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California Rail News

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High Speed Rail's Moment of Decision: Approaching an Irreversible Committment

By David Schonbrunn
TRAC President

Despite still not having built a single foot of track, the California HSR Authority (CHSRA) is trying to muscle $23 billion to build a landlocked Merced-Bakersfield line. CHSRA is fighting to get the Legislature this fall to appropriate the $4.2 billion in remaining HSR bond funds. Overcoming this roadblock would give CHSRA clear sailing to build its project.

"Awarding the Track and Systems agreement contract and especially the Trainset contract [which rely on these funds]," the California High-Speed Rail Peer Review Group wrote, "will effectively commit the state to completing the 171-mile segment regardless of what the eventual cost may be. … The Legislature should consider whether completion of the Merced to Bakersfield system would increase the probability of eventually completing the links to San Francisco and Los Angeles/Anaheim …"

With a bitterly divided Congress, there's no funding in sight on the scale needed to connect a Central Valley HSR line to San Jose (at least $16 billion) or Los Angeles/Anaheim (at least another $37 billion). TRAC sees no point in continuing with the project, since there is very little chance this isolated line would ever reach a major population center. We see the $8 billion already spent on the Central Valley HSR project as money down the drain, and oppose CHSRA's call for another $15 billion to complete the project, especially given the certainty of cost overruns.

The Central Valley was supposed to be the easiest and least-expensive segment to build. Thirteen years after the passage of the bond measure, it certainly has not turned out that way. From the standpoint of rail advocates who see the urgent need for Bay Area and Los Angeles rail projects which are far less expensive and would have far more daily passengers, costs at this level are obscene.

The Politics of HSR

When Jerry Brown was Governor, he was able to tightly control the Legislature to support High-Speed Rail, his pet project. During his time in office, the State Assembly never raised a peep about the project. Governor Newsom is experiencing something very different. The leadership of the Assembly is

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INSIDE

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HSR at a Crossroads

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deeply skeptical of the HSR project in the Central Valley--and they're willing to speak up about it. They don't see the project leading anywhere, even if it were to be completed as the Authority proposes.

Opinion pieces by Assembly Speaker Anthony Rendon (D-Lakewood) and Assemblymembers Laura Friedman (D-Burbank) and Tom Daly (D-Anaheim) called for holding off electrification of the Central Valley line until there is a larger completed project. "Greater investment in trains running from Burbank to Anaheim will help millions of riders get where they need to go quickly," they wrote. The new Chair of the Assembly Transportation Committee asked hard questions at a Fresno hearing last year: "Why does it matter that it goes fast, if not all that many people ride it?"

Knowing that the Assembly leadership was dubious of the value of electrifying the Central Valley HSR project, CHSRA set up a confrontation with the Assembly last year by moving towards approving a 30-year contract for the installation and maintenance of tracks and electrical power for HSR trains (i.e., installing catenary).

Last June, the Assembly pushed back hard by passing House Resolution 97. A highly unusual unanimous bipartisan vote directed CHSRA to hold off on adopting the track and electrification contract until the Assembly has voted on an appropriation. The Authority is now planning on approving a contract in October, after the Legislature has acted on an appropriation of remaining bond funds.

The State Budget adopted in June contained several critical provisions: First, action on the HSR bond appropriation was deferred. This was a big disappointment for CHSRA, which was eager to get its hands on the remaining bond funds. Second, billions in transportation funds were appropriated, but that appropriation would lapse unless a subsequent bill allocating the funds was enacted by October 10. As the State Transportation Agency, CalSTA, recently wrote:

"Governor Gavin Newsom continues to work with the Legislature to enact a comprehensive transportation package that includes significant investments in transportation infrastructure, including $4.2 billion in General Obligation bond funds dedicated for the High-Speed Rail project, and $3.4 billion General Fund for high-priority transit projects, grade crossings, zero-emission rail equipment, active transportation, and climate adaptation projects."

This is code for "the Governor is holding the transportation package hostage, in exchange for the Assembly passing the HSR bond appropriation." This sets up a head-butting moment here. However, the outcome is far from clear, as there are multiple levels of complexity:

A. The Governor's position is significantly weakened by his having to campaign right now to avoid being recalled. He is not going to want to call attention to HSR, because that would motivate voting by the 72% of Republicans that want the project stopped. The project's popularity is low--a recent poll had 41% of voters supporting the construction, while 42% want it shut down. The Governor has never been a vocal champion of the HSR project in the way his predecessor once was. It seems that Newsom would like the project to quietly just go away. He tried to limit the State's commitment to HSR at the beginning of his term, but got so much pushback from unions, contractors and consultants that his strong statement turned to mush.

B. To shore up its position, CHSRA managed to get the Federal Railroad Administration to help box-in the Legislature, when it restored a $929 million grant to CHSRA that the Trump Administration had rescinded. The settlement agreement included terms requiring the state to electrify the line, a condition that had not been in previous grant agreements. Speaker Rendon and 17 Assemblymembers wrote to the Secretary of Transportation, asking that this provision be removed from the agreement. If the Feds refuse to budge on the settlement condition, the Speaker's effort to defer electrification will become even more complicated.

C. The biggest players in the politics of HSR are those that benefit directly from the project: the construction unions, consultants and contractors. They lobby hard to keep the HSR gravy train chugging along. They were big contributors to the 2008 campaign for the Proposition 1A bond measure, and continue to lobby and contribute to legislators. With public opinion shifting away from the project, they put politicians in an awkward position.

How will this end up?

From its inception, the HSR project has been a cynical grab for public money–TRAC is convinced it was never intended to deliver actual train service. Informed insiders have observed that the money has been so good for the unions, consultants and contractors that it will be politically impossible to shut down this dysfunctional project. TRAC urges readers to ask their Assemblymembers to stand with the Speaker, to ensure that State funds benefit rail passengers, rather than the self-interested parties that continue to push this project.

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What's Wrong With California's HSR Project?

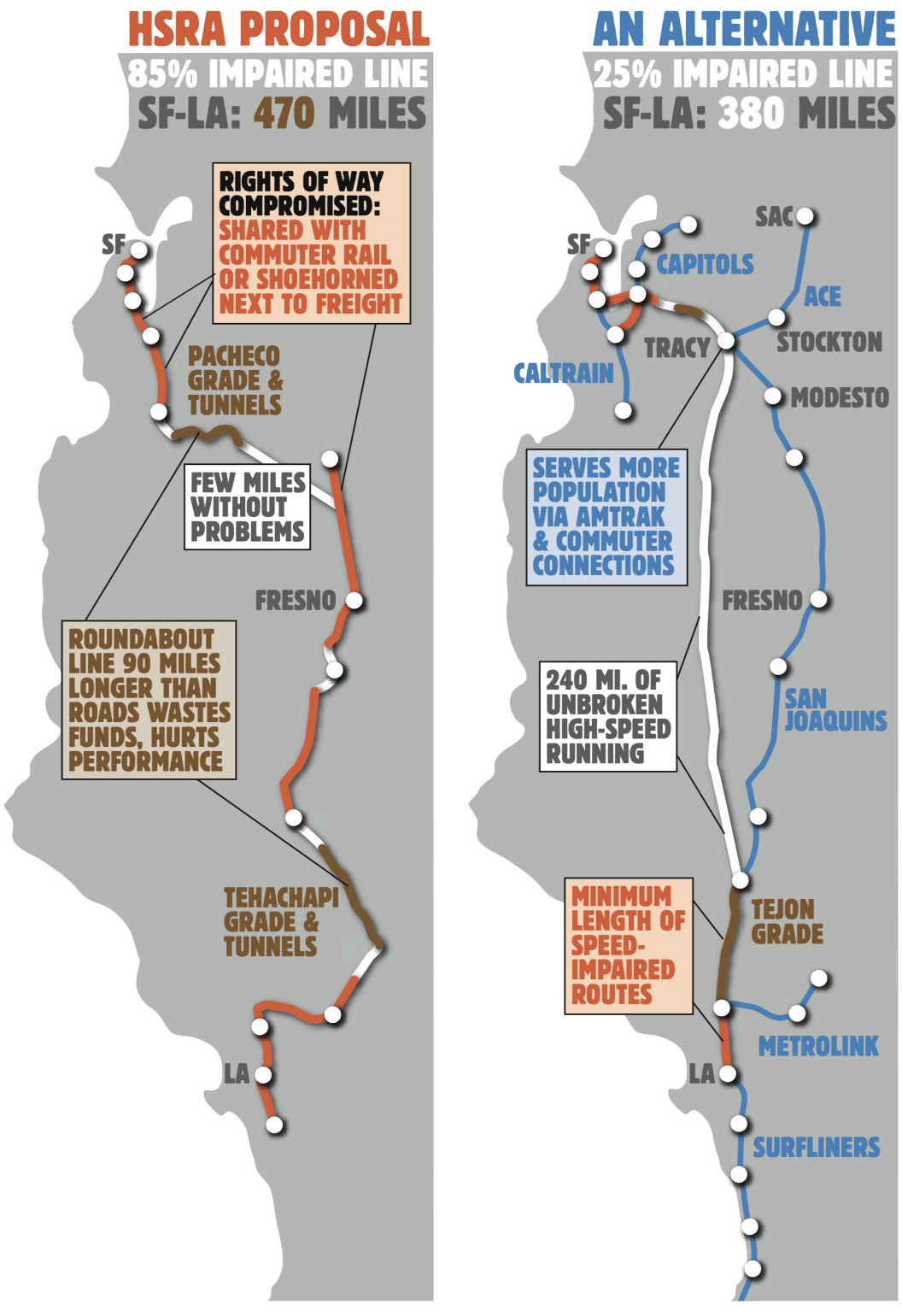
By David Schonbrunn
TRAC President

TRAC's Treasurer Gordon Osumundson recently drafted a letter conveying TRAC's suggestions for the Infrastructure Bill to Transportation Secretary Buttigieg. In the process of reviewing it, I was amazed at how perfectly past *California Rail News* articles had captured what was wrong with California's HSR project.

Eleven years ago, TRAC nailed the fundamental problem with the project: "The HSRA board has done the project a disservice by dictating a private agenda that is little more than drawing lines on a map to connect politically desired dots. The project's cost is now poised to soar out of control, and the finished project risks huge deficits due to uncompetitive travel times." For newer readers of this newspaper, here are the points made back then, which are still just as valid today:

- The HSR route was designed to serve every population center along the route, instead of taking I-5, the fastest, most direct route.
- Excessive noise makes it infeasible to run trains at 220 mph through cities.
- Because longer trip times will make HSR uncompetitive with airlines, ridership will be too low to pay for the operating expenses.
- Running through cities increases construction costs by requiring costly structures.
- Successful HSR systems operate on their own tracks, sharing tracks with local traffic only close to the origination and destination. CA HSR, on the other hand, would share 78 miles with Caltrain, and 77 miles with Metrolink, one-third of the 470 route miles.
- Far better would be to split off from Caltrain at Redwood City, eliminating 52 miles of slower-speed travel, to head east over the Dumbarton Rail Bridge and the Altamont Pass. By connecting to Southern California via the Tejon Pass, HSR could link to Metrolink in Santa Clarita, eliminating 42 miles of slower-speed travel.
- TRAC suggested serving the cities of the San Joaquin Valley with the existing San Joaquin intercity trains, which would feed into the North-South HSR backbone.
- TRAC's route would be about 90 miles shorter, much faster, and much less expensive to build.

All of these problems were obvious to TRAC a decade ago. However, the political leadership of the State insisted on pushing the project forward, despite the fact that, if it were built, this HSR project would not be a viable business. This is why the private sector has refused to invest in the project, while other HSR projects in Texas and Las Vegas have secured private financing.



Coast Observations

LOS ANGELES METRO GIVES GO-AHEAD FOR TWO PRIVATE SECTOR RAIL PROPOSALS for the Sepulveda Corridor between the San Fernando Valley and West Los Angeles parallel to the I-405 freeway through Sepulveda Pass. In July 2021, Los Angeles Transit Partners, spearheaded by Bechtel, was awarded a $69.9 million contract to develop its heavy rail concept. A TOTAL OF $63.6 million WAS AWARDED TO SKYRAIL EXPRESS, a consortium proposing monorail technology. Naturally, TRAC prefers conventional rail, given its flexibility and ability to be integrated with Los Angeles' current rail network…START-ING IN AUGUST 2021, BART RETURNS TO CLOSE TO ITS PRE-COVID SCHEDULE. Hopefully as the Delta variant dies down, BART can be returned to full capacity when sufficient people have been vaccinated and masks can be dispensed with… SAN FRANCISCO'S CABLE CARS ALSO RETURN after a 16-month hiatus, with free rides in the interim…NOT SURPRISINGLY AS THE POST-COVID WORLD EMERGES, SO DOES TRAFFIC CONGESTION IN THE BAY AREA. While many white-collar workers normally in downtown San Francisco offices continue to work from home, traffic congestion continues its fast buildup… MENDOCINO COUNTY'S FAMOUS SKUNK TRAIN MAY HELP CARRY WATER TO THE COASTAL TOURIST BURG OF MENDOCINO. Drought conditions there have been severe, drying up many local wells since Mendocino does not have a central water system. The Skunk Train may bring in water in tank cars, transferred to trucks in Fort Bragg…IT TURNS OUT THAT ELECTRIC AUTOMOBILES ARE NOT THE TRANSPORTATION PANACEA THAT GOVERNOR NEWSOM AND OTHERS HAVE CLAIMED. For one thing, California is often running short of electrical capacity on hot summer days. Electric car owners have been asked to not charge their vehicles at certain times…SOMETIMES HORRIBLE THINGS LIKE THE PANDEMIC CAN HAVE SMALL SILVER LININGS. Due to the lulls in BART ridership and service, BART has been able to hasten its $3.5 billion capital replacement program; according to BART about 25% of its program ahead of schedule…SOME AIRPORTS ARE EXPERIENCING JET FUEL SHORTAGES due to a lack of tank truck drivers, one fallout from the Covid pandemic. Will this result in politicians and the public putting more value on rail passenger service? Time will tell… THE POTENTIAL IMPACT OF SEA LEVEL RISE FROM CLIMATE CHANGE ON THE NORTH BAY'S HIGHWAY 37 AND OTHER KEY BAY AREA ROADWAYS is an increasing concern. A San Francisco Chronicle story repeats the claim that raising Highway 37 would cost nearly $4 billion, versus $200-$300 million by TRAC's estimate for upgrading the existing parallel, publicly-owned rail line…RESTARTING SANTA CLARA COUNTY'S LIGHT RAIL LINE AFTER A MASS SHOOTING IS PROVING A CHALLENGE, particularly bringing back traumatized employees…

How the LOSSAN Rail Corridor Can

TRAC's highest priority project

By Greg Thompson, PhD & Sandra Bauer

The LOSSAN-South Corridor connecting Los Angeles with San Diego is the second most significant rail passenger corridor in the United States. Patronage in the corridor is now many times higher than it was when the state started supporting Amtrak-operated Pacific Surfliners. However, ridership has plateaued in the last several years, as train congestion has lengthened running times and increased unreliability. It takes almost 3 hours for Surfliners to cover the 128 miles from San Diego to Los Angeles, for an average speed of 44 miles per hour (mph).

The Caltrans Division of Rail developed plans to significantly improve the speed and capacity of the corridor. It completed a program-level environmental review of projects along the entire LOSSAN-South Corridor that collectively would allow hourly regional express (also known as "intercity") trains to complete their runs from San Diego to Los Angeles in 1'50", including several intermediate stops, resulting in an average end-to-end speed of 70 mph. Local commuter service could be increased as well.

This article concludes that the Caltrans LOSSAN improvement program can make the LOSSAN-South corridor an effective alternative to the I-5 freeway, competing successfully with longer-distance auto travel between San Diego, Orange, and Los Angeles Counties. The proposed Miramar Tunnel, discussed below, would be a significant first step in bringing the corridor up to the level of the Northeast Corridor between Washington and Boston. (See our paper **Intercity Passenger Trains Are Not Commuter Trains**, at *calrailnews.org*).

Converting LOSSAN South Into A Modern Railroad Corridor

Since the mid-1970s, improvements to the LOSSAN Corridor have emphasized the addition of more frequencies for both commuter trains and Surfliners, as well as the building of more stations. This resulted in more trains running at slower speeds, with more delays. The railroad between San Diego and Los Angeles remains mostly a single-track affair following a curvy alignment laid out in the Victorian era. Increasing numbers of slow trains struggle to keep to schedule as they duck in and out of sidings to get by opposing trains. As transit operators continue to add more trains, the line becomes even slower and more subject to delays. Surfliners now average only 44 mph between San Diego and Los Angeles, compared to the 1976 average of 49 mph.

The Pacific Surfliner service is barely distinguishable from the Coaster and Metrolink commuter services. It actually is as slow or slower than commuter trains operating on the same tracks, even though commuter trains make more stops. The one huge difference is the average trip distance of Surfliner passengers and commuter users. Despite increases in population, employment, and congestion on I-5, there has been little recent growth in regional express train usage in LOSSAN-South, even though many trains have been added to the schedule.Experience with the Northeast Corridor suggests that stagnation in Surfliner ridership is the result of travelers not receiving the faster service they demand and are willing to pay for.

Demand patterns for commuter and regional express rail service in California and in the Northeast are more similar than is commonly realized. What sets the LOSSAN Corridor apart from the Northeast Corridor is the lack of differentiation between the average speeds of regional express and commuter trains. Commuter trains operate along most of the length of both the LOSSAN and Northeast corridors at similar speeds and fares.

What differs between the two corridors is the speed of regional express trains. Amtrak runs its Northeast regional express trains at average speeds of 55 to 78 miles per hour in contrast to the 40 to 45 mph average speeds of Pacific Surfliners. Northeast Corridor passengers strongly support the service, paying high fares and filling most seats. Passenger revenues are high enough to cover operating and maintenance expenses.

Amtrak can operate both quality commuter service and very frequent regional express service on the Northeast Corridor because it has the infrastructure to allow simultaneous operation of two classes of frequent trains, operating at different average speeds and catering to different markets. One class of traveler needs long station-spacing and high speeds and is willing to pay high fares to get those qualities; the other requires close station-spacing (and, as a result, lower speeds) and thus they are not willing to pay high fares.

An Amtrak Surfliner train heads south alongside a beach in Northern San Diego County. Photo Credit: LOSSAN.

In the era preceding the automobile, private Northeastern railroads, most notably the Pennsylvania Railroad, built infrastructure to allow such dual classes of service in response to demand as the Northeast urbanized. In contrast, private railroads in California built what we now call the LOSSAN Corridor during much the same era, when passenger demand was low.

Southern California's great waves of population and economic growth came later, after the auto had become king. State and federal governments invested vast sums on a freeway-based transportation system to serve the demand for auto travel.

The 2007 Caltrans/FRA Program EIS/EIR addressed the need for rail infrastructure in the LOSSAN-South Corridor to accommodate two classes of demand. Major projects included a tunnel through San Clemente to move the tracks away from the beach, another tunnel through Del Mar to remove the tracks from the crumbling

n Do More for Southern Californians

- Cars and locomotives similar to those in use today
- Rebuilt infrastructure throughout
- Single track replaced with double track, with stretches of 3 and 4 tracks
- Line relocations using cut and cover subways under major roadways or tunnels through ridges
- To remove tight curves
- To remove most at-grade crossings with vehicles and pedestrians
- To relocate tracks away from crumbling bluffs overlooking the ocean
- To remove lengthy detours
- To add the University Town Center station to connect with one of the region's most important financial, research, and commercial centers, including three major research hospitals and the University of California at San Diego. (The patronage-generating potential for this station should be similar to that of the Old Town San Diego station.)
- To facilitate operation of 16 daily Surfliner round trips on hourly headways while simultaneously accommodating 27 daily Coasters, 29 daily Metrolink commuter trains north of Irvine, 8 to 18 Metrolink trains between Oceanside and Irvine and several freight trains per day.
- To allow Surfliners (stopping at some intermediate stations) to maintain average speeds throughout of around 70 mph.

U.S. Department of Transportation
Federal Railroad Administration

bluffs, and another tunnel project to bypass the Miramar Grade, removing significant curvature and grades from the corridor. Unfortunately, the California State Transportation Agency has effectively tabled the EIR in favor of pursuit of the High-Speed Rail project in the San Joaquin Valley and further freeway expansion.

Now it appears that the EIR is coming back to life. Controversy over widening of I-5 led to review of proposed improvements to the rail corridor in the vicinity of the Miramar Grade. Among the most important of the improvements studied is the Miramar Tunnel, which would tunnel under the mountain range immediately north of San Diego, bypassing the winding eight-mile Rose Canyon alignment of the original 19th century Santa Fe line. The tunnel would speed up Pacific Surfliners and Coaster commuter trains while serving one of San Diego County's major growth nodes, University Town Center, thereby attracting auto users.

The goal is transformation of the San Diego-Los Angeles rail corridor into a modern rail traffic artery. What it lacks is the quality of infrastructure possessed by the Northeast Corridor to accommodate that demand. The Miramar Tunnel project can be the first step of that renewal. If such an upgrading is successful, it could serve as a prototype for other upgrades, including the Del Mar and San Clemente bypasses, the conversion of the Santa Clarita and LOSSAN-North services from commuter to regional express, the Capitol Corridor, and others.

The Caltrans Program for the LOSSAN South Corridor

The authors of the LOSSAN Corridor EIR present a realistic program for establishing a first-class, conventional-gauge regional express rail facility hosting both hourly regional express trains running at an average end-to-end speed of 70 mph and commuter trains running at average speeds of between 30 and 40 mph.

The programmatic EIR calls for:

The capital cost for accomplishing these performance standards would be $6.7 billion in 2019 dollars. In 2009, a federal Record of Decision adopting that alternative was signed. When an EIR/EIS for the Miramar Tunnel is done, increased traffic congestion will cause it to show even greater benefits.

We suggest that the modernized railroad should eventually host half-hourly express trains (32 daily round trips), speeding from San Diego to Los Angeles in 1'48" at an average speed of 69 mph. It is likely that this average speed can be attained only with the elimination of some intermediate stops.

(See the **full paper** on TRAC's website, from which this article is excerpted, for ridership estimates and analysis.)

We also suggest that the reconstruction of LOSSAN-South include the evaluation of an alternative to the run-through tracks at Los Angeles Union Station. Not too long ago, there was consensus to improve the operational utility of regional express and commuter trains using Union Station by

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A Message From TRAC'S President

By David Schonbrunn

It's been an extremely difficult year. Happily, the vast majority of our members stayed healthy through the trying days of COVID-19. Because most of our members—and myself—are older, that suggests that an interest in railroading counterbalances the health risks associated with age!

We did manage to get an issue of the *California Rail News* out at the beginning of the lockdowns last year. However, we were unable to distribute it our normal way, because Amtrak had closed many of its stations, and ridership was **way** down. We sent it out to the emails of our members. (All the more reason to give us your email.) That issue spoke to the big political change in progress, where the State Assembly, for the first time, became visibly critical of California's High-Speed Rail project.

That criticism is the key to the upcoming legislative vote on appropriating the remaining HSR bond funds. The Governor has asked for $4.2 billion for the Central Valley project, while the Assembly leadership doesn't want the money spent there. I explain the political dynamics in my front-page article, but the outcome is up for grabs.

I've personally been involved with the HSR project since 2003. A lot of my time has gone into litigation that attempted to shut down this money pit. We still have a case pending in the Court of Appeal. Our state is now approaching the best chance I've seen in all those years to stop this badly conceived project. That's why I urge every reader to write their Assemblymember to urge them to support the Speaker on the bond appropriation.

In this issue of *Rail News*, we present TRAC's highest priority: speeding up the LOSSAN Corridor between San Diego and Los Angeles. We want to make it faster than driving, especially during commute times. This corridor, which already has the second highest ridership in the U.S., could do so much better with investment to eliminate slow running. Strategic tunnels in Miramar, Del Mar and San Clemente would considerably reduce travel times.

TRAC's long-term vision is to speed up the LOSSAN and San Joaquin Corridors to 110 mph running, while encouraging the private sector to invest in higher speed corridors: the Altamont and the I-5. With the political will, these ideas could be readily translated into actual service, unlike CA HSR.

The other major article in this issue is an exposé on how consultants crank up the cost of projects largely to benefit themselves. In the process, they make projects so expensive as to be infeasible. We offer cost-effective alternatives, the development of which has become a lost art in American consulting.

TRAC's mission has always been to advocate for effectively using public funds to provide great rail transportation. What motivates us could not be more different than the highly conflicted political system, which has been blowing money for the past decade on a project that can never work. It is truly shocking that $8 billion has been spent on HSR without it resulting in **any** rail service whatsoever. This is truly unheard of… As scrappy outsiders, we may not win in the end, but we will continue to show what COULD BE, if political decisions were made in the public interest.

Upgrading LOSSAN

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extending most or all of the stub-end tracks in the station into through-tracks. This would be accomplished by extending the tracks south over the US 101 Freeway and then curving them east to rejoin the main passenger tracks along the west bank of the Los Angeles River.

Since then, the project has been hijacked to serve developers who want to create a retail mall below the tracks. The proposal now is to raise the entire track structure of Union Station by 15 feet at a cost of over a billion dollars of transportation improvement funds (not private equity), to create room for a retailing emporium. Such a raising of the tracks is unnecessary for the extension of tracks over the Hollywood Freeway.

Instead there should be a feasibility study of returning the rail terminal to the location of Santa Fe's original station on the passenger mainline west of the Los Angeles River and beneath First Street. The design could include convenient transfer connections to light rail and the Red Line subway.

Regional express and commuter trains could shave significant minutes from their running time by using this location instead of Union Station, while saving over a billion dollars in capital expense.

Cutting Demand on Freeways By Improving LOSSAN

When a freeway becomes congested, such as the I-5 freeway parallel to the LOSSAN corridor, it is natural to assume that widening the freeway will remove the congestion. That is because traffic using the freeway is thought to be a fixed amount that will flow freely once it is given more room, such as by adding a lane.

In reality, traffic expands to fill the additional space, a phenomenon known as induced demand. Adding highway capacity reduces (temporarily) travel time, the only cost directly borne by freeway users. When costs, whether monetary or travel time costs goes down, usage goes up. This is induced demand.

The I-5/US 101 freeway that follows the LOSSAN Corridor between Centre City San Diego and Union Station Los Angeles generates about 7,133 million annual passenger-miles over this stretch. Widening the freeway in that stretch by one lane in each direction would induce another 2,140 million annual passenger-miles, a 30% increase in freeway use.

Conclusion

Induced demand takes on a critical role in transportation planning in the Age of Climate Change. Auto use is the leading source of greenhouse gases in California and keeps growing, even as the State is working throughout the economy to reduce GHG emissions. To achieve its climate goals, the State of California is not only encouraging the adoption of electric vehicles, it is adopting policies to slow and stop the growth of auto use. These new policies will require enhancing alternative modes of travel, including the proposed improvements to the LOSSAN Corridor.

While improvements to the rail corridor are not a replacement for additional freeway lanes, they may well be the best achievable option, given the challenges of climate change. Widening freeways will come to be seen as obsolete, because the resulting increase of freeway traffic and decline of rail traffic would cause a significant increase in greenhouse gas emissions.

The LOSSAN Corridor has the potential for carrying a significantly larger share of corridor traffic if it is improved to achieve auto-competitive speeds (70 mph averageß) for interregional Surfliner trains, along with carrying the slower commuter trains that make many stops.

In addition to curtailing freeway expansion, a policy embracing dual levels of service on the same right-of-way would make the LOSSAN corridor similar to the busy Northeast Corridor. Now is the time to take the 2009 Caltrans plans for LOSSAN off the shelf and turn them into reality.

Lead author Gregory Thompson, PhD is Professor Emeritus of Urban and Regional Planning, Florida State University.

Monterey Bay Rail: Two Low Quality Studies, One Good Idea

Typical Products of the Compromised U.S. Consulting Process: Grossly Overpriced Rail Projects

By Michael D. Setty
Editor, California Rail News

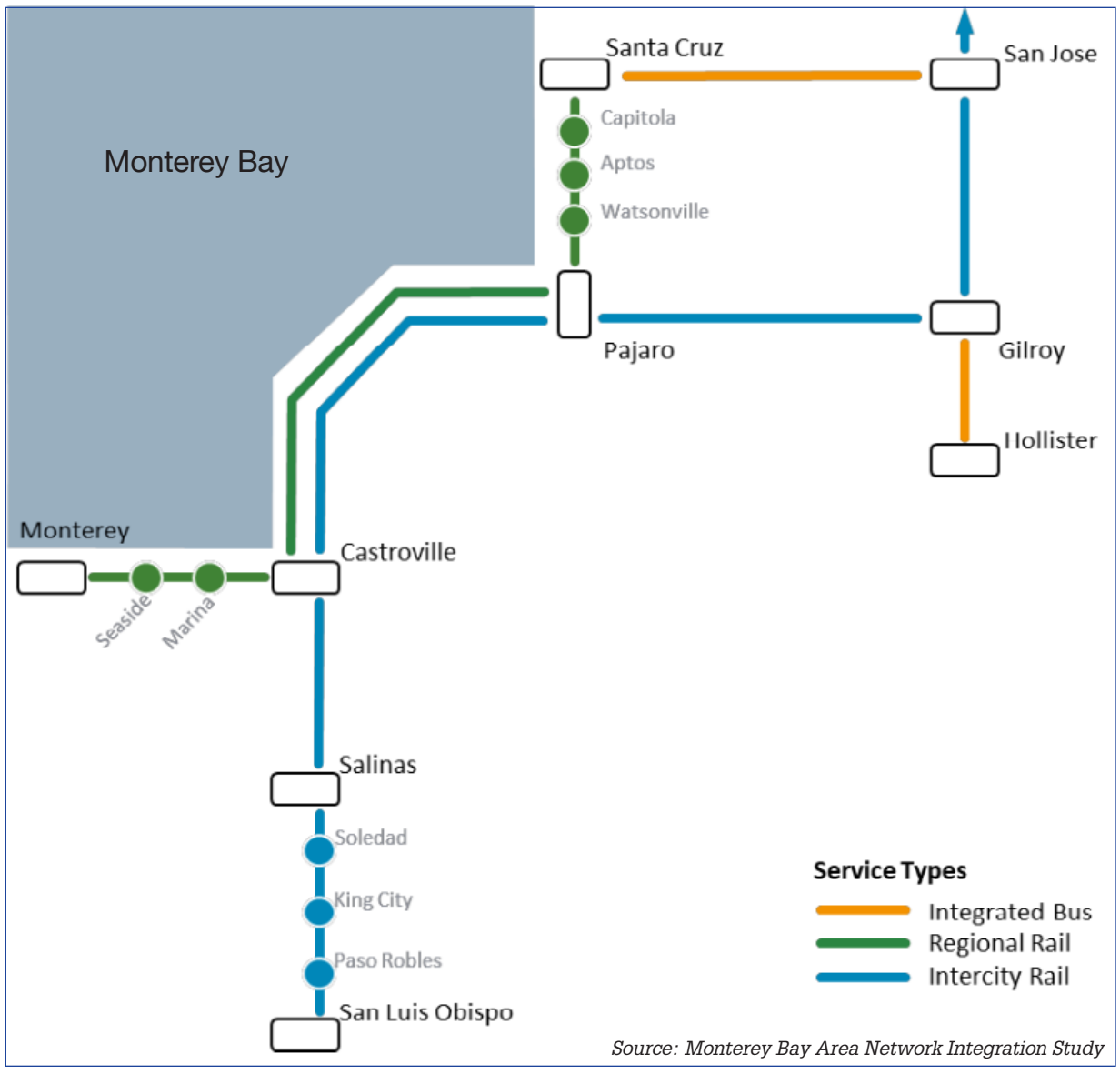
Two major studies on rail passenger service in the Monterey Bay-Santa Cruz Area were released in the first half of 2021. These were: *Transit Corridor Alternatives Analysis & Rail Network Integration Study: Business Plan for Electric Passenger Rail Line on the Santa Cruz Branch Rail Line,* and the *Monterey Bay Area Network Integration Study.*

These studies are typical products of the increasingly corrupt U.S. system of overpriced consultants that consistently recommend overpriced proposals. While cost-effective projects are conceived and planned in Europe, Japan and elsewhere, the consulting industry here generates higher billings by self-servingly recommending the most expensive construction possible. (e.g., California High-Speed Rail.) The combined capital cost of the various projects is nearly $1.3 billion, not including the cost of a Caltrain or Capitol Corridor extension between San Jose and Salinas.

It is highly unlikely such overpriced plans will ever be implemented, if only because elected leaders and the public will balk at the price tags. These high costs will also be fodder for Santa Cruz rail opponents who are now circulating a voter initiative that would remove wording from the *Santa Cruz County General Plan* promoting rail, endangering the potential for future rail service as well as existing freight railroad operations.

The plans' estimated cost for the Santa Cruz Branch Line is about $20 million per mile, and about $15 million per mile for the Monterey Branch Line between Castroville and Downtown Monterey, with stations, new sidings and signaling but excluding vehicles. These studies assume that making the Santa Cruz and Monterey branch lines usable requires complete replacement of not only rails and ties, but total regrading of rail embankments. This is unnecessary for initial operations! Because automated equipment makes short work of complete rebuilds, it would be a better use of public funds to build strong ridership before seeking the funding needed for complete reconstruction.

Upgrading existing tracks is much less expensive, typically costing less than $3 million per track-mile, including modern communications and Positive Train Control (PTC). Existing tracks can be upgraded to FRA Class III (59 mph maximum speeds) for typically less than $500,000 per mile. The primary expenses are tie replacements, replacing worn rail with "re-lay" rail, and minor repairs to existing fixed structures. Modern wireless PTC costs are in the same order-of-magnitude.



Source: Monterey Bay Area Network Integration Study

European-style vision for "network integration" for the Monterey Bay Area with timed transfers, cross-platform connections and infrastucture planning based on the concept.

The cost of new sidings can range up to about $5 million per mile in hilly terrain that requires utility relocation, and major grading and drainage treatments.

Modern communications-based, wireless PTC is an order of magnitude less costly than wayside signaling, eliminating expensive cabling that must be buried alongside the tracks. Such communications have worked quite well on U.S. freight railroads over long distances, with communications based on dedicated radio networks rather than "in the ground" cabling.

In Europe or Japan, projects of a similar scope, with only a handful of major structures, could be implemented for only 25% to 33% of these two plans' projected cost. U.S. politicians have not been willing to rein in the self-interest of mainstream consultants.

Inflated Operating Costs

According to the *Monterey Bay Area Network Integration Study*, the projected cost of operating Diesel Multiple Units (DMUs) and/or Battery Electric Multiple Units (EMUs) between Monterey and Santa Cruz is $23.00 per train-mile. This is consistent with operating costs for the 100-seat New Jersey "River Line" DMU service between Trenton and Camden, and costs for eBART DMU service between Antioch and Baypoint/West Pittsburg.

In contrast to the *Network Integration Study,* the *Santa Cruz Branch Line* study projects operating costs of $25 million per year for service over 22 miles each way, every 30 minutes during peak hours, and every 60 minutes at all other times. This results in estimated costs of about $70-$75 per train-mile, which is in the same highly inflated range of operating costs as SMART's DMU service in Marin and Sonoma Counties. This is also considerably higher than the $55-$60 per train-mile estimated for extensions of Caltrain commuter rail service from San Jose to Salinas using large locomotive-hauled 6-8 car, 700-800 seat passenger trains.

There are two other significant conceptual errors in the studies. First, the ridership does not justify operating locomotive-hauled passenger trains between San Jose and Salinas, at cost of $55-$60 per train-mile. Monterey Bay DMUs could be extended to San Jose at an estimated cost of $23 per train-mile.

By assuming Monterey Bay riders would transfer to Caltrain in San Jose, the additional expense of another 16 round trips per day north of San Jose would also be eliminated. Overall, this would reduce estimated operating costs of San Jose-Salinas service by about 70-80 percent. If such service was operated directly to the Monterey Peninsula rather than terminating in Salinas, another several hundred thousand tourists annually would be served in addition to local residents. That would put San Jose-Monterey service well into the profitable range, making service provision potentially attractive to the private sector.

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Monterey Bay Rail Plans

(continued from Page Seven)

Another major conceptual error is extending several daily trains from San Jose through Salinas south to San Luis Obispo. This plan envisages annual operating costs of about $28 million south of Salinas to San Luis Obispo, to serve only about 150,000-160,000 annual riders south of Salinas. This would be the equivalent of less than 50 riders per train. Under this plan, a selected number of trains would run Salinas-San Luis Obispo, with connections to SLO-Los Angeles Pacific Surfliners, rather than operating through trains to Los Angeles. Forcing a transfer in San Luis Obispo cuts potential traffic by 50% or more. Better options exist.

One Major "Good Idea"

The valuable part of the *Monterey Bay Area Network Integration Study* is its proposal for an integrated service vision for regional rail service between Santa Cruz and Monterey, similar to Swiss and other European operations. The vision includes hourly timed connections in both directions at the Pajaro/Watsonville station, between Monterey Bay Area regional service and extended Caltrain or Capitol Corridor services. Cross-platform connections would be provided. Rail infrastructure improvements would be planned around the service concept, which is how rail network planning is done in Switzerland and Germany.

TRAC Has A Better Strategy

Except for the "integrated service vision" both studies are best ignored. TRAC's alternative plan is as follows:

Fuel cell/battery hybrid streetcar in Doha, Qatar. A demonstration using this rolling stock is scheduled for October 2021 on the Santa Cruz Branch Line. Tig/M, manufacturer of these cars, claims they can build rail for a fraction of the costs estimated by the branch line study.

- Upgrade existing trackage on the Monterey and Santa Cruz branch lines to FRA Class III (up to 59 mph) for a fraction of the cost of complete track replacement.
- Install modern communication-based Positive Train Control (PTC) that does not require wayside signals, cutting costs for this item by 80%-90%.
- The Coast Line between San Jose and Los Angeles should be purchased by the State of California, primarily to reduce costs and to enable implementation of through-service between San Francisco, San Jose and Los Angeles.
- This would eliminate the need to comply with Union Pacific Railroad standards for grade-separated pedestrian crossings: new passenger station platforms would not be needed, particularly in light of the low volume of freight trains (1-2 daily round trips). This would cut the capital costs for major stations (Pajaro, Castroville) by 40%-50%.
- Adding more stations on the Monterey and Santa Cruz branch lines would add only a few minutes to schedules in each direction, but the added convenience could increase patronage by 50%-60%. Similarly, operating trains every 30 minutes rather than every 60 minutes as proposed in the *Monterey Bay Area Network Integration Study* would increase ridership by 50%-60%.
- Maximize double track at both the north and south ends of trackage through Elkhorn Slough to improve schedule reliability. In the longer run, consider a new bypass track around the Slough for passenger trains to reduce environmental impacts.

Busan, South Korea Selected for Demonstration Battery Tramway

By Leroy W. Demery, Jr.

Special to California Rail News

Santa Cruz County is not the only place where battery streetcars will be demonstrated. Early in 2019, the South Korean government selected Busan (from among five cities) for a demonstration battery tramway line.

The line will be the first light rail project in South Korea since the country's last LRT line closed in 1968.

Late in 2020, the government (the Metropolitan Transport Commission of the Ministry of Land, Infrastructure and Transport; MOLIT) approved plans to construct part of the planned Oryukdo Line. This is described as a research project sponsored by MOLIT and the Korea Railroad Research Institute (KRRI).

The planned Oryukdo Line is a 5.15-kilometer route from the Kyungsung University - Pukyong National University Station (Busan Metro Line 2) to the Oryukdo SK View Apartments, a high-rise residential complex. The approved segment

Busan Battery Tram concept, a design selected by public vote. Service beginning in 2023.

extends 1.9 km from the metro station (known as Kyungsung-dae - Pukyong-dae Station in Korean) to Igidae station. This segment is planned to include three intermediate stops as well as the maintenance facility. Low-floor battery tramcars will be used. Estimated capital cost is $42.2 million, or about $35.7 million per mile. This cost includes the car fleet, recharging stations for the cars, and the line's maintenance and storage facility.

The Busan local government and KRRI planned to begin construction during 2021, following approval by MOLIT of the Oryukdo Line business plan. Completion was anticipated by 2023. Thereafter, the remaining 3.25 km of the Oryukdo Line would be built.

The catenary-free vehicles will be built by Dawonsys, Korea. Each vehicle will have a range of 40 km (25 miles) on a charge. As previously noted, one major purpose of the line is to develop standards for LRT in South Korea and as a "proof of concept" for other local governments.