Bicycle Advisory Committee

Correspondence as of

September 17, 2018
Dear Scott,

Thank you for your comments. The current design with bikes in front of emergency windows is compliant with FRA regulations (as discussed during the Subcommittee on EMU Design (question 10) item at the March BAC Meeting). We understand the bike community's interest in this topic, and should there be additional design changes we will let you know.

Caltrain is also working to improve boarding/deboarding of the bike car through its Bikes Board First Pilot Program. The latest update on this effort can be seen here: [http://www.caltrain.com/Assets/BAC/pdf/Bikes+Board+First+Pilot+Update+7.19.18.pdf](http://www.caltrain.com/Assets/BAC/pdf/Bikes+Board+First+Pilot+Update+7.19.18.pdf)

Thank you again for your continued feedback.

Best,
Lori

---

From: Scott Yarbrough [mailto:yarbrough.scott@gmail.com]
Sent: Wednesday, September 12, 2018 8:19 PM
To: Caltrain, Bac (@caltrain.com)
Cc: Bikes on Board; Janice Li
Subject: BAC agenda September 20

Hello,

I request an update regarding the car layout design for the new electric trains and that the agenda in next week's meeting include communication about the present status to the public. There are many cyclists on trains expressing concerns about safety issues (e.g., bikes blocking emergency exit windows) and frequent delays boarding and exiting bike cars due to the number of cyclists who anticipate standing next to their bikes in anticipation of theft concerns. An update on the current status of the design discussion would be appreciated by many in your cycling customer base.

Thank you,

Scott Yarbrough
Zone 1 to Zone 3 daily commuter
September 11, 2018

Media Contact: Dan Lieberman, 650.508.6385

**Caltrain Ridership Back on the Rise**

After a slight decrease in ridership last year, Caltrain’s annual ridership count shows that Caltrain ridership grew by 1.5 percent. Initial findings from the annual onboard ridership count show that average mid-weekday ridership (AMWR) for 2018 is at 65,095 passengers.

Due to increasing costs and budget constraints, the weekday count methodology was changed from counting weekday trains on all five weekdays (Monday to Friday) to counting weekday trains on two mid-weekdays (Tuesday, Wednesday or Thursday). In order to provide an “apples to apples” comparison to last year’s count, Monday and Friday ridership data was extracted from 2017 data. AMWR also captures the true maximum load because ridership is lower on Mondays (by approximately 1 percent) and Fridays (by approximately 9 percent). For weekends, riders were counted for one weekend on each train once on a Saturday and a Sunday.

The results of the annual ridership count, given to the Board of Directors at its monthly meeting last Thursday, provides a snapshot of Caltrain ridership that is used to identify trends, allocate resources to address capacity issues and validate revenue-based ridership estimates.

Most riders continue to travel during peak commute hours. There was a 2.5 percent increase in traditional peak riders (defined as northbound in the morning and southbound in the afternoon) from 33,548 riders in 2017 to 34,373 in 2018. There was a 9.2 percent decrease in midday riders, 5.1 percent increase in reverse peak riders (southbound in the morning and northbound in the afternoon) and 5.8 percent decrease in evening riders.

Average mid-weekday ridership is up at 18 stations, and down at 11 stations. Hayward Park, College Park, Belmont, Gilroy, Capitol, Blossom Hill, 22nd Street, and Morgan Hill all had more than 10 percent growth. The 10 most popular train stations are San Francisco, Palo Alto, San Jose Diridon, Mountain View, Redwood City, Sunnyvale, Millbrae, Hillsdale, San Mateo and 22nd Street.

When comparing average mid-weekday ridership by county, Santa Clara County still has the highest average weekday ridership with 27,687, a 0.8 percent drop from last year; San Mateo County has the second-most at 19,757, 4.1 percent higher than 2017 and San Francisco County has 17,651, a 0.2 percent decrease. Average mid-weekday ridership has increased by 15.4
percent on the Gilroy extension, which includes the Capitol, Blossom Hill, Morgan Hill, San Martin and Gilroy stations, from last year.

Results indicate that riders are traveling shorter distances on Caltrain, with the average weekday trip length for 2018 being 22.9 miles, compared to 23.4 in 2017.

During peak period travel, Local service had the highest growth, with a 17.5 percent increase in ridership. Limited service clocked in at 5.1 percent and Baby Bullet service had a 1.1 percent increase.

Average mid-week bike ridership (AMWBR) increased by 6 percent this year, with 5,919 riders bringing bikes on Caltrain on an average weekday. For the seventh year, the number of bike riders that were not able to board the train due to overcrowding was counted. There was a substantial decrease in bikes bumped due to capacity, with only 1.6 riders bumped per 1,000 bike boardings versus 3.2 in 2017.

The count, a physical head count of riders, is typically conducted in January and February when there are fewer holidays and special events that could skew ridership numbers. The count data is used as Caltrain’s ridership baseline.

This data will also be incorporated into the Caltrain Business Plan in order to strategize for future scheduling and passenger capacity. Caltrain also looks forward to the ability to monitor ridership more frequently using Automatic Passengers Counters (APCs) that will be installed on the new electric fleet in 2022. Later this month, the entirety of the 2018 Annual Count Key Findings Report will be uploaded to http://www.caltrain.com/about/statsandreports/Ridership.html.

###

About Caltrain: Owned and operated by the Peninsula Corridor Joint Powers Board, Caltrain provides commuter rail service from San Francisco to San Jose, with limited commute service to Gilroy. Caltrain enjoyed more than five years of consecutive monthly ridership increases, surpassing more than 65,000 average weekday riders. While the Joint Powers Board assumed operating responsibilities for the service in 1992, the railroad celebrated 150 years of continuous passenger service in 2014. Planning for the next 150 years of Peninsula rail service, Caltrain is on pace to electrify the system, reduce diesel emissions by 97 percent by 2040 and add more service to more stations.

Like us on Facebook at: www.facebook.com/caltrain and follow us on Twitter @Caltrain

Free translation assistance is available. Para traducción llame al 1.800.660.4287; 如需翻译,請電 1.800.660.4287.

This email was sent to bac@caltrain.com
San Mateo County Transit District, 1250 San Carlos Ave., San Carlos, California 94070, USA
Unsubscribe
From: Bikes on Board [mailto:bikesonboard@sonic.net]  
Sent: Saturday, September 01, 2018 6:54 PM  
To: Board (@caltrain.com)  
Cc: Caltrain, Bac (@caltrain.com); cacsecretary [@caltrain.com]; CalMod@caltrain.com  
Subject: Please keep electrification on schedule

Dear Chair Bruins and Members of the Joint Power Board,

We see that staff has flagged a risk to the electrification project that the FRA may not allow emergency exit windows to be blocked by stacked bikes. Why take the risk of delaying electrification, when a simple re-design of the bike car layout would make this risk go away completely? Please ensure seats (not bikes) are next to emergency exit windows, as specifically permitted by FRA regulations.

In addition, you have heard from many passengers that seats within view of bikes is critical to help prevent bike theft. In fact, 637 people have signed a petition for more capacity and better bike-car layout for electrified Caltrain (please see comments below). If passengers cannot sit within view of their bicycles, they will be forced to stand in the bike car causing congestion and delaying the train.

Electrification is a high-profile and very important advancement for Caltrain. Please ensure its timely implementation by putting seats within view of bikes for the sake of passenger safety (to keep emergency exit windows clear) and security of personal property (to allow passengers to watch their bikes to guard against theft). Thank you.

Respectfully,  
The BIKES ONboard Team

Petition for More capacity and better bike-car layout for electrified Caltrain

I support more capacity on electrified Caltrain and seats within view of bikes to deter bicycle theft. Caltrain plans to electrify its line and run six-car electric trains, which have fewer seats and less bike capacity than today’s diesel trains and no dedicated seats within view of bikes. I urge Caltrain to run eight-car (instead of six-car) electric trains with seats within view of bikes. Eight-car trains with 96 bike spaces per train satisfy the board-mandated 8:1 ratio of seats-to-bike-spaces and provide more capacity for all Caltrain passengers.

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Date</th>
<th>City</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
More bikes mean less cars. Let’s prioritize road.

Caltrain: please be more bike friendly!

And thank you for the bikes-board-first ini Hillsdale at least. It might also make sense cars back to back so that the non-cyclists in where best to wait on the platform.

More capacity for bikes is absolutely neces transportation option for commuters.

I’ve witnessed many bike theft attempts on been able to sit close by, those cyclists wo for bicyclists to sit within sight of their bik retain their bikes.

We need to make biking a viable alternativ don’t make us choose between losing our b

I currently stand in the bike car on average bicycle, rather than seeking a seat where it

MORE BIKE SPACES!!

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Haley</td>
<td>6/11/2018</td>
<td>23:30</td>
<td>Oakland</td>
</tr>
<tr>
<td>Kurt Martin</td>
<td>6/11/2018</td>
<td>23:32</td>
<td>San Francisco</td>
</tr>
<tr>
<td>LeAnn Baum</td>
<td>6/11/2018</td>
<td>23:33</td>
<td></td>
</tr>
<tr>
<td>Ellen Koivisto</td>
<td>6/11/2018</td>
<td>23:33</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Shahin Saneinejad</td>
<td>6/11/2018</td>
<td>23:34</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Charlotte Campbell</td>
<td>6/11/2018</td>
<td>23:34</td>
<td>Sunnyvale</td>
</tr>
<tr>
<td>Brad Taft</td>
<td>6/11/2018</td>
<td>23:36</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Ed Ruder</td>
<td>6/11/2018</td>
<td>23:37</td>
<td>San Jose</td>
</tr>
<tr>
<td>Michelle Siebling</td>
<td>6/11/2018</td>
<td>23:42</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Reed Kennedy</td>
<td>6/11/2018</td>
<td>23:43</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Jason Hogeboom</td>
<td>6/11/2018</td>
<td>23:44</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Segue Fischlin</td>
<td>6/11/2018</td>
<td>23:47</td>
<td>Oakland</td>
</tr>
<tr>
<td>Alex Jacobs</td>
<td>6/11/2018</td>
<td>23:53</td>
<td>Berkeley</td>
</tr>
<tr>
<td>Aaron Verstraete</td>
<td>6/11/2018</td>
<td>23:53</td>
<td>San Francisco</td>
</tr>
<tr>
<td>David Giberton</td>
<td>6/11/2018</td>
<td>23:54</td>
<td>Belmont</td>
</tr>
<tr>
<td>Ryan Klafric</td>
<td>6/11/2018</td>
<td>23:58</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Scott Johnston</td>
<td>6/11/2018</td>
<td>23:58</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Judith A Butts</td>
<td>6/12/2018</td>
<td>00:02</td>
<td>MOUNTAIN VIEW</td>
</tr>
<tr>
<td>Kevin Wang</td>
<td>6/12/2018</td>
<td>00:02</td>
<td>Santa Clara</td>
</tr>
<tr>
<td>John Luk</td>
<td>6/12/2018</td>
<td>00:03</td>
<td>San Mateo</td>
</tr>
<tr>
<td>Paul Bigbee</td>
<td>6/12/2018</td>
<td>00:04</td>
<td>Palo Alto</td>
</tr>
<tr>
<td>Tim O'Brien</td>
<td>6/12/2018</td>
<td>00:05</td>
<td>Belmont</td>
</tr>
<tr>
<td>Miguel Lopez Saenz</td>
<td>6/12/2018</td>
<td>00:09</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Alex Herzick</td>
<td>6/12/2018</td>
<td>00:10</td>
<td>Menlo Park</td>
</tr>
<tr>
<td>Frank Paysen</td>
<td>6/12/2018</td>
<td>00:10</td>
<td>San Jose</td>
</tr>
</tbody>
</table>

It's vital to make bicycle commuting viable. Amazing progress electrifying cars, we should focus there.

Have used my bike on Caltrain for 13 years without problem.

Having lived in the South Bay a long time, I've seen the bicycle capacity. And bike riders will want to prevent theft.

Come on, you all! How often do we need to tell people who ride bikes and who ride the train to show up here. So does your staff. So why are you neglecting the capacity? Making it worse in every way possible.

Looking at the proposed layouts made me realize: 1) Video cameras promised but not added 2) Video cameras promised but not added 3) Video cameras promised but not added. Please re-think the layout.

All the prototypes I saw didn't consider the bike racks.

I agree with the provided statement. More bicycle transport support with less rack capacity.

Need more cars or more scheduled runs in the future. I don't want to have my bike stolen.

The ability to bring a bike to the workplace is important to many of us, yet there is often a lack of opportunity to make things better.

When on the train, it is difficult to relax at night. I feel vulnerable to damage and the...
Bike riders need to watch their bikes during stops.

We need more bike capacity on trains and by their owners.

I support the idea for more seating capacity to add a strip of rubber to the steps to avoid accidents in and out of the train car. Hanging straps for bike trains comes to a stop will be a great support.

Designing the bike cars in a theft-friendly way seems like a sneaky way to deter bicycle riders from demand/availability. Being able to watch your bike while I depend on the train and bike.

We need more room for bikes and a seating arrangement that is not less favorable to bikes. Commuting is stressful enough with the whole time. Thanks!

Taking my bike to and from Caltrain doesn't foul the air. More people should do the same.
<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>96</td>
<td>david tu</td>
<td>6/12/2018 1:25</td>
<td>Redwood city</td>
</tr>
<tr>
<td>97</td>
<td>Noam Zomerfeld</td>
<td>6/12/2018 1:28</td>
<td>San Francisco</td>
</tr>
<tr>
<td>98</td>
<td>Brian</td>
<td>6/12/2018 1:29</td>
<td>East Palo Alto</td>
</tr>
<tr>
<td>99</td>
<td>Gary Wu</td>
<td>6/12/2018 1:34</td>
<td>Redwood city</td>
</tr>
<tr>
<td>100</td>
<td>Christine</td>
<td>6/12/2018 1:36</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Caroline Horn</td>
<td>6/12/2018 1:45</td>
<td>Los altos</td>
</tr>
<tr>
<td>102</td>
<td>RenÊ© Sterental</td>
<td>6/12/2018 1:47</td>
<td>Palo Alto</td>
</tr>
<tr>
<td>103</td>
<td>Marilyn Beck</td>
<td>6/12/2018 2:30</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>Jon Spangler</td>
<td>6/12/2018 2:34</td>
<td>Alameda</td>
</tr>
<tr>
<td>105</td>
<td>Dale Low</td>
<td>6/12/2018 2:35</td>
<td>SF</td>
</tr>
<tr>
<td>106</td>
<td>Michael Mansour</td>
<td>6/12/2018 2:38</td>
<td>San Mateo</td>
</tr>
<tr>
<td>107</td>
<td>Michael Gregory</td>
<td>6/12/2018 2:54</td>
<td>San Francisco</td>
</tr>
<tr>
<td>108</td>
<td>David Kardatzke</td>
<td>6/12/2018 3:04</td>
<td>San Francisco</td>
</tr>
<tr>
<td>109</td>
<td>Julie Watt</td>
<td>6/12/2018 3:06</td>
<td>Mountain View</td>
</tr>
<tr>
<td>110</td>
<td>Mark Rauscher</td>
<td>6/12/2018 3:12</td>
<td>Morgan Hill</td>
</tr>
<tr>
<td>111</td>
<td>Michael Schumann</td>
<td>6/12/2018 3:37</td>
<td>Brisbane</td>
</tr>
<tr>
<td>112</td>
<td>Marc Aronson</td>
<td>6/12/2018 3:47</td>
<td>Cupertino</td>
</tr>
<tr>
<td>113</td>
<td>Jenn Gross</td>
<td>6/12/2018 3:48</td>
<td>San Francisco</td>
</tr>
<tr>
<td>114</td>
<td>Mike Cohn</td>
<td>6/12/2018 3:49</td>
<td>San Francisco</td>
</tr>
<tr>
<td>115</td>
<td>Robert Cronin</td>
<td>6/12/2018 3:54</td>
<td>Menlo Park</td>
</tr>
<tr>
<td>116</td>
<td>Kara Baker</td>
<td>6/12/2018 3:58</td>
<td>Stanford</td>
</tr>
<tr>
<td>117</td>
<td>David Groves</td>
<td>6/12/2018 4:17</td>
<td>San Mateo, California</td>
</tr>
<tr>
<td>118</td>
<td>Yoichi Shiga</td>
<td>6/12/2018 4:18</td>
<td>San Francisco</td>
</tr>
</tbody>
</table>

I would not be able to use Caltrain if I coul simply drive. I applaud Caltrain for expanc When I started, only 4 bikes were allowed permit. I hope Caltrain keeps improving its off the roads!

1. Caltrain needs to use common-sense, bil deterrent- not video cameras, which have t needs to follow its own adopted board poli passenger seats and provide 96 bike spaces

Bikes make Caltrain work for many people passengers, electrifying will create more de incredible problem in the Bay Area, cal tra with poor design. Bike owners who can see theft.

More capacity and seats near bikes is esser using Caltrain is the "last mile" problem: C you get to your train stop. Bikes solve this friendly and economical way.

Caltrain's charter should be changed to req board would be welcomed not sabotaged b

I am a long-time Caltrain bike commuter a in eyesight of your bike is really important a sit elsewhere. Bike/Caltrain commuting i maintain capacity for this to continue in the Bay Area population!

I am a disabled veteran, who uses a bicycle Aquatic Therapy on Saturdays, (when the 89, does not run on weekends). Please do t be "One Less Car", than drive, since I pay use Caltrain to get to my therapy at the V
I've used Caltrain for over a decade to get to Jose. My bike is a critical part of every Ca couldn't get my bike on board, or couldn't.

Please be more bicycle friendly

Security is important. And more bikes on we trying to stop using fossil fuels?!?

Without being able to use my bike at both able to use Caltrain. Protecting my bike w bicycles have been stolen. Please retain se Caltrain has been a leader in bike commute safety for all commuters. Please don't regre

CalTrain has been a leader in bikes on pub has a great opportunity to create an even bi attract more customers.

please provide additional capacity for bike amount of cars on our roads :)

You MUST have seats within view of the that. Cameras will only show a grainy pict stealing a bike. It will do NOTHING to st bike, I will most likely use a lock to keep r others. With the increasing use of electric their car and using bikes from further dista (happening today). Caltrain needs to provi may also look at different seating configur.
dedicated bullets, less seats for locals where
More bike capacity and seats for cyclists is
just common sense. If you want to cut down
the CalTrain), then making biking + Caltra
go.

Bringing bikes on CalTrain is how my son
Altos since our family is car free.

Please increase projected bike capacity on
is behind demand, and the board agreed in
trains in a way that staff continue to attempt
space to electric trains with seating available
theft. Thank you!

This is a huge opportunity to perpetuate an
CalTrain has allowed people to revolutionize
momentum by limiting capacity and adding,

Current bike capacity is already lacking co
reduce it! Enforce bike car seating for cycl
The reason why theft isn’t a big problem ex
count on someone not watching their own sp
some seats, and maintain bike capacity per
further population growth.

I live right next to a CalTrain station, so dc
sure that there would be space on it for my
was unsure if my bike would be stolen.

If you had to keep your unlocked car in a
would want to keep it in sight. I would war
Having a realistic way for cyclists to bring
importance in the new plan.
I have been a biker on Caltrain for 7 years
space for bikes!
One of the main reasons I don't ride Caltra
bike space. Please don't take one step forw

I frequently commute with a work stuff in
keep an eye on my bike.

Bikes on board are better than cars in the p
apples to apples replacement for the bike o
in the long run.
Yes! This is a no brainer

Bikers are a large share of Caltrain ridershi
mile problem. We need to make Caltrain a:

Bikes are critical for the last mile, but they CalTrain electrification project.

There's not enough bike space as is. More, I'm not leaving it without a lock, which wil Caltrain needs more room for bikes, not le: I've been riding Caltrain for years, and bik
We need more future bike spaces, not fewe
Bike space on southbound rush hour trains
definitely don't need less capacity, and we
sight of owners.

I commute from SF to Mountain View or S
to and from my origin and destination stati
I stopped commuting to Palo Alto and char
enough space for my bike.
I bring my bike on CalTrain from Bayshore
every day.

Strongly support this effort, as bike theft is
Caltrain should do everything it can to pro
keep polluting, congestion-causing cars off

I bike to Caltrain and would appreciate no
I ride Caltrain Daily! Please add space for
As time goes on, there will only be MORE
work now to make that happen.

We need more bike spaces not fewer.
Yes!

We need more bike spaces not fewer.
Yes!

Bikes are critical for last mile commute on
commute. Bike capacity on Caltrain with 6
bikes to prevent theft needs to be part of C.
needs of commuters and relieve congestior
<table>
<thead>
<tr>
<th>Name</th>
<th>Date/Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nathan Dushman</td>
<td>6/15/2018 17:13</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Larry Aronovitz</td>
<td>6/15/2018 17:16</td>
<td>Los Altos</td>
</tr>
<tr>
<td>Mert Dikmen</td>
<td>6/15/2018 17:31</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Medum Choe</td>
<td>6/15/2018 18:28</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Maurizio Franzini</td>
<td>6/15/2018 19:13</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Christian Veer</td>
<td>6/15/2018 19:53</td>
<td>San Francisco</td>
</tr>
<tr>
<td>David Steele</td>
<td>6/15/2018 22:12</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Christine Ryan</td>
<td>6/15/2018 22:27</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Patrick Kitto</td>
<td>6/15/2018 22:49</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Scott Perry</td>
<td>6/16/2018 3:53</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Chris H Takimoto MD</td>
<td>6/16/2018 9:13</td>
<td>Menlo Park</td>
</tr>
<tr>
<td>Casey Passmore</td>
<td>6/16/2018 15:25</td>
<td>Pacifica</td>
</tr>
<tr>
<td>Joseph Swisher</td>
<td>6/16/2018 15:35</td>
<td>Berkeley</td>
</tr>
<tr>
<td>Bruce Halperin</td>
<td>6/16/2018 23:33</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Steve Sergeant</td>
<td>6/16/2018 23:36</td>
<td>San Jose</td>
</tr>
<tr>
<td>Thomson Yeh</td>
<td>6/17/2018 16:31</td>
<td>Palo Alto</td>
</tr>
<tr>
<td>Laurie Bierman</td>
<td>6/17/2018 19:37</td>
<td>Santa Clara</td>
</tr>
<tr>
<td>Michael Bierman</td>
<td>6/17/2018 19:38</td>
<td>Santa Clara</td>
</tr>
<tr>
<td>Antoine Rose</td>
<td>6/17/2018 19:38</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Noriko Nakano</td>
<td>6/17/2018 20:37</td>
<td>San Mateo</td>
</tr>
<tr>
<td>Dave</td>
<td>6/18/2018 1:43</td>
<td>SF</td>
</tr>
<tr>
<td>Leif Wennerberg</td>
<td>6/18/2018 5:21</td>
<td></td>
</tr>
<tr>
<td>Scott Toh</td>
<td>6/18/2018 15:13</td>
<td>San Mateo</td>
</tr>
<tr>
<td>Chuck Kamzelski</td>
<td>6/18/2018 18:52</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Alex Simrell</td>
<td>6/18/2018 20:12</td>
<td>Belmont</td>
</tr>
<tr>
<td>Mardhen Bravo</td>
<td>6/19/2018 1:42</td>
<td>San Mateo</td>
</tr>
<tr>
<td>Carrie Doyle</td>
<td>6/19/2018 15:56</td>
<td>San Carlos</td>
</tr>
<tr>
<td>Mark Sherwood</td>
<td>6/19/2018 19:02</td>
<td>San Francisco</td>
</tr>
<tr>
<td>Pierce Salamaek</td>
<td>6/20/2018 0:21</td>
<td>San Francisco</td>
</tr>
<tr>
<td>CHARLES SCHNAKE</td>
<td>6/20/2018 0:53</td>
<td>SAN FRANCISCO</td>
</tr>
<tr>
<td>Jessy Diamond Exum</td>
<td>6/20/2018 2:38</td>
<td>San Francisco</td>
</tr>
</tbody>
</table>

Greatly needed.

More capacity for bikes is urgently needed. I support more capacity on electrified Caltrain to deter bicycle theft.

I support any policy that allows cyclists to Caltrain, and discourages non-cyclists from being monitored.

We need to encourage biking. Given error have a bike to get around once we make it Am from France, and am really enjoying b... Even the current level of bike capacity is a... And since you can’t lock your bike in the til keep someone from just walking off with y be doing all we can to encourage people to cars.

Bikes are sustainable transportation. Please issues with bookends of commute and bike... Been denied boarding on a couple occasion northbound to SF.

I expect Caltrain and the state of California Caltrain. The first and last miles (2.5 miles and are the most expensive to solve for (do you build an infinite number of parking sp... Maintain the ratio of 8:1 should be a good...
Of course we need bike space on the trains and more as it is getting safer and more eco to support the trend. It's good public policy for your riders' health.

Please more room for bikes. There are time off the train because of too many bikes and

History has shown that supporting bikes or CalTrain, traffic reduction, lower carbon ft won't bring our bikes if we can't secure the

I currently actively avoid taking my bike o setup.

I love bike/Caltrain commuting! Please co Sitting far away from your bike is very uns have some seating in view of bikes. Thank

no one should worry about their bike while If you take a morning train from the penins number of cyclists on board... and the diff high participation in mass transiti.

I would be very worried about leaving my I'm sure you already know that there aren't many of the trains.

I can fortunately avoid crowded trains, but unpleasant this is, much worse than it is for reasonable measures to make mass transit i bicycle capacity.

Watch it or lock it - thats the rule. Unless where I can't see my bike is not a viable op Let's communicate with our fellow bike ca aware of the misguided Caltrain plans for Bay Area affecting both bikers and non-bil

Please don't reduced bike capacity on Caltr
<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Date/Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>297</td>
<td>Helena Birecki</td>
<td>6/20/2018 19:12</td>
<td>San Francisco</td>
</tr>
<tr>
<td>298</td>
<td>Amy Harcourt</td>
<td>6/20/2018 19:42</td>
<td>San Francisco</td>
</tr>
<tr>
<td>299</td>
<td>Barry Burr</td>
<td>6/20/2018 19:47</td>
<td>Santa Clara, CA</td>
</tr>
<tr>
<td>300</td>
<td>Curt Relick</td>
<td>6/20/2018 20:30</td>
<td>Redwood City</td>
</tr>
<tr>
<td>301</td>
<td>Jake Kaplove</td>
<td>6/20/2018 21:22</td>
<td>San Francisco</td>
</tr>
<tr>
<td>302</td>
<td>Thomas R Prager</td>
<td>6/20/2018 21:23</td>
<td>Burlingame</td>
</tr>
<tr>
<td>303</td>
<td>Derek Myers</td>
<td>6/21/2018 1:03</td>
<td>San Francisco</td>
</tr>
<tr>
<td>304</td>
<td>Jared Jelsing</td>
<td>6/21/2018 1:05</td>
<td>San Francisco</td>
</tr>
<tr>
<td>305</td>
<td>Robert M</td>
<td>6/21/2018 1:05</td>
<td>San Francisco</td>
</tr>
<tr>
<td>306</td>
<td>Nava Kommalapati</td>
<td>6/21/2018 1:05</td>
<td>Redwood City</td>
</tr>
<tr>
<td>307</td>
<td>Benjamin Lai</td>
<td>6/21/2018 1:08</td>
<td>Mountain View</td>
</tr>
<tr>
<td>309</td>
<td>John Langhein</td>
<td>6/21/2018 14:38</td>
<td>Redwood City</td>
</tr>
<tr>
<td>310</td>
<td>Colin Raffel</td>
<td>6/21/2018 15:33</td>
<td>San Francisco, CA</td>
</tr>
<tr>
<td>311</td>
<td>Joanna Percher</td>
<td>6/21/2018 15:37</td>
<td>San Francisco</td>
</tr>
<tr>
<td>312</td>
<td>Alexandre Tachard Passos</td>
<td>6/21/2018 15:47</td>
<td>San Francisco</td>
</tr>
<tr>
<td>313</td>
<td>Valentin Geffrier</td>
<td>6/21/2018 15:56</td>
<td>San Francisco</td>
</tr>
<tr>
<td>314</td>
<td>James Rozzelle</td>
<td>6/21/2018 17:32</td>
<td>San Francisco</td>
</tr>
<tr>
<td>315</td>
<td>Catherine Young</td>
<td>6/21/2018 20:47</td>
<td>Melbourne (visits SF)</td>
</tr>
<tr>
<td>316</td>
<td>Maria Stevens</td>
<td>6/21/2018 22:27</td>
<td>Mountain View</td>
</tr>
<tr>
<td>317</td>
<td>Ingrid Heller</td>
<td>6/22/2018 0:41</td>
<td>Sunnyvale</td>
</tr>
<tr>
<td>318</td>
<td>Vardhman Jain</td>
<td>6/22/2018 1:32</td>
<td>San Francisco</td>
</tr>
<tr>
<td>319</td>
<td>Jonathan Hills</td>
<td>6/22/2018 1:34</td>
<td>San Francisco</td>
</tr>
<tr>
<td>320</td>
<td>Jo Vesco</td>
<td>6/22/2018 4:59</td>
<td>SAN LEANDRO</td>
</tr>
<tr>
<td>321</td>
<td>Timothy Oey</td>
<td>6/22/2018 5:36</td>
<td>Sunnyvale</td>
</tr>
<tr>
<td>322</td>
<td>Sharleen Garcia</td>
<td>6/22/2018 14:42</td>
<td>San Mateo</td>
</tr>
</tbody>
</table>

Bikes allow me to leave my bike unlocked unboarding. Being able to take one's own bike on board is essential to many people, including me, who take their bikes during the day outside of "down bike capacity with seats in view of bikes!"

If your bike isn't with you, its not your's. The bike is it, its anyone's who want to take it away. Please assure additional bicycle capacity on board near bikes.

I depend on taking my bike on Caltrain to and from work due to lack of space and the bike cars as is difficult to navigate. More trains and more bike space mean more (people with) bikes. Looking forward and fleet and hoping that Caltrain will continue to encourage and facilitate bike riding.

We need to keep enough bike space on the train and at home and commute by bike + train instead of more car. On busy trains in Europe and France, don't have to see how crowded it can be in the U.S.

Bike theft has been a problem and we need to prevent it. "I want to ride my bicycle I want to ride it Eight car electric trains good idea.

Bikes greatly expand the reach of who Caltrain serves for bikes and riders on Caltrain. And bicycle parking to prevent theft. 8 car electric trains is best. Thanks!
323 Dana Wilson  6/22/2018 15:54 Sunnyvale
324 David Ahn  6/22/2018 16:27 San Francisco
325 Martin Strauss  6/22/2018 17:07 San Francisco
326 Thomas Hazelton  6/22/2018 19:22 San Francisco
327 Ammon Skidmore  6/22/2018 20:16 San Bruno
328 Joseph Mercurio  6/23/2018 17:48 Gilroy

329 Bob Mack  6/23/2018 18:08 San Jose

330 Gordon Hamachi  6/23/2018 20:52 Mountain View
331 Stanley  6/24/2018 13:46 San Francisco
332 Matt Elsey  6/24/2018 20:48 San Francisco
333 Tyler Ackerson  6/25/2018 2:04 San Francisco
334 Jonathan Dirrenberger  6/25/2018 5:01 San Francisco
335 Nicholas Lucey  6/25/2018 7:26 San Francisco, CA

336 Robert Manchester  6/25/2018 12:35 San Francisco

337 Kit Colbert  6/25/2018 13:54 San Francisco
338 Cindy Asrir  6/25/2018 21:49 Redwood City
339 Charles Deffarges  6/26/2018 1:44 San Francisco
340 Brad Williford  6/26/2018 1:45 San Francisco
341 Keith stevens  6/26/2018 1:45 San Francisco
342 Colleen McCarthy  6/26/2018 1:46 San Francisco
343 Michael Marlin  6/26/2018 1:46 San Francisco
344 Deland Chan  6/26/2018 14:46 San Francisco, CA
345 Mike Osorio  6/26/2018 14:52 San Francisco
346 ALISTAIR male BARR  6/26/2018 14:57 San Carlos
347 Ibrahim Halloum  6/26/2018 15:02 San Francisco
348 Mike Marley  6/26/2018 15:03 San Francisco, CA
349 Mike Marley  6/26/2018 15:03 San Francisco, CA
350 Khanh Truong  6/26/2018 15:03 Mountain View
351 Joseph Injae Chang  6/26/2018 15:19 San Francisco
352 Aaron wippold  6/26/2018 15:24 Redwood city
353 Caleb Stewart  6/26/2018 15:28 San Mateo
354 Tavio J  6/26/2018 15:29 San Jose, CA
355 Brannon Klopf  6/26/2018 15:30 San Francisco

Please don't make it harder for bicycle con

Over the last 10 years the Caltrain Board has
board bike capacity. Caltrain needs to live
board bike capacity with electric trains. The
cyclists to sit near their bikes. If they are not
your are setting up a system that will encour
more people who can safely take their bike
leave their cars at home and use Caltrain.

I always sit above / near my bike to make my
bike commute to get to the caltrain and it is
damaged / stolen. Just as important is that
my bike. Getting bumped from a train mak
miserable.

We need more bike cars, as well as seats to

thank you!!

At least it should be better enforced that bi
At least it should be better enforced that bi

More seats within view of bike storage!
I have contacted Caltrain a couple times in
to see a unified petition!
We need more seats!
<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
<th>Location</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaetano D'Amato</td>
<td>6/26/2018 15:35</td>
<td>San Francisco</td>
<td>Reducing bike space is not the answer. If C and reliability then we could potentially dis without that you are not solving anything.</td>
</tr>
<tr>
<td>Jennifer Finley</td>
<td>6/26/2018 15:36</td>
<td>San Francisco</td>
<td>As the Bay Area grows we need to increase inadequate in this as well as the lack of deck eye on our bikes. For some of us it's not just I depend on the train to commute everyday enough room for bikes, sometimes racks be maintain the 8 car trains and increase servi</td>
</tr>
<tr>
<td>Scott Haefner</td>
<td>6/26/2018 15:38</td>
<td>San Francisco</td>
<td>Never had my bike stolen yet, largely due to need seats in the bike area</td>
</tr>
<tr>
<td>Lucas Oliver Oswald</td>
<td>6/26/2018 15:46</td>
<td>San Francisco</td>
<td>What is Caltrain doing to prevent bike theft their bikes? Not all owners can sit next to will make a difference. Also post in the confined on the spot.</td>
</tr>
<tr>
<td>Jerry Reiva</td>
<td>6/26/2018 15:53</td>
<td>San Francisco</td>
<td>I have been taking the bicycle train to work who has had his bicycle stolen from the tra It is very important to have seats within vic</td>
</tr>
<tr>
<td>Michael C Leung</td>
<td>6/26/2018 15:56</td>
<td>San Francisco</td>
<td>Increase capacity, and ensure a layout that bikes, both for increased speed boarding at prevention!</td>
</tr>
<tr>
<td>Thibaut Loysel</td>
<td>6/26/2018 15:56</td>
<td>San Francisco</td>
<td>The Bay Area economy makes it very difficult workplace. Commuting by car is not feasible transit option that runs the full length of the same roads that make car commuting is highly ramified system, like a subway, it is mile solutions for both ends of the commute need seats in view of our bicycles.</td>
</tr>
<tr>
<td>Steve Della-Valentina</td>
<td>6/26/2018 15:57</td>
<td>SF</td>
<td>Bicycle theft happens today, when riders can't close, as with the current design, thic</td>
</tr>
<tr>
<td>Devendra Modum</td>
<td>6/26/2018 16:01</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Danny</td>
<td>6/26/2018 16:19</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Senthil</td>
<td>6/26/2018 16:21</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Jonathan Ward</td>
<td>6/26/2018 16:30</td>
<td>Palo Alto</td>
<td></td>
</tr>
<tr>
<td>Satish Uppuluri</td>
<td>6/26/2018 16:50</td>
<td>Sunnyvale</td>
<td></td>
</tr>
<tr>
<td>Jeff Mahe</td>
<td>6/26/2018 16:52</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Mitchell Miglis</td>
<td>6/26/2018 17:51</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Richard Goldman</td>
<td>6/26/2018 18:08</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Bailey Wall</td>
<td>6/26/2018 18:57</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Ming Yan</td>
<td>6/26/2018 19:44</td>
<td>Mountain View</td>
<td></td>
</tr>
<tr>
<td>Ryan Dougherty</td>
<td>6/26/2018 20:44</td>
<td>Palo Alto</td>
<td></td>
</tr>
<tr>
<td>Ben E Machado</td>
<td>6/26/2018 20:52</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Natalie Love</td>
<td>6/26/2018 20:55</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Jason Cauthen</td>
<td>6/26/2018 21:11</td>
<td>Santa Clara</td>
<td></td>
</tr>
<tr>
<td>James Chu</td>
<td>6/26/2018 21:20</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Romain Roux</td>
<td>6/26/2018 22:05</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Edward Ruder</td>
<td>6/26/2018 22:21</td>
<td>San Jose</td>
<td></td>
</tr>
</tbody>
</table>
I have commented on every previous petition: the more bike capacity the better. Please don’t make this dumb move of eliminating bike spaces. In this city it is impossible to have a car without losing something else. We need more capacity in Caltrain to accommodate bikes. We must have seats with a view of the bike, which when many people do will being hugely inconvenient. Caltrain is a commuter option in the country, let’s keep it that way.

In an already crowded and at-capacity bike and car spaces is a major cause of concern.

I had someone try to take my bike once and bike they would have succeeded, and I don’t believe graduate student, bike + Caltrain makes it impossible.

I appreciate current Caltrain bicycle access. High use times requires more, not less’ proceeds and demand increases. Theft is a major issue. We need an increase in bike thefts. Storage area. Theft seems like a future liability. Probability that the number of thefts will increase.

We need 8 car trains!

Electrified Caltrain is going to be an improvement. That being said, we should not forget that Caltrain’s support of bikes is already great. Further! Please add capacity for more bikes.

Biking to the train is a critical part of my cycling. If bike, I’ll have to drive 25 min to the train. The purpose of using public transit.
<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Date/Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>407</td>
<td>Frank Tessier</td>
<td>6/28/2018 17:28</td>
<td>San Francisco</td>
</tr>
<tr>
<td>408</td>
<td>Fabien Blanc-Paques</td>
<td>6/28/2018 23:03</td>
<td>San Francisco</td>
</tr>
<tr>
<td>409</td>
<td>Erwan Blanc</td>
<td>6/28/2018 23:04</td>
<td>San Francisco</td>
</tr>
<tr>
<td>410</td>
<td>Elaine</td>
<td>6/28/2018 23:13</td>
<td>San Francisco</td>
</tr>
<tr>
<td>411</td>
<td>Zach</td>
<td>6/29/2018 1:58</td>
<td>San Francisco</td>
</tr>
<tr>
<td>413</td>
<td>Amélie B</td>
<td>6/29/2018 14:52</td>
<td>San Mateo</td>
</tr>
<tr>
<td>414</td>
<td>Keith Hall</td>
<td>6/29/2018 15:09</td>
<td>San Francisco</td>
</tr>
<tr>
<td>415</td>
<td>Karen Stevenson</td>
<td>6/29/2018 15:20</td>
<td>Sunnyvale</td>
</tr>
<tr>
<td>416</td>
<td>Cara Dodge</td>
<td>6/29/2018 15:40</td>
<td>San Jose</td>
</tr>
<tr>
<td>417</td>
<td>Matthew Stephens</td>
<td>6/29/2018 16:34</td>
<td>San Francisco</td>
</tr>
<tr>
<td>418</td>
<td>Brett McKenzie</td>
<td>6/29/2018 17:04</td>
<td>San Francisco</td>
</tr>
<tr>
<td>419</td>
<td>Bram Lambrecht</td>
<td>6/29/2018 17:05</td>
<td>Redwood City</td>
</tr>
<tr>
<td>420</td>
<td>Madeline Sides</td>
<td>6/29/2018 17:19</td>
<td>San Francisco</td>
</tr>
<tr>
<td>421</td>
<td>Myles A Iribarne</td>
<td>6/29/2018 17:20</td>
<td>San Francisco</td>
</tr>
<tr>
<td>422</td>
<td>Boris Foelsch</td>
<td>6/29/2018 17:28</td>
<td>Palo Alto</td>
</tr>
<tr>
<td>423</td>
<td>Eric Schmidt</td>
<td>6/29/2018 18:08</td>
<td>San Francisco</td>
</tr>
<tr>
<td>424</td>
<td>Chris Gerretty</td>
<td>6/29/2018 20:27</td>
<td>San Francisco/ San Carlos</td>
</tr>
<tr>
<td>426</td>
<td>Rachel Ha</td>
<td>6/29/2018 23:22</td>
<td>San Francisco</td>
</tr>
<tr>
<td>427</td>
<td>Tyler</td>
<td>6/29/2018 23:24</td>
<td>San Francisco</td>
</tr>
<tr>
<td>428</td>
<td>Brandon Tran</td>
<td>6/29/2018 23:48</td>
<td>San Francisco</td>
</tr>
<tr>
<td>429</td>
<td>Robert Fink</td>
<td>6/29/2018 23:50</td>
<td>SAN FRANCISCO</td>
</tr>
<tr>
<td>430</td>
<td>Kai</td>
<td>6/30/2018 0:46</td>
<td></td>
</tr>
<tr>
<td>431</td>
<td>Joe</td>
<td>6/30/2018 0:52</td>
<td>San Mateo</td>
</tr>
<tr>
<td>432</td>
<td>Andrew Nelson</td>
<td>6/30/2018 2:22</td>
<td>San Francisco</td>
</tr>
<tr>
<td>433</td>
<td>Erico Gomes</td>
<td>6/30/2018 3:47</td>
<td>San Francisco</td>
</tr>
<tr>
<td>434</td>
<td>Joshua Brause</td>
<td>6/30/2018 4:24</td>
<td>Palo Alto</td>
</tr>
<tr>
<td>435</td>
<td>John stamos</td>
<td>6/30/2018 4:24</td>
<td>San Francisco</td>
</tr>
<tr>
<td>436</td>
<td>Wyatt Scott</td>
<td>6/30/2018 4:25</td>
<td>Longview</td>
</tr>
<tr>
<td>437</td>
<td>JOSEPH ZARATE</td>
<td>6/30/2018 4:45</td>
<td>REDWOOD CITY</td>
</tr>
<tr>
<td>438</td>
<td>Michael Leung</td>
<td>6/30/2018 16:49</td>
<td>San Francisco</td>
</tr>
<tr>
<td>439</td>
<td>Jean nguyen</td>
<td>6/30/2018 17:15</td>
<td>San Francisco</td>
</tr>
</tbody>
</table>

I use the train to commute daily, and often today I found the train and SB train would mean I wouldn't be able to use my bike. For public transit if I couldn't use my bike. For concern for me, if I can't get a seat nearby, see others do the same. That's not efficient.

Please honor the 8:1 seat:bicycle ratio that we need to watch our bikes!

I look forward to electrifying the train, but well!

Bike thefts are real. The conductors warn c bike and disembark with a bike.

Bikes and trains make a wonderful couple.

Caltrain is useless without bike capacity. If increased.

We need to increase bike capacity in order to have a complete solution to our congestion and so on.

Doing the right thing for the future!

I don't need my bike stolen. Caltrain should keep an eye on their property instead of making...

I commute with my bike everyday and alw...
few months ago I witnessed a transient attempt to steal a nice road bike with a carbon frame) - the other person was within view of his bike because there were with a few other cyclists, were able to prevent the thief from taking it safely to its owner. I support increasing the number of cars to get the bike back safely to its owner.

We definitely need more bike capacity!

I would like to be able to see my bike while I am in the car with it when I can not see it.

Seeing the bike is a must when on the train to work.

We need space on trains.

I bike to work 3 times a week on CalTrain, implemented but I want more bike space at the station.

Anything that meets the ratio is fine with me.

More space would be great- and I applaud those who have put in some basic education for bikers: how to
taught how to bring on that electric bike that's basically a car. There are plenty of other cars for you.
<table>
<thead>
<tr>
<th>Name</th>
<th>Date/Time</th>
<th>Location</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Kufer</td>
<td>7/8/2018 17:56</td>
<td>Saratoga</td>
<td></td>
</tr>
<tr>
<td>Alex Gonzalez</td>
<td>7/9/2018 0:48</td>
<td>Palo Alto, CA</td>
<td></td>
</tr>
<tr>
<td>Stefan Geiger</td>
<td>7/9/2018 14:55</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>William Kemper</td>
<td>7/9/2018 17:39</td>
<td>Redwood City</td>
<td>More bikes, less theft!</td>
</tr>
<tr>
<td>Kyle Liske</td>
<td>7/9/2018 18:12</td>
<td>San Francisco</td>
<td>Having to lock bikes onboard to prevent theft and become unworkable.</td>
</tr>
<tr>
<td>Kelsie Eichel</td>
<td>7/9/2018 18:15</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>David Hirsch</td>
<td>7/9/2018 19:14</td>
<td>Palo Alto</td>
<td></td>
</tr>
<tr>
<td>Peter Hand</td>
<td>7/9/2018 22:07</td>
<td>Redwood City</td>
<td></td>
</tr>
<tr>
<td>Heung-Gyu Lim</td>
<td>7/9/2018 22:40</td>
<td>Foster City</td>
<td></td>
</tr>
<tr>
<td>Mark Sheinbaum</td>
<td>7/10/2018 0:46</td>
<td>Redwood City</td>
<td>Please stand in support of configuring train storage of bicycles within train cars and reduce theft.</td>
</tr>
<tr>
<td>Tanya Maslach</td>
<td>7/10/2018 13:12</td>
<td>San Mateo</td>
<td></td>
</tr>
<tr>
<td>Robert Bihler</td>
<td>7/10/2018 14:13</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Robert Maslach</td>
<td>7/10/2018 15:13</td>
<td>San Mateo</td>
<td></td>
</tr>
<tr>
<td>Byron</td>
<td>7/12/2018 0:24</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Sanjay</td>
<td>7/12/2018 0:29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asav Patel</td>
<td>7/12/2018 0:48</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Jill C</td>
<td>7/12/2018 1:09</td>
<td>Sunnyvale</td>
<td></td>
</tr>
<tr>
<td>William Bertrand</td>
<td>7/12/2018 1:18</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Laura Begay</td>
<td>7/12/2018 1:38</td>
<td>Sunnyvale</td>
<td></td>
</tr>
<tr>
<td>Andee Tao</td>
<td>7/12/2018 1:58</td>
<td>San Bruno</td>
<td></td>
</tr>
<tr>
<td>Belinda Liu</td>
<td>7/12/2018 2:03</td>
<td>Sunnyvale</td>
<td></td>
</tr>
<tr>
<td>Peter Herzlinger</td>
<td>7/12/2018 2:45</td>
<td>Saratoga</td>
<td></td>
</tr>
<tr>
<td>Giuseppe Puglisi</td>
<td>7/12/2018 15:54</td>
<td>Sunnyvale</td>
<td></td>
</tr>
<tr>
<td>Herman</td>
<td>7/12/2018 17:02</td>
<td>Sunnyvale</td>
<td></td>
</tr>
<tr>
<td>Jeffrey Mishler</td>
<td>7/12/2018 20:09</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Chris Potter</td>
<td>7/12/2018 21:25</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Omar Riaz</td>
<td>7/13/2018 2:44</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Madhan</td>
<td>7/15/2018 19:29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tibor Gal</td>
<td>7/15/2018 19:33</td>
<td>Cupertino</td>
<td></td>
</tr>
<tr>
<td>Daniel T</td>
<td>7/15/2018 19:33</td>
<td>Redwood City</td>
<td></td>
</tr>
<tr>
<td>Milind</td>
<td>7/15/2018 19:35</td>
<td>Palo Alto</td>
<td></td>
</tr>
<tr>
<td>Johnny root</td>
<td>7/15/2018 19:38</td>
<td>Redwood City</td>
<td></td>
</tr>
<tr>
<td>Tony Fossati</td>
<td>7/15/2018 20:05</td>
<td>MISSION VIEJO</td>
<td></td>
</tr>
<tr>
<td>Catherine Elizabeth Carter</td>
<td>7/15/2018 22:01</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td>Bradley Freitag</td>
<td>7/16/2018 14:49</td>
<td>San Mateo</td>
<td></td>
</tr>
<tr>
<td>Aron Mason</td>
<td>7/16/2018 14:52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jonathan Brand</td>
<td>7/16/2018 23:44</td>
<td>Mountain View, CA</td>
<td></td>
</tr>
</tbody>
</table>
and this petition are unclear.

Vote for electric train and more train route

I support this initiative!
it has been too crowded in the current caltr fewer sets and less bike capacity.
more bike capacity is critical. rush hour tr: If there is a reduction and less view to east more per year for service? If anything this and place more cars on the local roads.

Bike availability is critical to building a go encourage people to use more efficient mo the infrastructure to support it!
I've seen theft and people trying to leave w need to be near their bikes.

As a commuter and transit user I support the new electric carts to feature only six ca inconvenience for passangers and bike ride

Let's be progressive in our thinking here. a real need for Silicon Valley. More bike I don't want my bike stolen
People should be able to sit near their bike: folks that don't use destination tags. Not he absolute chaos boarding at stations with hi delays caused by slow boarding.

Caltrain support of cyclists is critical to cre greener and clogs roads less than car/train - during the change to electric trains is going
transportation to and from Caltrain, like dr
lead to people doing things like locking b
in order to protect their property, which wi
some of the gains of the trains going elect
ycling accommodations will make stops k
keeping cyclists from losing their bikes.

I strongly support seats next to the bikes f
I've already had one bike stolen... I'd like t
being able to see it on the train.

The proposed configuration seems to inv
to see their bicycles throughout the commu
at each station will take a great deal of ti

I support more capacity

Very sad to say this, but I would not trust l
Caltrain ride. And "less bike capacity"?? I
provide more bike capacity for environment

Caltrain's plans for new bike cars without a
unreasonable invitation to bike thieves. Th
vandalism and bike theft on the current bik
community helps thwart those problems by cy
cyclists' bikes. Forcing cyclists to tempor
the lower level and out of view from the m
community threatens cyclists' valuable pro
transportation. Cycling and using mass tra
driving clogged roadways, and will only be
reduce global warming and pollution. Plea
spaces/train and seating within view of bik
have fewer seats and less bike capacity th

I support this petition.

We cyclists absolutely need to be able to s
someone messes with it. Please correct this e

Bicycles are essential to solving the 'last m
users. Space for bicycles is already scarce
<table>
<thead>
<tr>
<th>558</th>
<th>Bill Carter</th>
<th>7/26/2018 5:15</th>
<th>San Jose</th>
</tr>
</thead>
<tbody>
<tr>
<td>559</td>
<td>Caleb Fowler</td>
<td>7/26/2018 6:06</td>
<td>San Jose</td>
</tr>
<tr>
<td>560</td>
<td>Scott Reimert</td>
<td>7/26/2018 13:26</td>
<td>San Jose</td>
</tr>
<tr>
<td>561</td>
<td>Brian Funk</td>
<td>7/26/2018 13:55</td>
<td>Saratoga</td>
</tr>
<tr>
<td>562</td>
<td>Martina Sbicca</td>
<td>7/26/2018 13:56</td>
<td>Santa Clara</td>
</tr>
<tr>
<td>563</td>
<td>Patrick Barone</td>
<td>7/26/2018 14:03</td>
<td>Santa Clara</td>
</tr>
<tr>
<td>564</td>
<td>Hesham</td>
<td>7/26/2018 14:06</td>
<td>Santa Clara</td>
</tr>
<tr>
<td>565</td>
<td>Pankaj Dugar</td>
<td>7/26/2018 14:29</td>
<td>MTV station</td>
</tr>
<tr>
<td>566</td>
<td>Anthony Moor</td>
<td>7/26/2018 15:01</td>
<td>Mountain View</td>
</tr>
<tr>
<td>567</td>
<td>karan gathani</td>
<td>7/26/2018 15:04</td>
<td>Mountain View</td>
</tr>
<tr>
<td>568</td>
<td>Sasha Ovsiankin</td>
<td>7/26/2018 15:08</td>
<td>Sunnyvale, CA</td>
</tr>
<tr>
<td>569</td>
<td>Kavit</td>
<td>7/26/2018 15:10</td>
<td>Mountain View</td>
</tr>
<tr>
<td>570</td>
<td>Viet Nguyen</td>
<td>7/26/2018 15:16</td>
<td>Mountain View</td>
</tr>
<tr>
<td>571</td>
<td>Chris Parry</td>
<td>7/26/2018 15:28</td>
<td>Mountain View</td>
</tr>
<tr>
<td>572</td>
<td>TK Tsai</td>
<td>7/26/2018 15:34</td>
<td>Sunnyvale</td>
</tr>
<tr>
<td>573</td>
<td>Stav Ashuri Zohar</td>
<td>7/26/2018 15:43</td>
<td>Mountain View</td>
</tr>
<tr>
<td>574</td>
<td>Moya Damberger</td>
<td>7/26/2018 19:31</td>
<td>San Jose</td>
</tr>
<tr>
<td>575</td>
<td>Cyrus Vafadari</td>
<td>7/26/2018 19:39</td>
<td>Sunnyvale</td>
</tr>
<tr>
<td>576</td>
<td>Randy Leberknight</td>
<td>7/26/2018 21:01</td>
<td>San Jose</td>
</tr>
<tr>
<td>577</td>
<td>Stan Wong</td>
<td>7/26/2018 22:36</td>
<td>San Jose</td>
</tr>
<tr>
<td>578</td>
<td>J Lawrence</td>
<td>7/26/2018 23:04</td>
<td>Mountain View, CA</td>
</tr>
<tr>
<td>579</td>
<td>Ashley Hanson</td>
<td>7/27/2018 3:02</td>
<td>San Jose</td>
</tr>
<tr>
<td>580</td>
<td>Claire</td>
<td>7/27/2018 14:32</td>
<td></td>
</tr>
<tr>
<td>581</td>
<td>Christopher weber</td>
<td>7/27/2018 14:49</td>
<td>San Francisco</td>
</tr>
</tbody>
</table>

Please! Good design facilitates increased ridership. Unless CalTrain is replacing stolen bikes, bike thieves.

As a daily commuter who brings his bike on board, I see firsthand the stress that bike cars cause. I don't have adequate space for bikes and don't understand why there aren't more options to each stop if people had to shuffle between cars.

Bike cars are a great feature of CalTrain that I enjoy. Without a convenient way to view my bike I won't use it. There are too many crowded cars and the bikes are often crammed. It's too crowded to safely ride a bike.

The bike cars are often crammed today. Please find balance on the seating & bike car policies. The train is a great way to travel with bike. Able to stay with their bikes in a car.

Watching the bikes is important. Even if it's to note that they went a long way.

Encourage bikes instead of making it hard. If you want more commuters on the train, I think a continuous GROWING population will help. I commute via Caltrain with my bike and things have improved in so many ways, but I still see people struggling.

I'm not so bothered by the lesser capacity of bicycle cars, they'll run more frequently. I am however frustrated that I can't sit near my bike. If I can't sit near it, it's causing greater disruption to everyone who wants a seat.
<table>
<thead>
<tr>
<th>Name</th>
<th>Date/Time</th>
<th>Location</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam Pinch</td>
<td>7/27/2018 16:31</td>
<td>San Francisco</td>
<td>More space for bikes is needed. Not less!!</td>
</tr>
<tr>
<td>Brian Kammerer</td>
<td>7/27/2018 23:20</td>
<td>San Francisco</td>
<td>I like to be able to sit with my bike</td>
</tr>
<tr>
<td>Kunal Sangani</td>
<td>7/27/2018 23:36</td>
<td>San Francisco</td>
<td>Paying more for less! I've about had it with overcrowded, and unsafe!</td>
</tr>
<tr>
<td>Matthias Bendull</td>
<td>7/28/2018 0:56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brad Davis</td>
<td>7/28/2018 15:04</td>
<td>Mountain View</td>
<td></td>
</tr>
<tr>
<td>Eric Muller</td>
<td>7/28/2018 18:18</td>
<td>Los Altos</td>
<td></td>
</tr>
<tr>
<td>Sarah Ellison</td>
<td>7/28/2018 19:52</td>
<td>Redwood City</td>
<td></td>
</tr>
<tr>
<td>Jackson Reed</td>
<td>7/29/2018 19:27</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Joke van Bemmel</td>
<td>7/29/2018 20:07</td>
<td>Palo Alto</td>
<td></td>
</tr>
<tr>
<td>Frank San Miguel</td>
<td>7/29/2018 22:36</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Brian</td>
<td>7/30/2018 14:29</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Kenneth Ledbetter</td>
<td>7/30/2018 20:34</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Randy Spickler</td>
<td>7/30/2018 20:59</td>
<td>Mountain View</td>
<td></td>
</tr>
<tr>
<td>David Gustafson</td>
<td>7/30/2018 21:20</td>
<td>San Mateo</td>
<td></td>
</tr>
<tr>
<td>Mark Kashima</td>
<td>7/30/2018 21:23</td>
<td>San Mateo</td>
<td></td>
</tr>
<tr>
<td>Lauren Renaud</td>
<td>7/30/2018 22:10</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Peter Levanion</td>
<td>7/30/2018 23:56</td>
<td>Mountain View</td>
<td></td>
</tr>
<tr>
<td>Genevieve Norman</td>
<td>7/31/2018 0:26</td>
<td>Redwood City</td>
<td></td>
</tr>
<tr>
<td>Carlos Marin</td>
<td>7/31/2018 13:43</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Javier Trueba</td>
<td>7/31/2018 13:45</td>
<td>San Jose</td>
<td></td>
</tr>
<tr>
<td>Fernanda Marchant</td>
<td>7/31/2018 20:07</td>
<td>Redwood City</td>
<td></td>
</tr>
<tr>
<td>Jacob Crabill</td>
<td>8/1/2018 4:14</td>
<td>Palo Alto</td>
<td></td>
</tr>
<tr>
<td>Rocio Segura</td>
<td>8/1/2018 5:04</td>
<td>Mountain View</td>
<td></td>
</tr>
<tr>
<td>Alfonso Ramirez</td>
<td>8/1/2018 15:42</td>
<td>Sunnyvale</td>
<td></td>
</tr>
<tr>
<td>Annie Xu</td>
<td>8/1/2018 16:04</td>
<td>Saratoga</td>
<td></td>
</tr>
<tr>
<td>Cameron Moberg</td>
<td>8/1/2018 23:28</td>
<td>Mountain View</td>
<td></td>
</tr>
<tr>
<td>Sophie</td>
<td>8/2/2018 0:06</td>
<td>Palo Alto</td>
<td></td>
</tr>
<tr>
<td>Sarah Hanes</td>
<td>8/2/2018 0:06</td>
<td>San Jose</td>
<td></td>
</tr>
</tbody>
</table>

Please do not force bicyclists to choose between potentially having their bike stolen due to overcrowding.

Please provide for bikers the opportunity to ride during the volume of bikers riding Caltrain by providing more space.

As a young person using CalTrain for the first time, I was impressed and entertained by the number of wonderfully low-tech bikes, in combination with the bikes on board is great! keep them safe is important. There's barely enough capacity as it is; I'd like to see more bike space during commute hours. We need more options for those who ride bikes daily. commuter have very expensive bike tickets. There are not enough bikes on the train. It would be disappointing for a commuter problem instead of alleviating it. I hope that, despite the current situation, CalTrain will consider revisiting this issue.

Security cameras won't stop bike thefts. People trying to keep an eye on their bikes.
within view of bikes, people need to be able stacking. Seems like the worst option at ev cars.

Daily commuter Palo Alto to SF & back up

Remember why there is mass transit. Let's efficiency in transportation infrastructure a powered transport. More bikes on trains helps. We have design objectives for a reason. It's important for the economy and environmental cuts in the name of expediency we have here or don't do it at all.

I've witnessed too many bike thefts even in view of riders is an invitation for theft.

Caltrain you're electrifying the line to cut e us also cut our emissions by making it less me 30 minutes to walk to the station and it stolen I might have to drive instead!

We need more space for bikes! Thank you.

Bike cars are already too crowded, we need transportation with us
Dear Alvaro,

Thank you for your comments below. While customers are allowed to sit in any car, Caltrain encourages non-cyclists to sit in non-bike cars as a courtesy. I have brought your feedback to the attention of the rail operations team as Caltrain constantly works to improve its service and make the boarding/deboarding process as seamless as possible. Thanks again for the information.

Best,

Lori

-----Original Message-----
From: Alvaro Jimenez [mailto:[EMAIL PROTECTED]]
Sent: Tuesday, August 28, 2018 7:17 AM
To: Caltrain, Bac (@caltrain.com)
Subject: Comment from BAC Webpage

As a daily train rider, a monthly pass subscriber, a bicycle rider, and a respectful citizen, I would like to make an observation regarding train passengers that ride on the Bicycle designated cars. It is unfortunate to note that people without bicycles take over the limited sitting available in such cars making more difficult for riders like myself to get to our bicycles in case it is needed, and whenever bicyclists need to get off or vacate the train. Is it possible to have conductors actively asking people without bikes not to be in these cars? Conductors are often seen just having long and pleasant conversations with passengers, but it will also be very appreciated if they can actively help the growing community of bike riders on Caltrain.

Best regards,

-Alvaro Jimenez

Sent from my iPhone
Hi Dana,

Thank you for your comments below regarding conductors and open bike spaces onboard trains. I have brought this to the attention of the director of rail operations who is looking into the matter. As you know, Caltrain has one of the most extensive bicycle access programs among passenger railroads in the nation as bikes are an excellent first and last mile solution that help reduce pollution and relieve congestion. Thanks again for the information.

Best,
Lori

---

Hi there! I am currently on the #222 train (boarded at San Mateo-getting off in Menlo) and in San Mateo I was waiting with three other bikers to board the train. The conductor was very nice about it but had to bump the three others (thankfully I get to the station early to avoid being bumped myself).

When I got in the train I noticed a few racks with only 3 bikes and quite a bit of space but the conductor abides by the 40 TOTAL bikes -thus bumped the others. Just wanted to let someone know -and show a pic- to indicate the plethora of space, even with the max amount of bikes. I definitely understand the safety issue but thought, in a situation like this, it warrants a conversation to help out those bikers who are bumped but could possibly have been accommodated.

Thanks for listening-
Dana
(FYI- I did ask everyone in the bike car for permission to take this photo)
Dear Supervisor Peskin and members of the SFCTA Board of Directors,

Please find attached my response to Ms. Gygi's August 14 2018 letter.

Sincerely,

Roland Lebrun

cc
Caltrain Board
TJPA Board
CHSRA Board
SFCTA CAC
TJPA CAC
Caltrain CAC
Caltrain BAC
Roland Lebrun  
ccss@msn.com  
September 10, 2018

SFCTA September 11th 2018 Full Board meeting  
Item #7 Pennsylvania Avenue Alignment

Dear Chair Peskin and members of the SFCTA Board of Directors

Further to my July 8th letter to the SFCTA Board and Ms. Gygi’s August 14th 2018 response, I appreciate the opportunity to respond to some of the points raised by Ms. Gygi.

First, I apologize for any confusion the presentation may have caused. As stated in the last paragraph on page 2 of my July 8 letter (The solution outlined in the attached “Rethinking DTX” (2012) presentation), this presentation was prepared in 2012, approximately two years before the so-called “RAB study.”

Most of the presentation stands today with the exception of the following items:

$1.3B cost estimates. The 2012 estimates were based on two contracts awarded during the 2008 Great Recession:

- Crossrail: 13 miles of twin-bore tunnels and two ¼ mile-long stations under existing buildings awarded in 2009 for under $2B.  
http://www.crossrail.co.uk/news/articles/crossrail-awards-major-tunnelling-contracts-worth-125bn

- Central Subway: “The Tunnels contract was awarded in June 2011, to the Joint Venture of Barnard/Impregilo/Healy. The $233.9 million contract consisted of 1.5 miles of twin-bore tunnels”  
https://www.sfcta.org/sites/default/files/content/Projects/images/Central_Subway/CentralSubway_factsheet_042017.pdf

The 2012 estimate for the tunnels and the 7th & King station was revised to $2B on page 9 of the July 8 2018 letter and is followed by a table showing an average of $350M/mile for recently awarded tunnel contracts.

Adverse impact to other buildings

As can be seen in the video and the 2012 presentation, the twin bores did not impact any buildings because the 7th street alignment was the only alignment that made it possible to connect the Transit Center to the East Bay without requiring massive building condemnations.
With regards to comments about the 2012 alignment impacting the foundations of the Park Tower building, it should be noted that Ms. Gygi informed Mayor Ed Lee's office in December 2014 that it was "OK to sell Transbay Block 5" because she had a "Spear Street solution" consisting of "Removing and reconstructing building structures and foundations" including the entire Rincon Center.


Here is a revised draft Transbay tunnel alignment which requires the condemnation of a single building on Main Street.
Relocation of 4th & King Railyard
As can be seen from the above snapshot, the 7th Street alignment makes it possible to fit 1,400-foot platforms (vs. 800 for the 2nd street alignment) within the existing train box, so (assuming double-stacking), the Transit Center could accommodate the same number of trains (12) as the 4th & King railyard and there would be no need for train storage at any other location.

Location of crossover
The 2013 refined alignment introduced two crossovers between the Minna (southbound) and Natoma (northbound) tunnels (11/17 2013 letter to Luis Zurinaga).

The location of the Yerba Buena Garden crossover is deliberate because it has the potential to use the Hall E&F slabs to support the face during excavation without additional support from a layer of grout.
The crossovers are discussed at length in the November 17th 2013 letter (attached) and closely follow Crossrail crossover designs (see engineering diagrams on page 7 and the Whitechapel Station crossover in particular).

**Curves would not meet CHSRA standards**

**This comment is incomprehensible.** The curve radii as the tunnels transition from 7th Street to Minna and Natoma are approximately 1,800 feet versus 600 feet for each of the three sharp curves in the current DTX alignment.

Assuming 100-foot piles, there should be no building impacts because the elevation of the tunnels through the curve drops to 130 feet below the surface rising to -110 feet before going under the Central Subway.

With regards to building impacts on Second Street between Minna and Natoma, I reached out to an engineering firm specializing in Sequential Excavation Mining (SEM) and they advised that the properties could be preserved if necessary. Here is their reference project:

"The tunnel passes diagonally under the 100 year old Russia Wharf complex, which comprises three seven-story buildings with steel frames and brick facades listed in the National Register of Historic Places"

http://projects.dr-sauer.com/projects/mbta-russia-wharf-segment-section-cc03a

**Operational Constraints and Safety risks**

The comment that "The two single-track tunnels proposed by Mr. LeBrun would constrain operations, create severe safety risks, and pose maintenance challenges" does not have any basis in fact, specifically that these tunnels follow best practices developed on the Channel Tunnel Rail Link, Crossrail, High Speed Two (HS2) and the Central Subway.

Please encourage Ms. Gygi to familiarize herself with basic twin bore tunnel ventilation principles:


With regards to "Constructing the passages would disrupt businesses and circulation on Second Street and would be difficult to locate, given the large number of existing buildings with deep foundations and below-grade parking..."

Once again, this comment is incomprehensible. First, the 7th Street alignment does not need cross-passages on Second Street and second most of the cross-passages are located under existing streets between Minna and Natoma (no building impacts). Last but not least, Ms. Gygi does not appear to be familiar with recent developments in cross-passage construction:
Design Requirements

Ms. Gygi states that “The proposed alignment would eliminate the connection with the Central Subway.”

Once again, this statement does not have any basis in fact. The Central Subway is one of the “Guiding principles” in the 2012 presentation which shows a MUNI station serving both the N and the T-Third via an extension of the 16th Street turnback loop integrated with the 7th Street underground Caltrain/HSR station (similar to Montgomery and Embarcadero stations). Furthermore, the 7th Street location provides an opportunity to integrate an additional level ready to provide a BART connection to Alameda.

“Additionally, relocating the 4th/Townsend Station would not eliminate the cut-and-cover construction techniques and the resultant impacts, as Mr. LeBrun contends. 7th/Townsend ground conditions still require cut-and-cover construction. The relocation would also lose the advantage of the adjacent 4th/King railyard as a potential staging area for construction materials of the DTX.” Once again this statement does not have a basis in fact because the 2012 Guiding Principles clearly state “No surface impacts north of Townsend.” The 7th Street location additionally eliminates all impacts on Townsend Street and has the advantage of using both the unused portion of the Caltrain railyard at the corner of 7th & Townsend as well as the Recology site for staging. Last but not least, unlike 4th & Townsend, the 7th Street location serves Mission Bay, including UCSF and the Arena as well as SOMA because it straddles China Creek.

Structural Compromise to the SFTC

Once again, had Ms. Gygi paid closer attention to the proposed alignment, she would have realized that there is no need to “demolish the west end of the brand new building” let alone “take the new bridge out of service” or “require the relocation of the already built columns”.

3) Travel times

Ms. Gygi is questioning a travel time saving of 3 minutes between San Jose and San Francisco. This saving was achieved through a series of refinements in 2013 designed to sustain a minimum speed of 80 MPH until approaching Moscone Center.

As an example, a close examination of the video and slide 10 of the 2012 presentation will reveal that the alignment is not under Pennsylvania Avenue per se because this would result in a sharp bend at the junction of Pennsylvania and 7th (this sharp bend is most likely the reason behind the 2017 SMA study showing a speed of 40 MPH as far south as 22nd Street).
Ms. Gigy's assertion that "The curve speeds on the DTX alignment are 35 mph between 7th/Townsend and 2nd/Townsend." appears to contradict the 2015 SMA report.

Current track layout was accepted as the starting point for initial analysis.
Conclusions

- The 3-track requirement is a direct afterfact of the poorly designed 2nd Street throat structure
- The 3-track design results in a poorly ventilated tunnel design requiring multiple vent structures while London’s twin bore high speed tunnels require a vent structure every 2 miles (see below)

2001 London tunnel contracts

- There has been no attempt to comply with Streets & Highways Codes section 2704.09(b)

"Maximum nonstop service travel times for each corridor that shall not exceed the following:
(3) San Francisco-San Jose: 30 minutes."
http://www.leginfo.ca.gov/cgi-bin/displaycode?section=shc&group=02001-03000&file=2704.04-2704.095

- There has been no attempt to connect the Transit Center to the East Bay
- There has been no attempt to fit 1,400-foot platforms within the existing 1,543-foot train box

Sincerely,

Roland Lebrun
The purpose of this short paper is to outline a refined northbound DTX tunnel alignment capable of delivering substantially higher TTC capacity if the crossover under Main Street is not available.

The refined alignment enables the implementation of Crossrail crossover designs and construction techniques to deliver a track layout with the same capacity as the connection between the HSI tunnels and St Pancras platforms 11, 12 & 13.

Background:

The current northbound DTX tunnel proposal avoids existing building foundations by veering east off 7th Street under Howard before lining up with Natoma east of 3rd Street.
The refined northbound tunnel alignment lines up with Natoma east of 7th Street and runs deep enough to avoid any current or future building foundations between 7th and 3rd Street, including Moscone Center which is understood to have foundations supported by micropiles extending 100 feet below the surface.
Moving the northbound DTX tunnel alignment to Natoma makes it feasible to connect the two tunnels with additional crossovers as follows:

1) Crossover from Northbound to Southbound tunnel between 3rd and 4th Street. This crossover’s purpose is to route northbound trains to TTC platforms 1, 2 & 3 (northern-most platforms closest to Mission Street) which should be reserved for high-volume traffic (12 trains/hour).
2) Crossover from Northbound to Southbound tunnel between 6th & 7th Street.
This crossover is for southbound traffic originating from TTC platforms 4, 5 & 6 which should be reserved for low-volume traffic (maximum 4 trains/hour) because southbound trains originating from these platforms can potentially interfere with northbound traffic between 7th street and the TTC.

Last but not least, the refined alignment is expected to deliver costs savings through shorter cross-passages between the northbound and southbound tunnels and these savings are expected to cover the construction costs of the two crossovers.
Reference material:

St Pancras track layout
2012 Summer Olympics timetable (12 trains/hour)

| Time  | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T |
| 00:00 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 00:30 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 01:00 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 01:30 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 02:00 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 02:30 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 03:00 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 03:30 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 04:00 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 04:30 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 05:00 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 05:30 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 06:00 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

St Pancras domestic platforms 11, 12 & 13
Red Lion Square (London WC1) Crossrail crossover

Whitechapel Crossrail station (London E14) crossover
Thank you very much for looking into this issue! I appreciate it.

I've also sent a message to the Caltrans District 4 Bicycle and Pedestrian Advisory Committee members, as Caltrans may want to have a say if there's an incursion into their offramp space, but I haven't heard back from them yet.

On 9/7/18, Tietjen, Brent wrote:
> Hi Kevin,
> 
> > Thanks for your comments below regarding the Caltrain South San Francisco Station Improvement Project. I have brought this to the attention of the Project Manager, our Station Access Manager, and South San Francisco Planning. We are researching possible alternatives to the current configuration and will provide an update once we are able to investigate further.
> 
> > Please let me know if you have additional questions at this time.
> 
> > Thanks,
> 
> > Brent Tietjen, Government and Community Relations Officer SamTrans
> Caltrain TA
> 1250 San Carlos Ave.
> San Carlos, CA 94070-1306
> 650-508-6495

> From: Kevin Burke
> Sent: Tuesday, September 04, 2018 11:21 AM
> To: Caltrain, Bac; Low, Lori
> Subject: Problems with proposed east side exit design at South San Francisco Caltrain station

> Hi,
> 
> > Reading through this month's Caltrain board presentation, there's a rendering on page 13 of the east side station offramp that I haven't seen in either the SSF Downtown Area Plan or the Bike/Ped Plan and I'm wondering how finalized that is.
> It's not ideal to have pedestrians and cyclists on the north side of
> East Grand for two reasons: ped/bike crossings will hold up shuttles
> merging onto East Grand, and peds/bikes have to go out of the way up
> to the East Grand/Grand intersection and then cross two signals - one
> with a 30 second wait time and the other with a 42 second wait time.
> It's currently in poor shape and it's not clear there are plans to repair the surface.
>
> > [cid:image002.jpg@01D4469B.924249C0]
> > It's pretty easy to imagine instead that cyclists will try to get
> > across 2-3 lanes of traffic here, instead of waiting for two WALK signs at East Grand:
>
> > [bike-ramp-exit-how.png]
> > In an ideal world bikes/peds could just cut straight across to the
> > Gateway/East Grand intersection like this. I believe SSF owns the
> > right of way where the bottom red line is located.
>
> > [proposed-route-vs-good-route.png]
> > If we are stalling the undercrossing construction by a few months, I
> > hope that we could come up with a better plan here!
>
> > Thanks,
> > Kevin
> > —
> > Kevin Burke
> > 925.271.7005 | kev.inburke.com<http://kev.inburke.com>
Hi,

Reading through this month’s Caltrain board presentation, there's a rendering on page 13 of the east side station offramp that I haven't seen in either the SSF Downtown Area Plan or the Bike/Ped Plan and I'm wondering how finalized that is. http://www.caltrain.com/Assets/__Agendas+and+Minutes/JPB/2018/2018-09-06+SSF+presentation.pdf

It's not ideal to have pedestrians and cyclists on the north side of East Grand for two reasons: ped/bike crossings will hold up shuttles merging onto East Grand, and peds/bikes have to go out of the way up to the East Grand/Grand intersection and then cross two signals - one with a 30 second wait time and the other with a 42 second wait time. If one of the sidewalks in that photo is supposed to be a bike path, it's currently in poor shape and it's not clear there are plans to repair the surface.
It's pretty easy to imagine instead that cyclists will try to get across 2-3 lanes of traffic here, instead of waiting for two WALK signs at East Grand:
In an ideal world bikes/peds could just cut straight across to the Gateway/East Grand intersection like this. I believe SSF owns the right of way where the bottom red line is located.

If we are stalling the undercrossing construction by a few months, I hope that we could come up with a better plan here!

Thanks,
Kevin

—
Kevin Burke
925.271.7005 | kev.inburke.com
Dear Chair Larson and members of the SFCTA CAC,

Please find my attached response to Ms. Susan Gygi’s August 14th letter.

I look forward to hearing the CAC’s comments.

Sincerely,

Roland Lebrun

cc
SFCTA Board
Caltrain Board
TJPA Board
CHSRA Board
MTC Commissioners
Caltrain CAC
Caltrain BAC
TJPA CAC
SFCTA CAC September 5 Special Meeting

Dear Chair Larson and members of the SFCTA CAC

Further to my July 8th letter to the SFCTA Board and Ms. Gygi’s August 14th 2018 response (both attached), I appreciate the opportunity to respond to some of the points raised by Ms. Gygi.

First, I apologize for any confusion the presentation may have caused. As stated in the last paragraph on page 2 of my July 8 letter (The solution outlined in the attached “Rethinking DTX” (2012) presentation), this presentation was prepared in 2012, approximately two years before the so-called “RAB study.” Most of the presentation stands today with the exception of the following items:

1) $1.3B cost estimates. These estimates were based on two contracts awarded during the 2008 Great Recession:

- Crossrail: 13 miles of twin-bore tunnels and civils for two ¼ mile-long stations under existing buildings awarded in 2009 for under $2B.  
  http://www.crossrail.co.uk/news/articles/crossrail-awards-major-tunnelling-contracts-worth-125bn

- Central Subway: “The Tunnels contract was awarded in June 2011, to the Joint Venture of Barnard/Impregilo/Healy. The $233.9 million contract consisted of 1.5 miles of twin-bore tunnels” 

The 2012 estimate for the tunnels and the 7th & King station was revised to $2B on page 9 of the July 8 2018 letter and is followed by a table showing an average of $350M/mile for recently awarded tunnel contracts.

2) Adverse impact to other buildings
As can be seen in the video and the 2012 presentation, the twin bores did not impact any buildings because the 7th street alignment was the only alignment that made it possible to connect the Transit Center to the east bay without requiring massive building condemnations including the entire Rincon Center
With regards to comments about the 2012 alignment impacting the foundations of the Park Tower building, it should be noted that Ms. Gygi informed Mayor Ed Lee's office in December 2014 that it was OK to sell Transbay Block 5 because she had a "Spear Street solution" [link](http://default.sfplanning.org/Citywide/railyard_blvd/RAB_TechReport_052118_DRAFT-AppendixB.pdf) (page 4)

Here is a revised Transbay tunnel alignment which requires the condemnation of a single building on Main Street.
3) Travel times

Ms. Gygi is questioning a travel time saving of 3 minutes between San Jose and San Francisco. This saving was achieved through a series of refinements over 6 months in 2013 designed to sustain a minimum speed of 80 MPH until approaching the Moscone Center.

As an example, a close examination of the video and slide 10 of the 2012 presentation will reveal that the alignment is not under Pennsylvania Avenue per se because this would result in a sharp bend at the junction of Pennsylvania and 7th (this sharp bend is most likely the reason behind the 2017 SMA study showing a speed of 40 MPH as far south as 22nd Street).

DTX South to Mission Bay station

I will be addressing Ms. Gygi’s other concerns when the item comes to the full SFCTA and the Board of Supervisors for their consideration.

Sincerely,

Roland Lebrun
Dear Chair Peskin and members of the SFCTA Board of Directors,

The intent of this letter is to elaborate on my response to the following comments made at the June 27 CAC meeting:

“Mr. Zurinaga said that the 7th Street alignment had been looked at multiple times and been rejected because of the complexity to build around and under city buildings. He said the alignment of the project had been carefully looked at for the last 14 years by industry experts.”

The only slide referring to the 7th Street alignment is found on page 40 of the May 2018 DTX Peer Review Panel report (the 7th Street alignment was not reviewed by the Panel).

**DTX Project Background:**

**Other Alignments (2010)**

- Seventh St. reviewed in 2010
- Determined that conflicts with Central Subway and buildings along Minna/Natoma required alignment to be up to 130 ft deep.
- New required Throat Structure would require demolition of buildings between the Transit Center and Third St. including SF MOMA.

This slide appears to refer to the “San Francisco Technical Working Group DTX Engineering Charette and Alternative Alignment Analysis” held at the SFCTA offices on October 11-12, 2011 which identified the following issues and opportunities:
- Minimum # of sharp turns
- Shorter distance
- Minimum cut & cover disruption
The Orange alignment above is the “7th Street alignment” with a fatal flaw (a single 44-foot diameter two-track tunnel).

“Alternative 1B mimics Alternative 1A, but the alignment is routed under Natoma Street. Similar to Minna Street, the ROW available on Natoma Street is approximately 30 feet. Given that about 60 feet ROW will be needed to accommodate the 44 feet tunnel bore, the buildings abutting on either side of Natoma Street will be impacted. “

The solution outlined in the attached “Rethinking DTX” (2012) presentation is to locate the northbound and southbound tracks in separate 27-foot tunnel bores (one each under Minna and Natoma Street) similar to the high-speed tunnels linking London to the Channel Tunnel.
As seen above, there is no need to demolish any buildings between Second & Third, including SFMOMA (the orange tunnels under Minna & Natoma are to scale).
The smaller tunnel diameters provide an opportunity to cross the Central Subway.

Additional issues resolved by the 7th Street alignment

   Elimination of six-track station throat under 2nd Street

"The structural column configuration in the built Salesforce Transit Center limits the flexibility for changing the track geometry within the train box and at the throat leading into the terminal, but options that entail adjustments to track design criteria at the throat to minimize right-of-way impacts should be explored with CHSRA, TIPA, Caltrain and SENER."

This problem is resolved through the replacement of the 90 degree curved throat under Second Street with two mini-throats each serving 3 sets of platform faces. These mini-throats are modeled after the approach to St Pancras domestic platforms 11, 12 and 13 (please refer to “Elimination of the requirement for a third track” on page 7 below).
Station mini-throats under Second Street

Entering the STC train box (no conflicts). Minna is on the left and Natoma is on the right.
- Platform lengths

One of the conditions of the $400M 2008 ARRA grant was 400-meter (1,312 feet) straight platforms. The 7th Street alignment makes it possible to have six (not five) full-length platforms without impacts on the 201 Mission foundations by sliding the southern tip of the platforms to the location previously occupied by the six-track angled station throat located between Second & First.

- Vacation of 4th & King Railyard

Doubling the length of the six STC platforms makes it possible to store two 650-foot trains per platform resulting in the same capacity as the existing twelve 650-foot platforms at the 4th & King railyard.
Elimination of the requirement for a third track

"Only one of the studies, completed by Parsons and Carl Wood for TJPA, performed a detailed service perturbation analysis. It shows that if there is a delay or track blockage in the tracks leading to the "throat" of the terminal, then three tracks are required to support reliable train service and to facilitate recovery from operational delays."

This problem is resolved by a combination of
- Two 3-track mini throats
- Two mined crossovers (at Howard & Seven and under Yerba Buena Gardens)
- Four tracks between 16th and Townsend (new 7th & King station)

Please refer to the attached "Northbound refined DTX alignment" letter dated November 17th 2013 which explained how London was able to support 12 trains/hour with 3 (not six) platforms faces and **two tracks** (not three) during the 2012 Olympics.
- Elimination of multiple vent/evacuation structures

The elimination of the third track enables the implementation of a twin-bore ventilation/evacuation system similar to BART's Transbay tube (in the event of a fire in the Minna tunnel, passengers would evacuate through the Natoma tunnel).
- $4B (2/3) cost reduction

This slide lists recent tunnel project with an average cost of $350M/mile.

<table>
<thead>
<tr>
<th>Tunnel</th>
<th>Year completed</th>
<th>Diameter (ft)</th>
<th>Bore</th>
<th>Alignment length (miles)</th>
<th>Total length of tunnels (miles)</th>
<th>Reported cost ($ million)</th>
<th>Cost per mile of tunnel (million $/mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of Miami Tunnel</td>
<td>2005</td>
<td>36</td>
<td>twin</td>
<td>0.7</td>
<td>1.5</td>
<td>1,000</td>
<td>$677</td>
</tr>
<tr>
<td>LeBertovo</td>
<td>2012</td>
<td>41</td>
<td>single</td>
<td>1.4</td>
<td>1.4</td>
<td>600</td>
<td>$439</td>
</tr>
<tr>
<td>Airport Link Brisbane</td>
<td>2006</td>
<td>48</td>
<td>twin</td>
<td>1.4</td>
<td>1.4</td>
<td>450</td>
<td>$332</td>
</tr>
<tr>
<td>Groen Hart Tunnel</td>
<td>2002</td>
<td>47</td>
<td>single</td>
<td>2.6</td>
<td>2.6</td>
<td>775</td>
<td>$303</td>
</tr>
<tr>
<td>I-710 (AS)</td>
<td>proposed</td>
<td>50†</td>
<td>triple</td>
<td>4.1</td>
<td>12.4</td>
<td>3,585</td>
<td>$290</td>
</tr>
<tr>
<td>I-710 (CS)</td>
<td>proposed</td>
<td>42†</td>
<td>triple</td>
<td>4.0</td>
<td>12.0</td>
<td>3,195</td>
<td>$266</td>
</tr>
<tr>
<td>ADEW</td>
<td>2010</td>
<td>37†</td>
<td>single</td>
<td>10.9</td>
<td>10.9</td>
<td>2,641</td>
<td>$242</td>
</tr>
<tr>
<td>Wesertunnel</td>
<td>2001</td>
<td>38</td>
<td>twin</td>
<td>1.0</td>
<td>2.0</td>
<td>358</td>
<td>$180</td>
</tr>
<tr>
<td>Beacon Hill Tunnel</td>
<td>2009</td>
<td>21</td>
<td>twin</td>
<td>0.8</td>
<td>1.6</td>
<td>260</td>
<td>$172</td>
</tr>
<tr>
<td>M-30</td>
<td>2008</td>
<td>50</td>
<td>twin</td>
<td>2.2</td>
<td>4.3</td>
<td>570</td>
<td>$131</td>
</tr>
<tr>
<td>Dublin Port Tunnel</td>
<td>2006</td>
<td>50</td>
<td>twin</td>
<td>2.8</td>
<td>5.6</td>
<td>530</td>
<td>$94</td>
</tr>
<tr>
<td>Pannerdanschikanal</td>
<td>2003</td>
<td>32</td>
<td>twin</td>
<td>1.0</td>
<td>2.0</td>
<td>173</td>
<td>$86</td>
</tr>
<tr>
<td>SMART</td>
<td>2007</td>
<td>43</td>
<td>single</td>
<td>6.0</td>
<td>6.0</td>
<td>515</td>
<td>$85</td>
</tr>
<tr>
<td>Wuhan</td>
<td>2008</td>
<td>37</td>
<td>twin</td>
<td>1.7</td>
<td>3.4</td>
<td>268</td>
<td>$85</td>
</tr>
<tr>
<td>Nanjing</td>
<td>2013</td>
<td>49</td>
<td>twin</td>
<td>1.9</td>
<td>3.7</td>
<td>245</td>
<td>$66</td>
</tr>
<tr>
<td>Westerscheide</td>
<td>2002</td>
<td>37</td>
<td>twin</td>
<td>4.1</td>
<td>8.2</td>
<td>450</td>
<td>$50</td>
</tr>
<tr>
<td>Shanghai River Crossing</td>
<td>2008</td>
<td>51</td>
<td>twin</td>
<td>4.6</td>
<td>9.9</td>
<td>245</td>
<td>$27</td>
</tr>
</tbody>
</table>

† This scheme contains multiple tunnel diameters. This number presented is the average tunnel diameter.

This is in sharp contrast with the $2B/mile costs presented to the CAC on June 27.

PRELIMINARY ESTIMATES OF PROBABLE COSTS AND SCHEDULES

<table>
<thead>
<tr>
<th>ALIGNMENT</th>
<th>COST 1</th>
<th>EXPECTED COMPLETION DATE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future With Surface Rail</td>
<td>$5.1B</td>
<td>2026</td>
</tr>
<tr>
<td>DTX - Trenched Streets</td>
<td>$5.0B</td>
<td>2027</td>
</tr>
<tr>
<td>Pennsylvania Avenue</td>
<td>$5.1B</td>
<td>2026</td>
</tr>
<tr>
<td>Mission Bay</td>
<td>$5.3B</td>
<td>2031</td>
</tr>
</tbody>
</table>

1. Includes construction costs, value capture, and impact costs
2. Completion date estimate if all money were available on January 1, 2017

Respectfully presented for your consideration.

Sincerely,

Roland Lebrun
Introduction

The RAB Study Project Management Team (Susan Gygi and Jeremy Shaw) provided an informational presentation related to the Rail Alignment and Benefits (RAB) Study at the June 27, 2018 meeting of the SFCTA CAC. In that meeting there was also an agenda item to adopt a motion of support for the Pennsylvania Avenue Alignment as the Preliminary Preferred Alternative for grade separations at 16th Street and Mission Bay Drive on the approach to the Downtown Rail Extension (DTX).

It was the desire of the CAC to continue the motion of support adoption for two reasons:

1. Two CAC members expressed concerns about not knowing the specific location of a potential southern railyard, and asked for clarification on the continued use of the 4th/King railyard.
2. During public comment, Mr. Roland LeBrun requested that a 7th Street alignment be fully reviewed prior to approval of any singular alignment moving forward

This memorandum responds to those two items.

Response to Continued use of surface 4th/King Railyard

The continued use of the surface 4th/King railyard was not fully studied under the RAB. The RAB studied only scenarios which included full relocation of the 4th/King railyard to a southern location (biggest impact). The study also determined that it may be possible to distribute train storage among various locations (more on this below). At this time, no decision can be made about modifying or relocating the yard and/or its functions until a full analysis of the needs of Caltrain and CHSRA are completed. This work is being done through the Caltrain Business Plan and the Blended Service Operations Plan. Both efforts are underway and anticipated to be completed in mid-2019. In the future, any proposed yard relocation would be required to have its own environmental process where all alternatives will be analyzed, and public input sought.

As noted above, the RAB study found that it may be possible to distribute train storage among various locations. For example, expanding the 4th/Townsend underground station further south (under the 4th/King surface railyard), is one option that would allow for additional dead-end tracks for staging or storage, allowing for a transit-oriented development to be built above. In addition, there is the possibility to allow for overnight storage at the Salesforce Transit Center (SFTC) on all six tracks including double-berthing the trains on five of them. Some combination of the above could also be deployed with or without a southern railyard. Until the Caltrain Business Plan and the Blended Service Operations Plan efforts are completed, and we have a better understanding of the needs to operate future service, we must have potential alternative railyard sites. Of note, the Pennsylvania Avenue alignment and a potential yard relocation can be seen as independent projects. Even after the Pennsylvania Avenue alignment is built, Caltrain could continue using the current surface railyard (or a smaller footprint) for some to-be-determined amount of time. Since most trains would be going to the SFTC, train volumes on the surface would be significantly lower than present.

Response to Request for Locations under Consideration for a Southern Railyard

The RAB study team identified two likely railyard locations (one inside the City limits, and one outside of the City limits) that could meet Caltrain’s storage and operational needs in the near term.
Two CAC members requested the physical location of a potential southern railyard before they would consider supporting the preliminary preferred Pennsylvania Avenue alignment.

Based on the City Attorney’s Office legal opinion and common practice, City agencies should not disclose potential locations for properties that may have to be acquired until sufficient work is completed to determine what parcels may be needed. Currently, both of the potential locations appear to work for operations. However, without further study, a determination cannot be made as to what, if anything, is necessary.

The RAB study was based on the most conservative planning assumptions for each of the three alignment alternatives. Specific to the Pennsylvania Avenue alignment, that included assuming a total replacement of the 4th/King railyard to a southern location. However, the ultimate solution may be much less (as stated above). Caltrain and California High Speed Rail Authority (CHSRA) do not currently know what their railyard needs are along the entire Caltrain alignment. Caltrain is currently undertaking the Caltrain Business Plan and CHSRA/Caltrain are undertaking a Blended Service Plan, aka the Peninsula Corridor Service Vision. These two documents, expected in 2019, will provide a better understanding of each agency’s railyard needs along the Caltrain alignment.

Response to Mr. LeBrun’s proposed 7th Street alignment

The RAB study preliminarily reviewed over 30 conceptual alignments for getting heavy rail (Caltrain and High Speed Rail) to the Salesforce Transit Center (SFTC). Four alignments were deemed to have merit and were studied further as part of the RAB Study. Mr. LeBrun’s proposal is similar to the 7th St alignment that the RAB Study considered, deemed infeasible, and therefore, did not study further. This response to the request to look at Mr. LeBrun’s alignment proposal was developed in cooperation by the RAB Study Team, the TJPA DTX Team, and SFCTA.

To reach the SFTC, Mr. LeBrun proposes two parallel one-track tunnels starting at the north west edge of the current railyard, traveling north under 7th Street, turning east under Minna/Natoma Streets, and ultimately entering the underground train box through the already-constructed western wall near Second Street. The Planning Department, TJPA, SFCTA, consultants, and other agencies evaluated a similar alignment as part of the 3-year RAB study, drawing upon original analysis from the TJPA DTX work. Agency staff and consultants determined that the 7th Street alignment did not warrant further study as it would: i) adversely impact other existing buildings, ii) constrain operations and create safety risks, iii) doesn’t meet design requirements, iv) compromise the structural layout of the SFTC, and v) not conform to design requirements. Each finding is detailed out below.

Adverse Impacts to Other Existing Buildings

The proposed alignment goes under multiple buildings, and will have greater ROW impacts than the current DTX alignment, located predominantly in the public ROW. The tracks and a mined crossover on the proposed alignment would be located under Moscone Center, which is in itself an underground facility with deep piles. Park Tower, currently under construction, sits on deep foundations and two levels of parking below grade, which would be in the path of the tunnel proposed by Mr. LeBrun. The tunnels for Mr. LeBrun’s alignment would also pass under Moscone Center, Yerba Buena Gardens, and the SFMoMA. Since much of the Moscone facility as well as SFMoMA subsurface structures are located in the way of the proposed alignment, its construction would be unacceptably disruptive and costly.

The two curves that would be necessary from 7th Street would not meet CHSRA standards. Mr. LeBrun’s drawings do not seem to be to scale as preliminary layouts determined impacts to all three facilities. In addition, the curves impact many more buildings in the transition from 7th Street to Minna and Natoma, respectively. In addition, even by Mr. LeBrun’s assumption, the grade coming up to the train box after passing under Moscone Center would be 3.5% or more. CHSRA has a maximum grade of 2.7% so this alignment would not meet CHSRA criteria for continued operation. Finally, the wider footprint of the throat structure in Mr. LeBrun’s concept would affect two additional properties that are clear of the planned alignment. Impacting these two properties would require re-opening the environmental document again, delaying the project further with no possibility of improvement over the current proposed alignment.
Operational Constraints and Safety Risks

The two single-track tunnels proposed by Mr. LeBrun would constrain operations, create severe safety risks, and pose maintenance challenges. The February 2018 SFCTA’s peer review panel made up of five construction, operations, and maintenance experts, identified a need for three tracks into/out of the station to allow for anticipated operational inconsistencies without affecting train travel up and down the Peninsula main line. This determination of three tracks was not specific to the alignment itself but to address issues going in and out of the SFTC and the need to absolutely ensure that operations can be maintained even when there are incidents. This additional track allows for train service to continue if a train were disabled where the tracks enter the station. Mr. LeBrun’s concept does not account for this. Twin-bore single-track tunnels, as recommended by Mr. LeBrun, fail to achieve the required operational flexibility provided by a third track, which is required by Caltrain and CHSRA. In addition, to meet safety standards for sufficient egress/access, Mr. LeBrun’s option would require longer, numerous, and more expensive cross-passages between tunnels. Constructing the passages would disrupt businesses and circulation on Second Street and would be difficult to locate, given the large number of existing buildings with deep foundations and below-grade parking.

Design Requirements

Relocating a planned 4th/Townsend station to 7th Street, as suggested by Mr. LeBrun, would undermine the planning and land use-transportation coordination at the core of the Central SoMa Plan and the Central Subway alignment. As currently, an escalator at Fourth Street will provide convenient access to the Central Subway from the underground 4th/Townsend Station currently planned for DTX. The proposed alignment would eliminate the connection with the Central Subway, which received $65 million towards construction due to HSR connectivity funds.

In addition, the Central SoMa plan upzoned the area based on a train station at 4th/Townsend. Moving the station would require longer walking distances for these higher density neighborhoods and for those making the connection between Muni Metro and Caltrain. Additionally, relocating the 4th/Townsend Station would not eliminate the cut-and-cover construction techniques and the resultant impacts, as Mr. LeBrun contends.

7th/Townsend ground conditions still require cut-and-cover construction. The relocation would also lose the advantage of the adjacent 4th/King railyard as a potential staging area for construction materials of the DTX.

Structural Compromise to the SFTC

The SFTC construction is now complete. In order to accommodate Mr. LeBrun’s proposal, the west end of the brand-new building would have to be demolished and rebuilt to accommodate the different approach of the proposed alignment and move the load bearing elements to another location. This would mean that the new bridge from the Bay Bridge, which connects to the terminal at the west end, would most likely have to be taken out of service (if not partly demolished), eliminating bus service on the bus deck for the duration of demolition and construction of the modifications. This very expensive proposition would require major structural changes to the SFTC. Having the tracks approach the train box from a different direction will require the relocation of the already-built columns at the west end of the station. Since the west end carries a significant portion of the structural load of the station, any change to the western wall would require modifying the rest of the SFTC. The SFTC opened for bus operations on August 12, 2018. Modifications to the structural elements within the building would impact bus operations on the bus level.

Travel Times

Mr. LeBrun’s claims the 7th St alignment will save three minutes travel time. Unfortunately, this claim is unrealistic, since the current travel time from 4th/Townsend into the SFTC is anticipated to be three minutes, so, under Mr. LeBrun’s claim this time would shrink to zero. Mr. LeBrun states that the current DTX alignment has a longer travel time, due to three sharp curves with a maximum speed of 25 mph. This statement is incorrect. The curve speeds on the DTX alignment are 35 mph between 7th/Townsend and 2nd/Townsend. And while the final curve speed entering the SFTC is 22 mph, trains are required to slow down regardless of
curve radius because the SFTC is a terminal station. In 2007, TJPA engaged Deutsche Bahn International (DBI) GmbH, the engineering division of the German high-speed rail operator, to peer review the Transit Center and DTX alignment, configurations, and design criteria in relation to current practice in Europe and elsewhere. The peer review report prepared by DBI, and available for review online, concluded that “operating speeds on the DTX approach to the Transit Center are comparable to several major terminals in Europe and do not adversely affect the operation of the Transit Center.” Finally, for over two years during the RAB Study, the TJPA, Caltrain and CHSRA simulated rail operations between 4th/Townsend and the SFTC that met the needs of both train operators.

Peer Review

Mr. LeBrun states that the 7th Street alignment was not reviewed by the SFCTA-convened DTX Peer Review. This is correct. The Peer review had a limited scope, which was to review three independent operational studies to determine whether two or three tracks are needed for the DTX as well as opining on other operational elements of the project. Therefore, alternative alignments were not part of the scope.

Cost and Schedule Impacts

Mr. LeBrun’s assertions that the costs could be lowered to a total of $1.3B with the extension through the west side of the SFTC are unsubstantiated, particularly since both alignments are practically the same length. Lacking backup information, we can only guess that he did not factor in the additional right-of-way costs, the need for a third track, crossover passages in the tunnel, ventilation structures, nor the demolition and reconstruction of the west end of the SFTC, not to mention the extension of the train box one block to the west. MTC, TJPA, and various City departments along with Caltrain and other agencies have reviewed the DTX cost as currently envisioned and estimated it at $4 billion. There is no information to support the assertions Mr. LeBrun puts forth.

Conclusion

The RAB Study, its peer review panels, and expert opinions all demonstrate the strengths of the Pennsylvania Avenue Alignment over other alignments to the Salesforce Transit Center (SFTC). However, at the current preliminary engineering stage (5-8% design completion) additional analysis and public outreach will be necessary to better understand needs, constraints and impacts. Agreeing on a preliminary preferred alignment is the best way to further the analysis and identify those impacts while also moving towards a common goal.

We hope the above responses adequately address the concerns of CAC members as they have for the project team, consultants, peer reviewers, and the RAB Citizen’s Working Group. If so, we look forward to returning to the SFCTA CAC for their approval of the Motion of Support.

As always, if there are any questions, feel free to contact me.

Sincerely

Susan Gygi, PE
Project Manager
SF Planning Department
Dear Chair Bruins,

Thank you for making Caltrain correspondence packets available for review by the general public.

Please consider the following suggestions for additional improvements:

1) Board correspondence packets should be uploaded as searchable (not image) PDF documents to facilitate copying/pasting of specific issues in subsequent emails.

2) Hyperlinks should be enabled.

3) Attachments should be included. As an example my 8/17 email to the CAC included an attachment depicting station track layout and safety barriers designed to improve passenger safety while simultaneously increasing line speed and capacity (see attached). This attachment is missing from the August correspondence packet.

4) Existing Board policy mandates that “Any correspondence to be included in the Board reading file must be received by 10 a.m. the day before the Board meeting” (not the last day of the month prior to the Board meeting). A potential solution would be to post two correspondence packets per Board meeting:

- The first packet would cover the period between the previous Board meeting cutoff date and the end of the month.

- The second packet would cover the period between the first of the month and the Board meeting cutoff date.
5) Links to archived correspondence packets should be added retroactively to the list of materials for every archived Board meeting.

Sincerely,

Roland Lebrun
Dusseldorf Airport

LONG DISTANCE RAIL STATION DESIGN

There are 4 Long Distance platforms (platforms 4 through 7) with two passing tracks in the middle separated by barriers for high speed service (ICE trains that do not stop here pass at 125mph)
Dear CAC Secretary,

Please distribute the attached image to members of the CAC.

Thank You.

Roland Lebrun

The following pages have been updated:
Citizens Advisory Committee Meetings Calendar - Wednesday, August 15, 2018 8:55 AM
The JPB CAC Presentation for August 15, 2018 meeting is now available.

To stop receiving email notifications, please unsubscribe here.
There are 4 Long Distance platforms (platforms 4 through 7) with two passing tracks in the middle separated by barriers for high speed service (ICE trains that do not stop here pass at 125mph)
July 19, 2018

Peninsula Corridor Joint Powers Board
Caltrain Citizens Advisory Committee
1250 San Carlos Ave.
San Carlos, CA 94070

Re: Calling for improved bicycle security and capacity on board future Caltrain EMUs

Dear Caltrain Joint Powers Board and Caltrain Citizens Advisory Committee,

The Caltrain Bicycle Advisory Committee (BAC), a voice for passengers who use bicycles to access Caltrain, wishes to provide input about Caltrain modernization to the Joint Powers Board (JPB).

Commuters across the Bay Area are experiencing longer and longer commutes (some even termed “megacommutes”), often requiring combinations of two or more modes of travel. Caltrain users in particular come from far and wide, including passengers commuting from Marin and Alameda Counties to San Mateo and Santa Clara Counties.

Scores of passengers have written emails and/or made public comment expressing concern over capacity and bicycle security due to a lack of dedicated seats within view of bicycles in the proposed EMU train cars and hundreds of paid-ticket holders with bicycles are left behind on the platform every year due to insufficient onboard bike capacity. The wayside Bike Parking Management Plan is a great step forward for passengers who need their bicycle on only one end of their trip, but the timeline and results are uncertain and Caltrain’s passenger surveys indicate that a large majority of passengers who bring their bikes on board require them on both ends of their trip.

The currently proposed “mixed fleet” may carry more bikes and more passengers per hour but a smaller proportion of bikes, with no indication that a smaller proportion of passengers will require bikes as ridership continues to grow. Further, the Caltrain Joint Powers Board approved a ratio of one bicycle space for every 8 seats in 2015.

When it comes to bicycle security, a survey of tweets by Caltrain riders shows that bicycle thefts are already on average at least a monthly occurrence on board Caltrain, with many going unreported to the Transit Police. There are even reports of passengers seated in the bike car thwarting attempted bicycle thefts.

As Caltrain has received additional funds from the California State Transportation Agency’s SBI Transit and Intercity Rail grant program to procure more train cars, the BAC encourages the JPB to work with staff to add more bike cars to longer trains (both EMUs and diesel trainsets) while increasing the number of seats within view of bikes on EMUs to improve onboard bicycle security. When bicycle owners can see their bikes it reduces the risk of theft. The BAC also recommends that, without reducing overall bike capacity, each bike car have at minimum half as many seats in view of the bikes as there are bike spaces to allow passengers to watch their bikes to guard against theft.

Sincerely,
The Caltrain Bicycle Advisory Committee
July 19, 2018

Peninsula Corridor Joint Powers Board
Caltrain Citizens Advisory Committee
1250 San Carlos Ave.
San Carlos, CA 94070

Re: Townsend Corridor Improvement Project

Dear Peninsula Corridor Joint Powers Board and Caltrain Citizens Advisory Committee,

The Caltrain Bicycle Advisory Committee (BAC), a committee of Caltrain riders representing the interests of passengers who access the train by bicycle, strongly urges the SFMTA to implement the Townsend Street protected bike lanes as soon as possible.

Caltrain’s customer data shows that Caltrain’s San Francisco (4th and King) Station is by far the system’s busiest, seeing over a quarter of all train boardings and exits. The data further shows that over 15 percent of Caltrain passengers access the train by bicycle across the whole system. At 4th and King, there are over 1,400 average weekday bike boardings, not including users of bike share or those who leave their bikes at the station. Moreover, Ford GoBike’s data shows that 4th and Townsend’s two docks are the bike sharing system’s busiest.

A large number of Caltrain riders brave dangerous conditions in the existing bike lanes, having to frequently dodge Ubers, Lyfts, parked cars, megabuses and other shuttles and even terrible quality pavement. The two blocks of Townsend Street closest to the train station are considered a high-injury corridor, with 43 bicyclists injured in the last five years. Seeing this project completed by the end of 2018 is not only of great importance to these riders but can help encourage more riders to access the train by bicycle, lessening the volume of TNCs on Townsend.

Fourth & King Station is a crucial regional transit connection for San Francisco and needs to have safe bike infrastructure to facilitate the travel of these thousands of daily riders. Please restore the plan for protected bike lanes and get them installed as soon as possible.

Sincerely,
The Caltrain Bicycle Advisory Committee

Cc: SFMTA Director of Transportation Ed Reiskin
SFMTA Board of Directors
Hi Lori,

The attachments to my July 9 letter to the SFCTA are missing from the BAC correspondence packet. These attachments were included in yesterday's CAC packet which is not available to the general public.

On a related note, the July CAC correspondence packet is in machine-readable (OCR) format while the BAC packet was scanned in TIF (image) format which makes it somewhat illegible.

Would it be possible to resolve the above issues and repost the BAC correspondence packet?

Thank you in advance.

Roland.
- Cost estimates are approximately $4B (300%) above similar recent tunnel projects.

This short video clip and the attached "Rethinking DTX" presentation show the proposed path for the two TBMs between 22nd Street and the STC [https://youtu.be/v-QVQJYDTr4](https://youtu.be/v-QVQJYDTr4)

DTX 3D Flyover

[SDSS](https://youtu.be)

San Francisco Downtown Extension (DTX) via twin bore single track from 22nd St. north to the Transbay Transit Center (TTC)

Sincerely,

Roland Lebrun

CC

TJPA Board of Directors
Caltrain Board of Directors
CHSRA Board of Directors
MTC Commissioners
SFCTA CAC
TJPA CAC
Caltrain CAC
Caltrain BAC
Dear Chair Peskin and members of the SFCTA Board of Directors,

The intent of this letter is to elaborate on my response to the following comments made at the June 27 CAC meeting:

"Mr. Zurinaga said that the 7th Street alignment had been looked at multiple times and been rejected because of the complexity to build around and under city buildings. He said the alignment of the project had been carefully looked at for the last 14 years by industry experts."

The only slide referring to the 7th Street alignment is found on page 40 of the May 2018 DTX Peer Review Panel report (the 7th Street alignment was not reviewed by the Panel).

DTX Project Background:
Other Alignments (2010)

- Seventh St. reviewed in 2010
- Determined that conflicts with Central Subway and buildings along Minna/Natoma required alignment to be up to 130 ft deep.
- New required Throat Structure would require demolition of buildings between the Transit Center and Third St. including SF MOMA.

This slide appears to refer to the "San Francisco Technical Working Group DTX Engineering Charette and Alternative Alignment Analysis" held at the SFCTA offices on October 11-12, 2011 which identified the following issues and opportunities:

- Minimum # of sharp turns
- Shorter distance
- Minimum cut & cover disruption
The Orange alignment above is the “7th Street alignment” with a fatal flaw (a single 44-foot diameter two-track tunnel).

“Alternative 1B mimics Alternative 1A, but the alignment is routed under Natoma Street. Similar to Minna Street, the ROW available on Natoma Street is approximately 30 feet. Given that about 60 feet ROW will be needed to accommodate the 44 feet tunnel bore, the buildings abutting on either side of Natoma Street will be impacted.”

The solution outlined in the attached “Rethinking DTX” (2012) presentation is to locate the northbound and southbound tracks in separate 27-foot tunnel bores (one each under Minna and Natoma Street) similar to the high-speed tunnels linking London to the Channel Tunnel.
As seen above, there is no need to demolish any buildings between Second & Third, including SFMOMA (the orange tunnels under Minna & Natoma are to scale).
The smaller tunnel diameters provide an opportunity to cross the Central Subway.

Additional issues resolved by the 7th Street alignment

- Elimination of six-track station throat under 2nd Street

"The structural column configuration in the built Salesforce Transit Center limits the flexibility for changing the track geometry within the train box and at the throat leading into the terminal, but options that entail adjustments to track design criteria at the throat to minimize right-of-way impacts should be explored with CHSRA, TJPA, Caltrain and SENER."

This problem is resolved through the replacement of the 90 degree curved throat under Second Street with two mini-throats each serving 3 sets of platform faces. These mini-throats are modeled after the approach to St Pancras domestic platforms 11, 12 and 13 (please refer to “Elimination of the requirement for a third track” on page 7 below).
Station mini-throats under Second Street

Entering the STC train box (no conflicts). Minna is on the left and Natoma is on the right.
- Platform lengths

One of the conditions of the $400M 2008 ARRA grant was 400-meter (1,312 feet) straight platforms. The 7th Street alignment makes it possible to have six (not five) full-length platforms without impacts on the 201 Mission foundations by sliding the southern tip of the platforms to the location previously occupied by the six-track angled station throat located between Second & First.

- Vacation of 4th & King Railyard

Doubling the length of the six STC platforms makes it possible to store two 650-foot trains per platform resulting in the same capacity as the existing twelve 650-foot platforms at the 4th & King railyard.
Elimination of the requirement for a third track

"Only one of the studies, completed by Parsons and Carl Wood for TJPA, performed a detailed service perturbation analysis. It shows that if there is a delay or track blockage in the tracks leading to the "throat" of the terminal, then three tracks are required to support reliable train service and to facilitate recovery from operational delays."

This problem is resolved by a combination of
- Two 3-track mini throats
- Two mined crossovers (at Howard & Seven and under Yerba Buena Gardens)
- Four tracks between 16th and Townsend (new 7th & King station)

Please refer to the attached “Northbound refined DTX alignment” letter dated November 17th 2013 which explained how London was able to support 12 trains/hour with 3 (not six) platforms faces and two tracks (not three) during the 2012 Olympics.
- **Elimination of multiple vent/evacuation structures**

The elimination of the third track enables the implementation of a twin-bore ventilation/evacuation system similar to BART's Transbay tube (in the event of a fire in the Minna tunnel, passengers would evacuate through the Natoma tunnel).
- $4B (2/3) cost reduction

This slide lists recent tunnel project with an average cost of $350M/mile.

<table>
<thead>
<tr>
<th>Tunnel</th>
<th>Year completed</th>
<th>Diameter (ft)</th>
<th>Bore(s)</th>
<th>Alignment Length (miles)</th>
<th>Total Length of tunnels (miles)</th>
<th>Reported cost ($ million)</th>
<th>Cost per mile of tunnel (million $/mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of Miami Tunnel</td>
<td>proposed</td>
<td>36</td>
<td>twin</td>
<td>0.7</td>
<td>1.5</td>
<td>1,000</td>
<td>$677</td>
</tr>
<tr>
<td>Leitrima</td>
<td>2005</td>
<td>47</td>
<td>single</td>
<td>1.4</td>
<td>1.4</td>
<td>600</td>
<td>$439</td>
</tr>
<tr>
<td>Airport Link Brisbane</td>
<td>2012</td>
<td>41</td>
<td>twin</td>
<td>3.3</td>
<td>6.5</td>
<td>2,206</td>
<td>$358</td>
</tr>
<tr>
<td>Groene Hart Tunnel</td>
<td>2006</td>
<td>48</td>
<td>single</td>
<td>1.4</td>
<td>1.4</td>
<td>450</td>
<td>$322</td>
</tr>
<tr>
<td>4th Tube of the Elbe</td>
<td>2002</td>
<td>47</td>
<td>single</td>
<td>2.6</td>
<td>2.5</td>
<td>775</td>
<td>$303</td>
</tr>
<tr>
<td>I-710 (A3)</td>
<td>proposed</td>
<td>50</td>
<td>triple</td>
<td>4.1</td>
<td>12.4</td>
<td>3,585</td>
<td>$290</td>
</tr>
<tr>
<td>I-710 (C3)</td>
<td>proposed</td>
<td>42</td>
<td>triple</td>
<td>4.0</td>
<td>12.0</td>
<td>3,195</td>
<td>$266</td>
</tr>
<tr>
<td>Ash6W</td>
<td>2010</td>
<td>37</td>
<td>single</td>
<td>10.9</td>
<td>10.9</td>
<td>2,641</td>
<td>$242</td>
</tr>
<tr>
<td>Weser Tunnel</td>
<td>2001</td>
<td>38</td>
<td>twin</td>
<td>1.0</td>
<td>2.0</td>
<td>358</td>
<td>$180</td>
</tr>
<tr>
<td>Beacon Hill Tunnel</td>
<td>2009</td>
<td>21</td>
<td>twin</td>
<td>0.8</td>
<td>1.6</td>
<td>260</td>
<td>$172</td>
</tr>
<tr>
<td>M-39</td>
<td>2008</td>
<td>50</td>
<td>twin</td>
<td>2.2</td>
<td>4.3</td>
<td>570</td>
<td>$131</td>
</tr>
<tr>
<td>Dublin Port Tunnel</td>
<td>2006</td>
<td>38</td>
<td>twin</td>
<td>2.8</td>
<td>5.6</td>
<td>530</td>
<td>$94</td>
</tr>
<tr>
<td>Panama City Bridge</td>
<td>2003</td>
<td>32</td>
<td>twin</td>
<td>1.0</td>
<td>2.0</td>
<td>173</td>
<td>$86</td>
</tr>
<tr>
<td>SMART</td>
<td>2007</td>
<td>43</td>
<td>single</td>
<td>6.0</td>
<td>6.0</td>
<td>515</td>
<td>$85</td>
</tr>
<tr>
<td>Dalian Port Tunnel</td>
<td>2008</td>
<td>37</td>
<td>twin</td>
<td>1.7</td>
<td>3.4</td>
<td>288</td>
<td>$85</td>
</tr>
<tr>
<td>Shanghai River Crossing</td>
<td>2002</td>
<td>37</td>
<td>twin</td>
<td>4.1</td>
<td>8.2</td>
<td>490</td>
<td>$60</td>
</tr>
</tbody>
</table>

1. This scheme contains multiple tunnel diameters. This number presented is the average tunnel diameter.

This is in sharp contrast with the $2B/mile costs presented to the CAC on June 27.

**PRELIMINARY ESTIMATES OF PROBABLE COSTS AND SCHEDULES**

<table>
<thead>
<tr>
<th>Alignment</th>
<th>Cost 1</th>
<th>Expected Completion Date 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future with Surface Rail: DTX + Trenched Streets</td>
<td>$5.1 Billion</td>
<td>2026</td>
</tr>
<tr>
<td>Pennsylvania Avenue: DTX + Extended Tunnel</td>
<td>$5.0 Billion</td>
<td>2027</td>
</tr>
<tr>
<td>Mission Bay: Modified DTX + 3rd Street Tunnel</td>
<td>$9.3 Billion</td>
<td>2031</td>
</tr>
</tbody>
</table>

1. Includes construction costs, value capture, and impact costs
2. Completion date estimate if all money were available on January 1, 2017

Respectfully presented for your consideration.

Sincerely,

Roland Lebrun
The purpose of this short paper is to outline a refined northbound DTX tunnel alignment capable of delivering substantially higher TTC capacity if the crossover under Main Street is not available.

The refined alignment enables the implementation of Crossrail crossover designs and construction techniques to deliver a track layout with the same capacity as the connection between the HSI tunnels and St Pancras platforms 11, 12 & 13.

Background:

The current northbound DTX tunnel proposal avoids existing building foundations by veering east off 7th Street under Howard before lining up with Natoma east of 3rd Street.
The refined northbound tunnel alignment lines up with Natoma east of 7th Street and runs deep enough to avoid any current or future building foundations between 7th and 3rd Street, including Moscone Center which is understood to have foundations supported by micropiles extending 100 feet below the surface.
Moving the northbound DTX tunnel alignment to Natoma makes it feasible to connect the two tunnels with additional crossovers as follows:

1) Crossover from Northbound to Southbound tunnel between 3rd and 4th Street. This crossover's purpose is to route northbound trains to TTC platforms 1, 2 & 3 (northern-most platforms closest to Mission Street) which should be reserved for high-volume traffic (12 trains/hour).
2) Crossover from Northbound to Southbound tunnel between 6th & 7th Street. This crossover is for southbound traffic originating from TTC platforms 4, 5 & 6 which should be reserved for low-volume traffic (maximum 4 trains/hour) because southbound trains originating from these platforms can potentially interfere with northbound traffic between 7th street and the TTC.

Last but not least, the refined alignment is expected to deliver costs savings through shorter cross-passages between the northbound and southbound tunnels and these savings are expected to cover the construction costs of the two crossovers.
Reference material:

St Pancras track layout
2012 Summer Olympics timetable (12 trains/hour)

<table>
<thead>
<tr>
<th>Destination</th>
<th>02:30</th>
<th>02:45</th>
<th>03:00</th>
<th>03:15</th>
<th>03:30</th>
<th>03:45</th>
<th>04:00</th>
<th>04:15</th>
<th>04:30</th>
<th>04:45</th>
<th>05:00</th>
<th>05:15</th>
<th>05:30</th>
<th>05:45</th>
<th>06:00</th>
<th>06:15</th>
<th>06:30</th>
</tr>
</thead>
<tbody>
<tr>
<td>London Bridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olympic Stadium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wapsley</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St Pancras</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St Pancras</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>London Bridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olympic Stadium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wapsley</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St Pancras</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For guaranteed Olympic service

St Pancras domestic platforms 11, 12 & 13
Red Lion Square (London WC1) Crossrail crossover

Whitechapel Crossrail station (London E14) crossover
Rethinking DTX
Guiding principles

- Address DTX cost issues (currently $2.5B+)
- Full-size straight HSR platforms
- Improve DTX alignment (faster, straighter curves)
- Minimize surface impacts in SOMA
- No construction impacts on Caltrain operations
- Mission Bay station (redevelop 4th&King Caltrain yard)
- Provide Muni (Central Subway) connection
- Grade-separate 16th street
- Reconnect King, Berry and Channel Street
- Enable tearing down 280 @ Mariposa
- Eliminate Transbay approach bottlenecks
- Provide nearby HSR storage/maintenance facility
Rethinking DTX

- Extended DTX tunnels (DTX South & DTX North)
- Mission Bay station @ 7th & King
- Launch box under 23rd (or 22nd for new station)
- 1.3 mile twin-bore tunnel to 7th & King station
- 1.3 mile twin-bore tunnel to Transbay train box
- No surface impacts north of Townsend
- DTX first, Mission Bay as funding becomes available
- No dependency on 280 @ Mariposa
- Storage facility within 4 miles of Transbay
- TTC track layout redesign (enable Bay tunnel)
- Total cost: $1B (includes DTX & 7th & King station)
DTX North

DTX South
TBM staging and soil removal area (Bayshore Baylands fill?)
Western Tunnel #2 reopening
Potential HSR Storage/Maintenance
160 MPH Tunnel Design
(large enough for Caltrain bi-level EMUs)

Evacuation Platforms

Emergency Exits

Twin bore - Single track tunnel

7.15m internal diameter, 8.1m external diameter
DTX South Portal @ 23rd
Mission Bay station (7th & King)

N Judah Extension

T Third Connection
Mission Bay station

Southbound DTX
(future Grand Boulevard)

Under 7th Street

Northbound DTX
(under existing tracks)
DTX South score card

- No construction impacts on Caltrain operations
- Mission Bay station (redevelop 4\textsuperscript{th} & King Yard)
- Caltrain/Muni (Central Subway) connection @ 7th
- Reconnect King St, Berry St and Channel St
- Grade-separation @ 16th street (tunnel)
- Enable tearing down 280 @ Mariposa
- Eliminate Transbay approach bottlenecks (4 tracks)
Crossing the Central Subway
Crossing the Central Subway

- Central Subway runs 80 feet down @ Moscone
- Add 20-foot clearance between DTX & CS tunnels
- Add 26-foot DTX TBM outer diameter
- Total: DTX needs to go down at least 126 feet deep
- Distance between 4th & TTC: 2,000 feet
- Maximum climb @ 3.5%: 70 feet
- Minimum depth at entry to TTC: 56 feet
Track layout at TTC entry (2nd street)
Estimated costs

- DTX South: $250M
- Mission Bay Station: $500M
- DTX North: $300M
- Embarcadero extension: $250M

- Total: $1.3B
DTX Final score card

- Addresses cost issues (+/- $1.3B vs. $2.5B+)
- Full-size (1,330 feet) straight HSR platforms
- Improved DTX Alignment (faster, straighter curves)
- **No surface impacts north of Townsend**
- No construction impacts on Caltrain operations
- Enabled Future Mission Bay station (7th & King)
- Muni (Central Subway) connection @ 7th & King
- Reconnected King St, Channel St & Berry St
- Grade-separated 16th street (DTX south tunnel)
- Eliminated Transbay approach bottlenecks
- Prepared for tearing down 280 @ Mariposa
- Provided nearby HSR storage/maintenance facility
- **Prepared Transbay for future Bay tunnel**
Q&A

Roland Lebrun
CCSS@MSN.COM