

California Rail News

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Caltrain's Gilroy & Salinas BEMU Plan: Add BEMUs to Santa Cruz & Monterey? Current San Jose–Salinas Rail Plan Disappointingly Under-Ambitious

By Michael D. Setty
Editor, California Rail News

In the wake of the Covid pandemic, most downtown San Francisco office workers now work from home two or three days per week. This has left the Bay Area's two largest regional transit operators, BART and Caltrain, starved for passengers. As of March 2023, BART is serving about 40% of its 2019-level ridership. Caltrain is even worse off, serving about 16,000–18,000 daily riders, only 25%-30% of the 60,000-70,000 daily riders in 2019.

Despite these drastic ridership declines, Caltrain is still moving ahead with its \$2.44 billion fleet replacement and electrification project. Caltrain had ordered 23 seven-car, 600+ seat electric trainsets to replace most diesel trains. It also requested funding for four additional electric multiple unit (EMU) trainsets, at \$44 million each.

Pre-Covid, Caltrain had expected ridership to grow dramatically by 2040 to about 240,000 daily passengers once electrification was in service. Caltrain's mid-range ridership estimate, once electrification is completed, is now about 60,000-65,000 per day by 2028 (matching its pre-Covid levels). The Metropolitan Transportation Commission's (MTC) optimistic estimate is about 90,000 riders per day. The Caltrain estimate assumes a 10% service increase over 2023, while the MTC estimate assumes an increase of about 60% over current service levels. TRAC thinks that if current work-from-home patterns continue, Caltrain



Caltrain buys more KISS trains for San Francisco-San Jose, plus a "BEMU" for Gilroy & Salinas. Buying more BEMUs could serve Gilroy, Santa Cruz, and Monterey Peninsula.

will be lucky to return to pre-Covid ridership levels before 2028.

Caltrain now proposes purchasing one battery-electric multiple unit (BEMU) experimental trainset. This EMU with added batteries would replace existing diesel service to Gilroy by allowing "off-wire" operations, and enable service to Salinas. The train manufacturer claims that its products can operate at least 100 kilometers (62 miles) off-wire, with recharging at terminal stations in 15 minutes. This prototype BEMU trainset is projected to cost about \$80 million, which includes development costs. TRAC believes BEMUs like this could be part of new strategies for stabilizing Caltrain's post-Covid operations and finances, with creatively designed service to new travel markets.

The Transportation Agency for Monterey County (TAMC) has

advocated for San Jose to Salinas rail passenger service for two decades. TAMC's plans call for operating two

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Early Option for Santa Cruz & Monterey Rail?

round-trip peak-hour trains from Monterey County to San Jose, serving Gilroy, Pajaro, Watsonville, Castroville, and Salinas. Because Caltrain had showed no interest in such service pre-Covid, the TAMC plan was converted into extending two Capitol Corridor Sacramento trains beyond San Jose to Salinas. However, extending Caltrain has lately reemerged as an option.

While TRAC lauds TAMC for its determined advocacy of extending trains to Salinas, we believe they are thinking too small. Santa Cruz and the Monterey Peninsula are much larger travel markets than Salinas, with 5 million and 8 million annual visitors annually plus tens of thousands of daily commuters.

Santa Cruz County voters delivered a decisive “NO” vote of 73% against County Measure D in the June 7th, 2022 California primary election.

In the wake of the overwhelming

defeat of the Greenway Initiative, in July 2022 TRAC proposed four strategies for initiating passenger rail in a timely fashion (*See here*). These included battery-electric transit services modeled on the Fall 2021 trolley demonstration: seasonal beach shuttles, and excursion and dinner trains. These local services would be joined by the revival of the Suntan Special and intercity trains to the Monterey Bay Area, e.g., Santa Cruz, Monterey, and Salinas.

Caltrain’s proposed purchase of a battery-electric version of its current EMU (“BEMU”) trainset design opens up the possibility of expanding Caltrain’s plan to operate the single BEMU trainset to serve Gilroy and Salinas. It could enable an early startup of intercity rail passenger service between the Bay Area and the Monterey Bay Area.

We suggest the four additional EMU trainsets Caltrain is seeking should be specified as BEMUs. This fleet would provide hourly service between Gilroy and San Jose, with timed connections in San Jose to express service (similar to “Baby Bullets”) to San Francisco.

Second, using TRAC’s July 2022 Santa Cruz proposal as a baseline, Monterey Bay Area communities should establish a regional transit authority, or similar institution, to fund and operate new intercity and local rail services in both counties. Four additional BEMU trainsets would be added to the Caltrain order, sufficient for hourly trains south from Gilroy.

Unlike Caltrains’ full electric EMUs, the BEMUs should be constructed as 4-car and 3-car BEMU trainsets. This would allow 7-car BEMU trains from Gilroy to Pajaro, then splitting with one BEMU operating to Santa Cruz and the other to Monterey (with limited service to Salinas). These trains would be extensions of the San Jose–Gilroy trains described above.

Infrastructure for this service would include the two major new stations at Pajaro and Castroville advocated by TAMC, as well as new smaller stations on the branches.

Revival of the Monterey Branch Line is also proposed, including a major new station in Downtown Monterey, and smaller stations in Sand City/Seaside, near CSU Monterey, and in Marina. New stations in South San Jose would also be needed to maximize patronage on the Gilroy segment.

Project capital costs would include stations and new sidings as needed, to provide sufficient capacity for hourly all-day service between San Jose and Gilroy. TRAC estimates each additional 7-car equivalent BEMU trainset will cost around \$45-\$46 million each (roughly \$6.5 million per car), somewhat more than EMUs. Over time, more trainsets may be needed for incremental expansion of local service within the Monterey Bay Area, and a possible Gilroy-Hollister shuttle.

In its July 2022 plan, TRAC estimated that intercity and local rail passenger service would generate about \$55 million annually, including the San Jose-Gilroy segment. The largest share of estimated revenue was about \$35 million on the “main line,” another \$10 million+/- generated by through riders on the branches to Santa Cruz, Monterey, and Salinas. The remainder comes from fares from local trips within the Monterey Bay Area.

We estimate that there will be enough passengers to fill these trains with an average of 250-300 passengers per train operated, generating about \$45 million in annual revenue.

Based on current Caltrain costs, San Jose-Gilroy service is estimated to cost about \$18-\$20 million annually to operate, with a similar amount for trains south of Gilroy.

For this plan to be profitable, costs must be kept under control, so that overhead costs don’t overwhelm the new services budget. We see this service potentially generating a profit of about \$8-\$10 million per year—almost all from south of Gilroy—enough to make it interesting for our proposed Monterey Bay agency or a public-private partnership.

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Restoring Service on Out-of-Service Rail Lines



By David Schonbrunn
TRAC President

TRAC has submitted a legislative proposal to make it easier to put publicly owned existing rail lines back into service. The typical railroad that restores service on such lines does so with minimal capital outlay. They will repair tracks just enough to pass federal inspection for the track speed they will operate at. They are secure in the knowledge that the cash flow generated by operations will be available for future maintenance.

On the other hand, public agencies seeking to restore service insist on writing capital plans that call for replacing everything with all-new materials. Although this approach is extremely expensive, starting out with a new facility allows them to avoid worries about funding future maintenance. Because their operations do not generate positive cash flow from fares and other sources, securing maintenance funding is difficult. Funding for new construction is much easier to get. However, because the ridership on such lines is speculative, the high cost of complete rebuilds tends to make such proposals infeasible.

Three quick examples:

1. TRAC submitted a proposal to the Santa Cruz County Regional Transportation Commission, proposing a public-private restoration of freight and passenger service on the Santa Cruz Branch Line. It called for using the existing tracks and replacing enough cross-ties to qualify for 59 mph passenger service. This was so low-cost that it could be undertaken by a private-sector operator, with modest public sector funding. The proposal was rejected so that the agency could pursue extensive studies leading to a half-billion dollar complete rebuild.
- 2.. TRAC proposed a public-private partnership to initiate passenger service linking SMART (Novato) and the Capitol Corridor (Suisun City), using the existing jointed rails and replacement crossties. TRAC estimated the cost at ~\$150 million. SMART produced a study in this corridor for CalSTA that would cost \$850 million to \$1.2 billion for an all-new facility.
- 3.. TRAC proposed an extension of SMART to Willits (beyond SMART's current jurisdiction, which ends in Cloverdale), using existing rails and lightweight DMUs, which are cheaper to operate than SMART's

DMUs. TRAC projected the capital cost to Willits would be half that of SMART's estimate of the much shorter extension to Cloverdale.

TRAC believes these rail lines are unlikely to ever receive the level of funding that would be needed to completely rebuild them. We think the trade-off is clear: a lesser-quality rail line is far superior to a non-operating one. These lines could be quickly brought back into service, if agencies adopted a low-cost approach. This would begin the process of building a transit market, thereby reducing truck and car traffic and emissions, and test out the new corridor to see how passengers respond.

TRAC sees a straightforward method of facilitating a low-cost approach: create a maintenance funding set-aside for a specific category of projects: those existing lines that were restored to service. Once a project was admitted into this category by the grant of initial funding, its managers would have confidence that future routine and emergency maintenance funding would be available. For this limited group of projects, the program would be the rail analog of Caltrans' SHOPP roadway maintenance program.

While there are no public agency examples of this low-cost start-up approach, the Music City Star service in Nashville, TN, was a low-cost start up on an operational rail line, requiring relatively little capital construction. It employed used railcars and locomotives, similar to Southern California's Metrolink start up.

By providing funding for the future maintenance needs of this limited group of projects, TRAC believes that this proposal would allow the State to move forward with a number of inexpensive rail line restorations at the same time. It would also make agencies confident they could acquire used train equipment—sufficient for start up service—without risking their operating budgets. If a better ride quality is later desired for lines that generate significant ridership, they can be retrofitted with welded rails and new rolling stock without a big interruption to service.

This era of climate change has made the mode shift from solo driving to transit a high priority for the State. This proposal seems to be an especially cost-effective means of offering transit to new markets.

Coast Observations

THE PRESS EXCELS AT STATING THE OBVIOUS:...Case in point, the reports that many previous BART riders would not return until trains are cleaner and crime on the trains is brought under tighter control...
THE BNSF IS PLANNING A NEW, \$1.5 BILLION FREIGHT YARD in Barstow. The yard could remove significant truck traffic from SoCal freeways. About 2 million “international” 40-foot containers would be directly loaded from ships to trains annually and moved to Barstow for “transloading” to 53-foot containers, the U.S. standard. The yard would also sort regular container traffic not requiring transloading. Moving many train operations from the L.A. and Long Beach ports would placate many residents and free up valuable land for more productive uses...
CALIFORNIA'S HIGH-SPEED RAIL AUTHORITY has officially completed the massive Cedar Viaduct in Fresno over Highway 99, the UP, and BNSF railroad tracks. It remains to be seen whether this expensive artifact has any real value; it may be able to carry lightweight passenger trains but apparently cannot carry freights...
RECORD SNOWFALL IN THE SOUTHERN SIERRA NEVADA THREATENS the high-speed rail alignment between Hanford and Wasco. The former Tulare Lake has reappeared, fed by heavy spring runoff. Flooding threatens Corcoran as well as the HSR and BNSF alignments. This is on top of ongoing ground subsistence, dropping 12 feet or more over the past 50 years in a widespread area including near the HSR route...
ANTI-GLOBALISM ACTIVISTS CLAIM THAT “15-MINUTE CITIES” PROPOSALS to tame urban traffic, particularly in the UK and specifically in Oxford, are part of a dastardly plot by the World Economic Forum (WEF) and its globalist allies to create “urban reservations” for the population. However, Oxfordshire voters recently reelected local politicians who support the idea. Limiting auto traffic, particularly in Europe, has been around long before the WEF et al decided to adopt this grassroots idea...
SINCE 1970, THE NETHERLANDS HAS PROVEN DECISIVELY THAT BICYCLES are a great idea. The latest trend is “e-bikes,” e.g., mopeds with electric motors rather than gas engines. Another good idea, but NOT a substitute for good transit service; not everyone can, or wants to, ride a bike...
BRUSSELS, BELGIUM HAS QUICKLY SHIFTED AUTO TRAFFIC TO OTHER MODES, reducing auto usage from 64% of trips in 2017 to 49% in 2022. Brussels has been considered Europe's “car capital” due to traffic and congestion. Like many Brits, Belgians “benefited” from tax-free company cars. Brussels converted public squares into parking lots but is now converting them back to public spaces. During the Covid lockdowns, the city reconfigured streets, installed bike lanes, and reduced speed limits. Most changes have “stuck” since residents liked the reduced traffic in their neighborhoods. **BRUSSELS' TRANSIT CAPACITY WAS INCREASED 30%,** and transit was also speeded up by 25%, resulting in nearly full recapture of Brussels' pre-Covid ridership, unlike U.S transit, which is about 25% below 2019 levels overall....

Spend Billions for Good Intercity Rail Service,

By Michael D. Setty

Editor, California Rail News

The current California high-speed rail project between Merced and Wasco is projected to cost \$34 billion, or about \$200 million per route mile—an absurd cost for a route that is almost completely flat and with few geographic barriers. Of the estimated \$34 billion, \$24 billion in funding has been identified, requiring another \$10 billion. TRAC doesn't believe in throwing good money after bad. We have absorbed the sunk cost fallacy into our bones. We see no justification for spending this huge amount of money on a project that will never receive enough funding to connect to anywhere outside the Central Valley. That makes the project useless, to us.

Unlike the high-speed rail project, which is a pipe dream, TRAC suggests that the following projects would produce real-world statewide transportation benefits consistent with the draft State Rail Plan. Providing additional funding for these projects is much worthier, given existing and projected ridership and the projects' overall contribution to statewide mobility. They are a better bargain for taxpayers than the current HSR project in the San Joaquin Valley.

Solving Coastal Erosion Problem of Los Angeles-San Diego Surfliners

Los Angeles–San Diego passenger rail can be transformed into higher-speed service with proven potential. The four projects discussed below could reduce travel times by nearly an hour, making Surfliner service truly competitive with driving in California's busiest intercity travel corridor. These projects are TRAC's highest priority.

Del Mar: Coastal erosion along the Los Angeles to San Diego Surfliner corridor has become an increasing problem over the past few decades. The railroad is situated on a bluff through Del Mar that is constantly eroding, endangering operations. A plan has been developed and adopted to construct a new San Dieguito River bridge near the Del Mar Fairgrounds, and to construct a tunnel bypass of the Del Mar Bluffs near I-5. This multibillion plan is already partially funded from federal, state, and local sources.

San Clemente: Over the past year, beach and bluff erosion in San Clemente has required multiple closures of the rail line to deal with ongoing slides and other erosion. Authorities believe the problem is under control for now, but a permanent solution is required. Orange County authorities have begun the process of studying alternative routes to the current beachfront rail alignment through San Clemente. A previous



Northbound Surfliner at San Onofre, near San Clemente's eroding coastal bluffs. By: Surfliner 580.

study from the early 2000's projected a mostly tunnel alignment along I-5, costing \$1 billion or more.

Rose Canyon (Miramar) Tunnel: A proposed bypass and realignment of the Surfliner Corridor through Rose Canyon in North San Diego would eliminate a time-consuming slow-speed detour and provide a rail connection to University Town Center.

Speed Improvements: Further support for LOSSAN Corridor track improvements could enable service at 110-125 mph.

Purchase UP's Coast Route and Santa Barbara Corridor Upgrades

In the early 1990's, the predecessor to Union Pacific (UP), the Southern Pacific Railroad, offered to sell its Coast Route between Los Angeles and San Francisco to the then-existing Los Angeles County Transportation Commission (LACTC). Southern Pacific sold them the route between Los Angeles and Moorpark, which is now owned by the Los Angeles County Metropolitan Transportation Authority (LACMTA).

However, to this day, the rest of the Coast Route from Moorpark to San Jose is still owned by UP. Metrolink and Pacific Surfliner passenger trains are the primary users of the route between Moorpark, Oxnard, Ventura, Santa Barbara and San Luis Obispo. UP operates only a handful of daily through-freights on the line, though it also is an alternative route to the very busy Tehachapi freight line east of Bakersfield.

Obtaining state ownership of the Coast Route would enable upgraded Metrolink service between Ventura County and Los Angeles, as well as faster, additional Pacific Surfliner service between Goleta, Santa Barbara, and Greater Los Angeles. In addition, state ownership would facilitate additional intercity passenger services between Southern California and the San Francisco Bay Area. For example,

Dreamstar—a private company based in Newport Beach—has proposed nightly luxury sleeper service from Los Angeles Union Station to downtown San Francisco.

Monterey/Santa Cruz

In July 2022, TRAC produced “Four Rail Passenger Service Types for Santa Cruz County” which included proposed intercity service from the San Francisco Bay Area to Santa Cruz and the Monterey Peninsula. TRAC's study estimated more than 4 million annual passengers, including local passengers between Gilroy and San Jose, and local travelers between Santa Cruz, Salinas, and the Monterey Peninsula. This level of potential patronage could justify \$200-\$300 million in capital spending.

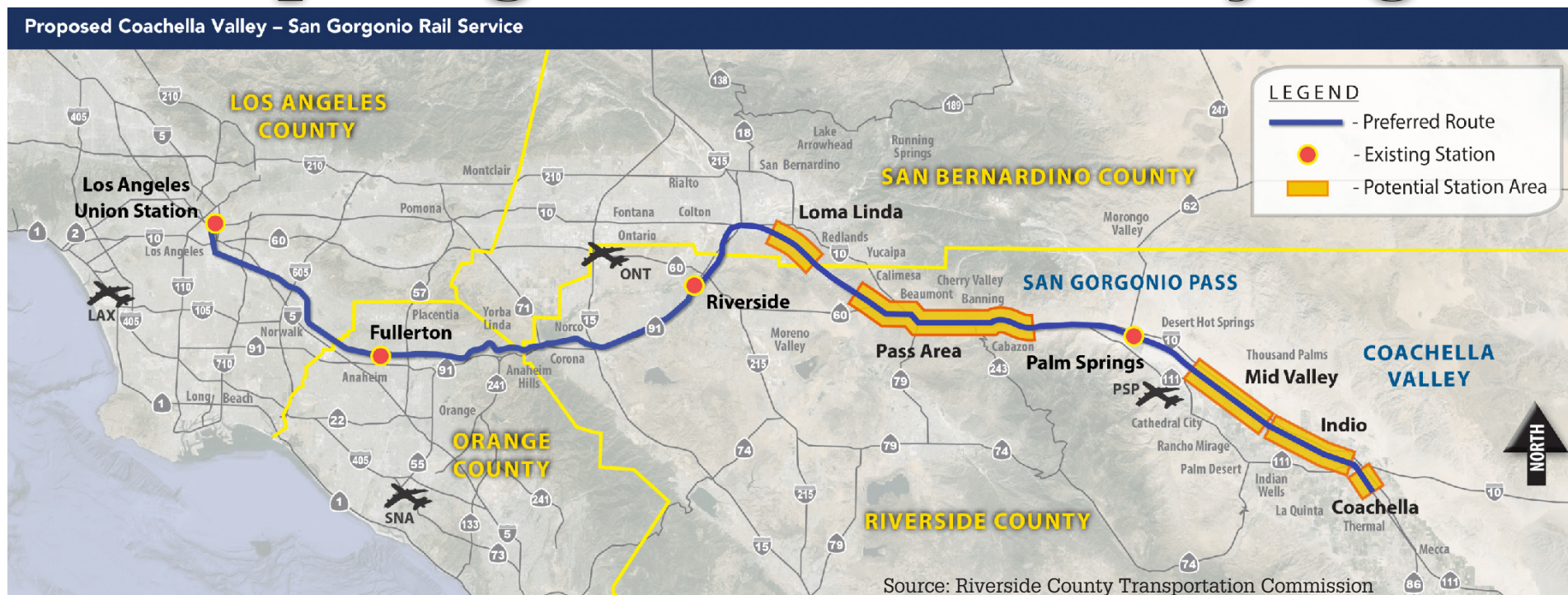
Upgrade San Joaquins Service

TRAC does not support spending \$25 billion+ to “complete” the high-speed rail line under construction between Merced and Wasco. We urge a major shift in California's rail planning: Committing \$2 billion-\$3 billion to completely upgrade the existing San Joaquins route to have a 110 mph passenger-only track is reasonable, given the San Joaquins' proven ridership base.

Faster, more frequent San Joaquins could also provide through-service on a future privately funded high-speed rail line—without the many negatives of the current bloated project—that would run along I-5, over Tejon Pass into the Los Angeles Basin, and via the Altamont Pass to enter the San Francisco Bay Area.

A more rational higher-speed 110 mph rail infrastructure could serve the Sacramento–Fresno, San Francisco–Fresno, and Los Angeles–Fresno markets with less than three-hour travel times. Thus, providing higher speed passenger service to Fresno and other San Joaquin Valley points does not require the current ill-conceived, doomed high-speed rail project.

Not “Completing” Useless HSR Valley Segment



Proposed Coachella Valley rail corridor. This route would benefit from frequent all-day service, compared to 2 daily round trips now proposed.

It may be possible to creatively use the otherwise-symbolic ruins constructed by the high-speed rail project. The new rail bridge over the San Joaquin River north of Fresno could enable rerouting Burlington Northern Santa Fe freight trains from their current alignment through Northwest Fresno—a project long sought by residents and the City of Fresno.

This would be possible if the California High-Speed Rail Authority had fulfilled its federal grant commitment to provide a fallback mode in case HSR never operates. It should have designed the bridge to carry the 35-ton axle loadings of passenger locomotives such as those used on the San Joaquins and freight trains. (Construction drawings show they didn't.) The bridge could possibly be used by lightweight passenger trains.

Altamont Corridor Vision Project

I-580 acts as the gateway to the Bay Area from the Central Valley. It has long been extremely congested, and projections are for it to get far worse. This is why TRAC has long advocated for a fast rail connection between Tracy and San Jose. We put forward an Altamont Corridor plan for the HSR Program EIR that was designed by a French HSR design firm. That alternative was not considered, despite it avoiding the environmental impacts of the Altamont alignment studied in the EIR.

In the litigation that followed the rejection of our plan, we discovered that CHSRA's modeler had forced the Altamont alignment to perform worse than the Pacheco alignment. CHSRA then told the modeler to not disclose how the deception had been accomplished.

TRAC is convinced that the travel demand in this Corridor warrants a new higher-speed ROW. There is interest from the private sector in building and operating infrastructure like that. This Corridor could start out with 110 mph service, but be designed

to be upgraded to run at 150 mph, once other higher-speed segments to Los Angeles get built.

Upgrade Metrolink Corridors to High Capacity, Fast Regional Rail

Southern California Metrolink has a \$10 billion plan to upgrade its network into a true regional rail system, resembling services in Europe and elsewhere. This would provide benefits to more than 50% of California's population, compared to completing the \$200 million+ per mile Merced–Wasco high-speed rail segment.

Extending proposed private-sector Brightline West trains from their currently planned terminus in Rancho Cucamonga to Los Angeles Union Station and/or to Orange County would greatly increase ridership potential.

New Passenger Rail Corridor Extensions

Palm Springs/Coachella Valley: Currently, the proposed Los Angeles-Riverside-Coachella Valley passenger rail corridor is projected to cost over \$1 billion. A handful of daily round trips would make this \$1 billion+ project very cost-ineffective compared to frequent, all-day service. The more than 40 million trips annually through San Gorgonio Pass need more funding to construct additional trackage and passing sidings, which would allow hourly all-day corridor service.

Chico and Redding: A rail passenger service extension from Sacramento to Marysville and Chico has also been proposed. Up to four round trips per day by 2030 are proposed at a capital cost of \$500 million.

We believe that around \$1 billion for this corridor can be justified if service is extended all the way to Red Bluff and Redding, and a reasonable level of service is provided, e.g., 8-10 daily round trips.

Two a.m. and two p.m. round trips would not be competitive for most of the passenger travel in the Redding-Chico-Yuba City/Marysville-

Sacramento corridor, which are mostly not commuter trips.

Freight and Passenger Rail Service to Northern Sonoma and Mendocino Counties

The “Great Redwood Trail Agency” (GRTA) is proceeding with a plan to destroy the viable freight and passenger railroad between Cloverdale, Ukiah, and Willits, and replace it with a trail of dubious economic worth. A private sector investment of about \$100 million would upgrade the existing rail line between Cloverdale and Willits.

Investment in rail could deliver substantial annual economic activity in Mendocino County. The economic activity generated by a trail replacing the rail line would be much smaller, despite a likely cost of \$100 million+/-, roughly the same as reopening the railroad.

A train certainly would have numerous benefits for residents, far outweighing modest net economic activity from 50,000 to 100,000 new Mendocino County visitors specifically attracted by a trail (a study for the GRTA estimates about 1.4 million visitors would use the trail, but that study fails to mention that most are likely to be existing Mendocino visitors).

It is important to note that in 2019 before Covid, there were about three million total tourists visiting Mendocino County, concentrated on the Mendocino Coast—e.g., Mendocino and Fort Bragg. It appears unlikely that 47% of Mendocino visitors would use the trail, given its inland location).

TRAC would like to see potential railroad operators, freight shippers, and Northern Sonoma and Mendocino County tourism interests weigh in with the federal Surface Transportation Board (STB) when abandonment is formally proposed by the GRTA.

Santa Cruz Rail Project Can Qualify for “Small Starts” Grants

By Michael D. Setty
Editor, California Rail News

In an effort to jump start rail service in Santa Cruz County, TRAC released its Santa Cruz Rail Study in July 2022. The study detailed the economics of a public-private partnership that would provide rail transit service on the Santa Cruz Branch line, supported by three profit-making services: Beach shuttles; dinner trains and excursion trains; and rail connections to San Jose, Monterey, and Salinas.

By overwhelmingly defeating the Greenway Initiative, the voters of Santa Cruz County clearly indicated that they want rail in their future. The TRAC study offered a fast and inexpensive path to starting up service: a partnership between the Regional Transportation Commission (RTC), owner of the Santa Cruz Branch line, and a private sector firm with the capital and the requisite operating experience. TRAC recommended:

1. That the RTC staff evaluate the Study to determine the reasonableness of the private sector business opportunities it disclosed.
2. That the staff invite private sector rail service proposals.
3. That the RTC look for grants to repair the bridges (rather than replace them). A relatively small grant could bring the tracks up to a 59-mph standard by adding new crossties as needed.

The study concluded that the dinner and excursion trains, which would travel where the tracks are mostly intact, between Santa Cruz and Davenport, could probably start up rather quickly.

As we noted in the Study, TRAC is convinced that getting a passenger service running ASAP is far more important than having “perfect” infrastructure. Residents will benefit from being able to take a train in the near term, rather than being stuck in traffic on the highway. Because rail passenger service has not been available for generations, it will take time to build up a culture of using rail transit. Better to start now, to build a robust market that could demand “perfect” infrastructure later.

Once a robust ridership has been demonstrated, the study pointed out that it is much easier to secure grant funding. (It is relatively quick and easy to bring in automated equipment to do total track replacement when and if it is needed.)

Unfortunately, the RTC and its staff wished to retain full control of the rail infrastructure and ignored TRAC’s proposals for potentially profitable dinner, excursion, and tourist shuttle trains. RTC opted for the traditional time-consuming, expensive approach typical of transit bureaucracies chasing Federal Transit Administration (FTA)



The demonstration of a modern electric rail car in October 2021 may have helped strongly defeat Measure D in June 2022, which would have outlawed rail in Santa Cruz County.

dollars.

The traditional approach guarantees that up to \$20 million will be spent on rail planning, engineering and environmental studies in a process that could take 4-5 years, or longer when competing for scarce FTA “New Starts” funding. It is highly unlikely that FTA would prioritize a \$500 million+ Santa Cruz rail project developed “the old-fashioned way,” particularly since projected ridership is considerably less than 10,000-15,000 daily rail passengers as the project is currently conceived.

Even if a project on the Branch Line managed to obtain a New Starts approval, many transit projects with much more robust ridership potential would be ahead in the line for funding. This means Santa Cruz County would be forced to wait many more years.

Based on this situation, TRAC’s “Plan B” for Santa Cruz rail is to transform the project scope into one that meets FTA’s “Small Starts” criteria. That is, developing a relatively small and affordable project costing no more than \$250 million overall, with a maximum federal share of \$75 million. Adding intercity rail components to the project could also attract other state and federal funding sources, and help improve the project’s operating efficiency (FTA recently raised the “Small Starts” threshold to \$400 and \$150 million, respectively, with a focus on stretching federal dollars).

This approach is being used by Monterey-Salinas Transit (MST) and the Transportation Agency for Monterey County (TAMC) for developing the \$60 million+/- Surf Busway between Marina and Seaside. In that case, MST and TAMC are providing 70% of the project cost through state and local sources, with only about \$20 million (30%) requested from FTA under the Small Starts program. FTA looks very favorably on projects with large local matches, and the \$15 million requested for the Surf Busway is virtually guaranteed despite the lack of studies other than environmental and design work.

Extensive state and new federal funding (in addition to Amtrak funding) is also available for intercity rail services. TRAC’s Santa Cruz Rail Study

estimated that intercity rail passenger services from the San Francisco Bay Area to Santa Cruz and Monterey could carry nearly 4 million annual passengers, including commuters and local trips within the Monterey Bay Area. About 2 million could use the Branch Line, mostly intercity trips by tourists and locals.

TRAC suggests the following strategies to keep the cost of the Branch Line project under the FTA’s Small Starts \$400 million threshold:

1. Scale back capital improvements to fit within a \$400 million or lower budget. This means upgrading existing track to Federal Railroad Administration (FRA) Class III standards (59 mph maximum speed for passenger services) by replacing crossties, while replacing old rail only as needed.
2. Repairing and upgrading bridges and other structures only as needed to reinstate rail service. Eventually many structures may require complete replacement, but this could be deferred for many years and funded from other sources when required in the future. For example, more than one source seen by the author suggests that the Capitola Trestle could be safely repaired for a few million dollars now, deferring estimated \$20-\$30 million replacement costs for 20-30 years.
3. Keep station designs simple and straightforward. All stations except terminals are likely to serve less than 2,000 boarding and alighting passengers per day. Simple, smart designs should be able to keep costs at or below \$2 million each, including pedestrian and bus access. It is also unlikely that extensive park and ride facilities will be needed.
4. Consider operation of freight trains beyond Watsonville only at night or during designated “time slots” to avoid conflicts with passenger trains. This could minimize Positive Train Control (PTC) installation to just the short segment of track regularly switched in Watsonville and Pajaro.
5. If PTC is installed on the entire line, use radio-based PTC systems only. Expensive wayside signaling is unnecessary, given modern PTC system capabilities as the defacto

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Healdsburg-Willits Freight & Passenger Rail

By Michael D. Setty

Editor, California Rail News

The “Great Redwood Trail Agency” (GRTA) is proceeding with an ill-conceived plan to build a trail of dubious economic worth. For reasons that are unclear, it insists on eliminating the potential for freight and passenger rail service between Cloverdale, Ukiah, and Willits.

The private sector could upgrade the existing 72-mile rail line between Healdsburg (a location SMART can probably get funding to extend to) and Willits, using most of the existing rails and fixing existing infrastructure such as bridges and tunnels. The \$100 million estimated cost is less than half of SMART's estimate for its unnecessary “replace everything” approach for only 15 miles of railroad between Healdsburg and Cloverdale.

The author rejects the SMART approach because: (1) passenger traffic to Mendocino would be modest, so that if SMART extended service, the improvements would not be cost-effective, and (2) train operations at up to 60 mph is perfectly feasible and safe with far less investment by upgrading existing infrastructure rather than total replacement.

Allowing the private sector to restore the railroad to freight and passenger use certainly would have numerous benefits for residents, far outweighing the modest net economic activity from new Mendocino County visitors specifically attracted by a trail. For example, TRAC believes there is a potential of 5,000–10,000 annual freight carloads from numerous shippers, worth \$5-10 million per year (e.g., \$1,000 in revenue per carload) to a potential rail operator.

The availability of rail freight service conceivably could save shippers a net of \$15-\$30 million annually in trucking costs after rail freight rates were paid. In turn, this could help create hundreds of new jobs over time, as well as improving the viability of forest product, chemical, feed, building supplies, and other businesses that benefit from affordable freight rail service.



The Skunk Train knows all about self-propelled rail cars. 1972 photo of a 1930's motor car.

A summer excursion operator was attracting several hundred riders per trip on Friday and Saturday trains operating between Healdsburg and Willits in the late 1990's, prior to storm damage taking the line out of service from Sonoma County to Willits. Many visitors then connected to Skunk Trains traveling to Fort Bragg. Given the relatively high prices charged by the excursion operator, this patronage level was noteworthy.

The fact Ukiah is a two to three hour drive each way from most parts of the Bay Area discourages potential visitors from coming to Mendocino County on their own. The author believes that consistent all-year train service with several trips per day from Healdsburg to Cloverdale, Ukiah and Willits could attract at least 5%-6% of current Mendocino visitors, plus a reasonable number of Northern Sonoma and Mendocino County residents.

In terms of visitor economic impact, this may be worth \$30 to \$50 million annually, or more. There's a history of trains being very good for Mendocino: During the 1980s, the Skunk Train attracted more than 150,000 annual passengers, nearly 10% of Mendocino County's visitors at the time.

Investment in rail could deliver substantial annual economic activity in Mendocino County. The economic activity generated by a trail replacing

the rail line would be much smaller, despite a likely cost of about \$100 million, roughly the same as reopening the railroad.

The most frustrating factor in the “Great Redwood Trail” debate is that most benefits of a trail, particularly for residents, can be obtained with continued railroad operations. Ironically, trails alongside the railroad have been completed through most of Ukiah and Willits, so the trade-off for the proposed rural trail links between communities, of modest benefit to locals, would be the elimination of the many potential benefits of restoring railroad operations.

Used diesel multiple units—comparable to those currently operating at eBART and three systems in Texas: Austin, Denton County, and Fort Worth—should be purchased. Such vehicles can be converted to battery operation and are significantly less expensive to fuel and maintain than SMART's heavy DMUs.

TRAC asks potential railroad operators, freight shippers, and Northern Sonoma and Mendocino County tourism interests to contact president@calrailnews.org to join TRAC in weighing in with the federal Surface Transportation Board (STB) when abandonment is formally proposed by the GRTA.

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- successor to U.S. railroad “cab signal” legacy systems.
6. Consider purchasing used rolling stock from Europe. Large number of currently operating diesel multiple units (DMUs) on European branch lines will become available over the next five years as new battery-electric and hydrogen-powered trainsets are phased in. Currently available trainsets include Stadler Rail and Siemens DMUs. The Stadler designs

- could be readily converted to battery-electric operations, for example. While this is a “second best” solution compared to new trains, this approach could save tens of millions of dollars in the short term.
7. Stadler equipment has been operating successfully at eBART in Contra Costa County, and three places in Texas: Austin, Denton County, Fort Worth.
8. An alternative would be to lobby the State Legislature to purchase several

battery-electric multiple units for Bay Area-Monterey Bay rail services as a add-on to Caltrain's proposal for a BEMU version of its EMU rolling stock. Alternatively, this could be an “add-on” to the recent contract between Caltrans and Stadler Rail for up to 29 hydrogen or battery/electric “FLIRT” trains to operate rail feeder service to high-speed rail from Sacramento and the Bay Area, and other intercity rail services.

North Valley Rail: San Joaquins Extended to Chico?

By Michael D. Setty

In the latest example of planning that is so focused on local travel problems that it “misses the forest for the trees,” the Butte County Association of Governments (BCAG) has begun a study of extending San Joaquin passenger rail service from Sacramento to Chico in the Northern Sacramento Valley.

Tentatively, North Valley Rail trains would also stop in Natomas (North Sacramento), Plumas Lake, Marysville/Yuba City, and Gridley. Initially, two trains would operate southbound mornings and return in the late afternoon, starting in late 2026. Up to four round trips per day are proposed by 2030.

Project capital costs are projected at about \$500 million, mainly for expanded track capacity, additional rolling stock, upgraded grade crossings, and station improvements. BCAG claims numerous benefits of the plan, including improving connectivity, supporting new development around stations, and advancing goals for reducing carbon emissions. Commuters are expected to use the line, as would California State University, Chico students, and off-peak recreational travellers.

As currently planned, trains would operate north-south through Midtown Sacramento on the Union Pacific's Sacramento Subdivision, e.g., the former Western Pacific mainline. These frequencies would be further extensions of San Joaquin trains to Sacramento.

The North Valley Rail plan as currently conceived is problematic in several ways. First, the plan may conflict with existing feeder bus services, as well as a plan by the Shasta (County) Regional Transportation Agency for intercity bus service to Sacramento, serving the Redding and Red Bluff areas. Unlike trains, buses can be started very quickly, to help “test the waters” for future intercity passenger services.

North Valley Rail as an extension of San Joaquins from south of Sacramento makes little sense. A cursory examination of travel data shows that Northern Sacramento Valley travellers make several times as many trips to/from the Bay Area as to/from the San Joaquin Valley and Southern California. Yet, North Valley Rail trains would not connect with Capitol Corridor trains to the Bay Area and Amtrak's two long

distance trains at the existing Sacramento Valley Station. This is not good planning.

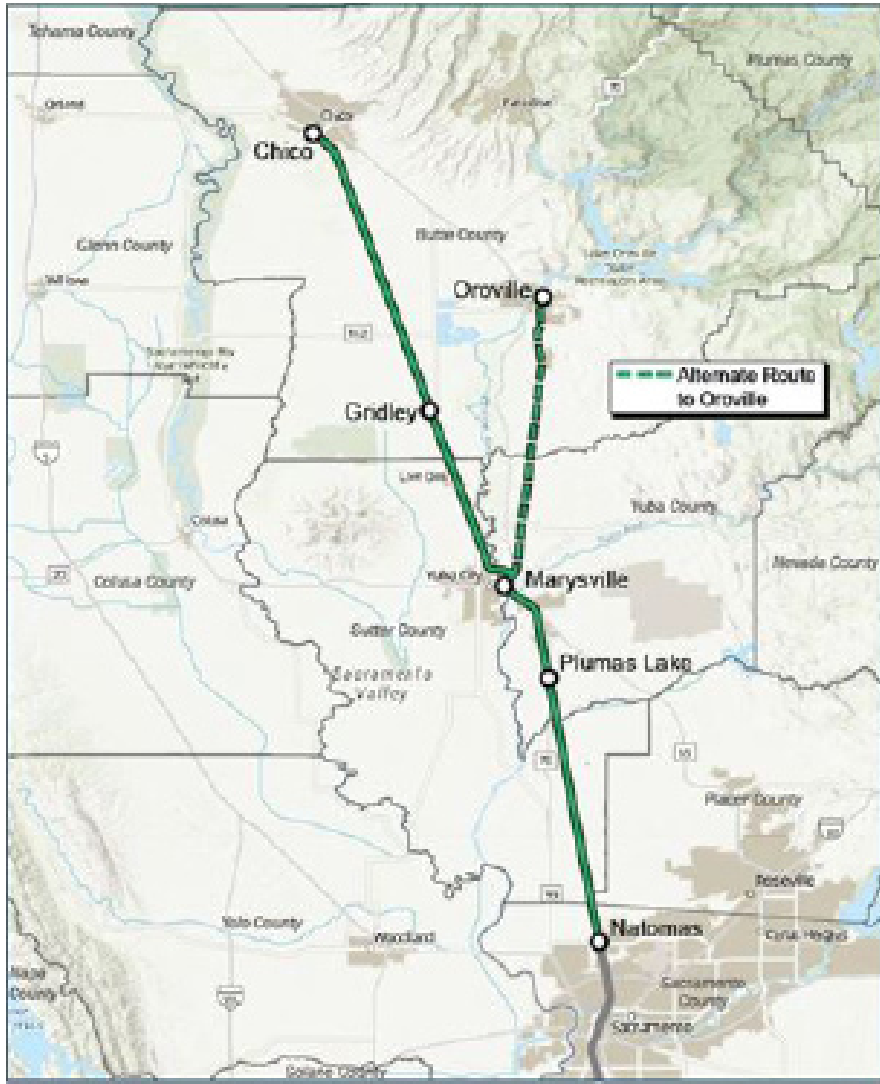
Thus, the patronage potential of Capitol Corridor trains extended north is much higher than extending San Joaquins. Some Capitol Corridor rolling stock is also underutilized, with many trainsets operating as few as one or two daily round trips per day over the 85 miles between Sacramento and Oakland.

A track connection between Union Pacific's Sacramento Subdivision (Oroville-Stockton) and Martinez Subdivision (Roseville-Oakland) was constructed in 1999, northeast of downtown Sacramento for a reroute of Amtrak's Coast Starlight away from the congested Roseville Yard. This connection could be readily adapted to Capitol Corridor extensions to the North Sacramento Valley.

The plan should also include extensions to serve Red Bluff in Tehama County and the Redding area in Shasta County. Such an extension would also open up access to (1) Lassen National Park, (2) Lake Shasta and other tourist destinations focused on Redding, and (3) makes feasible one-day trips via connecting buses to Klamath Falls, Ashland/Medford, and perhaps Bend and other parts of Southern and Central Oregon. It might even be possible to provide one or two round trips daily to Eugene, Springfield, and Portland.

The large highway volumes between the Bay Area, the Sacramento region and the North Valley suggest that only four round trips daily may be inadequate. Over relatively short distances (less than 100 miles), six to eight daily trains would provide better coverage of the travel market, e.g., hourly trains during peak periods and every two hours at other times.

A 1995 study projected about 150 daily passengers to/from Redding for intercity passenger rail service, with only about 15%-22% farebox cost recovery—well below the 55% required by state policy at the time.



Not shown on this map, but the proposal would miss downtown Sacramento and the San Francisco Bay Area, the 2nd largest travel market from the Sacramento Valley.

(It is not clear how many daily trains were proposed by that study to operate Sacramento-Redding.)

However, I-5 and Highway 99 travel volumes in 2017 were more than 40,000 daily average traffic south of Red Bluff, suggesting more than 60,000 daily trips if 1.5 persons average occupancy per vehicle is assumed.

Even a small percentage of this traffic captured by rail could mean more than million trips annually (~5%). This is sufficient to fill up four to five daily round trips that could be extended from Chico to Red Bluff and Redding. Clearly more capital improvements would be needed, mainly for more rail capacity north of Chico and new stations.

In my view, current plans for Sacramento-Chico trains falls short of what is needed in the corridor. Among other things, current plans are based on the obsolete pre-Covid notion that only peak period service is needed.

In actuality, the intercity passenger market by whatever mode—auto, bus and train—needs reasonably frequent all-day service, plus service into the evening and on Saturdays, Sundays, and holidays.

The plan for Sacramento-Chico trains is a good start, but a more complete solution is required to meet 21st Century travel needs.