

METROLINK ALTERNATIVE STUDY
PROJECTED TIME SAVINGS
By Save Angeles Forest for Everyone (SAFE) Coalition
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PURPOSE

The purpose of this report is to analyze the “Metrolink Alternative” (based on the Metrolink Antelope Valley Line that runs between Lancaster to Union Station) which includes electrifying Metrolink and replacing grade crossings with grade separations in lieu of a high speed train through various communities (Acton, Santa Clarita, San Fernando, Sylmar, Pacoima, Sun Valley) to ascertain whether it can complete its journey from just the Palmdale to Burbank section within the time constraints as required by Proposition 1A passed in 2008. The theory was that these enhancements could increase the average speed of the train, thus, making it a viable substitute for the proposed high speed train which can attain speeds up to 220 mph.

ISSUES

1. Can the “Metrolink Alternative” which includes electrifying Metrolink and replacing grade crossings with grade separations in lieu of a high speed train through our communities, complete its journey from Palmdale to Burbank within the parameters of 15 to 20 minutes—the current “time budget” for the high speed train?
2. How legally binding is Proposition 1A’s language passed by the voters in 2008 regarding the time requirement of 2 hours and 40 minutes?

EXECUTIVE SUMMARY

SAFE research concludes that the Metrolink Alternative is completely infeasible:

1. It is approximately one-and one-half times the distance as proposed high speed train routes (58 miles versus 40 miles), would roughly quadruple the time needed to travel from Palmdale to Burbank (15-20 minutes as a high speed train versus 70-72 minutes for the "Metrolink Alternative"), adding nearly 1 hour of travel time from Palmdale to Burbank. Therefore, the 2 hour 40 minute time requirement would jump by nearly an hour. The average weighted speed for the Metrolink Alternative ranges from 48-50 MPH.
2. Research and input from attorneys, rail engineers, and Legislative Counsel indicate that a small deviation in time, e.g., 2-4 minutes, would be acceptable under Proposition 1A’s mandate. However, an approximate 1 hour increase would deviate so significantly from the ballot measure, that the courts would require a new ballot measure to be placed before voters. Such a ballot measure, to become eligible for the ballot in 2018, would require either a two-thirds vote of the legislature or a petition signed by a significant percentage of voters who approved the ballot measure nearly a decade ago.

BACKGROUND

The "Metrolink Alternative," which includes electrifying Metrolink and replacing grade crossings with grade separations in lieu of a high speed train through our communities, was introduced to the Save Angeles Forest for Everyone Coalition (SAFE) by Glendale City Councilman and Metro Board Member,

Ara Najarian, in a 2016 Candidate Forum sponsored by SAFE related to the Los Angeles County 5th Supervisorial District in the Northeast San Fernando Valley. SAFE research found that such an alternative would cost about half as much as the present budget of nearly \$12 billion for the Palmdale to Burbank Project Section. The concept was of interest to SAFE which submitted it to California High Speed Rail Authority (CHSRA). CHSRA responded and stated that the alternative had been studied in 2012 but that the added time requirements placed it outside the realm of consideration for the high speed train project.

Despite these findings by CHSRA, the Metrolink Alternative concept continues to gain favor with elected officials such as LA Mayor Garcetti, LA County Supervisor Kathryn Barger, former Assemblyman Raul Bocanegra, and Los Angeles City Councilmembers Nury Martinez and Monica Rodriguez.

DISCUSSION AND ANALYSIS

LEGAL REQUIREMENTS

SAFE sought input from attorneys, rail engineers, and Legislative Counsel who indicated that a small deviation in time, e.g., 2-4 minutes, would be acceptable under Proposition 1A’s mandate. However, an approximate 1 hour increase would deviate so significantly from the ballot measure, that the courts would require a new ballot measure to be placed before voters. Such a ballot measure, to become eligible for the ballot in 2018, would require either a two-thirds vote of the legislature or a petition signed by a significant percentage of voters who approved the ballot measure nearly a decade ago.

THE HIGH SPEED TRAIN

The following chart illustrates what the time “budgets” are, by project section, as set forth by the CHSRA. Note that CHSRA at 2:51 is already outside of its 2:40 time requirement per Proposition 1A.

HIGH SPEED TRAIN MILES/JOURNEY TIME BY PROJECT SECTION

Project Section	Miles	Minutes Low	Minutes High	MPH (calc.) Low Minutes	MPH (calc.) High Minutes	% of Miles	% of Time-Low	Variance	% of Time-High
San Francisco to San Jose ¹	51	34	34	90	90	12%	20%	8%	19%
San Jose to Merced ²	84	45	45	112	112	20%	26%	7%	25%
Merced to Fresno Central Valley Wye ³	80	21	21	229	229	19%	12%	-6%	12%
Fresno to Bakersfield ⁴	114	37	37	185	185	27%	22%	-5%	21%
Bakersfield to Palmdale ⁵	80	20	25	240	192	19%	12%	-7%	14%
Palmdale to Burbank ⁶	40	15	20	160	120	9%	9%	-1%	11%
Burbank to LA-EST MINUTES* ⁷	12	10	8	75	90	3%	6%	3%	4%
UNADJUSTED TOTAL	461	181.6	190	152	57	107%	106%		106%* *

Less Merced to Madera-estimate***	-31	-10	-10
TOTAL****	430	171.6	180
NET TOTAL IN NUMERICAL FORM		2.9	3.0
NET TOTAL IN HOURS:MINUTES	2:51	3:00	

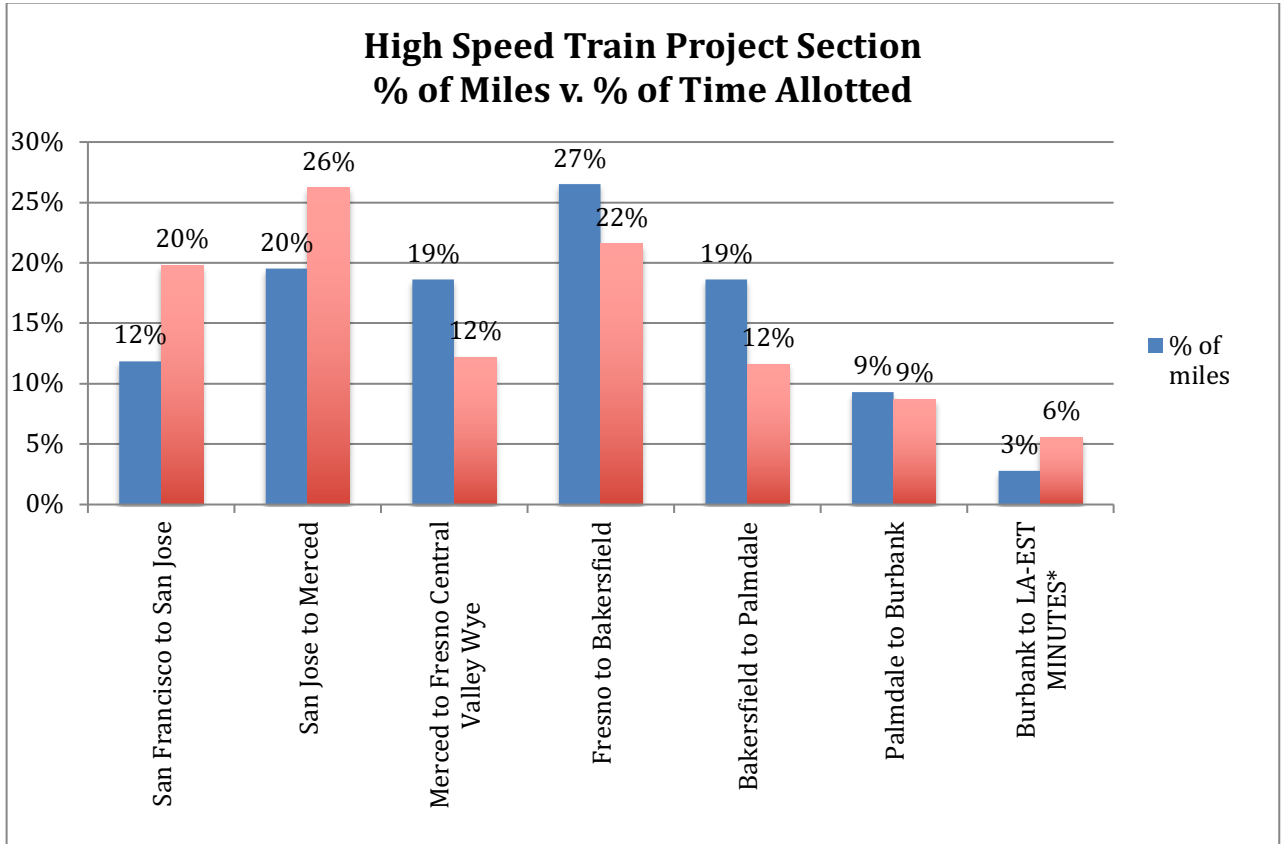
*unable to locate estimate time; estimate based on 103/160 mph

**Will not total to 100% due to inclusion of Merced station

***Merced is not on the main route and juts northward so is excluded from the SF to LA project section

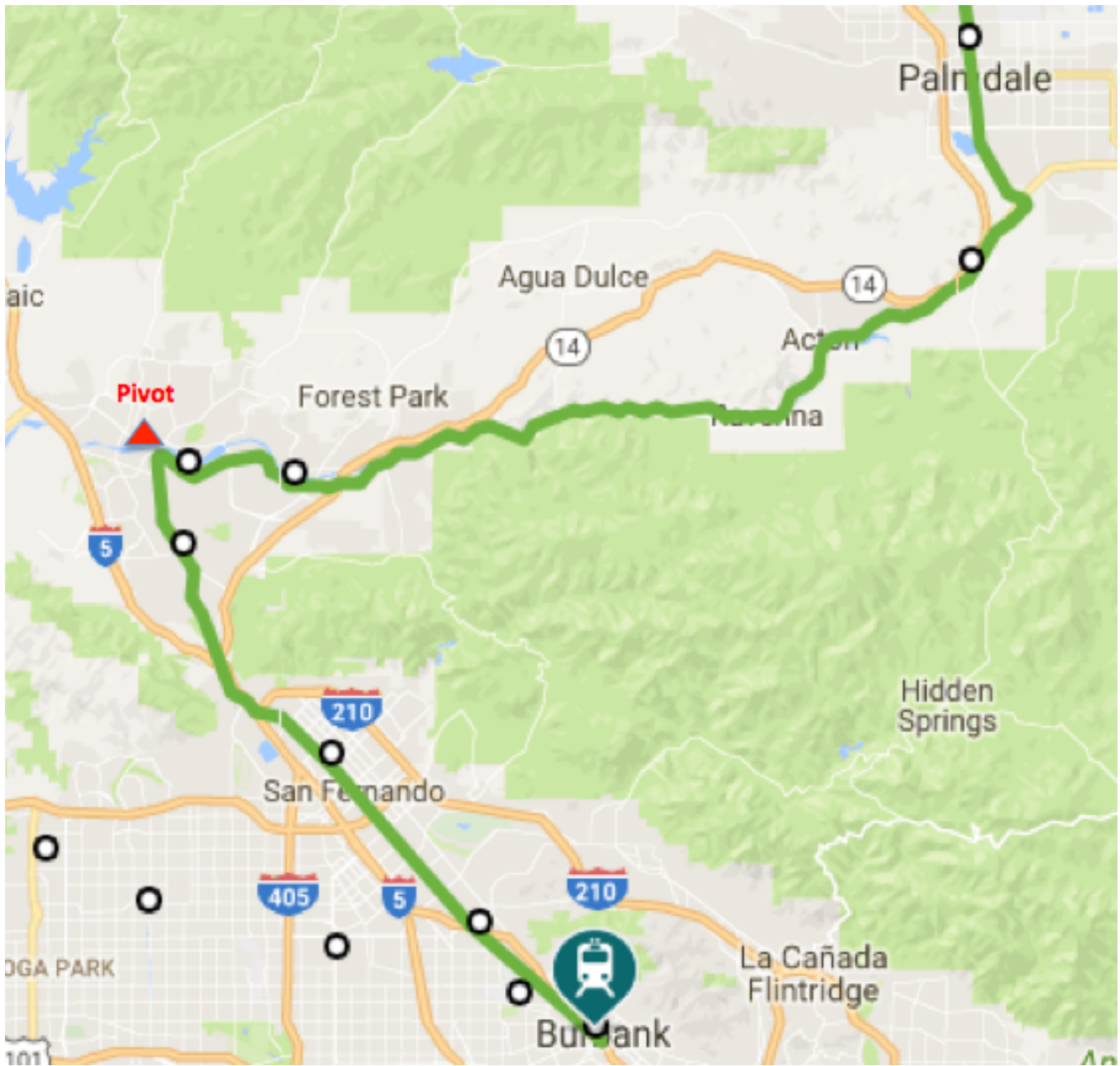
****EXCLUDED ABOVE IS MERCED TO SACRAMENTO, LA TO ANAHEIM, AND ANAHEIM TO SAN DIEGO

The following chart compares the percent of miles (totaling 430) to the percent of time of 2:51 as calculated. In an equitable world, the percent of miles would equal the percent of time within the 2:51 time. However, both the San Francisco to San Jose and the San Jose to Merced Project sections are “time hogs.” For example, although San Francisco to San Jose only represents 12% of the miles, they eat up 20% of the 2:51 time. The central valley segments are much more efficient, and the Palmdale to Burbank segment is at equilibrium.



METROLINK ALTERNATIVE

The map illustrates the Metrolink’s Antelope Valley Line (AVL). Note the numerous turns and curves from Palmdale to Santa Clarita, then it “pivots” and then runs on a fairly straight trajectory to Burbank.



Current Actual

The current Antelope Valley Line (AVL)'s travel time, with stops, ranges from 1:25 (express) to 1:30:

METROLINK - ANTELOPE VALLEY LINE CURRENT ACTUAL

	Miles	Hours:Minutes	Avg MPH
CURRENT TIME WITH STOPS	58	1:30	39
CURRENT EXPRESS TRAIN TIME	58	1:25	41

Theoretical (no stops, maximizing speed based on enhancements¹):

Based on conferring with a former Metrolink engineer, the following chart shows the results of theoretical, enhanced Metrolink service based on increased speeds resulting from grade separations and electrification. Time savings are minimal compared to existing Metrolink service and the time disparity is probably due to the Theoretical model not having stops included.

THEORETICAL VERSION	Miles	Minutes Low (calc)	Minutes High (calc)	MPH Low	MPH High
Palmdale to "pivot"	37	55.5	55.5	40.0	40.0
"Pivot" to Burbank	21	16.8	14.0	75.0	90.0
TOTAL AVL	58	72.3	69.5	48.1	50.1
NET TOTAL IN NUMERICAL FORM		1.21	1.16	n/a	n/a
TOTAL IN HOURS:MINUTES NON-STOP	-	1:12	1:09	n/a	n/a

<--weighted avg MPH

COMPARISON OF HIGH SPEED TRAIN, CURRENT METROLINK, AND THEORETICAL METROLINK PALMDALE TO BURBANK (ANTELOPE VALLEY LINE)

The following summary chart compares the High Speed Train (non-stop), the current Metrolink with stops, the current Metrolink Express with stops, and the Theoretical model. Note that the enhanced Theoretical Model (non-stop) will take between 70 to 72 minutes to complete its journey from Palmdale to Burbank. This is approximately 1 hour longer than what is currently budgeted by the CHSRA for the Palmdale to Burbank project section. This

Train Type	Miles	Minutes Low Range	Minutes High Range	MPH (calc.) Low Minutes	MPH (calc.) High Minutes
High Speed Train "budget"	40	15	20	160	120
Current Metrolink (with stops)	58	90	90	39	same
Current Metrolink Express (with stops)	58	85	85	41	same
Theoretical Metrolink* (NO stops)	58	72	70	48	50
Theoretical Metro better/(worse) HST*		-57	-50		

EXCERPTS FROM CHSRA’S RESPONSE TO THE METROLINK ALTERNATIVE⁸

“Utilizing a potentially improved Metrolink Antelope Valley Line (AVL) for high-speed rail operations or in lieu of high-speed rail would not provide an operating environment that meets the California High-

¹ According to SAFE’s source, grade separations’ benefit is for safety, and do not necessarily equate to a great deal of time reduction

Speed Rail Authority's (Authority) commitments for safety, service levels, and travel time. High-speed trains would not be able to safely travel between Palmdale and Burbank on the AVL for most of the 58 miles. The geometric and physical constraints of the railroad right-of-way raise safety issues and prevent an increase in speed due to:

- *Many of these curves do not meet high-speed rail design requirements, some of which would put high-speed rail trains at risk of derailment*
- *Numerous steep grades with tight curves (138 total) winding through narrow canyons and mountainous terrain that limit trains to an average 40 mph operating speed or less for 48.7 of the 58 miles between Palmdale and Burbank. High-speed trains are currently planned to travel at speeds capable of 200 mph in this section.*
- *A largely single track rail line shared with other passenger trains and freight trains would not provide the capacity to meet operating requirements.*
- *Three single track tunnels with only 20.5 feet of vertical clearance, which would be a challenge to accommodate overhead catenary lines for electrification.*
- *In 2012, a study was conducted by Los Angeles County Metro, (Metrolink Antelope Valley Line Infrastructure Improvement Strategic Plan) to look at the feasibility of improving the travel time on the AVL line. The study identified numerous feasible improvements that could be made, but in total would only result in a maximum 11-minute improvement in travel time. The study concluded that further improvements would require drastic rerouting and "would be unacceptable."*

CONCLUSION

The Metrolink Alternative fails on its face as it is approximately one-and one-half times the distance as proposed high speed train routes (58 miles versus 40 miles), would roughly quadruple the time needed to travel from Palmdale to Burbank (15-20 minutes as a high speed train versus 70-72 minutes for the "Metrolink Alternative"), adding nearly 1 hour of travel time from Palmdale to Burbank. Therefore, the 2 hour 40 minute time requirement would jump by nearly an hour. The only remedy to make the Metrolink feasible is for another statement ballot measure to amend the time requirement to add approximately 1 hour to the travel time. The process of creating that ballot measure for the 2018 election needs to begin immediately. In the absence of such a ballot measure approved by voters, those supporting the "Metrolink Alternative" are supporting an alternative that will delay the process and hold communities hostage indefinitely into the future.

¹ BLENDED SYSTEM; <https://www.mercurynews.com/2017/03/14/the-dream-of-high-speed-rail-in-california-is-taking-longer-and-costing-more/>

² https://www.hsr.ca.gov/docs/programs/merced-fresno-eir/final_EIR_MerFres_5CostOp.pdf

³ Ibid.

⁴ Ibid.

⁵ https://www.hsr.ca.gov/docs/programs/statewide_rail/proj_sections/Bakersfield_Palmdale/Bakersfield_to_Palmdale_Fact%20Sheet_Winter2017.pdf

⁶ https://www.hsr.ca.gov/docs/programs/statewide_rail/proj_sections/Palmdale_Burbank/Palmdale_Burbank_Project_Section_Fact_Sheet_Summer_2016.pdf

⁷ https://www.hsr.ca.gov/docs/programs/statewide_rail/proj_sections/Burbank_LA/Burbank_LA_Fact_Sheet_Fall_2016_updated_March_2017.pdf

⁸ Senator Hertzberg email from CHSRA to D. DePinto 2/2/18