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November 30, 2022

Sent via Email: Palmdale_Burbank@hsr.ca.gov

California High-Speed Rail Authority
355 S. Grand Ave.
Suite 2050
Los Angeles, CA 90071

Re: Palmdale to Burbank Project Section Draft EIR/EIS Comment

Dear California High-Speed Rail Board of Directors:

This letter serves as Save Angeles Forest for Everyone's official comment letter for the Draft Environmental Impact Report (DEIR) with respect to the above-referenced project section. Our Coalition includes volunteers from the communities of Kagel Canyon, Sunland-Tujunga, Shadow Hills, Lakeview Terrace, La Tuna Canyon, and Sun Valley, all in the Foothills of the San Gabriel Mountains, and all significantly impacted by each/all of CHSRA's proposed build alternatives.

This comment letter is organized by Chapter or Chapters (some with accompanying Appendices), and then stand-alone Appendices. Questions are incorporated throughout the document for CHSRA's review and response. In some sections, the focus was directed to the Preferred Alternative (SR14A) and in others, no specific route alternative was identified, and the analysis was intended to address all six build alternatives.

EXECUTIVE SUMMARY

The California Environmental Quality Act (CEQA) generally requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects, and to reduce those environmental impacts to the extent feasible.

The CEQA Guidelines define three types of effects (or impacts):

1. Direct or primary effects that are caused by a project and occur at the same time and place.
2. Indirect or secondary effects that are reasonably foreseeable and caused by a project, but occur at a different time or place.
3. *Cumulative effects, which refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*

State CEQA Guidelines require that the cumulative impacts of a project be addressed in an EIR when the cumulative impacts are expected to be significant and when the project's incremental effect is cumulatively considerable. Such impacts can result from individually minor but collectively significant actions taking place over time. (State CEQA Guidelines Section 15130[a]).

Section 15355 of the CEQA Guidelines states:

"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

(a) ***The individual effects may be changes resulting from a single project*** or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

In Chapter 3.19, CHSRA sets forth a cumulative impact analysis. However, CHSRA only considers the cumulative impacts as created by and/or in connection with **other** projects in the resource study area; CHSRA fails to take into account or analyze the cumulative impacts of its own project.

Considering that this is the largest infrastructure project in the history of the State of California (and one of the largest in the history of the United States), spanning 800 miles (and comprising over 10 years of construction for this project section alone), CEQA requires that CHSRA consider and study **the cumulative impacts of its own project**.

In its DEIR, CHSRA sets forth nearly 7,000 pages of significant and unavoidable impacts to or with respect to the following categories of study, many of which cannot be mitigated:

- Transportation
- Air Quality and Global Climate Change
- Noise and Vibration
- Electromagnetic Interference and Electromagnetic Fields
- Public Utilities and Energy
- Biological and Aquatic Resources
- Hydrology and Water Resources
- Geology, Soils, Seismicity, and Paleontological Resources
- Hazardous Materials
- Safety and Security
- Socioeconomics, Communities, and Environmental Justice
- Agricultural Farmland and Forest Land
- Parks, Recreation, and Open Space
- Aesthetics and Visual Quality
- Cultural Resources
- Regional Growth
- Project Cost and Operations

Were CHSRA to have studied and accurately reported the cumulative impacts of its own proposed high-speed rail project as required under CEQA, it would be clear that these impacts to the Palmdale to Burbank project section, when considered on a cumulative basis, far outweigh any potential “benefits” which may be realized by the completion of the high-speed rail system.

In light of the foregoing, it is clear that the only choice is the No Project Alternative.

LIMITATIONS OF THIS COMMENT LETTER

Due to the fact that the California High-Speed Rail Authority’s (“CHSRA” or “HSR” or “the Authority”) DEIR is comprised of nearly 7,000 pages (excluding additional ancillary documents, one of which was over 2,000 pages, which were referenced but not included as part of the official DEIR), and due to the fact that our coalition is comprised solely of community volunteers, we did not have adequate resources to perform an in-depth review of all sections, let alone to subsequently prepare comments and questions on each and every section within the 90-day review period. As such, there are significant portions of the DEIR which we simply did

not have the time to read; CHSRA should not interpret a lack of commentary on any particular section or issue of the DEIR to mean that there were no questions or concerns on that section or issue.

Our task was further hindered by the fact that the DEIR frequently referenced documents that were not available on the website and required a Public Records Request to obtain. While we did utilize CHSRA's portal to request documents, there were delays in getting some of the requests fulfilled. One such request was delayed not once, but twice, with the new date range for fulfillment extending beyond the December 1 comment period deadline.

Additionally, much of the data in the DEIR was stale, i.e., pulled from prior to 2016. We are nearly in 2023, so this data already is 8 years old and, as such, we contend that it is unreliable. Many of the financial data sets were difficult to compare because some were presented in the current year, and others were in the year of expenditure which includes inflation and escalations.

Similar to the DEIR, there is overlap and redundancy among the various sections in this document.

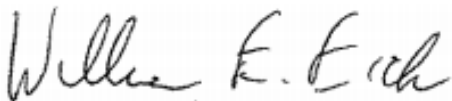
Sincerely,
On Behalf of the S.A.F.E. Coalition,



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CC:

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Los Angeles City Councilman Paul Krekorian
Los Angeles City Councilwoman Monica Rodriguez
Los Angeles City Council District 6 (vacant)

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CHAPTER 3
CHAPTER 3.2: TRANSPORTATION

Spoils Hauling Conditions

The spoils (rock and dirt) generated from miles of tunneling and other excavation areas will be loaded onto trucks and transported to numerous landfills in the region. Four disposal sites will be able to receive spoils via conveyor belt, therefore, not necessitating truck use.

The truck haul routes are shown in the map below:



Figure 3.2-1 Spoils Haul Routes

Depending on the spoils origination, hauling will occur either 8 hours per day 5 days per week or 16 hours per day 7 days per week (tunnel portals). This nearly incessant two-way parade of trucks will further increase the traffic and wear and tear on the two most traveled (and congested) freeways in the area: the I-5 and the I-210.

Appendix 2.1-I Spoils Disposal Assumptions contains charts for each alternative that shows: Spoils location, bulk cubic yards/day, years, number of outbound trips per hour, and potential off-hauling scenario. What it does NOT include is the total number of truck trips for the duration of the project or, perhaps even more importantly, the total amount of contaminated or hazardous material that will require special handling. Knowing the total is essential to fully understand the devastating impact this activity will have in our area in terms of air quality, noise, vibration, dust, freeway onramp queues, and traffic congestion.

Question: Why did CHSRA fail to enumerate the truck trips, the amount of contaminated soil, and all of the columns that contain numerical values in Appendix 2.1-I?

The following formula was used to determine the totals for the preferred alternative SR14A:

No. of outbound trips per hour x no. of hours (either 8 or 16) per day x no. of days per week (either 5 or 7) x 50 weeks per year (assumes 2 weeks' holidays annually) x no. of years. (During a CHSRA working group meeting held in September, CHSRA confirmed this is the correct formula to determine the total no. of truck trips.)

**The total is astounding: 2.4 MILLION one-way truck trips
 or 4.9 MILLION round-trip truck trips!
 10.9 million bulk cubic yards of contaminated soil!**

CHSRA assumes that each one-way trip is 20¹ miles, making the total number of round-trip miles: **97 MILLION miles!**² This is the equivalent of over 400 trips to the moon or wrapping around the equator 3,900 times—all while emitting greenhouse gas diesel trucks.

Question: Why does CHSRA believe that 4.9 million round-trip truck trips are acceptable?

The following chart summarizes what CHSRA did not—i.e., the total aggregate amount of spoils removal, truck trips, and the amount of contaminated soil what will have to go to a treatment plant.

**NO. OF TRUCK HAULING TRIPS
 (REMOVING SPOILS FROM LOCATION TO DISPOSAL SITE)**

	Per Week	Per Year	Project Duration Total
Round-Trips	42,480	2.1 million	4.8 million
Round-Trip Miles	.8 million	42.5 million	97 million
Duration of removing spoils from location	4 months to 6.4 years		
Duration of truck trips per hour	16.4 average, maximum 49		
Total amount of bulk cubic yards of hazardous/ contaminated material	10.9 million		

At portal P9, the stated estimated truck trips per hour is 49—that means one outgoing truck every 1.2 minutes! The average of 16.4 trucks per hour is still daunting at one outgoing truck every 3.7 minutes. Then there is the issue of empty returning trucks.

¹ Per Scott Steinwert of CHSRA, they used 25 miles 1-way to a disposal site. At 10-12-22 in person mtg, another engineer said probably too high so 20 miles 1-way was used

Question: What specific mitigation strategies will be implemented to limit truck traffic during peak times?

Then there is the issue of workers' vehicles travelling and parking at the work sites, and the transportation and parking/storage of construction vehicles and equipment.

Question: What is considered a "peak time?"

Question: How will workers get to/from the work sites and where will they park?

Lack of Accountability for "Mitigation" Measures. While CHSRA plans to mitigate the problems that spoils hauling will create, in most instances, it places the burden on the contractor(s):

- TR-IAMF#1: Protection of Public Roadways During Construction—will require **the contractor** to provide a photographic survey documenting the condition of the public roadways along truck routes. **The contractor** will be responsible for the repair of structural damage to public roadways caused by HSR construction or construction access.
- TR-IAMF#2: Construction Transportation Plan—will require **the contractor** to prepare a detailed CTP to minimize construction and construction traffic impacts on nearby roadways. The CTP will address, in detail, the activities to be executed in each construction phase to maintain traffic flow during peak travel periods.
- TR-IAMF#7: Construction Truck Routes—will require **the contractor** to deliver construction-related equipment and materials on appropriate truck routes, avoiding impacts on streets not designed to accommodate truck traffic.
- TR-IAMF#8: Construction during Special Events—will require **the contractor** to provide a mechanism to prevent roadway construction activities from reducing roadway capacity during major athletic events or other special events that substantially (10 percent or more) increase traffic on roadways affected by project construction as part of the CTP outlined in TR-IAMF#2.

Question: Who is ultimately responsible (i.e., the contractor or CHSRA) for imminent failures pertaining to the above four IAMFs?

Construction impacts

Refined SR14 and SR14A Build Alternative spoils hauling would degrade Level of Service (LOS) to unacceptable levels at the roadway segments for up to 6.4 years. Per CEQA:

"Level of service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Safety is not included in the measures that establish service levels."³

In the following chart, there are 11 scenarios of roadway segments for Refined SR14A. Of those 11, **9 fail!**

³ Transportation Analysis under CEQA First Edition © 2020 California Department of Transportation

Table 3.2-20 Refined SR14 and SR14A Build Alternatives Spoils Hauling Roadway Segment Analysis

Map ID	Segment	Existing (2015) No Project Conditions			Existing (2015) Plus Spoils Hauling Conditions Refined SR14			Existing (2015) Plus Spoils Hauling Conditions SR14A			Change in V/C Refined SR14	Change in V/C SR14A
		Volume ¹	V/C	LOS	Volume ¹	V/C	LOS	Volume ¹	V/C	LOS		
Northbound Routing – AM Peak Hour												
Sierra Highway												
B	West of Pearblossom Highway	2,955	1.028	F*	3,051	1.061	F*	3,117	1.084	F*	0.033	0.056*
D	West of Red Rover Mine Road	863	0.785	C	1,259	1.145	F*	863	0.785	C	0.360*	0.000
Hubbard Street												
N	North of I-210 WB Ramps	2,383	0.829	D	2,593	0.902	E*	2,593	0.902	E*	0.073*	0.073*
Northbound Routing – PM Peak Hour												
Sierra Highway												
B	West of Pearblossom Highway	3,93	1.368	F*	4,030	1.402	F*	4,096	1.425	F*	0.033	0.056*
Laurel Canyon												
S	East of Osborne Street	2,773	0.965	E*	2,935	1.021	F*	2,935	1.021	F*	0.056*	0.056*
Southbound Routing – AM Peak Hour												
Sierra Highway												
B	West of Pearblossom Highway	2,955	1.028	F*	3,051	1.061	F*	3,117	1.084	F*	0.033	0.056*
D	West of Red Rover Mine Road	863	0.785	C	1,259	1.145	F*	863	0.785	C	0.360*	0.000
Map ID	Segment	Existing (2015) No Project Conditions			Existing (2015) Plus Spoils Hauling Conditions Refined SR14			Existing (2015) Plus Spoils Hauling Conditions SR14A			Change in V/C Refined SR14	Change in V/C SR14A
Hubbard Street												
N	North of I-210 WB Ramps	2,383	0.829	D	2,593	0.902	E*	2,593	0.902	E*	0.073*	0.073*
Southbound Routing – PM Peak Hour												
Sierra Highway												
B	West of Pearblossom Highway	3,934	1.368	F*	4,030	1.402	F*	4,096	1.425	F*	0.033	0.056*
C	North of Angeles Forest Highway	1,466	1.275	F*	1,514	1.317	F*	1,583	1.377	F*	0.042*	0.102*
Laurel Canyon Road												
S	East of Osborne Street	2,773	0.965	E*	2,935	1.021	F*	2,935	1.021	F*	0.056*	0.056*

Source: Authority, 2019

***Boldface** type indicates that the intersection would operate at an inadequate LOS (LOS E/F) or where the change in V/C ratio increases by 0.04 or more.

¹ Volume is measured using peak hour average daily traffic and indicates the total volume of roadway during peak hours.

I = Interstate Highway

LOS = level-of-service

SB = southbound

V/C = volume-to-capacity ratio

WB = westbound

The same story repeats itself for impacts at street intersections and freeway ramp delays. The spoils hauling would degrade level of service to unacceptable levels for 100% of the 37 intersections for up to 6.4 years. For freeway onramps and offramps, 100% of the ramps (4) fail. Regarding ramps, CHSRA says there is adequate “storage.” That means the ramps are large/long enough for the queue of vehicles, including hauling trucks.

CHSRA states that they will be using 18-cubic yard dump trucks.⁴ Standard 18-yard dump trucks are about 22 feet long. The average car is 14.7 feet, so each dump truck equals about 1.5 cars.

Mitigation Strategies

There is nothing new or innovative with CHSRA’s mitigation plans. Even with the best mitigation efforts, all road or rail construction in populated areas cause bottlenecks, congestion, backed-up traffic, drivers making erratic and dangerous maneuvers to avoid congested areas, irate tempers, and more greenhouse gas emissions from idling vehicles sitting in gridlock.

Their “solutions”? Simply implement a transportation Construction (or Congestion) Management Plan during the construction duration (construction will last up to 6.4 years in some areas):

Mitigation Effort	Comment/Questions
Schedule a majority of construction-related travel during off-peak hours	Won't this cause light pollution due to high wattage lamps? Won't this stress the power grid during high-usage times? CalTrans does this and it results in high traffic and bottlenecks during times when drivers do not expect traffic.
Relocate spoils collection areas and access to minimize delays during peak hours	Where? Where are these “collection areas” for spoils?
Develop detour routes to facilitate traffic movements through construction zones without substantially increasing cut-through traffic in adjacent residential neighborhoods	How can this be accomplished? Won't this increase air pollution because drivers' routes will be longer than usual?
Temporarily restripe roadways to maximize vehicular capacity at locations affected by construction closures, where feasible	Won't this cause squeezed lanes, increasing the likelihood of collisions?
Temporarily remove on-street parking to maximize vehicular capacity, transit capacity, and bicycle circulation at locations affected by construction closures, where feasible	Where will these people who normally park on the street park?
Station traffic control officers at major intersections to minimize delays during peak hours, where feasible	Accomplishes nothing.
Develop alternative routes to reduce number of trucks on sensitive facilities without substantially increasing cut-through traffic in adjacent residential neighborhoods	How is this different from the “develop detour” routes above? Won't this increase air pollution because drivers' routes will be longer than usual?
Develop and implement an outreach program to inform the general public about the construction process and planned roadway closures	Won't this increase traffic on side streets in residential neighborhoods?
Develop and implement a program with business owners to minimize impacts on businesses during construction activity	How will they accomplish this? What program?
Modify Signal Timing—Electronically modifying signal timing at existing signals and would involve little to no physical disturbance that could cause impacts	Most cities, including Los Angeles, already have their signals timed and are working at optimal capacity. How can it be further improved?

⁴ Transportation Technical Report 2019, p. 2-42.

Modify Signal Phasing—Electronically modifying signal phasing at existing signals and would involve little to no physical disturbance that could cause impacts	Most cities, including Los Angeles, already have their signals timed and are working at optimal capacity. How can it be further improved?
Provide a Traffic Signal—Installing new signals to existing intersections generally could occur within existing pavement or disturbed graded right-of-way and will involve minor physical disturbance that could cause secondary environmental impacts.	Doesn't more signals mean more congestion and more starts and stops resulting in increased air pollution due to gasoline or diesel vehicles (including hauling trucks) idling while waiting for the signal to turn? To install a single traffic signal in Los Angeles costs \$250,000.
Widen Intersection—Widening intersection approaches by adding a through lane to improve LOS and intersection operations	This is completely infeasible.
Reconfigure Intersection—Reconfiguring intersection geometry to improve LOS and intersection operations	By doing what? Turning it into an equilateral triangle?

The above mitigation recommendations generally are not feasible and likely will not work. There is simply no solution to the chaos that will ensue from hauling spoils (particularly contaminated debris) as it requires hauling from the portals on roadways, getting onto the freeway via an onramp, taking up space of 1.5 cars on the onramp, utilizing the already congested 5 and 210 freeways, getting off the freeway, using roadways again, and dumping at the disposal site. Then the journey is reversed with an empty truck.

Angeles National Forest/San Gabriel National Monument

Once again, CHSRA puts the burden of major impacts upon the contractor. The DEIR states:

*“Construction activities within the ANF could also lead to temporary disruption of transportation system operations and possible damage to elements of the roadway system such as pavement and bridges, thereby interfering with USFS’s abilities to maintain National Forest System roads and infrastructure. **The contractor will be responsible** for the repair of structural damage to public roadways caused by HSR construction or construction access.*

*Trips for construction workers working within the ANF would generally occur outside of the peak hours for freeway and street traffic. The movement of heavy construction equipment such as cranes, bulldozers, and dump trucks to and from the site generally would occur during off-peak hours on designated truck routes. **The Contractor will be responsible** for identifying adequate off-street parking for construction-related vehicles and if necessary, designating remote parking areas for these workers, with shuttles to bring them to and from the construction area if the remote parking areas are distant from the project site.*

*The construction of the HSR track alignment would require temporary construction easements, which could require the temporary closure of parking areas, roadway travel lanes, transit routes, pedestrian facilities, bicycle lanes, and paths. **The contractor will prepare and implement** specific CMPs to ensure safe transit, pedestrian, and bicycle access during the construction period. Upon completion of construction, parking areas, roadway lanes, pedestrian facilities, and bicycle lanes will be restored to a condition equivalent to or better than their pre-project condition.”*
 (Emphasis added)

The roads within the Angeles National Forest and the San Gabriel National Monument are simply not built to handle the weight of heavy construction equipment, years of heavy truckloads of spoils hauling, and overall wear and tear this project will create. They were constructed to accommodate occasional maintenance vehicles.

CHSRA concentrates on avoiding disruption during “peak” times. The problem with this effort is that they will move activities during “non peak” times, thus turning those “non peak” into times of noise and vibration, increased traffic, and disruption of roadways.

CHAPTER 3.3: AIR QUALITY AND GLOBAL CLIMATE CHANGE

On Page 3.3-9 of the DEIR, CHSRA explains Assembly Bill 32, “The Global Warming Solutions Act of 2006.” Among AB 32’s specific requirements are the following:

- **Prepare a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020** (Health and Safety Code Section 38561). The scoping plan, approved by CARB in 2008 and updated in 2014 and 2017, provides the outline for future actions to reduce GHG emissions in California via regulations, market mechanisms, and other measures. The 2008 scoping plan included the implementation of HSR as a GHG reduction measure for the transportation sector.

California Climate Investments reports annually on Cap-and-Trade auction proceeds and investments. Below is a chart delineating the FY 2020-21 & Cumulative Appropriations of Cap-and-Trade Funds by Administering Agency.⁵ Considered on both an annual and cumulative basis, CHSRA is by far the recipient of the most money from the Cap-and-Trade funds.

⁵ Table 1: https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/2021_cci_annual_report.pdf

Administering Agency	Program	Appropriations (\$M) ^{24,25}		
		Cumulative Appropriations Prior to FY 2020-21	FY 2020-21	Cumulative Total ²⁶
California Air Resources Board	Community Air Protection	\$766	-	\$766
	Fluorinated Gases Emission Reduction Incentives	\$1	-	\$1
	Funding Agricultural Replacement Measures for Emission Reductions	\$251	-	\$251
	Low-Carbon Transportation	\$2,134	-	\$2,134
	Prescribed Fire Smoke Monitoring	\$4	-	\$4
	Woodsmoke Reduction	\$8	-	\$8
California Coastal Commission	Coastal Resilience Planning	\$5	-	\$5
California Conservation Corps	Training and Workforce Development	\$41	\$15	\$56
California Department of Community Services and Development	Low-Income Weatherization	\$212	-	\$212
California Department of Fish and Wildlife	Wetlands and Watershed Restoration	\$47	-	\$47
California Department of Food and Agriculture	Dairy Methane	\$289	-	\$289
	Healthy Soils	\$41	-	\$41
	Renewable Alternative Fuels	\$3	-	\$3
	State Water Efficiency and Enhancement	\$66	-	\$66
California Department of Forestry and Fire Protection	Community Fire Planning and Preparedness	\$10	-	\$10
	Fire Prevention	\$194	\$84	\$278
	Forest Carbon Plan Implementation	\$60	\$35	\$95
	Sustainable Forests	\$624	\$35	\$659
California Department of Resources Recycling and Recovery	Waste Diversion	\$141	-	\$141
California Department of Transportation	Active Transportation	\$10	-	\$10
	Low-Carbon Transit Operations	\$558	\$49	\$607
California Department of Water Resources	State Water Project Turbines	\$20	-	\$20
	Water-Energy Grant	\$49	-	\$49
California Energy Commission	Food Production Investment	\$124	-	\$124
	Low-Carbon Fuel Production	\$13	-	\$13
	Renewable Energy for Agriculture	\$10	-	\$10
California Environmental Protection Agency	Transition to a Carbon-Neutral Economy	\$3	-	\$3
California Governor's Office of Emergency Services	Wildfire Response and Readiness	\$51	\$1	\$52
California High-Speed Rail Authority	High-Speed Rail Project	\$3,317	\$247	\$3,564
California Natural Resources Agency	Regional Forest and Fire Capacity	\$20	-	\$20
	Urban Greening	\$156	-	\$156
California State Coastal Conservancy	Climate Ready	\$7	-	\$7
California State Transportation Agency	Transit and Intercity Rail Capital	\$1,227	\$98	\$1,325
California State Water Resources Control Board	Safe and Affordable Drinking Water Fund	\$100	\$49	\$149
California Strategic Growth Council	Affordable Housing and Sustainable Communities (Including Sustainable Agricultural Lands Conservation)	\$2,273	\$196	\$2,469
	Climate Change Research	\$34	-	\$34
	Technical Assistance	\$6	-	\$6
	Transformative Climate Communities	\$241	-	\$241
California Wildlife Conservation Board	Climate Adaptation and Resiliency	\$20	-	\$20
California Workforce Development Board	Low-Carbon Economy Workforce	\$30	\$3	\$33
San Francisco Bay Conservation and Development Commission	Climate Resilience Planning	\$3	\$2	\$5
Total		\$13,167	\$813	\$13,980

In its 2021 report, California Climate Investments also set forth the following data (table spanning the next three pages), which delineates the “Summary of Investments and Outcomes through 2020.”⁶

Administering Agency	Subprogram	Cumulative Funding Status (\$M)			Implemented Projects				Benefiting Priority Populations ²⁸		
		Allocated	Awarded ²⁹	Implemented	GHG Reduction (1,000 MTCO ₂ e)	Cost per GHG (\$/MTCO ₂ e)	Number of Projects	Intermediary Administrative Expenses (\$M) ³⁰	(\$M)	%	
California Air Resources Board	AB 617 Implementation	\$40.0	\$40.0	\$20.0	– ³¹	–	1	\$20.0	TBD		
	Community Air Grants	\$25.0	\$15.0	\$15.0	– ³¹	–	56	–	\$13.6	91%	
	Community Air Protection Incentives	\$704.4	\$700.7	\$322.7	166	\$1,947	1,858	\$46.6	\$259.6	94%	
	Fluorinated Gases Emission Reduction Incentives	\$1.0	This program has not yet awarded or implemented funds.								
	Funding Agricultural Replacement Measures for Emission Reductions	\$250.8	\$250.8	\$150.4	110	\$1,367	3,935	\$4.5	\$99.4	68%	
	Advanced Technology Demonstration and Pilot Projects	\$115.0	\$79.2	\$79.2	16	\$4,939	11	–	\$79.2	100%	
	Agricultural Worker Vanpools	\$6.0	\$6.0	\$6.0	5	\$1,307	1	–	\$6.0	100%	
	Clean Cars For All	\$102.0	\$102.0	\$73.0	56	\$1,299	9,128	\$6.3	\$58.7	88%	
	Clean Mobility in Schools Project	\$24.6	\$24.6	\$24.6	10	\$2,453	3	–	\$24.6	100%	
	Clean Mobility Options	\$55.2	\$51.6	\$10.7	3	\$3,312	31	–	\$10.7	100%	
California Air Resources Board (cont.)	Clean Off-Road Equipment Voucher Incentive Project	\$44.2	\$44.2	\$18.8	13	\$1,472	133	\$1.3	\$12.3	70%	
	Clean Vehicle Rebate Project	\$948.9	\$946.0	\$817.3	6,240	\$131	338,658	\$15.3	\$253.4	32%	
	Financing Assistance for Lower-Income Consumers	\$33.9	\$15.9	\$5.9	6	\$1,038	923	\$1.1	\$3.7	78%	
	Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project	\$486.4	\$475.3	\$271.7	1,112	\$244	4,298	\$6.5	\$168.1	63%	
	Outreach, Education, and Awareness	\$6.0	\$6.0	\$6.0	– ³¹	–	1	–	\$6.0	100%	
	Rural School Bus Pilot Projects	\$61.6	\$58.6	\$35.1	32	\$1,107	116	\$0.3	\$21.0	60%	
	Sustainable Transportation Equity Project	\$19.5	This program has not yet awarded or implemented funds.								
	Zero and Near Zero-Emission Freight Facilities	\$148.7	\$148.7	\$148.7	50	\$2,997	10	–	\$148.7	100%	
	Zero-Emission Truck and Bus Pilot Projects ³²	\$85.0	\$82.8	\$82.8	107	\$778	9	–	\$64.5	78%	
	Prescribed Fire and Smoke Monitoring	\$7.2	\$3.9	\$3.9	– ³¹	–	51	–	\$0	0%	
	Woodsmoke Reduction	\$8.0	\$8.0	\$6.8	94	\$72	1,880	\$0.8	\$5.1	86%	
California Coastal Commission	Coastal Resilience Planning	\$4.5	\$2.1	\$2.1	– ³¹	–	16	–	\$1.1	54%	
California Conservation Corps	Training and Workforce Development Program	\$55.9	\$20.4	\$20.4	183	\$111	346	–	\$16.3	80%	

⁶ Table 2: https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/2021_cci_annual_report.pdf

Administering Agency	Subprogram	Cumulative Funding Status (\$M)			Implemented Projects				Benefiting Priority Populations ²⁸	
		Allocated	Awarded ²⁹	Implemented	GHG Reduction (1,000 MTCO ₂ e)	Cost per GHG (\$/MTCO ₂ e)	Number of Projects	Intermediary Administrative Expenses (\$M) ³⁰	(\$M)	%
California Department of Community Services and Development	Community Solar ³²	\$2.2	\$2.0	\$2.0	10	\$204	1	–	\$2.0	100%
	Farmworker Housing Single-Family Energy Efficiency and Solar Photovoltaics	\$12.3	\$10.9	\$6.7	8	\$860	393	\$1.1	\$5.3 ³³	95% ³³
	Multi-Family Energy Efficiency and Renewables	\$63.9	\$63.9	\$37.2	161	\$230	8,342	\$1.9	\$35.2	100%
	Single-Family Energy Efficiency and Solar Photovoltaics	\$70.0	\$70.0	\$70.0	216	\$324	16,146	\$9.3	\$60.7	100%
	Single-Family Solar Photovoltaics	\$51.0	\$51.0	\$51.0	134	\$382	3,160	\$6.8	\$44.2	100%
California Department of Fish and Wildlife	Wetlands & Watershed Restoration Program ³²	\$46.7	\$36.9	\$36.9	1,000	\$37	22	–	\$20.5	55%
California Department of Food and Agriculture	Alternative Manure Management Program	\$288.9	\$60.9	\$60.9	1,009	\$60	104	\$0.7	\$0	0%
	Dairy Digester Research and Development Program		\$180.0	\$180.0	19,379	\$9	107	\$0.8	\$117.7	66%
	Healthy Soils Program	\$40.5	\$34.1	\$34.1	289	\$118	479	\$0.1	\$12.1	35%
	Renewable and Alternative Fuels	\$3.0	\$3.0	\$3.0	– ³¹	–	1	–	\$0	0%
	State Water Efficiency and Enhancement Program ³²	\$66.2	\$61.8	\$61.8	744	\$83	598	\$0.5	\$22.7	37%
California Department of Forestry and Fire Protection	Community Fire Planning and Preparedness	\$10.0	\$0.2	\$0.2	– ³¹	–	1	–	\$0.2	100%
	Fire Prevention Program	\$278.1	\$161.6	\$161.6	– ³¹	–	87	–	\$108.0	67%
	Forest Carbon Plan Implementation	\$89.5	\$42.2	\$42.2	– ³¹	–	73	–	\$5.3	13%
	Fire Prevention Grants Program	\$580.4	\$156.6	\$156.6	– ³¹	–	222	–	\$49.4	32%
	Forest Health Program		\$317.8	\$317.8	11,105	\$29	158	–	\$117.0	37%
California Department of Forestry and Fire Protection	Forest Health Research	\$5.5	\$5.4	\$5.4	– ³¹	–	26	–	\$1.2	23%
	Urban and Community Forestry Program	\$77.8	\$74.8	\$56.2	394	\$143	93	–	\$55.3	98%
California Department of Resources Recycling and Recovery	Community Composting for Green Spaces Grant	\$1.4	\$1.4	This program has not yet implemented funds.						
	Food Waste Prevention and Rescue Grants	\$24.7	\$20.2	\$20.2	434	\$47	64	–	\$19.4	96%
	Organics and Recycling Manufacturing Loans	\$9.2	\$7.7	\$7.7	772	\$10	5	–	\$0.8	11%
	Organics Grants	\$75.4	\$72.5	\$72.5	1,312	\$55	29	–	\$57.0	79%
	Recycled Fiber, Plastic, and Glass Grants	\$36.1	\$25.7	\$25.7	671	\$38	11	–	\$14.7	57%
	Reuse Grant Program	\$2.0	New program for FY 2021.							
California Department of Transportation	Active Transportation Program	\$10.0	\$10.0	\$10.0	<1	\$163,934	3	–	\$10.0	100%
	Low-Carbon Transit Operations Program	\$606.7	\$558.3	\$558.3	6,224	\$90	719	–	\$540.2	97%
California Department of Water Resources	State Water Project Turbines	\$20.0	\$20.0	\$20.0	37	\$542	2	–	\$0	0%
	Water-Energy Grant Program	\$49.3	\$45.3	\$36.7	382	\$96	95,300	–	\$23.1	63%

Administering Agency	Subprogram	Cumulative Funding Status (\$M)			Implemented Projects				Benefiting Priority Populations ²⁸	
		Allocated	Awarded ²⁹	Implemented	GHG Reduction (1,000 MTCO ₂ e)	Cost per GHG (\$/MTCO ₂ e)	Number of Projects	Intermediary Administrative Expenses (\$M) ³⁰	(\$M)	%
California Energy Commission	Food Production Investment Program	\$124.0	\$103.2	\$103.2	3,172	\$33	42	–	\$89.6	87%
	Low-Carbon Fuel Production	\$12.5	\$12.5	\$12.5	452	\$28	4	–	\$11.7	94%
	Renewable Energy for Agriculture Program ³²	\$10.0	\$9.5	\$9.5	127	\$75	45	–	\$1.1 ³⁴	11% ³⁴
California Environmental Protection Agency	Transition to a Carbon-Neutral Economy	\$2.6	\$2.6	\$2.6	– ³¹	–	2	–	\$0	0%
California Governor's Office of Emergency Services	Fire Engines and Maintenance	\$26.0	\$4.8	\$4.8	– ³¹	–	1	–	\$0	0%
	Wildfire Response and Readiness	\$25.0	\$25.0	\$25.0	– ³¹	–	61	–	\$0	0%
California High-Speed Rail Authority	High-Speed Rail Project	\$3,563.8	\$2,284.8	\$2,284.8	– ³⁵	– ³⁶	1	–	\$0	0%
California Natural Resources Agency	Regional Forest and Fire Capacity	\$20.0	\$18.1	\$4.6	– ³¹	–	27	–	\$1.3	27%
	Urban Greening Program	\$156.0	\$117.4	\$117.4	45	\$2,626	69	–	\$110.9	94%
California State Coastal Conservancy	Climate Ready Program ³²	\$7.0	\$6.7	\$6.7	2	\$3,982	18	–	\$4.1	62%
California State Transportation Agency	Transit and Intercity Rail Capital Program	\$1,324.8	\$2,123.4	\$389.9	2,557	\$153	29	–	\$357.6	92%
California State Water Resources Control Board	Safe and Affordable Drinking Water Fund	\$149.3	\$64.4	\$50.7	– ³¹	–	18	–	\$49.2	97%
California Strategic Growth Council	Affordable Housing and Sustainable Communities Program	\$2,272.4	\$838.6	\$838.6	1,793	\$468	85	–	\$674.6	80%
	Sustainable Agricultural Lands Conservation Program		\$153.5	\$46.4	5,319	\$9	39	–	\$4.3	9%
	Climate Change Research Program ³²	\$34.0	\$32.3	\$32.3	– ³¹	–	20	–	\$0	0%
	Technical Assistance	\$13.5	\$9.4	\$6.9	– ³¹	–	26	–	\$5.6	81%
	Transformative Climate Communities Program	\$241.3	\$179.1	\$164.8	123	\$1,341	119	\$2.9	\$156.9	97%
California Wildlife Conservation Board	Climate Adaptation and Resiliency Program	\$20.0	\$11.5	\$11.5	2	\$6,767	20	–	\$5.9	51%
California Workforce Development Board	Low-Carbon Economy Workforce	\$30.3	This program has not yet awarded or implemented funds.							
San Francisco Bay Conservation and Development Commission	Climate Resilience Planning	\$4.7	\$4.5	\$4.5	– ³¹	–	12	–	\$0	0%
Total		\$13,791.7	\$11,177.2	\$8,272.6	66,072	–	488,246	\$126.9	\$4,046.9	50%

34 Due to an error, this value does not reflect an additional \$0.3M in benefits to priority populations. Including these additional benefits, 15% of project dollars are benefiting priority populations.

35 Estimated GHG emission reduction from the California High-Speed Rail Project is 102 million MTCO₂e over its first 50 years of operating life, as detailed in the Revised Draft 2020 Business Plan available at hsr.ca.gov/about/business_plans/2020/.

36 GGRF funds provide an essential part of the total funds for the system, though it is difficult to estimate precisely what the ultimate GGRF investment will be, and consequently, a comparable "GGRF investment per ton of GHG reduced" metric.

In reviewing this data, there are some noteworthy conclusions. First, 70% of the recipients of cap-and-trade funds have already reported a demonstrable reduction in greenhouse gas emissions; CHSRA has not -- and will not for years to come (if it ever does).

Second, we can compare projects in terms of their efficacy. Evaluating simply the GHG reductions achieved to date, some standouts include the Clean Vehicle Rebate Program, which has already achieved over 6 million metric tons of GHG reductions; the Dairy Digester Research and Development Program, which has already achieved over 19 million metric tons of GHG reductions; the Forest Health Program, which has already achieved over 11 million metric tons of GHG reductions; the Sustainable Agricultural Lands Conservation Program, which has already achieved over 5 million metric tons of GHG reductions; and the Low Carbon Transit Operations Program, which has already achieved over 6 million metric tons of GHG reductions. By comparison, despite being the largest recipient of cap-and-trade funds, CHSRA has achieved 0 tons of GHG reductions as it has only been a net polluter during the construction phase.

Another way that we can compare the efficacy of projects is to consider the cost per metric ton of GHG reduced. California Climate Investments reported that, "Overall, California Climate Investments are reducing greenhouse gas emissions at an average rate of \$125 per MTCO_{2e}, not including greenhouse gas emission reductions attributable to the High-Speed Rail Project."⁷

The projects that stand out here in terms of being the best value or best investment of funds when compared against GHG reductions are: the Dairy Digester Research and Development Program, at a cost of just \$9 per MTCO_{2e} reduction; the Forest Health Program, at a cost of \$29 per MTCO_{2e} reduction; and the Sustainable Agricultural Lands Conservation Program, at a cost of just \$9 per MTCO_{2e} reduction. Even other transit projects present a respectable rate of return on investment: the Low Carbon Transit Operations Program has a cost of \$90 per MTCO_{2e} reduction (reporting a better-than-average rate of return when considered across all programs); and the even the Clean Vehicle Rebate Program costs \$131 per MTCO_{2e} reduction (at a cost slightly higher than the average rate of return, though very popular with over 300,000 people participating in the program).

Footnote 35 on this table states that: "The estimated GHG reduction from the California High-Speed Rail Project is 102 million MTCO_{2e} reduction over its first 50 years of operating life, as detailed in the Revised Draft 2020 Business Plan." Note that on page 3.3-12 of the DEIR, Figure 3.3-1 depicts the Aggregate GHG Emissions Reductions that Would Result from the California High-Speed Rail System. CHSRA's data in this chart states that the "Anticipated GHG Benefits Over 50-Year Timeframe" total 75.9 MMTCO_{2e}. This is 26 million less than quoted in the chart presented by California Climate Investments.

Question: Why is there such a large discrepancy in the data reported in the 2020 Business Plan and the data reported in the DEIR with respect to GHG reductions?

Question: In Summary of Investments and Outcomes reported by California Climate Investments, there is no data included for CHSRA with respect to both GHG reductions and Cost per GHG. In the interest of full disclosure and transparency, shouldn't the chart reflect negative data (meaning, a total net expenditure, not reduction of GHG) at least during the construction phase of the CHSRA project? Why is data not included to show the extent to which CHSRA is a contributor to GHG during the construction phase of the project?

Even if we were to believe CHSRA's claims that it will reduce GHG by somewhere between 75.9 and 102 MMTCO_{2e} over its first 50 years of operating life, the cost of construction is currently estimated to be \$105 billion. Using CHSRA's 75.9 MMTCO_{2e} estimate, **this puts its cost per MTCO_{2e} reduction at \$1,383**. Comparing this cost to the more cost-effective projects, this means that – on an investment to return basis – the Dairy Digester Research and Development Program is 153 times more effective than CHSRA; the Sustainable Agricultural Lands Conservation Program is 153 times more effective than CHSRA; and the Forest Health Program is 48 times more effective than CHSRA. Comparing CHSRA to other transit projects, the Low Carbon Transit Operations Program is 15 times more effective than CHSRA; and the even the Clean Vehicle Rebate Program is more than 10 times more effective than CHSRA. Compared to the California Climate Investment's reported average rate of \$125 per MTCO_{2e}, the average award recipient is 11 times more effective than CHSRA.

⁷ Page 25, https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/2021_cci_annual_report.pdf

Returning for a moment to the language of AB 32, the specific requirements of the The Global Warming Solutions Act of 2006's included the following: **Prepare a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020.**

Question: CHSRA has achieved no GHG reductions by 2020 and will not for the foreseeable future. How does it meet the requirements of AB 32?

Question: When considering CHSRA in comparison to other recipients of cap-and-trade funds, even using CHSRA's own high estimates for eventual GHG reductions (i.e., over the next 50 years), CHSRA's cost per MTCO_{2e} is significantly higher than the more successful program recipients which have already demonstrated GHG reductions. Given that CHSRA has not demonstrated and will not demonstrate **cost-effective reductions in GHG emissions** (by 2020, let alone ever), and AB 32 sets forth the expectation to achieve the maximum cost-effective reductions in GHG emissions, how does CHSRA meet the requirements of AB 32?

In its *Due Diligence Report*, the Reason Foundation highlights several problems with the HSR's claims that it will reduce GHG emissions. The first of those is that the United Nations Intergovernmental Panel on Climate Change has estimated that GHG emissions reductions can be achieved at a cost of \$20 - \$50 per ton. Using CHSRA data, Reason's report calculated that the emissions offset by the HSR during operation would cost \$1,800 per ton – and this was before the cost of the project more than doubled and before ridership projections were revised downward.⁸ This \$1800/ton offset cost is in line with the \$1,383/ton estimate calculated above.

Question: Given that the United Nations Intergovernmental Panel on Climate Change has estimated that GHG emissions reductions can be achieved at a cost of \$20 - \$50 per ton, and given that CHSRA's cost per ton is between 30 – 90 times that cost, how does CHSRA meet the requirements of AB 32 with respect to achieving **cost-effective reductions** in GHG emissions?

Question: Historically with respect to GHG reduction claims, CHSRA intentionally omits the GHG produced during construction of the project. How were CHSRA's estimates of 75.9 and 102 MMTCO_{2e} over 50 years of operation calculated? Do these estimates take into account the GHG that are created/emitted during construction of the project? Assuming the answer is no, and the estimates were advised to take into account the GHG created during construction, what would be the net increase or reduction in GHG emissions?

Other independent entities have evaluated CHSRA's claims that it is a "green" project. The non-partisan California Legislative Analyst's Office states:

*"High-Speed Rail Would Initially Increase GHG Emissions for Many Years. As mentioned above, in order to be a valid use of cap-and-trade revenues, programs will need to reduce GHG emissions. While the HSR has not conducted an analysis to determine the impact that the high-speed rail system will have on GHG emissions in the state, an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—**construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years.** While high-speed rail could reduce GHG emissions in the very long run, given the previously mentioned legal constraints, the fact that it would initially be a net emitter of GHG emissions could raise legal risks."⁹*

Additionally, the researchers at the University of California, Berkeley, who published "*Life-Cycle Assessment of High-Speed Rail: The Case of California*" concluded that it would take 71 years of HSR operations to save enough GHG emissions to negate the emissions produced during the construction of the train. Much of HSR's ability to recoup its GHG emissions depends upon its ridership levels. The Berkeley researchers concluded that

⁸ http://reason.org/files/california_high_speed_rail_report.pdf page 14

⁹ <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.pdf>.

if the HSR operates at 25% ridership capacity, it will NEVER achieve a recoupment on the amount of energy consumed and GHG emissions produced during construction.¹⁰

On the other hand, in Table 3.3-44, CHSRA asserts that, “The Build Alternatives construction would generate GHG emissions between 2020 and 2029. However, these emissions would be almost fully offset after 4 to 6 months of operations (depending on the ridership scenario and Build Alternative). After a maximum of 6 months, the Build Alternatives would result in net annual emissions reductions and a GHG benefit.”

Question: The independent analyses conducted by California Legislative Analyst’s Office and the University of California, Berkeley, each reach conclusions that are vastly different from CHSRA’s own claims that it will recoup all construction emissions in the first 4 – 6 months of operation. How does CHSRA account for this difference?

SB 32 (Chapter 249, Statutes of 2016) established a 2030 greenhouse gas emission reduction target of 40 percent below 1990 levels.¹¹ Further, in April 2015, Governor Edmund Gerald Brown issued EO B-30-15, which directed **all State agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal**, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

Question: As no section of the train will be operable by 2030, by the time the State is legislatively required to achieve the target of 40% below 1990 GHG emissions levels, CHSRA will have only contributed to, not reduced, GHG emissions. How is CHSRA operating in compliance with the requirements of SB 32? As CHSRA is a State agency with jurisdiction over GHG-emitting sources, and CHSRA will be a net emitter of GHG between 2015 and 2030, how is CHSRA operating in compliance with EO B-30-15?

State law requires the Department of Finance, in consultation with the California Air Resources Board and other state agencies, to submit a three-year investment plan to the Legislature to guide the investment of Cap-and-Trade Auction Proceeds. The Third Investment Plan was submitted to the Legislature in February 2019 and provided three main recommendations to the Legislature. One of those was to:

- Continue to invest in existing programs and prioritize new programs that **achieve near-term climate and health benefits** and contribute to long-term transformation to low-carbon communities and ecosystems that are adaptable and resilient.¹²

Question: Given that CHSRA will not achieve any reduction in GHG emissions until at least the train begins operating (and may never in the life of the train achieve a net reduction in GHG emissions), and given that CHSRA is by far the largest recipient of Cap-and-Trade Auction Proceeds, and given that the Department of Finance recommendation to the Legislature was to prioritize programs that **achieve near-term climate benefits**, how is CHSRA meeting the requirements of the state Investment Plan?

In Table 3.3-16, CHSRA sets forth its estimated emissions in each year of the construction period:

¹⁰ <http://its.berkeley.edu/btl/2010/spring/HRS-life-cycle>

¹¹ Page 135, https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/2021_cci_annual_report.pdf

¹² Page 137, https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/2021_cci_annual_report.pdf

Table 3.3-16 Annual Construction Emissions in the South Coast Air Quality Management District – SR14A Build Alternative

Projected Construction Year	VOCs	NO _x	CO	SO ₂	PM ₁₀ ²	PM _{2.5} ²
Annual General Conformity <i>de minimis</i> levels ¹	10	10	100	100	100	100
Annual CEQA threshold	The SCAQMD does not have annual CEQA thresholds. The SCAQMD CEQA thresholds for daily emissions are presented in subsequent tables.					
Year 2020						
Emissions (tons/year)	1.2	13.5	38.5	0.1	4.7	1.3
Exceeds General Conformity threshold?	No	Yes	No	No	No	No
Year 2021						
Emissions (tons/year)	3.1	45.1	73.7	0.3	9.4	2.5
Exceeds General Conformity threshold?	No	Yes	No	No	No	No
Year 2022						
Emissions (tons/year)	4.3	49.0	100.7	0.4	11.2	3.0
Exceeds General Conformity threshold?	No	Yes	Yes	No	No	No
Year 2023						
Emissions (tons/year)	4.9	54.8	112.7	0.4	12.0	3.4
Exceeds General Conformity threshold?	No	Yes	Yes	No	No	No
Year 2024						
Emissions (tons/year)	2.4	30.9	69.5	0.3	6.3	1.9
Exceeds General Conformity threshold?	No	Yes	No	No	No	No
Year 2025						
Emissions (tons/year)	1.4	19.5	43.9	0.2	4.4	1.3
Exceeds General Conformity threshold?	No	Yes	No	No	No	No
Year 2026						
Emissions (tons/year)	0.6	11.5	19.3	0.1	2.7	0.8
Exceeds General Conformity threshold?	No	Yes	No	No	No	No
Year 2027						
Emissions (tons/year)	0.3	3.8	8.5	0.0	0.9	0.2
Exceeds General Conformity threshold?	No	No	No	No	No	No
Year 2028						
Emissions (tons/year)	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Exceeds General Conformity threshold?	No	No	No	No	No	No
Total for Years 2020 – 2028 (supposed construction phase of the project section).	VOC	NO _x	CO	SO ₂	PM	PM
	18.3	228.2	466.8	1.8	51.6	14.4

Throughout the DEIR, CHSRA explains that it will rely on the purchase of “offset credits” to mitigate the GHG emissions it will generate during 10+ years of construction, as described on Page 3.3-72 of the DEIR:

AQ-MM#1 requires the purchase of emission offsets through the SCAQMD Emission Offsets programs. Emission reduction credits will be obtained from SCAQMD to offset emissions associated with the construction of the Build Alternatives. Purchase of emission offsets through SCAQMD’s RECLAIM Program or Air Quality Investment Program, emission reduction credits, or another mechanism, subject to discussion with and approval by SCAQMD (AQ-MM#1), would offset and/or decrease NO_x emissions.

On Page 3.3-79, CHSRA states:

Unlike the federal General Conformity regulations, obtaining offsets or emission reduction credits for CO exceedances of the CEQA thresholds is not prohibited. AQ-MM#3, described in Section 3.3.7, requires the use of ZE or NZE technology for 25 percent of all light-duty on-road vehicles, with a goal to use ZE or NZE technology for 100 percent of the light-duty on-road vehicles, 25 percent of the heavy-duty on-road vehicles, and a minimum of 10 percent for off-road conduction equipment used for construction. **All remaining emissions after implementation of AQ-MM#3 will be offset with emission offset credits required under AQ-MM#1 to below the SCAQMD CEQA thresholds.** However, until the contractual agreement between the Authority and the SCAQMD is in place and the purchase of emission offsets is secured, this represents a significant and unavoidable impact for the SR14A Build Alternative.

Further, on Page 3.3-104 of the DEIR, CHSRA explains:

Emissions from construction of the Palmdale to Burbank Project Section would be temporary. However, based on the amount of construction to be completed, **construction activities would involve heavy-duty construction equipment and cause air quality impacts that would conflict with or obstruct implementation of the applicable air quality plan, which serve to attain federal and state ambient air quality standards.** Construction NOx and CO emissions would exceed the SCAQMD and AVAQMD thresholds and could impede the implementation of the respective air quality plans. With incorporation of on-site IAMFs (AQ-IAMF#1, AQ-IAMF#2, AQ-IAMF#4, AQ-IAMF#5, and AQ-IAMF#6), NOx and CO effects will be reduced. With implementation of AQ-MM#1 and AQ-MM#2, construction emissions of NOx and CO will be offset until General Conformity or the CEQA threshold is met.

Per its own estimations as set forth in Table 3.3-16, CHSRA will be exceeding AQMD emissions levels in 7 of the 9 years of construction, and CHSRA will be required to purchase offset credits for at least these 7 years of construction.

Question: How can an agency that will be a gross polluter for at least the first 7 years of construction (i.e., to the extent that it is required to purchase offset credits as its emissions levels surpass those established by AQMD) simultaneously qualify to be the largest recipient of Cap-and-Trade funds?

Question: If the high-speed rail project is not completed, will CHSRA be required to return the funds it has already received to the Greenhouse Gas Reduction Fund so that the money can be reallocated to projects that actually reduce GHG emissions?

Question: If the high-speed rail project is completed, but never demonstrates a net reduction in GHG emissions, will CHSRA be required to return the funds it has already received to the Greenhouse Gas Reduction Fund so that the money can be reallocated to projects that actually reduce GHG emissions? Is there a penalty for not producing demonstrable emissions reductions?

Question: CHSRA includes the caveat that, "However, until the contractual agreement between the Authority and the SCAQMD is in place and the purchase of emission offsets is secured..." What is the process by which CHSRA purchases credits from AQMD? Is there the possibility that CHSRA will not be permitted to purchase the entirety of credits necessary to offset its construction emissions? In the event that CHSRA is unable to secure such a contractual agreement, what will CHSRA do to mitigate its significant deviance from AQMD accepted emissions levels?

Question: Why is purchasing offset credits considered to be an acceptable mitigation for pollution? Do the people who are living next to and working next to the construction staging areas (i.e., the people who will be

subjected to the pollution for 10+ years) get a say in what is an acceptable mitigation for violating applicable air quality standards?

On Page 3.3-27 of the DEIR, CHSRA sets forth its General Assumptions for Construction Activities, stating, “This analysis quantitatively estimates construction phase emissions related to the earthwork and construction activity associated with the following Build Alternative components”:

- Mobilization (including on-road deliveries)
- Site preparation/access roads (Off-road construction equipment, as well as on-road worker trips, deliveries, truck hauling, and grading activities)
- Demolition (Off-road construction equipment, as well as on-road worker trips, deliveries, truck hauling, and demolition activities)
- Earthmoving (Off-road construction equipment, as well as on-road worker trips, deliveries, and truck hauling activities)
- Tunneling (Off-road construction equipment, as well as on-road worker trips, deliveries, and truck hauling activities)
- Roadway segment construction (Off-road construction equipment, as well as on-road worker trips, deliveries, and truck hauling, grading, and paving activities)
- Grade separation construction (Off-road construction equipment, as well as on-road worker trips, deliveries, truck hauling, grading, and paving activities)
- Cut-and-cover (Off-road construction equipment, as well as on-road worker trips, deliveries, and truck hauling activities)
- Train station construction (Off-road construction equipment, as well as on-road worker trips, deliveries, truck hauling, grading, architectural coating, and paving activities)
- Retaining wall construction (Off-road construction equipment, as well as on-road worker trips, deliveries, truck hauling, and grading activities)
- Viaduct construction (Off-road construction equipment, as well as on-road worker trips, deliveries, truck hauling, and grading activities)
- Build Alternative alignment construction (Off-road construction equipment, as well as on-road worker trips, deliveries, and truck hauling activities)
- Demobilization (On-road deliveries)

While at first glance, this appears to be an exhaustive list of construction-related activities that would produce GHG emissions, upon closer look, there are several notable line items missing from this list. The first is concrete.

Per Table 2-12 (Summary of Design Features for the Build Alternatives) located on Page 2-79 of the DEIR, the Preferred Alternative features 27.95 miles of bored tunnel. For the ease of calculating using the estimated layman’s methodology herein, we will call the tunnel length an even 28 miles.

The online “Concrete Calculator” located at <https://www.calculator.net/concrete-calculator.html> allows users to estimate the volume of concrete necessary to build elements of various shapes and sizes. The screenshot below is the result of the calculation of the total volume of concrete necessary to build one of the twin bore tunnels at a length of 28 miles.

Circular Slab or Tube

Result

Total Volume: **17,852,399.33** cubic feet
 or **661,199.98** cubic yards
 or **505,523.65** cubic meters

If using pre-mixed concrete with density of 2,130 kg/m³ or 133 lbs/ft³*:

Total Weight needed	2,374,369,111.42 lbs or 1,076,765,381.4 kg
Using 60-lb bags	39,572,818.52 bags
Using 80-lb bags	29,679,613.89 bags

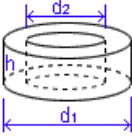
* Different types of concrete can have very different densities.

Outer Diameter (d₁)

Inner Diameter (d₂)

Length or Height (h)

Quantity



The diagram shows a 3D perspective of a cylindrical slab. The outer diameter is labeled d₁, the inner diameter is labeled d₂, and the height is labeled h.

Total volume for one tunnel = 17,852,399 cubic feet of concrete.
 For two tunnels (twin bore): 17,852,399 x 2 = 35,704,798 cubic feet of concrete.

In addition to the twin tunnels through which the HSR trains will traverse, there are going to be cross tunnels connecting the twin tunnels (primarily for the purpose of emergency evacuation), and these will be located every 800'. For 28 miles of tunnel, that means there will be 184 cross tunnels constructed (6.6 cross tunnels per mile of twin tunnel length).

Per CHSRA's specs set forth on Page 234 of the tunneling appendix, the average length of the cross tunnel will be 44', and the diameter of the cross tunnel will be 16'.

The screenshot below is the result of the calculation of the total volume of concrete necessary to build the 184 cross tunnels with the specifications set forth above.

Circular Slab or Tube

Result

Total Volume: **319,518.55** cubic feet
 or **11,834.02** cubic yards
 or **9,047.76** cubic meters

If using pre-mixed concrete with density of 2,130 kg/m³ or 133 lbs/ft³*:

Total Weight needed	42,495,967.49 lbs or 19,271,724.19 kg
Using 60-lb bags	708,266.12 bags
Using 80-lb bags	531,199.59 bags

* Different types of concrete can have very different densities.

Outer Diameter (d ₁)	<input type="text" value="17.5"/>	feet	
Inner Diameter (d ₂)	<input type="text" value="16"/>	feet	
Length or Height (h)	<input type="text" value="44"/>	feet	
Quantity	<input type="text" value="184"/>		
<input type="button" value="Calculate"/> <input type="button" value="Clear"/>			

Adding together the concrete for the twin bores (35,704,798 cubic feet of concrete) + the concrete for the 184 smaller cross tunnels (319,518 cubic feet of concrete) = **36,024,316 cubic feet of concrete**.

To calculate the tons of concrete based on this volume, we can assume that:

1 cubic foot of concrete = .075 tons of concrete

$$1 : .075 = 36,024,316 : x$$

$$1x = 36,024,316 * .075$$

x = 2,701,823 tons of concrete

This estimate seems low when compared to comparable tunneling projects which have already been completed. For example, the Gotthard Tunnel in Switzerland consists of 35-mile long twin bore tunnels that are between 29 and 31.5 feet in diameter, with 178 cross passage tubes to connect them. This project used 4.4 million tons of concrete.¹³

The Channel Tunnel (the "Chunnel") connecting Folkestone, England to Calais, France is 31.35 miles in length and is a three-bore tunnel, consisting of two 25' diameter rail tunnels and one 16' diameter service tunnel in between. Given its length and the size of its tunnels, the Chunnel serves as a suitable comparator to the tunnels that CHSRA proposes to build through the San Gabriel Mountains. Though the Chunnel is slightly longer than the proposed Preferred Alternative, the Chunnel only has 2 portals (one at each end), whereas the

¹³ <https://www.basf.com/global/en/media/news-releases/2016/05/p-16-212.html>

Proposed Alternative features 5 portals; therefore, the assumption is made that the Chunnel and the Preferred Alternative tunnels would use comparable amounts of concrete, as the amount of concrete needed at the greater number of San Gabriels tunnel portals offsets the greater length of the Chunnel. Construction of the Chunnel utilized 6.82 million tons of concrete,¹⁴ which is more than twice the estimated 2.7 million tons of concrete needed to complete the tunneled portion of the Preferred Alternative.

Why is the volume of concrete an important consideration vis à vis GHG emissions?

Because the major component of concrete is cement, and the cement industry is one of the two primary producers of carbon dioxide, a GHG. The cement industry produces over 5% of worldwide man-made emissions of CO₂.¹⁵

California ranks second in the nation (just behind Texas) in terms of CO₂ emissions created by the cement industry, producing over 11 million metric tons per year.¹⁶ The intensity of CO₂ emissions created by cement plants varies per state, and can be higher or lower depending on the fuel type, the raw ingredients used, and the energy efficiency of the cement plant.¹⁷ While the weighted national average is 0.97 tons of CO₂ emitted for each ton of cement produced, California comes in slightly higher with just over 1 ton of CO₂ emitted per ton of cement produced. This makes for an easy comparison, as we can consider that for every ton of cement produced for the HSR project, one ton of CO₂ is emitted.¹⁸

If we use the estimate calculated above, that **2,701,823 tons of concrete** will be utilized in the construction of the tunnels for the Preferred Alternative, and if we use the industry standard that that structural concrete is comprised of 15% cement, then the tunnels will use:

$2,701,823 * .15 = 405,273$ tons of cement.

Employing the intensity factors established above, **we may conclude that the production of 405,273 tons of cement used to build the tunnels will produce 405,273 tons of CO₂.**

By comparison, the Gotthard Tunnel, with 4.4 million tons of concrete, utilized approximately 660,000 tons of cement, which equates to 660,000 tons of CO₂ emissions; and the Chunnel, with 6.82 million tons of concrete, utilized approximately 1.023 million tons of cement, which equates to 1.023 million tons of CO₂ emitted during construction. As these are comparable projects to the Preferred Alternative, we can assume that CO₂ emissions attributable to just the concrete used during the construction of the tunnel portion of the project will range from 400,000 tons to 1 million tons of CO₂.

Question: In its emissions estimates presented in the DEIR, does CHSRA include the amount of CO₂ that will be generated during the creation of cement mixed to build the tunneled portion of the project? If not, why not?

California Climate Investments reports its investments and outcomes on a statewide basis, not per geographic area or project section. As calculated above, between 400,000 and 1 million tons of CO₂ will be emitted simply from the production of the concrete utilized to construct the 28-mile tunneled segment between Palmdale and Burbank. But the Palmdale to Burbank segment represents only 7% of the total HSR length.

¹⁴ Page 256 of Concrete in the Service of Mankind: Appropriate Concrete Technology. By Ravindra Dhir and Michael McCarthy. 1996.

¹⁵ http://en.wikipedia.org/wiki/Environmental_impact_of_concrete

¹⁶ <http://epa.gov/ttnchie1/conference/ei13/ghg/hanle.pdf> pages 9 and 10 CO2 Emissions Profile of the U.S. Cement Industry, produced by the EPA

¹⁷ Page 6 <http://www.nrmca.org/sustainability/> The Concrete CO2 Fact Sheet produced by the National Ready Mixed Concrete Association February 2012

¹⁸ <http://epa.gov/ttnchie1/conference/ei13/ghg/hanle.pdf> pages 9 and 10 CO2 Emissions Profile of the U.S. Cement Industry, produced by the EPA

Question: How many tons of CO₂ will be emitted during the production of the concrete needed to construct the remaining 492 miles connecting San Francisco to Los Angeles? Is California Climate Investments aware of these figures and, if so, why do they not include them when reporting annually on the efficacy of its Cap-and-Trade funding recipients?

Question: Does CHSRA assume that the concrete/cement tunnel linings will be manufactured locally? If not, where will they be manufactured?

In another chapter of the DEIR, CHSRA suggests that it may use 40-foot pre-fabricated lining segments. 28 miles x 5,280 feet / 40 feet = 3,696 segments. Admittedly this is for the entire circumference of the tunnel lining, and these would be broken into smaller segments to complete the round.

Question: In the event that these 3,696 tunnel segments are pre-fabricated elsewhere (i.e., to save local water sources) and then transported to the project section for installation, this will require 3,696 diesel truck trips made from a potentially significant distance. In its estimates of GHG emissions as set forth in the DEIR, has CHSRA included estimates of emissions that will be generated by the transportation of pre-fabricated concrete tunnel lining pieces?

Question: In Chapter 3.08 of the DEIR (“Hydrology and Water Resources”), CHSRA describes that for sections of the tunnel which experience water pressure in excess of 25 bar, CHSRA will install a second concrete tunnel lining. How will this additional layer of concrete lining impact the estimates above and, therefore, the overall carbon emissions stemming from the use of concrete in this project?

In an article entitled, “The Secrets of the World’s Longest Concrete Tunnel,” Cembureau, the European Cement Association, explains some of the unique factors of the Gotthard Tunnel in Switzerland. One of these was the stipulation that 100% of the aggregate used to make the concrete must come from recycling materials excavated on site. Cembureau explains that, “The key to ensuring that the material was sustainable was the use of recycled aggregate – with the tunnel team recycling more than one third of 28.2 million tonnes of excavated rock during the manufacture of the concrete.”¹⁹

Question: Does CHSRA have plans to recycle any of the aggregate that it is removing from the tunnels as spoils and use it in the creation of concrete needed to build the tunnels?

In a previously released document on “Green Practices,” CHSRA provides only one example of GHG tonnage produced by its construction activities. That’s the example of 30,107 tons of CO₂ that it expects to be generated from construction of the first 29-mile segment of rail from Madera to Fresno.²⁰ This 29-mile Madera to Fresno segment is comparable in length to the 28-mile tunneled portion of the Palmdale to Burbank segment; however, the tonnage of emissions is drastically different between the two project segments.

In considering GHG emissions from cement alone, we can compare 400,000 tons to 1 million tons of CO₂ emitted during construction of the 28-mile Preferred Alternative tunnels to 30,107 tons of CO₂ emitted during construction of the 29-mile Madera to Fresno rail alignment. We can only assume that the difference is attributable to the fact that the Madera to Fresno segment is at grade, while the Palmdale to Burbank section is tunneled, meaning that it requires exponentially more concrete to build.

Question: If construction of a tunneled route will generate 30X as much GHG emissions than construction of an at-grade route of comparable length, and if CHSRA purports to be a “green project,” then why does CHSRA not construct the Palmdale to Burbank project section at grade utilizing the existing transportation corridor?

¹⁹ <http://useofcement.cembureau.eu/2018/04/06/the-secrets-of-the-worlds-longest-concrete-tunnel/>

²⁰ http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf

In the same “Green Practices” paper, CHSRA explains that it will offset the 30,107 tons of CO₂ emitted during construction of the 29-mile Madera to Fresno rail alignment by planting over three million trees.²¹ The equivalent for the Palmdale to Burbank section would require planting to over 90,000,000 trees.

Question: Does CHSRA plan to plant over 90 million trees along the Palmdale to Burbank project section in order to offset its GHG emissions in this region? To get a sense of how large that number is, if CHSRA did nothing but plant trees every day for one year, it would need to plant 246,575 trees every single day in order to plant 90 million trees on day 365. If we increased the planting time to 10 years – i.e., to coincide with the construction period of the project in the Palmdale to Burbank project section – then CHSRA would still need to plant approximately 25,000 each day in order to achieve the equivalent offset goal that it set for the Madera to Fresno project section.

In a recent article for *Electrical Contractor* magazine entitled “Feeding the Monster,” author Claire Swedberg describes the important role played by Royal Electric Construction Corporation in a public utilities project in Columbus, Ohio that involves using a tunnel boring machine to tunnel 4.5 miles under the city.

Of course, digging out a 4.5-mile tunnel under city streets, as well as under a river, requires not only heavy equipment, but also power. Royal Electric Construction Corp. is providing all power to light the way, pump water in and out of the tunnel, and maintain wireless connectivity. In addition, Royal is powering a giant by the name of Marsha, a 546-foot-long tunnel boring machine (TBM), which is chewing through rock and clay under the city. “There is a great deal of high-voltage and data work being done, and they are handling all aspects of the job,” said Bob Rautenberg, Kenny Construction project manager.

Marsha, the TBM, is working her way deeper into the tunnel—which drops down to 170 feet beneath the surface—at a rate of up to 40 feet per day, five days per week, 24 hours per day. The \$16 million, two-story machine consists of its 95-ton, 23-foot diameter grinding disk and an excavation chamber where broken rock passes before entering an auger-screw conveyor. That conveyor excavates the material into a slurry system, where a water, rock and clay mix is pumped to the surface. The TBM also has thrust cylinders to hold six 5-foot-long concrete pieces in place, while installing them into what becomes a segment ring in the newly cut hole; those cylinders also advance and steer the machine by pushing off from the concrete segments.

The TBM was assembled, as much as possible, on the surface in segments of 30–40 feet. The machine is hydraulically driven but requires electric power, so the mechanical and electrical contractors rely on each other to keep it operating correctly. To turn the blade, the machine requires six 350-kilowatt (kW) motors. Additionally, its 546-foot length houses multiple motors for the many oiling and grease systems and the fresh-air ventilation system.

To power the TBM, Royal Electric installed approximately 18,000 feet of machine cable, ranging in size from 1/0 to 500 MCM (thousand circular mils) and more than 30,000 feet of low-voltage control cable for the wireless networks.

The entire project is supplied with a medium-voltage switchyard that was constructed on-site to allow for two 14,400V circuits for the TBM and water-pumping system. Both circuits will travel the entire length of the expanding tunnel, one providing 26,000 kW to the TBM and the other providing 36,000 kW to the pumps that are moving fresh and wastewater through the tunnel. To accomplish this, more than 46,000 feet of 15-kilovolt, tough, oil-resistant, SO cable is being installed as the TBM travels toward the other end of the tunnel.

²¹ http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf

The TBM's lower level houses three transformers to convert the incoming 14,400 circuit to 480 volts (V). The upper level contains five large motor control cabinets and an emergency generator for lighting in the event of a power outage.

The monthly cost to power the entire site for the temporary power averages between \$75,000 and \$100,000, and that average is expected to double toward the end of the project. In fact, this volume of electricity consumption causes a major challenge for contractors.

"The biggest hurdle is managing the incoming power," Rautenberg said. "We are limited on the amount of electrical energy that the city can supply to us, and we need to balance that energy between the TBM and the 13 pumps (six at 500 horsepower, seven at 300 hp) that need to be installed in the tunnel. We are working with Royal to optimize the positioning of all this equipment."

Question: Other sections of the DEIR address electrical requirements. Do the estimates that CHSRA set forth in Table 3.6-22 include the energy electricity to run multiple tunnel boring machines a day with each boring machine requiring up to 3,500 kwh (this number based on existing boring machine specifications)?

Additionally, this exceptional use of electricity factors into this chapter on Climate Change. The EPA's online Greenhouse Gas Equivalencies Calculator²² allows a user to convert emissions or energy data to the equivalent amount of carbon dioxide emissions from using that amount.

We used the Greenhouse Gas Equivalencies Calculator to convert the amount of energy required to power one tunnel boring machine for the duration of time it would take to complete one tunnel.

Assuming an average daily energy usage of 3,500 kwh per day * 365 days per year * 10 years * estimation that it will really only be running 70% of the time due to downtime, maintenance, etc. = 8,942,500 kwh of electricity.

Inputting this number to the GHG Equivalencies Calculator, 8,942,500 kwh of electricity equates to 3,868 metric tons of CO₂ emitted just to operate one TBM.

Per "Construction Power Requirements" set forth in a report by Jacobs Associates for the Gorge 2nd Tunnel project in Seattle, the electricity consumed by the TBM represents about 55 percent of the total electric needed to run corollary operations in tunnel construction.²³ Therefore if we double the calculations above, we can estimate the total amount of electricity needed during tunnel construction. 8,942,500 kwh * 2 = 17,885,000 kwh of electricity, which equates to 7,736 metric tons of CO₂ emitted in order to run construction-related equipment during tunnel construction.

Question: In its emissions estimates presented in the DEIR, does CHSRA include the amount of GHG that will be generated by the electricity necessary to operate the TBMs and/or the related equipment necessary to effectuate tunnel construction? If not, why not?

Question: Given the challenges experienced by Royal Electric with respect to the sheer volume of electricity required for the project and the limited supply available from the city electric company, what conversations has CHSRA had with SoCal Edison and/or DWP regarding the 10+ year need for a significant increase in energy on an already stressed system?

²² <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>

²³ https://www.seattle.gov/light/q2t/docs/Appendix_O_Power_Reqmts.pdf

Additionally, there is an electrical requirement for the production of cement. Per information presented by Cembureau, each ton of cement requires 121kwh of electricity to produce.²⁴ Per previous calculations in this comment section, we can assume that the construction of the tunnels in the Preferred Alternative will require between 400,000 and 1 million tons of cement.

$400,000 * 121 \text{ kwh} = 48,400,000 \text{ kwh}$ of electricity. Using the EPA's GHG Equivalencies Calculator, that is equivalent to 20,938 metric tons of CO₂. Using the higher estimate of 1 million tons of cement, $1,000,000 * 121 \text{ kwh} = 121,000,000 \text{ kwh}$ of electricity, which equates to 52,344 metric tons of CO₂.

Question: In its emissions estimates presented in the DEIR, does CHSRA include the amount of GHG that will be generated by the electricity necessary to mix the cement utilized in the construction of the tunnels? If not, why not?

On Page 3.3-20 of the DEIR, CHSRA explains the statewide, regional, and local air quality standards that must be achieved with respect to sensitive receptors:

The local air quality impact analysis focuses on the effects of pollutant emissions from both the construction and operation of the six Build Alternatives on nearby sensitive receptors. Sensitive receptors include residential dwellings, schools, churches, hospitals, and parks. The local RSA is defined as the Build Alternative footprint, plus 1,000 feet around the Palmdale and Burbank Stations, as well as roadway intersections projected to operate at unacceptable levels of service (i.e., generate localized pockets of traffic congestion and vehicle emissions) under future project conditions.

However, in Section 3.3.5.5, CHSRA sets forth its list of sensitive receptors that will be impacted by the build alternatives, including, "Non-residential sensitive receptors located within 1,000 feet of the Build Alternative."

Question: If "parks" were included in the definition of sensitive receptors on Page 3.3-20, why in its list of sensitive receptors in Section 3.3.5.5 does CHSRA not list the Angeles National Forest, the San Gabriel Mountains National Monument, the Big Tujunga Wash, and Hansen Dam? These locations are sensitive receptors that will suffer tremendous impacts as portals will be constructed and operated at their borders. In addition to many years of construction of the infrastructure needed to support portals, portals will also serve as a place by which spoils will be extricated for the duration of the excavation of the tunnels.

On Page 3.3-28 of the DEIR, CHSRA lists Build Alternative Start Dates as January 2020. This DEIR was not even released until nearly two full calendar years later, and will not be finalized/certified until at least three full calendar years after this supposed Start Date. Additionally, before the route can be started, significant additional geotechnical investigation will have to be conducted along the tunneled portions (i.e., 100 – 150 additional test bore holes will need to be drilled) before design-build contracts can even be bid, let alone issued.

Question: Why are CHSRA's dates so far off what could be considered a reasonable construction schedule? In releasing this DEIR to the public in September 2022, CHSRA was well aware that they had long passed the "Build Alternative Start Date" of January 2022. Why was the DEIR not revised to include more realistic dates?

On Page 3.3-113 of the DEIR, with respect to vehicle exhaust emissions, CHSRA states that:

AQ-IAMF#1, AQ-IAMF#2, AQ-IAMF#4, and AQ-IAMF#5 implement the lowest- emitting construction equipment technology and adopt best management practices to minimize construction-period emissions. No additional emissions control/mitigation measures exist. Given that all feasible DPM control measures (i.e., renewable diesel, Tier 4-compliant construction equipment, and 2010 or newer

²⁴ <https://cembureau.eu/about-our-industry/key-facts-figures/>

truck fleet) will already be implemented as IAMFs, no additional DPM control measures exist. Therefore, this impact would be significant under CEQA.

Question: In a separate section of this comment letter, we utilized information in the DEIR to calculate that more than 5 million truck trips will be required to haul spoils from the tunnel portals and transport them to their ultimate destination. Are the emissions from these 5 million truck trips included in CHSRA's Annual Construction Emissions tables?

Question: If, after the implementation of all available/known mitigation measures, the air quality impact with respect to vehicle exhaust emissions is still significant per CEQA standards, what is the consequence? It seems there are many study areas presented in this DEIR for which, even after mitigation, there will still be a significant impact. Has CHSRA prepared a Statement of Overriding Conditions? If not, will CHSRA prepare a Statement of Overriding Conditions and present it to the State Legislature for consideration with respect to either approval and/or funding requests vis a vis this project?

On Page 3.3-114 of the DEIR, CHSRA addresses the issue of Aircraft Emissions:

As indicated in Table 3.3-37 and Table 3.3-38, the operation of the six Build Alternatives would be expected to reduce aircraft emissions when compared to the existing and future No Project baselines (Table 3.3-12). The decrease in aircraft emissions would occur as intrastate travelers are expected to shift away from flying toward more use of the California HSR System. The reduction in aircraft travel as a result of the California HSR System is the largest contributor to the reduction in statewide and regional emissions.

As more thoroughly examined in a separate section of this comment letter, there is no evidence to suggest that the implementation of high-speed rail in California will lead to a reduction in flights. The only flights that could change or be impacted by the implementation of high-speed rail are flights between San Francisco and Burbank (i.e., the hubs serviced by both HSR and airplanes). As of the time of this writing, current flights on both United and Southwest are \$168 round trip between SFO and BUR and take under 1 ½ hours. On the other hand, a high-speed rail ticket is predicted to cost \$200 round trip (\$100 each way) and take a minimum of 2 hours 40 minutes.

Question: CHSRA's assumption that travelers will choose HSR over flying is overstated at best (if not misplaced entirely). Given the cost and time parameters set forth above, on what grounds does CHSRA believe that it will capture such a significant share of the air market?

Second, CHSRA's assumption that air carriers who currently service this route will simply take planes out of commission as passengers choose HSR over air is not realistic; in the event that airlines servicing SFO and BUR see a reduction in demand, they will simply reallocate those airplanes to different routes that are experiencing a higher demand.

Question: Considering that CHSRA admits that, "The reduction in aircraft travel as a result of the California HSR System is the largest contributor to the reduction in statewide and regional emissions," if CHSRA revised its calculations to not overstate HSR's potential capture of the air market, what emissions gains, if any, would result? If CHSRA recalculated its emissions tables based on the questions and information provided in this comment letter (including, but not limited to, factoring in and accurately reporting emissions generated during construction), what, if anything, would be the emissions gains for the lifetime of the project? In what year, if ever, would CHSRA recoup the amount of emissions generated during construction of the project?

On Page 3.3-129 of the DEIR, CHRSA asserts that:

Operation of the Palmdale to Burbank Project Section would reduce statewide GHG emissions by 1.1 to 1.7 MMT CO₂e in 2040, depending on the ridership scenario (medium and high). These annual reductions would represent 0.6 to 1.0 percent of the 172 MMT CO₂e needed to achieve the SB 32 goal.

Going back to the very first comments presented in response to this chapter of the DEIR, it is a requirement of AB 32 to, **“Prepare a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020.”**

CHSRA’s current budget predicts that it will cost \$105 billion to complete the high-speed rail network. Under CHRSA’s own best-case scenario (and still not taking into account other construction-related emissions which we do not believe have been accounted for in CHSRA’s tables), CHSRA predicts that its operations will represent, at most, 1% of the CO₂ emission reductions necessary to achieve the goals set forth in SB 32. In reviewing the “Summary of Investments and Outcomes” compiled by California Climate Investments, the cost-benefit ratio achieved by CHSRA would be the highest of all agencies administering programs funded by the Cap-and-Trade Auction Proceeds.

Question: Given that CHRSA has not demonstrated and cannot demonstrate that it can achieve cost-effective reductions in GHG emissions (let alone achieve the maximum feasible cost-effective reductions in GHG emissions), how is CHSRA in compliance with the requirements of AB 32? Why should CHSRA continue to receive funding from the Cap-and-Trade auction proceeds when it is not a cost-effective program and when it is questionable if/when it will ever reduce GHG emissions?

In Section 3.3.4.5 (Method for Determining Significance Under CEQA) of the DEIR, CHSRA states that, “The Authority is using the following thresholds to determine if a significant impact on air quality and global climate change would occur as a result of the project. A significant impact is one that would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Palmdale to Burbank Project Section region is nonattainment under an applicable NAAQS or CAAQS;
3. Expose sensitive receptors to substantial pollutant concentrations;
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
5. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;
6. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.”

Question: Considering that CHSRA’s plans as set forth in Chapter 3.3 of the DEIR meet each/all six of the foregoing criteria for determining if a project will result in a “significant impact” on air quality and global climate change, how is this project in compliance with CEQA with respect to air quality considerations? If state and/or federal legislators were aware of the information presented in Chapter 3.3 of the DEIR, for what reasons should they continue to allocate funds to support the continuation of this project?

CHAPTER 3.5: ELECTROMAGNETIC INTERFERENCE & FIELDS
CHAPTER 3.6: PUBLIC UTILITIES AND ENERGY
APPENDIX 3.6-A: HIGH RISK AND MAJOR UTILITY IMPACT REPORT

Electromagnetic Interferences and Electromagnetic Fields

Section 3.5, Electromagnetic Interference and Electromagnetic Fields, is CHSRA’s evaluation of existing Generated Electromagnetic Fields (EMF) and how CHSRA’s operations will impact existing EMF infrastructure. The existing EMF infrastructure includes radio waves (RF) from radio communications in use by Public Safety Organizations, Burbank Airport, private radio communications use by delivery companies, Cell Phone communications and EMF generated by critical machinery including Medical Equipment (MRI for example).

Per government regulation, CHSRA’s generated EMF from CHSRA’s operations (train’s electric motors for example) must not create Electromagnetic Interference (EMI) which adversely impacts the operations of the EMF infrastructure or provide plans for shielding CHSRA’s operations to mitigate the generated EMI from CHSRA’s. CHSRA’S trains, tracks, and electrical infrastructure generate EMF fields. The generated EMF can impact existing EMF infrastructure as well as impact the health of people and animals in close proximity to the CHSRA train and electrical power lines and distribution stations. CHSRA has defined a 1000-foot buffer zone between CHSRA trains and power lines to mitigate the impact of EMI to people, animals, and electrical infrastructure in order to meet US and California regulations.

Question: CHSRA proposes to have their contractors “prepare an Implementation Stage Electromagnetic Compatibility Program Plan (ISEP) to identify construction BMPs that will minimize EMI/EMF effects and demonstrate how EMI/EMF will be maintained below applicable standards.” Given how current CHSRA contractors on the Merced Line have not met CHSRA build standards as defined in their existing contracts, what actions will CHSRA take to ensure that appropriate standards are met within this project section? Will CHSRA implement heavy contractual penalties for failure to meet contractual obligations?

Question: CHSRA operations will operate in sparsely populated areas and through heavily populated areas. In non-tunnel CHSRA right of way, a 500’ buffer from the centerline to streets, homes, businesses, or wildlife was studied to assess the effects of CHSRA EMF on the affected areas. For areas where a 500’ buffer cannot be maintained, what mitigation will CHSRA provide to the impacted businesses, homes, schools, and wildlife? For example, if Sierra Hospital’s MRI system is impacted by CHSRA EMF, who will pay to mitigate this impact – CHSRA or Sierra Hospital?

Table 3.5-2 (p3.5-3) identifies the Frequency and related Wavelengths studied for this section to evaluate CHSRA impacts to existing infrastructure.

Table 3.5-1 Relationship Between Typical Frequencies and Their Wavelengths

Frequency	Wavelength	Common Commercial Uses
60 Hz	3,105 miles	Electric power grid
10 kHz	18.6 miles	Radio navigation
10 MHz	98.4 feet	Shortwave radio
100 MHz	9.8 feet	FM radio
2000 MHz	6 inches	Cellular communications

Source: Authority, 2017
 Hz = Hertz MHz = Megahertz
 kHz = kilohertz

Volunteer “HAM” radio operators are critical during a catastrophic infrastructure emergency (such as earthquakes) and provides critical communications when established infrastructure (such as cell phones, landlines, and even public safety agencies) are inoperable.

In Appendix 3.5-A, Electromagnetic Measurement Survey Summary, the introduction indicates “Two types of measurements were performed at each location. The first involved measurement of radiated electric fields from 10 kilohertz (kHz) to 6 gigahertz (GHz), meant to characterize the radio frequency (RF) environment. These electric field strengths were measured using an RF spectrum analyzer and calibrated antennas.”

The purpose of this evaluation is to measure the interference to existing RF infrastructure caused by the CHSRA and how the CHSRA will interfere with communications and electrical equipment operations close to CHSRA. By measuring the existing infrastructure RF environment, CHSRA performed an evaluation projecting how the CHSRA-generated RF will impact existing infrastructure and what mitigation would be required to eliminate or reduce the impact to the existing infrastructure or how the existing infrastructure could impact CHSRA operations.

During infrastructure emergencies (e.g., floods, earthquakes, fires), HAM operators provide critical communications when traditional infrastructure is down. During disasters, HAMS will establish mobile operations at critical locations. The most used HAM bands are in the Very High Frequency (VHF) and Ultra High Frequency (UHF) Bands; most often in the 144MHz, 220MHz, and 420MHz ranges. Most of the HAM repeater Networks, located on mountain tops and supported by backup power, operate in the VHF and UHF ranges. Additionally, HAMS may need to operate at the Super (SHF) and Extremely (EHF) Frequency Bands from 10 GHz to above 275GHz. While some infrastructure emergencies may shutdown CHSRA operations, the CHSRA electrical infrastructure could still be operations emitting EMI.

Question: Why did CHSRA exclude the HAM radio frequency spectrum above 2000MHz in section 3.5 in their evaluation of RF interference?

Question: Why was the RF environment capped at 6GHz when many HAM radio operators may need to operate at the SHF and EHF bands?

Question: Why was the RF environment capped at 200MHz (B6) and started again at 2.0Ghz (B9) on Table A3.5-1, ignoring the VHF and UHF bands?

Question: Why hasn't CHSRA considered RF impact on the critical HAM radio spectrums that become critical in local disaster situations?

Electrical Requirements of the High-Speed Rail System

Section 3.6.6.3 on p3.6-86 of the Draft EIR states: “The proposed California HSR System would obtain electricity from the statewide grid. None of the Build Alternatives would involve construction of a separate power source, but instead, would require the extension of existing power lines to traction power substations positioned along the HSR corridor. Impacts that might result from the proposed California HSR System would not affect statewide electricity reserves or transmission capacity. In September 2008, the Authority adopted a policy goal of utilizing renewable energy for all traction power. An industry survey in April 2013 indicated that there is sufficient renewable energy capacity to meet the system demand (Authority 2014b). Under the 2013 Policy Directive POLI-PLAN-03, the Authority has adopted a goal to purchase 100 percent of the HSR system's power from renewable energy sources (Authority 2016b).”

Table 3.6-7 Utility Service Provider (p3.6-24) of the Draft EIR indicates:

- Electrical Power to CHSRA will be provided by the local Power Utilities where CHSRA is planned to run. The relevant power utilities are Southern California Edison (SCE) from Palmdale to the LA City

Line, Los Angeles Department of Water and Power (LADWP) from LA City Line to Burbank City Line, and Burbank Water and Power (BWP) from Burbank City Line to Burbank Airport.

- All electrical power (100%) will be from renewable sources.

Question: Is this based upon SB100 – The 100 Percent Clean Energy Act that sets “State Policy”: that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045?

Question: It has been almost 10 years since CHSRA has evaluated electrical power requirements sufficient to power the Palmdale to Burbank Project Section. Given the significant changes to the existing power infrastructure, the addition of renewal power sources to the power grid, and expanding electrification automobile transportation, why hasn't CHSRA reevaluated and validated 10-year-old assumptions?

Question: What discussions has CHSRA had with SCE, LADWP, and BWP regarding CHSRA power requirements to support CHSRA Palmdale to Burbank operations? What are the dates/times of these discussions? Are there notes/documentation of these discussions? What conclusions/agreements have been made as a result of these discussions?

Question: Have the Power Utilities committed to supplying 100% green electricity to CHSRA? At peak CHSRA power requirements? During Heat Emergencies when Cal ISO has declared a power “Flex Alert”? If so, what conclusions/agreements have been made from these discussions? When and where were these commitments made, and by what people? Can CHSRA's planned power backup capabilities provide enough power to keep CHSRA operational until a “Flex Alert” has been lifted?

Question: Has CHSRA provided Peak/Normal/Minimal power supply requirements (KWh) to run the CHSRA train from Palmdale to Burbank based upon expected train traffic to SCE, LADWP, BWP by Utility?

Question: If the necessary power requirements are not currently available from either SCE, LADWP, and/or BWP, have these utilities committed to increasing their infrastructure to provide CHSRA's “Green” power requirements?

Question: How much power (KWh) is to be delivered to each CHSRA power distribution station? If this metric cannot be determined until detailed design is complete, how can CHSRA justify statements in the Draft EIR that the current or future energy grid can supply the 100% green energy required to power the Palmdale to Burbank Project?

Question: Does the electrical infrastructure (e.g., high power electrical lines, utility distribution stations, etc.) required to deliver electrical power from the Electrical Utility (SCE, LADWP, BWP) to CHSRA at each electrical Power Distribution Station currently exist?

Question: If the required electrical infrastructure does not exist, who will build the infrastructure? Who will pay for the cost of building this infrastructure: CHSRA or SCE, LADWP, BWP? If built by the Electrical Utility, will SCE, LADWP, and/or BWP bill back the cost of building the required infrastructure to CHSRA? Or pass it along to their customers?

Question: Has the cost of additional electrical infrastructure required to power CHSRA been included in the latest published CHSRA Palmdale to Burbank Project Cost Projections?

Question: Has CHSRA had discussions with SCE, LADWP, and/or BWP regarding high fire danger and the brown/black out of existing power lines to prevent catastrophic wildfires?

Question: In the event of a utility planned power outage, how will SCE, LADWP, and BWP allocate power to CHSRA?

Question: In the event of a utility planned power outage, will SCE, LADWP, and BWP prioritize power to their residential/commercial/government customers over CHSRA? How would this situation affect CHSRA train schedules and operations?

Question: Given that sections of the Palmdale to Burbank Project are within a High Fire Severity Zone, how will CHSRA mitigate these risks and ensure to CHSRA is operational?

Question: How will temporary power be provided to CHSRA contractors? Will temporary infrastructure be required – poles, lines, etc.? Who will be responsible for installing and removing this infrastructure? Who will pay for these activities?

Question: Has CHSRA negotiated power rates for construction for the temporary infrastructure required to build the CHSRA?

Question: Has CHSRA considered alternative electrical power supplies? Solar Power Arrays at CHSRA Power Distribution Stations? Placing Solar Arrays along the CHSRA above ground rights of way above the tracks and electrical train connections?

Environmental Consequences

Section 3.6.6.2, No Project Alternative of the Draft EIR, developed in 2016 details the assumptions used to provide environmental impact of the Palmdale to Burbank Project. This section states that, “Demand for energy would also increase at a level commensurate with population growth. Peak- and base-period electricity demand would increase and require additional generation and transmission capacity. According to the CEC Demand Analysis Office (CEC 2014), the average annual growth rate for statewide electricity demand between 2014 and 2026 is forecast to increase between 0.54 percent (low energy demand) and 1.27 percent (high energy demand). The CEC analysis included forecasts that considered impacts (beneficial and adverse) of approved efficiency programs, climate change, electric vehicle use, other electrification projects (including port projects and HSR), and demand response (time-of-use pricing) programs. Energy use in Los Angeles County would be anticipated to trend along the forecast state average during this same time period (2015-2040).”

Additionally, this section states, “Under the No Project Alternative, the projects listed in the regional transportation plans are expected to encourage both compact development and greater investment in local transit modes as a means of reducing VMT. Table 3.6-19 shows the projected 2040 estimate of energy consumed from fueling cars and planes, without the California HSR System. Under the No Project Alternative, the daily VMT in Los Angeles County would increase by the year 2040. In 2040, daily VMT would undergo an estimated increase of 9 percent under baseline conditions without implementation of the Southern California Association of Governments’ *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* (SCAG 2016). With implementation of this plan, which includes operation of the California HSR System, it is estimated that VMT would be reduced by 0.7 percent in 2040.”

This evaluation was completed in 2016, and as such, could not accurately predict the rapid increase in solar energy infrastructure (e.g., utility solar farms and rooftop solar), the increase of home solar battery systems, the rapid development and acceptance of electric vehicles, the government support of electrical charging stations along interstate and state highways, and the State of California’s commitment to be Carbon Neutral by 2045. This evaluation also predicts net population gains, while California’s population has held steady or decreased since 2016.

Question: Why hasn't CHSRA re-evaluated the accuracy of the 9% MVT increase or the expected 0.7 percent reduction by 2040 considering the changing infrastructure environment?

Construction Impacts

Section 3.6.6.3 states: "Construction and operations of the Build Alternatives could result in temporary and permanent impacts on public utilities and energy." Table 3.6-20 Summary of Potential High-Risk and Potential Major Low-Risk Utility Conflicts identifies these risks by build alternative. These risks include long or short-term interruption to electrical, water, gas, and other utility infrastructure.

Question: What compensation will homeowners and businesses receive from if their utilities are suspended due to construction of the Palmdale to Burbank Project?

Question: What supplemental utilities (e.g., power generators, water tanks, etc.) will a homeowner or business receive to bridge their utility outage?

Question: Will CHSRA compensate homeowners if suspended utilities require the homeowner to temporarily relocate to a hotel or other location during the outage?

Question: Will CHSRA compensate business for their outages if suspended utilities shut down their business?

Temporary Energy Consumption During Construction

Impact PUE#6 states: "During construction of the Palmdale to Burbank Project Section, energy would be consumed for the construction of trackway, stations, and ancillary facilities; production and transportation of construction materials; and the operation and maintenance of construction equipment. These construction activities typically utilize diesel- or gasoline-powered equipment and vehicles. Table 3.6-22 shows estimates of construction-related indirect energy consumption for the construction phase of the Build Alternatives.

Table 3.6-22 Estimated Energy Consumption for Construction of the Build Alternatives Build Alternative	Central Subsection (MMBtu)	Burbank Airport Station (MMBtu)	Total Consumption (MMBtu)
Refined SR14	2,982,239	173,589	3,155,828
SR14A	3,061,181	173,589	3,234,770
E1	2,522,664	173,589	2,696,253
E1A	2,532,424	173,589	2,706,013
E2	2,838,622	173,589	3,012,211
E2A	2,850,812	173,589	3,024,401

Energy used during construction of the Palmdale to Burbank Project Section would represent a one-time, nonrecoverable energy cost. The temporary demand for energy utilized during construction would not require additional permanent electricity transmission capacity and would not increase peak- or base-period demands for electricity from the electrical grid system."

Question: Do the estimates in Table 3.6-22 include the energy electricity to run multiple tunnel boring machines a day with each boring machine requiring up to 3,500 kwh (this number based on existing boring machine specifications)?

Question: How can CHSRA claim that, "The temporary demand for energy utilized during construction would not require additional permanent electricity transmission capacity and would not increase peak- or base-period demands for electricity from the electrical grid system"? How would CHSRA's operations not increase peak or base power demand when the tunnel boring machines would be running 24 hours per day 7 days a week?

High Risk & Major Utility Impact Report

Appendix 3.6-A details the impacts of CHSRA to critical Utility infrastructure including, Water, Power, Phone, Internet cables, Sewer, and other impacts.

Per CHSRA's report, you communicated with the various Organizations (Public and Private) to understand their existing infrastructure and how CHSRA will impact this critical infrastructure for each of the proposed CHSRA Route Alternatives.

Question: Appendix 3.6-A latest communications were in 2016. Why hasn't this EIR been updated or validated with current conditions, considering the last communications were 7 years ago?

Question: Did CHSRA validate the findings in Appendix 3.6-A with each of the impacted organizations? If so, when (date), with whom (persons), what were the results of discussion?

Question: Has CHSRA communicated with any of the impacted organizations since August 2016 to validate these findings? If so, when (date), with whom (persons), what were the results of discussion?

Question: Has CHSRA been informed of new or additional infrastructure projects since August 2016 (assuming this was the completion date of the Appendix) and how new or planned infrastructure would impact CHSRA Alternatives? If so, when (date), with whom (persons), what were the results of discussion? If updates were received, why are these updates not included in the Draft EIR?

Construction Water Usage

Appendix 3.8-D page 16 states that: "the volume of water necessary for construction of the SR14A Build Alternative has been estimated as a total of 193,680,000 gallons for the entire construction period." In water terms, 193,690,000 gallons is equal to 595 acre feet (AF) of water required to complete construction of the entire SR14A Build Alternative.

In Section 3.6-19, CHSRA estimates the amount of water required to build various CHSRA structures, including tunnelling, concrete structures, construction buildings, and cut-and-cover structures. See table 3.6-4 below.

A ballpark estimate of the tunneling requirement for boring the tunnels for SR14A, assuming a boring speed of 43 feet per day, estimates between a low of 327,1400,000 gallons (1,004 AF) and a high of 660,228,000 (2,026 AF) of water. Estimating the combined construction water estimates for all identified structures is between a low of 471,930,000 gallons (1,283 AF) and high of 751,018,000 (2,305 AF) of water (see spreadsheet below).

These water estimates are ONLY for major SR14A structures. This does not include additional construction water requirements for personnel, dust abatement around construction sites, water for constructing additional

utility infrastructures, or water required for movement of existing utility wires, pipelines, water lines, telecommunications lines and other construction activities.

The Western States of the US (i.e., California, Idaho, Utah, Wyoming, Nevada, Arizona, and Colorado) are in a multi-year long drought that will require reduced water allocations from the Sierra Nevada, Cascade, and Colorado Water sheds. Critical negotiations are currently being held by these Upper and Lower Colorado River Water Shed State to reduce water allocations to each State.

Question: Where does CHSRA expect to obtain this volume of water to support construction?

Question: Will CHSRA construction require a reduction in water allocation to all residents of California?

Question: Will CHSRA construction require a reduction in water allocation to California’s multi-billion dollar agricultural sector?

Question: Since all Californians are currently being asked to reduce water usage, what benefits will California residents obtain from additional water reductions that would be required to build the Palmdale to Burbank project section?

Question: Will there be sufficient water to support ongoing CHSRA activities once the CHSRA is completed?

Table 3.6-4 Water Demand Rates for Construction Activities Activity	Demand Rate
Constructing a steel structure (truss/arch)	10,000 gallons/structure
Constructing a concrete structure	10,000 gallons/structure
Constructing station buildings	20,000 gallons/building
Cut-and-cover	40,000 gallons/day/double track tunnel
Tunnel boring machine	55,000–105,000 gallons/day per tunnel boring machine ¹

Estimated Water Usage Table - Route SR14A Estimated

Feet per day estimate is based upon a Tunnel Boring Machine used in 2016 to bore a tunnel in the Swiss Alps. While this estimate is a maximum speed for this machine going through the Swiss Alps, the San Gabriel Mountains geology will provide additional challenges given the historic seismic conditions that currently exist.

Tunnel	Miles	Feet	Boring Speed-ft/day	Build Days
Tunnel 1	7.3	38544	43	897
Tunnel 2	3.1	16368	43	381
Tunnel 3	0.5	2640	43	62
Tunnel 4	0.9	4752	43	111
Tunnel 5	12.4	65472	43	1523
Tunnel 6	1.4	7392	43	172

Activity	Days to Build	Estimated Gallons per Day per Boring Machine	No. of Tunnels	Total Gallons per Activity	Acre Feet Per Tunnel	Tunnel Length(miles)
Tunnel 1						
Low Usage	897	55,000	2	98,670,000	302.81	7.3
Medium Usage	897	78,000	2	139,932,000	429.43	
High Usage	897	111,000	2	199,134,000	611.12	
Tunnel 2						
Low Usage	381	55,000	2	41,910,000	128.62	3.1
Medium Usage	381	78,000	2	59,436,000	182.40	
High Usage	381	111,000	2	84,582,000	259.57	
Tunnel 3						
Low Usage	62	55,000	2	6,820,000	20.93	0.5
Medium Usage	62	78,000	2	9,672,000	29.68	
High Usage	62	111,000	2	13,764,000	42.24	
Tunnel 4						
Low Usage	111	55,000	2	12,210,000	37.47	0.9
Medium Usage	111	78,000	2	17,316,000	53.14	
High Usage	111	111,000	2	24,642,000	75.62	
Tunnel 5						
Low Usage	1,523	55,000	2	167,530,000	514.13	12.4
Medium Usage	1,523	78,000	2	237,588,000	729.13	
High Usage	1,523	111,000	2	338,106,000	1037.61	
Tunnel 6						
Low Usage	172	55,000	2	18,920,000	58.06	1.4
Medium Usage	172	78,000	2	26,832,000	82.34	
High Usage	172	111,000	2	38,184,000	117.18	

Bridge	# Trusses per Bridge	Gallons per Truss	No. of Bridges	Total Gallons per Bridge	Acre Feet Per Bridge	Number of Trusses is a guesstimate given actual building plans don't exist.	Location	# Trusses
Bridge 1	8	10000	1	80,000	0.25		Barrel Springs	8
Bridge 2	16	10000	1	160,000	0.49		Red Rover	16
Bridge 3	10	10000	1	100,000	0.31		Big Springs-1	10
Bridge 4	12	10000	1	120,000	0.37		Big Springs-2	12
Bridge 5	6	10000	1	60,000	0.18		Big Springs-3	6
Bridge 6	4	10000	1	40,000	0.12		Big Springs-4	4
Bridge 7	7	10000	1	70,000	0.21		Agua Dulce -1	7

Bridge 8	20	10000	1	200,000	0.61	Agua Dulce -2	20
Bridge 9	12	10000	1	120,000	0.37	Soledad Cyn-1	12
Bridge 10	18	10000	1	180,000	0.55	Soledad Cyn-2	18
Bridge 11	4	10000	1	40,000	0.12	Tujunga Channel	4
Bridge 12	6	10000	1	60,000	0.18	Lankershim Bl	6
Bridge 13	6	10000	1	60,000	0.18	Tuxford St	6
Total Bridge				1,290,000	3.96		

Cut and Cover	Days to Build	Gallons per Day	No. Cut Cover	Total Gallons per Tunnel	Acre Feet Per Tunnel	Number of days to build are an estimate given building plans don't exist.	Distance/Miles
Olinda St	800	40000	1	32,000,000	98.20		1
Burbank Airport	1000	40000	1	40,000,000	122.76		1
Total Cut/Cover				72,000,000	220.96		

Trench	Days to Build	Gallons per Day	Total Gallons per Activity	Total Gallons per Trench	Acre Feet Per Trench	Assume Trench 50% Cut and Cover	Distance/Miles
Montegue St	200	20000	1	4,000,000	12.28		0.5
Tuxford	400	20000	1	8,000,000	24.55		1
Total/Trench				12,000,000	36.83		

Other Structures	Number of Structures	Total Gallons per Structure	Total Gallons per Activity	Total Gallons per Trench	Acre Feet Per Trench
Station Buildings	25	20,000	1	500,000	1.53
Concrete Structure	500	10,000	1	5,000,000	15.34
Total Other				5,500,000	16.88

Estimates Project Water Usage
 Estimate Per Table 3.6-4

	Gallons			Acre Feet		
	Low	Medium	High	Low	Medium	High
Tunnel	327,140,000	463,944,000	660,228,000	1,004	1,424	2,026
Bridges	1,290,000	1,290,000	1,290,000	4	4	4
Cut/Cover	72,000,000	72,000,000	72,000,000	221	221	221
Trench	12,000,000	12,000,000	12,000,000	36.83	36.83	36.83
Other Structures	5,500,000	5,500,000	5,500,000	16.88	16.88	16.88
Total	417,930,000	554,734,000	751,018,000	1,283	1,702	2,305

Table 3.6-30 Summary of CEQA Significance Conclusions and Mitigations Measures for Public Utilities and Energy states: "Impact PUE#3 Effects from Water Demand during Construction, Level of CEQA Significance after Mitigation is Less than Significant."

Question: Given the current drought conditions and expected low level of water availability in the future, how can CHSRA still consider this impact “Less than Significant”?

Impact	Level of CEQA Significance before Mitigation	Mitigation Measures	Level of CEQA Significance after Mitigation
Construction Impacts			
Impact PUE#1: Planned Temporary Interruption of Utility Services.	Significant	PUE-MM#2	Less than Significant
Impact PUE#2: Accidental Disruption of Utility Systems.	Less than Significant	No mitigation measures are required.	N/A
Impact PUE#3: Effects from Water Demand during Construction.	Significant	PUE-MM#1	Less than Significant

CHAPTER 3.7: BIOLOGICAL AND AQUATIC RESOURCES

Questions:

- 3.7-4** Who will be stipulating recovery plans? Who will be carrying the plans out? Who will be paying for them?
- 3.7-9** Over what time period has CHSRA been working with the U.S. Forest Service with respect to the ANF? Were communications available to the public? If not, then why not?

What is the process for voluntary protections under CA Assembly Bill 498?
- 3.7-10** Are all contractors working in the ANF familiar with each of these listed Acts and Codes?
- 3.7-11** Is the Authority exempt from Forest Service regulations? What would be an example of a mitigation measure that would minimize removal of native vegetation?
- 3.7-12** What would be an example of an unavailable RSA? What exactly is the process of identifying species through aerial photography interpretation?
- 3.7-18** How much training would be given during construction in addition to before construction? What is an example of WEAP training material? What is an example of a special status plant that might be encountered? Will workers be distracted from identifying plants when doing their jobs?
- 3.7-19** How many Project Biologists will be working in an area? Will there be video cameras at night to track animal life? How will wildlife movement corridors be identified? What

materials will be used to clean vehicles? Will rodenticides be used, given that they are harmful to animals, including owls and mountain lions?

- 3.7-22** What are examples of modeling tools?
- 3.7-24** Were any of the Field Surveys, aside from the red-legged frog, actually conducted in the field as opposed to prepared from desktop research or aerial photographs?
- 3.7-28** How were these 5 species chosen? Black bears are also prevalent in the San Gabriel Mountains. Why are they not on the list?
- 3.7-29** What are the special status plants? How many are there?
- 3.7-32** Although much of the 834-square mile Los Angeles River Watershed has been paved over, it is not necessarily largely polluted. What specific evidence is there that water from the area cannot be converted or used, especially in this time of drought? Which specific areas of the 834 square miles can be used? How will vegetation communities be affected by spoils hauling both in north and south routes?
- 3.7-90** Since what is under the mountains affects what is above, how might wildlife be affected in significant ecological areas? How would vibrations from trains affect animal and wetland life as the train traverses these areas above ground? What part of Hansen Dam is under the jurisdiction of the Army Corps of Engineers?
- 3.7-92** Are any of the Build Alternatives to go on ground level in any part of the 275,000 protected areas? Are specific wildlife corridors known to the Forest Service?
- 3.7-93** What wildlife, including but not limited to mountain lions, have been killed on the 14 Freeway?
- 3.7-95** Exactly what is meant by “would affect?”
- 3.7-96** To what extent are special status plants protected by law? Does “range of impact” mean that plants would be destroyed? Does “acres of impact” signify the number of acres found within the area of a Build Alternative or the number of acres that would be destroyed by the Build Alternative?
- 3.7-96-99** What will be done to mitigate the loss of threatened, endangered, and rare species plants?
- 3.7-101** How will the destruction of each plant community specifically affect wildlife (mammals, birds, fish) that depend on the plants for shelter or food?
- 3.7-102** Will workers be allowed to smoke during construction?
- 3.7-102** Why is CHSRA using the word “temporary” to describe impacts? How could the impacts described be temporary? How many biologists would be present on-site during construction? What are examples for WEAP training materials for workers? Where would construction spoils and waste go? How can construction equipment be cleaned and still not affect plant life from water drain off? Realistically speaking, how can hydrology changes in groundwater levels during construction be “temporary” in their impacts on plant life?

- 3.7-103** Is there groundwater recovery from tunnel construction as mentioned in the Arrowhead Tunnels? If so, how did that affect vegetation recovery?
- 3.7-106-7** How can the Authority justify destroying plants living in the San Gabriel Mountains National Monument? Is not that land protected? If endangered species of plants and animals are present, aren't they federally protected?
- 3.7-110** In a 2015 meeting in Pacoima, Michele Boehm from CHSRA told those present, including myself, "If any routes affect the watershed, then they won't be selected." Was this statement, made by a high-ranking High-Speed Rail representative, not accurate? If it was accurate, then why are routes with impacted streams that foster plant communities being considered?
- 3.7.109** Research has now established the fact that tree communities communicate underground, and their well-being depends upon this communication. How will forest communities of special-status trees survive when their habitats are interrupted?
- 3.7-112** How will surveys for Special-Status Plant Species and Communities be conducted? Where will seed banks be stored? How will they be preserved, and then who will replant them? Where will they be replanted, and who will monitor their growth? What exactly is Vernal Pool Work Restriction? Who will oversee the work? What would be an example for BIO-MM#32,33 of associated plants that rely on a particular special-status plant? For how long during train operation would monitoring of aquatic resources continue?
- 3.7-113** Who would receive compensation in BIO-MM#38? Who would determine what that compensation should be? What method would be used for restricting sensitive plant areas from construction areas? Would once a year suffice for an Annual Vegetation Control Plan? Wouldn't such plans vary by species? Who will be making specific plans in specific areas and monitoring activities? What does a Compliance Reporting Program look like? Who receives it and gives feedback? How do plans make impacts on plants "less than significant for all six Build Alternatives"? How could the Authority know if restoration of an affected habitat area is successful? How long would such an area be observed and maintained to determine success? What entity would receive compensation?
- 3.7-114** When were surveys and habitat assessment conducted for red-legged frog populations? Were the observations done in person? If so, by whom?
- 3.7-116** How do we know that destruction to aquatic breeding habitats would be temporary? How often will the BIO AMFs be employed? Will workers be on the job at night?
- 3.7-117** How does one compensate for "unavoidable impacts"? How will groundwater inflow during tunnel construction affect people who depend upon wells in the ANF for their water? Is there compensation for them?
- 3.7-121** What is the source of the surveys, Restoration Plans, and Minimization Measures? Have they been used in other high-speed rail construction projects? How successful have been? What are examples of Construction Activities and monitoring measures that can reduce impacts on nesting habitats? When a species is lost, how is it compensated?

- 3.7-122** What constitutes a way to eradicate weeds? Would a weed killer be used? It is important that rodenticides not be used. Will Arundo be eliminated? What are examples that would need reduced traffic speeds? Are these roads that are shared with other vehicles not related to High-Speed Rail construction? In what way and how often would compliance reports be made? Who receives them? What are examples of construction activities that can reduce impacts on breeding habitats for amphibian species? Will there be workers who specialize in construction in wetlands?
- 3.7-123** How can one determine that the listed mitigation measures automatically make impacts on amphibians less than significant in all cases, when construction has not started? Will construction continue from February to September during nesting months for the 5 FESA-listed species?
- 3.7-125** How has CHSRA concluded that, "There is no known breeding activity within 10 miles of the Build Alternatives?" How do we know this to be true?
- 3.7-128** Looking at Section 3.7.4.2:
- BIO-IAMF #1: Would appropriate Biologists for specific areas plan ahead to coordinate with bird nesting habits?
- BIO-IAMF#2: If issues are raised following a meeting between agencies, such as the USFWS, and sent to the Authority, what happens next?
- BIO-IAMF#3: How long should dissemination of WEAP Training Materials take to thoroughly make certain that workers understand? How are workers evaluated for understanding? Are materials available in the primary language of each worker?
- BIO-IAMF#4: What is an example of a penalty for noncompliance of a regulation?
- BIO-IAMF#5: At what point in the building process is the Resources Management Plan compiled?
- BIO-IAMF#6: What is an example of a type of material appropriate for a particular species protection? Will the Project Biologist inspect for wildlife daily?
- BIO-IAMF#8: How much space will be used by staging areas and traffic routes that cover special-status species? How long will species be restored when temporary structures are removed? How large and permanent will the staging areas for construction equipment be?
- BIO-IAMF#9: Will a new facility be built for storing construction spoils and waste? If so, how large will it be? How will disrupted plant species be preserved? What is meant by "treatment"?
- BIO-IAMF#10: Where will cleaning locations be? How large and disruptive to the forest will they be? What materials will be used to clean the equipment?
- BIO-IAMF#11: Will rodenticides that can harm animals, such as bobcats and mountain lions, be used? What method will be used to train workers to implement correct housekeeping?

BIO-IAM#12: How will books regarding electrical wires and birds be enough to affect disrupted nests, noise from construction, and fragmented habitats of birds? Will construction avoid the breeding season for birds?

3.7-133 In the Protection of Wetlands (USEO 11990), “practicable measures to minimize harm” are necessary. How would the Bio Mitigation Measures that conduct surveys reduce impacts on nesting birds? What do the surveys consist of? Who conducts them? How are their results translated to construction workers?

In BIO-MM#16, what specific measures would protect the California Condor? How does noting the presence of a nest protect the Swainson Hawk or the Burrowing Owl? What specific mitigation measures are used for protection? Does construction cease? Since restoration of habits and foraging areas are key to preservation of species, how would revegetation be carried out and when would it be done?

3.7-134 How and when will mitigation measures be documented? What evidence is there that habitat restoration will cause birds to return to a previous area?

How specifically will weeds be controlled? What are examples? How is noise from construction confined? What are specific examples of reducing traffic speeds through the ANF? What does the Compliance Reporting Program consist of? What entity receives it? How is it evaluated during construction? BIO-MM-63 states the Work Stoppage is the same as “reduced.” Which is it?

3.7-135 How does an active eagle nest get relocated? Who replaces an eagle nest? What measures are referred to in BIO-MM#68? Who identifies the Tricolored Blackbird Nest Colony? What method is used for the identification? What mitigations methods beside identification of habitats are used? How is helicopter use avoided? Migrating birds can be drawn to light at night. How will they, along with the California Condor, be protected? What are examples of “helicopter-based construction activities”? How would special-status birds be rescued? How do surveys directly reduce impacts on bird species?

3.7-136 Where would supplemental water for fostering habitat come from, and how would it be delivered? What “compensatory mitigation” would be issued and to whom? How does that make for “less than significant?”

3.7-138 How do mitigations involving biologists, planning, training, waste disposal, traffic, and maintenance of workspace and tools insure that special status fish are protected? How much time would this preparation be allowed?

3.7-142 BIO-MM#-32: At what point in the construction would riparian habitat be restored?

BIO-MM#33: What is the process for restoring aquatic resources? What is the difference between “Temporary” and “Permanent” impacts to fish?

BIO-MM#34: How does monitoring construction activities help to reduce impacts on fish? What is one activity that would have an effect in protecting a special status fish?

BIO-MM#46: How is it determined that compensatory mitigation is appropriate? Who receives compensation? What is the follow-up process to offset the loss?

BIO-MM#47: Are Aquatic Resources to be replenished? What is the source for replenishment?

BIO-MM#53: What is done with offset compensation?

3.7-143 How could construction itself reduce special-status fish disturbance? What power would the Biologist have in enforcing these mitigations? To what extent does the contractor follow the biologist's recommendations?

BIO-MM#61: Who is responsible for compiling and reporting on implementation of mitigation measures? How does a report reduce impacts on special-status fish?

BIO-MM#62: What is an example of a mitigation measure to reduce an impact on a special-status fish species should dewatering be an issue?

BIO-MM#63: How likely is it that work will be stopped for a fish species?

BIO-MM#76: What is meant by "relevant guidelines for all special-status fish species?"

BIO-MM#84: How knowledgeable are workers expected to be of the three-spine stickleback? How will workers show their knowledge from an awareness program? Why will contaminants be allowed to enter the Santa Clara River channel?

BIO-MM#86: What are some expected weather or seasonal work restrictions?

BIO-M#87 What are some spill-proof measures?

3.7-144 BIO-MM#88: Which debris prevention measures are expected to be most effective?

BIO-MM#89 Exactly what are the seasonal restriction dates for the unarmored three-spine stickleback?

BIO-MM#90: If dewatering decreases water in the Santa Clara River, at what point will construction dewatering results begin again? Are pollutants expected to enter the river?

How do planned mitigations result in less than significant impacts? How are habitat areas measured to determine whether mitigation measures have been successful? At what point does measurement take place? Who receives compensation?

3.7-146 How can the mitigation measures listed prevent construction activities, off-road traffic, and chemical runoff into habitats of special-status invertebrate habitats?

BIO-MM#3: Does surveying the area for wildlife species change construction at all?

BIO-MM#4: What is an example of vernal pool work restriction for a particular species? Would work stop during that period?

3.7-147 BIO-MM#6: How will a revegetation plan, even if implemented, bring back a butterfly? When and how would its success be determined?

BIO-MM#39: What kind of compensatory mitigation can be expected?

BIO-MM#47: What is an example of an offset for a species?

BIO-MM#50: Who will supervise and carry out these mitigation measures? How will restoration be measured?

BIO-MM#53: What is an example of a Compensatory Mitigation Plan for a specific species?

BIO-MM#55: Who will prepare and implement the weed control plan?

BIO-MM#56: Will the Contractor be answering to the Biologist? Will the Biologist be present at all construction activities which could impact invertebrate species habitat?

BIO-MM#60: What is a safe speed for a particular construction vehicle in an endangered butterfly zone?

3.7-148 BIO-MM#61: How often are compliance reports written? Who receives them?

BIO-MM#63: What is an example of work stoppage or reduction?

BIO-MM#94: How will workers recognize Monarch Butterfly host plants? What kind of compensatory mitigation would be provided?

How are the mitigation measures above ground guaranteed to be effective and, thus, considered "less than significant?"

3.7-150 What is the likelihood of mountain lions straying into human-populated areas as a result of high-speed rail construction disturbance? How will loss of mountain lions be determined and tabulated?

How can lighting be changed and/or reduced to discourage insects and prevent disorientation of bats?

3.7-151 How do the listed BIO-IAMFs work for recognition of badger presence and survival? What does preservation "to the extent feasible" actually mean for a special-status mammal, such as a badger or bat? What studies are referenced by "previous monitoring of tunnel effects?"

3.7-155 BIO-MM#6: How could revegetation plans be made for a ringtail?

BIO-MM#25: How will mitigation be determined as successful for bats?

BIO-MM#26: What method would be used to relocate bats?

BIO-MM#27: How do bats get excluded?

BIO-MM#28: How would construction be changed to avoid Ringtails?

BIO-MM#29: Once a badger den is spotted, does construction cease?

BIO-MM#36: How deep into the ground will barriers be installed?

BIO-MM#47: What is an example from an aquatic resource that would provide compensatory mitigation?

BIO-MM#50: Who will oversee Off-Site Habitat Restoration? How soon after construction will it be implemented?

BIO-MM#55: What is an example for a weed control plan for a specific habitat?

3.7-156

BIO-MM#56: How many Project Biologists will be monitoring sensitive areas when several different locations are involved in construction at a given time?

Will different types of exclusionary materials be installed at the same locations for different species? If construction equipment would crush burrows, how would impacts on species be avoided?

BIO-MM#61: Does compliance reporting necessarily insure that impacts on special-status species are reduced?

BIO-MM#63: How many times is work stoppage expected to minimize mammal injury?

BIO-MM#76: What is an example of a Wildlife Rescue Measure?

BIO-MM#96: Will cameras be used when surveying for mountain lion dens?

BIO-MM#97: Once a mountain lion den is located, what is a following procedure?

BIO-MM#99: How would reduced lighting be different for species which are accustomed to no lighting? What lighting that is not artificial would be employed?

3.7.157

How exactly is groundwater-dependent surface water monitored? Where would needed supplemental water come from? How does CHSRA guarantee that the mitigation measures would make impacts "less than significant"?

3.7-163

BIO-MM#6: How does a plan reduce impacts?

BIO-MM#7: How are surveys for reptile and amphibian conducted?

BIO-MM#8: Will amphibians be cleared from construction areas on a daily basis?

BIO-MM#36: What materials are best for barriers against reptiles?

BIO-MM#47: Who prepares this plan? How is the contractor involved?

BIO-MM#50: How do off-site mitigations differ from other mitigations?

BIO-MM#52: What specifically is done during lizard monitoring?

BIO-MM#53: Does a mitigation plan always offset impacts?

BIO-MM#55: What is an example of an invasive weed and an example of a weed control plan that would be implemented in reptile species habitat?

- 3.7-164** What evidence is there that the aforementioned mitigation measures will make impacts “less than significant”?
- 3.7-167** To what extent would the E2 Build Alternative affect private wells in Kagel Canyon, north of Lake View Terrace? Because construction is significantly longer than two growing seasons, how long will it take for aquatic resources to be restored?
- 3.7-169** With BIO-IAMF#11, what is considered a “timely manner” for weed abatement that will reduce impacts on aquatic resources? What regulatory agencies receive documentation? What sources are used for previous monitoring of tunnel effects? How are they pertinent to the ANF?
- 3.7.172** What is the name of the “agency-approved mitigation bank”? Knowing that the CEQA Conclusion acknowledges significant impact, how can CHSRA justify destroying California and Federal wetlands and water, especially in this time of extreme drought?
- BIO-MM#4: How would pool work restriction be carried out? Who would monitor it?
- BIO-MM#5: What expert will oversee avoidance and minimization measures?
- What is an example of one measure and how it protects aquatic resources?
- BIO-MM#s32,33: How will habitats be restored?
- BIO-MM#34: Will waters not considered Jurisdictional also be monitored?
- BIO-MM#39: Who will oversee the mitigation for impacts?
- BIO-MM#47: Will these mitigation plans also be approved by Federal authorities? What are several different specific plans to mitigate impacts on shrimp habitats?
- BIO-MM#50: How does saying that some unstated measures will definitely minimize and reduce impacts on habitats actually mean that aquatic resources will be restored?
- 3.7-173** BIO-MM#56 and BIO-MM#58: Who will be in charge of these two mitigations?
- What will be the source of supplemental water? Do the mitigations mentioned here change impacts under CEQA? How?
- 3.7-176** Who will design, monitor, and implement the mitigation measures that are to be applied in each area that has construction that could affect fish and wildlife species in streams, rivers, and lakes?
- 3.7-177** Can changes in groundwater levels caused by tunnel construction be permanent?
- 3.7-178** Is tunnelling allowed in the SGMNM?
- 3.7-179** BIO-MM#6: How would a revegetation plan affect wildlife and fish dependent upon streams during construction?
- BIO-MM#32: What is considered “long term”?

BIO-MM#33: How much time is considered as “temporary”?

BIO-MM#34: How does construction activity monitoring differ in Jurisdictional waters as opposed to non-Jurisdictional water monitoring?

BIO-MM#46: How does compensatory mitigation offset permanent impacts on areas?

BIO-MM#47, MM#50 and MM#53: Who prepares and oversees the Compensatory Mitigation Plan on Aquatic Resources? How does a plan ensure mitigation?

3.7-180 BIO-MM#55: What weeds are expected in the different Build Alternatives?

BIO-MM#62: How much time will be given to ascertain the existence of special-status species within a waterbody? If dewatering affects such an area, how will the species be protected? To what extent have these aquatic mitigation measures been effective in other sections of the project? How would supplemental water be supplied?

3.7-181 Although BIO-IAMF#1-5 and IAMF#12 may have good intentions, what evidence is there that they would have the desired effect until they were put into practice?

3.7-183 BIO-MM#6: Who prepares the RRP, oversees that it is carried out, and evaluates the results?

BIO-MM#47: In what way could there be an additional benefit to a critical habitat?

BIO-MM#50: In what way could off-site habitat restoration restore fish? How do these mitigation measures ensure no adverse effects? What would be the source of supplemental water? How would it be administered? How does importing water justify that there are no adverse effects on species?

3.7-184 What is the acreage of the Hansen Dam Spreading Grounds that would be affected? The Audubon Society conducts bird watching walks in the Hansen Dam area? How would birds, endangered or not, be affected by construction there?

3.7-185 BIO-MM#6, MM#47, MM#50: During the construction period, would these plans be put into place? How would their success be determined? What are examples of particular measures to be put into place in the Hansen Dam SEA, for example?

3.7-186 What specific mitigations would work for protecting native oak trees? Making and carrying out a plan will not work since oaks do not transplant well, and Oak Tree Ordinances require permission to cut more than 2 inches in diameter. What are mitigations for each of the kinds of trees that will be uprooted? What methods of compensation are being offered in BIO-MM#35? Because off-site tree colonies communicate underground for survival, how could they avoid being impacted in BIO-MM#50? Because oaks in particular have adapted to seasonal water from rain and can get mold from other watering, will there be any mitigations to protect the trees? Is the Authority aware that many oaks are well over 100 years old? Is it important to preserve native trees?

3.7-187 BIO-MM#56: How close to elderly trees will construction machinery be allowed, keeping in mind that compaction over ground above tree roots is harmful to the trees? How can it

be concluded that unnamed mitigation measures will be successful? What kinds of fencing will be used around portals and adits?

- 3.7-188** How much soil will be displaced and allowed to cover areas around open-cut activities? How long will the soil stay in one spot before removal? How wide would the grading footprint be in at-grade sections in the San Gabriel Mountains and foothills?
- 3.7-193** Considering its width, why is Angeles Forest Highway considered constraining to wildlife crossing?
- 3.7-198** “Inundated” by what?
- BIO-MM#36: At what point in the process will fencing be introduced as opposed to the wildlife corridor protection?
- 3.7-199** BIO-MM#37: Specifically, how would effects on wildlife movement corridors be minimized during construction?
- BIO-MM#60: What specific speeds are mandated for vehicle traffic at construction sites?
- BIO-MM#78: What does a Wildlife Jump-out look like, and how does it work?
- BIO-MM#83: What are examples of specific measures for at least three different kinds of special-status wildlife? How do WEAP training materials differ in areas for operation and maintenance compared to WEAP during construction?
- 3.7-200** What are examples of herbicides and pesticides that would be used for weed abatement for different species needing protection? Why would trash and chemicals have accumulated within a Build Alternative footprint after construction if mitigation is complete? If mitigation for hazardous materials has been accepted as environmentally safe, how could it still be an issue?
- 3.7-201** How will lights from catenaries affect birds which travel at night? How would light and noise at portals by the ANF and SGMNM affect wildlife?
- 3.7-202** How would Santa Ana winds, prevalent in the area, affect seed settlement? How does a short duration of noise affect amphibians, given statements that they would already have been affected by possible water contamination and invasive plant species? What spacing is considered effective to prevent bird electrocution? How does marking lines help protect birds at night? What are other types of flight diverters besides fencing? What distance from a moving train could protect bird habitat?
- 3.7-204** How exactly would implementing BIO-IAMF#12 minimize alteration of melatonin metabolism on several different species?
- 3.7-206** Which reptiles are most vibration-sensitive? Are those reptiles inactive during the day in all seasons?
- BIO-MM#36: How much noise from a moving train would be reduced by an apron or fenced barrier for special-status species such as the mountain lion, for example?
- BIO-MM#53: What is an example of a CMP for a state-listed fish, for example?

- 3.7-207** BIO-MM#54-55: How useful is weed control when invertebrates have already been crushed during equipment maintenance?
- BIO-MM#73: How often will tracks be inspected for carrion removal?
- BIO-MM#76: What would be a wildlife rescue measure for a specific endangered mammal? How would it be carried out? Who would oversee the operation?
- BIO-MM#86: What is a specific example of a weather-related or seasonal work restriction for avoiding the Santa Clara River channel?
- BIO-MM#88: Who will oversee debris prevention measures? What is an example of a measure?
- BIO-MM#92: What are avoidance measures during operation and maintenance for the Santa Clara River?
- BIO-MM#98: How can aerial species wildlife be minimized?
- 3.7-208** BIO-MM#101: How does measurement of conditions for noise reduction for special-status bird habitats work? How logical is it to assume that the mitigations measures will be successful for a project that has not begun? At what point do you measure the effectiveness of the listed mitigation measures?
- What happens if the mitigation measures have not been effective?
- 3.7-210** Will decibels be measured during operation further than 50 feet of the aboveground centerline? Who will be carrying out the measurement? How often will measurements be recorded?
- 3.7-211** What are examples of herbicides and pesticides that would be applied? Who would determine the compensation for impacts on protected trees?
- 3.7-212** When removal of a tree is affected by a law (such as the L.A. County Oak Tree Ordinance) and transplantation is not possible, how is real compensation possible, and how does that suggest a “less than significant” measure? Would the contractor, who is responsible, be knowledgeable about tree conservation? Who in “The Authority” oversees the contractor’s work with this issue?
- 3.7-213** BIO-MM#2: Who will determine appropriate replanting areas to substitute for plants that could not be salvaged? Who will attend to new plant growth? Who approves the Project Biologist’s plan?
- BIO-MM#3: Is the “work” referred to the work of the Biologist or construction? Will there be no groundbreaking activities between October and April?
- 3.7-214** BIO-MM#6 is quite general without CHSRA having identified a specific Build Alternative. Where would the Project Biologist be procuring these procedures for a variety of vegetation communities?
- 3.7-215** BIO-MM#7: How does one survey for the presence or absence of special-status reptiles and amphibian species? How much time is given to a particular survey location?

BIO-MM#8: How is relocation of amphibians done?

BIO-MM#14: Will birds remain in nests within 75 feet of construction? Will construction take place between February and September?

BIO-MM#15: How effective are buffers for raptor nests?

BIO-MM#16: Will construction take place after sunset and before sunrise in the area of a roosting California Condor? If several different work areas will be constructed at the same time, will there be different Project Biologists overseeing different areas? Will the Project Biologist have had experience in identifying Swainson Hawks and their nests? What kinds of trees do Swainson hawks usually nest in?

3.7-217 BIO-MM#21: How often do burrowing owls return to a relocated burrow?

BIO-MM#26: What determines whether removal or relocation of bat roosts is feasible? What is an example of an exclusion techniques? Are project activities continuing during the week after implementing exclusion activities? What kinds of relocation plans exist for bats?

3.7-218 BIO-MM#29: Since badgers burrow, how will the Project Biologist determine whether a badger is pregnant? What is an example of a “passive den exclusion measure” for badgers?

BIO-MM#32: How will the Project Biologist time native plant seeding with the growing season for the plants to be restored?

BIO-MM#33: What is an example of maintenance monitoring for a specific aquatic plant?

BIO-MM#34: Will protective barriers be permanent?

BIO-MM#35: Examples would be useful here, especially since some plants, such as native oaks, do not transplant.

3.7-219 BIO-MM#36, 37: How permanent and aesthetically unappealing will the fencing be?

3.7-220 BIO-MM#38, 39, 44, 46: What are some examples from the Compensatory Mitigation Plan?

3.7-221 BIO-MM#47: What are two agency-approved mitigation banks that could be used? Where is property that could be acquired? Would it be property conducive to aquatic resources?

BIO-MM#50: Who will be in charge of carrying out the IAMF measures?

3.7-222 Does BIO-MM#53 apply to all federal and state-listed species and their habitat? What role does the Project Biologist have in the process of CMP preparation? Who will decide the type of credits to be given? Will easements be permanent?

3.7-223 How long is the process presented in BIO-MM#53 likely to take?

BIO-MM#54: What are cultural controls over vegetation? What chemicals might be used to control vegetation?

3.7-224 BIO-MM#55: Who is in charge of carrying out the weed control plan? What paperwork is involved?

3.7-225 Will new roads be created? If so, are they likely to cover over endangered plants which will need replacement?

BIO-MM#61: What kind of feedback will go to the Project Biologist after the annual and daily reports are submitted and read?

3.7-227 BIO-MM#62: What is the turnaround time for approval of preparation of plans or dewatering and diverting water plans?

3.7-228 What would be an example of a feature that would accommodate wildlife movement when designing bridges and culverts in BIO-MM#64?

BIO-MM#65: How is the “pre-construction sweep” for golden eagle use carried out?

BIO-MM#66: What kinds of activities would likely disturb active eagle nests? Would the no-work buffer halt all work?

3.7-229 BIO-MM#67: Can active eagle nests be relocated?

BIO-MM#70: Will the project Biologist be able to identify habitat loss of the tricolored blackbird?

3.7-230 BIO-MM#72: Will the Project Biologist be on site both day and night?

BIO-MM#74: How are vertical buffers measured? What materials are jump-outs made of?

3.7-231-2 BIO-MM#79, 80, 81, 82: How will the surveys for the Coastal California Gnatcatcher, the Least Bell’s Vireo, the Southwestern Willow Flycatcher, the Western Flycatcher, the Western Yellow-billed Cuckoo be conducted?

BIO-MM#83: How much fencing is being planned at at-grade sections? How tall will it be?

3.7-233 Are crossing structures and fences to be inspected in perpetuity? Will there be a variety of biologists, each who specialize in different species?

BIO-MM#85: Will the K-rail eventually be moved?

3.7-234 BIO-MM87: Will hazardous materials be used at night?

BIO-MM#88: What materials would the underslung tarp or other barrier consist of?

3.7-235 BIO-MM#90: What is the purpose of dewatering? During this time of severe drought and given the unknown time period when this project might occur, how much water is expected to be dewatered? How will it be used?

- 3.7-236** BIO-MM#93: Will AMMPs vary with different sites? How would supplemental water be provided? Where would it come from? How much supplemental water is expected to be needed over 3 seasons? How will supplemental water be transported? How often during the post-construction 5 years would groundwater levels be monitored?
- 3.7-237** Is it not ironic that a project intended to help the environment is purchasing credits due to its destruction of habitats of endangered species?
- 3.7-238** BIO-MM#96: If a mountain lion den is determined to be occupied, will construction work continue? Given that mountain lions are apt to claim large areas, how will CHSRA keep track of them?
- 3.7-239** BIO-MM#100: How much light from above will shields allow?

BIO-MM#101: What might be an example of a special-status bird that could withstand noise as a result of sound barriers?
- 3.7-240** Although many of the mitigations may be standard and applicable to different locations, the question is: how long would they be in operation in order to be successful? Would they be temporary enough so that wildlife could revive or return to former habitats? How long would most of them be needed?
- 3.7-241** Stating that because secondary impacts are common in construction should not apply to this particular project, which is a first of its kind. How do impacts from this project differ from others, especially in the San Gabriel Mountains?
- 3.7-242** How can permanent security fencing be made agreeable to the eye? Will management activities be on-going? Are they budgeted?
- 3.7-246-250** How do we know that the mitigations would leave no adverse effect when they have yet to be tried?
- 3.7-256-269** Once again, there is an assumption that there would be no adverse effects due to mitigations when no work has begun. How is it possible to be certain of this conclusion?
- 3.7-271-73** How have the mitigations managed to be so successful?
- 3.7-275** What might be some difficulties in determining that there would be not adverse effects? Does reducing impacts erase all impacts in SEASs?
- 3.7-178** What existing constraints make wildlife movement impossible?
- 3.7-282-288** CEQA significance post-mitigation has also been deemed less than significant. Does the fact that compensation, when mitigations are not possible, make for low levels of significance?

CHAPTER 3.8: HYDROLOGY AND WATER RESOURCES
APPENDIX 3.8-A: HYDROLOGY AND WATER RESOURCES FIGURES PART 1
APPENDIX 3.8-A: HYDROLOGY AND WATER RESOURCES FIGURES PART 2
APPENDIX 3.8-B: MAJOR WATERBODIES CROSSED TABLE

Case Study: Nora, the Tunnel Boring Machine

In a 2017 article entitled, “Meet Nora, the TBM that will help to repair the world’s longest tunnel,” *NYC Water* magazine describes the tunnel boring machine that was tasked with repairing New York City’s Delaware Aqueduct. Nora was charged with tunneling a bypass tunnel to convey water around a leaking portion of the Aqueduct. Nora’s bypass tunnel is 2.5 miles long, and at a depth of 600 feet below the Hudson River. The article describes the capabilities unique to this TBM:

Nora was built to withstand 30 bar of pressure—believed to be the most of any TBM every manufactured. That’s about 11 times the amount of pressure that comes out of a garden hose. The machine was built to withstand that much pressure because workers encountered huge inflows of water under immense head pressure when the aqueduct was first built more than 70 years ago.²⁵

In Table 3.8-8 of the DEIR, CHSRA delineates the estimated groundwater pressure it expects to encounter in various sections of the alignments. CHSRA anticipates encountering groundwater pressure between 25 and 35 bars for lengths of tunnel segments between .6 miles and 2.1 miles (depending on the alignment); and anticipates encountering groundwater pressure over 35 bars for lengths of tunnel segments between 1 mile and 4.5 miles (depending on the alignment).

Further, on Page 3.8-33, CHSRA states that, “The highest anticipated groundwater pressures... are anticipated to be as high as 50 bar for Refined SR14, SR14A, E1, and E1A, and greater than 60 bar for E2 and E2A.”

Question: If Nora is the TBM believed to withstand the most water pressure of any TBM ever manufactured, and if the amount of water pressure that Nora is able to withstand is equivalent to 30 bars, and if CHSRA anticipates having to tunnel for as much as 4.5 miles through terrain where it will encounter water pressure >35 bars; what evidence does CHSRA have that leads it to believe that it is possible to tunnel through these extreme conditions? What TBM(s) does CHSRA plan to utilize that can withstand >35 bars of pressure? And in what previous projects have these TBMs achieved proven success at these levels of pressure?

Case Study: The Parbati Hydroelectric Project in India

On Page 2-E-24 of the DEIR, CHSRA describes the mitigation measure HYD-IAMF#5 which pertains to the Tunnel Boring Machine Design and Features. HYD-IAMF#5 states that the TBMs that will be used in the boring of the tunnels through the ANF will be, “designed with ports for drilling horizontal probe holes through the TBM cutterhead,” the purpose of which is to allow for water pressure and flow rates to be measured ahead of the TBM and to allow for pre-excavation grouting to be employed to prevent groundwater inflows.

In *The Greatest Challenges in TBM Tunneling: Experiences from the Field*, engineers from the Robbins Company detail their experience with the Parbati Hydroelectric Project in India. This tunneling project bears some similarities to the proposed CHSR tunnels through the ANF, as Parbati is located in a highly stressed mountain range at the foot of the Himalayan Mountains where there is limited access and high overburden above the tunnel alignment. Like CHSRA’s proposed tunnels, Parbati offered limited availability of geological

²⁵ <https://medium.com/nycwater/meet-nora-the-tbm-tasked-with-repairing-the-worlds-longest-tunnel-111f4d04fe5f>

information, and therefore, “geological investigation ahead of the tunnel face was essential and was achieved by maintaining a strict regime of probe drilling.”²⁶

In their article, engineers Jim Clark and Steve Chorley describe the challenges they faced in boring this tunnel:

A routine probe hole (P1) was drilled at chainage 4056 m at the 11 o'clock position on the face. The depth of the hole was 27 m and minor ingress of water and silt was observed from probe chainage 4066.5 m up to 4077.3 m. A decision was made to drill a second probe hole (P2) at the 1 o'clock face position in order to gain further information on the geology/hydrology ahead of the face. During the night shift of the 18th November 2006, the P2 probe drilling operations were underway when the crew heard several cracking sounds emanating from the surrounding rock mass. Shortly after these events, the initial probe hole (P1) was observed to be discharging water and silt under high pressure. It took the crew almost 2 1/2 hours to seal the 51 mm hole using a mechanical packer attached to the probe drill. During these 2 1/2 hours, approximately 180 cubic meters of silt and 125,000 liters [33,021 gallons] of water were discharged, and continuous rock bursting was occurring.

On the 24th November probe hole P1 was successfully intersected and drainage operations were underway when several rock bursting events occurred. The pressure in probe hole P1 gradually increased until it exceeded the 25-bar capacity of the pressure gauge, and minor inflows of silt and water began to flow through fissures in the rock mass close to the face. Further rock bursting fractured the rock mass surrounding the collar of probe hole P1 causing the rock to fall away and expose the hole behind resulting in an inrush of water and silt under massive pressure. The crew tried unsuccessfully for several hours to insert a packer into P1 to stem the flow of material, but at 7:00 am with silt levels rising rapidly and rock bursting continually occurring, the tunnel was evacuated for safety reasons.

During the 25th November it was deemed impractical and unsafe to enter the tunnel. Water ingress was measured at the portal throughout the day and flow rates gradually increased until they exceeded 7000 liters/min [1,850 gallons/min]. On the 26th November flow rates stabilized so a team entered the tunnel to assess the situation. **They observed that the inundation had almost completely buried the TBM (see Figure 9) and that silt and water were still flowing from the probe hole.** However the pressure of the discharge had reduced and a crew was mobilized and managed to seal the probe hole by inserting a mechanical packer. **The total amount of silt deposited during this event was over 14,000 cubic meters, and the cleanup operation took over 2 months.**

²⁶ Jim Clark and Steve Chorley, the Robbins Company. *The Greatest Challenges in TBM Tunneling: Experiences from the Field*. Pages 106 – 107. https://www.robbinstbm.com/wp-content/uploads/2010/09/14_Challenges_FieldService_NAT2014.pdf



Photo: Parbati TBM buried in silt

For the purposes of comparison, 14,000 cubic meters is the equivalent of 5 ½ Olympic-sized swimming pools of silt that was accumulated in one day due to the inflow of water and silt into the tunnel bore.

Questions: CHSRA’s HYD-IAMF#5 lists the use a TBM with probe drilling capability as a mitigation measure to preemptively address the potential for groundwater inflow into the tunnel. The TBM used in the Parbati project also had this capability, and yet the result was rock bursting resulting in significant inflow of highly pressurized water – so much so that the tunnel had to be evacuated for the safety of the crew, and the amount of damage caused in the day that followed took two months to clean up. Based on this case study, coupled with the limited geotechnical data that CHSRA has on the tunnel areas, what leads CHSRA to believe that its experience will be any different or better than that which faced the Robbins Company in Parbati?

Questions: The engineers in Parbati mentioned damage that occurred when the pressure in one of the probe holes gradually increased until it exceeded the 25-bar capacity of the pressure gauge. CHSRA plans to tunnel for miles in areas that are expected to significantly exceed 25 bars of pressure. In these areas of the CHSRA alignments, will the conditions faced by the TBM and the crew not exceed what was experienced by those in the Parbati tunneling project?

Case Study: The Gerede Water Transmission Tunnel in Turkey

In their article, “*Tunneling through 48 Fault Zones and High Water Pressures on Turkey’s Gerede Water Transmission Tunnel*,” engineers D. Harding and Y. Alpagut of the Robbins Company detail what is known to be one of the greatest success stories of tunneling through difficult conditions. The article begins by stating that although preliminary bore holes of the area revealed challenging conditions, including a mix of rock types punctuated by fault zones, “What the contractor and owner could not know were the distinct challenges they would encounter, making it one of the most difficult projects attempted in the world of tunneling. The tunneling

success story highlights what today's equipment is capable of, and how far the Turkish tunneling industry has come in tackling its own incredibly difficult geology.”²⁷

The authors describe the challenges faced in tunneling through this difficult terrain:

TBM-2 was launched from an intermediate shaft under higher cover, starting at 60 m and reaching over 400 m as it bored toward the south. The rock was more transitional in this section, and the TBM had bored a significant section of its 10,339 m tunnel when it encountered a massive inrush of water that flooded the TBM and tunnel. The TBM was boring downhill and the water had to be pumped out, which took some time. **The TBM was deemed a loss, and removed from the tunnel.**

TBM-3 began boring from the south portal under increasingly high cover that would reach a maximum of over 500 m. The TBM was several kilometers into its 11,653 m downhill drive, struggling in karstic aquifer conditions that required polyurethane injection and slowed tunneling, when its problem became worse. **A high water inrush of 1,500 liters/second [400 gallons/second] flowed into the tunnel, causing the machine to become stuck. This inflow resulted in enough pressure to crush the TBM shields and send cylinders catapulting into the back- up.** Dye tests showed that the water had come from a river flowing overhead and entered into the tunnel through a cave system. **As quickly as it had started, the Gerede Water Transmission Tunnel ground to a halt with two TBMs stuck 9 km apart.**

Of the three standard Double Shield TBMs used to originally bore sections of the tunnel, two became irretrievably stuck or damaged amid massive mud and water inflows.

The revised geology was now understood to contain **more significant fault zones and an aquifer system that could cause high-pressure water inrushes of up to 20 bar.** However, the ground was expected to improve as the TBM advanced and consist mostly of sandstone, limestone and tuff with a maximum UCS in the range of 100 MPa. Kolin/Limak needed a machine that could effectively bore in those wide-ranging conditions, but also statically hold water pressure up to 20 bar in the event of an emergency flow—a failsafe that none of the standard Double Shield TBMs were equipped with.

Due to previous experiences at Gerede, the **new TBM is designed to statically hold up to 20 bar pressure in the event of a massive water inflow.** In order to protect the machine from such high water pressure, an extensive sealing system has been put into place. Around the main bearing, there is an outer row of six (6) seals and an inner row of three (3) seals. Between each seal, the cavity is filled with pressurized grease to ensure a constant pressure in each of the cavities. In the event that the machine is shut down and an inrush of water overtakes the machine, a pressure sensor will detect this presence of water and pressurize each cavity with grease in order to continually protect the seals from the pace pressure.

The logistics of getting components through the existing tunnel were the most challenging thing. The assembly chamber was 7 km (4 mi) from the portal. “The water inflow of 600 l/s (159 gal/s) made it difficult to get the materials to the machine,” said Glen Maynard, Robbins Field Service Site Manager. **By the end of tunnelling, the TBM had crossed 48 such fault zones and statically held back 26**

²⁷ D. Harding and Y. Alpagut, the Robbins Company. *Tunneling through 48 Fault Zones and High Water Pressures on Turkey's Gerede Water Transmission Tunnel*. May 2020. https://www.robbinstbm.com/wp-content/uploads/2020/09/WTC2020_Gerede_HardingAlpagut_Paper282.pdf

bar water pressure. Each time a zone was encountered, exceptional thrust was used to keep the machine from becoming stuck combined with dewatering to lower the water pressure.²⁸

The authors begin describing their field experience by touting the completion of the Gerede project as being, **“one of the most difficult projects attempted in the world of tunneling. The tunneling success story highlights what today’s equipment is capable of.”** By all accounts, it appears that the conditions that CHSRA will face in tunneling through the San Gabriel Mountains will exceed the difficulty level faced by the engineers in Turkey. Though the North Anatolian Fault in Turkey has been considered comparable in many ways to our San Andreas Fault, the water pressure in the depths of the San Gabriel Mountains is expected to exceed that experienced in Gerede.

In an article entitled, *“What Could Possibly Go Wrong,”* author Dominic Holden makes a case for Seattle’s City Council to vote against giving the State of Washington permission to dig the world’s largest deep bore tunnel under downtown Seattle. In his article, Holden cites Levent Ozdemir, the author of *North American Tunneling*, a technical book that examines, among other things, TBMs getting stuck underground due to boulders. Ozdemir explains that, “The tunnel boring machines were stuck... a total of 12 times in 40 cases (30 percent overall stuck rate).” Ozdemir notes that, “the delay and cost consequences of getting stuck are very high,” in tunnels deeper than 50 feet and in those that go beneath the water table.²⁹

In Table 3.8-12 of the DEIR, CHSRA delineates the expected water pressure in various segments of its alignments through the San Gabriel Mountains. One of the alignments anticipates 6.9 miles of tunneling at pressures exceeding 25 bars. Further, on Page 3.8-33, CHSRA states that, “The highest anticipated groundwater pressures... are anticipated to be as high as 50 bar for Refined SR14, SR14A, E1, and E1A, and greater than 60 bar for E2 and E2A.”

Question: If the Gerede project is touted as being a success story highlighting what today’s equipment is capable of, and if in the course of that project, two of three TBMs utilized became irretrievably stuck or damaged due to massive mud and water inflows, and if in the course of that project, the highest water pressure experienced was 26 bars, under what scientific reasoning does CHSRA believe that it will have success tunneling through fault zones where water pressure >60 bars will be encountered?

Question: Given that in the “success story” of the Gerede tunneling project, two of three TBMs were destroyed in the process, and given the warning of Levent Ozdemir that TBMs have a 30% overall “stuck rate,” has CHSRA built into its plans an anticipated loss of TBMs?

Question: What is the anticipated cost of the tunnel boring machines to be used in this project? The cost of “Nora,” the TBM utilized in the recent New York City Delaware Aqueduct project is estimated to be \$30 million.³⁰ How many, and at what total cost, is CHSRA planning to “lose” during the course of the tunneling project due for factors including but not limited to damage from mud and water inflows which are likely to exceed those experienced in the Gerede project?

Question: What is the methodology proposed by CHSRA to remove or retrieve a TBM in the likely event that at least one will get stuck during tunneling? If TBMs are incapable of backing up and cannot move forward, how will they be removed from the tunnel?

²⁸ D. Harding and Y. Alpagut, the Robbins Company. *Tunneling through 48 Fault Zones and High Water Pressures on Turkey’s Gerede Water Transmission Tunnel*. May 2020. https://www.robbinstbm.com/wp-content/uploads/2020/09/WTC2020_Gerede_HardingAlpagut_Paper282.pdf

²⁹ Dominic Holden, “What Could Possibly Go Wrong.” July 8, 2010. <https://www.thestranger.com/pullout/2010/07/08/4399657/what-could-possibly-go-wrong>

³⁰ <https://www.recordonline.com/story/news/2017/09/08/tunnel-boring-machine-dedicated-in/18852633007/>



Photo Caption from the Robbins Company white paper on the Gerede Project:
Of the three standard Double Shield TBMs used to originally bore sections of the tunnel, two became irretrievably stuck or damaged amid massive mud and water inflows.

Discussion: Potential for Groundwater Contamination from Use of Grout

In a 2001 report for *Water Research* entitled, “Environmental risk assessment of acrylamide and methylolacrylamide from a grouting agent used in the tunnel construction of Romeriksporten, Norway,” the authors concluded that:

“Increased focus on the possible environmental risk associated with large-scale use of grouting agents has revealed that leakage of chemicals from grouting activities may cause harm to the environment.”³¹

Weideborg et al. studied the environmental impacts caused by the use of Rhoca-Gil (Siprogel), a common chemical grouting agent used to reduce water leakages during tunnel construction. Drainage water from the Norwegian tunnel was monitored to test for levels of acrylamide and methylolacrylamide, and the results showed that these substances leaked into the drainage water as a result of two factors: (1) in connection with

³¹ Mona Weideborg, Torsten Källqvist, Knut Ødegård, Line Sverdrup, and Eilen Vik. “*Environmental risk assessment of acrylamide and methylolacrylamide from a grouting agent used in the tunnel construction of Romeriksporten, Norway.*” Included in the August 2001 Edition of *Water Research* (Volume 35, Issue 11). Pages 2645-2652.

the injection of Rhoca-Gil, and (2) in connection with after-injection using other grouting agents. In the case of the Norwegian tunnel, the water was eventually discharged into the Alna River and into the Oslo Fjord. Both receiving waters demonstrated negative impacts on the aquatic life therein.³²

During the period 1995–1997, the acrylamide and methylolacrylamide (N-hydroxymethylacrylamide)-containing product Rhoca-Gil (Siprogel) was used in tunnel construction works in both Hallandsåsen, Sweden, and in Romeriksporten, Norway. In both cases, discharge water from the injection sites led to high concentrations of acrylamide in recipient waters. In addition, the injections did not give the expected reductions of water leakages to the tunnels.

In Hallandsåsen, an 8.6 km long tunnel was built through a bed-rock ridge. The large-scale use of Rhoca-Gil in this tunnel started in August 1997. ***A few weeks after the grouting agent was used, adverse effects symptomatic of acrylamide poisoning were observed in fish and cattle downstream the construction works. At the same time, symptoms characteristic of exposure to acrylamide were observed in workers in the tunnel.***

Symptoms characteristic of exposure to acrylamide were also observed for workers in this tunnel. An examination of 73 exposed tunnel workers, by the Norwegian Occupational Health Services, revealed suspected skin effects due to acrylamide exposure in 4 workers, and 7 workers had slight reductions of nerve conduction velocities or amplitudes. The product was used in areas with large water leakages both in the Hallandsåsen and the Romeriksporten tunnels, and this explains the high concentrations of acrylamides found in the drainage waters, and the subsequent high risk for adverse aquatic effects in the receiving waters.³³

By the volume used, polyacrylamide grouting agents (including Rhoca-Gil) constitute one of the largest groups of grouting agents, but monitoring data from the use of polyacrylamide grouting agents are yet unpublished. Rhoca-Gil is prepared by mixing two solutions immediately prior to injection; Solution 1, containing 30–60% methylolacrylamide, 2% acrylamide and 1% formaldehyde, and Solution 2, containing a sodium silicate solution. In addition, an accelerator (Solution 3) containing an unspecified mixture of esters of dibasic acids and amine derivatives is used during the injection process.³⁴

The authors noted that prior to their study, little research had been done on the toxic effects of acrylamide and methylolacrylamide, and, further, “the leakage potential of chemicals from the grouting agents during large-scale usage had never been examined.”³⁵ As a result of these findings, the Norwegian authorities banned the use of grouting agents that contained acrylamide and methylolacrylamide. The use of acrylamides as a grout had already been banned in Japan as early as 1974, likely due to the correlation between their usage and several cases of neural disorder.³⁶ However, it does not appear that these chemicals have ever been banned in the United States, despite being under investigation by the EPA and included on California’s Prop 65 List.

In a paper entitled, *Chemical Grouts for Potential Use in Bureau of Reclamation Projects*, the U.S. Department of the Interior warns against the use of grouting in tunnels in proximity to water sources:

The key to the question of toxicity is to be found during the selection process and planning. **If drinking water, especially ground water near wells, is involved, chemical grouts should not be used.** No matter how well a grout is mixed, excesses of one ingredient or another will remain after the grout has

³² Mona Weideborg, et al. Pages 2645-2652.

³³ Mona Weideborg, et al. Pages 2645-2652.

³⁴ Mona Weideborg, et al. Pages 2645-2652.

³⁵ Mona Weideborg, et al. Pages 2645-2652.

³⁶ *Chemical Grouts for Potential Use in Bureau of Reclamation Projects*. December 1986. U.S. Department of the Interior, Bureau of Reclamation Division of Research and Laboratory Services Applied Sciences Branch. Page 8.

<https://www.usbr.gov/tsc/techreferences/research/GR8613.pdf>

set. These excesses will migrate through the soil at a rate that depends on the presence of water and permeability of the grouted body.³⁷

On Page 3.8-16 of the DEIR, CHSRA states that, “Construction of adits for the tunnels would be conducted using conventional mining methods, which would include pre-exploratory grouting, tunnel liners, and check grouting **such that effects on groundwater would be minimized.**” Per the case studies conducted above, we can conclude that the opposite is true: while grouting may be effective in limiting seepage of groundwater into the tunnels, grouting will still have effects on groundwater as the chemicals comprising the grouting compounds are likely to leak into the groundwater, negatively impacting the plant and animal life with which it comes into contact.

Question: What grouting compounds are likely to be used in tunneling through the ANF and the SGMNM?

Question: What chemicals comprise those compounds?

Question: What tests have been done to determine the toxicity of these grouting compounds?

Question: When mixed with water inflow into the tunnel, this water, contaminated with grouting chemicals, will be discharged. What is the ultimate destination of this contaminated water?

Question: When mixed with groundwater surrounding the tunnels, the chemicals will travel with the water where they will encounter flora and fauna. What tests have been done to determine the effects that these chemicals will have on the plant species in the ANF? What tests have been done to determine the effects that these chemicals will have on the animal species in the ANF, including the sensitive and threatened riparian species in the ANF and the Big Tujunga Wash?

Question: When mixed with groundwater surrounding the tunnels, the chemicals will travel with the water where they may eventually mix with water wells. What tests have been done to determine the effects that these chemicals will have on humans may consume them if chemicals are mixed with their primary source of water for a prolonged period of construction?

HYD-IAMF#7 describes CHSRA’s reliance on grouting to minimize groundwater flows into the tunnels. On Page 2-E-26 of the DEIR, CHSRA describes that after pre-grouting, “Additional grouting will be implemented radially outward from the tunnel interior to broaden the diameter of the grouted zone surrounding the tunnel, as necessary, to further reduce groundwater flows into the tunnel.” Further, CHSRA plans to inject bentonite to fill the void space between the TBM shield and the rock/soil outside the shield; plus backfill grouting with two-component grout; plus check grouting. Given the size of the tunnels (meaning, the diameter of each of the twin tunnels X the length of the tunnel, between 22 and 28 miles, depending on the build alternative that is ultimately selected), the volume of grouting needed must be significant.

Question: What is the estimated total volume of grouting compound that will be needed to complete HYD-IAMF#5, HYD-IAMF#6, and HYD-IAMF#7? How does the sheer volume of grouting needed to complete the tunnels correlate to the risk of contamination of the water supply and potential impacts on flora and fauna?

³⁷ *Chemical Grouts for Potential Use in Bureau of Reclamation Projects*. December 1986. U.S. Department of the Interior, Bureau of Reclamation Division of Research and Laboratory Services Applied Sciences Branch. Page 8.
<https://www.usbr.gov/tsc/techreferences/research/GR8613.pdf>

Discussion: Tunnel Boring Mitigation Measures

On Page 2-E-24 through 2-E-27 of the DEIR, CHSRA sets forth HYD-IAMF#5, HYD-IAMF#6, and HYD-IAMF#7, mitigation measures designed to address and overcome the significant geologic challenges presented by the combination of faults and high water pressure.

On Page 2-E-24, CHSRA states that, "Current technology allows TBMs to sustain up to 17 bar of groundwater pressure while boring without additional measures." This implies that with the implementation of additional measures (e.g., pre-grouting), TBMs can sustain the intensity of water pressure that will be encountered in the tunnels beneath the ANF. However, according to sources previously cited in this analysis, the best tunnel boring machine in the world can only withstand water pressure up to 30 bars, and the TBM utilized in the construction of the Gerede project in Turkey withstood water pressure of 26 bars maximum. The TBM used in Gerede also implemented additional measures such as pre-grouting.

Question: Given that CHSRA's preliminary geotechnical analysis has indicated that TBMs will encounter water pressure >60 bars, what case studies does it have to demonstrate success of a TBM under these conditions?

Also on Page 2-E-24, CHSRA states that:

In circumstances where groundwater pressures are 25 bar or less, a one-pass lining system will be installed in the tunnels constructed behind the passing TBM. In circumstances in which groundwater pressures exceed 25 bar, a two-pass lining system will be installed after the TBM has finalized its operations.

This mitigation measure is more fully set forth in HYD-IAMF#6, "Tunnel Lining Systems":

The lining system, which will consist of segmental, precast, concrete lining with bolted and gasketed joints, will create a tunnel lining capable of resisting the groundwater pressure with minimal leakage. In sections where groundwater pressures are above 25 bar, and after the first lining has been installed, no significant water leakage is expected until a second lining has been put in place. Current gaskets available in the market are nominally rated up to 50 bar; however these gaskets are assumed to withstand only 25 bars in the design (using a safety factor of 2) to account for construction quality defects and the 100-year lifespan of the infrastructure. In order to minimize water leakage into the tunnel for the complete lifespan of the infrastructure, in the segments where ground water pressures are expected to exceed 25 bar, a monolithic second lining will be put in place after the TBM has finalized its operations and all its facilities have been dismantled (approx. 16 months).

CHSRA anticipates encountering water pressure conditions >25 bars in significant lengths of tunneling; between 1.6 miles and 6.6 miles of tunneling, depending on the alignment selected. Per its explanation above, the single lining system will suffice for the sections of tunnel where the water pressure is <25 bars; but for sections of the tunnel where the water pressure is >25 bars, CHSRA will have to put in place a second lining.

This second lining will be put in place after the TBM has finalized its operations. Per CHSRA's estimate, for a period of approximately 16 months, significant sections of the tunnel (between 1.6 miles and 6.6 miles) will be under water pressure >25 bars with a single tunnel lining that can only withstand 25 bars of pressure.

Question: Does CHSRA not anticipate breakthroughs due to significant water pressure during the 16 months that the tunnel is protected by only a single layer of lining? How does the mitigation measure of installing the second lining count as protection during the period of over one year when the tunnel will be vulnerable due to water pressures higher than are able to be withstood by the single layer? In the lengths of the tunnel where water pressure is anticipated to exceed 60 bars, and for the period of 16 months where the tunnel will only

have a single layer of lining that can withstand 25 bars of pressure, what is the failure rate predicted for these segments?

Per CHSRA's explanation of how the single layer lining is installed, it appears to be installed in pre-cast, 40-foot segments. This implies that the TBM has to have excavated a minimum of 40 feet ahead in order to allow for a 40-foot segment to be installed. As the TBM can excavate approximately 50 feet per day (under good conditions), we can expect that it will take a day for the TBM to advance sufficiently to allow installation of the single layer liner. Under difficult conditions, TBMs can expect a forward rate of progress of approximately 3 feet at best. Under these conditions, which could be anticipated in the difficult terrain under the San Gabriel Mountains where the water pressure is highest, we can expect that it will take over 13 days for the TBM to advance sufficiently to allow installation of the single layer liner. This means that for the span of somewhere between one day and two weeks, the only "protection" that the tunnel will be afforded against water pressure is the pre-grouting treatment advanced by the TBM.

Question: During this period of time when the tunnel is vulnerable, before the installation of the single liner, what is the failure rate anticipated by CHSRA for the miles of tunnel sections where water pressure exceeds 25 bars? What is the failure rate anticipated by CHSRA for the sections of tunnel where the water pressure exceeds 50 bars?

Question: Cumulatively, taking into account both the short period of time (i.e., approximately one day to two weeks) in which the tunnel has no liner, and the long period of time (i.e., approximately 16 months) in which the tunnel has a single layer liner, what is the risk associated with tunnel failure for the sections of tunnel in which the water pressure exceeds 25 bars? What is the risk associated with tunnel failure for sections of tunnel in which the water pressure exceeds 50 bars?

Discussion of Applicable Laws

In Section 3.8.2 ("Laws, Regulations, and Orders") of the DEIR, CHSRA asserts that, "The Authority would implement the high-speed rail project, including the project extent, in compliance with all federal and state regulations." In reviewing the applicable laws and regulations governing the use of water resources in comparison with CHSRA's plans, we have concluded that there are a number of inconsistencies between the six proposed Build Alternatives and the federal and state laws and regulations.

On Page 3.8-4 of the DEIR, CHSRA states that the *Protection of Wetlands (USEO 11990)*, "aims to avoid direct or indirect impacts on wetlands from federal or federally-approved projects when a practicable alternative is available." CHSRA previously considered a number of alignments that did not impact wetlands to the extent impacted by the routes through the Angeles National Forest, including routes following the 5 and 14 freeways. These alignments were practicable, but were eliminated from consideration for political (not engineering or geotechnical) reasons.

Question: Given the existence of practicable high-speed rail alignments that would not impact, or would impact to a lesser extent, wetlands, how is CHSRA's proposal to tunnel through the ANF and build corollary infrastructure in wetlands within and surrounding the ANF (e.g., Big Tujunga Wash, Hansen Dam) to support a high-speed train system **not** a violation of the intent of the USEO 11990?

The Safe Drinking Water Act (42 USC Section 300 et seq.) protects against both naturally-occurring and human-produced contaminants that may be found in drinking water. The Sole Source Aquifer Protection Program is authorized by Section 1424(e) of the Safe Water Drinking Act, and it is used, "to protect drinking water supplies where there are few or no alternative sources and where, if contamination occurred, use of an alternative source would be extremely expensive. All proposed projects to receive federal funds are subject to USEPA review to ensure that they do not endanger the water source."

The naturally-occurring sources of water in the San Gabriel Mountains are estimated to provide between 15 and 30 percent of Los Angeles' drinking water. Given the epic drought and given the depletion of sources of imported water (e.g., the Colorado River, Lake Mead), these sources are all the more important at this time and could be considered per the definition above to be the "sole source." Further for those residents within the ANF who rely on wells, those water sources truly represent the sole source.

Question: Given the impacts to naturally occurring water sources that are likely to result from CHSRA's tunneling through the ANF, how are CHSRA's plans not in violation of the Safe Drinking Water Act?

Per USFS Soil, Water, Riparian, and Heritage Standard 45, "all construction, reconstruction, operation, and maintenance of tunnels on National Forest System Lands shall use practices that minimize adverse effects on groundwater aquifers and their surface expressions." CHSRA's build alternatives have been designed to cross between 23 and 60 surface water features (depending on the alignment selected), including between 13 and 37 streams and tributaries. The DEIR devotes upwards of 100 pages detailing the potential impacts to groundwater and the myriad mitigation measures meant to address these impacts that will be created by tunneling.

Question: How are CHSRA's proposed alignments not in violation of S45?

Per USFS Soil, Water, Riparian, and Heritage Standard 47, a screening process must be applied to projects that could impact riparian areas, including such areas that are dependent on groundwater aquifers.

Question: What does this screening process entail, and has CHSRA begun the screening process with the USFS? What comments or concerns, if any, has the USFS brought forward with respect to CHSRA's potential impacts on riparian areas within the ANF?

Per US Fish and Wildlife Standard 11, habitat of special-status species within the National Forest System must be protected, including surface habitat that is impacted by subsurface changes in hydrogeologic conditions.

Question: Given the special status species within the ANF and the need for water to sustain their habitats, how are CHSRA's proposed alignments impacted by S11? Maps in Chapter 3.7 of the DEIR show the crossover of special species habitat with the CHSRA proposed alignments, including critical habitat for special status species like the Santa Ana Sucker Fish, the Arroyo Toad, and the Western Pond Turtle. Given that CHSRA's proposed alignments as well as surface infrastructure improvements intersect the critical habitat in multiple places, and given the likelihood of impacts to groundwater which will impact these sensitive species, how are CHSRA's plans protecting the habitat of special-status species within the ANF?

Sections 1601 to 1603 of the California Fish and Game Code ("Streambed Alteration Agreement") require that agencies notify the California Department of Fish and Wildlife prior to implementing any project that would divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream (including intermittent streams) or lake.

Question: Has CHSRA notified the California Department of Fish and Wildlife of its proposed alignments and their impacts on numerous applicable bodies of water? What has been the response of the California Department of Fish and Wildlife?

The Los Angeles Flood Control Act, adopted by the State Legislature in 1915, established the Los Angeles Flood Control District with a directive to provide flood protection, water conservation, recreation, and aesthetic enhancement within its boundaries.

Question: Given that the entirety of the Palmdale-Burbank Project Section takes place within the boundaries of the LAFCD, and given the amount of water necessary to construct the proposed alignments (including water

to operate the TBMs, water to mix cement, as well as water for mitigation measures including control of fugitive dust and trucking in water to supplement lost water in the ANF), how are CHSRA's plans not in violation of the LA Flood Control Act which requires water conservation within the district boundaries?

General Discussion of Hydrological Concerns:

On Page 3.8-15 of the DEIR, CHSRA states that for its analysis of potential hydrologic impacts, it relied in part on case studies of tunnel construction occurring under similar conditions, "including documented effects on surface water and other water resources associated with those tunnels," including case studies of other tunnels in Southern California.

Question: Did CHSRA study the tunneling of the Metro Red Line and the effects on Runyon Canyon? The tunneling dewatered Runyon Canyon, lowering the water table by over 100 feet. What did CHSRA learn from this case study, and how are those lessons applied to the plans to tunnel through the ANF?

On Page 3.8-16 of the DEIR, CHSRA states the following with respect to the potential for impact to naturally occurring water sources within the ANF:

1. The greatest potential for groundwater to flow into tunnels exists at locations where tunnel construction intersects faults and fractures in the bedrock.
2. The potential for water to flow into tunnels during construction, as well as the rate and volume of any such flows, is greatest in areas of high water pressure, assumed for purposes of this analysis to greater than 25 bar.
3. Proximity of the tunnel construction to water resources influences the severity of the water loss. Closer proximity of a water resource to the tunnel excavation may result in greater impact.
4. Springs, intermittent and perennial streams, and water supply wells along, or in proximity to, faults are most vulnerable to impacts when tunnel construction intersects faults, areas of high water pressure, and water within fractures that seeps into the tunnel excavation.

With respect to Refined SR14 and SR14A, there are at least 12 intersection points:

- Figure 3.8-A-1 (Tunnel Construction RSA Detailed Map Refined SR14/SR14A – Map 1 of 3) depicts 7 intersection points where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-2 (Tunnel Construction RSA Detailed Map Refined SR14/SR14A – Map 2 of 3) depicts at least 4 intersection points where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-3 (Tunnel Construction RSA Detailed Map Refined SR14/SR14A – Map 3 of 3) depicts at least 1 intersection point where the proposed alignment crosses BOTH a fault line and a stream.

With respect to E1 and E1A, there are as many as 7 intersection points:

- Figure 3.8-A-4 (Tunnel Construction RSA Detailed Map E1/E1A – Map 1 of 6) depicts possibly 1 intersection point where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-5 (Tunnel Construction RSA Detailed Map E1/E1A – Map 2 of 6) depicts possibly 1 intersection point where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-6 (Tunnel Construction RSA Detailed Map E1/E1A – Map 3 of 6) depicts 0 intersection points where the proposed alignment crosses BOTH a fault line and a stream.

- Figure 3.8-A-7 (Tunnel Construction RSA Detailed Map E1/E1A – Map 4 of 6) depicts at least 1 intersection point where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-8 (Tunnel Construction RSA Detailed Map E1/E1A – Map 5 of 6) depicts possibly 3 intersection points where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-9 (Tunnel Construction RSA Detailed Map E1/E1A – Map 6 of 6) depicts possibly 1 intersection point where the proposed alignment crosses BOTH a fault line and a stream.

With respect to E2 and E2A, there are at least 17 intersection points:

- Figure 3.8-A-10 (Tunnel Construction RSA Detailed Map E2/E2A – Map 1 of 6) depicts possibly 1 intersection point where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-11 (Tunnel Construction RSA Detailed Map E2/E2A – Map 2 of 6) depicts possibly 1 intersection point where the proposed alignment crosses BOTH a fault line and a water source.
- Figure 3.8-A-12 (Tunnel Construction RSA Detailed Map E2/E2A – Map 3 of 6) depicts at least 1 intersection point where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-13 (Tunnel Construction RSA Detailed Map E2/E2A – Map 4 of 6) depicts at least 3 intersection points where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-14 (Tunnel Construction RSA Detailed Map E2/E2A – Map 5 of 6) depicts at least 9 intersection points where the proposed alignment crosses BOTH a fault line and a stream.
- Figure 3.8-A-15 (Tunnel Construction RSA Detailed Map E2/E2A – Map 6 of 6) depicts at least 2 intersection points where the proposed alignment crosses BOTH a fault line and a stream.

Question: Based on the alignment that is selected, CHSRA proposes tunneling through as few as 7 or as many as 17 “high risk” intersections, where the alignment tunnels through a point where a known fault crosses a stream. Given that these water sources are considered to be most vulnerable to the impacts of tunneling, isn’t jeopardizing 7 to 17 streams in the ANF too big a risk to take, particularly during a period of epic drought in California? What number of water sources does the USFS say is an acceptable number to jeopardize?

On Page 3.8-27 of the DEIR, CHSRA lists the number of active groundwater wells within 1 mile of the center lines of each of the 6 build alternatives. CHSRA states that for the Refined SR14/SR14A route, there are 30 active wells; for the E1/E1A route, there are 24 active wells; and for the E2/E2A route, there are 22 active wells. However, Figure 3.8-A-9 (“Tunnel Construction RSA Detailed Map for E1/E1A”) shows only 3 active wells in the Kagel Canyon area. Even though these wells are just outside of the demarcation limit of 1 mile from the center line of the E1/E1A build alternative, the fact that 3 active wells are listed indicates that this must be of some significance to CHSRA (otherwise they would not include the locations of any wells outside the 1-mile zone). There are over 50 active wells in Kagel Canyon, all of which fall just outside the 1-mile demarcation.

Question: Given that CHSRA has more unknown than known factors regarding the geology and hydrology of the area within the ANF, how can CHSRA be certain that the 50+ wells in Kagel Canyon will not be impacted by tunneling?

Question: Since CHSRA has not noted the locations of these wells and is not considering them to be within the 1-mile “danger zone,” what will happen to homeowners in Kagel Canyon if they experience depletion of

their water supply? How will they prove to CHSRA that they have sustained damage if CHSRA did not mark baseline water levels in Kagel Canyon prior to commencement of tunneling?

Question: One of the proposed mitigation measures is to truck in water to homeowners whose wells were depleted as a result of tunneling. What type of resale value does a property have if it no longer has a water supply? Will CHSRA compensate homeowners who suffer an economic loss in resale value if the productivity of their wells was damaged or destroyed by tunneling? Will this decision also apply to homeowners in Kagel Canyon, who fall just outside the 1-mile zone, but who represent the highest concentration of wells within the RSA?

According to Section 3.8.5.6 of the DEIR (“Other Hydrologic Resources”), CHSRA mapped seeps within 2 miles of the proposed alignments, but wells only within 1 mile of the proposed alignments.

Question: Why were seeps mapped at a center line distance twice that of wells? Were wells to be mapped at the same distance of impact, all 50+ wells in Kagel Canyon would be included in the mapping. What was the criteria CHSRA utilized for determining the distance of potential impact on these various sources of water?

Page 3.8-28 of the DEIR explains connection between faults and water sources:

The core samples illustrate broadly differing zones of fracturing, some with high density of fractures and other zones with virtually no fracturing. The wide variation of fracturing and the intersecting patterns of fracturing govern the direction and quantity of groundwater that is able to flow through the rock at those points. Generally, with greater and greater displacement along a fault, the fractured rock adjacent to a fault becomes a preferred path of groundwater flow.

According to a 2013 National Park Service study, “The San Gabriel Mountains are among the fastest growing mountains in the world. Forces from the San Andreas Fault to the north and a series of thrust faults on their south face are causing the San Gabriel Mountains to rise as much as 2 inches a year.”³⁸

Question: Given the rate at which the San Gabriel Mountains are growing, won’t the fracturing in the rock along the alignments only grow over time? How will this growth and increased fracturing impact CHSRA’s tunneling plans? How will this growth and increased fracturing impact the likelihood of disruption of the naturally occurring water sources in the San Gabriels as tunneling intersects the groundwater flow along fractured rock adjacent to a fault?

Question: If the San Gabriels continue to rise at approximately 2 inches per year, in the 10+ years that it will take CHSRA to construct this alignment, the concrete “ground” on which the track is laid within the may have risen nearly 2 feet. How will the growth of the San Gabriels impact the concrete tunnels? Will they not buckle as the mountains continue to grow? If and when the concrete tunnels buckle, will that not create cracks through which groundwater will flow into the tunnels?

On Page 3.8-29, CHSRA provides an example in which, “zones of completely intact rock could prevent groundwater flow, forming an impermeable barrier in the rock mass, whereas zones of more fractured rock facilitate storage and movement of groundwater.”

Question: Will the introduction of 30-foot in diameter concrete tunnels not create an impermeable barrier preventing groundwater flow? How will the introduction of these large tunnels into the natural flow impact underground streams?

³⁸ <https://www.kpcc.org/2013-04-11/national-park-service-protect-more-of-the-san-gabr>

Later on the same page, CHSRA explains that, "Faults have the potential to act both as groundwater conduits and as barriers that often result in substantial variations in groundwater pressures from one side of the fault to the other."

Question: If CHSRA tunnels through a fault (as it proposes to do a minimum of 7 times and as many as 20 times, per the data set forth in Table 3.8-6), will this not create the possibility of changing the fault from a conduit to a barrier? What will be the effects "downstream" if water that was previously freeflowing is suddenly blocked?

On Page 3.8-32 of the DEIR, CHSRA explains the importance of groundwater pressure vis a vis tunneling; with an increase in groundwater pressure (measured in bars) comes a corollary increase in the risk of both (1) inflow into the tunnel from surrounding rock, and (2) impacts to both groundwater and surface water resources. CHSRA goes on to state that it estimated groundwater pressures along the alignments based upon the data available for the 6 core holes and bore samples taken from the ANF – i.e, approximately 2 core samples from each of the proposed alignments.

According to geotechnical engineers with whom we made inquiries on the subject, 2 core samples for a section of tunneling in excess of 20 miles is a vastly insufficient data sample on which to make determinations. These engineers stated that CHSRA would need to conduct between 100 and 150 test borings within the ANF along the specific alignment in order to gather sufficient data necessary to plan its tunneling.

Question: Has CHSRA approached the USFS regarding the need to conduct additional test drilling within the ANF? Has CHSRA quoted to the USFS an estimated number of test bores in excess of 100? What has been the response of the USFS to this proposition?

Question: In other sections of the DEIR, CHSRA minimizes the impact that its alignments will have on the ANF, insisting that since the majority of the route through the ANF will be tunneled, surface impacts will be minimal. This assertion clearly does not include the need for CHSRA to conduct an additional 100 – 150 test bores on the Forest floor. Test boring is a loud and invasive process which will negatively impact wildlife within the Forest. Why were the impacts from these additional test bores not included in the applicable sections of the DEIR?

Question: For Routes E1, E1A, E2, and E2A, test bores will presumably also need to be conducted within the San Gabriel Mountains National Monument. What has the USFS stated will be the difference, if any, in policy regarding permission to drill test bore holes in the ANF vs. in the SGMNM?

Question: Presumably the additional 100 – 150 test bores will only be conducted along the Build Alternative that is selected as the actual alignment to connect Palmdale to Burbank. What results could the test bores yield that would render that chosen alignment to be impracticable? If such results are yielded in the test bores for the selected alignment, what happens next? Will the project not be completed in this Project Section? Or will a different alignment then be selected and test bores conducted along that alignment?

Question: Given the lack of data available from only 2 test borings conducted along the preferred alternative, how can CHSRA even provide a reasonably accurate cost estimate to build this project section?

In Table 3.8-8, CHSRA sets forth the estimated groundwater pressures beneath the Angeles National Forest. Later on Page 3.8-33, CHSRA states that:

"Based on the limited data **and professional judgment**, the E1 and E1A, and the E2 and E2A Build Alternative alignments have three to five times the lengths of tunnel where the groundwater pressures are anticipated to exceed 25 bar, compared to the Refined SR14 and SR14A Build Alternative alignments. The highest anticipated groundwater pressures for portions of the Refined SR14, SR14A,

E1, E1A, E2, and E2A alignments are **anticipated to be as high as 50 bar for Refined SR14, SR14A, E1, and E1A, and greater than 60 bar for E2 and E2A.**”

Question: Given previous discussion in this section of comment letter regarding the ability (or lack thereof) of TBM machines to withstand >30 bars of pressure, wouldn't the same professional judgment that led to the estimation of groundwater pressures beneath the ANF also suggest that it is either imprudent, infeasible, or both to construct the tunnels as proposed?

In Section 3.8.6.3 (“Build Alternatives”) of the DEIR, CHSRA sets forth the number of water features that will be impacted by each of the build alternatives. Below is a summary, culled from the information set forth in this section:

Build Alternative	Surface Water Crossings: At Grade	Surface Water Crossings: Viaduct	Surface Water Crossings: Tunnel	Surface Water Crossings: TOTAL
Refined SR14	48	12	29	89
SR14 A	43	3	32	78
E1	43	7	43	93
E1A	42	3	44	89
E2	34	8	44	86
E2A	39	3	40	82
No Project	0	0	0	0

CHSRA goes on to summarize the impacts that construction of the build alternatives will have on these water sources, including:

- Water diversion and/or dewatering of water channels to accommodate in-channel construction activities, including the placement of the following WITHIN surface water channels:
 - Trackway
 - Viaduct piers and abutments
 - Traction power substations
 - Roadway/railway modifications
 - Access roads
 - Station areas
 - Construction staging areas
 - Drainage facilities.
- Permanent modification of water channel capacity and flow to accommodate placement of fill material in surface water channels;
- Permanent modification of water channels due to placement of piers and abutments within surface waterbodies;
- Permanent modification of stormwater runoff patterns due to placement of permanent HSR infrastructure within surface water bodies, which may reduce the amount of water in the receiving waterbodies.

Despite these major impacts to significant sources of water within the RSA, CHSRA has concluded that the impacts, “would be less than significant” for the build alternatives, and therefore CEQA does not require mitigation.

Question: Has CHSRA made the Antelope Valley Watermaster aware of its plans to impact between 78 and 93 surface water crossings? What has been the response of the Antelope Valley Watermaster to the proposed alignments and their impact on hydrology? Does the Antelope Valley Watermaster agree with CHSRA’s conclusion that these impacts would be “less than significant”? Will the Antelope Valley Watermaster allows

CHSRA to proceed with its plans, either with or without conditions placed on the construction? Given the potential impacts to water within its jurisdiction, what reason would the Antelope Valley Watermaster have to select any alignment other than the No Project Alternative?

Question: Has CHSRA made the Upper Los Angeles River Area (ULARA) Watermaster aware of its plans to impact between 78 and 93 surface water crossings? What has been the response of the ULARA Watermaster to the proposed alignments and their impact on hydrology? Does the ULARA Watermaster agree with CHSRA’s conclusion that these impacts would be “less than significant”? Will the ULARA Watermaster allow CHSRA to proceed with its plans, either with or without conditions placed on the construction? Given the potential impacts to water within its jurisdiction, what reason would the ULARA Watermaster have to select any alignment other than the No Project Alternative?

On Page 3.8-40 of the DEIR, CHSRA sets forth for each of the build alternatives what will be the total number of acres disturbed during and after construction. Below is a summary, culled from the information set forth in this section:

Build Alternative	Acres of construction-period ground disturbance footprint	Acres of permanent footprint	Acres of new impervious surface
Refined SR14	2,572 – 2,654	2,436 – 2,510	787
SR14 A	2,355 – 2,437	2,208 – 2,274	752
E1	2,249 – 2,263	2,156	742
E1A	2,022 – 2,159	1,898 – 2,021	700
E2	2,093 – 2,094	1,994 – 2,006	650
E2A	1,963 – 1,964	1,835 – 1,847	607
No Project	0	0	0

In conjunction with the thousands of acres that will be impacted during construction, CHSRA goes on to summarize the ways in which water resources may be impacted by construction, including the following:

- Contamination or pollution of surface waters due to use of construction-related chemicals;
- Water quality impacts from this contamination/pollution spread via stormwater runoff;
- Sedimentation and turbidity caused by erosion from soil disturbance during construction;
- Damage from activities within water courses related to the construction of infrastructure within the water channel;
- Dewatering, diversion, or disruption of streambeds during in-watercourse construction;
- Disposal of water that flowed into the tunnels during construction could release water contaminated with construction chemicals;
- Groundwater quality degradation due to TBMs (e.g., grouting, excavation, dewatering).

CHSRA concludes that with the implementation of mitigation measures that will “treat groundwater contamination,” the Build Alternatives, “would not violate standards for groundwater quality or otherwise substantially degrade groundwater quality, and this impact would be less than significant for... the Build Alternatives.”

Question: In contemplating a risk-reward analysis for this section of the DEIR, it seems that the risk is high, and the reward is low; the No Project Alternative is the only alternative that does not create thousands of acres of disturbance (some temporary, for those who define 10+ years as temporary, and some permanent) and myriad risks of contamination and disturbance to naturally occurring sources of groundwater. How would CHSRA present a risk-reward analysis that would justify the construction of any of the six proposed Build Alternatives?

On Page 3.8-46 of the DEIR, CHSRA sets forth Groundwater Recharge Impacts from New Impermeable Surfaces:

Impermeable surfaces created by the Build Alternatives would disrupt the infiltration of water from the surface to groundwater basins, permanently affecting groundwater recharge. Reducing groundwater recharge could lead to groundwater reduction. Nearby groundwater wells could be affected by a reduction in groundwater availability.

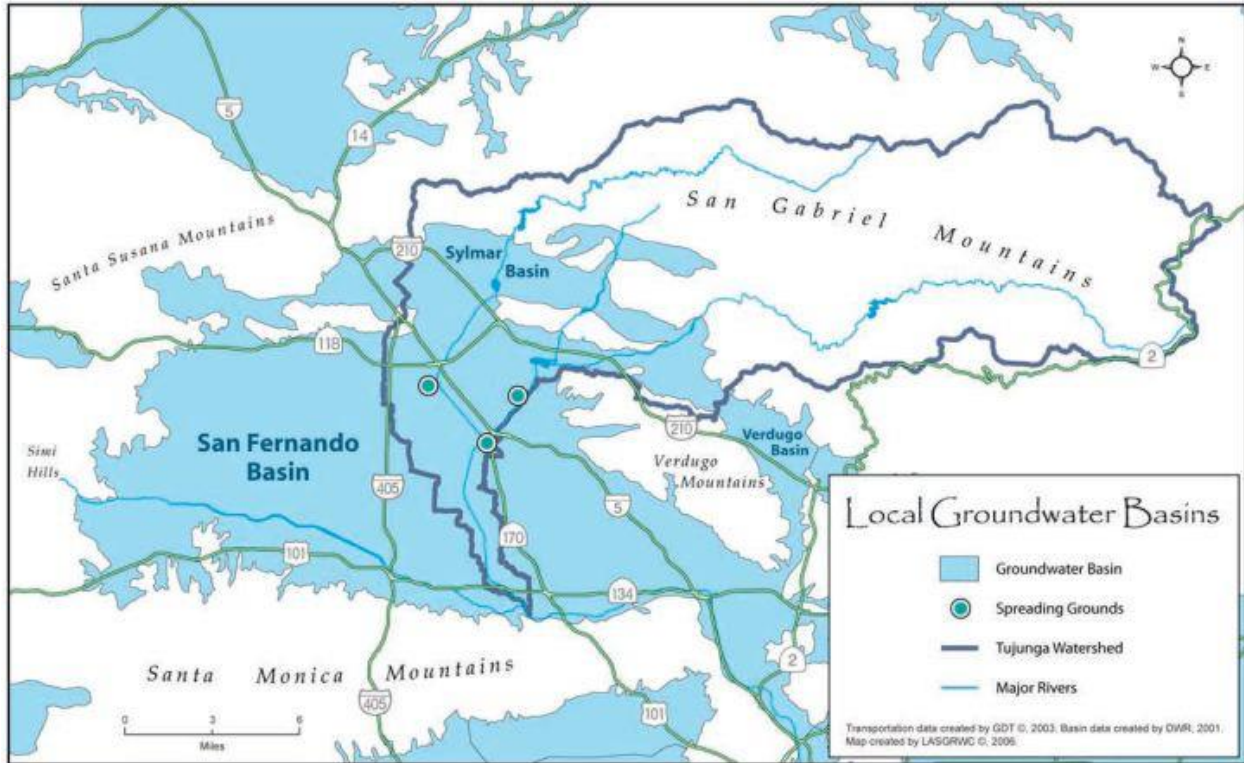
CHSRA explains that groundwater may be depleted by tunneling, and this could impact water in the Antelope Valley Groundwater Basin, the Acton Valley Groundwater Basin, The Santa Clara River Groundwater Basin, the San Fernando Groundwater Basin. However, CSHRA minimizes the importance of these groundwater basins by explaining that they are not listed as “medium or high priority groundwater basins” and that no applicable groundwater sustainability plans have been adopted for these basins.

On Page 3.8-47, CHSRA goes on to state that within the San Fernando Basin, several of the Build Alternatives, “would cross the Hansen Spreading Grounds on fill or embankment. New impervious surfaces within the spreading ground could reduce its capacity for groundwater recharge.”

Despite CHSRA’s marginalization of the importance of our local groundwater basins, there is evidence to underscore their significance – particularly during this time of California’s epic drought. The “History” section of Hansen Dam’s Wikipedia entry explains the importance of this groundwater basin:

During storms and flooding, the dam is intended to catch water within the reservoir. Provisions in the dam's standards of operations promote water conservation efforts coordinated with the Los Angeles County Department of Public Works. The provisions allow the dam to discharge water onto spreading grounds located south of the dam, which then percolates into groundwater recharge basins and is stored as part of the city's water supply.³⁹

³⁹ https://en.wikipedia.org/wiki/Hansen_Dam



San Fernando Basin Map provided by The River Project

In an article entitled, “Groundwater Recharge, Retention & Pollution,” The Sierra Club explains the importance of our local water supply, quoting data from LADWP: “The local groundwater has historically provided approximately 11 to 15 percent of the city’s total water supply. During times of drought and/or emergencies, the local groundwater has provided up to 30 percent of the total water supply.”

This local groundwater is all the more important because of the current (and presumably future) issues with importing water to meet demand. The Sierra Club explains, “...we have to import water from northern California and, also, from the Colorado River. That is problematic because those places are not giving us the allotment they did even 10 years ago, and that means we need to rely more on our local water. We currently spend \$1 billion a year to import 85 percent of our water supply from other regions whose ecosystems are seriously threatened by that loss.”⁴⁰

The issue of water is critically important to California. At the end of July, levels in Lake Mead, according to NASA, “stand at their lowest since April 1937, when the reservoir was still being filled for the first time.”⁴¹ In September 2022, several days after the release of this DEIR, cuts to the water from supply from the Colorado River were announced: “Officials in California are closing in on an agreement to give up a significant portion of the water the state gets from the Colorado River, bowing to an emergency demand made by the federal government earlier this summer.”⁴²

In order to balance the drought and the need for water, the Sierra Club recommends that in Los Angeles, we, “Need to have the most water absorbent & sensitive areas as ‘no-build places’.”⁴³

⁴⁰ https://angeles.sierraclub.org/groundwater_recharge_retention_pollution

⁴¹ <https://thehill.com/changing-america/sustainability/climate-change/3573535-nasa-photos-show-dramatic-shrinking-of-lake-mead/>

⁴² <https://grist.org/drought/colorado-river-water-california-imperial-irrigation-district/>

⁴³ https://angeles.sierraclub.org/groundwater_recharge_retention_pollution

To take advantage of the wonderful resource of a highly absorbent aquifer we need to be able to use it when needed, so if there is a building placed on top of it then the aquifer can't do its job. Cities need to make those places "no build" and only used for such activities as recreation... In the past parks have not been a high priority but if they can be seen as a way of capturing water they might be seen as more important and, therefore, receive more funding. Other public rights-of-way crossing the watershed include 27.75 miles of channelized streams and five transmission line corridors. These interconnect with spreading grounds throughout the watershed, providing an ideal opportunity to create green infrastructure for stormwater capture, groundwater recharge, and habitat that can provide a network of trails, pocket parks, and community gardens. Prioritizing these areas for reclamation and restoration can have tremendous impact on our available amounts of local water supply. Along restored riparian (stream) corridors connecting the mountains and the washes, habitat for wildlife could be integrated with multiple-use parkland for people. **Permanent protection of open space is warranted, particularly along these corridors and in the urban fringe above Hansen Dam.**⁴⁴

Question: Groundwater resources are more important to Los Angeles than ever before, yet CHSRA proposes polluting them, reducing them, and reducing their potential for recharge, all while claiming that these impacts are "less than significant." How can CHSRA's Board of Directors select in good faith any build alternative other than the No Project Alternative?

On Page 3.8-48 of the DEIR, CHSRA examines the impacts on Groundwater Recharge from Tunnel Construction, explaining,

Within the Antelope Valley Groundwater Basin, tunneling activities required for each of the six Build Alternatives could encounter shallow groundwater south of the California Aqueduct and north of the ANF. Where each of the Build Alternative alignments passes through foothills of the San Gabriel Mountains, tunnels would likely be constructed above the groundwater table. **However, not enough groundwater information is available at this time to identify the extent to which the tunnels may be below the water table.** There may be perched groundwater or seasonal springs in the vicinity of these tunnels (Figure 3.8-A-21); therefore, local water inflows during portal and tunnel excavations are anticipated in this area.

Further, with respect to design features such as the tunneling methods to be employed, CHSRA states:

The circumstances under which these approaches would be employed would be guided by site-specific geotechnical and hydrogeological characterizations that would be developed during the preconstruction phase of the selected Preferred Alternative. Such studies would include geotechnical investigations along the tunnel alignment for the selected Preferred Alternative to characterize the differing rock/soil types (e.g., strength, fracturing, in-situ stresses), groundwater pressures at tunnel depth, potential flow quantities, and structural geology, including faults and gouge zones.

Question: If not enough information on groundwater resources exists to know the relation of the tunnels to groundwater resources, how can we rely on CHSRA's admittedly limited analysis to know that its tunneling plans are even feasible?

Question: CHSRA is placing a great deal of emphasis on additional testing and studies that will need to be conducted after the Preferred Alignment is selected but before construction begins. These additional tests/studies will yield pretty important information that could determine whether or not an alignment is feasible. For example, if additional testing determines areas in which the water pressure exceeds 60 bars, what will happen then?

⁴⁴ https://angeles.sierraclub.org/groundwater_recharge_retention_pollution

Question: Will these additional studies be conducted by CHSRA itself, or by a contractor bidding on the build contract for the Preferred Alignment?

Question: Other than water pressure, what other factors could be discovered during these additional tests that would render an alignment infeasible or impracticable? If any such factor(s) are discovered during the period of additional study, will the Preferred Alignment be abandoned and there will be no project in this Project Section? Or will a different alignment then be selected and additional studies conducted along that alignment?

Question: Given CHSRA's admitted lack of information available on groundwater resources, how can CHSRA even provide a reasonably accurate cost estimate to build this project section?

With respect to the inventory and monitoring of groundwater and surface water resources, on Pages 3.8-68 and 3.8-69 of the DEIR, CHSRA explains that it will conduct monitoring activities to evaluate the recovery of water resources that were depleted or otherwise damaged by tunnel construction. These monitoring/recovery plans include the following statements:

1. Over time, groundwater resources would recover from losses sustained during construction through recharge by natural precipitation. Such recharge may take months to years after the tunnel lining system is installed.
2. The Authority will prepare contingency plans to provide supplemental water as necessary to support springs and streams determined through modeling and monitoring to be adversely affected by groundwater reductions. For all features, supplemental water would provide minimum flows and periods of inundation to match baseline conditions.
3. Supplemental water would be supplied to affected springs or streams to approximate baseline levels until groundwater recharged naturally. The actual method of distribution of supplemental water would vary according to site-specific characteristics. For example, at some locations, a drip irrigation system may be more appropriate, whereas at other locations, it may be more appropriate to simply discharge water directly to a creek bed.

Question: It seems to contradict common sense for reasonable people to choose importing water and dumping it into streams in the Forest instead of choosing to not damage the naturally-occurring water sources in the first place. Given that recharge of water resources may take years, and given that CHSRA proposes importing water and dumping it into streams in order to achieve baseline water levels before they were depleted by tunneling, what are the reasons why it would not be preferable to simply not cause the damage in the first place?

On Page 3.8-79 of the DEIR, CHSRA begins a section entitled, "Incomplete or Unavailable Information Regarding Evaluation of the Effects of Tunnel Construction" with the following:

Although preliminary assessments of subsurface conditions in the ANF have been conducted to date, many aspects of the hydrogeologic and hydrologic conditions that would be encountered during tunnel construction **have been defined only partially, and data gaps remain** regarding the surrounding bedrock, groundwater, soil, and surface hydrology conditions present in the vicinity of the proposed tunnels. The current data gaps include the following:

- Geologic conditions, including spatial distribution of rock formations, rock structure types, rock orientation, extent and intensity of fractures and shear zones, and characteristics of the San Gabriel fault zones and Sierra Madre fault zones, including lengths, widths, depths, and alignment of the fault zones in the subsurface;
- Hydrogeologic conditions, including aquifer boundaries, groundwater, and hydrostatic pressures, annual and interannual variation of groundwater conditions, responses to rainfall, conductivity, fault and fracture zone features, hydrologic connectivity with surface water resources and overlying alluvial aquifers, and groundwater chemistry;

- Hydrologic conditions, including average productivity of existing groundwater wells and springs, and the annual and interannual variation in productivity, metrics describing average, peak, and low-flow conditions of streams, and hydroperiods of surface water resources.

CHSRA has proven in the Central Valley that the 15/85 design plan (i.e., only 15% of the project has to be designed before 100% of the project has been approved) is an abject failure. The failure of CHSRA to sufficiently research proposed alignments in advance of their approval led to significant cost overruns as well as waste, as houses were taken by eminent domain which turned out to not even be in the eventual path of the train, and rerouting was necessary for miles as CHSRA failed to realize that utilities were in the way.

Question: Instead of repeating the mistakes made in the Central Valley, would it not be preferable to research the necessary factors ahead of time in order to conclude whether or not the Preferred Alignment is even feasible?

Question: The fact that the “data gaps” are in some of the most serious issues facing the design and construction of the CHSRA proposed alignments – i.e., geologic conditions, hydrogeologic conditions, and hydrologic conditions – is worrisome at best. Considering that some of the most significant questions/concerns about the feasibility of this project stem from these issues (e.g., seismicity, potential for disruption of water sources), would it not be preferable to do the necessary research now to address these significant concerns?

Question: Considering how little CHSRA actually knows about the geologic, hydrogeologic, and hydrologic conditions through the most technically challenging portion of the proposed rail system, what would CHSRA say are the chances of success in actually completing these tunnels? Given that the unknowns outweigh the knowns, what would CHSRA say are the chances of successfully completing this project section within the projected \$12B - \$24B estimate set forth in the 2022 Business Plan?

On Page 3.8-82 of the DEIR, CHSRA states that, “The AMMP would address foreseeable and unforeseeable impacts associated with the Build Alternatives.”

Question: How does a plan address “unforeseeable impacts”?

Conclusion: Some of CHSRA’s proposed mitigation measures may help to either prevent or remediate damage to water resources on a case-by-case basis; however, when considered overall/cumulatively, these mitigation measures are vastly insufficient to address not only the risk, but also the overwhelming likelihood of damage to water resources that will be sustained during both the construction period and the operation of the train. Additionally, CHSRA’s admitted lack of information about the geologic, hydrologic, and hydrogeologic conditions that exist along the project alignments is alarming. The proposition that these factors will be studied at a later date, and possibly by contractors bidding on the build of the project section, is unacceptable for a project of this cost and complexity. These concerns are exacerbated by the epic drought currently facing the State of California, when for the foreseeable future the significance of our naturally-occurring sources of water are at an all-time high – and the thought of jeopardizing these resources is unthinkable. With the information that CHSRA has presented in Chapter 3.08 and its appendices, the only acceptable alternative is the No Project Alternative.

APPENDIX 3.8-C: ADAPTIVE MANAGEMENT AND MONITORING PLAN FOR POTENTIAL HYDROLOGIC EFFECTS WITHIN THE ANGELES NATIONAL FOREST

APPENDIX 3.8-D: SUPPLEMENTAL WATER PLAN ANALYSIS FOR POTENTIAL IMPACTS WITHIN THE ANGELES NATIONAL FOREST/SAN GABRIEL MOUNTAINS NATIONAL MONUMENT

The high-speed train requires a substantial amount of water during and for construction as well as afterwards to ensure that the Angeles National Forest/San Gabriel National Monument’s (hereinafter just referred to as “Angeles National Forest” or “ANF”) habitat remains at its pre-construction condition. Therefore, the US Forest

Service (USFS) provided CHSRA with several mandates to follow concerning the alarming effects that constructing and operating tunnels through the ANF could or would cause.

California, and the rest of the Western United States, are in yet another multi-year mega-drought with no end in sight.⁴⁵ The fact that CHSRA is even thinking about using any water for any use is a non-starter. Therefore, the only feasible alternative is the No Build Alternative.

CHSRA acknowledges that tunnel construction can cause loss of water to the ANF's ground floor. This temporary or permanent loss of water would destroy habitat resulting in death for fish, amphibians, reptiles, small mammals, apex predators, and birds. One area of great concern is the negative impact loss of water will have on oak trees and hardwood conifers. Further, CHSRA recognizes that after tunnels are completed, they may leak, resulting in continuous seepage and loss of water for plants and riparian areas.

CHSRA states they have ways to seal the tunnel if they leak, but it is disquietingly reminiscent of the Central Artery/Tunnel Project, commonly known as "the Big Dig" in Massachusetts. This tunnel project was plagued with massive construction flaws including thousands of leaks. This negligence led to criminal convictions and the death of a motorist. Unlike the high-speed rail tunnels, the "Big Dig" tunnel was not hundreds or thousands of feet underground, nor was it subject to high pressure. Yet, because of poor construction, the tunnel failed. If you think, "Surely, CHSRA wouldn't use substandard construction," please refer to the high-speed rail's Madera bridge failure in 2020⁴⁶. High-strength steel strands supporting the 636-foot-long structure began to snap in October 2020, one after another. Ultimately, 23 of the strands, which are composed of seven individual wires each, broke unexpectedly, according to rail authority documents and officials. The order to stop work was issued in November 2020. Additionally, the same contractor that built this failed Madera bridge, Tutor-Perini, was ordered in October 2022 to shut down construction for two weeks on LA's Metro Purple Line due to massive worker injuries. Guess who is CHSRA's largest contractor? Yes, it's Tutor-Perini – which has a nearly \$3 billion multi-year contract that expires in 2024.

On a side note, Tutor-Perini's business practices have earned Ron Tutor the title of "Change Order Artist." Officials in both San Francisco and Los Angeles are seeking to ban the company from bidding on contracts. Over 12 years, Tutor-Perini cost the San Francisco government \$765 million more than expected (or 40% above initial bids) for contracted projects by fraudulently inflating costs from \$626 million to \$980 million, as determined in a 2002 lawsuit. The company paid only \$19 million to settle the San Francisco based suit. Tutor-Perini filed a lawsuit against Los Angeles County for \$16 million in "unanticipated costs." Two decades later, the county has spent over \$32 million without a resolution to what the county refers to as a false reimbursement claim. With respect to the high-speed rail project, Tutor-Perini underbid the anticipated costs and then later made a change order and was given another \$63 million by the CHSRA as a result.⁴⁷

With respect to impact on groundwater, USFS has provided various standards. Appendix 3.8-C, Section 2.1 provides:

*"Section 2.1 USFS Soil, Water, Riparian and Heritage Standard 45
USFS Standard 45 establishes that activities on USFS land must minimize adverse effects on groundwater (USFS 2005). Standard 45 states: 'All construction, reconstruction, operation and maintenance of tunnels on National Forest System lands shall use practices that minimize adverse effects on groundwater aquifers and their surface expressions.'*

⁴⁵ https://www.earthisland.org/journal/index.php/articles/entry/us-west-megadrought-worst-1200-years-new-study?utm_source=google&utm_medium=paid&utm_campaign=afd_dsa&qclid=Cj0KCCQiAveebBhD_ARIsAFaAvrFBWFf15_3Ma2ajZ-cWwdcwQAWq9knmFM09ZjYgHc4wkn1LGGVvkFCsaAjxXEA

⁴⁶ <https://www.latimes.com/california/story/2020-08-10/california-bullet-train-bridge-snafu>

⁴⁷ <https://californiapolicycenter.org/horrible-history-state-contract-awards/>

Authority Objectives Regarding Standard 45:

- Maintain the minimum baseline range of flows of springs and streams and measured groundwater levels (i.e., measured pressures) within documented seasonal parameters.*
- Maintain minimum baseline spring and stream flows to maintain surface water conditions substantially similar to flows documented during monitoring that support existing habitats and wildlife species.”*

Similar standards are stated for fish and wildlife. In short, construction cannot be allowed that results in damage to the ecological system.

Currently, there is monthly water monitoring. A baseline will be established through various tests prior to construction and will include streams and springs (inflow and quality), impact on riparian habitats, plants, birds, and bats. Monitoring will continue during construction and then for 10 years after construction.

If a variance is found, remedial steps will be taken. However, it is our belief based on the effects that dewatering has had on other parts of the state (e.g., the Central Valley, Runyon Canyon in Los Angeles) that when water is gone, it is gone, and any mitigation measure will be too little too late.

In addition to the timing and the amount of irreversible loss of water even if dewatering is discovered, the remedies are infeasible and untenable.

While CHSRA outlines in detail their mitigation remedies on several pages of this appendix, their “mitigation” remedies are simplistic and senseless:

1. Replace the water in streams and springs by 8,000 gallon water truck deliveries⁴⁸ from local water agencies (water would require aeration, circulation, exposure to ultraviolet light, or otherwise treated to reduce concentrations of chlorine and other byproducts of water treatment which suggests that the water is potable) to match the existing naturally occurring water chemistry that was lost; water would be added to streambeds or delivered through drip irrigation systems (CHSRA estimates that there will be 27 truck trips DAILY to supply the necessary amount of supplemental water and states that this is a rather infeasible solution); trucks would have to drive 48 or 62 miles round trip, with 16 miles on Forest Service roads and an additional 9 and 15 miles on paved or urban roads, respectively, per visit; or
2. Replace the water in streams and springs by pumps and 620 foot long pipeline(s) along existing roads; and/or
3. Install permanent water tanks and irrigation systems to lessen the amount of truck trips; and/or
4. Rehome species that are negatively impacted to another area.
5. For affected supply wells, actions could include modifying the well equipment, such as by lowering the pump within the well, cleaning the pump, or providing a larger pump. Other or additional actions may include providing potable water supplementation until water levels recover in the water supply well. A third grader knows that the replacement water must come from somewhere and California does not have that “somewhere”! (NOTE: California Central Valley’s groundwater loss caused irreversible sinking.)⁴⁹

It is obvious that these “remedies” are infeasible, untenable, and absurd. California has more drought years than not, and its climate is changing to a much drier climate. To say California is suffering from yet another drought is like stating that the Sahara Desert continues to have droughts.

⁴⁸ A 8,000 gallon water truck weighs 30,283 pounds loaded and runs on greenhouse gas-emitting diesel. CHSRA acknowledges that ANF roads are not built for heavy usage and heavy weight vehicles. The noise, fumes, and vibration from frequent truck trips will harm the ANF.

⁴⁹ <https://news.stanford.edu/press-releases/2022/06/02/will-californiasley-stop-sinking/#:~:text=The%20floor%20of%20California's%20arid,water%20levels%20merely%20stop%20declining>.

CHSRA used precipitation data from 1932 to 2016 to determine how much water will be required to maintain the status quo. It excludes California's current predicament: October 2019 through September 2022 — the past three water years combined — was California's driest such period on record. In that time, much of northern California missed more than a year's worth of precipitation.⁵⁰ As each year of rainfall dwindles, the more supplemental water will be required. Further, the sources of this supplemental water also dwindle. Where is

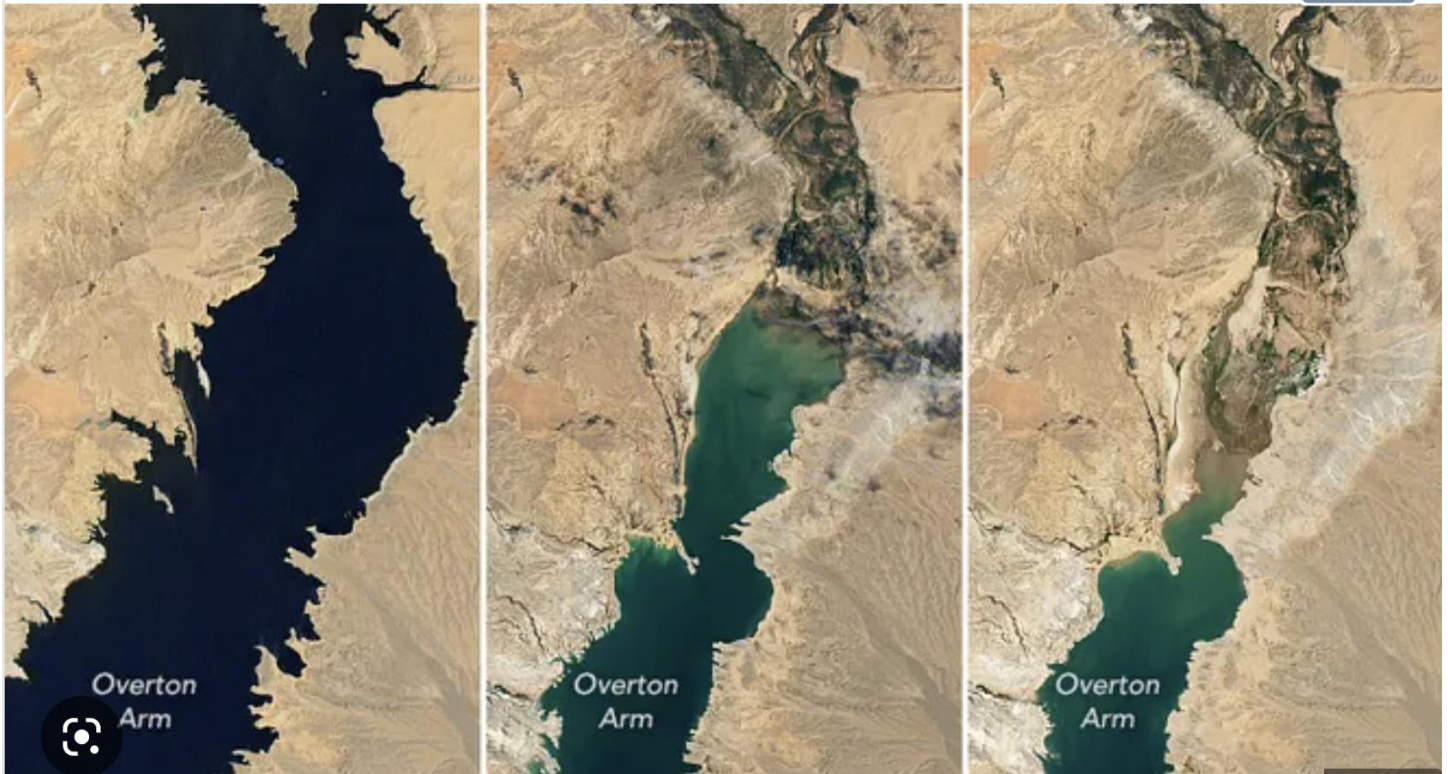
this water going to come from? It cannot come from California's current sources of water which includes reservoirs inside and outside of the state which are at a fraction of their normal capacity and whose agencies are draconianly cutting allocations.

The LA Times' headline on November 23, 2022 says it all, "*It's a disaster.' Drought dramatically shrinking California farmland, costing \$1.7 billion.*" The article goes on to state that California has just gone through the state's driest three-year period on record, and this year the drought has pushed the fallowing of farmland to a new high. Further, scientists predict a fourth year of drought which puts California into uncharted territory.

Impacts of this current drought:

- California's irrigated farmland shrank by 752,000 acres, or nearly 10%, in 2022 compared with 2019 — the year prior to the drought. That was up from an estimated 563,000 acres of fallowed farmland last year.
- Gross crop revenues fell \$1.7 billion, or 4.6%, this year. Revenues of the state's food processing and manufacturing industries declined nearly \$3.5 billion, or 7.8%.
- An estimated 12,000 agricultural jobs were lost, representing a 2.8% decline.
- The amount of farmland left dry this year surpassed the peak of fallowed land during California's last drought from 2012 to 2016.
- With the Sacramento River watershed parched and Shasta Lake at low levels, wildlife officials dedicated some water to try to help the spawning of endangered winter-run Chinook salmon, which contributed to the cuts in water deliveries to farms. Very few fish survived.
- Lack of water now threatens millions of wetland-dependent birds, and could affect the migratory path along the Pacific Flyway.

⁵⁰ <https://www.washingtonpost.com/climate-environment/2022/10/25/california-drought-forecast-record-dry/>



Satellite view of the Colorado River -- one of California's largest water sources

The following chart enumerates how much supplemental water will be required:

Table 3 Estimated Water Demand for Supplemental Water at Two High Risk Areas within the Angeles National Forest

Subsection	Estimated Water Demand	
	acre-feet/year	gallons/year
E1/E1A		
E1/E1A-4	215.00	70,053,892.00
With 10% contingency	236.50	77,059,281.20
E2/E2A (includes areas within the SGMNM)		
E2/E2A-4	1.98	646,651.00
With 10% contingency	2.18	711,316.10

**70 to 77 MILLION GALLONS OF WATER PER YEAR!
 PLUS 194 MILLION GALLONS OF WATER DURING CONSTRUCTION!
 Assuming 7 years⁵¹ of construction: 733 MILLION GALLONS OF WATER!**

733 million gallons of water would provide water for 6,275 households in Los Angeles for an entire year assuming a generous use of 320 gallons of water use per day or could fill 1,110 Olympic-sized swimming pools.

⁵¹ Can be 7 years, but will probably exceed 10 years.

CHSRA states that water will be provided by agencies such as wholesale water and retail domestic potable water agencies that serve the area. While none of this water would be drawn from natural water sources in the ANF, it will divert water used by businesses, residences, farms, ranches, and commercial enterprises.

Without construction of the high-speed rail project, water providers predict that sufficient water supplies would be available to meet demands in 2020 (it is nearly 2023), assuming normal water year conditions. However, in the event of single or multiple dry year conditions, which is the current situation with no end in sight, demands would exceed supplies in 2020. Additional water supplies would be needed to meet demands under such conditions, with or without construction of the project. Without the allocation of additional water during dry years, there may not be water supplies available from these providers. Every day it seems like there is another piece of news about water cuts from the usual reliable water suppliers. In October 2022, it was announced that the southwestern states that rely on the Colorado River must implement further cuts because the water levels are so low (25% of normal) that there won't be enough water to generate hydro power. The risk of dead pooling⁵² is real.

CHSRA states that 10-25% of construction water can be recycled, treated, and then also re-used again for supplemental water. Even if this were true, any water for this project is too much water, particularly when we have essential uses for growing food and raising livestock, for drinking, cooking, washing, and flushing one's toilet.

With respect to water access and consumption, California residents, businesses, and farms should take precedence. California is the world's 5th largest supplier of food, cotton fiber, and other agricultural commodities. In the U.S., California is the largest producer of food, despite having less than 4% of the farms in the country.⁵³ It is simply reckless and wasteful, not to mention unfair, to divert water from anywhere in the Western United States for this project.

Per CHSRA, water for construction would be simply provided and delivered by domestic and wholesale providers to construction sites (primarily portal and adit locations) via pipelines that would be constructed as part of the project. These pipelines have been incorporated into the project footprint and have been evaluated in the impact analysis. Many of the portal and adit locations where domestic and wholesale water supplies would be piped in for construction are either within or near the Angeles National Forest and San Gabriel National Monument. These pipelines are just another encroachment into the environmentally-sensitive forest.

It is not a simple process to produce water from underground water resources. A production well would need to produce several hundred gallons of water per minute. Most of the bedrock wells in the vicinity of the tunnel alignments are low-yield wells for private uses⁵⁴ and are not capable of producing the quantity of water needed for supplementing affected surface water resources. A large yielding well would need to be in an alluvial groundwater basin rather than in bedrock areas. This would likely result in wells being located outside the ANF in basins—the Santa Clara River Valley Groundwater Basin and the San Fernando Valley Groundwater Basin.

Question: Are these water pipelines permanent infrastructure?

Question: Are the water storage tanks permanent infrastructure?

Question: Who pays for the 10-years of post-construction monitoring?

⁵² Dead pool occurs when water in a reservoir drops so low that it can't flow downstream from the dam. The biggest concerns are Lake Powell, behind Glen Canyon Dam on the Utah-Arizona border, and Lake Mead, behind Boulder Canyon Dam on the Nevada-Arizona border.

⁵³ <https://blog.aghires.com/california-largest-food-producer-u-s/>

⁵⁴ This statement is confusing because CHSRA has stated that they would not utilize water from the ANF. We assumed it was because the optics are terrible but apparently it is because the pumps are not robust enough.

Question: Who pays for the water during and after construction?

Question: Who pays for the replacement water delivery systems?

Question: Are the water agencies who are assumed to be supplying the replacement water aware of this plan?

Question: Why is CHSRA going to pump water themselves if they are planning on getting their water from local water agencies? Don't local water agencies also rely on this groundwater for their inventory? Isn't that larceny?

Question: With respect to water allocation, why should this project be given priority over everyone else?

CHAPTER 3.9: GEOLOGY, SOILS, SEISMICITY, PALEONTOLOGICAL RESOURCES

In this section, we will discuss the CEQA mandates and CHSRA's responsibilities as they relate to geology, soils, seismicity, and paleontological resources.

CEQA Mandates

1. "CEQA was enacted to advance four related purposes; to (1) inform the government and public about a proposed activity's potential environmental impacts; (2) identify ways to reduce, or avoid, environmental damage; (3) prevent environmental damage by requiring project changes via alternatives or mitigation measures when feasible; and (4) disclose to the public the rationale for governmental approval of a project that may significantly impact the environment." (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 382.)
2. To further these goals, CEQA requires an agency to prepare an EIR for any proposed project that may have a significant effect on the environment. (Pub. Resources Code §§ 21100(a), 21151(a), 21080(d), 21080.2(d).)
3. "An [EIR] is the public document used by the governmental agency to analyze the significant environmental effects of a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid the possible environmental damage." (14 Cal. Code Regs. § 15002(f); Pub. Resources Code, § 21002.1) The EIR must clearly identify and describe the project's significant effects on the environment. (14 Cal. Code Regs. § 15126.2.)
4. "An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR." (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185.) Failure to adequately describe a project undermines CEQA.
5. The EIR must "describe feasible measures which could minimize significant adverse impacts," and the "formulation of mitigation measures shall not be deferred until some future time." (14 Cal. Code Regs. § 15126.4.)
6. Under CEQA, an agency must solicit and respond to comments from the public and from other agencies concerned with the project." (14 Cal. Code Regs. § 15200(j).)
7. The agency must evaluate comments on environmental issues received from persons who reviewed the Draft EIR and prepare a written response. (14 Cal. Code Regs. § 15088.) The agency must address "in detail" objections raised in the comments, "giving reason why specific comments and suggestions were not accepted. Conclusory statements unsupported by factual information will not suffice." (14 Cal. Code Regs. § 15088.)

Failure to Meet Mandates

The DEIR is 7,000 pages long (6 times the length of *War and Peace*) and yet still fails to meet the State Required Mandates on several levels as follows:

1. **Seismicity**. The DEIR proposes a design and build contract whereby the contractor, if one can be located, will somehow determine the subsurface features of the route. CHSRA only drilled 6 bore holes to cover the area of the 6 alternative routes. This is an insufficient number of bore holes for 28 miles of tunneling per alternative. Since earthquake faults that are not always “surface reflected,” the subsurface conditions require the drilling of about 150 bore holes along each route. There is inadequate subsurface testing to allow a reasonably prudent contractor to enter into a design and build contract. More importantly, the CHSRA does not have enough information to make a rational decision about which route – if any – should be selected. The failure to test prior to issuing the DEIR violates Cal. Code Regs (14 Cal. Code Regs. § 15126.4.) You can't approve that which you do not know. Kicking the can down the road is an abrogation of the Authority's duties.

Questions:

- 1.1 Question: How many bore holes would a reasonable person making multi-billion-dollar decisions need along each proposed route to have sufficient information to make an “accurate stable and finite project description”?
- 1.2 Question: How can the Authority decide which route, if any, to approve if it has not conducted the tests (bore holes) needed to derive the requisite information?
- 1.3 Question: Has the authority approached any contractor about what information it will need to enter into a “design and build” contract for tunneling through the Angeles National Forest (ANF) or the Transverse Mountains?
- 1.4 Question: Is there an estimated cost for a design and build contract for tunneling through the ANF?
- 1.5 Question: What happens if the bore holes drilled along the preferred alternative confirm that preferred alternative is infeasible?
- 1.6 Question: What happens if the drilling of all bore holes yields results that render all the alternatives infeasible?

2. **Track Misalignment**: CHSRA proposes to mitigate the derailment damages likely to be caused by an earthquake event with the use of early earthquake warning (EEW) systems which will then contact the train to slow down.

Questions:

- 2.1 Question: At 200 miles per hour, how long (in miles and time) will it take a train to slow down and stop before derailing?
- 2.2 Question: Would restricting the train's speed to no more than 100 mph in a tunnel be a reasonable mitigation measure to decrease stopping distance and time?
- 2.3 Question: If the train were limited to traveling at 100 mph through the tunnel, wouldn't it be easier and less expensive to select the "no project" alternative and not tunnel under the ANF?
- 2.4 Question: The CHSRA talks about mitigating problems by using the Asian and European models but does not describe such models. What are those models?

3. **Tunnel Boring Machines**: In Seattle the tunnel boring machine (TBM) was named Big Bertha, after the first female mayor of Seattle. It got stuck in the hole and took about a year to extract. Portions of the geology of the Seattle tunnel can be similar to that found in the ANF. This is especially true around existing earthquakes that have pulverized the rock, and which will likely have excessive water pressure.

Question: How long would it take to extract the TBM at 2,000 feet from the ANF?

Question: What is the additional cost of extracting a TBM from the ANF?

4. Hydrology - High Pressure Water: The DEIR states that when rocks have been crushed by earthquakes, the water pressure can be in excess of 25 bars. Twenty-five bars equal 362 psi of water pressure. Water pressure from most fire hydrants is 50 psi to 100 psi. This makes 25 bars up to 6 times as strong as pressure from a fire hydrant.

Question: How will the tunnels be constructed to meet this high water pressure?

Question: Where will all the water be sent during construction?

Question: How will high water pressure affect using the second tunnel as an escape for passengers from the first tunnel during an earthquake or derailment?

Question: At what pressure (psi) will water seep into tunnels?

Question: What is effect of water seeping into the tunnel?

5. Hydrology - Surface Water: The tunneling will likely cause the dewatering of the surface water with the attendant adverse consequences to flora and fauna. This happened in the Runyon Canyon portion of the Hollywood Hills during the construction in the Metro Red Line.

Question: Will the US Forest Service have the authority to withdraw its permit allowing CHSRA to travel through the ANF during or after the completion of the tunneling because of dewatering?

Question: Where will the water come from to provide water to the surface to replace the dewatering effect of tunneling?

Question: How much replacement water is needed and how much will it cost?

6. Hydrology - Earthquakes: The addition to or removal of water from surface formations can cause earthquakes. There are a series of articles in the 2014 *Smithsonian* which discuss the possibility of earthquakes caused by inserting liquids into underground formations (Oklahoma fracking) or removing water from the formation (Central California).

Question: What studies have the Authority conducted on the effect of the removal of water (dewatering) on earthquakes in the Transverse Mountains?

7. Electricity: There is no analysis of who is going to provide the electrical infrastructure for this section of CHSR. Neither the Los Angeles Department of Water and Power (LADWP) nor Southern California Edison (SCE) have commented on the cost of infrastructure nor who will pay for it. This is a failure to describe the project. This failure is a system-wide failure which may make the entire project infeasible. The questions which the DEIR fail to address are as follows:

Question: If public or private utilities do not pay for the purchase and installation of the electrical infrastructure for Palmdale to Burbank, who will pay for it?

Question: Regardless of who pays for the electrical infrastructure for the Palmdale to Burbank section, what is the estimated cost in 2022 dollars?

Question: Recently there have been flex alerts with threats of rolling blackouts of electricity. What priority of electrical usage does CHRSA have compared with residential and commercial users?

Question: Is the priority for usage consistent between all potential providers of electricity?

Question: What happens if electricity is not available on a portion of the CHRSA system?

Question: What agreements or memorandums of understanding does the Authority have with the utilities within the Palmdale to Burbank section to provide electricity or electrical infrastructure?

Question: Has CHSRA discussed these or similar issues with the LADWP?

8. **Conclusion:** “Substantial Evidence” is needed to sustain the approval of an EIR. In this matter there is no “substantial evidence” because there is no evidence at all. The use of a design and build standard means that all facts needed to determine if the project is feasible or what mitigation is appropriate will be made after the approval of the project. That is backwards and specifically prohibited under California law.

Additional Questions on this Chapter:

Question: Why isn't all the necessary/required and voluminous testing not being done PRIOR to approval of the preferred build alternative? As the many graphs included in this section include projections without the foundation of any previously proven results, what assurance does the public have that CHSRA can successfully complete this project?

Question: What is the reason that HSR has not already conducted the additional test bores necessary to evaluate the feasibility of the tunneled routes? Shouldn't that testing have occurred and the results been made available prior to the release of this DEIR?

Question: What are the dates of the graphs presented in this section?

Question: In what ways has CHSRA prepared for catastrophes (including but not limited to deaths of construction workers and/or eventual riders) that may occur as a result of tunneling through the San Gabriel Mountains?

Question: Is CHSRA prepared to reimburse the citizens that live in the Foothills for effects they may suffer as a result of construction and/or operation of the train, including but not limited to the depletion of water, landslides, deforestation, and construction impacts that disrupt everyday life?

Question: Why is CHSRA pursuing this project section when it knows that all 6 proposed build alternatives cross fault lines in many areas?

CHAPTER AND APPENDIX 3.11: SAFETY AND SECURITY

According to CHSRA, the high-speed train will be fully access controlled:

- Public to access train by platform only
- Access control barriers and railway/roadway barriers to prevent intrusion into the right of way, the fixed infrastructure and would employ the latest safety features and design to enable the trains to stay upright and in line in the event of a derailment
- Protect against collisions and derailments / outside hazards-intrusions into the right of way
- Earthquakes and severe weather conditions

The HSR guideway, stations and associated facilities would include:

- Fire and life safety infrastructure (including fire and smoke prevention and control)
- Security and communication systems
- Features to manage adjacent hazards from electrical and other utilities
- Hazardous materials facilities
- Oil and gas wells
- Wind and turbines

Appropriate setbacks and access controls for adjacent facilities or areas underneath elevated structures

- Based on existing regulations, guidance, or site-specific analysis, would maintain the safety and security of both the California HSR system operations and the adjacent communities.

The Authority will require the Safety and Security Management plan to be developed and implemented prior to project construction.

Regional and local safety plan analysis Summary shows:

- City of Lancaster, Palmdale, Los Angeles Burbank
- Los Angeles County
- Whiteman Airport, Hollywood Burbank Airport

These safety plans all together cover:

- Geology and seismicity. Flooding and drainage, noise, air installation land use compatibility, hazardous materials, crime prevention, fire prevention, disaster preparedness, emergency medical services, natural and human made hazardous materials, comprehensive risk management plans, public safety, safety and security in parking areas and commercial and residential areas, safety for pedestrians, bicyclists and equestrians, planned response to emergencies.

Question: What is the safety plan to prevent a derailment?

Emergency Response Plans

- City of Burbank, Lancaster, Palmdale, Santa Clarita, Los Angeles
- Los Angeles County, Southern California Association of Governments

These organizations cover: Prepare the district to respond to emergencies using the Standardized Emergency Management System, strategies to address multi hazard issue as well as hazard specific activities for windstorm, earthquakes, fires, flood, landslides and terrorism, ensure that the long-term values of the community are not compromised, strategies to ensure safety and mobility of the region's residents, including drivers and passengers, transit riders, pedestrians and bicyclists.

Question: What is the emergency response plan in the event there is a derailment?

Consistency with plans and Laws:

- The Authority reviewed 14 plans. Each of the 6 Building Alternatives is inconsistent with one policy from the Los Angeles County General Plan 2035.
That policy is: The safety element of this plan addresses limited aspects of human-made disasters, such as hazardous waste and materials management, in particular, the plan addresses those aspects related to seismic events, fires and floods.

Inconsistent for all 6 alternatives

- Some features of the Palmdale to Burbank Project Section could introduce hazardous waste and materials to the project area.

- Despite the inconsistency, the project is consistent with the majority of regional and local policies and plans.

Question: How can CHSRA claim to be “consistent” with local safety policies?

Safety and Security Resource Areas

- Right of ways and stations as well as landfills must be ½ mile from the project footprint
- Schools must be ¼ miles away from project footprint
- Airports and high-risk facilities must be 2 miles from the project footprint
- Oil and Gas wells must be 150-foot buffer from alignment centerline
- All sections above must be ½ mile away from the airport

Question: On what basis does CHSRA believe that 150 feet of clearance from a track to a gas line is safe?

The construction team is supposed to comply to all safety and security standards and present their plan to the Authority prior to breaking ground.

Question: Who is going to monitor the construction contractor to ensure they are meeting all the standards in their plan? How often will monitoring be done?

All fire departments along the Palmdale to Burbank project section will have a 2-to-5-minute response time.

All the police departments along the Palmdale to Burbank project section will have a 3.36-to-16-minute response time.

Question: How can CHSRA assert these time frames when a great portion of the alignment will run through the Angeles National Forest, and current emergency response times to locations in this area already exceed CHSRA’s stated response times?

All Medical Emergency Facilities along the Palmdale to Burbank project section all respond to 911 calls

- At grade railroad crossings can hinder emergency response times when the train block the crossings.

Community Safety and Security

- This section covers safety and security in relation to vehicles, pedestrians, railroad operations, airport, schools, high-risk facilities, fall hazards. High winds, Valley Fever, geotechnical hazards, and landfills.
- High winds are an issue. There are some mountain areas of California where the wind was measured at 100mph and 130mph.

Question: How will CHSRA mitigate the inevitable spread of Valley Fever fungal spores arising from digging and transporting dirt? (Note: there were over 7,500 cases of Valley Fever in 2017.)

Geotechnical Hazards

- There is a history of earthquakes in Southern California.
- The response plan acknowledges that a large earthquake could exceed the response capabilities of the individual cities. Response and disaster relief would have to come from state and federal governments.
- There is a 1% annual chance of a flooding and high-risk flood zones along the Palmdale to Burbank Section.
- Even though there is a ¼ mile buffer from landfills to the project footprint, they have the potential to release methane gas, which may present an explosion risk.

- Due to Southern California's hot climate, wildfires have posed a threat to communities, some in the Fire Hazard Severity Zones in the Palmdale to Burbank section.
- Temporary Road Closures will be between 5 and 17.
- Permanent interference with emergency response times from construction activities. From the 6 build alternatives there will be between 5 and 13 permanent road closures

Question: How will CHSRA build for, and respond to, an earthquake in the event train(s) are in tunnels during the earthquake event?

Special measures are taken in response to:

- Temporary and permanent road closures, emergency response times, interference response from train and increased activity at stations and facilities, community safety and security, temporary exposure to criminal activity at construction sites, temporary exposure to construction site hazards, temporary exposure to traffic hazards, permanent exposure to traffic hazards, permanent interference with airport safety,
- Airport land use planning documents would represent navigation hazards to aircraft and hazards to people on the ground in areas exposed to aircraft overflight
- The central subsection of Agua Dulce Airport and Whiteman Airport are between 500 feet and 2 miles from the project footprint
- The Burbank subsection Hollywood Burbank Airport is 500 feet from the Project footprint
- Check rails, guard rails and derailment walls would be used in specific areas with a high risk or high impact from derailment areas

Question: Why would CHSRA build structures around airports that exceed the height limits established by the airports? Wouldn't doing so interfere with air traffic controls?

High-Speed Rail systems accidents

- Train to train accidents are minimized by the use of the ACT (automatic train control), which can slow down the train or stop it entirely. It controls the electricity.
- TSA would minimize the crime and terrorist threats to the train and passengers
- The train would be going through high fire risk areas and might encounter land or mudslides and flooding

NEPA concluded that before mitigation of ALL building alternatives there were no adverse effects in these areas

- Valley fever
- Exposure risk from High risk Facilities
- Permanent Operational safety impacts
- Exposure to high risk facilities and fall hazards
- Permanent criminal and terrorist activity
- Safety hazards to schools
- Permanent exposure to wildfire hazards
- Post wildfire flooding and landslide risks
- Exposure of passengers to pollutant concentrations due to wildfires
- Fire and wildfire hazards from operations and maintenance

The Angeles National Forest stated: Although the train would not contain flammable materials, the presence of electrical facilities and operation of cars and trucks on new access roads could increase fire risks.

Question: What safety precautions is CHSRA establishing when introducing construction equipment in the Angeles National Forest and other fire-prone areas since most of this area is in a designated High Fire Hazard Severity Zone?

CHAPTER 3.12: SOCIO-ECONOMICS AND COMMUNITIES **APPENDICES 3.12-A, B, C**

This section uses data that relies upon 1978 regulations, instead of the revised regulations issued in September, 2020. Census figures are from 2015. 2014-15 year figures are used for construction. Housing prices are dated from 2008 and 2017. Employment and unemployment rates are dated from 2016. Arleta, Pacoima, Sun Valley, La Tuna Canyon, North San Fernando Blvd., Sylmar, Palmdale, L. A. County, Santa Clarita, and the Antelope Valley area all have different General Plans dated from 1996 to 2016. The “peak year” of construction is 2023. 2040 is the date given for projected growth.

Question: Why does CHSRA use outdated data throughout the DEIR? How can accurate projections be made if CHSRA is relying on data from years ago?

In addition to Palmdale and Burbank displacement and relocation, study areas include Lake View Terrace, Shadow Hills, Pacoima, Sun Valley, Acton, Agua Dulce, and Little Tujunga Canyon. Each of the Build Alternatives includes displacement of businesses which lack nearby relocation areas. Displaced people in both residential and commercial areas can get assistance from relocation agents as required by the 1970 Uniform Relocation Assist and Real Property Acquisition Policies Act. CEQA does not consider displacement an environmental concern.

Question: For local businesses that will be taken by eminent domain, what is the methodology CHSRA will implement to calculate fair compensation for those who have no place to relocate within their current customer base?

“Economic changes caused by the project would not lead to physical deterioration of local including items such as Noise and Vibration, Fugitive Dust, Demolition Plans which are to be part of relocation mitigation plans.”

Economic effects used include changes in property and sales tax, revenue, employment, and school district funding, and agriculture. However, CEQA 15064 (e) states “economic and social changes resulting from a project shall not be treated as significant effects on the environment.” Nevertheless, IMAF’s (Impact Avoidance Minimalization Features) are addressed and contractors must produce plans to minimize effects on low-income and minority residents as well as provide relocation assistance for displaced residents. These plans include items such as noise and vibration, dust emissions, spill, safety, and transportation.

Several residential communities would be divided in Agua Dulce and Lake View Terrace.

Communities which will have physical and visual barriers will be able to give feedback for the High-Speed Rail Authority “to develop enhancements to ameliorate effects associated with community cohesion and community division.” Contractors will supply plans for noise, dust and exhaust control that could affect schools and parks. The contractor submits a “yearly health assessment.”

Question: How does CHSRA propose to mitigate communities that will lose their character and cohesiveness when physically divided by a train? How can CHSRA mitigate intangible losses such as those that will be suffered by these communities?

According to the Authority, the No Project Alternative would still result in other projects due to “anticipated growth” that would require CQUA and NEPA compliance that would also disrupt and divide communities.

Question: On what data is CHSRA relying to project this “anticipated growth,” when, for the first time ever, California lost a Congressional seat as the result of the 2020 Census results? Our population is growing, but at a rate slower than the national average.

Questions:

- Page 3.12-1** Why is the Draft EIR/EIS calling 2016 data, the “most recent available” for a document published in August, 2022? Why have a plan based upon obsolete figures?
- 3.12-3** How can the DEIR presented in 2022 justify using 1978 data when CEQ regulations were adjusted 42 years later in September, 2020?
- 3.12-3** How are people with Limited English Proficiency being made acquainted with the DEIR?
- 3.12-3.** How would inconsistencies with Community Plans be mitigated?
- 3.12-8** Are the listed General Plans the most recent ones? If not, why not?
- 3.12-2** How are growth projections of cities to 2040 determined?
- 3.12-3,4,5,6** In what ways are these tables from 2015 pertinent to the future time period for High-Speed Rail construction in these areas?
- Figure 3.12-8** On Map 7 where does E1 come above ground from Little Tujunga Canyon?
- 3.12-9-10** E2 and E2A Build Alternatives are considered “inconsistent” due to a lack of available replacement units. Nevertheless, it is considered “consistent with the majority of regional and local policies and plans.” Is this not a kind of double-speak? How can opposites be true?
- 3.12-23** Why are Sylmar and San Fernando not included in the Study Area?
- 3.12.24** When will the mitigation plans be released to the public? How much time before construction will the public learn of these plans? Who will be writing the mitigation plan?
- 3.12-27** In footnote #4, 2023 “is considered to be the peak year of construction.” How is that date possible?
- 3.12.5-37** Why does the DEIR assume that the Courtship Ranch equestrian facility would be “an important element of community cohesions”? What evidence is there to support this claim?
- 3.12.-37** Since the Covid outbreak has resulted in closed and minimally attended recreational facilities, how can these activities be verified as taking place in Sun Valley?
- 3.12.-38** Housing figures from 2016 in this report have changed significantly when homeless populations, especially around Lake View Terrace and Hansen Dam have grown. What is the current homeless population for the area?
- 3.12.46** Although Burbank has a substantial number of employees in media, hospitals, and the Burbank Airport, how many of them live in Palmdale or Lancaster and could use High-Speed Rail to get to work?
- 3.12.46.** What is the purpose of depicting State and L.A. County employment and projected growth for 2015 and 2040? Is this growth projected to live by High-Speed Rail Stations? Have the exodus figures from the State in the last years been factored in?
- 3.12-47** How have property taxes changed for the area since 2015?

- 3.12-47** Keeping in mind ADA changes in schools due to attrition, gaps in attendance after Covid, and decreases in population, how is table 3.12-15 useful?
- 3.12-49** Stating that the No Project Alternative “could” have similar effects as the train from other, later projects ignores the possibility of the land remaining in its natural, undisturbed form. Why is a disruptive project the only option for the mountains?
- 3.12-50.** Assuming that “188” was meant to be the 118 Freeway, how will the staging area where the two freeways join affect traffic when there is regular daily commuter backup going north on the 210 as well as west on the 118 to Simi Valley and east towards Pasadena?
- 3.12-51** Why is the CMP not in the EIR, rather than developed at the time of construction? How much water, during this period of drought-produced water restrictions would be used to reduce dust?
- If shielding light glare during night work is not sufficient, what recourse would local residents have to correct the problem?
- 3.12-52** What mitigation measures will need to be addressed as the E2 Build Alternative emerges from Little Tujunga Canyon Road in Lake View Terrace?
- 3.12-57** How closely does the Authority work with agents from The Uniform Act? Is there back and forth communication regarding sites? To whom do the agents answer?
- 3.12.6.2.** How much of the No Project Alternative is speculation? How much is substantiated?
- 3.12.6.3** To what extent would construction of the staging area for SR-14-W2 affect students at Broadus Elementary School?
- Although communities may not be disturbed after construction, how long will they be disrupted during construction?
- 3.12-5.2** Are the activities listed here since Covid still in place with participants?
- 3.12-54** What will be mitigation for the division of residential communities in Acton and Agua Dulce?
- 3.12-56** The E2 Build Alternative suggests that residential displacements in Lake View Terrace will not divide a neighborhood, but would affect it by reducing views and paths for walking. To what extent would paths be reduced? How is this not “social isolation”? What mitigation in addition to asking residents for solutions would be in place? How does that make the situation “less significant” as stated in the DEIR?
- 3.12-57** How could Burbank, a separate city, be considered as a replacement property for the Los Angeles County Department of Social Services?
- 3.12-71** How are 2017 housing figures pertinent to residential available units at the time of construction, especially since in 2022 at the time of the DEIR there is a housing shortage?
- 3.12-76** What is the required time period for outreach to communities regarding relocation? Who does the outreach?

How would property values of residences for neighbors of displaced homes be affected? Is there compensation for residences that remain but have lost revenue due to construction? Could property taxes be lowered as a result?

3.12-77 Since “The displacement of sensitive populations by itself, is not environmental impact under CEQA,” is there any required assistance for displaced sensitive people? If not, how can The High-Speed Rail Authority morally justify removing peoples’ housing?

3.12-77 Specifically how will High Speed Rail Authority be communicating with sensitive displaced individuals?

What constitutes “substantial numbers of existing homes?” Why is this appraisal considered “less than significant” and not in need of mitigation when people and parts of communities will be uprooted?

3.12-79 Specialized businesses, especially those established 30 or more years ago, will have difficulty relocating, especially motion picture production businesses. What mitigation will be done to locate suitable sites and costs for needed relocation, including lost income and changes in taxes? Specifically, who will be in charge?

3.12-79 How is it reasonable or even legitimate to assume that businesses can move to other areas? Has the DEIR actually measured the size and type of each business to be displaced and found comparable spaces in the other general locations named? For example, have similar sized locations been found for particular restaurants?

How are businesses supposed to get assistance from the Rail Authority for rebuilding in different areas? Who determines the costs of losing the current locations and rebuilding in other locations?

3.12-81 Is stating that businesses “could relocate” in other communities not a supposition? How can this statement be verified?

3.12-82 Are the “Expanded Commercial and Industrial Resource Areas “ for the E1 Build Alternative accurate for the date of actual construction? If not, what merit do they have?

3.12-85 Has loss of revenue been considered, for example, for a business that would need to relocate from Shadow Hills to Pacoima as suggested for the E2 Build Alternative?

3.12-88 Once again CEQA does not consider displacement as an environment concern. Instead, the DEIR seems to focus upon the job market and regional growth. It states that. “...economic changes caused by the project would not lead to physical deterioration of local communities,” making impacts “less than significant for all six Build Alternatives.” What evidence is available to suggest that relocation would not result in community deterioration? How are individual owners and employees in dislocated businesses affected, especially since they are not likely to be the same people doing construction for High-Speed Rail since they are part of a different job market?

3.12-88 To what extent and how long will utilities be disrupted? Given current drought conditions leading to water shortages, what measures will be required to reduce water loss during construction? How often do routine shutdowns of the East Branch of the California Aqueduct occur? What are some ways that landowners will be helped to protect pipes and ditches when they are “worked with?”

If project construction is to be done by local workers, what are some examples of those jobs? What contractors would be hired to oversee them? Will they be replacing current workers hired by the High-Speed Rail Authority?

3.12-89 How long a period of time would 89 A-weighted decibels be evident? What grazing animals are in the vicinity of construction? What on-going decibel level is acceptable for grazing animals?

3.12-90 The environmental effects from construction, including “fugitive dust and exhaust”, and especially Valley Fever, can be life threatening, even for healthy construction workers. How are contractors experienced in this area? What exactly does “a fugitive dust control plan” consist of? What exactly is a “Valley Fever action plan”? How many workers have contracted Valley Fever during work in the Central Valley? This information is pertinent to future construction.

Who supervises the contractor to follow federal guidelines for noise reduction for neighborhoods, schools, parks, and construction workers?

If a vehicle carrying hazardous waste were to overturn on the 5 Freeway near a school, how would students and the surrounding community’s health be protected?

Since only the health of adults is considered, as opposed to children (“...There is no specific requirement in California for an analysis of children’s health impacts separate from environmental impacts that could affect other individuals”), is this not an example of begging the question of whether or not children are important people?

What recourse would schools and residents have when noise still exceeds minimal Federal requirement standards despite mitigation efforts?

3.12-92 How can use of 2014-15 year figures be pertinent for real construction, which will take place in later years?

3.12-94 Kagel Canyon (correctly spelled) does not have room for replacement housing of houses for sale. To what extent has High-Speed Rail found housing in Tujunga, Sunland, and Sylmar?

3.12-96 How many utility poles would be placed on Agricultural land?

3.12-97 What is the State’s threshold quantity of hazardous substances? What hazardous substances are expected to be stored outside of .25 mile of a school?

Are there any schools within a .25 mile of above ground tracks? What degree magnitude earthquake might derail a train above ground?

3.12-97 At what point in the construction process will **SO-MM#1** annual reports take place? Will they be available in written form to the parties affected?

3.12-98 What exactly would a community workshop consist of? Along with input from the affected community, could community leaders be part of final decision making?

3.12-99 After mitigation changes are developed by the Authority, is continued funding and maintenance of these changes expected to be done by local governments or through private funding? If so, how is that factored into the changes?

Explaining that mitigation measures may very well result in new environmental issues for neighborhoods is not particularly useful for affected communities. How are people to choose in favor of mitigations with little choice?

3.12-101 What specific jobs are going to be filled by local workers? Have local workers been surveyed? How do these jobs differ from those for workers currently being trained and used by the Authority?

Repeatedly the DEIR calls 2023 the "Peak Year of construction." How is that possible?

3.12-102 What is the cause of the increased sales tax? Is it from an influx of workers?

How can the Authority determine that there would be no long-term effects resulting from construction hazards upon children's health?

3.12-111 If private land, for example in the forest, is sold and developed before construction of the chosen route, will new owners be displaced and referred to relocation assistance?

Appendix 3.12-A

The Uniform Act for relocation reimburses up to \$2,500 for searching for replacement property, loss of personal property, and cost of moving. Business reestablishment expenses and operations may receive up to \$20,000. Relocation Agents from the High-Speed Rail Authority will contact businesses. Examples of price differentials are provided in the 1970 Relocation brochure. Businesses, home owners, renters, mobile home owners and renters are eligible for assistance if they live in the U.S. They may choose their own replacement location if it meets required "decent, safe, and sanitary conditions." (DSS)

Appendix 3.12-B

This appendix reviews effects on school district funding and bus transportation routes. A reduction in student attendance would reduce school funding. There would be revenue losses to school districts from parcel acquisitions with the greatest percentage in the Action – Agua Dulce School District. Five different school districts are affected. No schools would be affected by the No Project Alternative.

During construction there will be traffic diversions. Penrose Street in Sun Valley will be closed.

Appendix 3.12-C

Maps in Appendix C show the .05 footprint of all Build Alternatives in addition to focusing upon children's health which can be affected by respiratory impacts, noise, chemical use, and safety risks. There are 50 schools within .05 miles of the Build Alternatives. There are 28 parks: 15 passive and 13 active. The Rim of the Valley Trail, the San Gabriel Mountains Monument, Vasquez Rocks, Hansen Dam, Tujunga Ponds, and the Pacific Crest Trail are among the passive group, while Roger Jessup Park in Pacoima, Stonehurst, and the Sun Valley Recreation Center as well as playgrounds connected to schools are in the active category. There are also 182-233 community facilities located in the Build Alternative.

CHAPTER 3.14: AGRICULTURE FARMLAND AND FOREST LAND
CHAPTER 3.15: PARKS, RECREATION AND OPEN SPACE
APPENDIX 3.1-B: USFS CONSISTENCY ANALYSIS

Section 3.14.2.1 of the DEIR references a number of federal laws, regulations, and orders which govern use of the land within the borders of the Angeles National Forest (the “Forest” or the “ANF”) and the San Gabriel Mountains National Monument (the “Monument” or the “SGMNM”), including the following:

1. The San Gabriel Mountains National Monument Management Plan, the purpose of which is to provide guidance for the management of the Monument; and
2. The USFS’s 2005 Land Management Plan (the “LMP”) for the Pacific Southwest Region, including the Forest, which is comprised of the following:
 - a. Part 1: Southern California National Forest Vision directs the long-term vision and strategic management of the ANF (USDA 2005a);
 - b. Part 2: Angeles National Forest Strategy describes the implementing objectives to achieve the vision described in Part 1 (USDA 2005b); and
 - c. Part 3: Design Criteria for the Southern California National Forests contains the guiding laws and standards during project planning and implementation (USDA 2005c).

Specifically, Part 3 of the LMP comprises the laws that the USFS will follow as the national forest implements projects and activities over time. “The rules include the laws, agency policy, standards, and the associated guidance that is referenced for use at the project level.”⁵⁵ Part 3 includes two components: “The first component contains the forest plan standards and guidelines, and the second component contains the laws, policy or other direction that may be applicable to proposed activities. The standards are the fundamental requirements that define the parameters for the activities that the Forest Service anticipates.”⁵⁶

Section 3.14.3 (“Consistency with Plans and Laws”) of the DEIR states that The Authority, “as the lead state and federal agency proposing to construct and operate the California HSR System, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction on the selected Build Alternative. Therefore, **there would be no inconsistencies between the six Build Alternatives and these federal and state laws and regulations.**”

In reviewing the applicable laws and regulations governing the Forest and the Monument in comparison with CHSRA’s plans, we have concluded that there are a number of inconsistencies between the six proposed Build Alternatives and the federal and state laws and regulations.

First and foremost, Section 3.14.2.1 of the DEIR references the Federal Land Policy and Management Act of 1976, which makes it law that “public lands be retained in Federal Ownership.” Section 102(a)(8) of the FLPMA states that it is the policy of the United States that, “the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, **will preserve and protect certain public lands in their natural condition**; that will provide food and habitat for fish and domestic animals; and that will provide for outdoor recreation and human occupancy and use.”

Question: How are CHSRA’s plans with respect to the Federally-owned/controlled lands of the Forest, the Monument, and the Hansen Dam Open Space/Recreation Area consistent with the federal directive to preserve and protect public lands in their natural condition?

⁵⁵ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 1

⁵⁶ USDA Land Management Plan (2005); Part 3 Design Criteria for Southern California National Forests, p. 1

Question: If CHSRA has determined that the impacted areas of the Forest, the Monument, and the Hansen Dam Open Space/Recreation Area do not qualify as “certain” public lands, for what reasons has CHSRA determined that these areas are not worthy of preservation and protection? For what reasons should the USFS, the USDA, and the ACoE agree with this determination?

The Parks, Forestry, and Public Property chapter of the Code of Federal Regulations (Section 36 CFR, Chapter II of the Forest Service, Department of Agriculture) sets forth a two-tiered screening process by which the USFS shall determine whether or not it may consider a Special Use Permit application. The first tier of the screening criteria includes the following two (of six total) criteria for consideration:

- (iv) *The proposed use will not create an exclusive or perpetual right of use or occupancy.*
- (v) *The proposed use will not unreasonably conflict or interfere with administrative use by the Forest Service, other scheduled or authorized existing uses of the National Forest System, or use of adjacent non-National Forest lands.*⁵⁷

If the USFS determines that an application meets the minimum six criteria set forth in the first-tier screening, it may proceed to the second-tier screening.

Question: CHSRA proposes to introduce significant infrastructure within the Forest and the Monument, including over 20 miles of concrete tunnels beneath the surface. Does CHSRA have a plan to remove these tunnels at the end of the train’s life cycle? If not, how do the proposed tunnels not create perpetual occupancy of Forest land? How is the creation of these tunnels (in addition to corollary infrastructure) not in violation of (iv) of the 36 C.F.R. § 251.54 (e)(2)?

Question: CHSRA’s proposed alignments and infrastructure create significant impacts and pose significant threats to authorized existing uses of the Forest, including but not limited to use by wildlife, use by flora, and use by humans of the water resources within the Forest. How has CHSRA determined that its proposed high-speed rail system within the Forest does not unreasonably conflict or interfere with these uses?

Question: CHSRA has proposed to place not only portals, but also significant infrastructure related to portals (e.g., Noise attenuation hoods, ventilation buildings, access roads, lighting, communication facilities, parking, and public utilities) immediately adjacent to Forest and Monument land (specifically near Aliso Canyon and the Big Tujunga Wash). How does the introduction of this significant infrastructure not unreasonably conflict or interfere with the use of adjacent non-National Forest lands?

Question: Based on the fact that CHSRA’s proposed plans fail to meet the prerequisite conditions (iv) and (v) of the first-tier screening process, what leads CHSRA to believe that the USFS will allow it to move forward to the second tier of the screening process?

Per CHSRA’s explanation on Page 3.1-B-5, “If USFS determines that an application meets the minimum requirements identified in the initial screening, then it proceeds to evaluate the application against the following five criteria, **any one of which would require rejection of the application**”:

- (i) **The proposed use would be inconsistent or incompatible with the purposes for which the lands are managed**, or with other uses; or
- (ii) The proposed use would not be in the public interest; or
- (iii) The proponent is not qualified; or
- (iv) **The proponent does not or cannot demonstrate technical or economic feasibility of the proposed use or the financial or technical capability to undertake the use and to fully comply with the terms and conditions of the authorization**; or

⁵⁷ 36 C.F.R. § 251.54 (e)(2)

(v) There is no person or entity authorized to sign a special use authorization and/or there is no person or entity willing to accept responsibility for adherence to the terms and conditions of the authorization.⁵⁸

We contend that USFS should deny the special use permit as CHSRA's plans do not meet the requirements set forth in 3.1-B-5(i) above. Table 4.3 ("Suitable Uses for Selected ANF, including SGMNM, Land Use Categories") sets for the Land Use categories as designated by the USFS and the types of development/infrastructure that is permitted (or not permitted) in each zone. CHSRA plans to construct its High-Speed Rail system through USFS designated as Back Country Motorized Use Restricted, Back Country Non-Motorized, and Critical Biological. However, as set forth in Table 4-3, the USFS has designated these categories as NOT SUITABLE for Major Transportation Corridors. Therefore, each of the Build Alternatives (and CHSRA's plans overall) are both inconsistent and incompatible with the purposes for which the land is managed. Per the requirements of the second-tier of the screening process, the USFS must reject any application by CHSRA for a Special Use Authorization as it failed to meet the criteria set forth in 3.1-B-5(i).

We further contend that the USFS should deny a Special Use Authorization as CHSRA cannot meet the economic feasibility requirement as set forth in 3.1-B-5(iv). There is simply not enough funding available now or in the foreseeable future to complete any project section beyond the initial Fresno to Bakersfield line (which is iffy at best). The only guaranteed funding currently is \$3.5 billion from the Federal Government (which must be and is being matched by California funds), plus \$9.95 billion from the bond issue. Those funding sources provide a total of \$17 billion, leaving a budget shortfall of \$89 billion. While CHSRA does receive cap & trade monies, this is an unstable revenue stream and will terminate at some point in time. CHSRA had originally relied on private investors as "matching funds" for both the bond funding and the federal grant requirements. However, private investors have failed to materialize. It was supposedly these private investors who would likely be the train operator; without a train operator, there will be no running trains. Without running trains, there is no ridership. Without ridership, there is no ridership revenue. This clearly fails the economic feasibility test on every level.

Question: Given that CHSRA has a budget shortfall of \$89 billion and no private investors in sight, on what grounds does CHSRA believe that it meets the economic feasibility requirement of the USFS to approve a special use permit?

Question: Given that if an applicant fails to meet any one of the five stated criteria, the USFS must reject the special use permit application, and further given that CHSRA fails to meet at least two of the five stated criteria, what leads CHSRA to believe that it will be able to secure a special use permit from the USFS?

President Obama's Proclamation designation of 346,177 acres of existing federal lands as the Monument underscored the significance of this land, which is a, "unique recreational and educational gateway to America's most urban national forest in the nation's most populous county."⁵⁹ While the Proclamation acknowledged that pre-existing uses for utilities and infrastructure would be permitted to continue, the intention of the proclamation is clearly to reduce the amount of infrastructure present in the Monument. This is evidenced by the fact that Federal lands and interests in lands within the boundaries of the Monument were withdrawn from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing. Additionally, in "Land Use Zones", the Monument Plan states that, "Mineral and energy resources exploration and development are not suitable within the Monument, except where valid rights already exist at the time of the Proclamation."⁶⁰

Question: As many of the impacts of mining overlap with the impacts of tunneling for a high-speed train, and considering that new mining uses are not being permitted by the USFS within the Monument, what is the justification for allowing tunneling through the Monument?

⁵⁸ 36 C.F.R. § 251.54(e)(5)(i)-(v)

⁵⁹ San Gabriel Mountains National Monument Management Plan, p. 10

⁶⁰ San Gabriel Mountains National Monument Management Plan, p. 14

Question: Considering that mineral and energy resource exploration is less invasive than constructing a tunnel through the Monument, how can CHSRA not be in violation of the spirit of this federal directive?

The intention of the Presidential Proclamation is further underscored by the fact that, with respect to transportation, the stated goals of the Monument Plan are:

1. "Road density within the Monument remains stable or is decreasing;"⁶¹ and
2. "Consider opportunities to reduce the size of the road system by decommissioning individual roads or converting them to non-motorized trails."⁶²

Question: As the stated goal of the Monument Plan is to decrease road density within the Monument, how does CHSRA justify its plans to introduce access roads within the Monument?

The Presidential Proclamation (2014) states with respect to transportation that, "The Secretary shall limit all motor vehicle use to designated roads [and] trails."⁶³

Question: If equipment such as bulldozers, scrapers, skid loaders, backhoe loaders, excavators, articulated haulers, motor graders, and similar vehicular pieces of construction equipment will be needed to create high-speed rail infrastructure in locations where there are no access roads now, how are CHSRA's plans not in violation of the Presidential Proclamation?

With respect to Biological Resources, there are only two stated desired conditions within the Monument Plan:

1. "Habitat conditions are stable or improving over time as indicated by the 2016 Angeles Land Management Plan Monitoring Strategy;" and
2. "Habitats of special status species (threatened and endangered and Forest Service sensitive) in the Monument are managed to preserve and protect these species."⁶⁴

Question: How will habitat conditions stable or improving when construction is introduced within and immediately at the borders of the Monument? How are the proposed alignments within the Monument consistent with the federal guidelines set forth in the Monument plan?

With respect to "Designated Areas and Areas Recommended for Designation," the Monument Plan sets forth the following desired condition:

1. Designated Wilderness and Recommended Wilderness within the Monument are maintained as a naturally evolving and natural-appearing landscape that provides for ***primitive and unconfined recreation use. The sense of remoteness and solitude is maintained.***

Question: How are CHSRA's plans to stage 7+ years of construction adjacent to the Wilderness Areas of the Monument in keeping with USFS directive to maintaining a sense of remoteness and solitude?

Discussion of Water as it pertains to Fire in the Forest.

Any impacts to the groundwater caused by tunneling will remove the sources of water necessary to hydrate the Forest flora, thereby reducing their fuel moisture levels. This impact is all the more important during drought conditions like the ones we are currently experiencing. Dead and dying trees, chaparral, scrub, and other

⁶¹ San Gabriel Mountains National Monument Management Plan, p. 11

⁶² San Gabriel Mountains National Monument Management Plan, p. 24

⁶³ San Gabriel Mountains National Monument Management Plan, p. 22

⁶⁴ San Gabriel Mountains National Monument Management Plan, p. 12

vegetation will contribute to forest fuels and will increase the intensity of wildland fires and the potential for spread to the urban-wildland interface. The LMP explains that, “Excessive fuel loading will increase the scale of forest fires. Drought-caused mortality, making montane conifer forests susceptible to widespread insect and disease outbreaks that, in combination with excessive fuel loading, has set the stage for more large-scale, stand replacing wildland fires.”⁶⁵

As described in the LMP, Goal 1.1 of the Southern California National Forests Vision is to: “*Improve the ability of southern California communities to limit loss of life and property and recover from the high intensity wildland fires that are a natural part of this state's ecosystem;*” and Goal 1.2 is to: “*Restore forest health where alteration of natural fire regimes have put human and natural resource values at risk.*”⁶⁶

Question: How do the tunneling-associated risks of impact to groundwater sources within the Forest not contravene Goals 1.1 and 1.2 of the Southern California National Forests Vision as set forth by the USFS?

In **WL-1** of LMP2 which addresses Threatened, Endangered, Proposed, Candidate, and Sensitive Species Management, the USFS directive is to, “Use vegetation management practices to reduce the intensity of fires to reduce habitat loss due to catastrophic fires.” On page 3.1-B-9 of the DEIR, CHSRA claims that its plans are consistent with this directive as, “Implementation of BIO-MM#54 involves preparation and implementation of an Annual Vegetation Control Plan (VCP). The Authority will prepare a VCP to address vegetation removal for the purpose of maintaining clear areas around HSR facilities and reducing the risk of fire.”

Question: CHSRA’s response is limited to “vegetation removal,” but that only partially addresses vegetation management. Vegetation management includes ensuring that projects do not deplete natural water supplies within the Forest, which would decrease moisture content of the flora and increase fire fuels. Given that CHSRA is anticipating dewatering of Forest land as a result of tunneling, how are its plans consistent with directive WL-1?

In **FIRE-1** of the LMP2, the USFS sets forth directives with respect to Wildfire Prevention. One of those is to, “Reduce the number of human-caused wildland fires and associated human and environmental impacts.” On Page 3.1-B-38, CHSRA claims that its actions are consistent with this directive as it plans to form a committee to “review issues that are critical to fire and life safety and security.”

Question: CHSRA plans to introduce new electric lines within the Forest to power its adits and other facilities. Several of the proposed adits are near Gold Creek Road in Little Tujunga Canyon – an area that burned during the Creek Fire in 2017 (a fire that was caused by power lines). How will building new electric power lines in a high fire severity zone within the Forest serve to reduce the number of human-caused wildland fires?

In **FIRE-2** of the LMP2, the USFS sets forth directives with respect to Direct Community Protection, including the following: “Reduce the number of high risk/high value, and high and moderate risk acres.”

Question: Given that CHSRA plans to introduce new power lines into high fire severity zones within the Forest, it will be increasing, not reducing, the number of acres at high risk of fire. How can CHSRA maintain that its plans are consistent with the FIRE-2 directive?

Discussion of Water as it pertains to Watershed in the Forest.

The importance of the naturally-occurring water sources in the Forest cannot be overstated. The USDA explains that, “In drought-prone California, the quantity, quality, and timely provision of our water are dependent on the health of our national forests. The forests supply, filter, and regulate water from upper watersheds and meadows, providing clean water throughout the year to communities, homes, and wildland

⁶⁵ USFS 2005 Management Plan, Part 1, p23

⁶⁶ USFS 2005 Management Plan, Part 1, p20

habitats. About 384,000 acre-feet of water per year come from the Angeles National Forest, or over 125 billion gallons per year. That equates to:

- Over 180,000 Olympic-size swimming pools
- Enough drinking water for California's population for more than 10 years, or
- Enough water for over 940,000 households for a year.⁶⁷

In the LMP1, the USFS explains the importance of the Angeles National Forest Watershed, which "serves as quality, low-cost, local source of water consumed by the urban population of southern California. The national forests continue to serve as a recharge area for numerous reservoirs and groundwater basins that provide water for numerous communities, and for agricultural and industrial uses."⁶⁸ In the section on Watershed Function, the USFS sets forth the goal to, "Protect, maintain, and restore natural watershed functions, including slope processes, surface water and groundwater flow and retention, and riparian area sustainability," and, further, to, "restore, maintain, and improve watershed functions."⁶⁹

According to the LMP1, "Watershed conditions, or watershed health, of the national forests vary depending upon the amount of disturbance that has occurred within each watershed, and the effect of the disturbance on the natural integrity of the watershed as a whole."⁷⁰ The USFS explains that, "The potential for creating or exacerbating geologic hazards and risks can be affected by many different activities. Some of these include wildland fire, encroaching urbanization, increasing recreation uses, and disturbance from land management activities such as construction, reconstruction, operation or maintenance of roads and trails, mines, energy mineral developments, dams, reservoirs and **tunnels**."⁷¹

Question: Given the known risks to groundwater sources within the ANF, how does CHSRA's tunneling proposal protect and/or improve watershed functions?

In the section on Water Management, the USFS sets forth the goal to, "Conserve and protect high quality water sources in quantities adequate to meet national forest needs."⁷²

Question: Given CHSRA's proposed mitigation measure HYD-MM#4 as set forth in Appendix 3.8-C which calls for importing water to meet forest needs and maintain baseline water levels established before tunneling, how do CHSRA's proposed tunneling plans conserve and protect water sources in quantities adequate to meet forest needs?

On Page 3.1-B-14, CHSRA asserts that its plans are consistent with this directive, despite admitting that, "Tunnel construction under the ANF has the potential to alter hydrogeological conditions, resulting in inflows of groundwater into the tunnel and the subsequent depletion of groundwater aquifers. Depletion of groundwater aquifers could affect the hydrology of groundwater-dependent ecosystems, resulting in effects on species." CHSRA has set forth proposed mitigation measures that would be employed following implementation of its Adaptive Management and Monitoring Program, including, "providing supplemental water where needed, and remediating adversely effected aquatic, riparian and upland resources identified during monitoring. If restoration of affected areas is not successful, compensatory mitigation to offset impacts would be provided."

Question: Per the United States Environmental Protection Agency, "The amount and quality of compensatory mitigation may not substitute for avoiding and minimizing impacts."⁷³ How is it not a preferable choice for

⁶⁷ <https://www.fs.usda.gov/detail/angeles/about-forest/?cid=fseprd604146>

⁶⁸ USFS 2005 Management Plan, Part 1, p8

⁶⁹ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 102

⁷⁰ USFS 2005 Management Plan, Part 1, p40

⁷¹ USFS 2005 Management Plan, Part 1, p41

⁷² USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 103

⁷³ https://www.epa.gov/sites/default/files/2015-08/documents/compensatory_mitigation_factsheet.pdf

CHSRA to simply avoid impacts by designing and selecting a route that does not tunnel through the Forest and jeopardize our natural water sources?

Question: The United States Environmental Protection Agency sets forth three distinct mechanisms for compensatory mitigation, the third and final of which is “In-Lieu Fee Mitigation.” Under this scenario, the permittee (in this case, CHSRA) would provide funds to an in-lieu-fee sponsor (a public agency or non-profit organization; in this case, presumably the USFS) which will then build and maintain a mitigation site.⁷⁴ As CHSRA sets forth compensatory mitigation as a last resort in the event that its other mitigation measures have failed, the possibility exists that it will simply pay a fee to the USFS in the event that it is unable to restore adversely affected resources within the Forest. How will CHSRA calculate compensatory damages in this event? How is it not a preferable course of action to not cause unmitigable damage in the first place?

Question: Given the myriad of mitigation measures proposed to address the very real possibility/likelihood of dewatering and the possibility/likelihood that wildlife, flora, and humans dependent upon the water sources in the Forest will be negatively impacted, and given the possibility that CHSRA will have to pay the USFS in the event that it cannot successfully restore the Forest to pre-tunneling conditions, how is it not a better plan to design and select a route that does not tunnel through the Forest and jeopardize our natural water sources?

On Page 3.1-B-15, CHSRA goes on to state that, “With implementation of IAMFs and mitigation measures, the Build Alternatives would not adversely affect aquatic, riparian or upland ecosystems as a result of indirect effects from tunnel construction.”

Question: Given that one of the proposed mitigation measures is to pay financial remuneration to the USFS in the event that CHSRA’s other mitigation measures fail to restore aquatic, riparian, or upland ecosystems to pre-tunneling conditions, how can CHSRA claim that the Build Alternatives will not adversely affect these ecosystems? Paying for damaged caused that can’t be fixed does not mean that no damage was done.

WAT-1 of LMP2 also sets forth the following directive with respect to Watershed Function: the USFS must, “Assess impacts of proposed groundwater extraction proposals to assure that developments will not adversely affect aquatic, riparian or upland ecosystems.” On page 3.1-B-14 of the DEIR, CHSRA asserts that its plans are consistent with this directive, using the same justification as in previous sections – namely that because it plans to employ mitigation measures, “the Build Alternatives would not adversely affect aquatic, riparian or upland ecosystems as a result of indirect effects from tunnel construction.”

Question: Some of CHSRA’s proposed mitigation measures (e.g., grouting in the tunnels to minimize groundwater inflows) are pre-emptive measures that might enable CHSRA to avoid creating adverse impacts. However, most of CHSRA’s proposed mitigation measures would be employed **because** it adversely affected Forest ecosystems. Habitat remediation as a mitigation measure would be employed **because** CHSRA had already adversely affected Forest ecosystems. “Providing supplemental water where needed” is a mitigation measure that would be employed because CHSRA had already depleted the natural water sources, thus adversely affecting Forest ecosystems. Providing “compensatory mitigation to offset impacts” in the event that its other mitigation measures failed is a mitigation measure that would be employed **because** CHSRA had already adversely affected Forest ecosystems to the point where they could not be otherwise restored. Why does CHSRA mistake “not adversely affecting” Forest resources with proposing mitigation measures that would be employed as a result of it causing these adverse impacts?

WAT-1 of LMP2 also sets forth the following directive with respect to Watershed Function: the USFS must, “Manage Riparian Conservation Areas (RCA) to maintain or improve conditions for riparian dependent resources. Riparian Conservation Areas include aquatic and terrestrial ecosystems and lands adjacent to perennial, intermittent, and ephemeral streams, as well as around meadows, lakes, reservoirs, ponds,

⁷⁴ https://www.epa.gov/sites/default/files/2015-08/documents/compensatory_mitigation_factsheet.pdf

wetlands, vernal pools, seeps, and springs and other bodies of water. Riparian dependent resources are those natural resources that owe their existence to the area, such as fish, amphibians, reptiles, fairy shrimp, aquatic invertebrates, plants, birds, mammals, soil and water quality.” The USFS notes that, “Some of the greatest threats to riparian and aquatic habitats are from diversion of surface water, removal of shallow groundwater, [and] the effects of prolonged drought conditions.”⁷⁵

On Page 3.1-B-16 of the DEIR, CHSRA claims that its actions are consistent with this federal directive because although, “the HSR Build Alternatives would impact riparian habitat, watersheds, streams, and other riparian-dependent upland ecosystems, these impacts would be minimized through implementation of compensatory mitigation for both temporary and permanent impacts to riparian habitat through habitat restoration and revegetation.”

Question: The directive set forth in WAT-1 is to **maintain or improve** conditions for riparian dependent resources. CHSRA admits that its plans will negatively impact riparian-dependent resources. These impacts do not maintain (let alone improve) conditions; CHSRA proposes to damage conditions, then later set about to employ mitigation measures to restore the riparian- dependent resources to pre-tunneling conditions. During the time in between damage and restoration, the directive set forth in WAT-1 is violated, as conditions are not maintained. How can CHSRA claim that its actions are consistent with this directive?

Another directive of WAT-1 states that the USFS must, “Achieve and maintain natural stream channel conductivity, connectivity and function.” In its response on Page 3.1-B-17 of the DEIR, CHSRA asserts that its actions are consistent with this directive, despite the fact that its first sentence admits that, “the HSR infrastructure could alter stream capacity, connectivity, and function.” CHSRA then goes on to delineate a number of mitigation measures, including, for example, “augmenting water supplies for wells and surface water resources... to approximately match baseline conditions.”

Again, CHSRA is mistaking implementing mitigation measures to correct damage with not causing the damage in the first place. On Page 3.1-B-18, CHSRA asserts that, “With implementation of these mitigation measures, the Build Alternatives would not result in a substantial adverse effect to the conductivity, connectivity, and function of natural streams as a result of indirect effects from tunnel construction.”

Question: Trucking in water to replenish wells that CHSRA depleted does not mean that it has not created a substantial adverse effect on natural streams. In fact, exactly the opposite is true; if CHSRA needs to truck in water to replenish wells, it is **because** it has substantially adversely affected the function of natural streams. Given the foregoing, how can CHSRA assert that its plans are consistent with the directive set forth in WAT-1?

In **WAT-2** of the LMP2, the USFS sets forth the following directive with respect to Water Management: the USFS must, “Manage groundwater and surface water to **maintain or improve water quantity** and quality in ways that minimize adverse effects,” including the requirement to, “Assess impacts of proposed groundwater and surface water extraction proposals to assure that developments will not adversely affect aquatic, riparian or upland ecosystems and other uses, resources or rights.”

Question: On Page 3.1-B-20 of the DEIR, CHSRA asserts that its plans are consistent with this directive. Given that CHSRA is planning to truck in or pipe in water as a mitigation measure to restore baseline conditions in the Forest, then clearly the quantity of water will not have been maintained; it will have been depleted. How can CHSRA claim that its plans are consistent with the USFS directive to maintain or improve water quantity within the Forest?

Additionally, **WAT-2** of the LMP2 declares that the USFS must, “Promote water conservation at all national forest administrative and authorized facilities. When reviewing non-forest water-related projects that may affect

⁷⁵ USFS 2005 Management Plan, Part 1, p 42

national forest resources, include appropriate conservation and water quality mitigation measures in the review response.”

Question: Many of CHSRA’s mitigation measures involve the application of water. For example, in order to mitigate fugitive dust at construction staging areas within ANF borders, CHSRA intends to continually spray water for a construction duration of 7+ years. In response to depleting the natural sources of water in the Forest by tunneling, CHSRA proposes to truck in tens of millions of gallons of water to bring the watershed back to baseline levels. How are these proposed mitigation measures consistent with the USFS directive to conserve water at authorized facilities (any infrastructure, construction staging area, or area of CHSRA action or activity being considered an “authorized facility”)?

Another directive of WAT-2 establishes that the USFS must, “Conserve and protect high quality water sources in quantities adequate to meet national forest needs.”

Question: Considering that CHSRA proposes, as mitigation for depleting the natural water supply, to truck in water to meet the needs of the oak trees within the Forest, clearly CHSRA’s actions will create damage such that the water sources are no longer in sufficient quantities to meet Forest needs. How can CHSRA claim that its actions are consistent with the directive set forth in WAT-2?

In LMP3, in the section on “Soil, Water, Riparian, and Heritage Standards,” **S45 states that:** “All construction, reconstruction, operation and maintenance of tunnels on National Forest System lands shall use practices that minimize adverse effects on groundwater aquifers and their surface expressions.”⁷⁶

Question: Given the litany of proposed “mitigation measures” CHSRA has planned to offset the damage to groundwater that is likely to be caused by its tunneling through the ANF, how is CHSRA using practices that minimize adverse effects on groundwater aquifers and their surface expressions?

In the same section, **S46 states that:** “Surface water diversions and groundwater extractions, including wells and spring developments will only be authorized when it is demonstrated by the user, and/or agreed to by the Forest Service, that the water extracted is excess to the current and reasonably foreseeable future needs of forest resources.”⁷⁷

Question: As the loss of groundwater due to CHSRA’s interruption of naturally occurring springs and aquifers amounts to extraction, and as CHSRA proposes to import water to offset the loss due to its extraction, clearly the water extracted as a result of CHSRA’s tunneling is not excess to the current and foreseeable needs of forest resources. How are CHSRA’s tunneling proposals not in direct contradiction to the USFS policy directives?

Discussion of Land Uses within the Angeles National Forest.

In LMP2, the USFS declares that, “The legislative mandate for the management of national forests requires that public lands be **conservatively used and managed** in order to ensure their sustainability and to guarantee that future generations will continue to benefit from their many values.”⁷⁸

Question: How is CHSRA’s proposal to tunnel through the ANF and build corollary infrastructure within the ANF to support a high-speed train system **not** a violation of the legislative mandate to use forest lands conservatively?

⁷⁶ USDA Land Management Plan (2005); Part 3 Design Criteria for Southern California National Forests, p. 10

⁷⁷ USDA Land Management Plan (2005); Part 3 Design Criteria for Southern California National Forests, p. 10

⁷⁸ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 1

Pages 4, 5, and 6 of the LMP2 delineate what uses are considered suitable and unsuitable CHSRA plans for its train and supporting infrastructure to traverse the following categories of USFS land: Developed Areas Interface, Back Country, Back Country Motorized Use Restricted, Back Country Non-motorized, Critical Biological, and Experimental Forest. Table 2.1.3 states that Major Transportation Corridors are NOT A SUITABLE use in any of the following categories of USFS land: Back Country Motorized Use Restricted, Back Country Non-motorized, Critical Biological, and Experimental Forest.

Per the DEIR, CHSRA plans to install permanent infrastructure in portions of the ANF with the following land use designations: Back Country, Back Country/Non-Motorized, Back Country/Motorized Use Restricted, and Critical Biological.⁷⁹

Question: How is CHSRA's proposal to tunnel through the ANF and build corollary infrastructure within the ANF to support a high-speed train system (i.e., creating a Major Transportation Corridor) *not* a violation the USFS "Suitable Uses" as delineated in Table 2.1.3.? Given the USFS's stated use guidelines, what leads CHSRA to believe that it will be granted a Special Use Permit by the USFS for the construction and operation of its high-speed rail system?

Much of CHSRA's footprint within the ANF is set within land designated by the USFS to be "Back Country." Per the LMP2, "although this zone generally allows a broad range of uses, the management intent is to retain the natural character inherent in this zone and limit the level and type of development."⁸⁰

Question: If the stated intention of the USFS is to limit the level and type of development within the Back Country zones, how is CHSRA's proposal to tunnel through the ANF and build corollary infrastructure within the ANF to support a high-speed train system *not* a violation of the intent of the USFS?

In its chapter on "Commodity and Commercial Uses," the USFS states that, "[non-recreation] special uses are authorized *only when they cannot be reasonably accommodated on non-National Forest System land.*"⁸¹ CHSRA previously considered a number of alignments that did not traverse USFS lands, including routes following the 5 and 14 freeways. These alignments could have been reasonably accommodated, but were eliminated from consideration for political (not engineering or geotechnical) reasons.

Question: Given that high-speed rail alignments could be reasonably accommodated on non-National Forest System land, how is CHSRA's proposal to tunnel through the ANF and build corollary infrastructure within the ANF to support a high-speed train system *not* a violation of the intent of the USFS?

In **LANDS-2** of the LMP2, the USFS sets forth directives regarding Non-Recreation Special Use Authorizations, including the following: "Upon termination, restore special use authorization areas to a specified condition."

Question: In the event that CHSRA secures a special use authorization from the USFS to build its train through the ANF, upon expiration or termination of that SUA, how will CHSRA restore the impacted areas to a specified condition? Assuming that the condition is baseline, pre-tunneling, how will CHSRA remove its significant infrastructure from Forest lands?

The LMP2 describes that the high-speed rail resource study area covers four USFS-designated "Places":

1. Soledad Front Country;
2. Angeles Uplands West;

⁷⁹ Page 3.15-143

⁸⁰ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 8

⁸¹ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 31

3. The Front Country; and
4. Big Tujunga Canyon.

For the designated Angeles Uplands West, the LMP2 states that, “Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the arroyo toad, California red-legged frog, southwestern willow flycatcher, San Diego horned lizard, two-striped garter snake, western pond turtle and rare and sensitive plants will be emphasized in all activities.”⁸²

Question: How will 7+ years of construction at multiple locations within the Angeles Uplands West emphasize the protection and enhancement of these species?

For the designated Big Tujunga Canyon Place, the USFS has two stated Program Emphases. The first is: “Forest health in terms of water quality and water needs will be managed to provide for forest ecosystem needs and instream flows necessary to support surface and subsurface resources.”⁸³

Question: Given the anticipated impacts that tunneling will have on naturally occurring water sources within this area, and given CHSRA’s proposed mitigation measure to truck in or pipe in water to restore the watershed to base level conditions pre-tunneling, how is CHSRA’s proposal to tunnel through the ANF *not* a violation of the Program Emphasis for this area?

The second stated Program Emphasis for Big Tujunga Canyon Place is that, “Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species such as the Santa Ana sucker, California red-legged frog, arroyo toad, southwestern willow flycatcher, least Bell’s vireo, San Diego horned lizard, two-striped garter snake, slender horned spineflower and other rare and sensitive plants will be emphasized in all activities.”

Question: How will 7+ years of construction at multiple locations within the Big Tujunga Canyon Place, and specifically the construction of a viaduct structure through the Big Tujunga Canyon Wash, emphasize the protection and enhancement of these species? How will ongoing operation of a train crossing the Big Tujunga Canyon Wash emphasize the protection and enhancement of these species?

The Program Emphasis for the Soledad Front Country states that the, “Protection and enhancement of threatened, endangered, proposed, candidate and sensitive species, such as the unarmored threespine stickleback, arroyo toad, southwestern willow flycatcher, least Bell’s vireo, San Diego horned lizard, two-striped garter snake and sensitive plants will be emphasized in all activities.”⁸⁴

Question: How will 7+ years of construction at multiple locations within the Soledad Front Country Place, and specifically the construction of at-grade and elevated structures through the Soledad Front Country Place, emphasize the protection and enhancement of these species? How will ongoing operation of a train crossing the Soledad Front Country Place at grade emphasize the protection and enhancement of these species?

Appendix L, *Glossary*, of LMP3 defines “aesthetics” as: “The study of science, or philosophy dealing with beauty in nature with judgments concerning beauty. In scenery management, it describes landscapes that give visual and sensory pleasure.” LMP1 dictates that, “Scenic resources will emphasize conserving or restoring

⁸² USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 48

⁸³ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 52

⁸⁴ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 71

aesthetic, recreation, and open space values, especially those of high-valued scenery such as scenic backdrops for local communities and increasingly rare values such as solitude.⁸⁵

Question: Please describe how CHSRA's plans for the following give visual and sensory pleasure:

1. Construction staging areas located within the Forest;
2. Portals and the significant infrastructure surrounding portals located at the borders of the Forest, the Monument, and the Big Tujunga Wash; and
3. Millions of truck trips hauling spoils out of the tunnels, a significant portion of which will be ultimately dumped within the Forest.

Question: The Foothills of the San Gabriel Mountains provide the scenic backdrop for the communities along the Big Tujunga Wash. As CHSRA's proposed viaduct structure across the Big Tujunga Wash will destroy this scenic backdrop, how are CHSRA's plans for this area supporting the directive set forth in LMP1?

In the Landscape Character section of LMP2, the USFS sets forth the directive to, "Maintain the character of key places to preserve their intact nature and valued attributes:

- Maintain the integrity of the expansive, unencumbered landscapes and traditional cultural features that provide the distinctive character of the place;
- Promote the planning and improvement of infrastructure along federal and state scenic travel routes; and
- Promote the consideration of key landscape character in other landscape analyses such as Fireshed."⁸⁶

Question: Every bit of infrastructure that CHSRA is proposing to introduce to the Forest and the Monument seemingly violates the directive to maintain the integrity of unencumbered landscapes. How can CHSRA maintain that there is no inconsistency between its plans and the federal laws and regulations?

Question: Considering that CHSRA has designed its alignments to run through the Forest and the Monument (i.e., not along existing transportation corridors as is required by Prop 1A), how is the introduction of infrastructure as CHSRA has proposed not in contradiction to the directive provided in the Landscape Character section of LMP2?

Question: As CHSRA's tunneling is likely to negatively impact the naturally occurring water sources in the Forest, leading to a reduction in moisture content of the flora and a corollary increase in dead and dying fire fuels, how are CHSRA's plans not in contradiction of the Landscape Character directives set forth by the USFS?

Discussion of Other Applicable Federal Statutes.

In LMP3, the USFS delineates a number of federal statutes which also apply to the management of the ANF, including the following:

1. Act of September 3, 1954, Permits for Public Buildings and Other Public Works. This Act authorizes permits, term permits, leases, or easements at the fair market value (not to exceed 30-years duration) to states, counties, cities, municipalities, or other public agencies without acreage limitation for the construction and operation of public buildings or other public works, exclusive of rights-of-way.

Question: Is there a time limit/expiration date of 30 years (or less) on CHSRA's proposed Special Use Permit from the USFS?

⁸⁵ USDA Land Management Plan (2005); Part 1, p. 27

⁸⁶ USDA Land Management Plan (2005); Part 2, p.113

2. Clean Air Act of 1977, as amended. The ANF is designated as a “Class I” area under the Clean Air Act of 1977. Class I “provides protection to designated wilderness lands by severely limiting the amount of additional human-caused air pollution from stationary sources that can be added to these areas.”⁸⁷

Question: CHSRA proposes 7+ years of construction at multiple locations within the Forest, and the extent of the pollution that will be generated during construction is extensive enough that it will require CHSRA to purchase offset credits. How is construction of this project within Forest lands not in violation of its Class I protection under the Clean Air Act?

3. Federal Land Policy and Management Act (FLPMA) of 1976, as amended.

This statute, “Requires that public land be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values.”⁸⁸

Question: Given the pollution that will be created during construction for seven years at a multitude of locations within the Forest, how is CHSRA’s proposed project protecting the quality of air and atmospheric values as required by this statute?

Question: Given the likely impacts to groundwater resources within the Forest, how is CHSRA’s proposed project protecting the quality of water resource values as required by this statute?

This statute also requires that public land be managed in a manner that, “Where appropriate, will preserve and protect certain public lands in their natural condition.”

Question: How has CHSRA made the determination that the impact areas within the Forest are not appropriate for preservation and protection?

This statute also requires that, “the United States shall receive fair market value of the use of the public land and their resources unless otherwise provided for by law.”⁸⁹

Question: How much is the CHSRA anticipating to pay for use of the Forest for housing of the high-speed rail system?

4. Occupancy Permits Act of 1915, as amended. This statute, “Authorizes term permits for structures or facilities on National Forest System land, and sets maximum limits of 80 acres and 30 years.”⁹⁰

Question: CHSRA’s proposed alignments each plan to utilize more than 80 acres of NFS land. How are CHSRA’s proposals not in violation of this statute?

Discussion of Wildlife.

In LMP1, the USFS explains the significance of the Angeles National Forest specifically with respect to wildlife. The Forest, “provides habitat preserves within one of the most highly urbanized landscapes in the United States, and contains areas that are the only remaining habitat refugia for species imperiled by the loss or degradation of habitat off-forest.”⁹¹

⁸⁷ USDA Land Management Plan (2005); Part 3 Design Criteria for Southern California National Forests, p. 23

⁸⁸ <http://www.blm.gov/flpma/FLPMA.pdf>

⁸⁹ USDA Land Management Plan (2005); Part 3 Design Criteria for Southern California National Forests, p. 27

⁹⁰ USDA Land Management Plan (2005); Part 3 Design Criteria for Southern California National Forests, p. 34

⁹¹ USFS 2005 Management Plan, Part 1, p8

Page 3.14-28 of the DEIR highlights the “permanent facility surface footprint(s)” within the ANF that would be required to be constructed as part of each of the Build Alternatives. These permanent facilities would include adit structures, electrical power lines, and, in several of the Build Alternatives, a temporary Construction Staging Area. CHSRA highlights the fact that these structures would be located on “private in-holding(s)” within the ANF and therefore CHSRA’s permanent and temporary facilities “would not impact forest land.”

CHSRA has very strategically located its surface facilities to be either on private in-holdings within the ANF (in the case of the adit options) or immediately outside the boundary of the ANF/SGMNM (in the case of the portals in the Aliso Canyon area). While it may help CHSRA to secure a permit from the USFS as these facilities are not located on land managed by the USFS, it is not correct to state that these facilities will not impact forest land.

Wildlife does not know the difference between a “private in-holding” within the ANF and the immediately surrounding land that is managed by the USFS. The sites selected as potential locations for adits and temporary Construction Staging Areas have recently had numerous sightings of California Black Bears and Mountain Lions, in addition to other wildlife that calls the area home. Seven+ years is a long time to be considered “temporary” in terms of wildlife habitat and patterns. Building a Construction Staging Area within habitat occupied by Black Bears and Mountain Lions — whether or not these facilities are technically located on “private in-holdings” will force these animals out of the area.

The ANF and the SGMNM lie within the “California Floristic Province,” an area designated by Conservation International as a Biodiversity Hotspot — an area where, “exceptional concentrations of endemic species are undergoing exceptional loss of habitat.”⁹² For context, there are only 36 total Biodiversity Hotspots identified in the entire world. Conservation International lists “threats from human activities and development” as a primary risk to the California Floristic Province ecosystems.

The area around Gold Creek in Little Tujunga Canyon, where CHSRA intends to build and operate a construction staging area for 7+ years, is teeming with native wildlife. There are Black Bears, Mountain Lions, Mule Deer, Coyotes, Bobcats, Ringtails, Raccoons, Squirrels – everything lives there. The bigger animals, like Black Bears and Mountain Lions, require territory that spans many miles.

Right now, Los Angeles is at a critical point when it comes to our native wildlife, with Mountain Lions leading the way. The first incident of a Mountain Lion in Los Angeles born with a curled tail was evidence of a population that is beginning to lack the genetic diversity necessary to continue to survive here as a species. They are becoming inbred.

The freeways cut off wildlife corridors, and mountain lions are stuck on “islands” throughout the Los Angeles area. There, they are becoming genetically distinct from their cousins across the freeway. The resource study area of the high-speed rail project within the Angeles National Forest hemmed in by the 210 freeway, the 5 freeway, the 2 freeway, and the 14 freeway. These animals are running out of areas to live. The individual territory required to sustain one Mountain Lion ranges in size from 50 to 200 square miles; the size of the territory of one individual Black Bear is between 15 to 70 square miles.

If we look at a map of the Los Angeles area, we can see that there are very few pieces of land left that offer this size of space – let alone with a lack of infrastructure to impact their habitat and behavioral patterns. Mountain Lions are particularly sensitive to human infrastructure and try to avoid it at all costs. Our activity directly affects their activity. It has been noted by local researchers that our Mountain Lions are more nocturnal and exhibit fewer active hours (e.g., ours are active from 12am-4am instead of from 9pm-6am) than their more rural counterparts who are less affected by human activity.

⁹² USDA Land Management Plan (2005); Part 1, p.7.

Now is the time when Los Angeles is looking at critical wildlife habitats and corridors. Other State and Federally-funded programs are striving to build infrastructure to protect Mountain Lions. For example, construction of the Wallis Annenberg Wildlife Crossing is underway in the Santa Monica Mountains National Recreation Area. When completed, the crossing will be, “the largest of its kind anywhere in the world and the most ambitious in such a densely human-populated region.”⁹³

Question: Infrastructure improvements like the Wallis Annenberg Wildlife Crossing reflect the values of this region: to counter the negative human encroachments on wildlife habitat with infrastructure that connects parcels of open space to provide safe passage for Mountain Lions and other wildlife. Why do CHRSA’s proposals intentionally contravene these values, placing Construction Staging Areas and tunnel portals within and immediately adjacent to the Forest, an area designated as wildlife habitat?

Question: How can CHRSA possibly mitigate the impacts to Mountain Lions and Black Bears who will be disproportionately affected by the introduction of CHSRA’s infrastructure elements into their habitat? “Relocating them” as has been suggested by CHSRA is not an acceptable option; we want them to continue to live in the Angeles National Forest.

In the Land Use section of the Monument Plan, the USFS addresses the Magic Mountain Wilderness Zone, including the following description: “The Magic Mountain Wilderness’s chaparral-covered hillsides and oak-studded canyons provide a scenic vista and suitable habitat for the California condor.” In its consistency assessment on Page 3.1-B-58, CHSRA asserts that the Wilderness Zone requirements are “Not Applicable” as, “The Build Alternatives would not encounter the Magic Mountain Wilderness Area.”

While we often see birds sitting atop power lines unharmed, power lines pose a unique threat to California Condors. It is safe for birds to touch one power line, but touching two lines at one time can prove fatal. As California Condors are the largest birds in the United States (with a wingspan of nearly 10 feet), their size makes them likely to touch two lines at one time, making them vulnerable to the risk of death by electrocution.⁹⁴

Question: CHSRA plans to build a traction power facility adjacent to its portal near the Vulcan Mine, approximately half a mile from the border of the Magic Mountain Wilderness Zone. Doesn’t the introduction of new power lines immediately adjacent to the Magic Mountain Wilderness Zone put condors at risk of electrocution? Given that we are talking about birds, isn’t a distance of half a mile from the Wilderness Zone reason to observe the standards applicable to the Wilderness Zone? Shouldn’t the Wilderness Zone requirements as they pertain to birds apply to the significant infrastructure CHRSA intends to introduce within half a mile of the Wilderness Zone?

Discussion of Impacts on Parks, Recreation, and Open Space Resources by Affected Build Alternatives as set forth by CHSRA in Section 3.15 of the DEIR.

Impact PK#1 delineates the ways in which the build alternatives will necessitate the acquisition of Parks, Recreation, and Open Space Resources in the Forest and the Monument. Each of the build alternatives includes tunnel portals (either one, two, or three twin tunnel portals, depending on the alignment) located immediately adjacent to Forest land. While CHSRA intentionally designed these portals to technically fall outside of Forest land, these portals exist at the borders of the Forest and the Monument, and these portals will impact these lands both during construction and operation of the train. The E1, E1A, E2, and E2A alignments each feature two twin sets of portals entering and exiting the Monument within half a mile of each other. Additionally, land within the Forest and the Monument will be utilized for construction staging, with the acreage commandeered for such use ranging between 28 and 38 acres, plus another 23 – 36 acres for construction

⁹³ <https://www.curbed.com/2022/01/wildlife-crossing-liberty-canyon-los-angeles.html>

⁹⁴ <https://www.discovermagazine.com/planet-earth/shock-therapy-is-saving-endangered-california-condors>

staging for the adit locations. Permanent use of ANF land includes acreage for adits, access roadways, and electrical utilities and facilities.

Question: CHSRA claims that the Build Alternatives', "tunnel beneath the ANF would not result in operations impacts such as noise and vibration at the surface." Whether or not the tunnel boring machine will be seen, heard, or felt once it is 2,000 feet beneath the surface, all of the spoils will come through the portals which are located at the borders of the Forest and the Monument. How will millions of trucks hauling spoils for 7+ years at the borders of the Forest not result in noise and vibration impacts to the Forest?

In Impact PK#3, "Changes to Park Character," CHSRA asserts that operations and maintenance of permanent surface improvements within the Forest and the Monument, "would not result in a substantive change in character during project operations." The reasons given for this conclusion are that tunneling does not result in surface impacts; permanent surface impacts occupy a small percentage of the total land area of the Forest; and utilities will largely follow existing roadways and utility easements within the Forest.

Question: CHSRA is using the total acreage of the Forest as justification that overall impacts caused by its high-speed rail are negligible. The Forest is nearly the size of the State of Rhode Island. A project can have serious, irreparable impacts in one area, but not necessarily affect another. In determining impacts such as change of character, CHSRA should be considering the immediate area (i.e., most often the Resource Study Area), not the Forest as a whole. Considering the cumulative impacts of 7+ years of construction within the Forest and immediately at its borders, plus the permanent surface improvements, what is the rationale for stating that these manmade encroachments will not result in a change in character to the area of the Forest along/in proximity to the alignment?

In Impact PK#2, "Construction-Related Access, Noise, Vibration, Air Quality, and Visual Changes to Parks, Recreation, and Open Space Resources," CHSRA asserts that, "Visitors to the ANF, including the SGMNM, would have unobstructed views of the construction activities taking place at the... Build Alternative adits within the ANF. Temporary construction staging areas associated with adits would be visible, depending on the location and surrounding topography. Construction staging areas would introduce major visual changes to the immediate surroundings. However, these impacts would be temporary." Further, these staging areas, "would temporarily create a barrier for access or inhibit use of the trail."

Question: LM1 (Landscape Aesthetics) and **LM3** (Landscape Character) of the USFS LMP Part 3 set forth the law and agency standards regarding management of landscapes to achieve scenic integrity objectives and maintaining the character and integrity of unencumbered landscapes. How does forcing visitors to the Forest to have unobstructed views of construction activities for 7+ years not violate LM1 and LM3 of the USFS LMP Part 3?

Hansen Dam Open Space:

In Impact PK#1, "Acquisition of Parks, Recreation, and Open Space Resources," CHSRA describes the viaduct that would be constructed in the Hansen Dam Open Space. CHSRA plans to take (permanently) 13 acres of the Hansen Dam Open Space to accommodate this structure. Further, CHSRA states that, "Compensation, replacement, or enhancement would be granted as deemed necessary."

Question: How is compensation determined for the taking of a public resource like Hansen Dam Open Space? How would replacement be proposed considering the lack of available open space within the City of Los Angeles?

In Impact PK#3, "Changes to Park Character," CHSRA describes the permanent impacts to the Hansen Dam Open Space, including the viaduct, piers, and tunnel portals, each of which would be, "highly visible and would contrast with the existing visual setting. Patrons of the open space area would be highly sensitive to these

visual changes, as the changes would impinge upon the natural harmony of the views in this area.” Policy LU 6.3 of the Los Angeles County General Plan 2035 states that planning shall, “Encourage low density and low intensity development in rural areas that is consistent with rural community character, preserves open space, and conserves agricultural land.”

Question: CHSRA has stated that as a state agency, it is not required to comply with County laws and ordinances. That being said, the introduction of the viaduct into the Big Tujunga Wash is an extremely egregious example of CHSRA’s proposed alignments and infrastructure features completely contravening the LA County General Plan. Other than simply saying, “We aren’t required to comply with county ordinances,” what is CHSRA’s justification of proposing alignments and infrastructure that are so out of sync with the County’s laws and vision for land management?

WL-1 of the LMP addresses Threatened, Endangered, Proposed, Candidate, and Sensitive Species Management. One directive is to, “Implement priority conservation strategies (see table 528 Angeles NF Conservation Strategy).” On page 3.1-B-9 of the DEIR, CHSRA states that its actions are consistent with this directive as, “The Authority designed the Build Alternatives such that they avoid significant wash and open space areas within the ANF to protect sensitive species.” This is another example in which CHSRA is splitting hairs. It has designed two alignments such that portals are located on Forest land, and an elevated viaduct structure requiring a series of concrete pillars will be constructed to cross significant wash and open space areas immediately adjacent to the ANF. This particular wash area is known to house the endangered Santa Ana Suckerfish, among other sensitive species.

Question: How are CHSRA’s alignments that introduce significant infrastructure into the Big Tujunga Wash not a violation of the spirit of WL-1?

In **LINK-1** of the LMP2, the USFS sets forth directives regarding Habitat Linkage Planning, including the following: “Actively participate with local government, developers, and other entities to protect national forest values at intermix and interface zones.” On Page 3.1-B-26 of the DEIR, CHSRA maintains that its plans are consistent with this directive, “because the Build Alternatives would be located underground as they traverse the ANF.”

Question: The emergence of the train through the portals at the border of the ANF and its continuation on an elevated viaduct across the Big Tujunga Wash is exactly the geographic setting described as being an intermix/interface zone. How is the introduction of portals and the significant infrastructure that they require, plus the construction of a viaduct atop a series of concrete pillars, a demonstration that CHSRA is protecting National Forest values at intermix and interface zones?

Impact PK#3 goes on to describe that despite the acquisition of 13 acres of land, “The resource would remain accessible in the long term, and users would be able to pass under the viaduct to move from one area of the open space to another. Noise from passing trains would be perceptible to patrons of the open space area.”

The majority of the recreational use of the area described as being “under the viaduct” is comprised of equestrians. In addition to trail riders utilizing the trail system in the wash, also impacted will be the entirety of the Hansen Dam Horse Park. The Horse Park is a 38-acre facility at the eastern edge of the Hansen Dam Recreation Area, and immediately adjacent to the proposed viaduct. The Horse Park features boarding for up to 200 horses and 350 show stalls. Per HDHP, the facility offers, “turnouts, numerous riding rings, and access to miles of trails. Many different disciplines are represented by top trainers, including reining, dressage, and hunter/jumper. The facility is spacious, shaded, **and peaceful**. HDHP is the preferred location for a number of horse shows and clinics. There are six “A” rated hunter/jumper shows, five “B” hunter/jumper shows, ETI Coral #101, IEL, and a variety of other shows and clinics.”⁹⁵

⁹⁵ <https://hansendamhorsepark.com>

Question: As horses are flight animals, they will not respond well to the noise and visual impacts of a train moving at 200mph toward them, potentially posing a safety hazard to themselves and their riders. How will you mitigate the impacts that the train will have on equestrians in this area, both trail riders and riders utilizing the area's premiere horse park?

Further, CHSRA goes on to state that, "The changes described under Impact PK#3 would not inhibit the desirability of the resource to the extent that use would decrease."

Question: If the area closest to the viaducts is primarily used by equestrians, and knowing that horses will react negatively to the audio and visual impacts caused by a 200+mph train to the point where it becomes a safety concern for both horses and their riders, how can CHSRA conclude that use of the resource would not decrease?

In Impact PK#2, "Construction-Related Access, Noise, Vibration, Air Quality, and Visual Changes to Parks, Recreation, and Open Space Resources," CHSRA describes as a mitigation measure that, "the contractor will prepare a fugitive dust control plan and a noise and vibration technical memorandum documenting the pertinent federal guidance for controlling construction fugitive dust, noise, and vibration effects... the measures developed as part of the construction plans will ensure that temporary increases in dust, noise, and vibration would be reduced to a level that would allow the park to continue to operate."

Question: Please describe what mitigation measures might possibly be implemented that would allow Hansen Dam Horse Park to continue to operate during 7+ years of construction immediately adjacent to its facility?

Tujunga Ponds Wildlife Sanctuary.

In Impact PK#2, CHSRA notes that because the elevated viaduct will be located .8 mile to the west of the Ponds, construction, "would not result in temporary noise, vibration, air quality, or visual changes to this area," and, therefore, no mitigation measures are necessary.

Per LA County Parks, which manages the site, "The 13-acre Tujunga Ponds site in Sunland was acquired by the Department in 1978, following the CalTrans completion of the 210 (Foothill) Freeway through Tujunga wash, requiring CalTrans to create the pond site in mitigation for loss of similar habitat under the freeway. It was agreed that the site could be accessed by permit from the Department (Natural Areas) and existing trails around the ponds could be used by visiting groups for nature study, photography and similar passive recreation. The site contains 2 small lakes (ponds) and surrounding dense willow riparian woodlands and cottonwood riparian woodlands."⁹⁶

Birdwatching is a primary passive recreational activity at this site, as the freshwater cattail marshes make the Tujunga Ponds a destination for not only small, sensitive bird species including the Least Bell's Vireo and the Southwestern Willow Flycatcher, but also large wading birds such as egrets and herons.

In, Chapter 8 of the book *Railway Ecology*, authors Juan Malo, Garcia de la Morena, Israel Hervas, Christina Mata, and Jesus Herranz examine, "Cross-scale Changes in Bird Behavior Around a High Speed Railway: From Landscape Occupation to Infrastructure Use and Collision Risk." In their study, Malo et al. noted that, "Regarding changes potentially introduced by the railway, it is noteworthy that total bird densities were reduced from approximately 550 birds/km² in 2010–2011 to values in the range 360–390 birds/km² range in the following years. This change occurred shortly after the trains began running..."⁹⁷ They further concluded that,

⁹⁶ <https://parks.lacounty.gov/tujunga-ponds-wildlife-sanctuary/>

⁹⁷ Borda-de-Agua, Luis; Barrientos, Rafael; Beja, Pedro; and Pereira, Henrique M., eds. *Railway Ecology* (2017); p. 121.

“the construction of the HSR resulted in a general decrease in bird density in the area, and modified the small-scale spatial patterns of the avian community.”⁹⁸

Question: Aren't birds going to be deterred from safe harboring at the Tujunga Ponds Wildlife Sanctuary during both 7+ years of construction immediately adjacent to the sanctuary and during operation of the train? What does an independent ornithologist say will be the impacts to birds resulting from construction and operation of the train immediately adjacent to the Tujunga Ponds sanctuary?

With respect to bird mortality resulting from the introduction of high-speed trains into their habitat, Malo et al. noted the following:

“The mortality of birds depends on the extent to which they are exposed to the risk of being over-run while flying, or being electrocuted by the HSR poles or catenary.”⁹⁹

“The potential relevance of the HSR is conditioned by the fact that the great speed of the trains, in most cases, precludes birds from avoiding train collisions. Additionally, it is hazardous for birds to fly above the train collision risk area where they may come in contact with the catenary, suspenders, power wire, feeder, earth cable, and tensors (5.3–8.5 m above the ground). Although there is a constant risk of collision with these elements even when trains are not running, the risk of collision with the catenary may be increased by the passage of trains due to the potential for turbulence generated by the moving train to destabilize the normal flight of birds. Thus, it is reasonable to assume that birds that cross the railway by flying between or below the catenary wires face the mortality risk from train-kill.”¹⁰⁰

“These data suggest that train speed determines mortality risk independent of particular species' characteristics, with the risk being a result of the fact that birds are not adapted to avoiding objects approaching at such high velocities.”¹⁰¹

“...bird mortality may have a significant impact on the populations of some species, given the fact that birds cross the collision risk area frequently.”¹⁰²

Question: What mitigation measures will CHSRA employ to warn birds of an oncoming train to avoid avian mortality due to collision? What mitigation measures will CHSRA employ to deter birds from collision with the catenaries? In an effort to reduce overall avian mortality, what methods will CHSRA use to repel birds from its infrastructure elements, and what systems will it employ to decrease the frequency with which birds will fly through the viaduct area which CHSRA intends to introduce immediately adjacent to a sanctuary for birds and specifically waterfowl?

Pacific Crest Trail.

With respect to CHSRA's plans near the Pacific Crest Trail, CHSRA stipulates that, “PCT users would have unobstructed views of the construction activities. Staging areas would introduce major visual changes to the immediate surroundings with visually intrusive accumulations of stored material and equipment.”

The Monument Plan specifically addresses the USFS goals for the PCT:

⁹⁸ Borda-de-Agua, Luis; Barrientos, Rafael; Beja, Pedro; and Pereira, Henrique M., eds. *Railway Ecology* (2017); p. 122.

⁹⁹ Borda-de-Agua, Luis; Barrientos, Rafael; Beja, Pedro; and Pereira, Henrique M., eds. *Railway Ecology* (2017); p. 123.

¹⁰⁰ Borda-de-Agua, Luis; Barrientos, Rafael; Beja, Pedro; and Pereira, Henrique M., eds. *Railway Ecology* (2017); p. 125-126.

¹⁰¹ Borda-de-Agua, Luis; Barrientos, Rafael; Beja, Pedro; and Pereira, Henrique M., eds. *Railway Ecology* (2017); p. 129.

¹⁰² Borda-de-Agua, Luis; Barrientos, Rafael; Beja, Pedro; and Pereira, Henrique M., eds. *Railway Ecology* (2017); p. 131.

1. “The nature and purpose of the Pacific Crest National Scenic Trail (PCT) are to provide for outstanding journeys on foot or on horseback in the spectacularly wild landscapes of high Pacific mountain ridges. ***Tranquility and closeness with nature can be found consistently along the trail, evoking a feeling of extended retreat from civilization, even if only venturing out for a day.***”¹⁰³

Question: How can tranquility and a feeling of extended retreat from civilization be maintained during 7+ years of construction within sight of the PCT? How are CHSRA’s plans not in violation of the directive expressed in the Monument Plan?

The Monument Plan further sets forth the guidelines for recreation near the PCT:

1. “New recreation events, such as foot races or horseback endurance events and fundraising events should be limited to designated crossings only on the Pacific Crest National Scenic Trail (PCT) within the Monument. Existing recreation events may be allowed to continue at current levels;” and
2. “Within the Monument, new trails that are proposed to cross the PCT or to be built within the foreground of the PCT, should be designed to minimize conflicting uses and to minimize the scenic, aural, and resource impacts to the PCT.”¹⁰⁴

Question: The spirit of the law in these sections is clearly to minimize human impacts on the Monument and specifically on the PCT. If the USFS is restricting low-impact, one-day events such as horseback riding and foot races, why should they allow a highly invasive construction project that will go on for 7+ years?

The Monument Plan also sets forth the following restriction on activity within the foreground of the PCT:

1. “Within the Monument, the PCT foreground is not suitable for special-use authorizations for new communication sites and wind generation sites.”¹⁰⁵

Question: If the PCT foreground is not suitable for new communication sites and wind generation sites, how is placing a construction staging area within sight of the PCT not in violation of the spirit of the Monument Plan?

The USFS also sets forth guidelines for the PCT within the ANF Strategy. ANF S1 stipulates that it must:

1. “Protect scenic integrity of foreground views as well as from designated viewpoints. Where practicable, avoid establishing nonconforming land uses within the viewshed of the [Pacific Crest] Trail.”¹⁰⁶

Question: How do CHSRA’s alignments and construction staging areas protect the scenic integrity of views from the Pacific Crest Trail? How do CHSRA’s alignments and construction staging areas avoid the establishment of a non-conforming land use within the viewshed of the trail?

Rim of the Valley Trail Extension.

Not only do CHSRA’s proposed routes intersect/cross the Rim of the Valley Trail Extension in several places, but Impact PK#1, “Acquisition of Parks, Recreation, and Open Space Resources,” describes how CHSRA intends to commandeer 300 – 400 feet of the Rim of the Valley Trail Extension for use as a construction staging area.

¹⁰³ San Gabriel Mountains National Monument Management Plan, p. 13

¹⁰⁴ San Gabriel Mountains National Monument Management Plan, p. 13

¹⁰⁵ San Gabriel Mountains National Monument Management Plan, p. 13

¹⁰⁶ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 76

Question: In ANF S1, the USFS sets forth the goals of the management of the Pacific Crest Trail. As the Rim of the Valley Trail extension will also fall within ANF boundaries, we can assume it will be managed by the same standards. S1 states that management of this resource will, “Protect scenic integrity of foreground views as well as from designated viewpoints. Where practicable, avoid establishing nonconforming land uses within the viewshed of the trail.”¹⁰⁷ How does utilizing 300 – 400 feet of the Rim of the Valley Trail Extension as a construction staging area for 7+ years comply with the terms of S1?

In Impact PK#4, CHSRA asserts that the use of the Rim of the Valley Trail Extension, “would not increase or decrease with implementation of the... Build Alternatives.”

Question: This conclusion is misleading as it does not take into account the impacts during construction. How will use of the Rim of the Valley Trail Extension not decrease when a section of the Trail will be commandeered for use as a construction staging area for 7+ years?

In Impact PK#1, “Acquisition of Parks, Recreation, and Open Space Resources,” CHSRA states that, “Compensation, replacement, or enhancement would be granted as deemed necessary. These mitigation measures will ensure that each resource acquired would be accessible during construction. If construction would result in a permanent loss, the Authority will provide necessary compensation.”

Question: How is compensation determined for a public resource like the Rim of the Valley Trail?

Discussion of CEQA Conclusions:

With respect to ***Impact PK#1: Acquisition of Parks, Recreation, and Open Space Resources***, CHSRA concluded that acquisition of park/recreational resources would create a significant impact for the following resources in the study area:

- Palmdale Hills Trail (Proposed Extension)
- Vasquez Loop Trail (Proposed Extension)
- Littlerock Trail (Proposed Extension)
- Acton Community Trail (Proposed Extension)
- Santa Clara River Trail (Proposed Extension)
- Rim of the Valley Trail (Proposed Extension)
- Hansen Dam Open Space (Proposed Extension)

With respect to ***Impact PK#2: Construction-Related Access, Noise, Vibration, Air Quality, and Visual Changes to Parks, Recreation, and Open Space Resources***, CHSRA concluded that project-related construction activities would create a significant impact for the following resources in the study area:

- Tejon Equestrian Park
- Palmdale Hills Trail (Proposed Extension)
- Vasquez Loop Trail (Proposed Extension)
- Acton Community Trail (Proposed Extension)
- Pacific Crest Trail
- Santa Clara River Trail (Proposed Extension)
- Rim of the Valley Trail (Proposed Extension)
- Hansen Dam Open Space (Proposed Extension)

¹⁰⁷ USDA Land Management Plan; Part 2 Angeles National Forest Strategy, Applicable to the San Gabriel Mountains National Monument, p. 76

With respect to **Impact PK#3: Changes to Park, Recreation, and Open Space Resource Character**, CHSRA concluded that the following resources would suffer a significant impact because operations of the build alternatives would alter park character by preventing its use or by creating physical or perceived barrier:

- Tejon Equestrian Park
- Palmdale Hills Trail (Proposed Extension)
- Vasquez Loop Trail (Proposed Extension)
- Acton Community Trail (Proposed Extension)
- Hansen Dam Open Space

It is worth noting that CHSRA concluded that with respect to Impact PK#3, the ANF, including the SGMNM, would experience “less than significant impact.” We disagree with this conclusion as CHSRA is considering the entirety of the Forest in its analysis, concluding that the area impacted represents a small percentage of the overall resource. It is not reasonable to consider the Forest as a whole, as it is nearly the size of the State of Rhode Island. The only reason that CHSRA is considering the Forest as a whole is to dilute the impacts of its construction across 700,000 acres.

Considering solely the areas of the Forest that are impacted by CHSRA (i.e., in most respects, the Resource Study Areas), we maintain that those areas will suffer a significant impact with respect to Impact PK#1, Impact PK#2, and Impact PK#3.

Los Angeles County is the most populated county in the United States, with a population of over 10 million people; and the City of Los Angeles is the second most populated city in the United States, with a population of nearly 4 million people.¹⁰⁸ It is in this most urban of settings that the preservation of our National Forests, parkland, and open space is of the utmost importance.

There are a total of 28 parks, recreation areas, and open space resources within the resource study area that will be impacted by the construction and operation of a high-speed rail system. On page 3.15-120, CHSRA concludes that, “*With the inclusion of the applicable IAMFs and implementation of the mitigation measures identified in Section 3.15.7, all six Build Alternatives would avoid, minimize, reduce, or compensate for impacts on these resources.*”

Per CEQA guidelines, CHSRA is required to address the cumulative impacts of a project,” when the cumulative impacts are expected to be significant and when the project’s incremental effect is cumulatively considerable.”¹⁰⁹

Taking into account the **cumulative impacts** on the 28 parks, recreation areas, and open space resources in the resource study area, including but not limited to the impacts studied in Chapter 3.15 (i.e., acquisition; construction-related access, noise, vibration, air quality, and visual changes; and changes to character), the impacts created by CHSRA outweigh any possible benefits that could result from the implementation of a high-speed rail system in the RSA.

As such, the only reasonable conclusion is that CHSRA – as well as all Officials with Jurisdiction – must support the NO PROJECT ALTERNATIVE.

¹⁰⁸ April 1, 2020 Census figures.

¹⁰⁹ State CEQA Guidelines Section 15130[a]

CHAPTER 3.16: AESTHETICS AND VISUAL QUALITY

3.16.4.4 Method for Evaluating Impacts under NEPA

Page 3.16-13/Footnote 1

The CEQA issued new regulations, effective September 14, 2020, updating the NEPA implementing procedures at 40C.F.R. 1500-1508. However, because this project initiated the NEPA process before September 14, 2020, it is not subject to the new regulations. The Authority is relying on the regulations as they existed prior to September 14, 2020. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations, pursuant to 40 C.F.R.1506.13 (2020) and the preamble at 85 Fed. Reg. 43340.

Question: Are there elements in this Project Section that would have had to be drastically modified/rerouted or even deleted if CHSRA followed the 2020 NEPA procedures considering that the ones that are being followed are almost 45 years old and so many environmental regulations have changed drastically during that time?

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Tunnel Portals: Tunnel portal access roads would follow existing drainage courses or existing roads to the extent possible.

Question: Where is the map for all the access roads that need to be built near the portals? Are they paved/will they be paved? Has the adverse impact of these roads been considered?

Lighting: like all of these Project Component parts, CHSRA states something will be done, but there is no way of knowing if it can be as there is not a mitigation plan, such as lighting pollution from the train, train construction, etc.

Question: How will CHSRA mitigate the lighting pollution and train lights?

Sound Walls: "Noise walls can be made from transparent materials or include surface design enhancements to blend with the area's visual context."

Question: How do you keep transparent materials clean day to day? How do you keep them from getting scratch and damaged?

Traction Power Substations (TPSS)

Question: Where will the TPSSs be located? If we don't know the locations, how can we be certain that they will not cause harm to our community? How will we know which property(ies)/asset(s) will be taken by CHSRA for the TPSS's location?

Switching Stations:

Question: Where will the switching stations be located? If we don't know the locations, how can we be certain that they will not cause harm to our community? How will we know which property(ies)/asset(s) will be taken by CHSRA to house the switching station(s)?

Communications Towers:

Question: Where will these 100-foot towers be located? If we don't know the locations, how can we be certain that they will not cause harm to our community? How will we know which property(ies)/asset(s) will be taken by CHSRA to house the communications towers? Would these be located near the Burbank Airport? It seems this

would cause interference with the airport's operations. Has the Burbank Airport been contacted regarding CHSRA-planned facilities that may interfere with its operations? What has been their response?

3.16.6.4 Temporary Construction Impacts

Page 3.16-40

SR14

“During construction, spoils would be transported to both the Vulcan Mine and Boulevard Mine via conveyor belt systems installed along and within the Palmdale to Burbank Project Section alignment. The conveyor belt systems would appear highly industrial in nature; however, they would be visually compatible with the other industrial features in the area. Short-term aesthetic impacts would occur during construction as tunnel spoils would at times be visible traveling along the conveyor belt to the Vulcan and Boulevard Mines.”

Question: CHSRA believes that Sun Valley is so industrial that making it worse is not important, despite the best efforts of the community and the Sun Valley Area Neighborhood Council to rectify this? Do you believe the added conveyors to haul dirt would be acceptable to the community in addition to the noise, vibrations and pollution that will be occurring in their area?

Question: What happens to the Vulcan Mine and the Boulevard Mine once they are filled? The Boulevard Mine is in the heart of Sun Valley, which is in great need of a recreational park, especially since so many folks live in apartments. Would the land be usable for that purpose? Is there money in the budget to turn that land, which it is assumed the State will then own, into a first rate park with great facilities? Giving back to this underserved community would be the right thing to do.

3.16.6.5 Permanent Construction and Operations Impacts

Page 3.16-48

Table 3.16-14 Change in Visual Quality of Landscape Unit 1 Key Viewpoints, Refined SR14 Build Alternative (also Appendix 3.16-A: Photographs of Existing Conditions and Visual Simulations with the Project, Page 3.16-A-15: https://hsr.ca.gov/wp-content/uploads/2022/08/PB_03.16-AppxA_PhotosExistingConditions_a11y.pdf)

Question: KVP 1.14: Pacific Crest Trail – For this famous trail, the destruction of the scenic view called out in Landscape Unit 1b: Central State Route 14 Corridor, is High for Viewer Sensitivity, and Adverse to the Degree of Change to Visual Quality. What will be done to remediate this condition for this important California asset, and what has the Pacific Crest Trail Association had to say about the impact?

Page 3.16-82/83

AVQMM#4 – Permanent Construction Impacts on Visual Quality

“Prior to operation and maintenance of HSR, the contractor shall plant trees (minimum 24-inch box and 8 feet in height) along the edges of the HSR rights-of-way in locations adjacent to residential areas to visually screen the elevated guideway and the residential area. The species of trees to be installed will be selected based on their mature size and shape, growth rate, hardiness, and drought tolerance. No species on the Invasive Species Council of California’s list (ISCC 2010) would be planted. Upon maturity, the crowns of trees used would be tall enough to partially, or fully, screen views of the elevated guideway from adjacent at-grade areas. Upon maturity, trees would allow ground-level views under the crowns (with pruning if necessary) and will not interfere with the 15-foot clearance requirement for the guideway. The trees will be maintained. Irrigation systems would be installed within the tree planting areas...”

Question: Where is CHSRA going to get all of these mature trees? Where is the water coming from to irrigate all of these trees used to screen the HSR? We don't have enough water for the needs of California as it is and by needing to plant trees (which of course is important but especially in urban areas), that is an additional

demand for water, besides all the water needed for the construction, that will be additional to California's needs.

Page 3.16-102

KVP 1.22: Lake View Terrace (E2 and E2A Build Alternatives) As shown in Figure 3.16-A-22a (in Appendix 3.16-A), KVP 1.22 shows the view from Kurt Street at Nadina Street in unincorporated Los Angeles County, looking northeast from the Lake View Terrace neighborhood toward scenic hills located within the ANF. The view features an open, grassy field surrounded by scenic hills. Electrical transmission towers and lines descend from the hills into the adjacent neighborhood, revealing the interface of wildlands and development. Natural harmony is moderately high and cultural order is high; hence, overall visual quality is moderately high. As shown in Figure 3.16-A-22b (in Appendix 3.16-A), the E2 and E2A Build Alternative alignments would emerge from a tunnel beneath the hills at a currently vacant field. The introduction of these project elements would be highly visible and contrast with the natural harmony of the view. Residential neighbors adjacent to this area would be highly sensitive to these visual changes, as they would impinge upon the natural harmony of the view from their foothill community, shifting the scene toward a more industrial character. Overall, the degree of change to visual quality would be adverse for the E2 and E2A Build Alternatives.

(also: Appendix 3.16-A: Photographs of Existing Conditions and Visual Simulations with the Project, Page 3.16-A-24 https://hsr.ca.gov/wp-content/uploads/2022/08/PB_03.16-AppxA_PhotosExistingConditions_a11y.pdf)

This area that is so crucial to the Los Angeles equestrian community would be forever forfeited as the motion of a train much less the noise would not allow its use. Horses are flight animals, and despite the very uninformed study done years ago by the Mineta Transportation Institute dated Dec. 2015, (<http://static.politico.com/64/b3/d4e3ea7449e08a70005d2caf6ebd/mineta-transportation-institute-report-high-speed-rail-and-equine-issues.pdf>), horses and their riders could not safely coexist with a high speed train. The wildlife in this area is vast and diverse, and no doubt the HSR would cause the rapid disappearance of most species. It is also a migratory route for countless birds where they stop off right where the train would be located, again, changing a centuries old flight path. The Tujunga Wash is a treasured area for Los Angeles. Its scenic vista provides breathtaking views especially during sunrises and sunsets. It is a go-to location for our local photographers, as is so beautifully showcased in this website: <https://www.tompulaphotography.com/gallery.html>. With so many wild, pristine areas being destroyed by ongoing development, losing this area to the HSR would be a tremendous, heart-breaking disaster.

APPENDIX 3.16-A: PHOTOGRAPHS OF EXISTING CONDITIONS AND VISUAL SIMULATIONS WITH THE PROJECT

Page 3.16 – A-31

The top photo on this page shows the NW viewpoint from Hollywood Way, but taken years ago. CHSRA's document is dated August 2022, so there is no reason why you should not be addressing the current condition of that land. What occupies that 61 acres now is the huge megaplex called Avion. It is made up of warehouses (such as Amazon), office buildings, stores, restaurants, condos, and apartment buildings. The *LA Times* stated that this project would cost over \$900 Billion to buy out, though we are unsure if that figure includes demolition costs – and, of course, added to that figure would be the costs of inevitable lawsuits. The land was purchased for \$75 million, so essentially CHSRA upped the overall budget by over one billion dollars by not buying the land when it was available. Are you really thinking that you can (and should) turn that land into what is depicted in the second photo, which is a complete demolition of the Avion complex, turning it into a parking lot with trees? And your description is priceless (but insulting):

Simulated View: The project would add a parking lot and transit center along North Hollywood Way, as well as enhanced landscaping throughout, which would increase cultural order and natural harmony. Overall, the degree of change to visual quality would be beneficial.

Question: How you are going to address the following when you demolish the Avion project?

- Paying for the endless and inevitable lawsuits that will occur when taking their land when you had the opportunity to purchase it but declined to do so. Is that amount in the current business plan? We were told at a meeting with CHSRA that you declined to purchase it at the time believing it was “too expensive.” You admitted you knew about it being available, you turned it down, pushing a very expensive problem down the road. How does this demonstrate responsible planning and a responsible use of resources?
- Besides paying for the buyout and demolition, will the taxpayers also have to pay for the relocation and rebuilding of all of these businesses?
- Avion submitted a comprehensive document to CHSRA for the Burbank-Los Angeles Project Section (Submission 696, Timur Tecimer, OVERTON MOORE PROPERTIES, July 21, 2020), with one of your replies dated Sept. 2021:
696-781: “Once the design is final and the exact nature of impacts to the Burbank Avion Development is defined, the Authority will coordinate with the property owner and follow the procedures described in the Right-of-Way.” Again, you are resorting simply to the “Right of Way.” It is unbelievable that you allowed this property to be sold, developed, and completed, and yet you cite the Right of Way to solve this extremely expensive malfeasance on your part.

Question: Though the building materials are green, it is improbable that after demolishing, they could be repurposed, which means thousands of tons of materials will have to go into land fill. Where will all of the tons of materials go? Demolition of a newly built multi-million dollar project is not a green, carbon-neutral action.

The fact you have this “old” photo in your 2022 DEIR does not give us a feeling that you are being “transparent.”

Since you are addressing this land in this report, you are violating CEQA as you are NOT dealing with how you plan to handle the situation of this mega complex which, with its demolition, will have wide-ranging consequences environmentally: air pollution, materials disposal, and of course the relocation of all the residents and businesses in the complex.

The above questions regarding the Burbank Station also apply to Vol 3: PEPD Record Set REV01, Burbank Station Area Plans.

APPENDIX 2.0-I: SPOILS DISPOSAL ASSUMPTIONS USED FOR ENVIRONMENTAL ANALYSIS

Page 2.0-I-3

Refined SR14: Portal 10 - Spreading grounds (& other locations)

50% of the spoils from this tunnel would be contaminated and require disposal at a facility licensed to accept potentially hazardous materials. Spoils disposal in existing mine pits would require a project design, which would include geotechnical investigation of the site, identification of disposal technology, site preparation, spoils transportation to an offsite treatment facility if spoils are hazardous, fill and compaction procedures, slope stability, monitoring, water treatment, and surface and vegetation restoration among other elements.

Question: What happens to the contamination itself? How is that disposed of? Is there a local company already set up to handle the decontamination process, or does one have to be created?

Page 2.0-I-3

Refined SR14: Burbank Airport Station SEM Tunnel

Spoils would be off-hauled by truck. 100% of the spoils from the tunnel excavation would be contaminated and would need to be off-hauled to a suitable treatment site.

Question: In many of the conditions where the DEIR states that the spoils are contaminated and will be off-hauled by truck, are those closed trucks so none of the spoils can become windborne during transit? With thousands of tons of contaminated dirt needing transporting, how do you protect the community when loading and transporting? If the load shifts and the truck tips, how is the contamination contained?

Page 2.0-I-4

Refined SR14: Burbank Airport Station

Spoils can be stockpiled in an area adjacent to cut-and-cover (within station footprint), to separate the spoils volume into layers to be hauled to disposal site daily (about 20 acres available during construction within the station area footprint). 100% of the spoils from the station cut-and-cover excavation would be contaminated and would need to be off-hauled to a suitable treatment site.

Question: It states that the contaminated spoils would be stockpiled over a period of 5.4 years. Where does that stockpiling occur? This is where the current Avion Project is located? If so, there does not appear to be 20 available acres without demolishing this project. Also, considering the soils under this project are no doubt very contaminated since it previously was the Lockheed Skunk Works and a Superfund site, how would the contaminated dirt be "sorted" so it does not float out to the community while it is being stockpiled, a community that has Santa Ana wind conditions?

Page 2.0-I-15

E2: Portal 4 (Tujunga Wash)

1 year to excavate for Portal 4, and 5.1 years to excavate for the Tunnel.

The damage to this pristine area of Los Angeles would be impossible to correct. The Tujunga Wash should not be considered a transportation route. The price is just too high.

Page 2.0-I-19

E2A: Intermediate window at Calmat Mine

Question: Where is the Calmat Mine? It doesn't show up on this map (<https://geografika.maps.arcgis.com/apps/MapJournal/index.html?appid=ccac46af003e4a2da4528b2a7595141b>), nor on Google Maps, or Google. Is this the Cal Mat Pit? Where exactly is this located?

Page 2.0-I-20/ Footnote 4

Hazardous materials would be trucked/shipped to a classified/permited disposal site.

Question: Why is the hazardous materials disposal site classified? How much tonnage from SR14 (including the Burbank Airport site) do you expect to dispose of in a hazardous materials site? How are these hazardous materials disposal sites protected?

General Questions:

Regarding this map:

<https://geografika.maps.arcgis.com/apps/MapJournal/index.html?appid=ccac46af003e4a2da4528b2a7595141b>

Question: Is it an adit at Little Tujunga Canyon Rd. for SR14? What is Sand Canyon Rd going to be used for? Are you closing Sand Canyon Rd near Baker St. & Abe St to Little Tujunga Canyon Rd, then closing Little Tujunga Canyon Rd to the end of the blue line on the map?

Question: The bike path along San Fernando Road has cost a great deal of money and taken a great deal of time to plan and construct. Once CHSRA demolishes the bike path, will it be rebuilt to the exact design as it was before demolition?

Question: How are we to know just what is occurring with the properties depicted in the above map in orange that are tagged as being “partial acquisition?” Is there a document that we can obtain that outlines the intent for each property as it will be dealt with by CHSRA?

Question: How are you dealing with the schools and hospitals during construction with the noise, vibration, road closures and pollution? How will their comfort and safety be assured during this long process?

Question: Who will own the properties if they are no longer needed by CHSRA? Will they be cleaned up and put up for sale, or will they be given to the community for their use?

Electrical:

Question: How will CHSRA protect the Angeles National Forest and other combustible elements from sparks from the catenaries, especially during high winds? (please refer to this study: <https://ietresearch.onlinelibrary.wiley.com/doi/full/10.1049/els2.12043>)

Question: Will the trains be stopped and the power shut down?

Question: Is the power coming from DWP and PG&E to run the trains?

- If so, how can that be considered “clean energy” which is one of CHSRA’s biggest talking points? DWP’s goal is to reach 100% clean energy in the year 2035, years after CHSRA intends to commence construction on this project section.
- During flex alerts, will the trains be stopped so that residential customers receive the power they need?

By 2035, the governor has mandated that all new cars are to be electric. If someone can drive from Los Angeles to San Francisco with 5 people in the car, isn’t that a lot cheaper than 5 people buying round-trip tickets on high-speed rail? How will the cost of over \$105 billion for a high-speed train make sense in 10 to 15 years? No matter the intent of trying mightily to install public transportation, San Francisco, Palmdale and Los Angeles are still car towns, and folks still need a car when they reach their destination, whether it is a taxi, car service, or rental.

PB 3.09 – GeoPaleo

Question: If a large discovery is made relating to Paleontology, such as a discovery of dinosaur bones, extinct mammals, ancient civilization artifacts, etc., is HSR willing to pause the project in order to do proper retrieval/excavation, or will they reroute? This condition has occurred in countless projects around the world when building infrastructure. How will HSR handle it?

CHAPTER 3.17: CULTURAL RESOURCES

This section details the archaeological, historical (pre and modern) sites, including locations currently or potentially eligible to be included on the National Register of Historic Places (NRHP), or the California Register

of Historic Places (CRHP). Pre-historic sites are places that were inhabited or used by Native Americans prior to 1769 (the date of European contact). Relevant terms include APE, Area of Potential Effect, and PA, Programmatic Agreement (to be determine after the DEIR is accepted and actual work plans are determined). This document is full of acronyms, so it is necessary to refer constantly to the guide at the end of the document.

Section 106 of the National Historic Preservation Act (NHPA) contains the rules for dealing with locations of historical importance to be taken into consideration in any Federal undertaking. Apparently, the State Historic Preservation Officer, Federal Railroad Administration and Advisory Council on Historic Preservation have agreed to modify some portions of Sec. 106 as follows:

1. Exempt certain properties deemed to have little or no potential to be eligible for NHPA protection;
2. Streamline documentation if significantly altered properties that have reached 50 years of age project section and prep a Memorandum of Understanding (MOU) for each project section that may adversely affect or has the potential to affect historic properties;
3. Prepare treatment plans for Historic Built properties and Archaeologic sites that tier off the MOU.

The next few sections detail the laws, interested parties (including Native American tribes), stakeholders, etc. Many of the interested parties did not respond to HSR's letters or communications. Included were regional and local entities, county, municipal, general and community planners.

Regarding historic properties, per the DEIR, if Refined SR14 or SR14A are not in accordance with Los Angeles Zoning Code LU-6.4, CHSRA will try to mitigate building which does not conform to this section, but no promises are made. The general consensus of this section of the DEIR is "we'll figure it out as we go along." The MOU for each section will be determined by HSR.

The exact location of non-historic sites may not be revealed per Federal and State laws. The build zone along the tracks will be 150 feet on each side.

There are only one or two historic locations along the Refined SR14 and SR14A routes. Several others are scattered around the other alternative routes.

Environmental Consequences

Due to the unavailability of access for archaeological surveys (likely from property owners refusing access to their properties after receipt of Permit to Enter letters), these surveys will be conducted in phases (Phased Evaluation).

Question: If there are no surveys granted by property owners, what is CHSRA's plan as construction moves forward?

No Project Alternative

Assumes Palmdale to Burbank section will not be built. CHSRA states that long-term plans for traffic improvements will cost the state increased overtime. There is nothing in this section to support that claim. CHSRA claims that Alternate Transportations Systems would need to be developed to carry the increased population and housing/retail/school needs. There is nothing in this section to support that claim.

Question: Is CHSRA saying that building the High-Speed train will have a lower impact on the region than not building it?

MOU signatories, concurring parties, and Tribal consulting parties will meet to determine preferred treatment and mitigation archaeological resources that cannot be avoided. Construction will be halted should there be an unanticipated arch discovery. If human remains are found, CHSRA will exercise caution when encountering

these sites. CHSRA will develop a geospatial layer to identify locations of burial sites. There will be sensitivity mapping, and the impact should be minimal per CHSRA.

Question: In the event that archaeological discoveries are found, how long does CHSRA anticipate it will take to remediate the situation?

If SR14 is chosen, there will be excavation under and around the CA Aqueduct, but no temporary or permanent damage is expected.

Grubbing and grading. These terms are used frequently but there is no definition in the DEIR for grubbing.

Question: What is the definition of grubbing and grading?

CHAPTER 3.18: REGIONAL GROWTH

In the context of transportation projects, a Regional Growth Analysis (RGA) examines whether the Palmdale to Burbank project section could directly and/or indirectly cause employment or population growth that exceeds projected population and job growth in a given area.

Per the DEIR, all 6 build alternatives have similar long-term regional construction costs and ridership projections and would result in similar near and long-term growth, and would not result in substantial increased land use consumption due to long-term population growth.

Employment growth refers to temporary or permanent jobs that would be created either directly or indirectly by the HSR build alternatives during construction or operation.

Population growth is the number of residents in the RSA, which analysis presents projections out to 2040 for the 6 alternatives and the No Project Alternative.

Housing considers available units of housing under the 6 alternatives and the No Project Alternative to determine if sufficient housing is available to meet projected demand from population growth.

It must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment. HSR is a war on cars. SCAG (Southern California Association of Governments) must put funding to projects that will reduce emissions and away from those that don't.

Alternate Planning Strategy (APS) will reduce emissions, but it is not a required component of the regional transportation plan and is less likely to be implemented.

The Palmdale to Burbank Project Section is projected to take 8-9 years to complete. Considering how long this project has taken so far with no track laid, it is difficult to have a high degree of confidence in this timeline.

Long-term employment growth is projected to be 102,000 jobs with 4,900 in Los Angeles County and 49% of the jobs in the Palmdale to Burbank Project Section.

Long-term Induced population growth. For every long-term job created on the Palmdale to Burbank route, a population growth of 2.17 people is assumed. People may move to exurban communities with lower housing costs.

Question: The figure of 2.17 implies that the long-term jobs created by CHSRA will be provided to people who live outside the area who will be moving themselves and family members into the area in order to accept the

CHSRA job opportunity. What benefit is there to the local population if the jobs created by CHSRA are given to people who reside outside the county?

Question: Who is building all this new housing and when?

City of Los Angeles population size only grew by 277,000 between 2000 and 2015.

Question: What about the census results from 2020 and the effects of Covid-related population changes?

Overview – No Build and Build Alternatives. Future projects aren't even in the early planning stage. Impacts cannot be determined, but the DEIR says it will be in compliance with CEQA and NEPA.

If the No Build Alternative is selected, there would be no need for outside employees to move to the region. No Build would have the lowest impact and would not cause the excessive greenhouse gas emissions that would be caused by any of the 6 alternatives.

HSR claims that jobs will be created in low-income communities.

Long-Term employment impacts compare 2040 employment estimates and projections of the 6 build alternatives and the No Build Alternative. Operations & Maintenance (O&M) of each alternative would be very similar, therefore all 6 alternatives would have similar direct effects on employment. Direct, indirect and induced employment would add 500 O&M jobs in Los Angeles County.

Question: Where are they getting this number?

Total Project Induced Employment .1% over the No Build Alternative.

First and Last Mile Connectivity. Starts when passenger boards HSR and ends when they reach their destination (might be by bus or van). There will be no reduction in station-to-station travel time until the project is completed to Union Station. Taking Antelope Valley residents off the streets will have no appreciable effect.

US Forest Service. There are few residences and employment opportunities on USFS lands or adjacent. Policies don't address regional employment or population growth trends on USFS lands. Regional employment and population growth would not cause inconsistencies within the National Forest Management Plans. All 6 build alternatives are considered consistent with the policies in the ANF system. As a rule, only housing for USFS employees is permitted on ANF and SGMNM lands.

Conclusion – The population of Los Angeles County is sufficient to meet employment demand during project construction. Construction employees are not expected to move to the RSA.

In reviewing this section, it looks like employment and population numbers will only be slightly higher, regardless of choosing one of the six alternatives or the No Build Alternative. Non HSR long-term plans will not be much higher than expected regardless of the direction chosen.

Questions:

3.18-11 If workers are needed from other regions and local housing is not available, where will new workers be housed?

3.18-12. Since 2023, the "Peak Year" for construction, is already upon us, and since construction is estimated to take 8-9 years, what years are now projected for construction?

- 3.18-14** Why confine the RSA to the current DEIR regional information and at the same time predict substantial environmental changes from growth resulting from construction of the project?
- 3.18-28** How is HSR an environmental advantage over the No Project Alternative, when the 8 – 9 year construction environmental effects for building HSR are factored in?
- 3.18-29** Wouldn't use of High-Speed Rail, even using current figures, be cost prohibitive at \$15,800 a year for most workers taking HSR trains from Palmdale to Los Angeles?
- 3.18-30** Although CEQA cannot affect housing that has not been built, the growth cited as a result of housing needs connected with HSR use could indirectly affect the environment. How can those effects be ignored when future train use and operation is being counted?

CHAPTER 4

CHAPTER 4: SECTION 4(F) AND 6(F) EVALUATIONS SUMMARIZES IMPACTS TO PARKS, WILDLIFE REFUGES, AND HISTORIC PROPERTIES IN ACCORDANCE WITH SECTION 4(F) OF THE DEPARTMENT OF TRANSPORTATION ACT OF 1966 AND SECTION 6(F) OF THE LAND AND WATER CONSERVATION FUND ACT

Under Section 4(f), an operating administration of the U.S. Department of Transportation may not approve a project that uses protected resources, unless one of the following conditions is met:

- There is a finding of *de minimis* impact for use of a resource; or
- If there are no prudent or feasible alternatives to such use, and the project includes all possible planning to minimize harm to such resources.

Question: CHSRA previously considered numerous other alignments to connect the Palmdale and Burbank Stations, but eliminated them from consideration for political reasons (i.e., not geotechnical reasons). Given that there exist numerous prudent and feasible alternatives, why should the U.S. DOT approve the high-speed rail project?

On Page 4-2 of the DEIR, CHSRA states that it, “proposes to classify identified property uses as *de minimis*; therefore, further analysis of feasible and prudent Build Alternatives and measures to minimize harm and a least harm analysis have not been prepared.”

What is a de minimis impact?

The Illinois Department of Transportation defines it as follows: “A *de minimis* impact means that the activities, features, or attributes of the property under protection of section 4(f) (for this project, Pyramid Park) **will not be adversely affected** by the transportation project.”¹¹⁰

The U.S. Department of Transportation Federal Highway Administration defines *de minimis* as follows: “For publicly owned public parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that **will not adversely affect** the activities, features, or attributes of the Section 4(f) property.”¹¹¹

Question: Given that at least portions of the Angeles National Forest, the San Gabriel Mountains National Monument, the Pacific Crest Trail, the Rim of the Valley Trail Extension, and the Hansen Dam Open Space

¹¹⁰ [https://idot.illinois.gov/Assets/uploads/files/IDOT-Projects/District-9/IL-37-to-IL-148/Section%204\(f\).pdf](https://idot.illinois.gov/Assets/uploads/files/IDOT-Projects/District-9/IL-37-to-IL-148/Section%204(f).pdf)

¹¹¹ https://www.environment.fhwa.dot.gov/env_topics/4f_tutorial/overview.aspx?b=e

qualify as properties under the protection of Section 4(f), how can CHSRA state that it will not adversely affect these resources? CHSRA has proposed myriad mitigation measures in order to offset the adverse effects that it will be causing to these resources.

On Page 4-3 of the DEIR, CHSRA states that it is released the following draft Section 4(f) statement for comment pursuant to 3 U.S.C. 237, 23 C.F.R. Part 774, and the NEPA Assignment MOU:

The Authority may not approve the use of a Section 4(f) property, as described in 49 U.S.C. 303(c), unless it determines that **there is no feasible and prudent alternative to avoid the use of the property** and the action includes all possible planning to minimize harm resulting from such use, or the project has a *de minimis* impact consistent with the requirements of 49 U.S.C. 303(d) (see Section 4.1.4.4 for a definition of *de minimis* impacts). An alternative is not feasible if it cannot be built as a matter of sound engineering judgment. In determining whether an alternative is prudent, the Authority may consider if the alternative would result in any of the following:

- i. The alternative does not meet the project's stated Purpose and Need;
- ii. The alternative would entail unacceptable safety or operational problems;
- iii. After reasonable mitigation, the alternative would result in severe social, economic, or environmental impacts; severe disruption to established communities; severe disproportionate impacts on minority or low-income populations; or severe impacts on environmental resources protected under other federal statutes;
- iv. The alternative would require additional construction, maintenance, or operational costs of an extraordinary magnitude;
- v. The alternative would pose other unique problems or unusual factors;
- vi. The project would entail multiple factors that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

Question: As stated previously, CHSRA considered, studied, and rejected numerous alignments. Under what reasoning can CHSRA conclude that there is no feasible and prudent alternative to avoid the use of Section 4(f) properties?

Question: Considering the six Build Alternatives CHSRA has presented in the DEIR, each of the six entails unacceptable safety and operational problems due to crossing numerous faults in a tunnel. The magnitude of these problems has not been sufficiently studied, as CHSRA has placed the burden of such research on contractors yet to be hired. Using its own guideline (ii) as set forth above, how can CHSRA **not** eliminate the six Build Alternatives from consideration?

Question: Considering the previous examinations of the impacts on the Angeles National Forest, the San Gabriel Mountains National Monument, the Pacific Crest Trail, the Rim of the Valley Trail Extension, and the Hansen Dam Open Space, it follows that the six Build Alternatives will cause severe impacts on environmental resources protected under other federal statutes. Using its own guideline (iii) as set forth above, how can CHSRA **not** eliminate the six Build Alternatives from consideration?

Question: Considering that the costs of tunneling through the San Gabriel Mountains are multiple times the cost of building a train system at grade to follow existing freeways, each of the six Build Alternatives would require additional construction costs of an extraordinary magnitude. Using its own guideline (iv) as set forth above, how can CHSRA **not** eliminate the six Build Alternatives from consideration?

Question: Considering the cumulative impacts of the six Build Alignments as detailed in 7,000 pages of this DEIR, the project cumulatively causes impacts of extraordinary magnitude. Using its own guideline (vi) as set forth above, how can CHSRA **not** eliminate the six Build Alternatives from consideration?

In a footnote on Page 4-3 of the DEIR, CHSRA states that:

“The Authority cannot make any determination that an action constitutes a constructive use of a publicly owned park, public recreation area, wildlife refuge, waterfowl refuge, or historic site under Section 4(f) without first consulting with FRA and obtaining FRA’s views on such determination. Thus, any determinations of a constructive use by the Authority would be preliminary only. The Authority will provide FRA written notice of any proposed constructive use determination, and FRA will have thirty (30) calendar days to review and provide comment. If FRA objects to the constructive use determination, the Authority will not proceed with the determination.”

Question: What is a constructive use?

According to 23 Code of Federal Regulation § 774.15 (Constructive Use Determinations):

“A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the property are substantially diminished.”

Although CHSRA has presented justifications as to why certain sections of the Angeles National Forest, the San Gabriel Mountains National Monument, the Pacific Crest Trail, the Rim of the Valley Trail Extension, and the Hansen Dam Open Space do not qualify for Section 4(f) protection, surely these areas then fall under the category of constructive use.

Question: Given the six Build Alternatives and CHSRA’s evaluation of the various resources as being applicable or not applicable for protection under Section 4(f), in what locations does CHSRA intend to notify the FRA of proposed constructive use determinations?

On Page 4-4 of the DEIR, CHSRA explains that, “the FRA must also compare the alternatives to determine which alternative has the potential to cause the least overall harm in light of the preservationist purpose of the statute.”

Question: Given that the No Project Alternative is the only one of the seven alternatives studied in the DEIR that will NOT cause harm to Section 4(f) resources, on what grounds would the FRA select any of the six Build Alternatives instead of selecting the No Project Alternative?

On Page 4-45 of the DEIR, CHSRA lays out its rationale for why it believes the majority of the Angeles National Forest should not qualify for protection under Section 4(f). Table 4-3 summarizes the Land Use Categories within the ANF and whether or not certain Land Uses are suitable or not suitable within each Category. Table 4-3, reviewed in conjunction with CHSRA’s rationale on Page 4-45, highlights CHSRA’s hypocrisy with respect to land use.

On Page 4-45, CHSRA asserts that because Back Country/Motorized Use Restricted zones and Back-Country/Non-Motorized zones allow for “communication sites by exception,” they would not qualify for protection under Section 4(f). Table 4-3 demonstrates that in both Back Country/Motorized Use Restricted zones and Back Country/Non-Motorized zones, Major Transportation Corridors are NOT SUITABLE. Additionally, the USFS has determined that Back-Country/Non-Motorized zones are also NOT SUITABLE for the following land uses: Major Utility Corridors, Road Construction, and Developed Facilities.

Figure 4-7 is an overlay map that demonstrates the six Build Alternatives and their geographical relation to the various Land Use Categories within the ANF and the Monument. The six Build Alternatives go through many Land Use Categories, including Back Country/Non-Motorized and Back Country/Motorized Use Restricted.

Question: If CHSRA is relying on the designations set forth in Table 4-3 as a rationalization for why major portions of the Forest are not protected under Section 4(f), by the same logic, shouldn't the high-speed rail system not be permitted within the Forest as the six Build Alternatives each go through the two Back Country zones which do not permit transportation corridors as an acceptable land use?

Beginning on Page 4-75 of the DEIR, CHSRA catalogues the various Section 4(f) resources and sets forth its rationale for concluding that both Permanent Use (i.e., when a portion of the resource will be permanently incorporated into a transportation project) and Temporary Occupancy (i.e., the resource will only be impacted during a temporary period of time, such as during construction) of these resources is *de minimis*.

At the outset of these evaluations, it is worth noting that we do not believe that any of the CHSRA proposed uses qualify as "Temporary Occupancy." Per CHSRA's definition as set forth in Section 4.1.4.2 of the DEIR:

A temporary occupancy of a Section 4(f) resource occurs when a Section 4(f) property is required for construction-related activities. Temporary occupancy would be considered use if the property is not permanently incorporated into a transportation facility, but the activity is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. However, a temporary occupancy of property does not constitute a use of a Section 4(f) resource when the following conditions are satisfied:

- i. The occupancy must be of temporary duration (i.e., shorter than the period of construction) and must not involve a change in ownership of the property.
- ii. The scope of work must be minor, with only minimal changes to the protected resource.
- iii. There must be no permanent adverse physical impacts on the protected resource or temporary or permanent interference with activities or purpose of the resource.
- iv. The property being used must be fully restored to a condition that is at least as good as existed before project construction.
- v. There must be documented agreement of the appropriate OWJ over the resource regarding the foregoing requirements.

Given that CHSRA proposes to construct the largest infrastructure project in the State of California (and one of the largest in the United States), it is not reasonable for CHSRA to assert that its scope of work will be minor, with only minimal changes to the protected resource. In this DEIR, CHSRA includes thousands of pages of proposed mitigation measures intended to address the vast scope of changes/impacts that will be inflicted on the Section 4(f) resources.

Question: Given the foregoing, how can CHSRA assert that any of its uses qualify as Temporary Occupancy of Section 4(f) resources?

In evaluating the resources, it is worth restating the definition of *de minimis*:

A *de minimis* impact means that the activities, features, or attributes of the property under protection of section 4(f) (for this project, Pyramid Park) **will not be adversely affected** by the transportation project.¹¹²

On Page 4-75 of the DEIR, CHSRA describes the impacts/changes to the Pacific Crest Trail. Figure 4-21 shows the geographical relation of the Build Alternatives vis a vis the proposed realignment of the Pacific Crest Trail as well as the existing Pacific Crest Trail. In both cases, the Build Alignments introduce significant infrastructure that literally crosses the Pacific Crest Trail – specifically, an elevated/aerial structure which will carry a high-speed train, which hikers will presumably have to cross underneath in order to continue on the

¹¹² [https://idot.illinois.gov/Assets/uploads/files/IDOT-Projects/District-9/IL-37-to-IL-148/Section%204\(f\).pdf](https://idot.illinois.gov/Assets/uploads/files/IDOT-Projects/District-9/IL-37-to-IL-148/Section%204(f).pdf)

trail. This infrastructure represents a change in character to the portion of the project in proximity to the train. Yet somehow, CHSRA concludes that its Permanent Use of the Pacific Crest Trail is *de minimis*.

Question: How can the introduction of major infrastructure crossing the Pacific Crest Trail not be considered an adverse effect?

On Page 4-78, CHSRA describes its uses of the San Gabriel Mountains National Monument, including: an at-grade covered tunnel and portal which would be constructed within the Monument boundary (in/around the Vulcan Mine); construction activities, grading, utility installation, and roadway work (in/around Aliso Canyon); the construction of tunnel portals along with an elevated viaduct across the creek (in/around Aliso Canyon). CHSRA has concluded that the impacts on the Monument are *de minimis* on the grounds that effects, "would not substantially change the attributes or functions of the SGMNM."

Again, CHSRA is relying on the sheer acreage of the Monument and of the Forest to claim that because its activities are limited to a small percentage of acreage of the total, its impacts are *de minimis*.

Question: What would be the reasoning why the Officials with Jurisdiction for each resource should not consider impacts to the area immediately affected by the high-speed rail (i.e., the resource study area) as opposed to considering impacts to the entirety of the Monument and/or the ANF?

In Figures 4-22 and 4-23, CHSRA sets forth the following temporary and permanent improvements that would be constructed as part of its Build Alignments within the ANF and/or the Monument:

1. Permanent adit(s) within the ANF boundary
2. Construction staging area(s) ranging from 28-33 acres associated with the adit(s)
3. Permanent utility easements and the installation of overhead utility lines and electrical utility poles
4. Temporary water lines
5. Permanent ventilation/access building

CHSRA has again concluded that its impacts are *de minimis*. One factor is the categorization of areas within the ANF as not qualifying for protection under Section 4(f). The problem with this determination is that CHSRA's infrastructure elements are inextricably linked. CHSRA's tunnels all go through areas that qualify for Section 4(f) protection. Those tunnels necessitate infrastructure, which CHSRA has intentionally placed either at the borders of protected areas or immediately outside the borders of protected areas. At minimum, this would place those areas under the jurisdiction for protection under Constructive Use.

Question: When considering impacts within Section 4(f) resources, if the high-speed train tunnels through a Section 4(f) resource, shouldn't the Officials with Jurisdiction also consider the related infrastructure when determining whether or not an impact is *de minimis*?

On Page 4-92 of the DEIR, CHSRA addresses Temporary Occupancy of the Rim of the Valley Trail (Proposed Extension). Impacts include the following:

1. Two temporary construction areas of approximately 500 feet and 250 feet; and
2. A temporary construction area of approximately 23 acres; noting that
3. All six Build Alternatives would require construction activities adjacent to and within segments of the Trail extension.

CHSRA goes on to say that: "For the purposes of Section 4(f), such temporary occupancy of a Section 4(f) resource does not constitute use if each of the five conditions listed in 23 C.F.R. 774.13(d) are met (listed in Section 4.1.4.2)."

The second of the five conditions is as follows: "ii. The scope of work must be minor, with only minimal changes to the protected resource."

On Page 4-92, CHSRA somehow maintains that the scope of work in proximity to the Rim of the Valley Trail Extension is minor. Construction staging areas occupying >20 acres, combined with construction activities generating noise, dust, vibration, etc. for a period of 7 or more years cannot be considered “minor” according to any reasonable evaluation.

Question: On what grounds should the Officials with Jurisdiction conclude that the five conditions listed in 23 C.F.R. 774.13 have been met, when any reasonable person would conclude that CHRSA has failed to meet the second of the five conditions?

On Page 4-93 of the DEIR, CHRSA asserts that its Permanent Use of the Hansen Dam Open Space area would be *de minimis*. CHRSA’s justification for this decision is comprised of the following factors: (i) CHRSA will be permanently taking “only” 13 acres of the resource; despite visual and noise-related impacts from the elevated viaduct structure, the open space would “remain open and available to the public.”

As explained in our evaluation of Chapter 3.15, equestrians (both those utilizing the trail system and those utilizing the Hansen Dam Horse Park) will be significantly impacted by the introduction of an elevated structure carrying a high-speed train – to the point that we expect use of these facilities to decrease, both during construction and operation of the train.

Question: Recalling that a *de minimis* impact means that, “the activities, features, or attributes of the property under protection of section 4(f) **will not be adversely affected** by the transportation project,” how can CHRSA claim that (i) the taking of 13 acres of land is not an adverse impact; and (ii) the ability of the resource to be utilized and enjoyed by equestrians will not be adversely impacted?

CHAPTER 5

CHAPTER 5 AND APPENDIX 5-A: ENVIRONMENTAL JUSTICE

“Minority includes persons who are American Indian, Alaskan Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian and Other Pacific Islander and other individuals who are one other or two or more races.” Low Income constitutes “a person whose median household income is at or below the Department of Health and Human Services’ poverty guidelines.” General Plans of areas involved date from 1993 (Palmdale) to 2035 (Burbank). After reviewing 10 plans and 20 policies, the Authority found only health impacts, displacement and unavailable replacement units in L.A. City inconsistent with requirements.

Census block groups with the highest minority populations include Sylmar, Pacoima, and Sun Valley for the SR14, 14A, E1A, and E1 routes while E2 and E2 A have fewer EJ residents. Lake View Terrace has two low-income census groups. Census block groups are defined as EJ or non-EJ blocks. Census figures are used from 2010-2014 instead of 2020 figures.

The case against the No Project Alternative argues that by 2040 other projects requiring environmental authentication would have been built in the RSA. These unknown projects could have negative effects upon citizens. Meanwhile, the only adverse effects upon Environmental Justice communities in the Build Alternatives would be from transporting spoils, displacements of businesses aesthetics and visual quality and, in several cases, community cohesion.

Chapter 5 proceeds to skim through most of the Chapter 3 sections with each of the Build Alternatives and a statement at the end of each: “Construction of each of the six Build Alternatives would not result in any adverse fill in blank (hydrology and water resources, hazardous materials and waste, safety and security, Parks, Recreation, and Open Space, Cultural Resources) effects.” Since mitigations from these areas would be implemented, there would be no effects. Because there is a plan, there is an assumption that there would be

no adverse results. Most business displacements (70-80%) would take place in environmental justice communities. Many Pacoima and Sun Valley environmental justice displaced businesses would need to relocate out of their area. Much of this is also covered in Section 3.12: Socioeconomics and communities. Only one EJ community in Lake View Terrace would lose cohesion. There are permanent adverse Aesthetic and Visual effects in all six Build Alternatives. Adverse effects in EJ and non-EJ communities vary from four in the SR14 to eight in E2A. There would be adverse cumulative effects from spoils hauling for all Build Alternatives.

The High-Speed Rail Authority would see that EJ workers receive training through union programs and public assistance. 30% of construction dollars would come to small businesses. Resource topics with adverse effects on EJ communities are summarized with mitigation solutions: transportation (provide a management plan, widen intersections, provide turn lanes), air quality and global climate change (future reduction of intercity trips), safety and security (signals and ATC systems), and socio/economics (job training).

Despite the mitigation attempts, the Authority states that they have preliminarily concluded that, "...even after applying these measures, there remains a disproportionately high and adverse effect on minority and/or low-income populations from business displacements (all six Build Alternatives), and community cohesion (E2, and E2A Build Alternatives)."

Questions:

- Page 5-14** If "All determinations are preliminary and subject to revision after any new information, public comment, or EJ input received after the release of the Draft EIR/EIS" as stated is correct, then how is the EIR/EIS to become final? How is the public to continue to provide more input?
- Page 5-15** If "meetings have already been held "with representatives affecting the low-income population along the Build Alternatives, when, where, and with whom were those meetings conducted?
- Page 5-41** How many meetings that included low-income residents took place since 2014? Specifically what outreach efforts have taken place in EJ communities since 2019? How many of these meetings have been in-person as opposed to virtual meetings?
- Page 5-48** Although the document references six meetings taking place in 2019 in six different areas, has any additional personal contact occurred since the DEIR became public?
- 5.7.1** How can suppositions about the No Project Alternative be made about the unknown?
- Page 5.50** Where in the No Project Alternative RSA would there be population growth when there is lack of land for moving displaced people with the other Build Alternatives?
- 5.7.1.3** Considering the anticipated high-speed noise and vibration during the 8-9 years of construction that could impact low-income RSA, with traffic carrying spoils on the 5 Freeway and then later noise and vibration at grade from trains in operation, how can the No Project Alternative be more problematic?
- 5.50** What specific projects affecting EJ are expected with the No Project Alternative? Are the projects purely speculative?
- 5.51** Considering the goal of California vehicles to be electric by 2035, how would traffic likely to be different from that predicted from each of the six Build Alternatives?

- 5.7.1.5** How would water resources, drainage, erosion, and storm water run-off for any future development for the No Project Alternative compare to water used for construction in Build alternatives?
- Page 5-51** What hazardous materials could be used for development affecting the No Project Alternative by 2040 in the RSA? Given the limited space for rebuilding for displaced businesses, how could a quantity of possible No Project Alternative materials compare with high-speed rail construction? What specific “lands with existing environmental concerns” are present in the area?
- Page 5-52** The DEIR states, “Given that extensive tunneling would likely not be required, the No Project Alternative would be unlikely to generate similar quantities of hazardous spoils.” Could this statement be an argument in favor of the No Project Alternative?
- 5.7.1.7** What are the current delays in emergency responders that would continue with the No Project Alternative?
- 5.7.1.8** According to the 3.12 Socio/Economic of the DEIR, several communities would become divided. What evidence is there that this would happen with the No Project Alternative?
- 5.7.1.11** What are examples of proposed projects for the No Project Alternative?
- Page 5-55** What effect will extra lanes in roads and added quantity of trucks have upon the roads themselves? What kinds of repairs will likely be needed as a result of weighted truck traffic?
- Page 5-56-61** What are several specific examples from several block groups with EJ population where roadwork affected by high-speed train spoils would change traffic circulation as opposed to the No Project Alternative? How temporary would these spoils-related traffic effects be?
- Page 5-62** Do pollution offsets purchased through the Cap & Trade program by the Authority decrease pollution affecting the local population? If offsets are not available, what difference does that make as far as air quality is concerned?
- Page 5-63** Does a fugitive dust plan further deplete California’s water resources? Will trucks be powered by batteries rather than gas to reduce air pollution? How realistic is utilizing this new technology of EV trucks since it’s unknown if contractors will be able to purchase a large enough fleet?
- Page 5-64** How can truck traffic be routed away from residential streets? What are at least 5 examples from 5 different neighborhoods? For how many years will noise and vibration persist during construction? How will workers be protected from noise and vibration?
- During operation what “further analysis” of from N&V-MM#6 might be made for validity? If mitigations are in place, yet are not meeting federal and state regulations, what will follow for public protection? How can a contractor know the effectiveness of mitigations before production?
- 5-7.2.4** Would people with medical implants and equipment be screened in the same manner as airline screening?
- Page 5-65** Where will groundwater basins be constructed? Have floodplains been identified? How many replacement groundwater recharge areas will be provided? How much water will be used for the tunnel construction?

5.7.2.6 Where will hazardous materials be stored? At what point during construction will hazardous waste be identified? What is the State threshold for hazardous substances in the Health and Safety Code?

What kinds of hazardous substances could arise during operation?

Page 5-66 What kinds of injuries/deaths have occurred during construction so far?

What are examples of accidents possible during tunnel construction?

Would contractors be providing Safety and Security Management Plan for each site?

Page 5-67 Is Valley Fever airborne? If so, how far could it be carried, especially during Santa Ana winds? How are workers protected from Valley Fever? How many workers have gotten Valley Fever during High-Speed Rail construction? How can residents and facilities more than 0.25 mile avoid Valley Fever?

Will there be detours on the 14, 5, or 210 Freeways?

Since wildfire, earthquakes, flood, and landslides are considered local, how will the Authority be interfacing with local regions during emergencies?

Page 5-68 Is there any special funding to assist displaced businesses who fall in the EJ category?

Page 5-72 Would the Community Benefits Agreement be geared at all to EJ job seekers? How would it work? Are there other programs to help EJ displaced workers?

Page 5-77 Where would the new jobholders of “5,400 direct, indirect, and induced jobs in Los Angeles County” live?

Page 5-78 What is a “trail facilities plan?” What are examples of “permanent changes” to parks?

If adverse effects to parks are not sufficiently mitigated and new parks are necessary, who will locate land and pay for new parks?

Page 5-86 What makes a “physical change severe?” Wouldn’t viewers’ “sensitivities” vary?

Page 5-87 In addition to architectural resources with history, could cultural objects be found during excavation? If so, how will they be recognized and preserved? In addition to noise and vibration effects on the Blum Ranch farmhouse, how would produce farmed on the property be affected?

Page 5-88 Stating that because displacement, visual effects, and loss of community cohesion, which are adverse effects, are localized and not seen in “foreseeable projects,” discounts their importance and severity. How can that thinking be justified?

Page 5-93 If a “disproportionately high and adverse” effect can be addressed further in the final EIR, why can it not be addressed in the draft version? What further mitigation measures are possible?

How is it possible to predict future transportation needs without knowing and taking into consideration current Los Angeles City light rail and Metrolink plans for the northeast San Fernando Valley?

Page 5-96 What are several specific examples of how local intercity vehicle trips would be reduced along freeways through the High-Speed Rail system, especially with commuter traffic with destinations other than High-Speed Rail stations?

To what extent can anyone predict real ridership of High-Speed trains, keeping in account needed destinations and ridership costs?

How would EJ communities in Sun Valley, especially those being displaced, benefit from the Burbank Airport Station?

Where specifically would training for new workers take place? After training, how long might a specific job last?

What construction packages were awarded in 2013? How many EJ workers were hired? How many workers does a contractor of a construction package oversee?

Page 5-97 How many years would spoils-related traffic continue through construction?

Page 5-98 Since new locations for EJ displaced business can't be mitigated and workers from the area are to be trained for jobs, where can former businesses and training be found?

How will the Authority advertise SO-MM#2 to receive input from residents in Lake View Terrace who have lost community cohesion?

Page 5-99 Mitigations for aesthetic impairment suggest planting, screening stations and towers, and minimizing noise. Who would be responsible for permanent preservation and upkeep of plants? What materials would be provided for screening stations and towers? How would the screens be protected from graffiti? What noise, in particular, would need minimizing? Would it come from train operation as well as construction?

Does saying that adverse, unmitigable effects affect both EJ and non-EJ groups suggest that these effects are less adverse?

Page 5-101 Should the DEIR be subject to change also due to population changes in the years between dates used for the DEIR and actual construction, especially since these dates may differ more than 10 years in addition to climate changes?

How much current congestion is caused by traffic between Palmdale and Burbank?

APPENDIX 5-A: ENVIRONMENTAL JUSTICE OUTREACH PLAN

As required by Title VI of the amended Civil Rights Act of 1964 and Executive Order 12898, "each Federal agency shall make achieving EJ part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States." In response, the Authority states that it, "*recognizes how important provisions of existing environmental, civil rights, civil, and criminal laws may be used to help reduce environmental impacts in all communities and environmental justice on the human element. The Authority has included environmental justice considerations in its planning for the statewide high-speed rail system since 2000, when it commenced a programmatic environmental review process.*" (*California High-Speed Rail Authority, Title VI Annual Accomplishments Report, 2015*). Under Executive Order 13166 (August 11, 2000) services must be provided to Limited English speakers.

Tables using 2010-2014 census figures give demographics, age, population, Limited English Proficiency, linguistic isolation, and median household income are given for each Build Alternative. A list containing national, state, and/or County and City organizations that serve Environmental Justice communities follows with the statement that they will be “regularly tracked.” An Outreach Team is to coordinate community events, take notes, and share feedback.

Questions:

5-A-2 Beginning with 2016 and continuing through 2022, what specific dates and locations involved low income and EJ populations, including meeting community organizations; publishing information in local newspapers; contacting religious leaders and business groups?

What was the attendance at each meeting?

What additional groups were then contacted as a result of the above meetings?

Should this outreach not have already occurred before drafting an EIR that chooses a final route?

Who conducts these meetings?

Is there a list of documents to be prepared? What is on the list?

5-A-3 What part in the decision-making process do EJ participants have?

How does the decision-making work?

How can communities be engaged in changing air quality?

What are examples of “tools, training, and resources” that CHSRA is using with LEP people?

5-A-6 If “Many of these communities are experiencing rapid change,” why is the DEIR using census figures from 2010-2014 when census data from 2020 is available in 2022?

5-A-9 What area are the L. A. City figures encompassing? Shouldn't they be for the area along each Build Alternative?

5-A-12 What is meant by “tracked and updated to the master Project Section database?” Is each organization to be contacted, or is it just part of a list? Will representatives from the Authority bring the groups to the community affected and, if so, at what point in the build process will this occur?

5-A-15 What is expected from the list of organizations? What kinds of services are the EJ communities most likely to need? Which organizations do not look useful for the residents in each EJ Build Alternative?

5-A-16 At what point in the construction process will EJ residents be informed of meetings?

Where will meetings occur?

What are examples of feedback expected from them?

What specifically EJ advocacy groups will be contacted? What is expected from them?

How can activities be included in the DEIR with its current deadline of 12/1/22?

Is there a specific Dept. of Justice guideline intended to be used?

5-A-17 Will directors be documenting attendance at gatherings? Is there a percentage of the populace that is considered healthy for attendance levels?

What methods would be used for follow-through? Are there examples from previous High-Speed Rail interfacing in other areas?

In reality, how many meetings might actually occur? Will construction have begun before these meetings take place?

5-A-19 How much advance notice will EJ communities receive before meetings?

Will schools be used for meetings?

How many translators will be at meetings?

Will residents be able to meet in small groups to express opinions?

Will contractors be present?

How will the summaries be used?

What is an example of a Project Section milestone?

Will attendees at meetings be personally notified before subsequent meetings?

5-A-20 How well attended and successful have webinars been in the past with EJ groups?

To what extent is the Authority aware of Native American locations of importance, in particular near Little Tujunga Road, for example?

How will contractors instruct workers to recognize artifacts from Native tribes during digging?

How often will Titleholder Working Group meetings be held?

How well has this system worked in other HSR areas, the Central Valley, for example? What has been learned from previous meetings there?

CHAPTER 6

CHAPTER 6: PROJECT COSTS AND OPERATIONS APPENDIX 6-A: HIGH-SPEED RAIL OPERATING AND MAINTENANCE COST FOR USE IN EIR/EIS PROJECT-LEVEL ANALYSIS

Capital Costs

There are a multitude of problems with this document, the most pervasive being CHSRA's use of different years' estimates ranging from 2015 to 2018. This is further exacerbated by their inconsistent use of stated year versus a "year of expenditure" year. For example, if 2018 is listed, that means the estimate is in 2018 dollars as if it were to be constructed in 2018. 2018\$YOE means that the cost includes estimated cost escalations and inflation. The DEIR sometimes uses the year and sometimes uses the YOE, so that it's profoundly difficult to compare apples to apples.

Although the most recent business plan was approved for 2022, no current estimates are used from this latest business plan. Instead, the Authority relies on stale numbers which do not include inflation at the highest rate in decades due to the pandemic's effect on supply chain problems. In addition, the cost of fuel is at its highest point in recent history, and fuel cost is the main driver of price increases across-the-board. 2018, the most recent year for any projection contained in the DEIR, was an entire year prior to the pandemic that threw the entire world into economic chaos which is still being experienced worldwide today. Russia's ongoing war on Ukraine is disrupting the global energy market, resulting in worldwide inflation with an unknown outcome. These drivers alone will increase the capital cost if and when the project is built.

If confronted with this obvious outdated estimate, CHSRA will state that they will rely on their contingencies contained in each cost category to allegedly remedy escalations or inflationary components. However, their contingencies range from 10% to 25%, which as we know today, will probably not be sufficient. Currently, annual inflation is nearly 10% -- in just one year. With no relief from escalating oil prices due to the Russian invasion of Ukraine and OPEC's cut in oil production, compounded inflation will probably be an issue for the next few years.

On page 1, this section states:

"The sections below discuss both capital costs and O&M costs estimating methodology, assumptions, and costs. Additionally, vehicle and O&M¹¹³ costs are based on the Authority's 2016 Business Plan for consistency with the environmental impact analysis."

A footnote states there were few changes from the 2016 business plan compared to the 2018 and the 2020 business plans. But what about the 2022 business plan? The DEIR should rely on the latest available data, especially financial, for a DEIR which, when approved, will govern the project in its entirety. The lack of effort in updating the DEIR with the most updated information is a symptom of being lazy or deceitful or possibly both, especially in light of the fact that this project will be one of the most, if not the most, expensive infrastructure project in the history of the United States.

Depending on the cost category, CHSRA cherry picks which financial data they use. For example, O&M utilizes 2016 data, while just a few pages later, 2018 dollars are used for capital expenditures.

¹¹³ O&M means operations and maintenance and are not part of the capital costs

There are three components of costs for this project:

1. Construction-Capital costs
2. Operations and Maintenance-Long term, ongoing costs
3. Finance charges

Table 6-1 Estimated Capital Costs of the Palmdale to Burbank Project Section Build Alternatives (2018\$ in millions)

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	\$12,723	\$13,568	\$13,267	\$13,867	\$13,526	\$14,086
20 Stations, terminal, intermodal ^{1,2}	\$556	\$560	\$573	\$532	\$661	\$624
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	\$4,946	\$5,472	\$4,459	\$4,607	\$4,074	\$4,139
50 Communications and signaling	\$175	\$189	\$173	\$182	\$164	\$159
60 Electric traction	\$249	\$256	\$237	\$238	\$213	\$214
70 Vehicles	Considered a systemwide cost and not included as part of the Build Alternatives within individual project sections.					
80 Professional services	\$2,950	\$3,169	\$2,985	\$3,110	\$3,036	\$3,138
90 Unallocated contingency ⁴	\$801	\$861	\$803	\$834	\$799	\$824
100 Finance charges	Estimate to be developed prior to project construction.					
Total⁵	\$22,400	\$24,075	\$22,497	\$23,370	\$22,473	\$23,184

The total of \$24,075 in 2018\$ (not YOE) in Table 6-1 is more than the 2020 and 2022 YOES \$16,775 in Table 22 below (from the 2022 Business Plan Capital Cost Basis of Estimate).

Table 22 Palmdale to Burbank Cost Estimate

Palmdale to Burbank	2020 Business Plan (YOES, Millions)	2022 Business Plan (YOES, Millions)
TOTAL:	16,775	16,775

Question: How can the 2018 cost be more than the Year of Expenditure 2022? (since the YOES should be higher because it includes inflation and escalations.)

**Capital Cost Comparison Between CHSRA Source Documents
 Palmdale to Burbank SR14A**

	DEIR (2018 Bus Plan)	2020 and 2022 Bus Plan YOES
\$ in Millions	\$24,075	\$16,775
\$ Difference from DEIR		-\$7,300
% Difference		-30%

Chapter 6 and its appendices address only the capital costs and exclude finance charges. It can be argued that finance charges are indeed a component of capital costs and must be included in the total. When one takes out a vehicle loan, the finance charges are a line item, and are definitely part of the total liability. They cannot simply be excluded. For example, the \$9.95 billion bond liability alone will generate interest charges of around \$9.5 billion, bringing the total for principal and interest to \$19.9 billion.

Another mind-boggling exclusion from capital costs are:

“Support facilities associated with the project, including equipment yards, shops, and administration buildings, are not included in the capital cost estimates.” (Emphasis added.)

We do know that Business Plans exclude finance charges, so the \$105 billion budget (originally \$33 billion in 2008) is grossly understated. If a station is included in project section EIRs (which they are), then equipment yards, shops, and administration buildings within each project section should also be included.

Question: Why are these equipment yards, shops, and administration buildings excluded?

Question: Does that mean that the \$105 billion is project cost contained in the 2022 Business Plan is understated?

Question: Are those costs excluded from project sections and included in another budget similar to the rolling train stock?

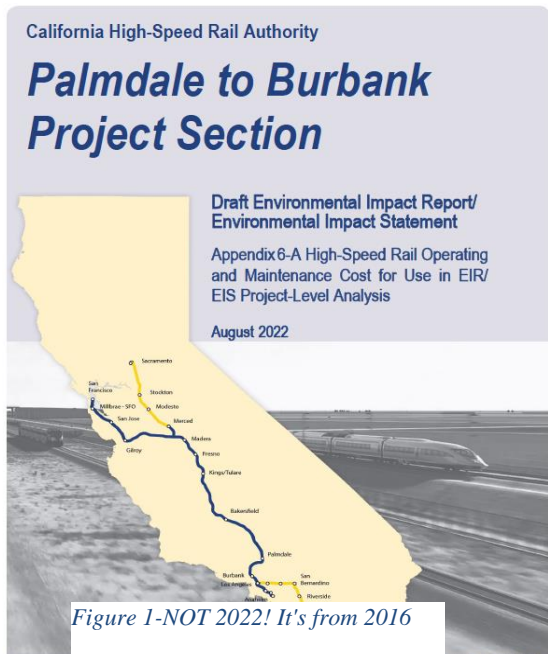
Question: What else is excluded?

CHSRA's numbers are suspect. They pick and choose which year(s) to include in the DEIR thinking that no one will check. Then, they mix that confusion with excluding billions in real, tangible costs from the overall budget. In some documents, they use 2029 as a Phase I operational base year. In others they use 2033 as a Phase 1 operational base year. Because of the mountain of delays of this project, 2033 (another published year) is likely the most accurate base year. Further, their use of dollars in a stated year in one document, and then using the Year of Expenditure in another document is inconsistent and confusing.

Question: Why did CHSRA not bother to use the most recent cost estimates since they were readily available (from the 2022 Business Plan)?

Question: Why did CHSRA not use consistent cost bases?

APPENDIX 6-A – O&M COSTS



CHSRA presented differing document names making it confusing to identify the most recent pertinent document. For example, the document entitled, “High-Speed Rail Operating and Maintenance Cost for Use in EIR/EIS Project Level Analysis Memorandum (2017)” was cited in another chapter as a document for “more information.” A Public Records Request was initiated for this document but the document provided was actually already part of the DEIR but listed under a new name, “Appendix 6-A High-Speed Rail Operating and Maintenance Cost for Use in EIR/EIS Project Level Analysis.” When questioned, CHSRA responded via email, “They are actually the same document. If you scroll past the cover page, which says August 2022, and get to page three of the PDF, you will see it is a four-page memorandum dated February 2017.”

This four-page memorandum states:

“This memo summarizes the assumptions used to estimate full system high-speed rail (HSR) operations and maintenance (O&M) costs published in the California High-Speed Rail Authority’s 2016 Business Plan.” (Emphasis added.)

So, it’s not from August 2022. It’s not even from 2017. It’s from the 2016 Business Plan. They merely slapped a new cover on an old document to make it appear current even though the data is six years old.

Question: Is this laziness, sloppiness, or deception?

As bad as it is for CHSRA to state their costs based on 2016 business plan dollars, it’s even more atrocious that for most of the remainder of the O&M document, CHSRA relies on 2015 dollars. *2015 dollars.* Barack Obama was still President. The pandemic was still 4 years in the future, and inflation was low. What cost \$100 in 2015 now costs \$122.49—so how can anyone believe the stated costs in this DEIR are even close to accurate?

Then, there’s the inability to compare apples to apples. When stale numbers are drawn upon and included in DEIR, a reasonable person would want to know what these same items cost pursuant to a more recent business plan. However, in most cases, that is impossible because they present items through just enough of a different lens that it is unachievable. For example, in one document they may use the years 2029 and 2040. In another document (the 2022 Business Plan), it looks like the following chart:

Table 5.6.1: Phase 1 High, Medium and Low O&M Costs by Year (YOY \$ in Millions)

O&M Levels	2033	2034	2035	2040	2045	2050	2055	2060
High Operations and Maintenance Cost	842	1,690	1,828	2,226	2,588	3,039	3,521	4,125
Medium Operations and Maintenance Cost	770	1,545	1,671	2,035	2,366	2,779	3,219	3,771
Low Operations and Maintenance Cost	742	1,489	1,611	1,962	2,282	2,679	3,104	3,636

Because full funding for the system has not been identified, the phasing assumptions used for developing the forecasts and estimates are for illustrative purposes.

From the start, CHSRA has stated that once the infrastructure is built, an independent/private contractor would take over operation of the train. An analogy that CHSRA offered years ago is our freeway system i.e., the government built and maintains the infrastructure, but it is used by the public.

Question: Why are estimates in the 2022 DEIR based on 2015 data (7-year-old cost assumptions)?

Question: Why are documents in different years' data presented in different manners (including line items and years of operation) so that an apple-to-apple comparison is nearly impossible?

Question: Why is maintenance (presumably to be the State of California's ongoing responsibility) lumped together with operations (presumably to be part of the train operator's obligation)?

From the Appendix 6.A, p. 3. Note that the Total Cost for 2029 High Scenario is \$798 million.

Question: If the operator is an independent private company, why is CHSRA including cost estimates for operations, dispatching, maintenance of equipment, station and train cleaning? Wouldn't these items presumably be the train operator's responsibility as operating costs?

Question: For comparison, Amtrak is a for profit company, but is government-owned because the federal government owns most of the stock. Is that what CHSRA envisions?

Question: Or, is it the "freeway model" where the government builds and maintains the tracks and other infrastructure but the public (in this case the operator is the "public")?

Table 2 below outlines high scenario O&M costs.

Table 2: Annual Operations and Maintenance High Scenario Cost Forecast (\$2015 millions)

Cost Category	2025 High Scenario Cost	2029 High Scenario Cost	2040 High Scenario Cost
Train Operations	\$31	\$263	\$311
Dispatching	\$14	\$32	\$33
Maintenance of Equipment	\$24	\$101	\$146
Maintenance of Infrastructure	\$58	\$131	\$133
Station and Train Cleaning	\$23	\$74	\$77
Commercial	\$46	\$56	\$103
General and Administrative	\$15	\$53	\$58
Insurance	\$29	\$57	\$57
Unallocated Contingency	\$10	\$32	\$38
Total Cost	\$249	\$798	\$956

Note: Numbers may not add due to rounding

CHAPTER 7: OTHER CEQA

This Chapter presents environmental adverse unavoidable effects of the Palmdale to Burbank Project Section. They include: nitric oxide, carbon monoxide, particulate matter in the air during construction and along haul routes, excessive operational train noise minus noise barriers, paleontological destruction from tunneling, visual aesthetics, and impacts on historic built resources.

The Chapter also attempts to show benefits to Los Angeles County from High-Speed Rail: less than 3 hour travel time between Los Angeles and San Francisco, decreased air pollutants once the train is operating, job creations, and improvements to local transit.

“Short-term Use of the Environment and the Enhancement of Long-term Productivity” points out investment of materials, consumption of fossil fuels, and conversion of land necessary for construction. However, without High-Speed Rail, air quality will continue to deteriorate and travel time and congestion will increase. With High-Speed Rail greenhouse gases will be reduced and there will be more construction for workers to provide new services and housing.

In summation, there are “irreversible environmental changes” with the project: procurement of land, materials, and fossil fuels both above and below ground.

Question: This chapter lists environmental detriments to people during the project’s construction and uses the same list as positive influences on people during the train’s operation: acquirement of land and housing construction as examples. How can the same factors be both adverse and beneficial?

Question: This chapter shows that encroachment on land, destruction of natural resources, and interruptions and damage to peoples’ lives from impacts of the construction of High-Speed Rail are neglectable when compared with hypothetical gains to people later during the train’s operation. Is travel convenience for people superior to environmental destruction?

APPENDICES NOT BUNDLED WITH CHAPTERS

APPENDIX 3.2-A: VEHICLE MILES TRAVELED METHODOLOGY

General Discussion

CHSRA asserts that it will divert trips from auto, air, and conventional rail (CVR)¹¹⁴ thus cutting greenhouse gas emissions. The problem is that there is no verifiable nor truly accurate way to project this data. California’s population grew only slightly from the 2010 census; in fact, it lost a Congressional seat. Further, the data that HSR cites was from 2015 and/or 2016, over 6 years prior to the release of this DEIR. It is also peculiar as to why HSR pulled data from its 2016 Business Plan when there has been a 2018 business plan, a 2020 business plan, and a 2022 business plan submitted and approved by the CHSRA board. CHSRA’s main and recurring “selling” point, whether it is true or not, is that it is a clean energy mode of transportation and will not contribute to greenhouse gasses from its operations, while further reducing greenhouse gas emissions by replacing miles traveled by vehicles, airplanes, and conventional rail.

Even if the high-speed train does indeed supplant other greenhouse gas-emitting modes of transportation when it becomes operational, the amount of greenhouse gasses it produces during construction is greater than any savings:

The non-partisan California Legislative Analyst’s Office states:

“High-Speed Rail Would Initially Increase GHG¹¹⁵ Emissions for Many Years. As mentioned above, in order to be a valid use of cap-and-trade revenues, programs will need to reduce GHG emissions. While the HSRA has not conducted an analysis to determine the impact that the high-speed rail system will have on GHG emissions in the state, an independent study found that—if the high-speed rail system met its ridership targets and renewable electricity commitments—construction and operation of the system would emit more GHG emissions than it would reduce for approximately the first 30 years. While high-speed rail could reduce GHG emissions in the

¹¹⁴ Not covered in this comment letter.

¹¹⁵ Greenhouse Gas (GHG)

very long run, given the previously mentioned legal constraints, the fact that it would initially be a net emitter of GHG emissions could raise legal risks.”¹¹⁶ [emphasis added]

The Reason Foundation’s findings are even more dire:

“In a 2010 UC Berkeley study, Professors Mikhail Chester and Arpad Horvath estimated that the entire California high-speed rail project would generate 9.7 million metric tons of carbon dioxide during construction. Chester and Horvath estimated that it would take high-speed rail 71 years of operation at medium occupancy to offset its own construction-related greenhouse-gas emissions. Given the project’s delays and carbon reductions being achieved by new technology, like electric vehicles, it is possible that, if built, the rail system will never pay back the carbon investment required to build it.”¹¹⁷ [emphasis added]

Question: How can CHSRA claim that this project is a clean energy project when it is emitting massive amounts of greenhouse gas emissions over a period of well over a decade?

There are three reasons people use transportation: Commuting, business, and pleasure. The three motorized modes currently utilized are vehicles, air travel, and conventional rail (CVR). The CHSRA claims that it can divert a substantial amount of usage to the high-speed train resulting in greenhouse gas emissions.

High-Speed Train v. Vehicles for Commuting

The high-speed train is an expensive and therefore infeasible choice for commuters. The majority of greenhouse gasses are emitted from vehicles for commuting purposes. Driving from Palmdale to Burbank takes about 93 minutes and costs about \$24 round trip for fuel¹¹⁸. A hybrid would do much better at \$13.53¹¹⁹. The Antelope Valley Metrolink line running from Palmdale to Burbank takes 97 minutes at a round trip cost of \$19. The proposed high-speed train would take 13 minutes at a round trip cost of \$72.¹²⁰ Over the course of 48 weeks (assumes 2 weeks’ vacation and 10 paid holidays), the high-speed train “commuter” would spend \$17,280 for commute costs, while the Metrolink commuter would spend \$4,560, or \$12,720 less. A gasoline vehicle would cost about \$5,683 annually and a hybrid \$3,248, resulting in savings compared to the high-speed train of \$12,608 and \$14,043, respectively. An electric vehicle costs a mere \$1,102 annually, with a whopping savings of \$16,178. Because the commute cost of the high-speed train is prohibitive, it cannot be considered a feasible contender for replacing either an automobile or the existing Metrolink as a commute alternative.

COMMUTE COST BETWEEN PALMDALE TO BURBANK		
Mode	Annual Cost for Commuting	Commute Time 1-Way
High Speed Train	\$17,280	13 minutes
Metrolink AVL	\$4,560	97 minutes
Gasoline Vehicle	\$5,683	93 minutes
Hybrid Vehicle	\$3,248	93 minutes
Electric Vehicle	\$1,102	93 minutes

¹¹⁶ <http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.pdf>. “Legal risks” refers to the fact that the California “cap & trade” program requires that beneficiaries of the generated revenue be “green.” The high-speed train currently is a beneficiary of 25% of these funds so if it’s legally challenged as to its standing, it is at risk for losing such funding from this revenue stream.

¹¹⁷ <https://reason.org/commentary/california-overstates-bullet-trains-climate-benefits/>

¹¹⁸ 51 miles each way at 28 mpg, gas cost per gallon of \$6.50

¹¹⁹ 51 miles each way at 49 mpg, gas cost per gallon of \$6.50

¹²⁰ 2020 Business Plan Ridership Revenue Technical Document, p. 2-6

Other sample city-to-city commutes are equally expensive using the High-Speed Train:

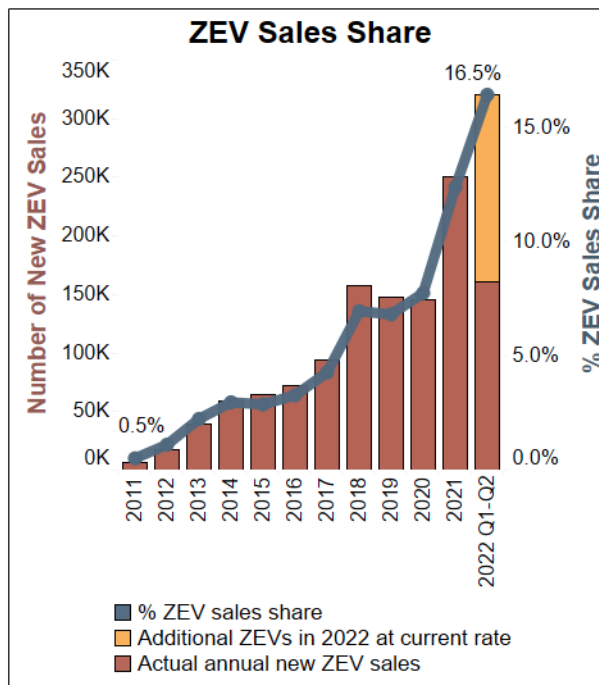
Route	Daily Round Trip	Annual
San Francisco to San Jose	\$52	\$12,480
San Jose to Gilroy	\$42	\$10,080
San Jose to Fresno	\$142	\$6,816

However, much has happened since 2016, the year that HSR relies on as its source:

1. Due to the pandemic, employers and employees discovered that working from home is a workable, practical, and successful way to conduct business. According to Ogletree Deakins, currently 22 percent of Californians work exclusively remotely and 15 percent have a mix of working remotely and working outside the home. Additionally, institutions of higher learning are increasing their online classes, thus saving professors and students fuel costs.
2. Gavin Newsom issued a mandate that all new vehicles sold in California commencing in 2035 must be electric (EV).
3. Even without a mandate, hybrid and EV vehicles continue to grow in popularity due to the lower maintenance costs and obvious fuel savings. The following automobile manufacturers are already producing, plan on producing, and/or are expanding their line of EVs: American Honda, BMW North America, Ford Motor Company, Jaguar Land Rover Limited, Kia Motors America, Mazda Motor Company, Mercedes-Benz USA, Mitsubishi Motors North America, Nissan North America, Stellantis North America, Subaru of America, Tesla Motors, Toyota Motor Sales, Volkswagen Group of America, and Volvo Group North America.

From 2011 to 2022, California's zero-emission vehicles' (ZEV) market share increased by a factor of 33--from .5% to 16.5% in only 11 years.¹²¹ With the anticipated and funded major rollout of electric charging stations, consumer rebates, and other incentives, by the time the high-speed train becomes operational, this market share will likely eclipse fossil fuel burning vehicles thus rendering the high-speed train obsolete. Newsom's mandate that all new vehicles sold in California must be electric by 2035 furthers the argument that the high-speed train is simply not needed. The migration to ZEV is also boosted by the fact that California already has the infrastructure in place: A world-class freeway and highway system that provides easy and thorough connectivity across the state, not to mention being overseen by a well-established agency, CalTrans, which provides repair and maintenance services.

The high-speed train can ONLY reduce greenhouse gas emissions IF it REPLACES a normally-scheduled vehicle trip, AND the train is full or nearly full. If a driver who normally wouldn't schedule a trip from Los Angeles to San Francisco (or between any other of the cities on the route), decides to take the high-speed train instead of driving, that is adding a trip (net gain), not replacing a trip (zero sum) otherwise done by car. Further, if a majority of the train is empty, it is drawing upon electricity (which currently would not be drawing from a power plant powered by 100% renewable energy). The California High-Speed Rail Authority, when questioned about their assertion that they would only utilize 100% renewable energy and asked where they would pull their electricity from, stated that they would hook up to the local power



¹²¹ California Energy Commission (2022). New ZEV Sales in California. <https://www.energy.ca.gov/zevstats>

companies along the way: PG&E (33% is renewable)¹²², Southern California Edison (50% is renewable)¹²³, LA Department of Water & Power (60% is renewable)¹²⁴. These stats are nowhere near 100% renewable, although it is unclear where they will be for the completion of Phase 1.

High-Speed Train v. Air Travel

The Palmdale to Burbank Project Section is completely irrelevant to reducing air travel. In fact, an air passenger may decide to utilize the high-speed train from Palmdale for the sole purpose of catching a flight from Burbank Airport. Statewide, the project will ONLY be effective in reducing airplanes' emissions IF it actually eliminates flight(s). Obviously, no emission savings are realized if the same number of flights remain, and actually will increase greenhouse gasses as explained below.

We established above that the high-speed train is too expensive to be a commuter train. That leaves business and pleasure travel, discussed below.

Early on, the CHSRA claimed that at full build-out (Phase 1), trains would run every 5-7 minutes. However, the chart in the DEIR is quite different:

Phase 1	San Francisco and Merced	Los Angeles and Anaheim	
			<ul style="list-style-type: none"> • 2 peak TPH from San Francisco and Los Angeles (3 in off-peak) • 2 peak TPH from San Francisco and Anaheim (1 in off-peak) • 2 peak TPH from San Jose and Los Angeles (0 in off-peak) • 1 peak TPH from Merced and Los Angeles (0 in off-peak) • 1 peak TPH from Merced and Anaheim (same in off-peak)

The San Francisco and Los Angeles termini assume only 2 trains per hour will run during peak times, and 3 trains per hour will run in off-peak. It is counter-intuitive that they would run fewer trains during peak hours for any scenario, much less the San Francisco and Los Angeles scenario while the other scenarios run more trains during peak hours than on off-peak hours.

Question: Why would the San Jose and Los Angeles scenario have a different number of trains since San Jose is not a terminus? Conceivably, since San Jose is relatively close to San Francisco, it would be the same train(s) passing through enroute to the terminus destination.

Assumed Headway Times

Table 1.4 Air Service Assumptions

Origin Airport	Destination Airport	Assumed Airfare (2015 Dollars)	Assumed Headway (Minutes)
Burbank	San Francisco	\$115	480.0

¹²²https://www.pgecorp.com/corp_responsibility/reports/2018/bu07_renewable_energy.html#:~:text=PG%26E%20delivers%20some%20of%20the.and%20various%20forms%20of%20bioenergy.

¹²³ <https://dailyenergyinsider.com/news/25853-southern-california-edison-nearly-50-percent-to-2045-carbon-free-energy-goal-as-edison-international-invests-in-progress/>

¹²⁴ <https://www.ladwpnews.com/mayor-garcetti-announces-that-over-60-l-a-s-energy-is-now-carbon-free/#:~:text=With%20this%20addition%2C%20LADWP%20is,of%20Water%20and%20Power%20Commissioners>.

Headway is the distance or duration between vehicles in a transit system measured in space or time. The above chart assumes 8 hours as headway for an airplane going from Burbank to San Francisco. Four air carriers provide 23 flights per day, or roughly 1.4 flights every hour. This is counter to what this chart provides.

Efficiency: High-Speed Train Versus Other Modes of Transportation

As will be illustrated below, the high-speed train is probably not the best choice for business or pleasure travel. Business travel would likely be a one-person journey and is comparable to air travel. Assuming a trip to/from Burbank to/from San Francisco¹²⁵:

Travel Activity	Airline	HSR
Pre-travel time*	1 hour 30 minutes	25 minutes
Travel time**	1 hour	3 hours 10 minutes
Post travel***	20 minutes	5 minutes
Total Time	2 hours 50 minutes	3 hours 40 minutes
Cost (round-trip)****	\$228	\$200
*assumes carry-on luggage, parking, checking in/boarding pass, security check for airline; only parking and checking in for HSR **actual travel time including 5 minute stops at stations for HSR ***assumes deboarding for airline travel only ****average Southwest Airline fares October 2022; schedule p. 2-6 of 2020 Ridership Tech Document		

The cost for travelling by airplane and the high-speed train is comparable, but the train takes nearly an hour longer. While the high-speed train is mandated to make the Los Angeles to San Francisco trip in 2 hours 40 minutes, it did not include stops at stations (there will be some “express” trains that will not stop at stations along the corridor). The time from Burbank to San Francisco non-stop is 10 minutes shorter than from Union Station in Los Angeles, or 2 hours 30 minutes.

For pleasure travel, it is likely that there will be at least 2 people travelling. This table compares the cost of travelling by air, HSR, and by vehicle:

	Air	HSR	Vehicle-Gas	Vehicle-Hybrid	EV
2 people	\$456	\$400	\$168.07	\$96.05	\$32.58
4 people	\$912	\$800	\$168.07	\$96.05	\$32.58
Total Time	2:50	3:20	5:44	5:44	5:44
362 miles each way, 28 MPG (gas), 49 MPG (hybrid), gas \$6.50, EV \$.045 per mile ¹²⁶					

It’s evident that for pleasure travel, a vehicle, especially an EV, is much more cost effective due to being able to carry more than 1 person at a time than either air travel or the high-speed train (although depending on the EV’s range, charging may be needed along the way). This throws doubt on the CHSRA’s assertion that the high-speed train will displace other modes of transportation.

Based on the above, if the high-speed train:

- Is not a cost-effective commuter train;
- Is not cost effective for pleasure trips, and
- Is not the best choice for business travelers who necessitate the shortest travel time, then

...what is its unique selling proposition?

¹²⁵ Assumes this particular train stops at every station, not one of the “express” trains.

¹²⁶ www.ecocostsavings.com

Question: If it's not a feasible replacement for commuting, pleasure, or business travel...then what is it?

CHSRA Claims the High-Speed Train Will Result in Substantial Flight Reductions

The California High-Speed Rail Authority claims that the train will replace thousands of flights annually.

The DEIR states:

“1.1.4 Process to Estimate Differences in Air Travel and Air Service Needs

As noted in Section 1.1.1, the introduction of HSR will divert trips from auto, air, and CVR. Those diverted trips can be consistently and deterministically forecast by comparing the differences in forecast trips by mode between the build and no-build alternatives.

The determination of changes in air service needs are more difficult to estimate since the amount of air service provided by carriers is based on their individual responses to HSR and other factors. Based on the structure of the BPM-V3, air trip interchanges can be assigned to origin and destination airports.⁹ The average daily air passenger trips were multiplied by 365 to estimate annual intra-California air passenger trips. Each airport was assigned to one of six regions: San Francisco Bay Area, Sacramento Valley, San Diego, San Joaquin Valley, Southern California, and the Remainder of the state. The forecast no-build and modeled annual air trips were aggregated into tables of trips from airport region to airport region.

Annual passenger and flight data between California airports updated in May 2015 by the US Bureau of Transportation Statistics (BTS) were used to determine load factors for flights from each of the six regions. The detail of the BTS data allowed for the calculation of different load factors for flights internal to California and flights destined to locations outside of California.

The forecast airport region to airport region trips were then divided by the BTS derived load factor for the departure airport region to determine the number of annual flights required to serve the passenger loads based on load factors estimated from 2015 passenger and flight data. The reduction was then the estimated flights for the no-build forecast minus the estimated flights for the build forecast.

Flight reductions computed using the above approach represent what might be expected in the future. However, airline response to changes in air passengers due to the introduction of HSR might be different.”

CHSRA claims that in year 2029 (when Phase I is fully operational, although in other documents 2033 is the first year of operation), 24,736 annual flights (outgoing and return trip) in the Southern California area “might” be eliminated by passengers instead opting to ride the high-speed train. The airports in the Southern California Area include Long Beach, Los Angeles International, and Burbank. Passengers flying from these airports would likely only be flying to the Bay Area (Oakland and San Francisco).

Flight Reductions	2025	2029
Bay Area	(5,358)	(22,644)
Sacramento Valley	(915)	(4,294)
San Diego	(677)	(4,140)
San Joaquin Valley	(438)	(1,143)
Southern California	(6,031)	(24,736)
Rest of State	(232)	(684)
Total	(13,651)	(57,641)

24,736 round trips / 2 = 12,368 one-way
 12,368 / 365 = 34 per day
 34 per day / 2 (no. of airports in "Southern California") = 17 per airport
 (excludes Long Beach Municipal Airport because there are no non-stop flights)

The following charts show the number of flights per day by carrier.¹²⁷ For Burbank, a daily 17 flight per day reduction equates to 33%, or one-third of Burbank's daily flights to Northern California. For flights from LAX, the per day reduction equates to nearly 50%. Blended average is 39%. These scenarios seem unrealistic.

It is important to note that the new Burbank Airport terminal will have more gates, but not more flights, therefore, no flight growth factor is, or should be, included in any analysis.

Would a passenger flying from Long Beach to Northern California opt for the high-speed train because no non-stop flights are available? It is doubtful that any passenger would book a flight from Long Beach to Northern California because all of them stop (or require changing planes) in either Salt Lake City or Phoenix with many taking 10-12 hours. A passenger would likely fly out of LAX or Burbank, or drive. Therefore, the train will not displace any Long Beach to Bay Area trips.

Burbank to San Francisco and Oakland – Non-Stop

	Burbank/SFO	Burbank/Oakland	Total
Southwest	6	14	20
United	11	11	22
Alaska	6	0	6
Jet Blue		4	4
Total	23	29	52
CHSRA Reduction Projection			-17
Net Flights			35

¹²⁷ <https://www.hollywoodburbankairport.com/flight-information/> and google flight search

Los Angeles International (LAX) to San Francisco and Oakland – Non-Stop

	LAX/SFO	LAX/Oakland	Total
Southwest	4	7	11
United	7	7	14
Alaska	6	0	6
Spirit		2	2
Delta		2	2
Total	17	18	35
CHSRA Reduction Projection			-17
Net Flights			18

Summary

	SFO	Oakland	Total
Burbank to:	23	29	52
LAX to:	17	4	35
Total	40	33	87
CHSRA Reduction Projection			-34
Net Flights			53
% Reduction			39%

Besides this reduction being unrealistic, it doesn't make sense that in 2025 CHSRA includes airports in the Sacramento Valley and San Diego as those experiencing flight reductions because they are not in close proximity to any high-speed train station and in a year that doesn't even have an operational high-speed rail corridor; these stations will not be operational until Phase 2 is completed.

Question: Why did CHSRA include flight reductions for airports serving areas that will not even have High-Speed Rail at that point in time and are not within a reasonable distance to an airport that does?

It is also possible that even if an airline(s) eliminates flights in the Northern California/Southern California corridor, they would substitute other destinations. For revenue and profit, they rely on their revenue from operations: **Flying.**

Question: Why does CHSRA believe that its service will result in airlines reducing actual flights between Northern and Southern California, and will not simply substitute another route?

The following HSR chart states that in 2029, HSR will divert 85% from autos, 8% from air, and 3% from conventional rail. Based on the foregoing, this does not seem credible.

**Table 2.4 2029 Annual Trips (in Millions) and Shares of Trips Diverted from Each Mode to HSR
 75th Percentile Forecast**

Market		HSR Ridership Diverted from Each Mode				Percentage of HSR Ridership Diverted from Each Mode			
		Auto	Air	CVR	Induced	Auto	Air	CVR	Induced
SACOG	SACOG	-	-	-	-	0%	0%	0%	0%
SACOG	SANDAG	0.1	0.1	0.0	0.0	51%	42%	1%	6%
SACOG	MTC	0.9	0.0	0.0	-	96%	0%	4%	0%
SACOG	SCAG	0.9	0.4	0.0	0.1	64%	29%	0%	6%
SACOG	San Joaquin Valley	0.3	0.0	0.0	-	97%	1%	2%	0%
SACOG	Other Regions	0.2	0.0	0.0	-	98%	1%	2%	0%
SANDAG	SANDAG	-	-	-	-	0%	0%	0%	0%
SANDAG	MTC	0.5	0.4	0.0	0.1	50%	42%	0%	7%
SANDAG	SCAG	3.2	0.0	0.3	0.0	89%	1%	9%	1%
SANDAG	San Joaquin Valley	0.5	0.0	0.0	0.0	86%	7%	2%	5%
SANDAG	Other Regions	0.2	0.1	0.0	0.0	74%	19%	1%	6%
MTC	MTC	2.4	-	0.2	0.1	90%	0%	6%	4%
MTC	SCAG	4.7	2.4	0.0	0.6	61%	30%	1%	8%
MTC	San Joaquin Valley	4.8	0.1	0.1	0.3	92%	1%	2%	5%
MTC	Other Regions	2.8	0.0	0.1	0.1	93%	0%	4%	3%
SCAG	SCAG	7.8	0.0	0.2	0.2	95%	0%	3%	2%
SCAG	San Joaquin Valley	6.3	0.1	0.4	0.4	88%	2%	5%	5%
SCAG	Other Regions	1.8	0.2	0.0	0.1	86%	9%	1%	4%
San Joaquin Valley	San Joaquin Valley	2.3	0.0	0.1	0.1	94%	0%	3%	3%
San Joaquin Valley	Other Regions	1.1	0.0	0.0	-	99%	0%	1%	0%
Other Regions	Other Regions	0.2	0.0	0.0	-	99%	1%	1%	0%
Long-Distance Total		41.0	3.8	1.5	2.0	85%	8%	3%	4%
MTC (< 50 miles)	MTC (< 50 miles)	0.4	-	-	-	100%	-	-	-
SCAG (< 50 miles)	SCAG (< 50 miles)	0.1	-	-	-	100%	-	-	-
Short-Distance Total		0.5	-	-	-	100%	-	-	-
Total		41.5	3.8	1.5	2.0	85%	8%	3%	4%

Source: Cambridge Systematics

To their credit, CHSRA admitted the following:¹²⁸

“The BPM-V3, like any travel model, is based on a limited number of variables. While the BPM-V3 has been calibrated to reasonably reproduce travel for a base year, much of the “unexplained” variation in travel is “explained” through calibrated model constants. The constants account for unknown input variables that affect travel. In effect, the constants assume that the impacts of those unknown variables do not change over time.

The information and results presented in this technical memorandum are estimates and projections that involve subjective judgments, and may differ materially from the actual future ridership and revenue. This technical memorandum is not intended, nor shall it be construed, to constitute a guarantee, promise, or representation of any particular outcome(s) or result(s). Further, the material presented in this technical memorandum is provided solely for the Authority’s planning purposes and should not be used for any other purpose. [Emphasis added.]

The CHSRA is admitting that the information contained in the DEIR involves subjective judgments and may be **materially** different from the actuals. Also, it is not intended to represent an outcome--so it begs the question, “What is it then?”

Question: If the train does not save passengers time and/or money, why would they ride?

APPENDIX 3.4-C: NOISE AND VIBRATION MITIGATION GUIDELINES

This section describes the noise levels (in terms of dBa) and vibration on the effect of the areas surrounding the construction and operation of the High-Speed Rail (HSR).

¹²⁸ Chapter 3.2A – Vehicle Miles P. 40

Noise is one of the principle environmental impacts associated with rail construction and operation. 40dBa represents a quiet ambient noise level in a rural environment. 90dBa represents a jackhammer at 50 feet.

High-Speed Rail noise source shows that a train going 150 mph generates a noise level of 90 dBa. A train traveling at 200 mph generates a dBa of 105.

Construction of the HSR is estimated to take up to five years. Based on previous timelines presented by the HSR, this is probably a low estimate.

During the construction, there will be many phases. A few are:

Phase	dBa produced at 50 feet from source	Estimated timeline
Mobilization	91	2 years
Site Preparation	90	3 years
Tunneling	90	Over 5 years
Retaining Wall Construction	88	3 years
Earthmoving	88	4 years
Cut-and-Cover	89	Over 6 months
Demolition	89	Over 8 months

In addition, the estimated thirty-three types of construction equipment, including pile drivers, rock drills, graders, dozers, etc. will generate typical noise emission levels ranging from 76 dBa to 101 dBa (50 feet from source).

The criteria of the Federal Railroad Administration (FRA) is not to exceed 80 dBa for daytime noise levels and 70 dBa for nighttime noise levels. Noise levels from the construction of each of the six Build Alternatives would exceed these criteria for both daytime and nighttime activities for sensitive receptors. The Burbank to Palmdale Section will not be able to comply with 10 of the 12 policies with respect to noise and vibration criteria set forth during the construction phase. Mitigation measures associated with the build would only decrease the noise and vibration to the extent feasible, and would still be well above the acceptable criteria levels.

Construction within the Angeles National Forest would exceed noise levels at the surface, therefore affecting wildlife. The FRA does not provide guidance for assessing noise and vibration impacts on wildlife and livestock. The Burbank to Palmdale Project Section traverses through equestrian communities and the Angeles National Forest and will have a potentially devastating impact on such animals. HSR construction would result in noise and vibration impacts for nearby sensitive receivers along the alignment where trains would travel at high speeds. Wildlife and human sensitive receivers could be startled or annoyed. Wildlife communication could be affected. It has been shown that communication among wildlife, especially songbirds, is affected by increased noise and vibration. Wild animals depend on calls and song for species identification, mate attraction, and territorial defense. Continuous noise levels above 60 dBa within habitat areas can affect the suitability of the habitat. Many regulatory agencies state that noise levels above 60 dBa is detrimental to a suitable habitat.

In addition, "startle effects" occur with each pass-by of a train. With a train speculated to pass by every six minutes, according to this DEIR, all domestic animals and wildlife located near the project corridor will be affected each time a train passes by. "Startle effects" occur when animals are subjected to noise levels of 100 dBa or higher. As stated previously, trains traveling at 200 mph produce noise levels around 105 dBa. The DEIR excludes dBa references for "tunnel boom" which is a loud boom sometimes generated by high-speed trains when they enter tunnels. These shock waves can disturb nearby residents and damage trains and nearby

structures.¹²⁹ There are no mitigation measures that effectively reduce these noise levels to acceptable levels, and therefore the No Project Alternative is the only feasible alternative to prevent the harmful effects of noise and vibration on sensitive subjects, domestic animals, livestock, and wildlife. (Please note that wildlife is not exclusive to the Angeles National Forest. There is abundant wildlife in neighboring areas to the forest.)

Construction vibration is assessed for areas where there is a potential for impact from construction activities (including blasting, pile driving, demolition). The only local standard that references vibration states that the perception threshold shall be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz. According to the Los Angeles County Ordinance Section 12.08.350, "operating or permitting the operation of any device that creates vibration that is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet from the source on a public space is prohibited." The Authority's "commitment" to minimizing construction noise and vibration impacts, since there are too many inconsistencies, is to prepare and submit a memo documenting their guidelines for minimizing noise and vibration when work is being conducted within 100 feet of sensitive receivers. This is completely unacceptable. Mitigation measures for noise and vibration concerns need to be specified before construction begins. There needs to be a specific plan to address noise and vibration in sensitive areas such as the wilderness and areas with livestock and other animals, as well as other sensitive subjects. Since the Authority is unable to comply with noise and vibration criteria, the No Build Alternative is the only solution.

In conclusion, the DEIR completely overlooks the effect of increased noise levels on wildlife, domestic animals, and livestock, stating that there will be less than significant effects after mitigation efforts (which they have failed to outline). There is a complete lack of specific plans to address the environmental impact of noise and vibration during both the construction phase and during the operation of the train.

We know that the effects of fireworks (up to 150 dBa), thunder (which produces a dBa of 100), and other loud noises have a startle effect on wildlife, domestic animals, livestock, and sensitive subjects.

Question: How can this report state that the noise impacts from the construction and operation of the train have "Less Than Significant" impact?

Even after mitigation efforts, the operational train noise impacts will be "significant and unavoidable" for sensitive receivers.

Question: How can you not correlate this same impact to wildlife, domestic animals and livestock?

Since the noise and vibration of the HSR cannot be mitigated to an acceptable level, the only alternative is the No Project Alternative.

MISCELLANEOUS COMMENTS/QUESTIONS

Businesses and residences that are permanently lost due to CHSRA acquisition currently generate the following revenues to the state (which are then allocated back to cities, counties, school districts, special districts, public safety, local transportation, etc.):

¹²⁹ People perceive this sound similarly to that of a sonic boom from supersonic aircraft. However, unlike a sonic boom, tunnel boom is not caused by trains exceeding the speed of sound. Instead, tunnel boom results from the structure of the tunnel preventing the air around the train from escaping in all directions. As a train passes through a tunnel, it creates compression waves in front of it. These waves coalesce into a shock wave that generates a loud boom when it reaches the tunnel exit. The strength of this wave is proportional to the cube of the train's speed, so the effect is much more pronounced with faster trains. (Wikipedia)

- Property Tax
- Business Tax
- Utility Users Tax
- Income Tax (state and federal)
- Sales Tax
- Franchise Fees
- Transient Occupancy Tax
- Payroll Tax

CHSRA suggests that there will be little negative impact because displaced businesses and residents will be able to find suitable replacements nearby. Yet, one cannot read the news for an extended period of time without seeing the phrase “Los Angeles housing crisis.” CHSRA also states that there will be a temporary increase in sales tax revenue because contractors will have to purchase construction supplies. However, that is only true (for any project section actually) IF they purchase the items in the same city for which they seized businesses/housing. Sales tax is generated at point of purchase and then allocated back to the city (incorporated or unincorporated) that generated it, so if a contractor purchases items in Glendale or any jurisdiction outside of the city of Los Angeles (assuming the lost business was in the city of Los Angeles), then Los Angeles loses that sales tax revenue, and it is instead transferred to Glendale.

Businesses that are forced to shut down will also have to lay off employees. This will result in a loss of state and federal income taxes and payroll taxes (Social Security and Medicare) paid by both the businesses and the employees.

Question: Where will displaced residents find suitable replacement housing?

Question: Where will displaced businesses find suitable replacement buildings that have the same character, location, and customer base?

Question: How can CHSRA guarantee that contractors purchase their supplies in the city of Los Angeles (or any city that had businesses acquired for the project)?

Question: How will the Utility Users Tax, which will be based on usage drawn from LADWP and Southern California Edison, be calculated and then remitted to Palmdale, City of San Fernando, City of Los Angeles, and unincorporated areas of Los Angeles County?

Question: Is CHSRA planning on backfilling temporary and permanent lost tax revenue to cities due to their acquisition of businesses and residences?

Question: For better transparency, and to help build public trust, please explain in greater detail how the inconsistencies between federal, state, regional and local laws for each build alternative will be resolved.

Question: What are the details of the construction management plan (CMP) so that the public can better understand how construction impacts within the Angeles National Forest will be maintained below applicable standards?

Question: Why are there no alternatives that don't disturb the Angeles National Forest? Considering all the hazards identified within each build alternative, it is irresponsible not to include a safer and less costly alternative. The No Build Alternative option should be selected.

Question: The Angeles National Forest belongs to the people of California. It's one thing to drill a tunnel under the forest floor, but another thing to take the Angeles National Forest land away from the people of California. How will the people be compensated for this federal land acquisition?

Question: For each build alternative, what are the estimated gallons of water that will be removed from aquifers within the Angeles National Forest during the construction phase, and what are the impacts this removal will have on humans, animals, and plants?

Question: For each build alternative, what are the maximum acres within the Angeles National Forest that will be impacted temporarily during construction activities, as well as acres permanently impacted by this project?

Question: For each build alternative, please describe in detail all equipment for electrification and infrastructure that will be built within the Angeles National Forest. What will this look like? How will it change the current conditions in the Angeles National Forest? Will there be many new buildings and structures in the forest? If so, how many and how tall and wide will they be? How large and what types of electrification equipment will be installed? What are the dimensions and weight of things like transformers, substations, power stations, poles, etc.? How will it change the view and serenity in the forest? Please include photos and detailed drawings so the public can see what the Angeles National Forest currently looks like and then what it will look like post construction.

Question: How many miles of access roads will be built within the Angeles National Forest for each build alternative?

Question: How many helicopter access points will be built within the Angeles National Forest for each build alternative?

Question: Will an updated biological study be performed prior to final selection to ensure the most accurate information is used?

Question: Could you please provide an updated cost-benefit analysis that reflects recent changes in population as well as ridership due to more and more people working from home?

Question: How much power per day and per year will each build alternative consume from the power grid, and how will this impact residents and businesses within each build alternative who already encounter problems with too much demand?

Question: Will this power need to be shut down during high winds to prevent forest fires?

CONCLUSION

Based on the foregoing discussion, which raises a multitude of alarming questions arising from legitimate concerns, the only route that can be considered for the Palmdale to Burbank Project Section is the No Project Alternative. All other six proposed build alternatives are fraught with risks and impacts which are real and easily verifiable: nearly 30 miles of deep-bore tunneling through an active seismic and high fire hazard zone, permanently losing precious water, destroying habitat, building acres of infrastructure within a national forest and a national monument, emitting years of greenhouse gasses during construction, pushing most of the logistical and technical burdens of serious design considerations onto contractors with no specified amount of oversight, utilizing the failed 15/85 design build model, and so on. Yet, the “benefits” of this project are based solely on CHSRA’s pure and untested speculation that ridership will be so vigorous (notwithstanding that there is no real reason for train ridership) that it will recoup the \$105 billion capital cost and the tons of greenhouse gas emissions generated during construction in a matter of months. It is clear that CHSRA’s ridership projections are aggressive and deeply flawed. This project is **all** cost and **no** benefit. The only acceptable alternative presented by CHSRA for consideration is the No Project Alternative.