

# California Rail News

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January-April 2017

## TRAC Rail Vision: Faster Trains, Through North-South Service

For the past two decades, the California High Speed Rail Authority "sucked the oxygen out of the room" and made it impossible for rail advocates to get alternative rail projects discussed at the state level. In the accompanying story "The Impending Death of CHSRA," we lay out why CHSRA will inevitably run out of funds. That will create a space where, for the first time in years, worthwhile projects can again be considered on their merits.

With this opening now coming into view, and a new Administration coming to Washington, D.C., the time appears right for TRAC to articulate its priorities for rail infrastructure spending. While TRAC certainly sees an important role for federal funding, we also see great potential for private sector investment in rail transportation.

Consistent with the name of our organization, our number one priority is growing rail ridership to the maximum possible, within capital and operating funding constraints. Research indicates that the best way to accomplish that is to provide convenient travel that is as fast or faster than driving. With today's congested highways, passenger rail is increasingly competitive.

We believe now is the time to step up the competition—with trains averaging end-to-end speeds of at least 55 or 60 mph. With Positive Train Control about to be universally adopted in the next few years, one of the major obstacles to faster operations will become history. The following categories of projects are necessary to increase ridership:

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Federal Railroad Administration rules now allow modern European-style equipment.  
Photo By Bahnfish (own work) CC BY-SA 3.0, via Wikimedia Common

### Public-Funded Improvements

- **LOSSAN Corridor:** Bypass around or tunnel under San Clemente. Tunnel to bypass Rose Canyon and provide a station in an area of high employment.
- **Capitol Corridor:** Connect Martinez station to the BNSF tracks to Richmond with a new tunnel, avoiding slow, winding UP tracks along the Bay. Extend all trains to San Jose.
- **LA Union Station:** Run-through tracks, to speed trains in California's most populous market.
- **Caltrain:** Extend trains to San Francisco's Transbay Terminal

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HSR IN MOROCCO

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TRAC  
Train Riders  
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of California



# TRAC's Rail Vision

(continued from Page One)

- Eliminate choke points and speed restrictions by building needed improvements and bypasses
- For California's intercity routes, build passenger-only 110-mph track alongside tracks that have been shared with freight trains. Not only will this eliminate conflicts with freight, it will significantly speed up the trips.
- Where adequate capacity protects passenger trains from conflicts with freights, improve tracks to enable trains to go faster than 79 mph.
- Provide both local and express service, so major destinations can be connected by the fastest trips possible. (Excessive station stops have a harmful effect on average speeds, reducing the competitiveness and ridership of intercity service.)
- Provide smartphone e-ticketing and online maps and schedules to make train travel easy for first-time riders. Coordinate the app with transit operator schedules, Uber and Lyft

to conveniently link passengers to stations and trains.

- To help ridership grow further, provide more frequent service when cost-effective.

While our top priority remains increasing speeds to increase ridership, we have one construction project that

## Public-Private Partnerships

- Santa Clarita to Bakersfield rail link (see article).
- Build a 45 minute faster passenger-only Altamont Corridor Express (ACE) line between the Altamont Pass and Fremont that can be eventually upgraded to HSR.
- Reopen the Dumbarton Rail Bridge, and provide service from the East Bay and Central Valley to the Mid-Peninsula and San Francisco.
- San Joaquin Corridor service: Utilize the new ACE Corridor to connect to the Bay Area, rather than the northern route via Martinez, providing direct service to the Mid-Peninsula and San Francisco.

stands apart from all other projects we want to see built: Closing the rail gap between Santa Clarita and Bakersfield. We see the potential for a public-private partnership between the state and a Class One railroad to build a line over the Grapevine. (See "Tejon or Tehachapi? What History Tells Us" in the April-July 2016 California Rail News.)

It would provide fast passenger service that could eventually upgraded to HSR, and also greatly increase California's north-south freight capacity.

TRAC sees the private sector playing a vital role in rail, providing infrastructure, trainsets, and passenger service. Some routes can conceivably be operated profitably, avoiding public subsidy, while others would require lower subsidies than are currently paid.

We foresee agreements for new service in which the state reduces the risks of a project by paying the costs of environmental permitting, while the private sector partner assumes all financial risks of operation.

TRAC invites you to send your comments on these priorities to: [trainriders2100@gmail.com](mailto:trainriders2100@gmail.com)

# California Rail News

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## President's Corner

### Why Join TRAC Now?

This is one of the most dynamic moments in TRAC's history. With a new Administration coming to Washington, there's no telling what's going to happen in transportation. Here in California, the HSR project is stumbling badly, with its future being openly doubted. In a moment like this, an informed group with good ideas can make a difference.

There is life after CHSRA! If and when CHSRA fails, there are options. California Rail News this month is full of ideas. With more interest in private-sector projects and new legislative opportunities, NOW is the time to support these

possibilities. TRAC over the years has been a steady voice of reasonableness. We care!

We believe our positive vision can now become a reality.

If you do too, please consider becoming a member of TRAC and/or donate in order to support:

- Our newspaper full of ideas and hope,
- Our advocacy whose time has come, and
- Our website which keeps you informed.

Thanks for wanting to be informed by reading the California Rail News, which we are very proud of. Here's to a year of possibilities for more safe, relaxing, and productive train travel!

# Join TRAC and Help Fight for Improved Trains

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# The Impending Death of California's HSR Authority

**by David Schonbrunn**  
**TRAC Vice President, Policy**

Friday, January 13 was a disastrous day for the credibility of California's high-speed rail project. The Los Angeles Times published a leaked report on the current project from the Federal Railroad Administration. The article stated that the final project cost could be 50% over the original budget. Because the Central Valley segment had been expected to be the easiest segment to construct, this report throws cold water on CHSRA and forces a reexamination of whether it is capable of delivering an operating passenger rail system.

What the voters approved in 2008 was a rail system that could be run at a profit--i.e., without an operating subsidy. The absence of any private investment in the project today is damning proof that the project underway is not the project the voters approved. It's obvious no rail operator believes money can be made on the circuitous CHSRA route design.

Voters had been told that federal and private sector partners would take on two-thirds of the cost of an HSR system. When Congress changed into Republican hands, the second domino fell. This should have triggered an overall reconsideration: Is this project still financially feasible? Instead, however, the state took on the burden of funding 100% of the project after the first \$3+ billion federal grant. That grant is now almost all spent.

**Accessing Bond Proceeds.** Without enough cash to keep building its project, CHSRA is desperate to get its hands on the 2008-approved HSR bond funds. Getting that funding has not proven easy, however. To give the voters confidence that the bonds would not be wasted building a half-finished project, very strict conditions were written into the bond measure. Construction money would be released only for segments that would be "suitable and ready" for HSR when completed, and would have to be able to be operated without a subsidy. That's quite a tall order for a brand-new system. Before bond funds could be released for construction, CHSRA would need to demonstrate that it had all the funding and permits needed to build that section of HSR.

Back in 2011, opponents of the project sued to block CHSRA's access to bond funds. In a case named Tos I, they claimed the HSR project did not comply with the requirements of the bond measure, Prop. 1A. The trial court agreed, but was reversed by the Court of Appeal, which ruled that opponents' claim could not be enforced. The court did, however, acknowledge the bond measure had created an enforceable "financial straitjacket." Opponents expect that ruling to be a continuing obstacle to access to bond funds.

On the December 2016 day that CHSRA approved its first formal

request for bond funds, many of the same opponents filed a new lawsuit, nicknamed Tos II. The case asks the court to block CHSRA from spending any bond funds on construction. Opponents assert that a law relied on by the funding request, AB 1889, is unconstitutional. Passed by the Legislature in 2016, AB 1889 purports to "clarify" the meaning of a key phrase in the bond measure.

Opponents assert that AB 1889 essentially frees CHSRA from the bond measure's "financial straitjacket," making it a major change to a voter-approved measure. The Legislature is not authorized by the state Constitution to make such changes--that power is held solely by the voters. If opponents convince the court that AB 1889 is unconstitutional, CHSRA would remain unable to access any bond funds for construction. Because the project cannot comply with the requirements of the bond measure without reliance on AB 1889, its days are numbered.

**CHSRA's Financial Bind.** Without a new federal grant, private sector investment or bond funding, the only other available funding source is CHSRA's annual share of cap & trade revenues. These funds are generated through the sale of permits to emit the greenhouse gas CO<sub>2</sub>. Because legislative authority for that program ends in 2020, the Governor has tried several times to get it reauthorized, without success. Then, because a case in the Court of Appeal has challenged the legality of the entire cap & trade system, the 2016 sales of permits have produced dramatically less money than previously. Because this source is sickly these days, with an uncertain future, it is not a viable fallback.

In its 2016 Business Plan, CHSRA tacitly admitted that it was unable to fund the building of the route from Los Angeles/Anaheim to San Francisco. The Rube Goldberg financing schemes did not add up to the estimated \$64 billion project cost. The recent report on cost overruns raises doubts as to whether CHSRA can complete even its Central Valley project, not to mention the far more ambitious Shafter to San Jose Initial Operating Segment.

Without ability to credibly claim that CHSRA can build something useful, TRAC believes policy makers finally have to ask "Is it time to stop throwing good money after bad? Perhaps we should just shut this thing down!"

If the litigation succeeds in requiring compliance with the explicit terms of the bond measure, CHSRA will fail to do so and run out of money. Worse yet, the state could end up having to pay back the entire \$3+ billion federal grant to the project, if it cannot meet its obligation to match the federal grant with state, local, or private funding.

*David Schonbrunn is part of the Tos legal team and President of TRANSDEF.*

## Coast Observations

**STILL NO HARD DATE FOR OPENING OF BART'S WARM SPRINGS EXTENSION, as well as the BART extension to Berryessa in San Jose. Apparently BART understands that it needs more rolling stock before these extensions can operate, given current system overcrowding... IN AN ANUAL REPORT produced by [www.thetransportpolitic.com](http://www.thetransportpolitic.com), as of January 2017 no less than 80 major transit lines with an estimated completion cost of \$78 billion are under construction in the U.S. These include 110 miles of heavy rail, 182 miles of light rail, 20 miles of streetcars, 250 miles of bus rapid transit and 235 miles of commuter rail. An estimated 3 million future daily riders are expected... IN A MOVE 50 YEARS OVERDUE, the Federal Department of Transportation will now require states and metropolitan planning organizations to report transportation goals in terms of moving people, not just cars... CALIFORNIA HIGH SPEED RAIL's segment currently under construction between Madera and the Wasco area could cost 50% more than was originally budgeted, according to a formerly confidential Federal report... THE NAPA VALLEY WINE TRAIN has announced that it is considering the provision of commuter service for local residents, in addition to the well-heeled tourists who now ride its lunch and dinner trains... THE BAY AREA WILL BE CONSIDERING INCREASING BRIDGE TOLLS from the current \$5.00 up to as much as \$8.00 to fund new transit and highway projects... potential highway projects include widening US 101 to a full six lanes between Novato and Petaluma, providing HOV/HOT lanes on the Dumbarton Bridge, and similar highway expansions... CHINA CONTINUES TO EXPAND ITS HIGH-SPEED RAIL SYSTEM at a furious pace, estimated to grow from about 12,000 miles in 2016 to more than 18,000 miles by 2020... even at China's high density it is unclear how much of this network will actually cover operating costs, let alone its capital costs... HOW PRESIDENT TRUMP'S PROPOSED \$1 TRILLION-INFRASTRUCTURE PLAN actually fleshes out is anyone's guess... the plan proposes that tax credits fund large portions, while some in Congress want actual Federal spending appropriations... some commenters also worry about cronyism potentially causing cost overruns... LOS ANGELES METRO recently approved a policy of naming rights for rail stations and bus lines... Will weird, oddball names appear as part of corporate marketing campaigns?... MARIN-SONOMA SMART rail service startup has been bumped from before Christmas 2016 to sometime in late Spring 2017... SMART expects to provide free rail service through July 4, 2017 with heavily discounted fares for a few months afterwards... IN HYPED HYPERLOOP NEWS, the HyperLoop One "Global Challenge" has announced 35 winners (sic) in a recent competition to identify corridors where it might consider building the first HyperLoop lines...U.S. corridors include Seattle-Portland, Chicago-Columbus, OH, freight routes in Greater Los Angeles, etc...**



# GETTING SMART: REGION'S NEWEST PASSENGER

**By Cecily O'Connor  
Bay Area Monitor**

At the 2016 Penngrove 4th of July parade, residents filed into the Sonoma-Marin Area Rail Transit (SMART) diesel locomotive on display. They commented on its “new car smell” and lined up at the info desk on board, asking about bridge crossings while snagging railway logo backpacks.

“It’s great,” said Kathryn Harmon, a Santa Rosa resident, about the Bay Area’s newest transit system that will roll by year’s end. “It will save people’s commute.” [Editor’s note: A recently discovered engine design flaw has led to the postponement of the startup of SMART service until late Spring 2017, allowing time for the car manufacturer to replace the crankshafts on the engines.]

SMART officials expect weekday ridership on the green and grey trains to average 3,000 riders during the first year along the 43-mile, 10-station route between San Rafael and Santa Rosa. The transit system, which includes an accompanying bike and pedestrian pathway, will eventually cover a 70-mile stretch from Larkspur to Cloverdale. The additional mileage, along with five more stations, will be built out during a second construction phase that should start in Central Marin next year.

With 30 daily trips, SMART will provide an alternative to commuters who depend on Highway 101. SMART is working with transit agencies to reconfigure bus routes, as needed, and provide connections to and from the first 10 stations.

“Our passenger trains will provide a safe, reliable, and efficient option to sitting in traffic gridlock on the 101,” said Farhad Mansourian, the agency’s General Manager. “SMART passengers will be able to cut their travel times in half or more, with a stress-free, predictable commute.”

Similar to a Bay Area ferry experience, SMART plans to hire a vendor to sell morning coffee and pastries on board, and beer and wine in the afternoon. Trains also are WiFi-enabled.

SMART’s arrival will mark the first North Bay rail service to operate since the Northwestern Pacific Railroad



**Interior view of a SMART train.** Photo courtesy of SMART via Bay Area Monitor.

closed nearly 60 years ago. Old track has been replaced and rebuilt with approximately 123,000 concrete railroad ties. Fifty-six crossings were rebuilt, and 49 bridges and trestles were built or repaired. SMART has a fleet of seven trains. Each two-car set can hold up to 300 seated and standing passengers, as well as two dozen bikes. Another four individual cars have been ordered.

The rollout comes amid greater emphasis on improving Bay Area commutes as transit providers seek to modernize existing services and meet growing demand. Within the realm of other railways, Caltrain officials recently approved \$1.2 billion in contracts to electrify their system, while BART is preparing to serve new areas like Antioch and San Jose.

Rail expansion brings regional environmental benefits, too. SMART will prevent at least 30 million pounds of greenhouse gases from entering the atmosphere annually by removing 5,300 car trips daily from North Bay roads, according to an environmental impact report. Additional reductions

**Most commuters won't consider their rail commute logistics until the trains are up and running, so first impressions around stations will matter. Santa Rosa CityBus is among several North Bay transit agencies that have made presentations to SMART about how to link schedules, as well as improve rides to key hubs like downtown Santa Rosa where four CitiBus routes circulate.**

are expected from thousands of trips on the accompanying bike and pedestrian pathway.

The first phase of SMART construction began in 2012, costing \$450 million and funded by Measure Q, the one-quarter-cent sales tax passed by Sonoma and Marin county voters in 2008. For the second phase of construction, \$250 million in funding is needed to build extensions north to Windsor, Healdsburg, and Cloverdale, according to estimates provided by SMART’s Communication and Marketing Director Jeanne Mariani-Belding.

Construction on the \$42 million Larkspur Extension will begin next year — funded, in part, by federal



## The SMART route through Sonoma and Marin Counties from Larkspur to Cloverdale

grant money and \$20 million from the Metropolitan Transportation Commission — with plans to open in 2018.

For all of SMART’s potential to whisk commuters to work and tourists to wine country, concerns remain about whether commuting habits will adapt enough to achieve full ridership — and deliver returns on the multi-million dollar transit investment. Some of the naysaying has dogged SMART from the start.

Opponents sought a repeal election four years ago on the sales tax subsidizing the train, but the effort was unsuccessful. Some residents still air frustrations on social media, mainly questioning whether fares are competitively priced. Mariani-Belding said she and other rail officials are



# RAIL SYSTEM SET TO ROLL STARTING SPRING '17



## igh Marin and Sonoma spur to Cloverdale.

“literally speaking to hundreds of people at outreach events,” including at booths at the Marin County Fair in July. Feedback is positive once residents grasp how fares work, she said.

Along the system’s five fare zones, commuters will pay a base \$3.50 fare for the first zone traveled, plus \$2 per zone thereafter. So, for example, a trip originating at the Novato-San Marin Station heading to downtown San Rafael spans two zones for a \$5.50 fare. Travel across five zones is \$11.50, although most riders will make two- to three-zone trips on average, Mariani-Belding said.

Discounts slice fares in half for youth, seniors, veterans, college students, and disabled riders. Commuters who catch annual “eco-



**Onboard bike hooks (SMART).**

will get transfer credits up to \$1.50.

The higher the ridership, the greater potential there is for benefits such as sustainable fare revenue, productivity gains, and traffic reduction, said Dr. Robert Eyler, professor of economics and dean of the School of Extended and International Education at Sonoma State University.

“We’re all playing a waiting game to see what ridership and adoption will be,” he said. Most commuters won’t consider their rail commute logistics until the trains are up and running, so first impressions around stations will matter. Santa Rosa CityBus is among several North Bay transit agencies that have made presentations to SMART about how to link schedules, as well as improve rides to key hubs like downtown where four Citibus routes circulate.

“We carry about 8,800 people a day,” said Rachel Ede, a Santa Rosa transit planner. “It’s a process to see how many want to make those connections, and if there are certain train connections we should be prioritizing. We’re feeling that out.”

Golden Gate Transit’s Priya Clemens reported that her agency is working with SMART to create an efficient system for transfers in San Rafael. “We’re also considering implementing a shuttle service which would bring riders from the train to the Larkspur Ferry Terminal,” Clemens said.

SMART is aligning with various chambers of commerce and local employers for additional shuttles. The Santa Rosa chamber, for example, has “identified interest” from employers like Sutter Health, Kaiser, and Medtronic, and met in late July to discuss a route and preliminary

passes” through employers can save up to 50 percent, depending on the number of company passes purchased. Riders taking Clipper Card-enabled transit systems to connect to SMART trains

### Future Expansion North

In addition to the funded extension to the vicinity of the Larkspur Ferry Terminal from San Rafael, SMART wants to extend rail service north 25 miles to Cloverdale via Windsor and Healdsburg. Elements of this project includes two new 2-car trains, three new stations, installation of Positive Train Control, and miscellaneous improvements to accommodate freight trains.



**SMART outreach efforts included showcasing a train at Penngrove's 4th of July day parade.**

Photo by Cecily O'Connor, LWV of the Bay Area.

cost estimates, said Jonathan Coe, president and CEO.

In the meantime, SMART’s staff is conducting “aggressive” system-wide testing—inclusive of rail conditioning, crossing gates, and control systems—to ensure the smooth running of the fleet.

“If the rail is not conditioned properly, the timing may be off,” Mariani-Belding said. “If we’re off by a minute on our schedule, we need to know and adjust that.”

Safety awareness is a big priority, too, conditioning residents to living in an area with a fully operational rail service. “This is a project discussed and debated for decades,” Mariani-Belding said. “We’re in the home stretch of making it a reality.”

*Cecily O'Connor covers transportation for the Bay Area Monitor. This article ran in the September-October 2016 issue, published bi-monthly by the League of Women Voters of the Bay Area, with financial support from the Metropolitan Transportation Commission and other regional agencies and transit operators.*

See <http://bayareamonitor.org/>



# Rail Viable for North Bay's Highway 37 Corridor

## RAIL AN ORDER-OF-MAGNITUDE CHEAPER THAN BILLIONS FOR ROAD EXPANSION

**By David Schonbrunn**  
**TRAC Vice President for Policy**

State Route 37 is a vital link between Solano County and the three other counties of the North Bay: Napa, Sonoma and Marin. It crosses the wetlands on the northern edge of San Pablo Bay. As sea level rises due to climate change, the highway will go under water.

The four North Bay counties have signed a Memorandum of Understanding and established an SR 37 Policy Committee, ostensibly to deal with sea level rise. In reality, however, their concern is far more urgent: the tremendous congestion resulting from a heavy east-west commute in the corridor. A private sector consortium, United Bridge Partners, has submitted an unsolicited proposal to build more lanes. While the intention is to relieve the congestion caused by the single-lane section of the highway, research indicates that new lanes will fill up with new traffic and become congested all over again.

This is a privatization proposal, in which Caltrans would hand over ownership of the highway, under a contract with specific performance requirements. In exchange for building and operating the new roadway, the partnership would gain the right collect tolls, as if the highway were a bridge. The tolls enable the partnership to acquire financing and make a profit.

This proposal would have been innovative and appropriate in a former era. However, now that climate

change has become a top policy concern for the state, projects like this one that increase vehicular travel are recognized as environmentally harmful. That means this proposal is likely to have stiff opposition from the environmental community, even while local government is thrilled to have a congestion solution handed to them.

What the North Bay needs instead is a transit network able to provide mobility for commuting in the Hwy 37 Corridor. As the map demonstrates, the area has a north-south rail line on each side of the square project area. While freight travels on the existing east-west rails, there is no passenger service. Passenger service would allow Capitol Corridor passengers to connect with destinations on the SMART corridor, without needing a car.

This could be achieved with trains that start at the Suisun/Fairfield Capitol Corridor station and go on the SMART corridor. Because the train is made up of diesel multiple units, the train could even split in two when it reaches SMART, ending up in both Santa Rosa and San Rafael.

The objection that will inevitably arise is "The North Bay is too low-density to support transit." While that is certainly a very real obstacle, the reality of climate change is that it is necessary to start now to provide the alternative of a low-carbon mode of transport.

An operational North Bay rail network will influence employers to locate their new offices near transit stations. With adequate promotion,

some fraction of existing commuters would find that transit serves their needs conveniently, and without the stress of being stuck in traffic every night. Over time, the transit market will build.

To enhance that market, access to intermediate destinations is needed. Implementation of rail service from Napa County to Vallejo should be considered, connecting with the east-west line at Napa Junction.

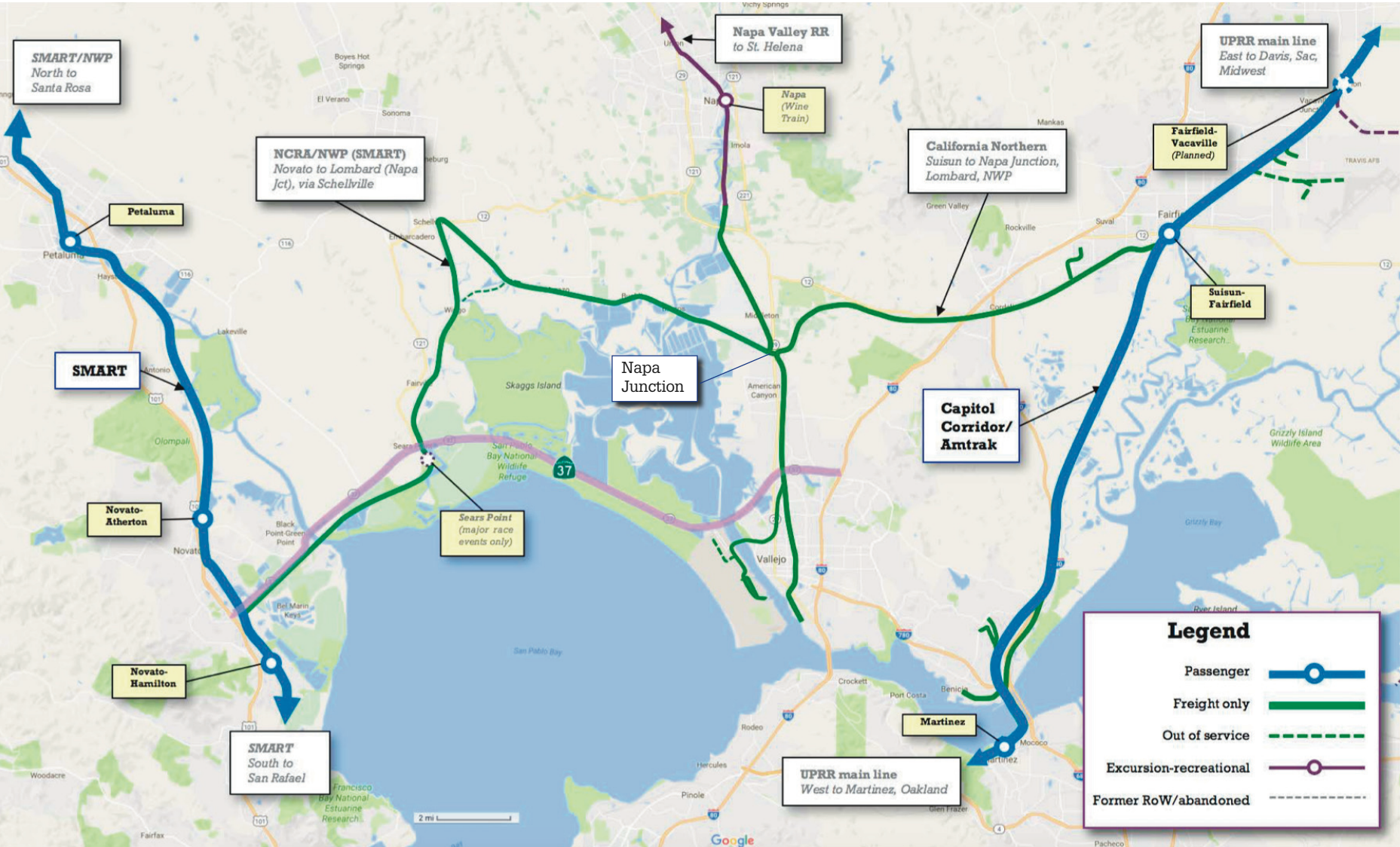
Such service would have added economic viability if it were attractive to tourists heading from the Vallejo Ferry to the Wine Country.

The sooner a North Bay rail network is implemented, the sooner it will be possible to shift some of the commuters from auto to train. As a matter of climate policy, that is inherently a good thing.

California has reached a point of decision: it could respond to the congestion on Hwy 37 as it has consistently done in the past, by adding more highway capacity. The United Bridge Partners' proposal is firmly in this camp.

Or it could radically change direction, and declare that from this point forward, California will be building transit infrastructure instead. TRAC will be doing its part to encourage this latter direction.

*David Schonbrunn is also President of TRANSDEF and a long-time advocate for Sonoma-Marin Area Rail Transit (SMART) and other North Bay rail.*



Source: State Route 37 Policy Committee



# PALMDALE – BURBANK TUNNEL ROUTE

## ALTERNATIVE E-2 IS A SHORT-CUT ONLY ON PAPER

**by Susan MacAdams**  
**TRAC Board Member**

In the last issue of California Rail News, the fatal flaws of tunneling high-speed rail directly from Palmdale to Burbank were identified. The plans for the long tunnel alternative known as E2, which includes an underground station at Burbank Airport, have become so environmentally insensitive that all five members of the Los Angeles County Board of Supervisors sent a letter in July of 2016, to the CHSRA, unanimously requesting the removal of the E2 alternative.

That request did not stop CHSRA. The Authority was able to sway other public officials to support the idea of building a HSR station under Burbank Airport despite its numerous fatal flaws and astronomical additional cost.

A CHSRA geotechnical consultant experienced in large tunneling projects, Bob Lemmer from Kleinfelder International, was present at a 2016 CHSRA community meeting in San Fernando. He explained that tunneling would involve two distinct geological conditions: the alluvial soil under the San Fernando Valley and the granite/composite rocks under the San Gabriel Mountains.

Where the two meet along the edges of the San Fernando Valley, there is a jumble of boulders beneath the surface. When an attendee asked whether large-scale tunneling machines can operate in those conditions, he replied no.

Under the San Gabriel National Forest are vast areas of granite-like rocks, highly fractured from millions of years of being compressed, shaken and twisted. A random rock core sample from a recent drilling was on display at the meeting. Mr. Lemmer used the sample to point

out the highly fractured nature of the granite; he stated one could not tunnel through this rock, and that in fact, about three feet of the sample was so fractured, it didn't make it into the box.

It is unknown where the rock is solid enough for tunneling beneath the mountains, even with the hundreds of boxes of core samples. CHSRA spent millions of dollars to drill thousands of feet into the mountain--there's enough boxes of rocks to fill a large gymnasium. There can be fractured rock in one location, and solid rock in another. "If the tunnel-boring machine hits the fractured rock, the rock could collapse into the face of the boring machine and the machine would lock up, unable to go forward or back, permanently stuck in place."

Mr. Lemmer made another important statement. "Under the San Fernando Valley, there are seven hundred feet of alluvial soil. This type of soil is found all over the world where there are tunnels--a mixture of soft and hard silty sand." In Burbank, however, the soil underneath contains a deposit of large boulders, buried in the sand after rolling down the mountains.

In addition, Mr. Lemmer agreed that there are thick tar deposits and pockets of methane. The Aliso Canyon gas and oil field, one of the largest repositories of gas in the state of California and the site of last year's massive methane blowout, is located at the north end of the Valley. Oil production in that area contains 32 active wells.

Tunnel-boring machines can't operate in the conditions under the San Fernando Valley. On a mixed face, the cutting blades would be severely damaged by the large boulders. And where tar deposits are present along the proposed underground routes,

there's methane. This mixture of tar and methane would gum up the face of the tunnel-boring machine in a toxic and potentially explosive combination.

As an example, there are similar conditions under the Los Angeles River near the Los Angeles Union Station. This geological combination prevented the Red Line subway from extending east under the Los Angeles River and into East Los Angeles. Plans were drawn, contracts were written, and for over three years Metro hired engineers to accomplish this feat.

The project was cancelled when the toxic nature of the soil and the mixed face of the rock was deemed too dangerous for the tunnel-boring machines. The stub-outs for the tunnels are still visible today from one end of the Red Line subway platform at Union Station.

The geotechnical expert, Mr. Lemmer, stated, "for these same reasons, CHSRA cannot tunnel through the alluvial soil under the San Fernando Valley." Yet, each of the three tunneling proposals for Palmdale to Burbank shows long tunnels! The Authority continues to ignore the advice of its own experts. Professionals know that the proposed tunnels cannot be built.

A planned tunnel from Burbank to Palmdale makes HSR trains appear to be able to meet a 2 hour 40 minute LA-SF travel time. That, in turn, helps make the project eligible for billions of dollars in HSR bond funds. This short-cut on paper is their short-cut to big dollars...

*Susan MacAdams was formerly the HSR Planning Manager for LA Metro. A collection of her comment letters and related documents is available at [calrailnews.net/southland](http://calrailnews.net/southland).*

## Many transportation sales taxes pass, but not in Contra Costa, San Francisco, Sacramento, Placer, or San Diego Counties

On November 8, 2016 transportation sales taxes passed in several California counties, but failed in Contra Costa, San Francisco, Sacramento, Placer and San Diego Counties.

Los Angeles County passed Measure M, a 0.5% sales tax providing \$890 million+ annually for an ambitious rail expansion program, enhanced bus and rail operations, local street maintenance and improvement projects, as well as limited highway improvements.

Santa Clara County passed Measure B, a 0.50% sales tax which will partially fund completion of the BART extension from Fremont to downtown San Jose and Santa Clara, provide \$1 billion for Caltrain improvements focusing on grade separations, some improvements to current transit operations, as well as selected roadway expansions and local road maintenance and improvements.

In Stanislaus County, voters passed a measure dedicating \$38 million+ plus to local transportation, of which 50%

would go to local streets and roads, 10% to "traffic management" and 5% to pedestrian and bicycle projects. Most of the remainder would go towards highway projects including Highway 99 upgrades and a Highway 132 expressway in West Modesto. A modest amount is also programmed for a possible ACE extension to Modesto.

Santa Cruz County passed Measure D, which is a 0.50% sales tax raising \$17 million+ annually for a wide variety of transportation improvements. These include 8% (about \$1.4 million annually, \$40 million over 30 years) of total funding set aside to maintain the recently-purchased rail line, with similar proportions for pedestrian and bicycle improvements, safe routes to schools, improving Highway 1 traffic flow, local street maintenance, etc.

Meanwhile, proposed sales taxes for transportation failed in Contra Costa, Sacramento, Placer and San Diego Counties. While the Contra Costa

measure includes some funding for transit expansion and operations, the lion's share of funding went toward major roadway expansions, not as popular as thought by local politicians.

This was also the case in Sacramento County, where an unpopular beltway would have been funded. Transit advocates also opposed Measure B due to Regional Transit's financial mismanagement.

San Francisco did not give majority support to a whopping 0.75% sales tax in support of the City's General Fund. Had it passed, the Board of Supervisors would have been empowered to distribute the funds to transportation and homeless services as they saw fit.

In Placer County, an extension of Capitol Corridor rail service would have been funded, but most funding would have gone to roads; voters are also very fiscally conservative. San Diego County Measure A failed to gain the two-thirds yes vote required.



# MOROCCO HSR PROJECT OVERTAKES CALIFORNIA

## \$2.5 BILLION, 115 MILE LINE LINKS 200 MILES OF COAST

**By Michael D. Setty**  
**California Rail News Editor**

Africa's first "true" high-speed rail line is currently under construction in Morocco, connecting Tangier with Kenitra via a new 185 kilometer (115 mile) line designed for 200 mph operations. Construction began in 2012 and trains will begin service in mid-2018, also operating through to Morocco's capital of Rabat and Casablanca via an existing 125 mph line. This follows Ethiopia's new 100 mph line that opened in late 2016. The new segment is the first of a proposed 1,500 kilometer (930 mile) high-speed rail network slated for completion by the mid-2030's, also incorporating parts of Morocco's existing rail network.

Based on Morocco's current economy and relatively low incomes, there is no doubt that high-speed rail is a major gamble on the country's future. Proposed fares between the port city of Tangier and Rabat—the nation's capital—will be roughly equivalent to a week's wages. At first, HSR service will be limited to hourly in each direction, but with significant reserve capacity as traffic grows and service is further speeded up by 2020. About 6 million annual passengers are projected by the third year of service, sufficient to maintain a healthy 70% load factor on the twelve 532-seat, double-deck TGV Duplex trainsets that have been ordered by the Moroccan National Railways (ONCF).

High-speed rail travel time is projected to be 2 hours, 10 minutes between Tangiers and Casablanca, less than half the current time of 4 hours, 45 minutes. Most of the projected time savings are between Tangiers and Kenitra, requiring 45 minutes compared to 3 hours, 15 minutes on a slow, winding single-track railway. Existing service between Rabat and Casablanca will also be improved, with higher speeds and faster service by 2020.

Morocco has made many major investments in its transportation infrastructure in pursuit of economic growth. These investments include a container port in Tangier, toll roads and light rail networks in Rabat and Casablanca. While other African countries have also invested in transit, ports, and highways, Morocco is the first high-speed rail entry in Africa.

Like many countries building high-speed rail, the Moroccan project has its share of critics and opponents. The critics say that the funding used for HSR should be used to provide basic infrastructure for rural areas, such as paved roads, new schools and hospitals.

Morocco has a per capita income of about \$3,000, and ranked 130th among nations in "human development" according to a UN study cited by the



Map by Richard F. Tolmach

New York Times. According to the critics, Morocco's existing rail network should also have been upgraded before spending scarce resources on high-speed rail.

Supporters claimed that HSR would help tie the country together and beef up economic ties between Moroccan cities and Western Europe. By greatly reducing travel times in the northern part of the country, the major cities connected by the line would function as an integrated economic unit, thus expanding economic opportunities and economic growth, such as helping attract more tourism and spreading visitors and their associated spending more widely.

One notable feature of the HSR construction program—in light of the absence of African HSR expertise—is the approach of the project's construction managers to organize materials and work schedules in "kit" form. Materials and components are stored at central locations and coded so field workers know exactly how to assemble such items as tracks, catenary, signal components and other items in the correct order and manner.

According to the construction managers, this process duplicates successful, money-saving construction strategies on the recent TGV extension from Nimes to Montpellier in France.

Projected project cost is around \$2.5 billion, or about \$13.5 million per kilometer (\$22 million per mile). Morocco is providing about \$466 million (19%) of the cost. The French government is providing a grant of \$191 million (8%), with loans from various sources such as Abu Dhabi covering the remainder of the project.

Major French engineering firms have provided design and construction

management services, while Alstom is supplying the TGV Duplex trainsets. But according to the Moroccan government, 90% of construction work has been assigned to Moroccan companies.

Even with the large wage disparities between Morocco and the United States, Morocco's high-speed rail line is costing less than half the estimated cost per mile for California HSR construction in the San Joaquin Valley. According to a 2012 New York Times article, the project was originally estimated to cost \$4 billion, rather than the current \$2.5 billion. As the head of Moroccan State Railways stated in a recent interview:

The LGV Morocco, which will connect Tangier to Casa-blanca in two hours ten [minutes], will run trains for the Moroccans and therefore suitable for purchasing power of Moroccans. We do not want to design a train for a high-end clientele. This implies cost control, which is what I am saying. We're building high-speed with European standards, [the] cheapest in the world." (*Source: <http://www.lemonde.fr/> Jan. 3, 2017; Google Translate*)

In 2016, construction of the Tangier–Kenitra line was nearing completion. ONCF also announced plans for two new high-speed rail lines. The second HSR line after Tangier-Casablanca is the "Atlantic Line" proposed to serve Casablanca, Marrakech and Agadi.

The third Moroccan HSR route would be the "North Line" serving Casablanca, Fez and ultimately Oujda in the far northeast of the country.

The impact of more cost effective high speed rail infrastructure is much faster profitability. Should the line carry the projected 6 million annual riders by the third year of service at the projected fares, the line would not only cover operating costs but also much of its capital costs.