



JPB Board of Directors  
Meeting of October 3, 2019

Correspondence as of October 1, 2019

- | <u>#</u> | <u>Subject</u>   |
|----------|--|
| 1.       | The Gravity of RWC Station   |
| 2.       | Caltrain Business Plan Long Range Service Vision                   |
| 3.       | Redwood trees along San Carlos Station Platform                    |
| 4.       | Caltrain 2.0 – Elevated: Save \$7B+, Better SF Stations, Bike Path |

**From:** Ian Bain  
**To:** [Jeremy Smith](#)  
**Cc:** [GRP-City Council](#); [Board \(@caltrain.com\)](#); [Board \(@samtrans.com\)](#); [Warren Slocum](#); [Sequoia Center Vision](#)  
**Subject:** Re: The Gravity of RWC Station  
**Date:** Friday, September 27, 2019 2:58:18 PM

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Dear Mr. Smith,

On behalf of the City Council, thank you for writing to express your thoughts on the Sequoia Station proposal. If this proposal were to go forward, it would require a general plan amendment. As part of due process, City staff will evaluate the developer's proposal, and I believe it will take a couple of months before this issue comes before the Council to consider whether to initiate an amendment process. When it does, your thoughts and concerns will be considered.

Thank you again for writing to us.

Respectfully,

Ian Bain



IAN BAIN

Mayor

City of Redwood City

Phone: [\(650\) 780-7565](tel:(650)780-7565)

E-mail: [ibain@redwoodcity.org](mailto:ibain@redwoodcity.org)

[www.redwoodcity.org](http://www.redwoodcity.org)



On Fri, Sep 27, 2019 at 10:06 AM Jeremy Smith <[jsmith.build@gmail.com](mailto:jsmith.build@gmail.com)> wrote:

Esteemed council members,

I am one of the “young” people riddled with worry about climate change and how the destruction it poses to our world and local communities. Living densely around transit is one of the best ways we in the Bay Area can reduce our carbon emissions and maintain economic growth per a UC Berkeley report in 2017 and several others since then. Personally, I use Caltrain every day to get to my graduate school at Stanford M-F (by the way it takes 19 mins door-to-door from my parent’s home on Opal Ave/Brewster).

Development at Sequoia Station is **critical** to Redwood City's future for many reasons I'm confident you understand. But I'd like to underscore how important the Redwood City Transit Center is to this future. Here are some points from a blog post that illustrate my views on what should be considered for the station:

- Think Big. Redwood City is one of the few stops on the peninsula rail corridor not surrounded by a sea of low-density single-family housing. Intensive land use and transportation must fit together to achieve a dynamic yet sustainable low-carbon future.
- Form follows function. No amount of architectural flourish or amenity can make up for a poor station design. Optimize for convenient access, easy transfers between trains and buses, short walks, direct and intuitive routes.
- Put the station at the center of the action, right over Broadway. Don't shove it to the north, out of the way of the development. The city rendering at right shows precisely what NOT to do.
- Configure the station as two island platforms to facilitate cross-platform transfers, without time-consuming vertical circulation or platform changes. The Caltrain business plan's staff-recommended service vision relies **entirely** on these Redwood City cross-platform transfers; every single train that pulls into Redwood City will make a timed transfer to another same-direction train docked at the opposite edge of the same platform. Denoting express tracks as 'F' for Fast and local tracks as 'S' for Slow, the optimal layout is FSSF with two islands, resulting in F-platform-SS-platform-F. Again, the city rendering shows precisely what NOT to do: passengers would not only have to change platforms, but also cross the tracks at grade.
- Elevate the train station to reconnect the street grid and make the railroad permeable to pedestrians, bikes, and other traffic. A busy four-track station is fundamentally incompatible with at-grade railroad crossings, and the only reasonable way to grade separate at this location is by elevating the entire station. Obstacles to pedestrian circulation such as the Jefferson Avenue underpass would be removed. Once again, the at-grade city rendering shows what NOT to do.
- Use four-track approaches from the north and the south. Cross-platform transfers are most efficient if trains do not have to arrive and depart sequentially using the same track, which adds about 3 minutes of delay. The best transfer is one where the two same-direction trains can arrive and depart simultaneously on their own separate tracks. Temporal separation is efficiently established by having the local train stop one station away from Redwood City (southbound at San Carlos or northbound at a new Fair Oaks station at Fifth Avenue) at each end of a new four-track segment that will ultimately measure four miles. In this arrangement, the express trains naturally gain on the local trains without a single passenger being delayed at Redwood City.
- Include turn-back tracks. Preserve room in the right of way north and south of the station for turn back pocket sidings, between the central slow tracks. Dumbarton rail corridor trains may not necessarily "interline" or continue on the peninsula rail corridor, so it's important to give them a convenient place to transfer and turn around without fouling other train traffic on the express tracks (hence FSSF arrangement). Same thing for a possible San Mateo local, which could serve the more densely spaced stops north of Redwood City.
- Don't be constrained by discrete city blocks. It could make sense to build structures

or connect them over and across the tracks, more tightly knitting the station complex into surrounding mixed-use neighborhoods. This has some surmountable safety and liability implications, but buildings on top of busy stations are a common feature of successful cities around the world.

- Plan for long 400-meter platforms, not Caltrain's standard 700-foot platform length (again as seen in the city rendering of what NOT to do). While statewide high-speed rail plans currently do not include a stop in Redwood City, it is becoming enough of a destination and a regional transportation node that it makes sense to build a station large enough to future-proof it for service by long high-speed trains, regardless of what the California High-Speed Rail Authority might have to say about it.
- Think ahead about construction sequencing. Redwood City should be grade separated in one project from Whipple to Route 84, including the elevated station, taking advantage of [Caltrain's land holdings](#) to minimize the use of temporary tracks. A shoo-fly track would have to be built on Pennsylvania Avenue (within the railroad right of way) to make room for construction of the western two-track viaduct. Trains would begin using the elevated station while a second eastern two-track viaduct is constructed. Pennsylvania Avenue could re-open later, under the new four-track viaduct. Construction sequencing may drive how much extra land is needed for the railroad, so it's important to think it through up front.

"Risk and Opportunity in Redwood City"

<https://caltrain-hsr.blogspot.com/2019/09/risk-and-opportunity-in-redwood-city.html>

"Right Type, Right Place: Assessing the Environmental and Economic Impacts of Infill Residential Development through

2030": [http://ternercenter.berkeley.edu/uploads/right\\_type\\_right\\_place.pdf](http://ternercenter.berkeley.edu/uploads/right_type_right_place.pdf)

"To save the planet, the Green New Deal needs to improve urban land

use": <https://www.brookings.edu/blog/the-avenue/2019/01/15/to-save-the-planet-the-green-new-deal-needs-to-improve-urban-land-use/>

Sincerely,  
Jeremy Smith

**From:** [Board \(@caltrain.com\)](mailto:Board (@caltrain.com))  
**To:** [jsmith.build@gmail.com](mailto:jsmith.build@gmail.com)  
**Cc:** [Board \(@caltrain.com\)](mailto:Board (@caltrain.com))  
**Subject:** RE: From Caltrain Board and SamTrans Board email account FW: The Gravity of RWC Station  
**Date:** Tuesday, October 01, 2019 12:09:23 PM

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Dear Jeremy Smith,

Thank you for your feedback. Receiving input from the public is extremely important to Caltrain and the Board.

Kind Regards,

Dora

Dora Seamans, MPA, CMC  
Executive Officer/District Secretary  
SamTrans, Executive Administration  
1250 San Carlos Ave  
San Carlos, CA 94070  
Tel: 650-508-6242  
[Seamansd@samtrans.com](mailto:Seamansd@samtrans.com)

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**From:** Jeremy Smith <[jsmith.build@gmail.com](mailto:jsmith.build@gmail.com)>  
**Sent:** Friday, September 27, 2019 10:06 AM  
**To:** [council@redwoodcity.org](mailto:council@redwoodcity.org)  
**Cc:** Board (@caltrain.com) <[BoardCaltrain@samtrans.com](mailto:BoardCaltrain@samtrans.com)>; Board (@samtrans.com) <[Board@samtrans.com](mailto:Board@samtrans.com)>; [wslocum@smcgov.org](mailto:wslocum@smcgov.org); Sequoia Center Vision <[sequoiacentervision@gmail.com](mailto:sequoiacentervision@gmail.com)>  
**Subject:** The Gravity of RWC Station

Esteemed council members,

I am one of the “young” people riddled with worry about climate change and how the destruction it poses to our world and local communities. Living densely around transit is one of the best ways we in the Bay Area can reduce our carbon emissions and maintain economic growth per a UC Berkeley report in 2017 and several others since then. Personally, I use Caltrain every day to get to my graduate school at Stanford M-F (by the way it takes 19 mins door-to-door from my parent’s home on Opal Ave/Brewster).

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use”: <https://www.brookings.edu/blog/the-avenue/2019/01/15/to-save-the-planet-the-green-new-deal-needs-to-improve-urban-land-use/>

Sincerely,  
Jeremy Smith

**From:** Laura Tolkoff  
**To:** [Board \(@caltrain.com\)](mailto:Board@caltrain.com)  
**Cc:** [Brinkman, Cheryl \[cheryl.brinkman@gmail.com\]](mailto:Brinkman.Cheryl@brinkman@gmail.com); [Gillett, Gillian \[gillett@graffio.net\]](mailto:Gillett.Gillian@graffio.net); [waltonstaff@sfgov.org](mailto:waltonstaff@sfgov.org); [Stone, Charles \[cstone@belmont.gov\]](mailto:Stone.Charles@belmont.gov); [Pine, Dave \[dpine@smcgov.org\]](mailto:Pine.Dave@smcgov.org); [Collins, Ron \[rcollins@cityofsancarlos.org\]](mailto:Collins.Ron@cityofsancarlos.org); [Bruins, Jeannie \[jbruins@losaltosca.gov\]](mailto:Bruins.Jeannie@losaltosca.gov); [Chavez, Cindy \[cindy.chavez@bos.sccgov.org\]](mailto:Chavez.Cindy@bos.sccgov.org); [district6@sanjoseca.gov](mailto:district6@sanjoseca.gov); [Petty, Sebastian](mailto:Petty.Sebastian); [Hartnett, Jim](mailto:Hartnett.Jim)  
**Subject:** SPUR Letter In Support of 2040 Long-Range Service Vision (Oct. 3, Item 11)  
**Date:** Monday, September 30, 2019 8:32:07 AM  
**Attachments:** [SPUR-CaltrainLongRangeServiceVision\\_09.30.19.pdf](#)

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Dear Peninsula Corridor Joint Powers Board:

October 3rd is an historic day and a turning point. This is an opportunity to commit to the next generation of transit investments on the Peninsula and is the first step towards creating an outstanding rail system with frequent service unlike anything that exists in the Bay Area today.

**SPUR strongly recommends that the Peninsula Joint Powers Board adopt the 2040 Caltrain Long-Range Service Vision.** This is the vision that is so sorely needed to transform today's railroad into one that offers outstanding service, makes Caltrain competitive with driving, and supports transit-friendly communities.

**SPUR encourages the Board to move forward with a process to develop an organizational vision that matches the scale of its service vision.** We appreciate that the Long-Range Service Vision incorporates a transparent and deliberative process to evolve Caltrain's governance and organizational structure. In our letter, we also suggest four ways to help structure this process.

Thank you for your leadership at this important moment for the Bay Area's future.

Laura Tolkoff, AICP  
Regional Planning Policy Director  
SPUR • Ideas + Action for a Better City  
[ltolkoff@spur.org](mailto:ltolkoff@spur.org)  
[SPUR](#) | [Facebook](#) | [Twitter](#) | [Join](#) | [Get Newsletters](#)



September 30, 2019

The Peninsula Corridor Joint Powers Board  
12509 San Carlos Avenue  
San Carlos, CA 94070

**Re: Caltrain Long-Range Service Vision Resolution (Item 11)**

Dear Chair Gillett and the Peninsula Corridor Joint Powers Board,

October 3rd is an historic day. This is the day when the Peninsula Corridor Joint Powers Board will decide whether or not to invest in the next generation of transit on the Peninsula. Adopting the Long-Range Service Vision is the first step towards creating an outstanding rail system with frequent service unlike anything that exists in the Bay Area today.

The Peninsula and the Bay Area benefited tremendously from the good foresight and collaboration of San Mateo, Santa Clara and San Francisco Counties, who came together to purchase and run Caltrain in the 1980s. Now is the time to once again commit to a bigger vision for Caltrain.

**SPUR strongly recommends that the Peninsula Joint Powers Board adopt the 2040 Caltrain Long-Range Service Vision.** This is the vision that is so sorely needed to transform today's railroad into one that offers outstanding service, makes Caltrain competitive with driving, and supports transit-friendly communities.

**SPUR encourages the Board to move forward with a process to develop an organizational vision that matches the scale of its service vision.** We appreciate that the Long-Range Service Vision incorporates a transparent and deliberative process to evolve Caltrain's governance and organizational structure. Achieving the Long-Range Service Vision will take years of creativity, collaboration and commitment, along with significant, dedicated funding, new strategies for delivering projects and coordinating services, and finding new ways to bring value to Caltrain's customers.

We believe that this process would benefit from:

- **A commitment to shared goals** for Caltrain's future. These goals could include:
  - Reduce Caltrain's financial volatility.
  - Put the needs of riders first.

- Deliver frequent, coordinated and seamless service.
  - Serve a larger and more diverse ridership.
  - Create the backbone for a more integrated megaregional network.
  - Make Caltrain stations the anchors of great, transit-friendly neighborhoods.
  - Build capital projects quickly and cost-effectively.
- **Decision-support tools** to help the Board and the public understand the consequences of each decision. Translink, a transit coordinator in metro Vancouver, has a staff member whose responsibility it is to develop decision-support tools. These can include scenarios of the future, evaluation matrices, prototypes, and more.
  - **A neutral facilitator** who can design working sessions, help Board Members roll-up-their sleeves, and help groups work together to problem-solve and think creatively.
  - **A study trip** that helps get “under the hood” of international best practices and case studies. International precedents can help find solutions for complicated policy, organizational and governance questions.

Thank you for your bold leadership in supporting the Long-Range Service Vision. The timing could not be more urgent. With over half of the Bay Area’s greenhouse gas emissions coming from transportation, an outstanding rail system that is competitive with driving is exactly what is needed. This is the bold leadership people have been waiting for.

Sincerely,

A handwritten signature in black ink, appearing to be 'Laura Tolhoff', with a long horizontal flourish extending to the right.

Laura Tolhoff  
Regional Planning Policy Director

Gillian Gillett  
Chair  
Peninsula Corridor Joint Powers Board  
1250 San Carlos Ave.  
San Carlos, CA 94070-1306

Dear Chair Gillett:

The E101 Commuter Coalition is a collective of small, mid and large size employers and property owners in South San Francisco coming together in strong support of better transportation mobility to, from and within South San Francisco's East of 101 business district.

The East of 101 Commuter Coalition, urges the Peninsula Corridor Joint Powers Board to adopt the Caltrain Business Plan Moderate Growth Service Vision scenario, including the plan's specific recommendation to increase service to the South San Francisco Caltrain Station to at least eight (8) trains per hour via local and express service during both peak and midday commute times.

The Caltrain Corridor running through Santa Clara, San Mateo, and San Francisco Counties is home to over 3 million people and a diverse economy that includes high-tech, biotechnology, financial services. The Caltrain Corridor also serves the headquarters to valuable companies and institutions including Google, LinkedIn, Facebook, Adobe, Oracle, VISA, Salesforce, Tesla, Apple, Stanford University, Genentech, Amgen and Twitter, just to name just a few. Caltrain serves more than 65,000 daily passengers and links the major economic centers of San Francisco to the Silicon Valley along with concentrations of employers and residents at all stations in between.

Unfortunately, the Caltrain Corridor is also home to some of California's worst traffic congestion. Congestion-related delays have increased nearly 40 percent since 2010 and impact hundreds of thousands of travelers daily. It is estimated that congestion along this corridor causes \$5.4 billion in lost economic productivity every year and the average delay per person has reached as high as 80 hours per year.

Along the northern portion of the Caltrain Corridor, in South San Francisco sits the core of the largest biotechnology cluster in the world. Today, the East of 101 biotechnology cluster is currently home to 28,000 workers and daily commuters, and is growing. In two decades the City of South San Francisco anticipates that it's job center will need to

accommodate nearly 54,000 daily commuters. The City of South San Francisco and the East of 101 Commuter Coalition, are working in partnership to responsibly and sustainably accommodate South San Francisco's growth. A new South San Francisco Caltrain station coupled with faster and more frequent Caltrain service to that station, is the cornerstone of a plan to do just that. To increase ridership and improve mobility along the Caltrain Corridor, including in South San Francisco, Caltrain must be improved to accommodate more riders and more service. Electrification by 2022 is the first step in achieving this important goal; however, adoption of a long-range service vision and integration of Caltrain into a larger regional transit network is the ultimate solution. The Caltrain Business Plan's Moderate Growth Service Vision scenario, is the blueprint for getting there.

For these reasons, we respectfully ask the Peninsula Corridor Joint Powers Board to adopt the draft staff recommendation for Caltrain's Moderate Growth Service Vision scenario and its objective to increase service to provide faster, more frequent service to the South San Francisco station.

Respectfully,

East of 101 Commuter Coalition





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Cytokinetics

distributed **bio**

freemove

**Genentech**  
*A Member of the Roche Group*

**hpi** **APOLLO**<sup>®</sup>



**From:** Lauren Bennett  
**To:** [Board \(@caltrain.com\)](mailto:Board@caltrain.com)  
**Subject:** Letter of Recommendation for Service Vision - Oct. 3 Board Mtg. - E101 Commuter Coalition  
**Date:** Sunday, September 29, 2019 6:08:29 PM  
**Attachments:** [E101 Commuter Coalition Letter regarding Caltrain Service Vision.pdf](#)

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Caltrain Board,

Please see the attached letter from the South San Francisco - E101 Commuter Coalition regarding the Caltrain Business Plan Service Vision.

Thank you,

**LAUREN BENNETT**

gRide; 1 DNA Way; South San Francisco, CA 94080-4990  
512.999.0379; [Bennett.Lauren@gene.com](mailto:Bennett.Lauren@gene.com)



Mayor Ian Bain  
Vice Mayor Diane Howard

Council Members  
Alicia C. Aguirre  
Janet Borgens  
Giselle Hale  
Shelly Masur  
Diana Reddy



1017 MIDDLEFIELD ROAD  
Redwood City, California 94063  
Telephone (650) 780-7220  
[www.redwoodcity.org](http://www.redwoodcity.org)

September 30, 2019

Caltrain Joint Powers Board  
P.O. Box 3006  
San Carlos, CA 94070-1306  
*(also submitted electronically)*

Dear Board Members,

Thank you for the opportunity to comment on your staff's recommended long-range service vision for the Caltrain Business Plan.

The City of Redwood City is a strong proponent of high-quality regional transit – as a driver of our local economy, as a mechanism to offset congestion, and as a means to reduce the impact of the transportation system on the climate. Enhancing Caltrain service is a key component to improving access to regional transit in Redwood City. In concept, we support staff's recommendation to pursue the moderate growth vision while not precluding the high growth scenario. However, we need more information to understand the potential impacts associated with the implementation of this vision.

Future planning work must address the potential increase in safety risk due to the increase in the number of trains and the number of tracks. Our train station sits in the middle of our downtown, with thousands of people crossing the tracks on foot, in cars, and on bikes on a daily basis. A related concern is the impact on emergency response times and local circulation with increased gate down times, absent grade separations. Additional delay for the thousands of residents who cross the tracks on a daily basis undermines the quality of life for our residents stuck in that traffic. As proposed, residents who live near those crossings will hear additional noise as the hours of congestion expand, train frequency (and associated horn noise) increases, and they will experience degraded air quality from more idling cars.

In order to support the proposed expansion in service and infrastructure, we request the following:

- Engineering analysis to determine the potential envelope of right-of-way needed for a new four track station
- Creation of a staff-level working group to develop the scope, memorandum of understanding, and funding approach for a station area plan that integrates Downtown with a new transit center (rail and bus) and promotes multimodal access
- A commitment to advancing and prioritizing funding for grade separation work deemed necessary to implement the station area plan
- Evaluation of traffic impacts surrounding the Redwood City station associated with increased train service



As you may know, Redwood City has multiple, active development proposals along the Caltrain corridor. With each successive project, the ability to build or expand rail infrastructure becomes more challenging and/or more expensive. Time is of the essence to mobilize a collaborative, multi-agency planning process. This work will ensure that the infrastructure required to support the moderate growth service vision is viable and that it can be successfully integrated into our community.

Respectfully,

A handwritten signature in black ink that reads "Ian Alan Bain". The signature is written in a cursive style with a horizontal line underlining the name.

Ian Bain  
Mayor, Redwood City

C: Redwood City Council  
Melissa Stevenson Diaz, City Manager  
Mark Muenzer, Community Development and Transportation Director



## OFFICE OF THE MAYOR

September 25, 2019

Chair Gillian Gillett  
Peninsula Corridor Joint Powers Board  
1250 San Carlos Avenue, 2<sup>nd</sup> Floor  
San Carlos, CA 94070

Dear Chair Gillett,

I write to encourage the Peninsula Corridor Joint Powers Board (JPB) to adopt the Moderate Growth Caltrain Business Plan scenario, which aspires to eight trains per hour stopping in South San Francisco – four trains going north plus four trains going south each hour. This represents an increase in Caltrain service to South San Francisco which is desperately needed.

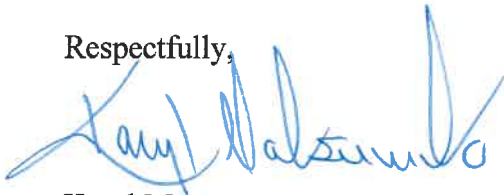
As you are aware, South San Francisco has grown tremendously over the past five years, and is expected to lead San Mateo County in job growth in the future. The City has a residential population in excess of 67,000; however, during the day, the population nearly doubles due to the approximately 60,000 jobs in South San Francisco. By 2040, the number of jobs in South San Francisco is estimated to exceed 90,000, driven by continued expansion in the biotech and tech sectors. This is graphically shown on the attached map prepared by San Mateo County's Transportation Authority. It demonstrates that over the next twenty years South San Francisco is expected to have the highest job growth in San Mateo County. Increased transit service is needed to meet this growth.

South San Francisco recently completed a new Master Transportation Plan for the jobs-rich area East of Highway 101 in our City. This study showed that 81% of the workers in this area are driving alone to work. Outreach to these employees showed the major reason for driving to work is the lack of available transit. A review of the current Caltrain schedule confirms what we have been hearing – transit service to South San Francisco is woefully inadequate. For example, there is only one northbound train per hour and only two southbound trains per hour during the evening commute, and that is a local train which stops at virtually every station on the line. Improved Caltrain service is essential to reducing the number of workers driving to work.

Chair Gillian Gillett  
Peninsula Corridor Joint Powers Board  
September 25, 2019

The new South San Francisco Caltrain Station will open late-2020, providing a great platform for increased service. I strongly urge the Board to adopt a new Caltrain Business Plan which provides increased service as soon as possible to South San Francisco. In the long run, a plan which includes adaptations for high speed rail and up to twelve trains per hour is optimal; however, in the short term, a plan providing eight trains per hour to South San Francisco is a must.

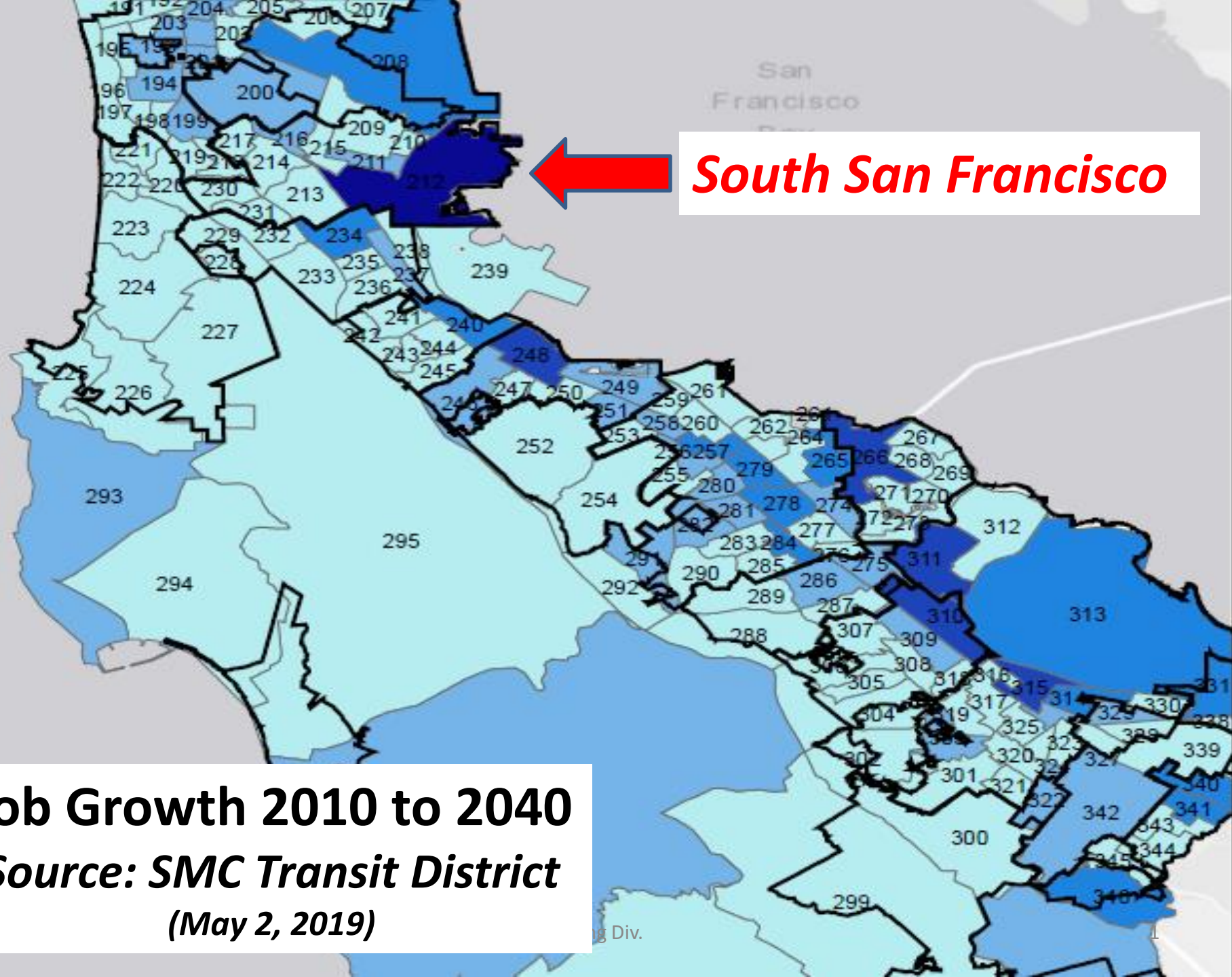
Respectfully,



Karyl Matsumoto  
Mayor

Attachment: Map of Projected Job Growth Centers  
cc: Peninsula Corridor Joint Powers Board  
San Mateo County Transportation Authority  
South San Francisco City Council  
Mr. Jim Hartnett

**South San Francisco**



**Job Growth 2010 to 2040**  
**Source: SMC Transit District**  
**(May 2, 2019)**

**CENTER FOR CONTINUING STUDY OF THE CALIFORNIA ECONOMY**

385 HOMER AVENUE • PALO ALTO • CALIFORNIA • 94301

TELEPHONE: (650) 321-8550

FAX: (650) 321-5451

[www.ccsce.com](http://www.ccsce.com)

The Peninsula Corridor Joint Powers Board

12509 San Carlos Avenue San Carlos, CA 94070

Re: Caltrain Long-Range Service Vision Resolution (Item 11)

Dear Chair Gillett and the Peninsula Corridor Joint Powers Board,

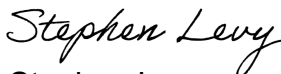
I write as an economist who studies the Bay Area economy and long-term policy issues and as a 56-year resident of the region.

The cities along the Caltrain corridor are implementing plans that will greatly increase ridership if capacity is available. While San Jose is a prime example, adding tens of thousands of jobs and homes within walking distance of the Caltrain station, other cities including Redwood City, Sunnyvale, San Mateo and Mountain View are adding jobs and housing near Caltrain service.

A bold vision for expansion will serve these residents and employers and reduce auto travel and related traffic and pollution. Moreover, it will support bolstering mid-day service, which will expand ridership even more.

Rarely does a public agency have a chance to do so many good things for so many people in one decision.

Please adopt the bold vision.



Stephen Levy  
Director

**From:** [Seamans, Dora](#)  
**To:** "Pat O'Flaherty"  
**Cc:** [Board \(@caltrain.com\)](#); [Gumpal, Cindy](#)  
**Subject:** RE: Redwood trees along San Carlos Caltrain Platform  
**Date:** Tuesday, October 01, 2019 12:01:30 PM

---

Dear Pat,

Thank you for your patience and understanding as we researched this matter. Our agreement with the City of San Carlos specified that the City is responsible for the maintenance of the trees on the berm. I checked with the San Carlos City Clerk and she shared the following contacts for you:

- Public Works Director Steven Machida- [smachida@cityofsancarlos.org](mailto:smachida@cityofsancarlos.org)
- City Manager Jeff Maltbie- [jmaltbie@cityofsancarlos.org](mailto:jmaltbie@cityofsancarlos.org)
- City Council – [citycouncil@cityofsancarlos.org](mailto:citycouncil@cityofsancarlos.org) (reaches out to all 5 members)

If you wish to send a letter, it can be made to the attention of the above and mailed to City Hall: 600 Elm Street, San Carlos CA 94070.

Meanwhile our contract operator and their arborist evaluated these trees along the platform and provided the following:

- One of the trees pictured is dead and should be removed.
- The other trees are declining due to insect infestation. Treatment is possible but cannot guarantee survival.
- The others along the stretch from Holly to parking lot are in OK shape but also need to be treated because of infestation as well.
- The trees that are on the embankment are struggling to retain water due to being on an incline.

Kind Regards,

Dora

---

**From:** Seamans, Dora  
**Sent:** Friday, September 27, 2019 4:27 PM  
**To:** 'Pat O'Flaherty'  
**Subject:** RE: Redwood trees along San Carlos Caltrain Platform

Hello – note - we are in communication with San Carlos city staff and trying to determine/identify who the most appropriate person/people are to address this issue.

Thanks,  
Dora

**From:** Pat O'Flaherty <[patoflaherty@gmail.com](mailto:patoflaherty@gmail.com)>  
**Sent:** Friday, September 27, 2019 4:24 PM  
**To:** Seamans, Dora <[SeamansD@samtrans.com](mailto:SeamansD@samtrans.com)>

**Subject:** Re: Redwood trees along San Carlos Caltrain Platform

Thank you Dora  
Perhaps the SC City Manager, whom I did write to, should be notified  
Pat

On Fri, Sep 27, 2019, 4:22 PM Seamans, Dora <[SeamansD@samtrans.com](mailto:SeamansD@samtrans.com)> wrote:

Hello – we are still investigating this matter and I hope to get definitive information to you soon.  
I appreciate your patience and understanding.

Most Sincerely,  
Dora

**From:** Pat O'Flaherty <[patoflaherty@gmail.com](mailto:patoflaherty@gmail.com)>

**Sent:** Thursday, September 26, 2019 6:18 PM

**To:** Seamans, Dora <[SeamansD@samtrans.com](mailto:SeamansD@samtrans.com)>

**Subject:** Re: Redwood trees along San Carlos Caltrain Platform

Hi Dora

Just wanted to inquire what did the Board decide to do about the dying Redwood Trees along the Caltrain train tracks?

Thank you

Pat

On Thu, Sep 12, 2019 at 5:45 PM Pat O'Flaherty <[patoflaherty@gmail.com](mailto:patoflaherty@gmail.com)> wrote:

Thanks Dora  
Pat

On Thu, Sep 12, 2019 at 10:16 AM Seamans, Dora <[SeamansD@samtrans.com](mailto:SeamansD@samtrans.com)> wrote:

Hello – confirmed receipt and forward to appropriate staff to share.

Thank you,

Dora

**From:** Pat O'Flaherty <[patoflaherty@gmail.com](mailto:patoflaherty@gmail.com)>

**Sent:** Wednesday, September 11, 2019 6:18 PM

**To:** Seamans, Dora <[SeamansD@samtrans.com](mailto:SeamansD@samtrans.com)>

**Subject:** Re: Redwood trees along San Carlos Caltrain Platform

Thank you Dora for the update

Included are the digital pics of the brown dying trees

I appreciate your help on this

Thank you

Pat

On Wed, Sep 11, 2019, 10:11 AM Seamans, Dora <[SeamansD@samtrans.com](mailto:SeamansD@samtrans.com)> wrote:

Dear Pat O'Flaherty,

Thank you for your letter expressing concern for the redwood trees along the San Carlos Caltrain platform. In response to your letter dated September 5, 2019 to the Peninsula Corridor Joint Powers Board (attached), please note the following:

While the trees were here before the San Carlos Station area was developed, JPB staff will have the TASI's (Transit American Services Inc.) arborist look at the trees to evaluate their condition. Meanwhile, staff will investigate further to determine who is responsible for their maintenance and should have an answer by the end of September.

Thank you,

Dora Seamans  
Dora Seamans, MPA, CMC  
Executive Officer/District Secretary  
SamTrans, Executive Administration  
1250 San Carlos Ave  
San Carlos, CA 94070  
Tel: 650-508-6242  
[Seamansd@samtrans.com](mailto:Seamansd@samtrans.com)



**From:** mike@mikeforster.us  
**To:** [Board \(@caltrain.com\)](mailto:Board@caltrain.com)  
**Cc:** [mike@mikeforster.us](mailto:mike@mikeforster.us)  
**Subject:** Caltrain 2.0 - Elevated: Save \$7B+, Better SF Stations, Bike Path  
**Date:** Monday, September 30, 2019 5:18:47 PM  
**Attachments:** [Caltrain 2.0 - Elevated - Mike Forster - v1 2019 09 30.pdf](#)

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September 30, 2019

Board of Directors, Peninsula Corridor Joint Powers Board

-  
Board Members:

-  
A new, fully-elevated Caltrain - Caltrain 2.0 - could accomplish the benefits listed below. Please see the attachment or visit [www.mikeforster.us](http://www.mikeforster.us) for a white paper detailing these benefits and aspects.

-  
Thank you.

-  
Mike Forster, Palo Alto, [mike@mikeforster.us](mailto:mike@mikeforster.us), 650 464 9425

-  
=====

-  
Caltrain 2.0 - Elevated: Save \$7B+, Better SF Stations, Bike Path

-  
1 Save \$7B or more of taxpayer funds over the current electrification project + individual grade separations.

-  
2 An attractive elevated railway from San Jose to the SF Transit Center. Level boarding included with new elevated platforms.

-  
3 Hydrogen fuel cell electric multiple units (EMUs) further reduce costs. And allow for future technology improvements in fuel cells and batteries.

-  
4 Better service to high traffic stations along 3rd Street in San Francisco: Bayview, 22nd St, Arena / UCSF, Giants Park, and Moscone Center.

-  
5 A 50-mile pedestrian / bike path by removing one set of tracks.

-  
6 Continued support for freight rail traffic and for nostalgic or holiday trains.

Caltrain 2.0 would retain the other single grade-level set of tracks.

7 Possible future CA HSR passengers would transfer in San Jose ... to and from: Caltrain 2.0, VTA, BART, Uber / Lyft / Taxis, etc. Most HSR passengers likely would transfer anyway, even if CA HSR were to travel to / from SF.

-

8 Resilient Against Rising Sea Level.

Elevated tracks avoid sea level issues that might impact ground-level Caltrain tracks.

-

9 Possible private financing, operation.

At less than \$4B, with current and forecast Caltrain ridership, a private enterprise might be interested to fund this project without taxpayer costs (e.g., Virgin Trains USA).

-

10 Partial Caltrain PCEP cost recovery.

-

11 Buildable in 2 years.

-

## ***Caltrain 2.0 - Elevated: Save \$7B+, Better SF Stations, Bike Path***

Mike Forster - [www.mikeforster.us](http://www.mikeforster.us) [mike@mikeforster.us](mailto:mike@mikeforster.us)

Version 1 - September 2019



Mike Forster

- 1 **Save \$7B or more** of taxpayer funds over the current electrification project + individual grade separations.
- 2 **An attractive elevated railway** from San Jose to the SF Transit Center. Level boarding included with new elevated platforms.
- 3 **Hydrogen fuel cell electric multiple units (EMUs) further reduce costs.** And allow for future technology improvements in fuel cells and batteries.
- 4 **Better service to high traffic stations** along 3rd Street in San Francisco: Bayview, 22nd St, Arena / UCSF, Giants Park, and Moscone Center.
- 5 **A 50-mile pedestrian / bike path** by removing one set of tracks.
- 6 **Continued support for freight rail traffic** and for nostalgic or holiday trains. Caltrain 2.0 would retain the other single grade-level set of tracks.
- 7 **Possible future CA HSR passengers would transfer in San Jose ...** to and from: Caltrain 2.0, VTA, BART, Uber / Lyft / Taxis, etc. Most HSR passengers likely would transfer anyway, even if CA HSR were to travel to / from SF.
- 8 **Resilient Against Rising Sea Level.** Elevated tracks avoid sea level issues that might impact ground-level Caltrain tracks.
- 9 **Possible private financing, operation.** At less than \$4B, with current and forecast Caltrain ridership, a private enterprise might be interested to fund this project without taxpayer costs (e.g., Virgin Trains USA).
- 10 **Partial Caltrain PCEP cost recovery.**
- 11 **Buildable in 2 years.**

# 1 Elevated Caltrain 2.0 would save at least \$7B of taxpayer funds.

This recommended Caltrain 2.0 approach is to:

- 1) **Cancel the current Peninsula Corridor Electrification Project (PCEP).**
- 2) **Instead, fully elevate an electrified Caltrain from San Jose to San Francisco.**

Any commuter transit system with frequent service must be fully grade-separated from other traffic. Without being fully grade-separated, Caltrain's forecasted 10 to 14 trains per hour would cause unacceptable automobile traffic congestion crossing and parallel to Caltrain tracks.

***\$10.8B+: The initial cost of the current Caltrain PCEP + grade separations***  
 Per Caltrain's own estimates: grade separations will cost \$8.8B to \$10.2B; PCEP electrification \$2B; total \$10.8B to \$12.2B. Downtown Extension (DTX) would be an additional \$4.2B.

*The important feature to retain is the Caltrain corridor right-of-way, not the existing tracks and roadbed.*

## ***\$3.75B - Fully elevated Caltrain 2.0 should cost no more than \$3.75B.***

A brand-new fully elevated medium-speed system with no trenches, tunnels, or roadway changes should cost no more than \$50M per mile, or \$2.75B for 55 miles. (See Appendix 1.)

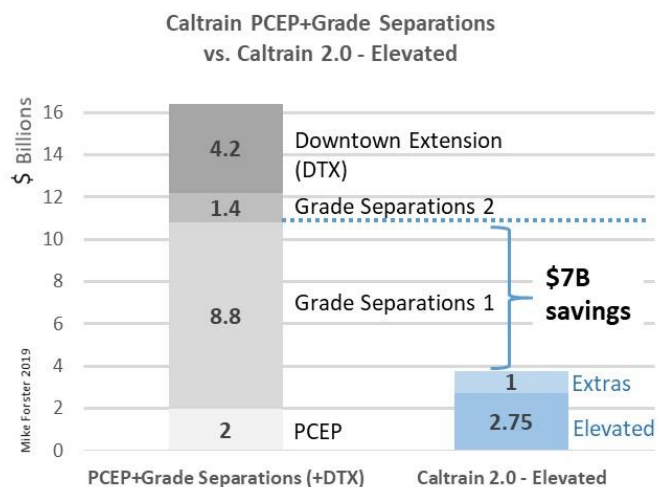
This estimate **adds \$1B** for: 1) new elevated boarding platforms at more stations than other HSRs have; 2) aesthetic facings - e.g., Stanford-style arches for Palo Alto; and 3) contingency. Much of this additional \$1B might not be necessary.

Caltrain 2.0 should be buildable within the current right-of-way and so should require no or minimal property acquisition eminent domain costs and disruption.

Fully elevating tracks also avoids roadway costs and disruptions: lowering roadways, changing intersections, moving utilities, and flood pumps.

Separating passenger from freight tracks enables the Caltrain 2.0 viaducts to be lighter, less costly, and more graceful than shared passenger and freight grade separations.

The Caltrain 2.0 route connects to the SF Transit Terminal, avoiding the DTX cost of \$4.2B.



## **2 An attractive elevated railway from SJ to SF.**

An elevated railway need not be a blemish that divides cities. Many examples exist worldwide of attractive viaducts and the people-friendly places below them (see Appendix 2). Below is an artist's conception of an attractive elevated Caltrain station at Redwood City.



[https://caltrain-hsr.blogspot.com/2011/04 Sept 2011](https://caltrain-hsr.blogspot.com/2011/04/Sept2011)

The Caltrain 2.0 approach is to use state-of-the-practice prefabricated modular construction techniques, and then where desired add attractive facings per with each city's preferences.

As with any electrified railway (or electric automobiles and motorcycles), Caltrain 2.0 operation is quiet - it eliminates diesel engine noise as well as train horns and crossing gate bells.

Level boarding will be included with new elevated boarding platforms - which is essential for quick passenger and accessible boarding. This also avoids existing platform and freight compatibility issues.

Residential privacy can be preserved with lightweight, graceful privacy screens. (See Appendix 2, Palo Alto architect Joe Bellomo's vision).

### **3 Hydrogen fuel cell EMUs further reduce costs.**

Hydrogen fuel cell EMUs are the preferred approach because these are much less costly than overhead contact systems (OCS) for new medium-distance passenger rail travel or extending the non-electrified sections of existing routes. Examples include: projects in Austria, Germany, and the UK; light rail in Aruba and China; and investigations in California / San Bernardino, Canada /Ontario, Japan, the Netherlands, and Norway.



Copyright: Alstom

Fuel cell EMUs provide the following benefits:

- \* Lower capital and ongoing maintenance costs.  
Much less infrastructure: 1 or 2 fueling stations vs. 55 miles of OCS catenary towers and wires.
- \* Extendable to additional locations with no or minimal additional infrastructure: e.g., Gilroy, Dumbarton, Hollister, Monterey.
- \* Enables and allows future technology improvements - fuel cell and battery. A traditional OCS would preclude any other technologies.
- \* Visually more attractive than OCS overhead wires and poles.
- \* Operable during grid power outages for as long as the EMUs have on board power.

The Alstom Coradia iLint fuel cell EMU is the current leader but a Siemens / Ballard team and other suppliers will provide competing products in the coming years.

iLint currently has a maximum speed of 87 mph, but it is almost certain that future EMUs will have higher speeds. For the Caltrain corridor, the maximum speed is less important than quick acceleration and deceleration that electrification provides.

In 2019, natural gas is the primary source for hydrogen generation. Water electrolysis is also used and will become more prevalent as renewables provide more low-cost electricity. Research into filtering sea water is progressing. Caltrain 2.0 near SF Bay is well-located for sea water hydrogen extraction.

*It would be unfortunate if our railway serving the Silicon Valley were to spend \$11B to build one of the last overhead catenary rail systems ... rather than \$4B to build one of the first of many hydrogen fuel cell rail systems.*

#### **4 Better service to high traffic stations along 3rd Street in SF**

Once the option to abandon the existing tracks is considered, better route choices become possible.

This fully elevated route:

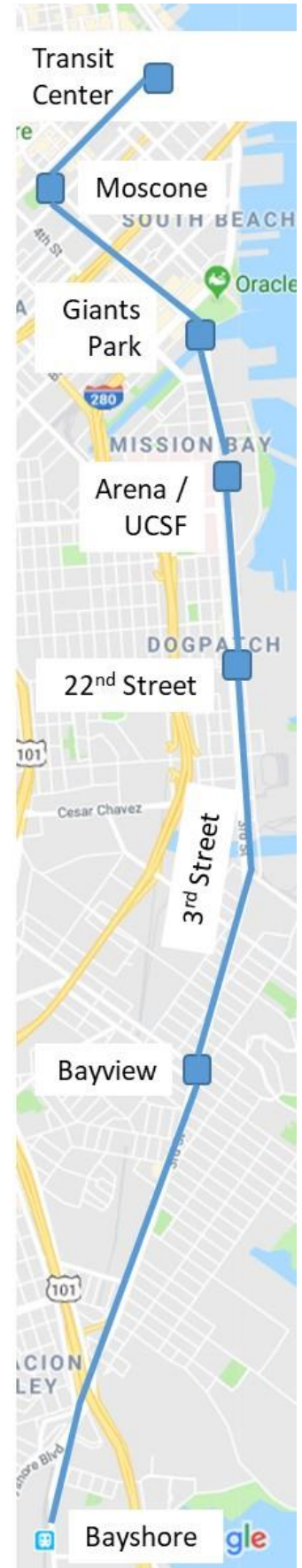
- \* **serves more high-traffic destinations in San Francisco;** and
- \* **connects to the Transit Center without the very costly underground DTX (Downtown Extension).**

The route details are:

- a) the Caltrain right-of-way from San Jose to the Bayshore station;
- b) up to and along 3rd Street above Muni;
- c) under I-80, then east on Howard to the Transit Center;
- d) with stations at Bayview, 22nd St, Arena / UCSF, Giants Park, and Moscone Center.

This route would free up land under I-280 for other uses. If Caltrain 2.0 passenger service were rerouted as described, and this I-280 extension were dismantled as has been suggested, a large area would become available for redevelopment.

The route would also eliminate the web of guy wires along 3rd Street that support the overhead Muni catenary power wires. The Muni catenary power wires would be attached to the bottom of the elevated Caltrain 2.0 structure.



Google Maps;  
route and stations added by Mike Forster

## **5 A 50-Mile bike / pedestrian path**

Caltrain 2.0 would remove one set of existing tracks, to create a 50-mile path or make that space available for other uses.

## **6 Continued support for freight rail traffic**

Caltrain 2.0 would retain the other single grade-level set of tracks for freight and nostalgic or holiday trains. A few freight trains each day would not cause significant traffic congestion.

## **7 Possible future CA HSR passengers would transfer in San Jose.**

CA HSR passengers would transfer in San Jose to and from: Caltrain 2.0, VTA, BART, Uber / Lyft / Taxis, and walking to downtown SJ locations. Most HSR passengers likely would transfer anyway rather than travel through to SF, even if CA HSR were to travel to / from SF.

## **8 Resilient against rising sea level.**

Elevated tracks avoid or reduce sea level rise issues that could impact ground-level tracks.

## **9 Possible private financing, operation**

At less than \$4B, with forecasted Caltrain ridership, a private enterprise such as Virgin Trains USA might be interested in constructing and operating this railway. It might be funded with loans from Silicon Valley corporations whose employees would benefit, without taxpayer costs.

## **10 Caltrain PCEP cost recovery: Sell contracts to other agencies.**

Years ago, a Peninsula Corridor Joint Powers Board member asked if the PCEP equipment were standard parts, in case Caltrain were to cancel the contracts. Staff responded "yes". Caltrain could recover much of the already spent PCEP \$2B project costs by selling the contracts for the standard project parts - the catenary poles and wiring, and the Stadler KISS carriages - to other agencies refurbishing or extending existing OCS systems.

## **11 Caltrain 2.0 buildable in 2 years.**

With much less cost than Caltrain PCEP + grade separations, Caltrain 2.0 could fund, start and complete years sooner. And Caltrain 2.0 should be buildable in 2 years. Virgin Trains USA / Las Vegas plans 3 years to construct 185 miles, or about 1 mile per week.



## Conclusion: Caltrain 2.0 - Elevated: A Better Approach

The table below lists and gives weights to key criteria for Caltrain electrification, scores each approach on those factors, and summarizes the results.

Caltrain 2.0 - Elevated is clearly the better approach.

*Santa Clara, San Mateo, and San Francisco should aim high - on functionality and aesthetics - for this railway project that will likely last a century. Caltrain 2.0 - Elevated does this.*

	Weight 1 to 10	Raw Score 1 to 5	Weighted Score Raw x Weight	Notes
Criteria		Caltrain PCEP +	Caltrain 2.0	1
Electrification from SJ to SF	10	5	50	2
Cost, Initial and Ongoing	10	1	10	3
Minimize Eminent Domain	6	3	18	4
Minimize Construction Disruption and Duration	6	3	18	5
Acceptable to Residents	6	3	18	6
Sea Level Rise Resilient	5	2	10	7
Possible Private Financing	4	0	0	
Better Station Locations in SF	4	1	4	
Ped / Bikeway	3	0	0	
Freight Traffic Separation	2	1	2	8
Electrification to Gilroy etc.	2	0	0	9
CA HSR Compatible	1	5	5	10
<b>Totals</b>			<b>135</b>	<b>254</b>

Notes:

- 1 This table assigns this author's opinion of: a) the weight (relative importance) of each criterion; and 2) of each approach's raw score on each criterion.
- 2 Both approaches provide full electrification from SJ to SF.
- 3 Caltrain 2.0 cost is much lower than Caltrain PCEP + grade separations + DTX.
- 4 Caltrain PCEP + grade separations may involve eminent domain acquisitions depending upon city decisions; Caltrain 2.0 should be able to be constructed within the Caltrain ROW, with no or minimal eminent domain acquisitions.
- 5 Caltrain 2.0 would avoid all of the disruption and cost of lowering roadways and reduce other disruptions and durations.
- 6 Resident acceptability of PCEP to-be-determined grade separations or Caltrain 2.0 elevated tracks is unknown at this time.
- 7 Caltrain 2.0 elevating all passenger tracks is more resilient than raising only grade-separated and lowering roadways.
- 8 Full separation from heavy freight traffic enables elevated passenger track viaducts to be lighter and less expensive. PCEP+ separates freight from passenger traffic by scheduling, not with separate tracks.
- 9 Fuel cell (or battery) EMUs inherently extend electrification to Gilroy, Hollister, and Monterey; OCS does not.
- 10 CA HSR compatibility is less important: 1) as CA HSR might never be constructed to San Jose in its current form; and 2) most travelers would transfer in San Jose anyway.

## **Appendix 1: Construction Cost Basis - No More Than \$50M per mile**

Below are double-track examples from the US and around the world that support a Caltrain 2.0 construction and rolling stock cost of **no more than \$50M per mile**, or **\$2.75B for 55 miles**.

Many of these include costs for land acquisition which would apply to Caltrain 2.0 minimally if at all, and for tunnels which does apply to Caltrain 2.0.

a) US, Virgin Trains USA - HSR / Las Vegas, 2019: \$4.8B for 185 miles = **\$26M/mile**.

Full project cost, including mostly grade-level tracks, rolling stock, and stations.

<https://finance-commerce.com/2019/07/virgin-trains-seeks-bonds-for-california-to-vegas-rail/>

b) US, Virgin Trains USA - HSR / Orlando extension, 2019: \$4B for 128 miles = **\$31M/mile**.

Full project cost, including mostly grade-level tracks, rolling stock, and stations.

(128 equivalent double-track miles; single tracks exist for part of the route; 170 total miles.)

<https://floridapolitics.com/archives/294607-with-bonds-sold-virgin-trains-set-to-break-ground-in-may-for-orlando-line>

c) China - HSR/2019: \$28M-\$35M/mile x 1.5 countries' factor = **\$42M to \$52M/mile**.

Rail cost only, but China has a high percentage of tunnels not applicable to Caltrain. World Bank concludes that Western countries' costs run 50% higher, hence the 1.5 factor applied.

<https://www.worldbank.org/en/news/press-release/2019/07/08/chinas-experience-with-high-speed-rail-offers-lessons-for-other-countries>

d) China - HSR/2003-14: \$28.315B, 1,821 mi, \$15.55M/mi + inflation = **\$18.35M/mile**.

Rail cost only, but China has many tunnels not applicable to Caltrain. Based on an analysis of 12 projects rated 250km/h in the table in section 3.3, [HSR construction financing](#).

[https://en.wikipedia.org/wiki/High-speed\\_rail\\_in\\_China](https://en.wikipedia.org/wiki/High-speed_rail_in_China)

e) Spain - HSR/2012-15: \$13.875B, 594 miles, \$23.38M/mile + inflation = **\$25.75M/mile**.

Full project cost.

<https://www.railway-technology.com/projects/madrid-levante-high-speed-rail-spain/>

f) France, Germany, Japan, Spain - HSR / 2017: Euro 26.6M/km + inflation = **\$49.2M/mile**.

[https://www.frontiersin.org/files/Articles/449077/fbuil-05-00079-HTML/image\\_m/fbuil-05-00079-t007.jpg](https://www.frontiersin.org/files/Articles/449077/fbuil-05-00079-HTML/image_m/fbuil-05-00079-t007.jpg) Table 7 (Janic, 2017)

g) Australia - Maglev / Maglev 2008: \$A \$34M/km + inflation = **\$46M / mile**.

Maglev has higher construction but lower maintenance costs than conventional HSR - but this Maglev would have been less than \$50M / mile. This was a proposal; the project was not built.

[https://en.wikipedia.org/wiki/Transrapid#Comparative\\_costs](https://en.wikipedia.org/wiki/Transrapid#Comparative_costs)

**Appendix 2: Attractive Elevated Railway Viaducts**



Melbourne, Australia Skytrain artist's concept - <https://www.theage.com.au/national/victoria/life-under-the-viaduct-melbournes-southeast-skyrail-will-get-a-green-up-20171113-gzk4dl.html>



Victoria, Australia - artist's concept <https://www.railway-technology.com/projects/caulfield-to-dandenong-elevated-rail-project-victoria/attachment/caulfield-to-dandenong-elevated-rail-project-victoria3/>



Melbourne, Australia Skytrain artist's concept - <https://www.theage.com.au/national/victoria/life-under-the-viaduct-melbournes-southeast-skyrail-will-get-a-green-up-20171113-gzk4dl.html>

Cable design team, Miami Metrorail / The Underline - artists' concepts <https://cableisdesign.com/the-underline/>



Palo Alto architect Joe Bellomo's HSR vision - <http://www.paloaltoonline.com/news/2009/11/27/architect-calls-for-design-contest-for-high-speed-rail>



Atlantic Coastline Bridge, Virginia - Scott Elmquist



San Carlos concept - MP Feasibility Study 2003



Montessoro, Italy  
<http://cahsr.blogspot.com/2009/03/grade-separations-done-right.html>



Caltrain artist's concept - <https://caltrain-hsr.blogspot.com/2011/> 30 Oct 2011



Union City, CA - Google Earth