

# California Rail News

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## Metro: Transit Provider or Developer? -- LA Union Station Quandary

**By Susan MacAdams  
TRAC Board Member**

Los Angeles Union Station, one of the great train stations in America, is undergoing a hugely ambitious redevelopment scheme called "LINK US," formerly known as "The Union Station Master Plan" and the "Southern California Regional Interconnector Project" or SCRIP. This project is intended to expand station capacity to handle much larger passenger volumes. First, to improve passenger access to the tracks, it would reconfigure access, adding a large amount of retail development under the tracks; second, it would incorporate run-through tracks for Amtrak, Metrolink and high speed rail.

### The Proposal

Currently the station is stub-ended; trains enter the station area to pick up and drop off passengers, then exit in the reverse direction. Run-through tracks would greatly increase the station's capacity by eliminating turn-around times. However, redevelopment appears to be the main goal of current LINK US plans. This plan would build a shiny steel and glass mall that clashes with Union Station's Spanish Colonial - Art Deco architecture.

Currently, Union Station has several garden courtyards that knit together outdoor space with the interior waiting room and ticketing areas. Placing the new addition under the tracks turns its back on the grandeur of this existing infrastructure. The total LINK US project's estimated cost of \$2.2 billion dollars could be better spent by building two new light rail lines or adding more buses, or by just



**Los Angeles Union Station, view through Main Waiting Room to train boarding area.**  
Photo By Alan Weeks. Used with permission.

simply building bus shelters in the San Fernando Valley.

The Los Angeles Co. Metropolitan Transportation Authority (Metro) has not overhauled its bus system in more than 25 years, yet during that time has added more than 500 miles of rail lines. When the rail lines were opened, the plans did not include adding local circulator buses to each rail or high-speed bus station. Many of the Metro buses run only once an hour. This greatly discourages ridership. As a result, the number of passengers using the buses has declined.

The original run-through track project more than ten years ago called for an extension of three tracks. Current plans would demolish all  
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**INTERCITY VS.  
COMMUTER TRAINS**

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# LA Union Station

(continued from Page One)

Union Station platforms and rebuild them fifteen feet higher to create a retail opportunity. The years of demolition and construction would make Amtrak and Metrolink service just about unusable for passengers. After construction, the retail and food concourse would become an unpleasant obstacle course with dust, vibration, and excessive noise from the trains traveling directly overhead.

There are many existing, underutilized spaces within Union Station better suited to retail and food services, including the former ticketing concourse at the front of the terminal. The oversized Amtrak baggage handling room immediately north of the boarding area could be relocated to less valuable space. The double doors of this room open onto a shaded courtyard, also underutilized. This location is ideal for a brew pub, upscale restaurant, or food court, but is not being considered in the new plans, even though it could literally save billions, and preserve functionality for passengers.

At Union Station today is a large Amtrak baggage handling room that is underutilized. The double doors of this room open onto a shaded courtyard, also underutilized. This location is ideal for a brew pub or upscale restaurant but is not being considered in the new plans.

The LINK US study also seems to disregard the needs of the many senior travelers and those with

A local example of excellent railway station preservation and adaptive reuse is the former Pasadena Santa Fe Railway depot. The old waiting room is now a trendy restaurant and the baggage room is a upscale pizzeria. The oversized windows of the baggage room originally served horse-drawn carriages. They were cost-effectively reused, with period-correct screens and wooden shutters that close at night. The depot's interior features the original custom-made chandeliers and rare Batchelder tiles. This is an excellent example of sensitive and efficient preservation when planning new construction at historic Union Station.

disabilities who use Union Station. These riders use motorized shuttles that require ramps. When raising the tracks 15 feet, all ramps would be demolished and not replaced. The number of steps passengers need to climb would increase from 25 to 50 steps! This formidable increase would slow passenger flow and probably not comply with the ADA.

### Safety Concerns

Raising the platforms by fifteen feet also creates serious safety issues: platform tracks would be higher than the mainline tracks. This violates a fundamental principle of railyard design; runaway trains from the station become a risk, potentially causing major accidents on the mainline freight and passenger routes along the Los Angeles River.

This sort of accident occurred at Lac-Megantic, Canada, garnering international attention. Brakes were not properly set, allowing the train to roll down the grade and derail, with a great loss of life and property. There is a possibility that a passenger train could roll out of Union Station and collide with a freight train carrying hazardous materials along the mainline tracks. Raising the tracks 15 feet to add a new passenger concourse

underneath does not sufficiently consider safety.

It also does not take into account the extensive special trackwork (a complex arrangement of switches) that surrounds Union Station. This trackwork is some of the most extensive and unique on the West Coast. It must be built on basically flat ground to be kept operational.

If the tracks are raised 15 feet in the station, the tracks along the LA River must be raised even higher, to prevent runaway trains. That would require tearing down several historic bridges that cross the river and rebuilding them higher. That would mean the profile of several of the busiest of streets of Los Angeles would have to be raised, affecting utilities, sidewalks and storefronts.

### Conclusion

The Metro Board has approved spending over \$70 million to study LINK US, of which \$25 million has already been spent. Despite the fact that these concerns have been made clear to both staff and the Board, project planning continues unaffected. Clearly, Metro is not listening.

The LINK US project should be revised to eliminate the new retail concourse, and focus on the much-needed run-through tracks. The original 1933 Union Station design included plans for expanding passenger access to the train platforms: two new tunnels could be built parallel to and on either side of the now-main corridor.

Adding these tunnels would allow for a significant increase in passenger volumes, at a very economical cost compared to the \$2.2 billion mega-project being considered.

Canceling station redevelopment would allow funding for adding circulator buses at train stops and building bus shelters throughout Los Angeles County. Although real estate interests would not be happy, this course of action would be much more beneficial to the taxpaying public.

*Susan MacAdams is a TRAC Board Member, a Los Angeles Union Station Historical Society Board Member, and former High-Speed Rail Planning Manager for Metro, where she had extensive responsibilities for Union Station.*

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# The Latest on High Speed Rail and Caltrain Electrification

**by David Schonbrunn**  
**TRAC Vice-President for Policy**

The California High-Speed Rail Authority, CHSRA, survived yet another brush with death. The *Tos* lawsuit plaintiffs were in court on April 26 for the hearing on a motion for preliminary injunction to shut off CHSRA's ability to spend High-Speed Rail bond funds for construction. Had the Court granted the motion, it would have been a mortal blow to HSR.

Instead, the Court granted CHSRA's demurrer, which essentially requires plaintiffs to start the case all over again. On May 25, plaintiffs filed their Second Amended Petition, this time naming the State of California as lead defendant. Plaintiffs allege that the \$3.2 billion in bond funding is dependent on a law that is unconstitutional.

The 2008 HSR bond measure included fiscal safeguards to ensure that all funds spent building projects would end up providing HSR service. Specifically, before bond funds can be used for construction of a segment, the measure requires documentation establishing that HSR trains will be able to use the segment when completed, to provide service that does not require an operating subsidy.

AB 1889, a law passed in 2016, allows bond funding to be used for construction projects that will only be ready for use by high-speed trains after further funding and further construction. By enacting this legislation, plaintiffs allege the State violated the State Constitution's provision that significant terms of a bond measure can only be amended by the voters.

Plaintiffs have asked CHSRA to help expedite the case, to quickly resolve the uncertainties about project funding. Interestingly, the hearing had originally been calendared for April 19, the day before the State Treasurer was scheduled to sell \$1.25 billion in HSR bonds. However, the date was pushed back a week, and the bonds were actually sold. Note, however, that the injunction had sought to block the expenditure of bond funds, not the bond sale itself.

## **The Caltrain Kerfuffle**

The Caltrain Electrification project is closely tied to High-Speed Rail, as its financial feasibility is dependent on the \$713 million sale of a perpetual easement allowing HSR trains to run on Caltrain's tracks. However, Caltrain had a problem: the only fund source available to CHSRA was HSR bond funds, and the explicit terms of the HSR bond ballot measure make its electrification project ineligible for bond funds. (After the completion of electrification, the Caltrain Corridor would not be able to run HSR trains—a fact Caltrain emphasized in responding to a challenge to the electrification

Environmental Impact Report.)

To enable its project to receive bond funds, Caltrain sponsored AB 1889, the law being challenged as an unconstitutional modification of a voter-approved bond measure. Last December, CHSRA approved funding plans for its Central Valley segment and Caltrain's Electrification project, neither of which would qualify for bond funds for construction, had AB 1889 not been enacted.

Emboldened by the results of the November 2016 presidential election, California's 14 Republican Congressional Representatives wrote to the incoming Secretary of Transportation, Elaine Chao, asking her to hold up a last-minute Obama Administration \$647 million full-funding grant agreement to Caltrain. The Caltrain project became their target because the Caltrain Electrification project would provide essential facilities that advance the HSR project. The Republicans did not want federal funds to aid the Caltrain project, at least until after a federal audit of the HSR project was completed.

Once Secretary Chao announced the deferral of the grant, the California Department of Finance was unable to approve the use of HSR bond funds for Caltrain Electrification, because it was no longer fully funded (a requirement of the bond measure). These dual blows threw the Caltrain Electrification project into chaos, because Caltrain had already approved \$1.25 billion in contracts it could not otherwise pay for.

At the end of May, after intense pressure from Democratic politicians and Silicon Valley businesses, Secretary Chao announced she would be approving the grant. Shortly afterwards, the Department of Finance approved the use of bond funds for the Electrification project. Caltrain is now assuming that its project is fully funded. It's not all smooth sailing from this point, however.

If the *Tos* lawsuit succeeds in getting AB 1889 declared unconstitutional, injunctions will block the use of bond funds for both the Central Valley HSR project and the Caltrain Electrification project. Because neither project has a fallback plan, they would each immediately become infeasible, with no way forward.

The opponents of the HSR project have been claiming for many years that CHSRA never produced a plan for completing the project that complies with the terms of the bond measure. The unconstitutional enactment of AB 1889, their only pathway to being able to spend bond funds on construction, proves that point.

*David Schonbrunn is President of TRANSDEF.org, one of the Tos plaintiffs. Full information on the case is available at <http://transdef.org/HSR/AB1889.html>*

# Coast Observations

**STILL NO FIRM STARTUP DATE FOR SMART service between Santa Rosa and San Rafael. Advocates for SMART are starting to get annoyed, particularly because of the ammo being handed to rail critics... IF YOU ARE A SEAT-HOG ON BART, have no fears. The bureaucracy couldn't get its act together to enforce rules against taking more than one seat... IF YOU WANT A NEW JOB, CEO of California's High Speed Rail is available. CEO Jeff Morales resigned effective June 2nd. At least one wag asks if the ghost of Edward Smith—former Captain of the Titanic—is available. Smith has the unique experience needed... BART CONTINUES TO HAVE ITS TROUBLES, from constantly breaking-down escalators to late trains every day, and a ham-fisted attempt to establish retail stores inside its stations... SOME TRANSIT SUPPORTERS HAVE ADVOCATED upgrading S.F. Muni's surface streetcar lines by extending service to the Marina District and purchasing new low-floor cars to partially replace the historic streetcar fleet... IN A MOVE THAT MIGHT BE FAVORABLE TO TRANSIT despite its proposed cuts to transit capital spending, the Trump Administration suggests allowing tolling of existing Interstates and other highways... TRUMP'S PROPOSED TRANSIT CUTS leave projects like Sacramento's Downtown Streetcar and finishing the Santa Clara County BART extension to downtown San Jose in limbo... TEXAS HIGH SPEED RAIL appears to have clear sailing ahead unlike California. The Texas Legislature had bills to kill HSR but none passed... SPEAKING OF FREEWAYS, Los Angeles Metro has killed the proposed I-780 tunnel extension proposal through South Pasadena. No transit alternatives are currently on the table, however...MEANWHILE IN SANTA CRUZ, "Trail Only" advocates dig in on their pitched battle against retaining the current rail line by starting up yet another anti-rail group... SEVERAL AUTOMATED BUS DEMONSTRATIONS are running in Europe, but so far none appear to be exploiting the potential for automating streetcars, which could be in service decades before self-driving automobiles actually prove practical, if ever... SOMETIMES SMART CAN BE DUMB; in May SMART proposed a possible schedule with 90-minute gaps between trains during rush hours, but made quick fixes after a massive public outcry... AFTER SPENDING MANY BILLIONS OF DOLLARS, New York's Second Avenue Subway is experiencing ridership increases and crowding, so the MTA is adding expanded train service... SOME MEMBERS OF CONGRESS WANTED a government Accountability office (GAO ) investigation of sky high transit construction costs in the U.S., but somehow this provision got knocked out of the FY 2017 federal budget. Was this collusion among transit haters—who would get to oppose more transit if it was cheaper to build—with the vested interests who profit from high construction costs?...**



# TRAC'S INTEGRATION PLAN FOR SAN JOA

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

Part of the deal-making by Governor Jerry Brown and the State Legislature to gain passage of the SB-1 transportation funding measure included earmarking \$400 million to extend Altamont Commuter Express (ACE) commuter rail service to Modesto, Ceres, Turlock, Livingston/Atwater and Merced. ACE, currently running between Stockton and San Jose, had unfunded plans to extend to Merced, called ACEforward.

SB-1 raises gas taxes and registration fees to for improved highway and street maintenance, as well as more funding for transit capital and operations, intercity rail, pedestrian and bicycle projects.

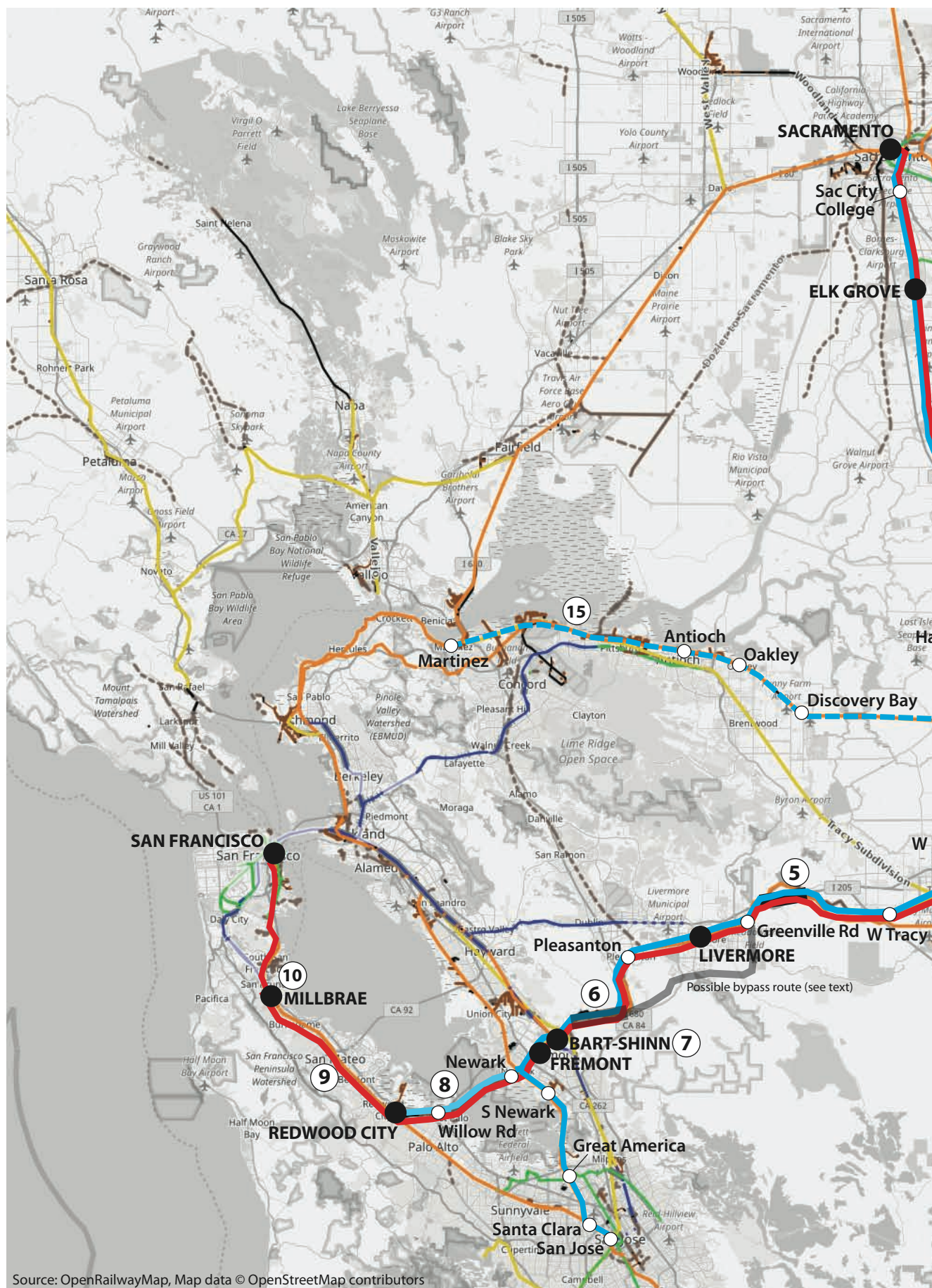
Now that a large portion of the ACEforward program is funded, TRAC sees tremendous potential for synergy between ACE and the San Joaquins. Combining their capital programs will allow the creation over time of an East-West Altamont route that is both much faster and much more reliable for both services, since much greater capacity would be available for both passenger trains and freight traffic.

The ACE route is far better matched to projected Bay Area travel demand than the San Joaquin's current route. Putting the trains from both services on the same tracks would substantially expand the availability of service. This would effectively convert ACE to an all-day transit provider, a long-time goal. The resulting convenient schedule would attract large numbers of passengers away from their cars, thereby aiding the State's climate program. Rerouting San Joaquins via the Altamont also opens up potential direct service between the Central Valley and San Francisco, the San Francisco Peninsula and Silicon Valley. Direct service to Sacramento would be offered as additional track capacity is developed.

These synergies could be achieved in the near-term, depending on negotiations for Altamont track capacity. San Joaquin trains from Bakersfield could pull into the Stockton ACE platform, then change directions to head west to the Tri-Valley and East Bay. A bus bridge (and perhaps future DEMU service) connecting Martinez and Stockton would support existing passengers as service is realigned.

Travel times will become faster than the current San Joaquin schedule as the improvements proposed below are brought into service. Connecting to the Capitol Corridor in Fremont (Centerville) opens the San Joaquin to the rich job market of the East Bay. The proposed new stops would substantially improve the cost-effectiveness of the new route between Lathrop and Merced.

By integrating ACE and San Joaquins service, other opportunities include dramatically expanded San Joaquins schedules serving Sacramento. Potentially large ridership gains can be achieved by rerouting service via Altamont Pass, the Dumbarton Corridor and via Caltrain tracks to San Mateo County and San Francisco. This reroute would also open up possibilities for direct intercity rail service from San Francisco and the South Bay to Stockton and Sacramento.



The remainder of this article outlines the details of proposed services and needed capital improvements to support proposed operations, with attention on retaining existing rail freight capacity.

## Summary of Proposed Upgrades

Please refer to the numbered items on the map above.

### ACEforward Enhancements

**1. ACEforward extension to Modesto and Merced.** The second track constructed by ACEforward alongside the existing Union Pacific freight tracks paralleling Highway 99 from the Lathrop/Manteca areas to Stanislaus and Merced Counties would be designed to allow operation of passenger trains every 30 minutes all-day. This would require constructing two primarily passenger tracks at most stations, and three to five-mile long 3rd passing tracks at selected locations. New infrastructure should be designed to allow San Joaquins to operate hourly in each direction, along with at least hourly ACE trains during the morning and afternoon peaks,

and two-hourly midday, evenings and weekends.

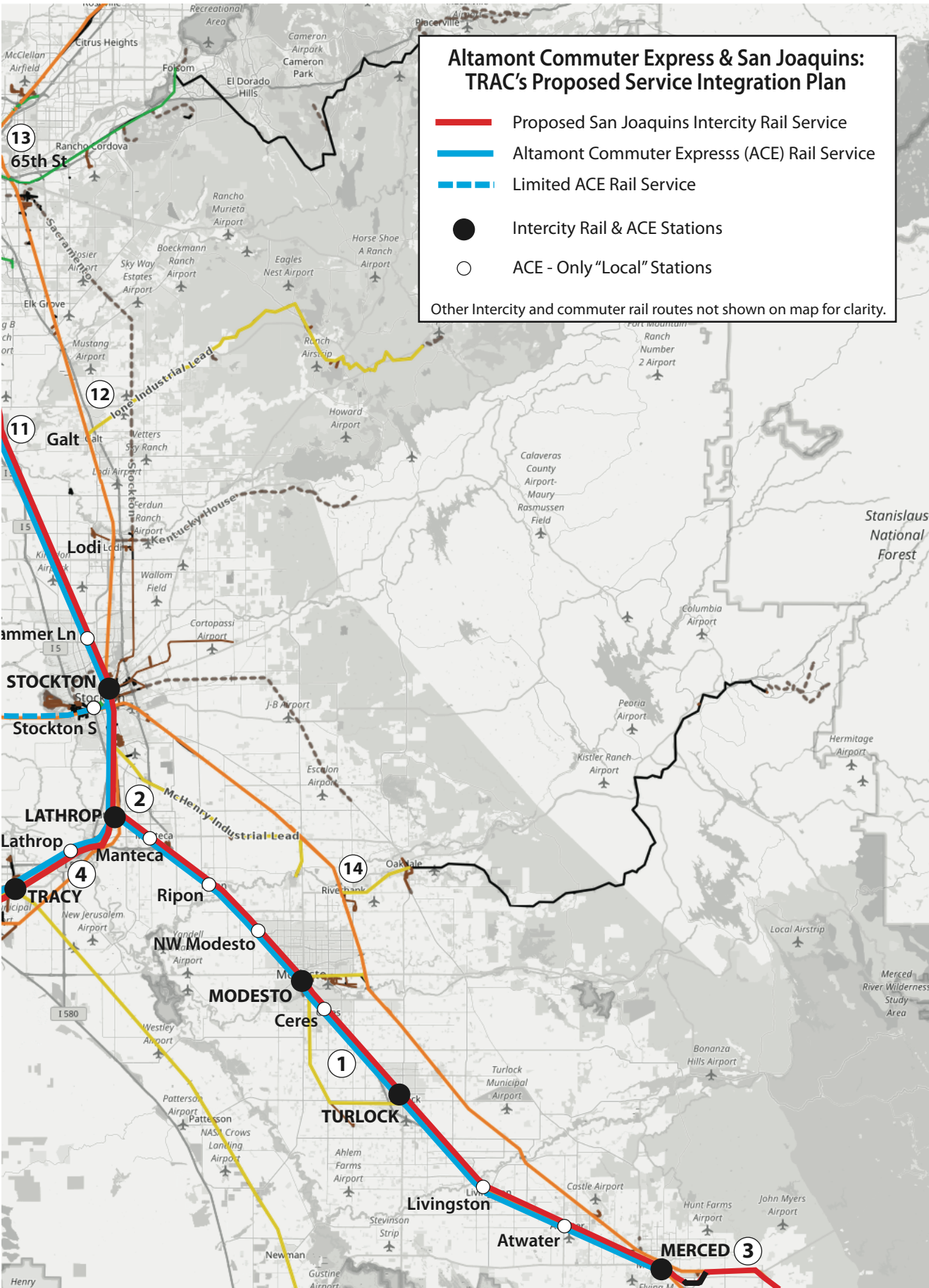
**2. Lathrop Junction Transfer Station.** Construct new transfer station at Lathrop Junction with platforms, passenger overcrossings of mainline track, and other facilities as needed to accommodate timed, cross-platform connections, allowing direct access from any direction to Sacramento, the ACE extension along Highway 99 to Modesto and Merced, the San Joaquin route to Bakersfield, and the Bay Area via Altamont.

**3. Construct a new track connection in South Merced** to transition San Joaquins off existing Burlington Northern Santa Fe trackage to new passenger tracks between Merced and Lathrop. This might be a new surface connection adjacent to University Parkway or a short tunnel paralleling Highway 140. A lower-cost connection could use the existing rail spur north of Central Merced to make the connection, and serve the existing Amtrak Merced station.

**4. Reroute existing passenger service between Lathrop and West Tracy** via



# QUINS & ALTAMONT COMMUTER EXPRESS



the prior Southern Pacific Altamont Pass route through downtown Tracy. This routing would provide much better, more central service to the 90,000 residents of Tracy, and would also allow rerouted San Joaquins to serve the community. Connect tracks to the existing Union Pacific alignment west of I-580. Double track this segment, as previously operated by SP.

**5. Through the Altamont Pass area, construct a new double-track tunnel and/or new alignment(s)** parallel to I-580 to reduce 5-10 minutes running time in each direction, and to facilitate future line upgrades to 110 and/or 125 standards. To expand capacity between Altamont Pass and the tunnel in Niles, consider the options studied in the 2011 Preliminary Alternatives Analysis for the Altamont Corridor Rail Project. This could be a major project for the Transit and Intercity Rail Capital Program, or for private capital. Select a route that avoids the Tri-Valley downtowns and does not share tracks with freight trains, if possible.

**6. To expand capacity between Alta-**

**mont Pass and the entrance to Niles Canyon,** consider the options studied in the 2011 Preliminary Alternatives Analysis for the Altamont Corridor Rail Project. This could be a major project for the Transit and Intercity Rail Capital Program, or for private capital. Select a new route that bypasses the Tri-Valley downtowns and the winding Niles Canyon line, and does not share track with freight trains if possible.

**7. New San Joaquins/ACE/BART transfer station at Shinn Street in Fremont.** The pedestrian-only connection to/from BART would offer no local access except for emergencies, similar to the new BART/eBART station in the median of Highway 4 a half-mile east of the existing Pittsburg/Bay Point BART station.

### San Francisco Segment

**8. Rebuild the Dumbarton Rail Bridge and rail corridor,** with new stations in Newark and Willow Road (Facebook) in Menlo Park. This project would connect Fremont with the Caltrain Corridor, costing less than \$300 million if the

unneded capital improvements proposed in recent government studies are dropped. A local service provider is to be determined on Dumbarton line.

**9. Extend San Joaquins service from Fremont to San Francisco via the Dumbarton Bridge,** Redwood City and the Caltrain Corridor, taking advantage of new passing tracks between the Redwood City station and San Mateo proposed by the California High-Speed Rail Authority. These trains would provide connections to the northern part of Silicon Valley, its employment center.

**10. Stop at the Millbrae BART/Caltrain station,** connecting to BART and SFO.

### Sacramento Segment

**11. From Stockton, extend San Joaquins and ACE service to Sacramento via Union Pacific's Sacramento Sub-division** (the prior Western Pacific). Capital improvements include new stations and passing sidings or double-tracking as required.

**12. Provide East-West Bus Connections between Lodi, Galt and 65th Street in East Sacramento** (connecting to light rail and Sacramento State University), and the ACE/San Joaquin stations to the west.

**13. New track connection from north-south UP line with loop track to east-west UP route on currently vacant property east and north** to provide direct access into Sacramento Valley station. Add two tracks between this point and the station to avoid freight conflicts.

**14. Provide East-West Bus Connections between Denair, East Modesto, Riverbank-Oakdale, and Escalon,** and the respective ACE/San Joaquin stations to the west.

### Martinez Segment

**15. Provide DEMU shuttle service between Stockton and Martinez,** replacing current San Joaquins service on this route. This will free up slots for expanded Capitol Corridor service west of Martinez.

### Rolling Stock

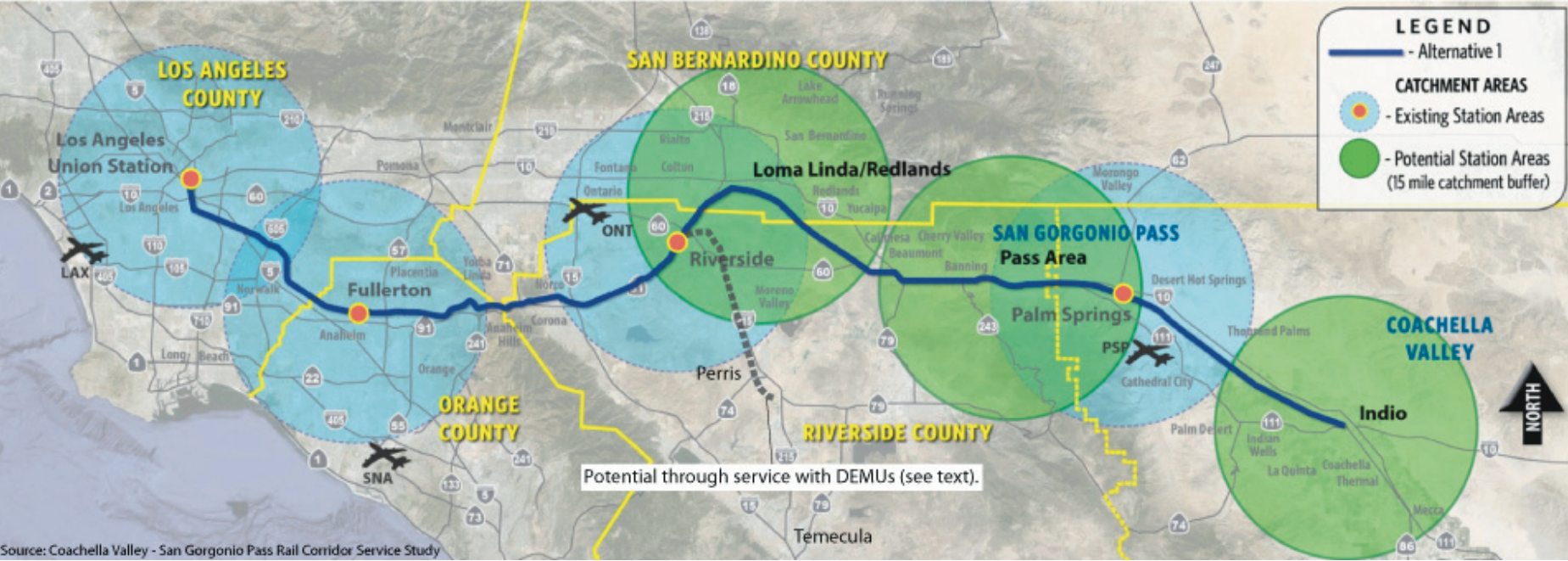
Replace existing ACE locomotive-hauled trains with DEMUs. DEMUs offer great flexibility. Their lower operating costs allow them to be used in short trains off-peak. They can split and combine trains when a route has more than one potential destination. For example, trains originating on the Highway 99 extension to Stanislaus and Merced Counties could operate with two DEMU trainsets coupled together, splitting at Lathrop Junction, with one section traveling to Sacramento, and the other into the Bay Area. Similarly, trains originating in Stockton could operate with two DEMU sets, splitting at Centerville (Fremont), with one section traveling to San Francisco and the other to San Jose, in both directions.

### Service Plan

ACE and the San Joaquins would be coordinated, to provide consistent day-long service. ACE would be an all-stops commuter service, while San Joaquins would be an intercity service, with many fewer stops and higher speeds. See the accompanying article describing the difference between these service types.



# Coachella Valley Trains Could Be Winners-With Better Plan



**by Michael D. Setty**  
**Editor, California Rail News**

Recently, the Riverside County Transportation Commission (RCTC), in cooperation with Caltrans and the Federal Railroad Administration (FRA), completed a preliminary study of proposed rail passenger service between the Coachella Valley and Los Angeles via Riverside and San Bernardino Counties.

The preferred route would operate between Indio and Los Angeles Union Station with proposed intermediate stops in Rancho Mirage, Palm Springs, Cazabon (serving a large Indian casino and the Banning/Beaumont area), Loma Linda, downtown Riverside and Fullerton. Two daily round trips would be provided. Travel times would be about 3 hours, 15 minutes in each direction, averaging 39 mph over the preferred route. This is 30 to 60 minutes slower than driving, depending on time of day and day of the week.

Projected ridership in 2022 would be 189,000 annual passengers, or 520 per day and 130 per train. This would generate approximately \$3.2 million in fares from about 16 million annual passenger-miles. Projected operating expenses of \$14 million annually for 190,000 annual train-miles, or an estimate of 130 passengers per train. This means fares would cover 23%, with a net operating subsidy of about \$10.8 million, e.g., a loss of about \$58.00 per passenger and \$0.68 per passenger-mile.

The conceptual operating plan envisions 6-car, 500-seat trainsets similar to current Pacific Surfliner equipment.

Despite Riverside County's strong advocacy for proposed Coachella Valley service, the poor projected performance raises serious concerns. Even with Amtrak's high costs, the Capitol Corridor and San Joaquins intercity corridors currently cover roughly 50% of their operating costs from fares and other operating revenues; the Pacific Surfliners recover about 70%.

For Riverside County, the RCTC's Coachella Valley rail proposal would come on top of the poor performance of the new Metrolink extension from Riverside to Perris that opened in 2016, which to-date carries only about 1/3 of

the projected 4,000 daily riders, has a farebox recovery of less than 10%, and costs Riverside County taxpayers more than \$10 million per year with a net operating subsidy of about \$50 per ride.

As noted in another article in this issue of California Rail News, intercity passenger trains really cannot achieve ridership and financial success until they travel at average speeds matching driving times, e.g., at least 55 to 60 mph overall. As with other intercity services in California, 39 mph is far too slow to be competitive. Combined with infrequent service, this proposal cannot be successful.

### A Fresh Perspective

In my estimation, successful intercity rail service to the Coachella Valley requires scrapping the current plan and approaching the problem from a fresh perspective.

First, selected rolling stock must match both likely demand and the characteristics of the proposed route. Six-car, 500-seat locomotive-hauled trains are far too large, too slow and underpowered for the relatively hilly route between the Coachella Valley, up and over San Geronio Pass, and the hilly portions of the BNSF line between Riverside, Fullerton and Los Angeles. Carrying 130 passengers on average aboard a 500-seat, \$25 million+ train is something only an agency spending public funds could do. It simply is not cost-effective.

In a move greatly increasing options available for U.S. rail planners, pending FRA safety rules allow adaption of European and other overseas train designs to U.S. operations with only minor upgrades.

Based on this, modern Diesel Electric Multiple Units (DEMUs) are a much better choice than traditional locomotive-hauled trains. DEMUs are:

- (1) Sized much more closely to the likely demand on the Indio-Los Angeles route, available in 125, 180 and 250 seat configurations;
- (2) Are much lighter, more fuel efficient and cheaper to maintain. A 4-car, 250-seat unit weighs about the same as a 130-ton locomotive from a 550-ton, six car train;
- (3) Being lighter, DEMUs have much better acceleration, speeding up service

through quicker stops and faster speeds on hills; and

- (4) DEMU trains can be made up of 2 or more separate units, which can join or divide at key junctions. This allows tailoring of train size to demand, and saves "slots" on busy mainlines over which the Coachella Valley route would operate.

Operating experience along both the Pacific Surfliner and Capitol Corridor shows that frequent service is essential to attracting sufficient ridership to justify the high costs of intercity rail passenger service. In the 1970's, doubling San Diegan (now Surfliner) service from 3 to 6 daily round trips more than tripled ridership. In the mid-1990's, doubling Capitol Corridor service also more than tripled ridership.

Based on this, 8-10 daily round trips between Indio and Los Angeles are recommended, with hourly peak service and two-hourly service at other times. This will require \$100-\$200 million in infrastructure to maintain existing freight train capacity for the Union Pacific and BNSF. More passing sidings and main trackage are needed, along with stations, and a layover facility in Indio.

A fleet of 8-10 leased DEMU trainsets could cover an expanded schedule for about the capital cost of 3 locomotive-hauled trainsets. The higher available horsepower per ton and better acceleration of DEMUs can probably increase average speed to at least 50-55 mph, reducing travel times by 20-30 minutes in each direction.

To lower labor costs, DEMUs serving the current low ridership Perris line could be coupled and decoupled at the Downtown Riverside station on DEMU trains to/from the Coachella Valley and Los Angeles. The current Perris line subsidy of \$10 million+ annually may be sufficient for both routes, assuming operating expenses can be kept under the \$20-\$30 per train-mile typical of DEMU services in the U.S. and Europe.

Through-buses to Arizona, San Diego, Hemet-San Jacinto, Yuma, the Imperial Valley and the border at Mexicali would also add potential revenues, further improving the route's cost-effectiveness.

*Michael D. Setty is a long-time advocate for rail service to the Coachella Valley.*



# "ELECTRIC FAST FREIGHT" IN CALIFORNIA?

## MOVING SHORT-DISTANCE TRUCK FREIGHT TO RAIL

by Michael D. Setty  
Editor, California Rail News

California freight planners have much to learn from the tiny country of Austria. In 2015, Austria carried about 40% of all freight ton-miles within the country, compared to the U.S. rail freight industry average of about 35% (2011 data). What's striking is Austrian rail's far greater penetration into the shorter-distance freight market. 27% of the total tonnage carried is containerized freight traveling 200-300 mile distances, short by U.S. railroad standards.

In the U.S., trucks dominate freight shipments up to 500 miles, while railroad freight is dominant over longer distances. Most U.S. rail ton-miles are generated by heavy, bulky materials such as coal and agricultural products. Long-distance container traffic such as "double stacks" make up a smaller share.

Unlike the U.S., over short distances in Austria and neighboring countries, rail is often very competitive with trucks for intermodal traffic. Austria's rail freight network operates frequent trains alongside very frequent passenger service. Most Austrian freights operate at close-to-passenger train speeds, on fixed schedules. The relatively short trains of



**ISU technology used in Austria for quickly loading & unloading trailers.**  
(Source: Rail Cargo Austria)

between 10 and 50 containers or truck trailers can be quickly loaded and unloaded. Austria leads in quick container and truck trailer loading/unloading technology, such as the "ISU" loading/unloading system pioneered by the Austrian Federal Railway's Rail Cargo Logistics division.

The fact that all Austrian mainlines are electrified also allows fast operation of the many relatively short freight trains of between 500 and 1,500 tons, in contrast to the standard U.S. freight railroad practice of making up long, heavy 100-200 container, 5,000-7,000 ton trains. That is a train size that can only economically serve 500-mile+ markets such as California to the Midwest, Texas, or the East Coast.

Over the past half-century, U.S. freight railroads have undertaken many efforts to capture high-value traffic that mostly travels by truck, such as Trailers on Flatcar (TOFC), Double Stacks, Road-railers and other intermodal approaches. While these have been technically successful, they have not proven truly competitive with trucks in the long-term, except in special cases.



**Electric intermodal freight in Austria.**  
(Wikimedia: Steffs 88, own work)

In California as in many other places, growing truck traffic contributes to an increasingly critical congestion crisis. While rail freight service is particularly important in carrying goods between California's ports and out-of-state markets, freight rail's competitiveness for intrastate traffic is extremely limited. Only about 2% of California's intrastate freight traffic is carried by rail, i.e., 98% travels by truck.

This is due to two major factors. First, most non-local freight travels less than 500 miles, where rail is not competitive except for heavy, low value commodities. Second, rail links between Southern California and the Central Valley/Northern California are extremely indirect with very long travel times compared to by truck. For example, there is Union Pacific's 480-mile Coast Route between Los Angeles and San Francisco, but typically only two daily, slow freight trains in each direction. Freight travel distances and times via Tehachapi Pass, Bakersfield and the San Joaquin Valley are even longer than the Coast Route.

### Applying the Austrian Model to California

In the past, California Rail News has featured articles proposing a new rail link between Bakersfield and Los Angeles via Tejon Pass, parallel to Interstate 5 (See April-July 2016, April-July 2015, August 2014). While these articles focus on a new line for passenger trains, its high capital costs mean the investment of private capital to enable fast rail freight traffic would make a new Tejon Pass line far more economically feasible.

According to recent freight studies for the I-5 and Highway 99 corridors, freight traffic within California totals approximately 819 million U.S. tons, or roughly 41 million truckloads annually. Of total annual statewide freight volume, 80% is deliveries within local areas and is therefore "truck-captive." This local traffic includes parcels, fuel trucks, gravel, and similar commodities.

About 164 million tons (8.5 million truckloads) of freight travels between various subareas of California. Because these trucks generate large amounts of air pollution and greenhouse gas emis-

sions, electrification of freight is part of the State's Sustainable Freight Plan. Of this longer-distance travel, about 35% (3 million truckloads) travels over Tejon Pass via I-5 in and out of the Los Angeles Basin. This intrastate traffic makes up roughly 9,000-10,000 out of the 12,000-13,000 5+ axle trucks that travel over Tejon on a typical weekday (many of the additional moves are empty backhauls or long-hauls to out-of-state destinations).

According to surveys of shippers, between 60% and 80% would consider shipments by intermodal rail freight. Their primary requirements were competitive pricing and reasonable travel times compared to trucks.

Electrically-powered freight trains would not be much slower than passenger trains on a new rail line via Tejon Pass, designed for 125-140 mph. The line would connect with electrified new tracks along the Union Pacific and Burlington Northern Santa Fe mainlines through the San Joaquin Valley. With full electric operation between the Ports of Los Angeles and Long Beach, as well as inland freight terminals in Southern California, the Central Valley and Bay Area, freight travel times of between 5 and 10 hours appear possible, depending on distance. Such a line would compete



**"CargoBeamer" is an innovative, automated European terminal that slides trailers on/off freight cars for quick loading & unloading of intermodal traffic.** (Source: CargoBeamer)

well with intrastate trucking.

Assuming that California electric fast freight can attract a 40% to 50% market share (versus the 60% to 80% implied by shipper surveys), the intrastate intermodal freight market may be worth \$700 million to \$1.1 billion annually, based on truckload rates averaging \$2.00 per trailer-load-mile. This is sufficient to cover direct operating expenses and a significant portion of capital costs for a new Tejon Pass rail line and strategically located intermodal terminals throughout the state.

The State can be expected to support this freight electrification initiative as part of its climate change efforts. The full project would include new tracks and associated electrification along existing freight mainlines. (This estimate does not include any estimate for revenues from general freight traffic that could also use the Tejon Pass route). Learning from Austria's success with shorter-distance fast electric freight, this concept appears to be an economically viable option worthy of serious study.

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# INTERCITY TRAINS NEED TO BE FAST! THEY ARE NOT COMMUTER TRAINS

**By Gregory L. Thompson, PhD.  
& David Schonbrunn**

Three state-supported agencies provide intercity passenger rail service in corridors connecting metropolitan regions in California. Other California agencies operate intra-metropolitan passenger train services, better known as commuter trains. Some commuter trains operate on the same tracks as state-supported intercity passenger trains. Under the recent devolution of power from the state to JPAs, the intercity services have come to be managed by commuter rail agencies. This intermingling results in confusion as to the respective market functions of these two distinct types of service. None of the state-supported intercity rail agencies has adopted service design standards to distinguish intercity trains from commuter services.

State-supported corridor trains operating in California's three intercity corridors are unlike commuter or intercity trains in the rest of the world. They are neither fish nor fowl. Their many stops slow the trains down to the point where they are not attractive to many making intercity trips. Yet, the stops are too few to adequately serve a commuter function. The state-supported trains most closely resemble regional all-stops locals. These are trains running relatively long distances at low average speeds, stopping at numerous stations and pleasing no one.

## Market Demand

We deduce from comparing fares that there is demand for two distinctly different types of passenger trains in intercity corridors. One type would stop only at the largest population and employment centers, between which it would offer several daily frequencies operating at average speeds in excess of 60 mph. The other type would be commuter trains, which would stop at many more places, offering average speeds of between 20 and 40 mph.

The one corridor in California where planners have been adequately sensitive to demand is the Caltrain commuter corridor. They clearly recognize this service distinction. Here there are three categories of service, distinguished by the number of stops that each category makes and the average speeds at which each category operates. The fastest category, the Baby Bullets, has an average speed almost 50% faster than the all-stops locals. The Baby Bullets have been a great step forward in service planning, as evidenced by their heavy patronage. If the top speed for the Baby Bullets was increased to 110 mph, the ridership would increase substantially. The Caltrain Corridor illustrates, that even for such a short corridor, there is a bifurcated demand that requires at least two very different types of train service.

While Northeast Corridor commuter fares are slightly higher than California commuter fares, intercity corridor services in the Northeast Corridor have much higher fares than intercity trains in California. Service frequencies are similar

in both regions and thus do not explain the fare differentials. What appears to explain them is the vastly faster intercity train service in the Northeast Corridor. There is a sizable segment of the public that demands to travel longer distances and is willing to pay much higher fares to travel faster. There undoubtedly are similar demands in the vast populated reaches of California, but because of the slow speeds of California's state-supported intercity corridor services, this market generally avoids the trains.

For California to achieve a substantial increase in rail ridership, rail service needs a market-based model for rail service that is appropriate for dense urban corridors. Fortunately, there is one, and it is the Northeast Corridor from Boston to Washington, D.C. Examined in the context of this model, California's state-supported intercity corridor trains are not fulfilling their potential for attracting users from other modes. They are too slow, and are burdened by too many stops.

## It's All About the Politics

Being different from the rest of the world is readily understandable historically. California's rail infrastructure developed when the state was relatively sparsely populated. Because the railroads never experienced the passenger volumes seen in the Northeast, their systems were not designed for fast and frequent trains intermixed with slow freights. Over the past 40 years, the state has invested several billion dollars in upgrading that infrastructure, but the design criteria for the new system emerged from political compromise, rather than from the discipline of market forces. California, however, now has the population and employment to generate travel demands similar to those in the Northeast. By applying the lessons of the Northeast Corridor, TRAC believes it is possible to deliver intercity service that competes well with congested highways.

Achieving that potential will require substantial additional infrastructure investment, including separate passenger rail rights-of-way and lightweight high-performance trainsets. It will also require institutional reform and the restructuring of service design. It may prove desirable to contract out operations to private operators on these corridors, as that would be the most straightforward method of achieving a degree of independence from the inevitability of politics.

Politics is problematic because the politician's imperative is to please. Politicians see new train stations as plums for their constituents, who do not travel very far and want stations close to where they live. Case in point: while editing these very words, an announcement arrived calling on the Capitol Corridor to build a station in Hercules, signed by two congressmen, two mayors and a county supervisor. For an agency that relies on public funding, political pressure like that is impossible to ignore. Unfortunately, the political dynamic of catering to local

wishes results in ever-slower rail travel as stations are added.

While additional stops would stimulate more short-distance riding, the resulting slower speeds would reduce long-distance ridership. The number of passengers could increase while the number of passenger-miles and revenue could decrease, as longer-distance passengers are driven away. Because their fares are what make these services economically feasible, the long-term viability of intercity rail is directly threatened by garden-variety politics. This is reason enough to be very concerned about the future of corridor services run by locally-focused JPAs.

In short, the existing three corridor services in California are what you get when service allocations are the result of localized political processes rather than market analyses. Consumers are willing to pay for fast longer-distance service, as demonstrated by the dramatically higher intercity fares on the Northeast Corridor. They literally are not represented in the political process, however, other than by advocates such as TRAC.

## Conclusion

California greatly needs alternative modes of travel. Highways are jammed and climate change means that travel patterns must shift away from driving. It is clear that intercity passenger rail service in California needs to have certain attributes before it will attract the substantial ridership that is its potential.

First, passenger rail corridors need to be designed to facilitate two types of service: commuter and intercity corridor trains. Achieving such attributes will require additional infrastructure investment, which will carry a significant price tag, but be highly cost-effective in the long-run. The Northeast Corridor offers a good model. Catering to those going to work or engaging in personal business on a daily basis, commuter trains need to stop frequently, therefore operating more slowly. Their users expect low fares. Intercity corridor trains would stop only at the most important centers of population and employment and would operate at an average speed of at least 60 mph end to end. They would charge higher fares, which the longer-distance traveling public is willing to pay, as long as the trains are speedy.

Second, intercity passenger corridors offering such service should be owned and operated by the state government, or by operators contracted by the state, in order to maintain the focus on long-distance travelers rather than on local constituents. Commuter train agencies, whose orientation is local and regional, would be tenants. With careful attention to service design and institutional arrangements, California's rail services can be made far more useful to far more Californians.

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