

## Greetings from the Grand Opening of the “Grand Central Station of the West” in San Francisco

SOURCE: US HIGH SPEED RAIL ASSOCIATION AUG 11, 2018



*The Grand Hall of the Salesforce Transit Center was filled with attendees during the Grand Opening Celebration hosted by the Transbay Joint Powers Authority.*

***Photo Credit:*** US High Speed Rail Association

Ever since Maria Ayerdi-Kaplan spoke on this \$2.26 Billion Salesforce Transit Center (“Grand Central Station of the West”) at the June 2010 US High-Speed Rail Association (USHSR) Conference in Los Angeles, transportation professionals worldwide have been watching the progress in anticipation of the Transbay Joint Powers Authority’s Grand Opening Celebration which took place this past weekend, Saturday August 11, 2018. “This is one of the most significant advances in modern transportation in America in 100 years” said USHSR President & CEO Andy Kunz. “Thousands jammed the Transbay Terminal Grand Opening this weekend in support of the

new station development and rail that the facility had to be closed a couple times because the crowds were so huge” said USHSR Vice President Joe Shelhorse.

Many arrived early for site tours and to familiarize themselves with the breath-taking transformative design and views and to pick up welcome bags commemorating this historic event.

The new million-square-foot station is designed by Pelli Clarke Pelli Architects. The project features a total of six levels including two below ground. The fourth level contains a food court and a massive four-block-long shopping gallery. On the fifth level, buses park and load at each of the 37 bus bays. Weekend attendees were impressed with the LED display in the Grand Hall on the third (street) level of the Salesforce Transit Center. Agencies include AC Transit, BART, Caltrain, Golden Gate Transit, Greyhound, Muni, SamTrans, WestCAT Lynx, Amtrak, Paratransit, and CA High Speed Rail in the near future. Caltrain is currently undergoing a major upgrade from diesel to electrification that will increase capacity with trains running faster. CAHSR is planning service from Transbay to Los Angeles. Salesforce unveiled Salesforce Tower to dramatically expand its world-wide headquarter in San Francisco. The breath-taking views of the Small Downtown Bay Bridge from the 5.4-acre Rooftop Park on the sixth level provide a fascinating backdrop for photo opportunities.

Salesforce Tower represents an incredible milestone in our company history-it will be the heart of our global headquarters in San Francisco”, said Marc Benioff, chairman and CEO, salesforce.com. “We founded salesforce.com in San Francisco 15 years ago, and this expansion of our urban campus represents our commitment to growing in the city”.

The California High-Speed Rail Authority excited the crowds especially the college students and young children with the endless travel possibilities once Caltrain and California High-Speed Rail come into the station. With successful implementation of the second Transbay Tube called for in the State Rail Plan, Sacramento residents will be able to enjoy a one-seat ride into the station via Amtrak’s Capitol Corridor from 85 miles away.

The effective implementation of innovative Transit Oriented Development (TOD) practices transformed the surrounding South of Market neighborhood from among the City’s “most blighted” to among now the nation’s most sought after real estate markets.

Transportation professionals are invited to hear from the world’s top High-Speed Rail and TOD experts at the Leadership Summit in San Jose September 11-13. Attendees will hear from experts from around the world with local tours offered of the recent construction. Brian Kelly and Dan Richard of the California High Speed Rail Authority will speak on “California High-Speed Rail - America’s Mega-Project”. Confirmed TOD Speakers include Peter Calthorpe (Calthorpe Associates) on the “Statewide Sustainability Framework”, Egon Terplan (SPUR) on “Transforming California’s Travel Options”, and Dr. Anastasia Loukaitou-Siders (UCLA) and Juan Matias Archilla Pintidura (RENFE, Spain) on “Rail Stations, TOD & Community Renaissance”. <http://www.ushsr.com/events/sanjose2018.html>

David Schwegel, PE  
Contributing Writer  
Institute of Transportation Engineers

**Via Email and Federal Express**

August 15, 2018

Hon. Dan Richard, Chair  
California High Speed Rail Authority  
770 L Street  
Suite 800  
Sacramento, CA 95814**Re: Fresno Rescue Mission**  
**310 G Street, Fresno, California**

Dear Chairman Richard:

I am writing to seek your help in resolving a situation that has been unilaterally created by the High Speed Rail Authority ("HSRA"), but which potentially has very serious consequences for the Fresno Rescue Mission ("FRM"). The FRM is being condemned by the HSR and has not objected to HSRA's right to take the property (although there may be disagreements about the amount of just compensation down the road.) FRM and HSRA staff have worked together in a cooperative manner to minimize the disruption to FRM's operations. That said, FRM has now encountered a situation not of its making, which is both troubling and detrimental to its interests. By way of background, the following chronology may be helpful:

April 1, 2017: HSRA and FRM enter into a Temporary Relocation Agreement (superseding an earlier, July 24, 2016 version) to allow for the move from the exiting (to be condemned facilities) into temporary facilities. At the time, and as an incentive to enter into the Temporary Relocation Agreement, it was agreed that a Permanent Relocation Agreement (to allow for the move from temporary to permanent facilities) would be prepared. Unfortunately, and contrary to the provisions of the Temporary Relocation Agreement, HSRA has refused to proceed with drafting such an agreement, instead claiming that it wants a "global settlement."

March 27, 2018: FRM enters into a Possession and Use Agreement ("PUA") to give HSRA possession of the property in order to meet its construction schedule, to be effective "...twenty one (21) days from the Notice of Temporary Relocation Completion...." Notwithstanding that provision, because HSRA was so anxious to get possession of the property, in order to be cooperative, FRM relinquished the property on April 5<sup>th</sup> and 6<sup>th</sup> and moved in to the temporary facilities waiving the 21 day Notice provision (which was not actually issued until August 9, 2018.)

Within a week after moving, HSRA and its contractor had boarded up the building and put their locks on the gates and facility i.e. at the very least taking constructive possession and depriving FRM of the same.

May 8, 2018: FRM was told for the first time that there was "a problem" with the PUA such that HSRA's contractor would not accept possession of the FRM property because there was no Permanent Relocation Agreement in place as required by the PUA. HSRA staff stressed that resolution of this issue was "critical."

June 13, 2018: Caltrans attorney Ephraim Egan sends draft "Agreement and Notice Granting Possession and Use" to try and resolve the issue; the document is unacceptable to FRM.

June 29, 2018: In Response to Mr. Egan's request, FRM sends a list of its issues and concerns;

July 3, 2018: FRM and HSRA meet and Mr. Egan agrees to prepare an "Occupation Agreement." FRM sends information to Mr. Egan on July 9th and again on July 16th.

July 10, 2018: A follow-up meeting scheduled for the following day, July 11th, is cancelled by Mr. Egan "because the drafting is more complicated than expected." This short notice occurred while our primary consultant was en route from Minneapolis.

August 3, 2018: FRM cancels meeting scheduled for August 9th because Mr. Egan cannot provide a new draft until August 7th, but offers to re-schedule after we receive a draft from HSRA.

The bottom line is that HSRA, which had pushed relentlessly for a PUA to allow possession of the property, which FRM provided in April 2016 and again in March 2017, now says it DOESN'T have possession because its contractor won't accept possession due to HSRA's failure to even consider a Permanent Relocation Agreement as required by the PUA. In May HSRA said that resolving this situation was "critical"; yet in over three months, it has not prepared a satisfactory document and cancelled a "critical" meeting. In the meantime, FRM is, arguably, stuck with the potential liability for property which we no longer own and for which HSRA is evading responsibility.

This situation borders on the ludicrous! It is a potential breach of contract, and raises serious questions about our ability to deal credibly with HSRA going forward. If indeed this situation -- of HSRA's own making -- is so "critical", we would really appreciate your efforts to get it resolved.

Very truly yours,

DENTONS US LLP



Ivor E. Samson

IES/dvd

cc: Ephraim Egan  
Diana Gomez  
Donald Odell  
Steven Castellano  
Karen Eddleman

**Drozd, Doug@HSR**

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**From:** Roland Lebrun <ccss@msn.com>  
**Sent:** Wednesday, August 01, 2018 5:12 AM  
**To:** Caltrain Board  
**Cc:** MTC Commission; Steve Stamos, Clerk of the Board; VTA Board Secretary; HSR boardmembers@HSR; SFMTA Municipal Transportation Agency  
**Subject:** item #7 (d) CHANGE ORDER FOR INSTALLATION OF INSULATED JOINTS  
**Attachments:** Datasheet 5A-4 (issue 2.0) Clearguard Phase Shift Overlay 4000 Track Circuit.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Chair Bruins and Members of the Caltrain Board of Directors,

The only known device capable of supporting Constant Warning Time (CWT) in electrified territory does not require insulated rail joints:

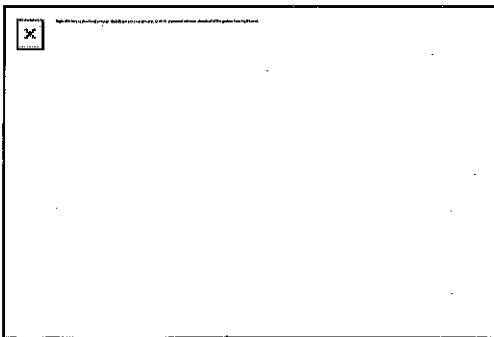
*"The PSO 4000 couples to the track with a bandpass, low impedance connection—**you don't have to have insulated rail joints on the track.**"*

[http://download.siemens.com.au/index.php?action=filemanager&doc\\_form\\_name=download&folder\\_id=5633&doc\\_id=17039](http://download.siemens.com.au/index.php?action=filemanager&doc_form_name=download&folder_id=5633&doc_id=17039)

Please consider deferring your vote on item #7 (d) **CHANGE ORDER FOR INSTALLATION OF INSULATED JOINTS** until after confirming the requirement for insulated rail joints with VTA signal engineers (the VTA purchased a PSO 4000 for \$38,688.32 last year).

On a related note, Balfour Beatty continue to experience difficulties at RTD in Denver and are now in arbitration after requesting a \$40M 599-day contract extension.

<http://www.cpr.org/news/story/rtd-and-contractor-battle-over-blame-for-n-line-commuter-train-delays>



## RTD And Contractor Battle Over Blame For N Line Commuter ...

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

The Regional Transportation District and a private contractor are in the midst of a dispute over which party is responsible for construction delays on the \$343 million N Line commuter train line from Denver to Thornton. The disagreement is laid out in Denver District Court documents filed earlier ...

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Recommendation:



[www.siemens.com.au/rail-components](http://www.siemens.com.au/rail-components)

## Clearguard Phase Shift Overlay 4000 Track Circuit

User configurable, overlay track vacancy detection



### New, Improved Design

Modern, reliable track circuit with new electrical design built on proven principles. Backwards compatible (functionally and electrically) with PSO–III and PSO–II. You can even mix versions on the one track.

### Low Component Count, High Flexibility

Separate Transmitter, Receiver, Transceiver and Crossing (two receivers plus an integrated island track circuit and stick logic) supplemented with a transceiver module.

No need to stock specific frequency variants. Modules can be used anywhere as all frequencies, modulation codes and levels are user configurable from the front panel codes.

Fully compatible with PSO–II and PSO–III transmitters, receivers and couplers.

Ideal to add track circuits in conjunction with other track circuits, level crossings and in difficult situations.

#### Benefits

- Each unit configurable to all frequencies
- Available as Transmitter, Receiver, Transceiver and Crossing
- Functionally & electrically compatible with PSO–II and PSO–III
- Transfer vital data with up to five different codes
- Suitable for electrified and non–electrified territory
- Generally operates without Insulated Rail Joints
- Overlays on most track circuits
- Uses the same couplers as PSO–II and PSO–III

## Description

PSO 4000 is a modular, audio frequency overlay, train vacancy detection system.

Each track section uses a transmitter that feeds a coded signal to the track and a receiver that validates both frequency and code to determine that the track section is clear. One intermediate receiver location can optionally be used.

The PSO 4000 couples to the track with a bandpass, low impedance connection—you don't have to have insulated rail joints on the track and you can mix PSO, GCP, ac and coded track circuits all on the one section.

PSO 4000 modules include:

- **Transmitter** (stand alone)
- **Receiver** (stand alone)
- **Transceiver** (combination of a transmitter and receiver for applications such as cut sections)
- **Crossing** (two receivers, an island circuit and integrated stick logic and timers for ready made level crossing protection)

- **GCP 4000:** Plug in module that programs to Transmitter, Receiver and Crossing functions and used for train detection or DAXing.
- **Couplers:**
  - receiver—tuned
  - line (used to couple transmitter or receiver to a cable)
  - track joint bypass—untuned for dc track or tuned for ac track

### Features

Configurable **anti bob timers** on all tracks.

PSO 4000 is functionally and electrically **backwardly compatible** with PSO-II and PSO-III track circuits—you can even mix components on one track.

Choose from **16 standard** (compatible with PSO-III) and **31 alternative** frequencies with over half suitable for ac and dc electrified territory.

Choose from standard A & C codes (compatible with PSO-III) or three new codes: D, E & F.

Choose from **14 standard** or **10 alternative island frequencies** (crossing module), all suitable for electrified territory.

Transmitters can **dynamically swap between A and C codes** in response to an input state change: corresponding receivers can provide different outputs for three different codes.

Simple level crossing control with two transmitters and a crossing package with two receivers, an island circuit and stick logic (including configurable stick reset timers).

**Configure and calibrate** from front panel push buttons—no tools required.

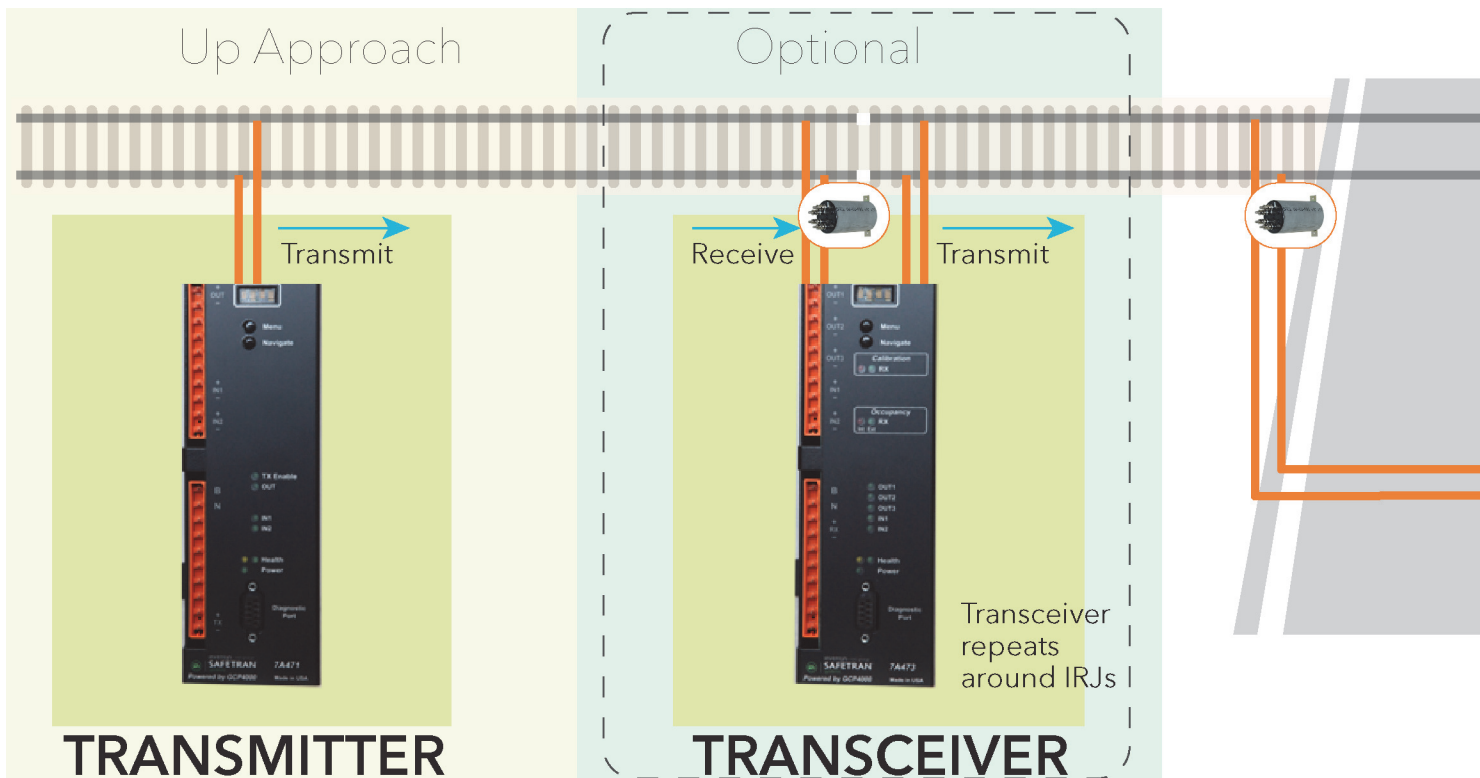
LEDs and 4 character displays for easy status identification and diagnostics.

**Diagnostic history** downloadable with DT or dumb terminal.

Configurable **Out of Service** setting.

Inputs and outputs on each module for control, output and health status.

## Example Layout



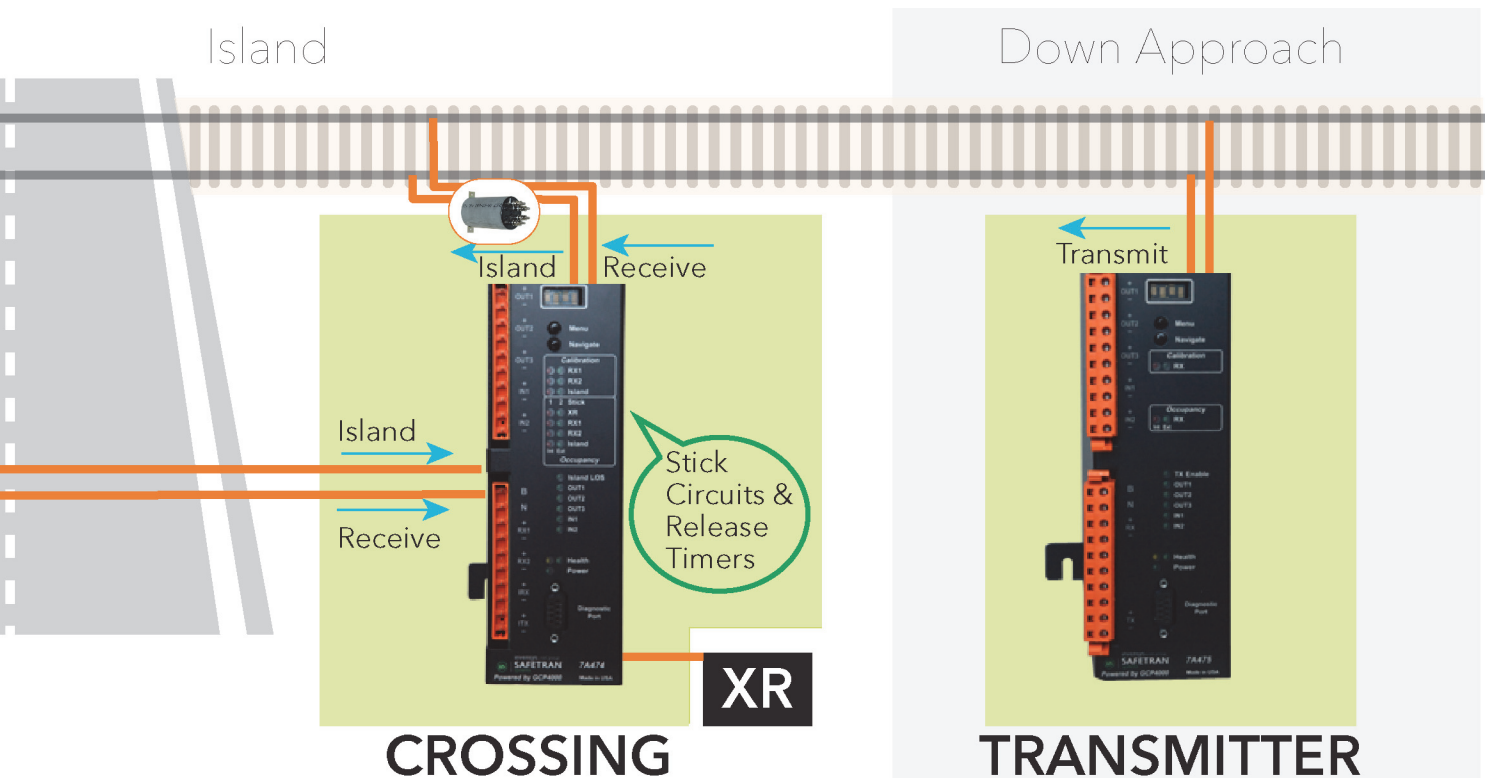
# Ordering

ITEM DESCRIPTION		PART NUMBER
PSO 4000 UNITS	Transmitter	7000-7A471-0001
	Receiver	7000-7A473-0001
	Crossing Assembly	7000-7A474-0001
	Transceiver Assembly	7000-7A475-0001
PSO Module for GCP 4000		8000-A80428-03
PSO 4000 AUXILIARY EQUIPMENT	AC Shunt, Wide Band	8000-8A076-0001
	Battery Choke	6000-62648-0001
	Battery Choke	8000-8A065-0001
	Cab Signal Filter	7000-7A417-00XX *
	Line to Receiver Coupler	7000-7A388-0001
	PSO Battery Choke	7000-7A360-0001
	PSO Battery Line Filter	7000-7A418-0001
	PSO Insulated Joint Bypass Coupler (Tuned)	7000-7A422- ffff †
	PSO Line Coupler, Low Z	7000-7A403-0001
	PSO Line Terminator	7000-7A345-0001
	Receiver Line to Rail Coupler (Pole Mounted)	7001-7A377- ffff
	Receiver Line to Rail Coupler (Shelf Mounted)	7002-7A377- ffff †
	Transmitter to Line Rail Coupler	7000-7A399- ffff †
	Tuned Receiver Coupler	7000-7A355- ffff †
	Tuned Receiver Coupler	7000-7A366- ffff †
	QS2 Relay (12 V)	See Datasheet 3B-5 Relay Style QS2
PSO 4000 SUPPORTING EQUIPMENT	Safetran Diagnostic Terminal (DT)	Z224-9V234-A01D ‡

\* Refer to your Sales Manager for for the final two digits of the required code specifying the manufacturer and the frequency required for the location.

† Order the component by the frequency required as per the railway's wiring or installation diagram (eg 0154 for 154 Hz frequency, 2630 for 2.63 kHz, 4000 for 4.0 kHz, etc)

‡ The Safetran Diagnostic Terminal (DT) CD shipped will be the latest version available.





# Specifications

PSO Frequencies								
<b>156 Hz</b>	<b>211 Hz</b>	<b>285 Hz</b>	<b>348 Hz</b>	<b>430 Hz</b>	500 Hz	<b>525 Hz</b>	<b>645 Hz</b>	700 Hz
<b>790 Hz</b>	900 Hz	<b>970 Hz</b>	1000 Hz	1100 Hz	1125 Hz	<b>1180 Hz</b>	1250 Hz	1300 Hz
1375 Hz	<b>1450 Hz</b>	1500 Hz	1600 Hz	1640 Hz	1750 Hz	<b>1770 Hz</b>	1875 Hz	<b>2140 Hz</b>
2175 Hz	2300 Hz	<b>2630 Hz</b>	2675 Hz	2800 Hz	3100 Hz	<b>3240 Hz</b>	3500 Hz	<b>4000 Hz</b>
4000 Hz	4900 Hz	5400 Hz	5900 Hz	6400 Hz	7100 Hz	7700 Hz	8300 Hz	8900 Hz
9500 Hz	10200 Hz							

Island Circuit Frequencies								
<b>2.14 kHz</b>	2.3 kHz	<b>2.63 kHz</b>	2.8 kHz	3.1 kHz	<b>3.24 kHz</b>	3.5 kHz	<b>4.00 kHz</b>	<b>4.90 kHz</b>
5.4 kHz	<b>5.90 kHz</b>	6.4 kHz	<b>7.10 kHz</b>	7.7 kHz	<b>8.30 kHz</b>	8.9 kHz	9.5 kHz	<b>10.0 kHz</b>
10.2 kHz	<b>11.5 kHz</b>	<b>13.2 kHz</b>	<b>15.2 kHz</b>	<b>17.5 kHz</b>	<b>20.2 kHz</b>			

**Legend:**

- Bold text** Standard frequencies
- Italic text* Alternative frequencies. Used with existing track equipment from other suppliers.
- Frequencies suitable for use in electrified territories

Refer manual for compatibility.

<b>Power Supply</b>	Voltage	9.0 Vdc min 16.5 Vdc max (<1 Vpp ripple)	
	Current: (12 V supply, typical)	<b>Steady</b>	<b>Shunted</b>
	Transmitter:	820 mA	850 mA
	Transceiver:	780 mA	590 mA
	Receiver:	780 mA	780 mA
	Crossing:	610 mA	590 mA
<b>Inputs</b>	12 Vdc Nominal		
	Low:	< 4.0 Vdc	
	High:	> 7.5 Vdc	
	Maximum:	20 Vdc	
	Impedance:	approximately 1 kΩ	
<b>Outputs</b>	12 Vdc nominal		
	400 to 1000 Ω external load		
	On voltage — load dependent, see manual		
	Off voltage < 2.5 Vdc		
	Suits SiemensQS2 12 V relays (other manufacturers may not meet off voltage level)		
<b>Frequency stability</b>	±0.01%		
<b>Modulation</b>	Frequency Modulation with 8-bit serial address		
<b>Train Shunt</b>	Select between 0.06 Ω and 0.5 Ω		
<b>Track Ballast Resistance</b>	> 0.6 Ω.km		
<b>Track length</b>	640 to 2860 m maximum at 1.2 Ω.km ballast and 0.2 Ω depending on frequency, ballast and shunt		
<b>Transmitter Load</b>	25 Ω		
<b>Receiver Load</b>	250 Ω		
<b>Pickup Delay</b>	PSO:	0–30 s, user configured	
	Island:	2 - 8 s, user configured	
<b>Drop Time</b>	PSO:	< 1 s	
	Island:	<0.5 s	
<b>Stick Timer</b>	5 to 60 m, user configured		
<b>Dimensions</b>	Height:	242.3 mm	
	Width:	92.7 mm	
	Depth:	262.9 mm	
	Weight:	2.7 kg	

**Decouple all resignaling from the DB electrification contract** and reach out to Siemens (and Wabtec) for a Constant Warning Time solution for electrified territory.

Sincerely,

Roland Lebrun

cc

Metropolitan Transportation Commission  
VTA Board of Directors  
SFCTA Board of Directors  
High Speed Rail Authority Board of Directors

**Drozd, Doug@HSR**

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**From:** Conrad Ko <conradko@ymail.com>  
**Sent:** Monday, July 30, 2018 2:31 AM  
**To:** HSR boardmembers@HSR; HSR Northern California@HSR; Cook, Andrew@DOT; Codey, Mark S@DOT; King, Wendy N@DOT; Harrison, Tracy P@DOT; Plowman, Bruce W@DOT  
**Subject:** Vision Plan: NorCal New Capitol Corridor

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

This construction proposal would have most of its track system shared with Amtrak.

To see the recommended map of the proposal, see the lines labeled "2nd Transbay Tube" and "new Berkeley Hills Rail Tunnel and Diablo Valley connector for commuter rail and HSR" and their associated station points in <https://www.google.com/maps/d/edit?mid=1MSzCvIzsXPz5d1NnMReZhpeGe3Y0bbwU&usp=sharing>.

At San Francisco's Transbay Transit Center, there would already be a bullet train station under the original proposal. However, dead-ending the HSR there would have many missed opportunities.

It is proposed that a Second Transbay Tube be built, connecting San Francisco Transbay to Oakland Jack London Square. The underwater section would be dual gauge to allow BART trains to use it during rush hour. There would also be new connecting tunnels to the ends of the existing Transbay Tube for BART trains to transfer between tunnels. The eastern portal of the new underwater crossing would be in the railyard just south of South Prescott.

From there to Jack London Square Station, only track upgrading and electrification would be required.

At Jack London Square, trains would dive back into a tunnel to Orinda. It would run under 5th Avenue, Park Boulevard, and Shepherd Canyon Road to minimize passing through private land. From Eastport, it would curve smoothly back into Orinda, where it would emerge from the tunnel. The section between Orinda and Pleasant/Contra Costa Centre Station would use BART's right of way and be the same elevation, though on separate tracks. The room for new standard gauge tracks in the middle of CA-24 freeway can be made by widening the median, which is just as simple as narrowing the fast lane freeway inner shoulders on both sides.

Walnut Creek would be a main station where passengers could transfer between BART, Amtrak commuter rail, high-speed rail, as well as buses.

The new tracks would run on a viaduct parallel to the existing BART viaduct until Treat Boulevard, where it diverges. There would be a new station at Contra Costa Centre for commuter rail only, with a footbridge connecting it to Pleasant Hill BART station. Pleasant Hill/Contra Costa would be another significant intermodal hub, though not as major as Walnut Creek as it would not serve HSR trains.

From Contra Costa Centre to Pacheco, it would run on a viaduct centered over the median of Contra Costa Boulevard.

From Pacheco northwards, the viaduct would curve smoothly into the interchange of I-680 & CA-4. Then, it would continue centered over the median of the 680 until Mococo, where it would descend into the existing Mococo Wye.

This project would be expensive as it requires an extensive tunnel through the Berkeley Hills. However, it is justified as the route would have a very high ridership.

Currently, Amtrak's Capitol Corridor is unpopular just because it is slow and has a low frequency of trains. The relatively low speed is partly due to the sharply curved tracks along the Carquinez Strait. With the proposal, Amtrak would open the New Capitol Corridor, which would have much shorter headways, serving as a true commuter railroad like the Northeast Corridor. This would become NorCal's primary Amtrak line, making the old Capitol Corridor secondary. Additionally, the new HSR line directly linking Sacramento to San Francisco would integrate the Bay Area and Sacramento into one economy. The short travel time on the bullet train between Sacramento Valley and San Francisco Transbay would make commuting between San Francisco and Sacramento realistic. Additionally, Bay Area tech companies looking for cheaper leases could expand into Sacramento without having their employees move homes. Similarly, people could live in Sacramento and work in San Francisco, making Sacramento's home values rise. The wealthier future commuting Sacramento residents would also spend more there, helping Sacramento's local economy.

All reasons in the paragraph above explain why the new line would have a high ridership. The high ridership means that a healthy revenue would be made. That would be more than enough to pay back the construction costs in a relatively short time. Perhaps net profit could be made from the New Capitol Corridor, like the Northeast Corridor.

**Drozd, Doug@HSR**

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**From:** cehastings23@aol.com  
**Sent:** Monday, July 16, 2018 12:33 PM  
**To:** HSR boardmembers@HSR

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

When as a taxpayer are we going to give up on a train to no where that is so far over budget, and every one who voted for it will be dead. You talk of all of the jobs that will be created but as a retired UP engineer you say there will be more jobs than the UP who are in over 20 states. Get a grip.

Charles Hastings

**Drozd, Doug@HSR**

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**From:** Morris Brown <mbrown5@pacbell.net>  
**Sent:** Monday, July 30, 2018 5:38 PM  
**To:** HSR boardmembers@HSR  
**Subject:** Trip times from San Francisco to LA

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

HSR Board members: 7/30/2018

In an important article published in the LA Times on July 29th,

<http://www.latimes.com/local/california/la-me-bullet-train-speed-20180729-story.html>

*Calculations show bullet train can complete route within 2 hours and 40 minutes. Reality may prove slower*

author Ralph Vartabedian, interviewed your Chief of Rail Operations, Frank Vacca. Mr. Vacca in attempting to justify meeting the Prop 1A mandate, that the SF to LA trip can be accomplished in 2 hours and 40 minutes or less is quoted as saying:

*Vacca noted that the bond act does not specifically say the trip must go to Transbay.*

This is simply not true. Prop 1A demands the trip from San Francisco start at the Transbay Terminal and not elsewhere.

The Authority has previously claimed this not to be fact, but this has already been argued in Court, and Judge Kenny ruled that Prop 1A does indeed demand the SF to LA trip initiate from the Transbay Terminal.

see the ruling of March 4, 2016:

<http://www.thehamiltonreport.com/downloads/TOS-RULING-KENNY-3-4-2016.PDF>

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*... " Consequently, it appears that the intent of the Bond Act was for the system to extend, in San Francisco, to the Transbay Terminal, not stop 1.3 miles short at a 4th and King Caltrain Station.*

Bottom line: Trip times must be calculated from the San Francisco Transbay Terminal.

This would seem to be just another continuation of the Authority being less than truthful about the project, a condition which the new CEO, Mr Kelly has promised to curtail.

morris brown  
Menlo Park, CA

**Drozd, Doug@HSR**

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**From:** Roland Lebrun <ccss@msn.com>  
**Sent:** Tuesday, July 24, 2018 5:42 AM  
**To:** jmackenzie@rpcity.org  
**Cc:** info@bayareametro.gov; HSR boardmembers@HSR; Caltrain Board; Nila Gonzales; SFCTA CAC; Caltrain CAC Secretary; CAC@TJPA.org; Steve Stamos, Clerk of the Board  
**Subject:** Item 4.a BATA Resolution No. 125: Adoption of Final EIR for Gateway Park  
**Attachments:** BATA Resolution 125 Final EIR for Gateway Park.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Chair Mackenzie and Members of the Bay Area Toll Authority Board of Directors,

The intent of the attached letter is to voice strong support for BATA Resolution No. 125: Adoption of Final EIR for Gateway Park and to elaborate on comments I made during the July 13<sup>th</sup> Planning Committee requesting that MTC consider taking actions to protect a future Transbay tunnel alignment from potentially conflicting developments.

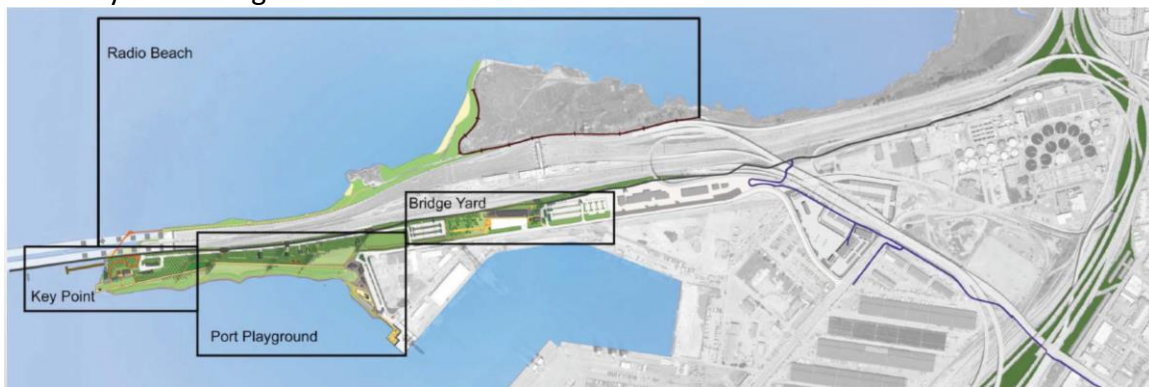
July 23 2018

Bay Area Toll Authority  
July 25 Board Meeting  
Item 4.A BATA Resolution No. 125: Final EIR for Gateway Park

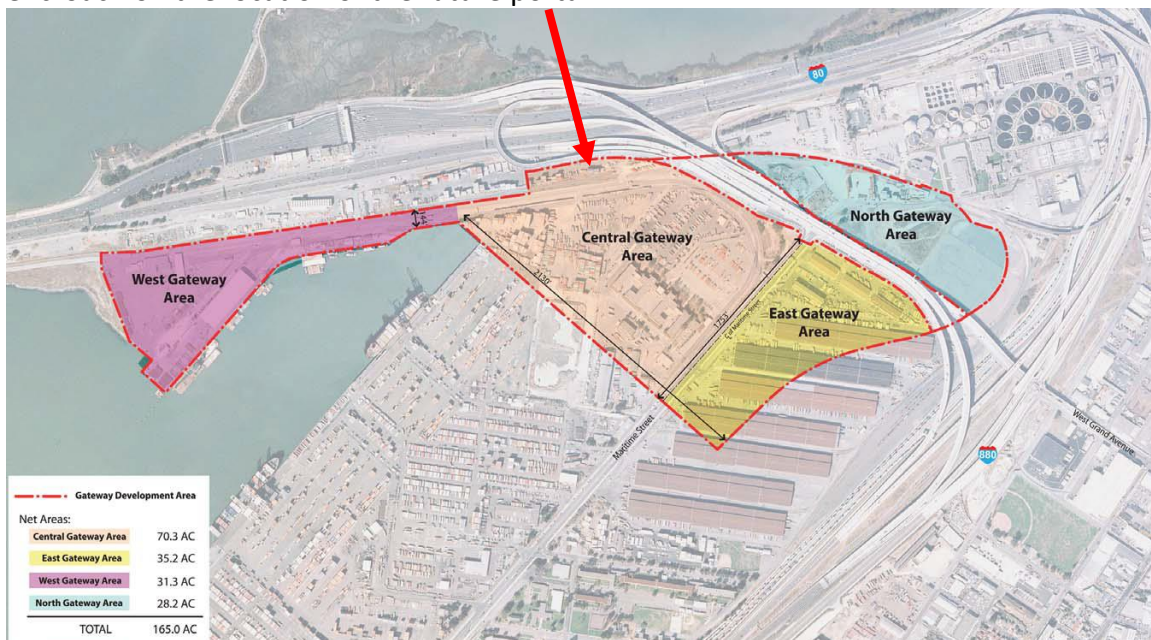
Dear Chair Mackenzie and Members of the Bay Area Toll Authority Board of Directors,

The intent of this letter is to voice strong support for BATA Resolution No. 125: Adoption of Final EIR for Gateway Park and to elaborate on the comments I made during the July 13<sup>th</sup> Planning Committee requesting that MTC consider taking actions to protect a future Transbay tunnel alignment from any conflicting development.

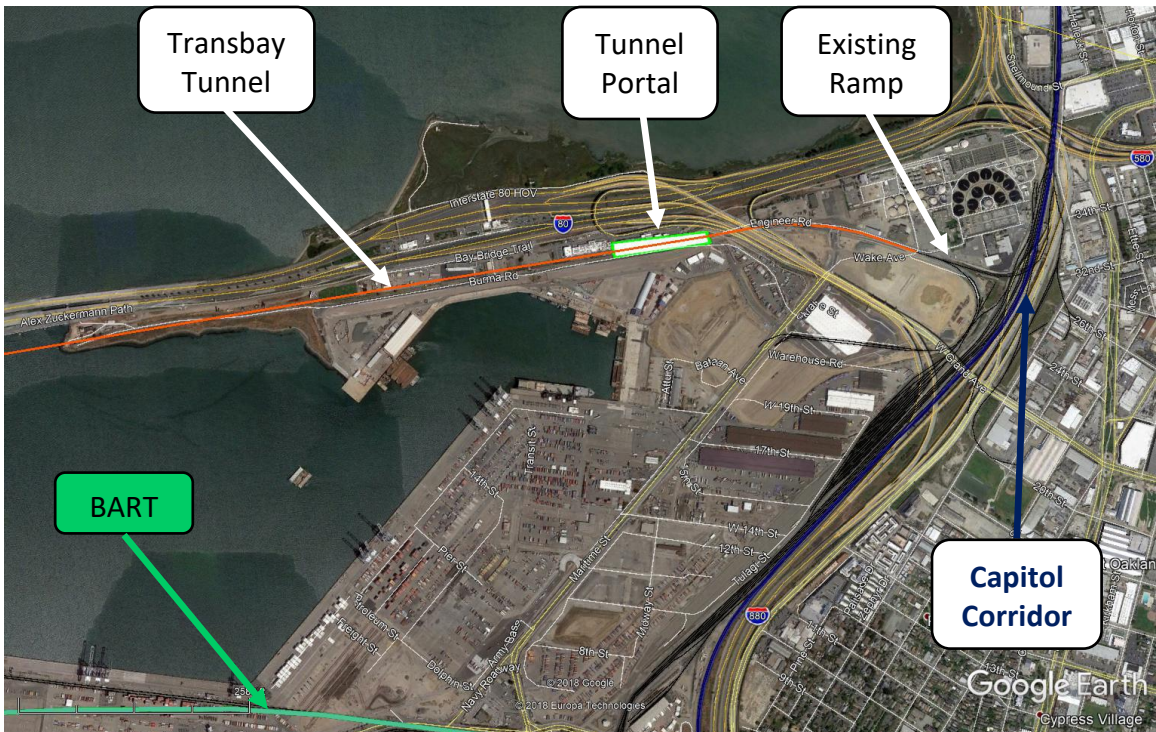
As can be seen below, the Key Point, Port Playground and Bridge Yard protect the future Transbay tunnel alignment.



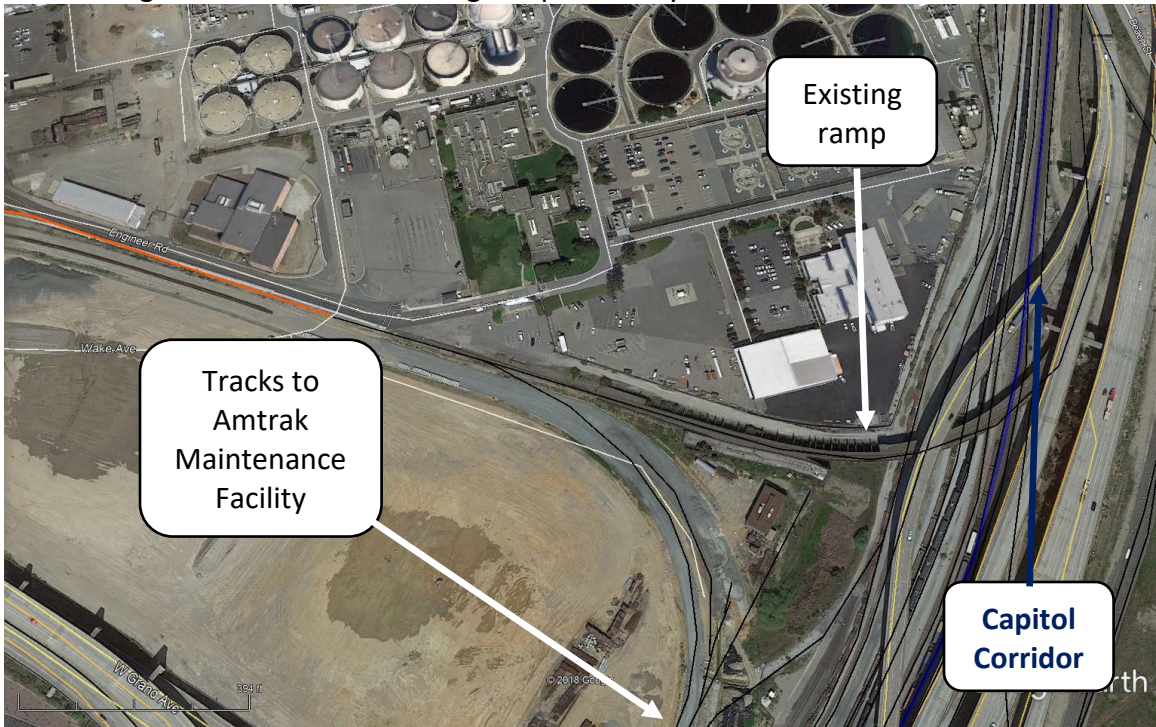
The issue is with the Army Base redevelopment's Central & North Gateway Areas which encroach on the location of the future portal.







Please consider protecting this right of way by extending Gateway Park all the way to the existing Union Pacific connecting ramp to Emeryville and Sacramento.



Thank You.

Roland Lebrun

**Droz, Doug@HSR**

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**From:** Roland Lebrun <ccss@msn.com>  
**Sent:** Monday, July 09, 2018 3:06 PM  
**To:** Supervisor Aaron Peskin; London.Breed@sfgov.org; Supervisor Jane Kim; Supervisor Malia Cohen; Sandra.Fewer@sfgov.org; Hillary.Ronen@sfgov.org; Ahsha.Safai@sfgov.org; Jeff.Sheehy@sfgov.org; Catherine.Stefani@sfgov.org; Katy.Tang@sfgov.org; Norman.Yee@sfgov.org  
**Cc:** Nila Gonzales; Caltrain Board; HSR boardmembers@HSR; MTC Commission; SFCTA CAC; CAC@TJPA.org; Caltrain CAC Secretary; Caltrain BAC  
**Subject:** July 10 SFCTA Board Item #2. Citizens Advisory Committee Report  
**Attachments:** Item #2 Citizens Advisory Committee Report.pdf; Rethinking DTX.pdf; Northbound DTX refined alignment.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

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

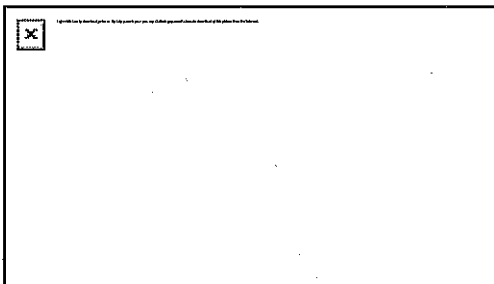
Please find attached my response to staff's response to a question from the CAC about the 7th Street alignment:

*"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."*

Key points:

- The 7th Street alignment was NOT reviewed by the 2018 DTX Peer Review Panel
- The 2011 Engineering Charette did NOT consider twin-bore tunnel construction modeled after London's Channel Tunnel Rail Link.
- The TJPA did NOT comply with the terms of the 2008 \$400M ARRA grant for the train box.
- The TJPA did NOT offer an alternative to the 3-track cut & cover approach between Townsend and Howard.
- **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-QYQJYDt4>



DTX 3D Flyover

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 7<sup>th</sup> Street alignment is found on page 40 of the May 2018 DTX Peer Review Panel report (the 7<sup>th</sup> Street alignment was not reviewed by the Panel)

## DTX Project Background: 40 Other Alignments (2010)

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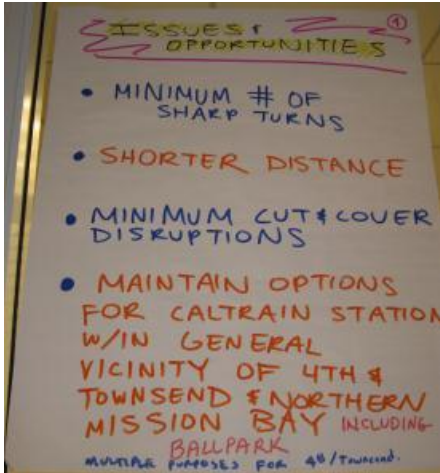
- Seventh St. reviewed in 2010
- Determined that conflicts with Central Subway and buildings along Minna/Natoma required alignment to be up to 130 ft deep.
- New required Throat Structure would require demolition of buildings between the Transit Center and Third St. including SF MOMA.



7

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**



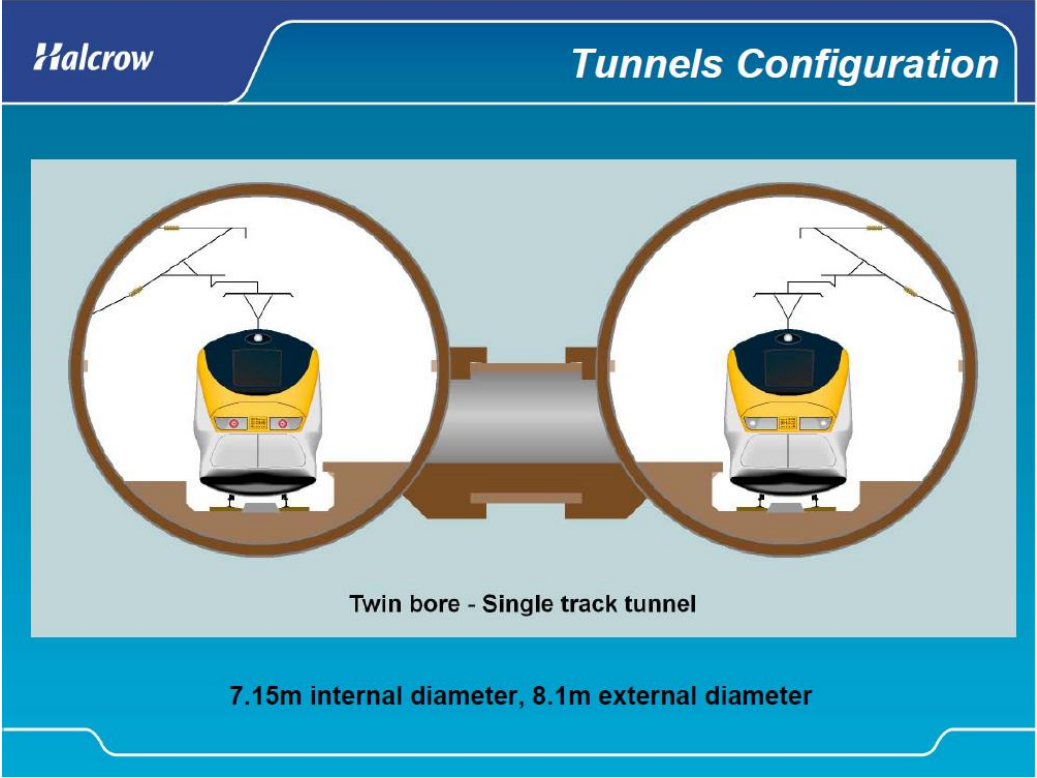
The Orange alignment above is the “7<sup>th</sup> Street alignment” with a fatal flaw (a single 44-foot diameter two-track tunnel).

*“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. ”*

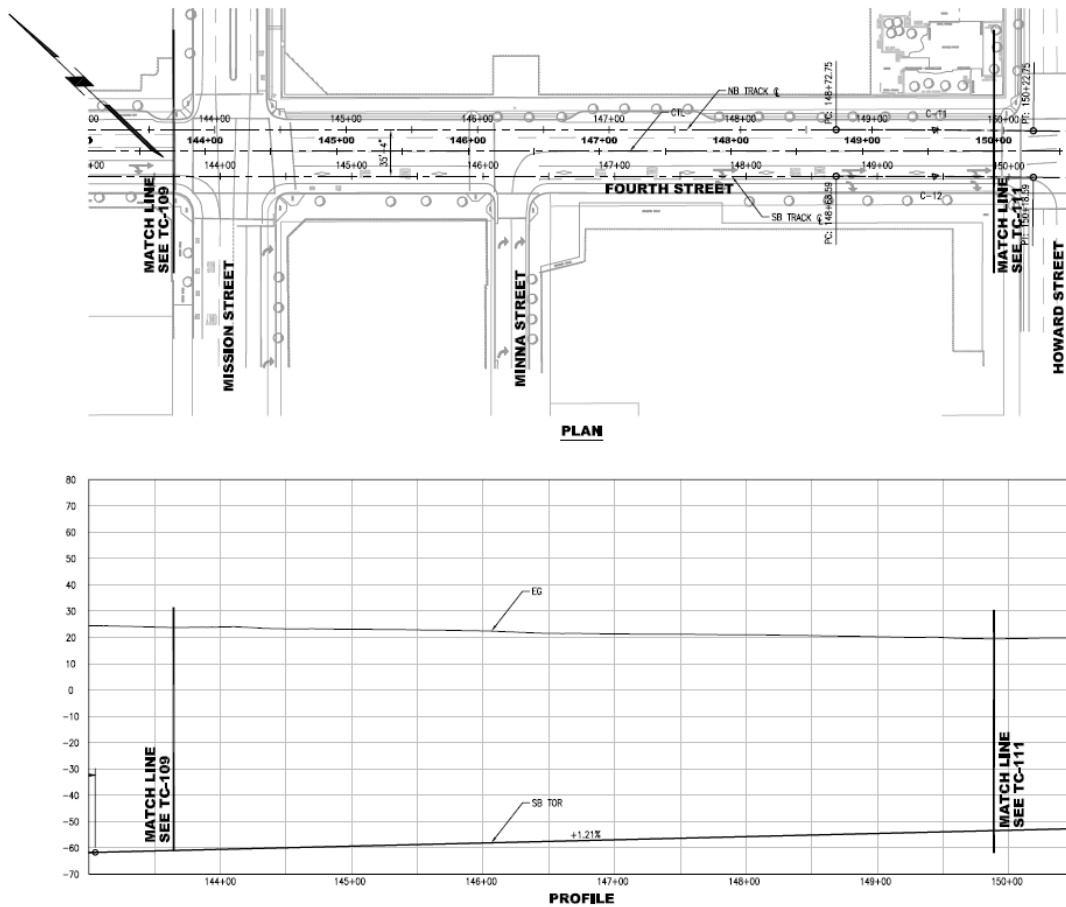
The solution outlined in the attached “Rethinking DTX” (2012) presentation is to locate the northbound and southbound tracks in separate 27-foot tunnel bores (one each under Minna and Natoma Street) similar to the high-speed tunnels linking London to the Channel Tunnel.



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.



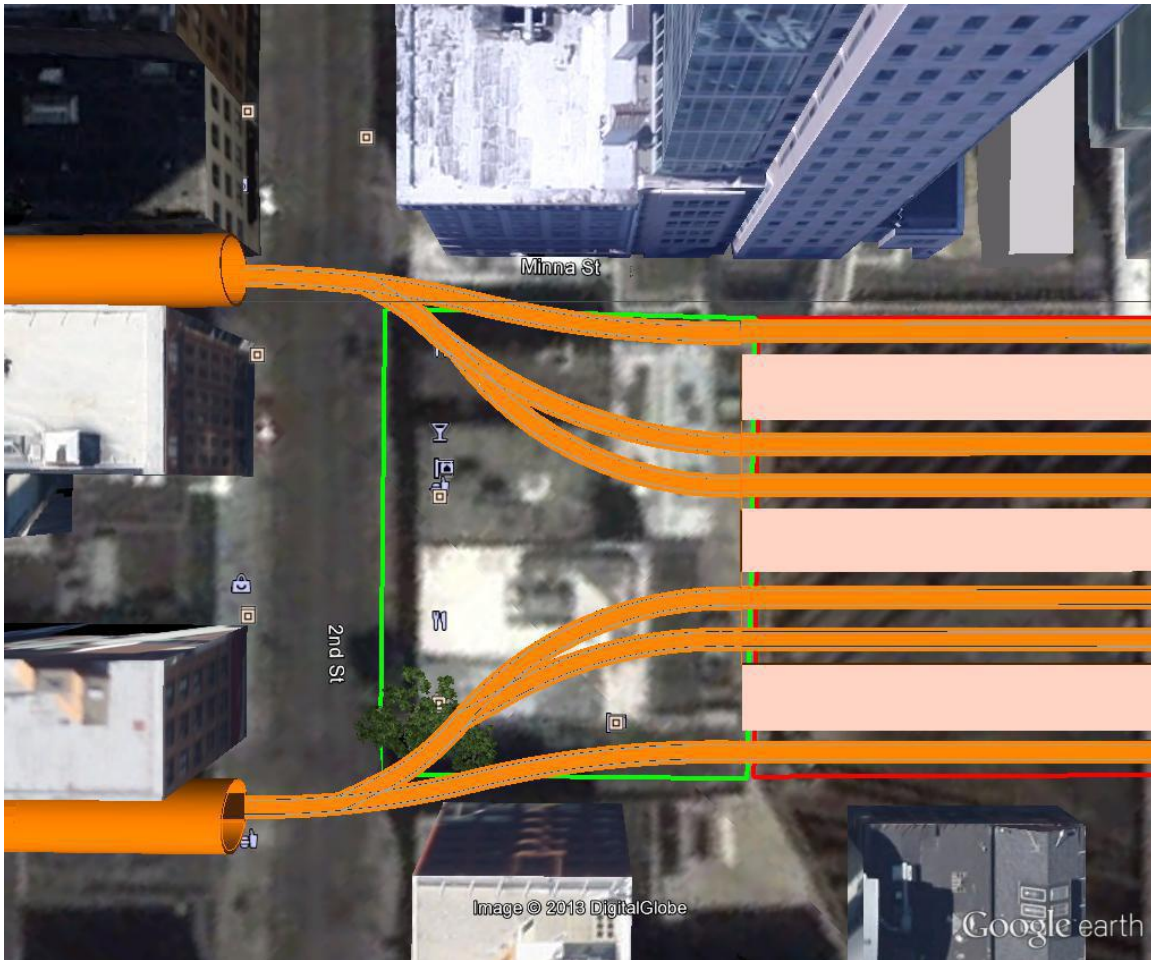
### Additional issues resolved by the 7<sup>th</sup> Street alignment

- Elimination of six-track station throat under 2<sup>nd</sup> Street

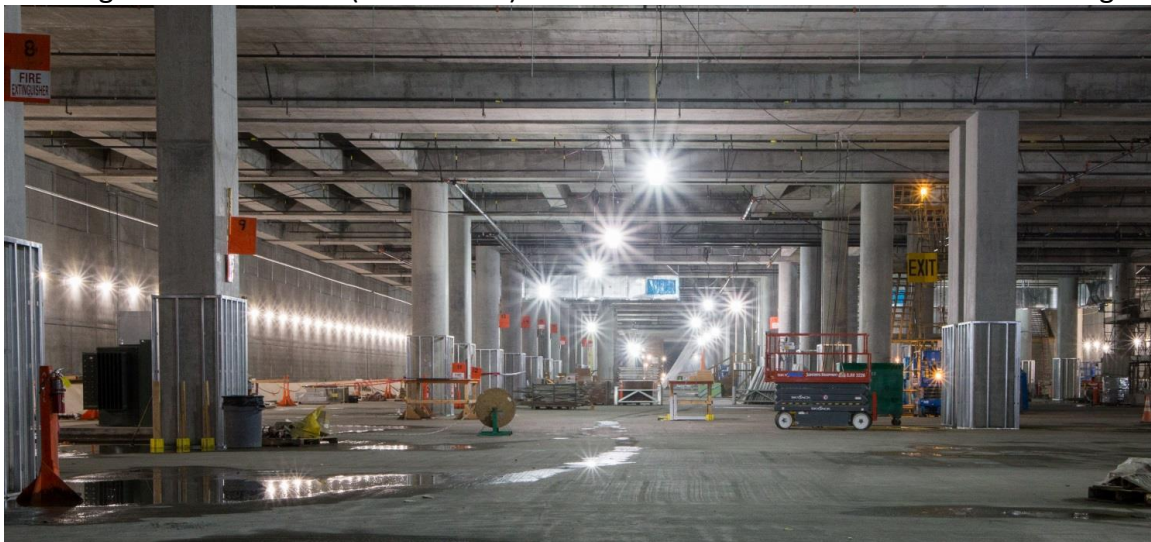
***“The structural column configuration in the built Salesforce Transit Center limits the flexibility for changing the track geometry within the train box and at the throat leading into the terminal, but options that entail adjustments to track design criteria at the throat to minimize right-of-way impacts 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



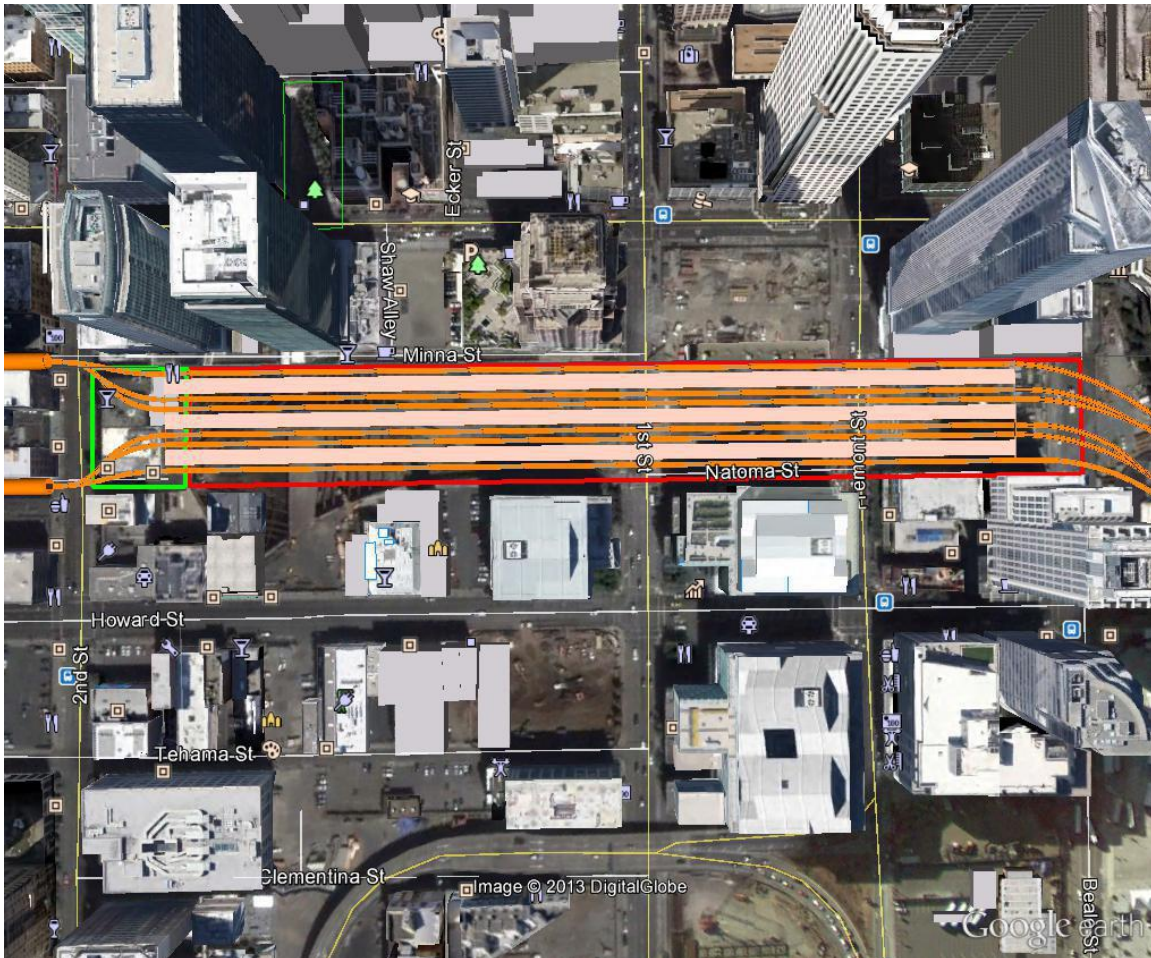
Entering the STC train box (no conflicts). Minna is on the left and Natoma is on the right





- **Platform lengths**

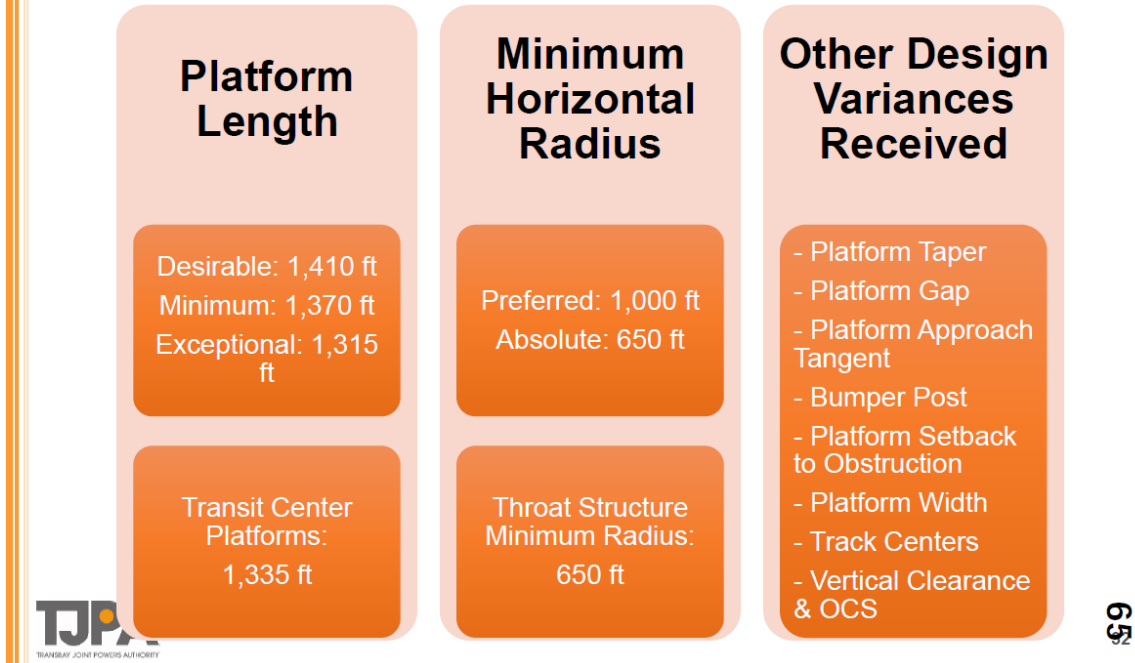
One of the conditions of the \$400M 2008 ARRA grant was 400-meter (1,312 feet) straight platforms. The 7<sup>th</sup> Street alignment makes it possible to have six (not five) full-length platforms without impacts on the 201 Mission foundations by sliding the southern tip of the platforms to the location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



- **Vacation of 4<sup>th</sup> & 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 4<sup>th</sup> & King railyard.

# CHSRA Design Guidance



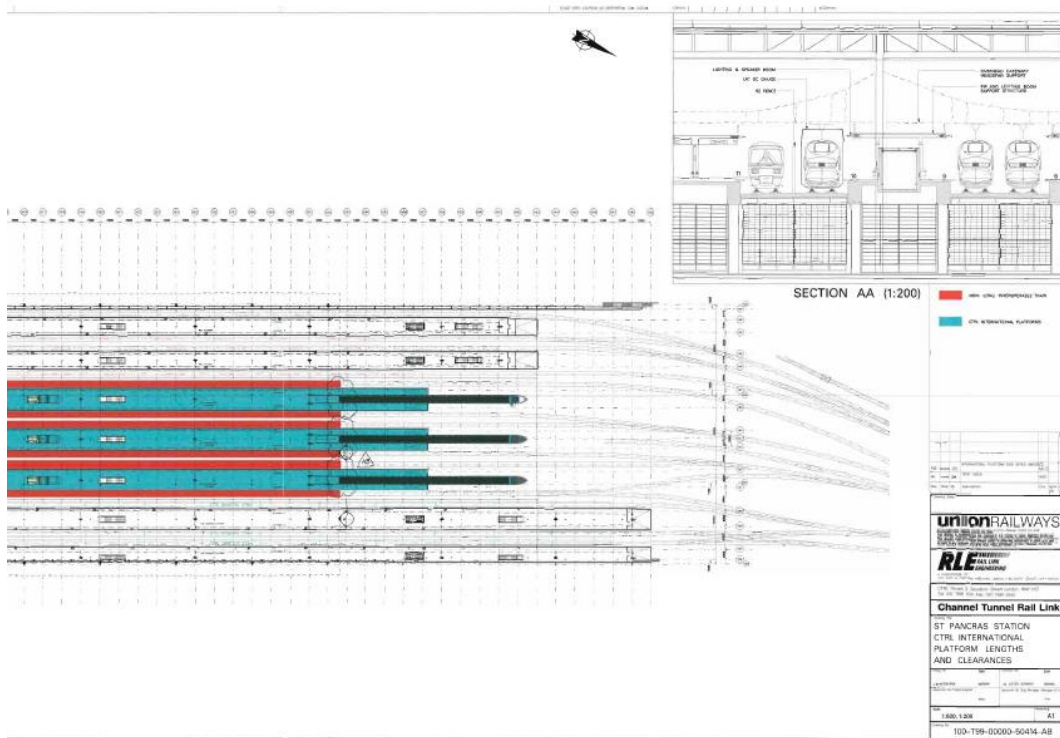
## - Elimination of the requirement for a third track

*“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 16<sup>th</sup> and Townsend (new 7<sup>th</sup> & King station)

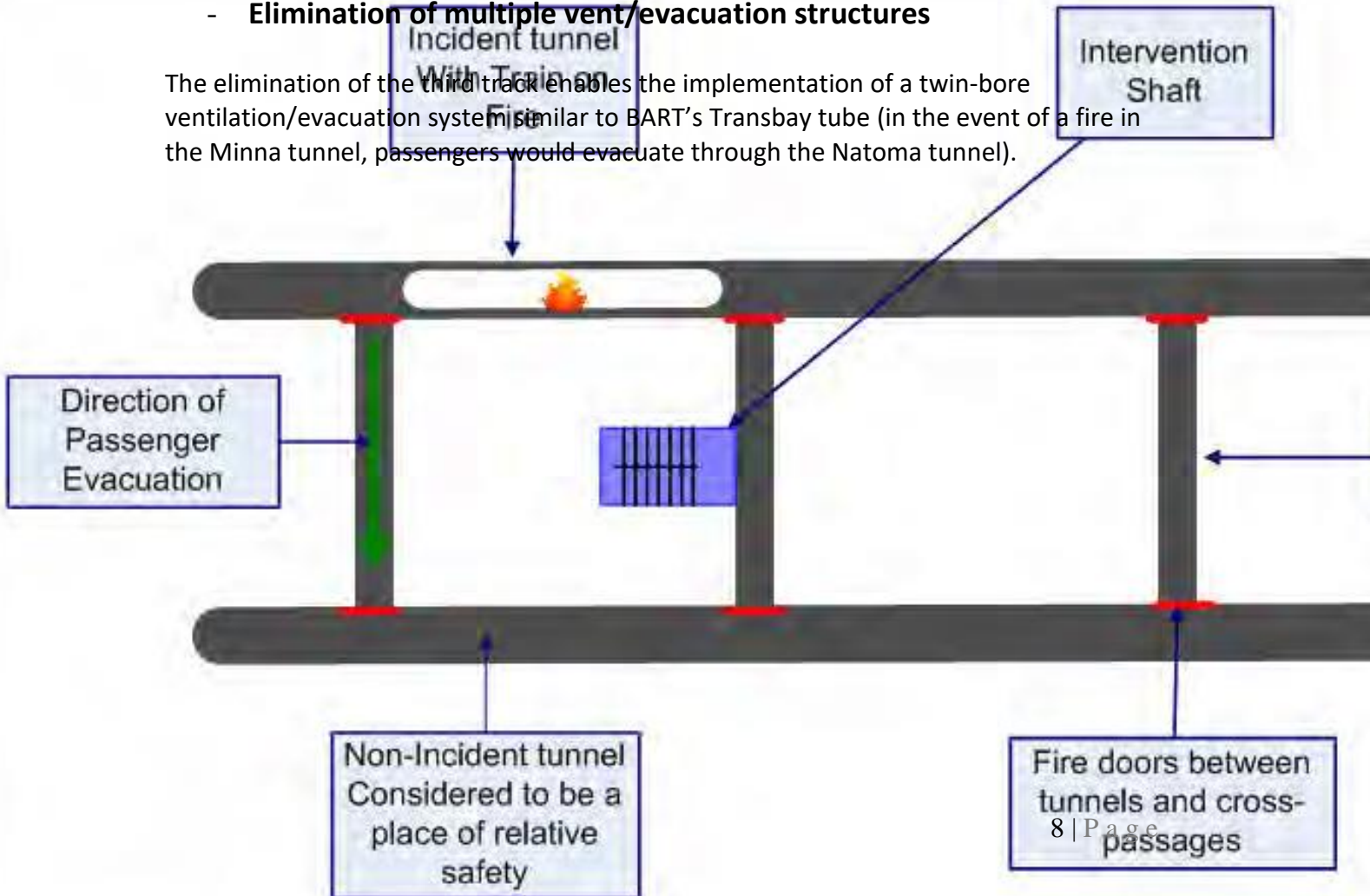
Please refer to the attached “Northbound refined DTX alignment” letter dated November 17<sup>th</sup> 2013 which explained how London was able to support 12 trains/hour with 3 (not six) platform faces and **two tracks** (not three) during the 2012 Olympics.



### TWO Tracks

- **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**.

Tunnel	Year completed	Diameter (ft)	Bores	Alignment length (miles)	Total length of tunnels (miles)	Reported cost (\$ million)	Cost per mile of tunnel (million \$/mile)
Port of Miami Tunnel	proposed	36	twin	0.7	1.5	1,000	\$677
Lefortovo	2005	47	single	1.4	1.4	600	\$439
Airport Link Brisbane	2012	41	twin	3.3	6.5	2,206	\$338
Groene Hart Tunnel	2006	48	single	1.4	1.4	450	\$332
4th Tube of the Elbe	2002	47	single	2.6	2.6	775	\$303
I-710 (A3)	proposed	50 <sup>1</sup>	triple	4.1	12.4	3,585	\$290
I-710 (C3)	proposed	42 <sup>1</sup>	triple	4.0	12.0	3,195	\$266
A86W	2010	37.9 <sup>1</sup>	single	10.9	10.9	2,641	\$242
Wesertunnel	2001	38	twin	1.0	2.0	358	\$180
Beacon Hill Tunnel	2009	21	twin	0.8	1.6	280	\$172
M-30	2008	50	twin	2.2	4.3	570	\$131
Dublin Port Tunnel	2006	38	twin	2.8	5.6	530	\$94
Pannerdenschkanaal	2003	32	twin	1.0	2.0	173	\$86
SMART	2007	43	single	6.0	6.0	515	\$85
Wuhan	2008	37	twin	1.7	3.4	288	\$85
Nanjing	2013	49	twin	1.9	3.7	245	\$66
Westerschelde	2002	37	twin	4.1	8.2	490	\$60
Shanghai River Crossing	2008	51	twin	4.6	9.3	245	\$27

<sup>1</sup> 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**

ALIGNMENT	COST <sup>1</sup>	EXPECTED COMPLETION DATE <sup>2</sup>
<b>FUTURE WITH SURFACE RAIL:</b> DTX + TRENCHED STREETS	\$5.1 Billion	2026
<b>PENNSYLVANIA AVENUE:</b> DTX + EXTENDED TUNNEL	\$6.0 Billion	2027
<b>MISSION BAY:</b> MODIFIED DTX + 3 <sup>RD</sup> STREET TUNNEL	\$9.3 Billion	2031

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

*Conceptual Level  
Comparative Cost  
Estimates*

Respectfully presented for your consideration.

Sincerely,

Roland Lebrun

# Rethinking DTX



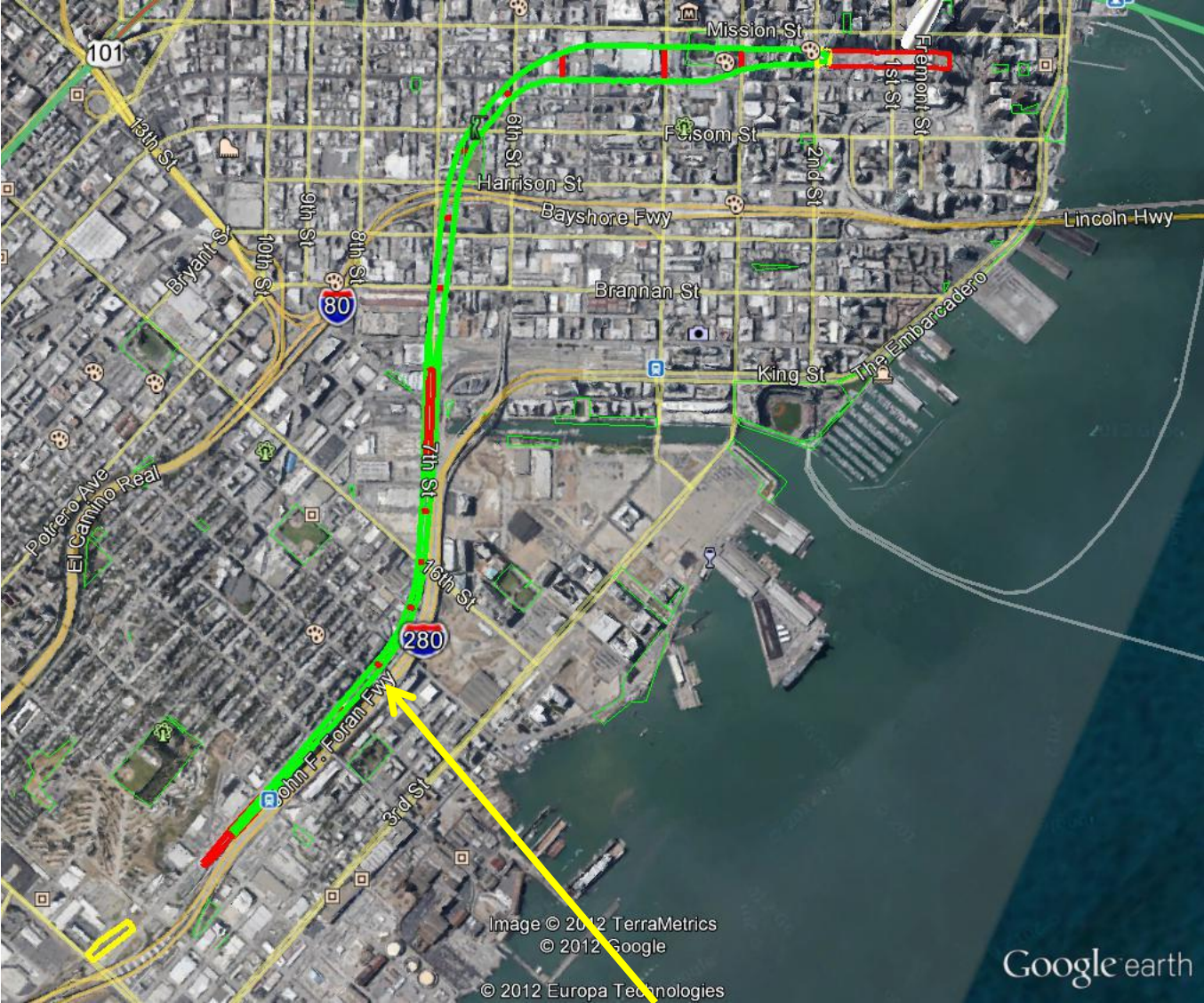
# Guiding principles

- 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 @ 7<sup>th</sup> & King
- Launch box under 23<sup>rd</sup> (or 22<sup>nd</sup> for new station)
- 1.3 mile twin-bore tunnel to 7<sup>th</sup> & 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 & 7<sup>th</sup> & King station)

# DTX North



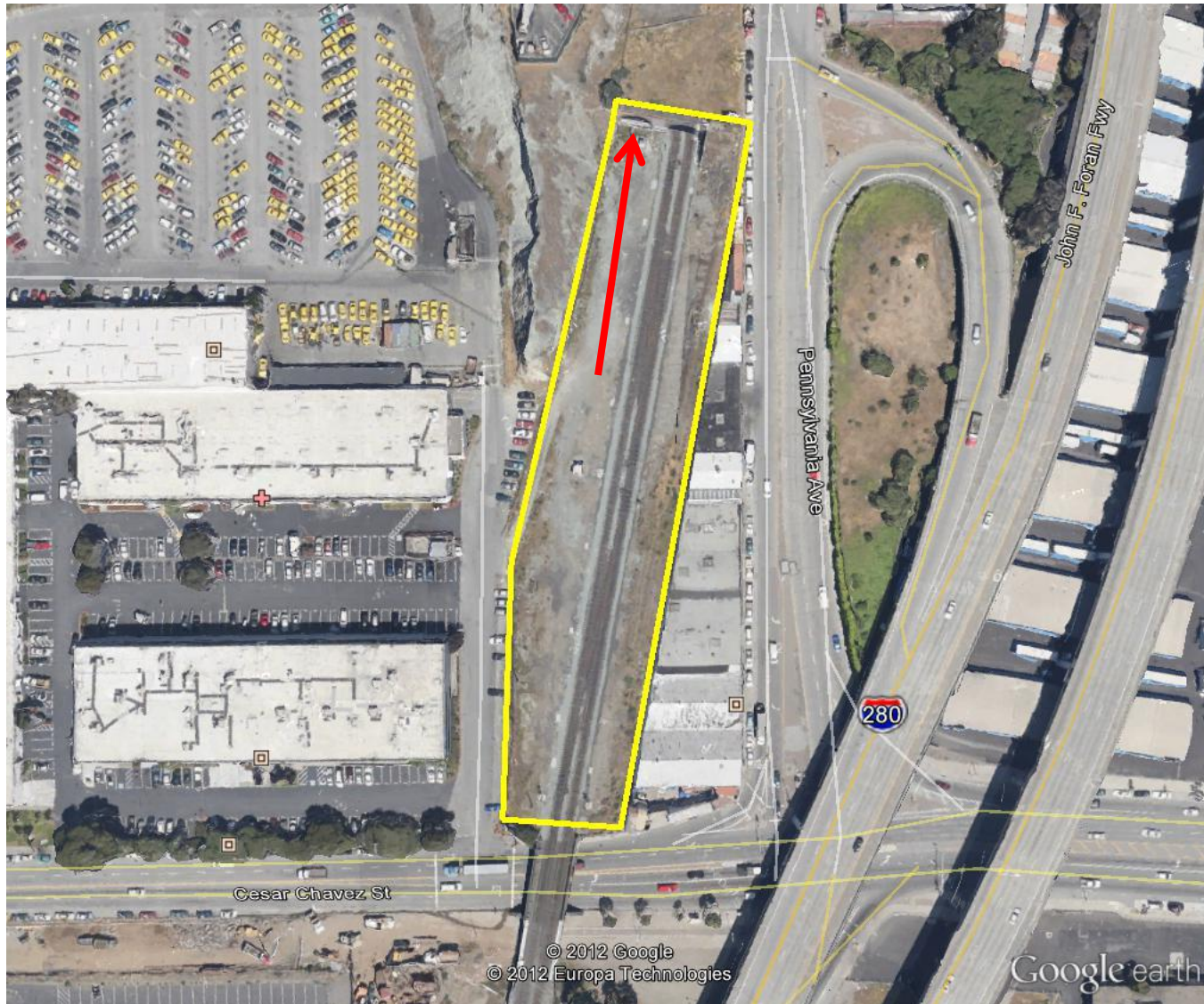
# DTX South



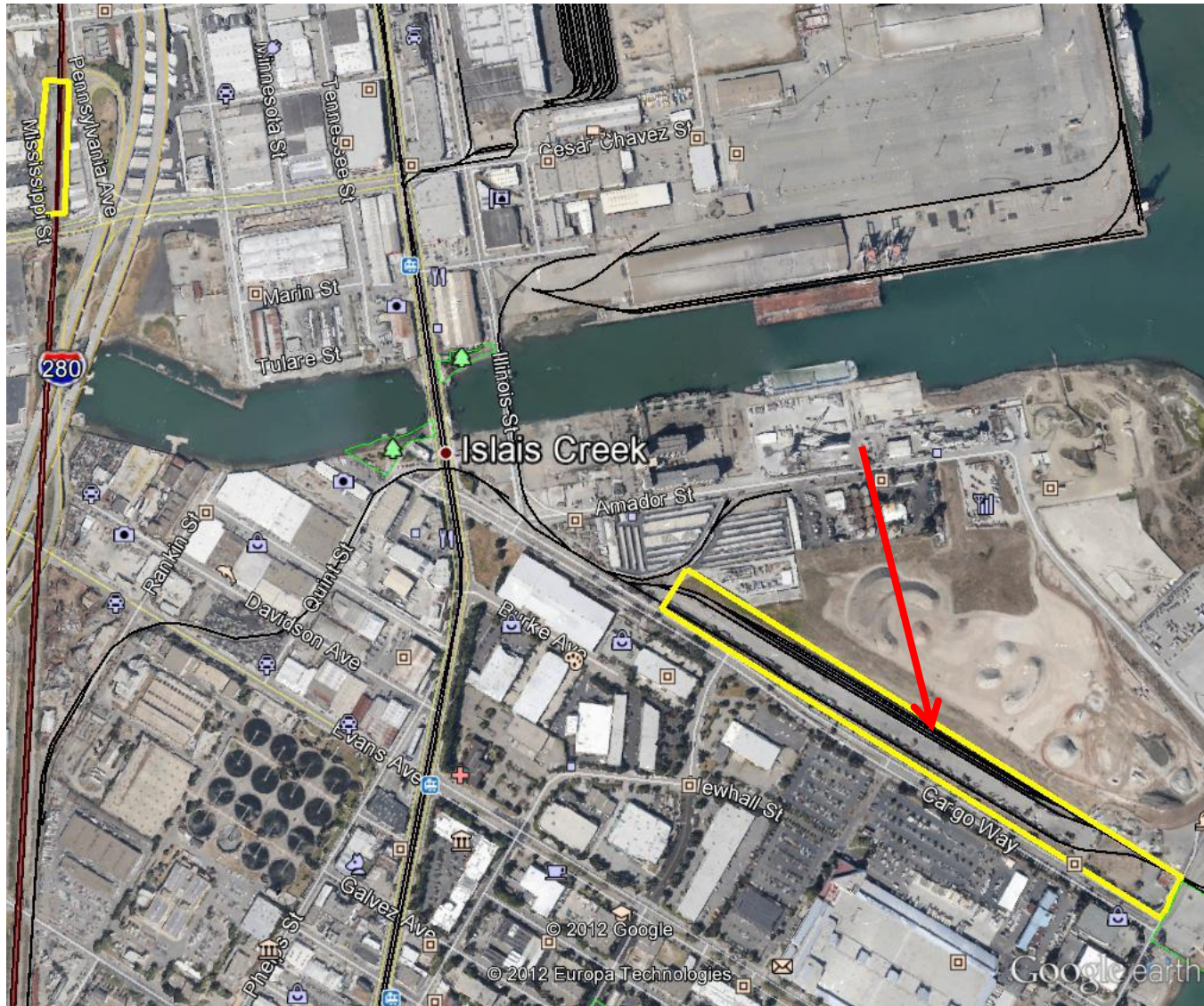
# TBM staging and soil removal area (Bayshore Baylands fill?)



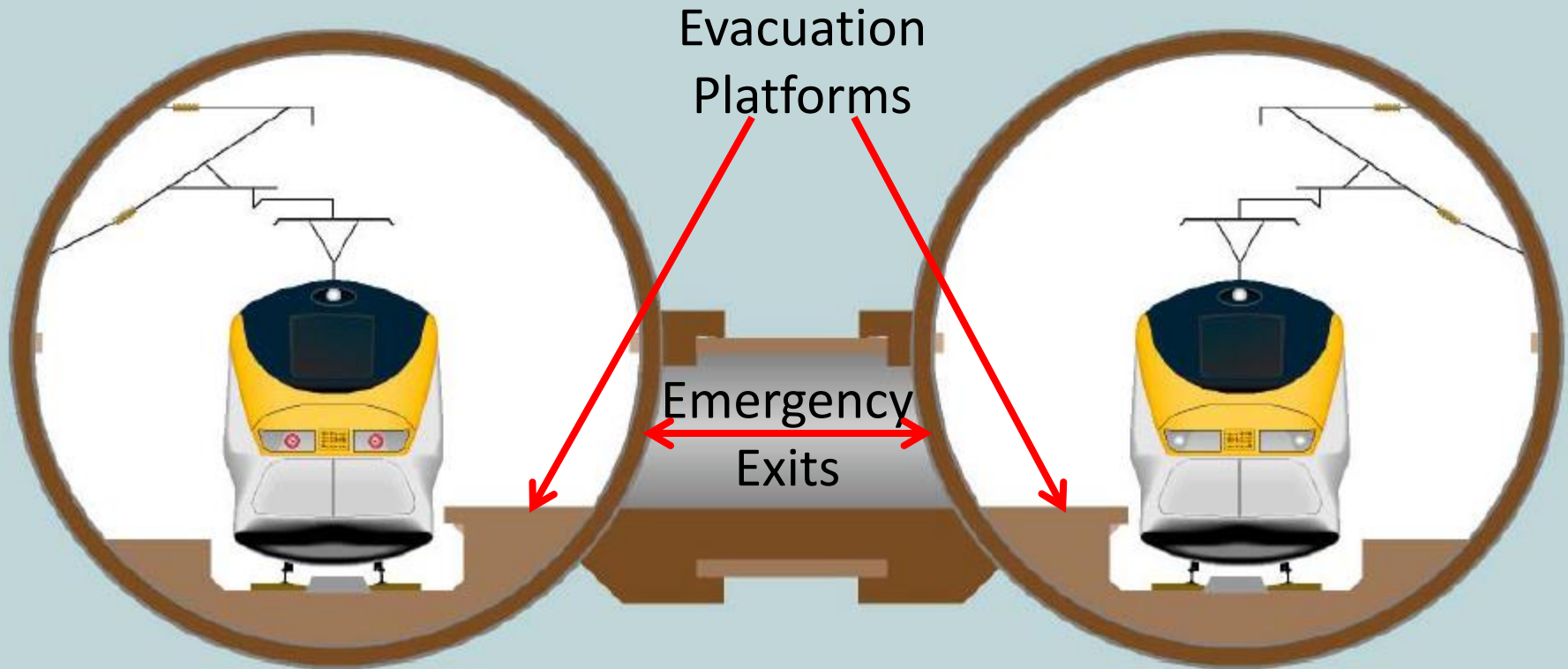
# Western Tunnel #2 reopening



# Potential HSR Storage/Maintenance



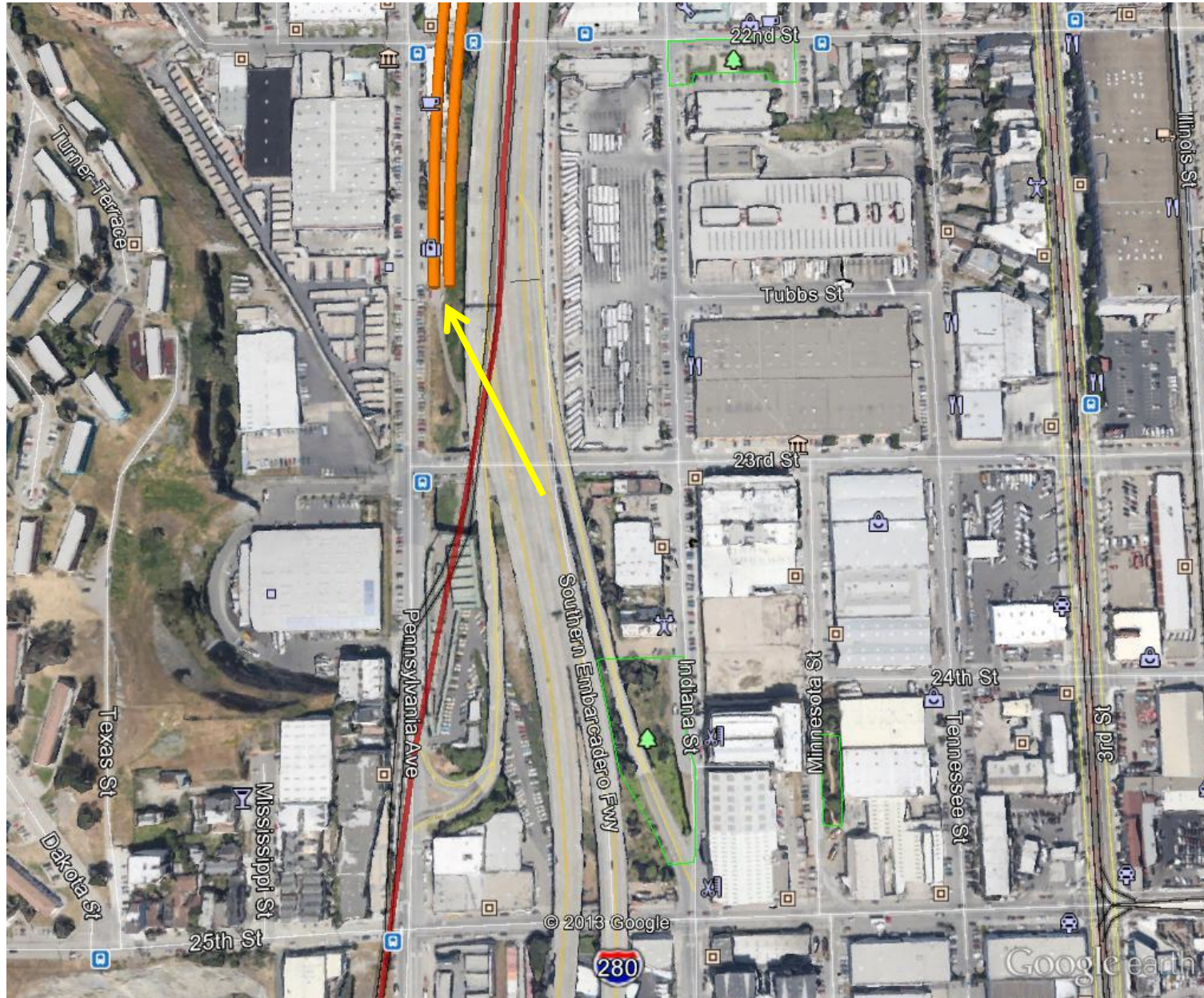
# 160 MPH Tunnel Design (large enough for Caltrain bi-level EMUs)



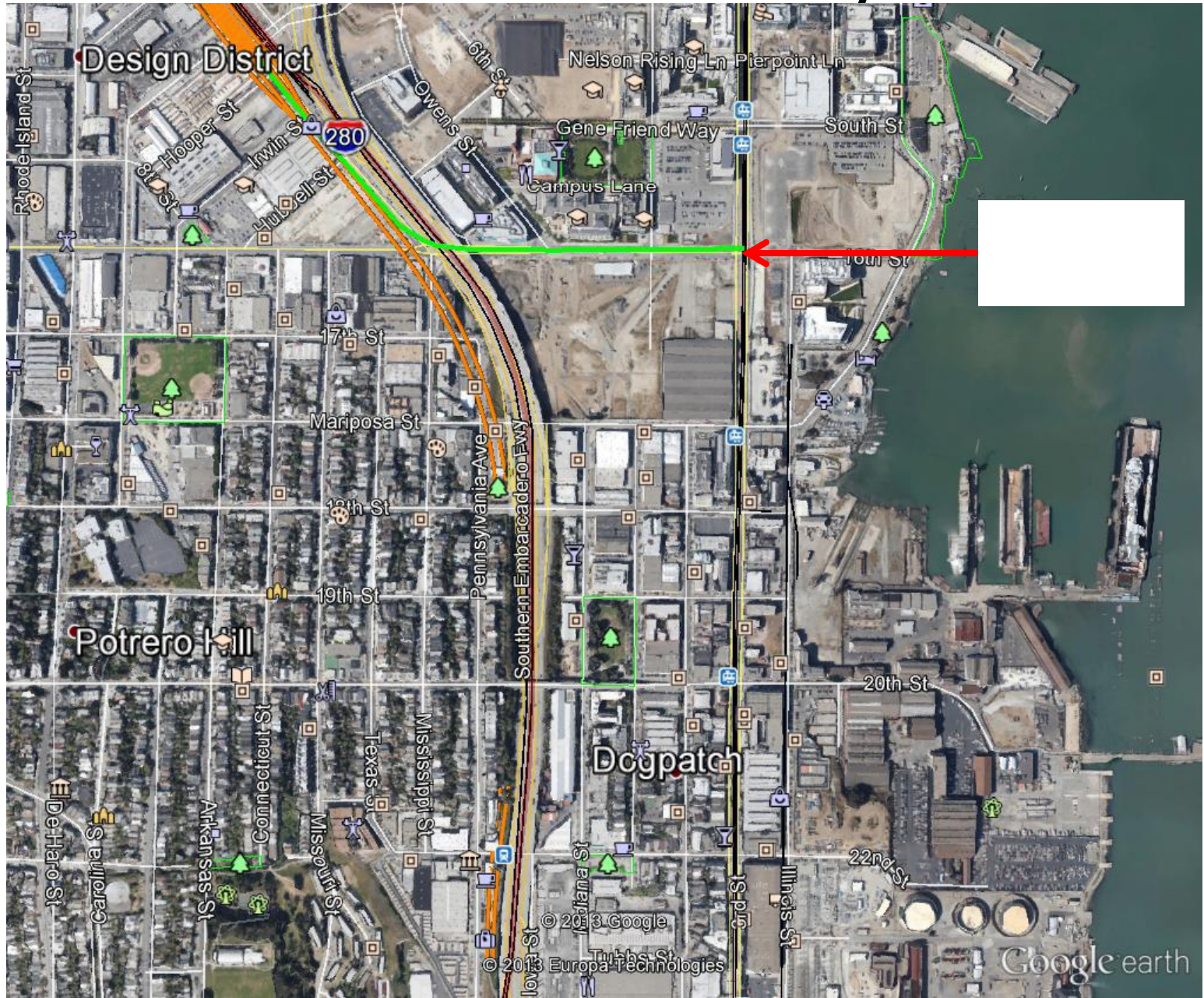
**Twin bore - Single track tunnel**

**7.15m internal diameter, 8.1m external diameter**

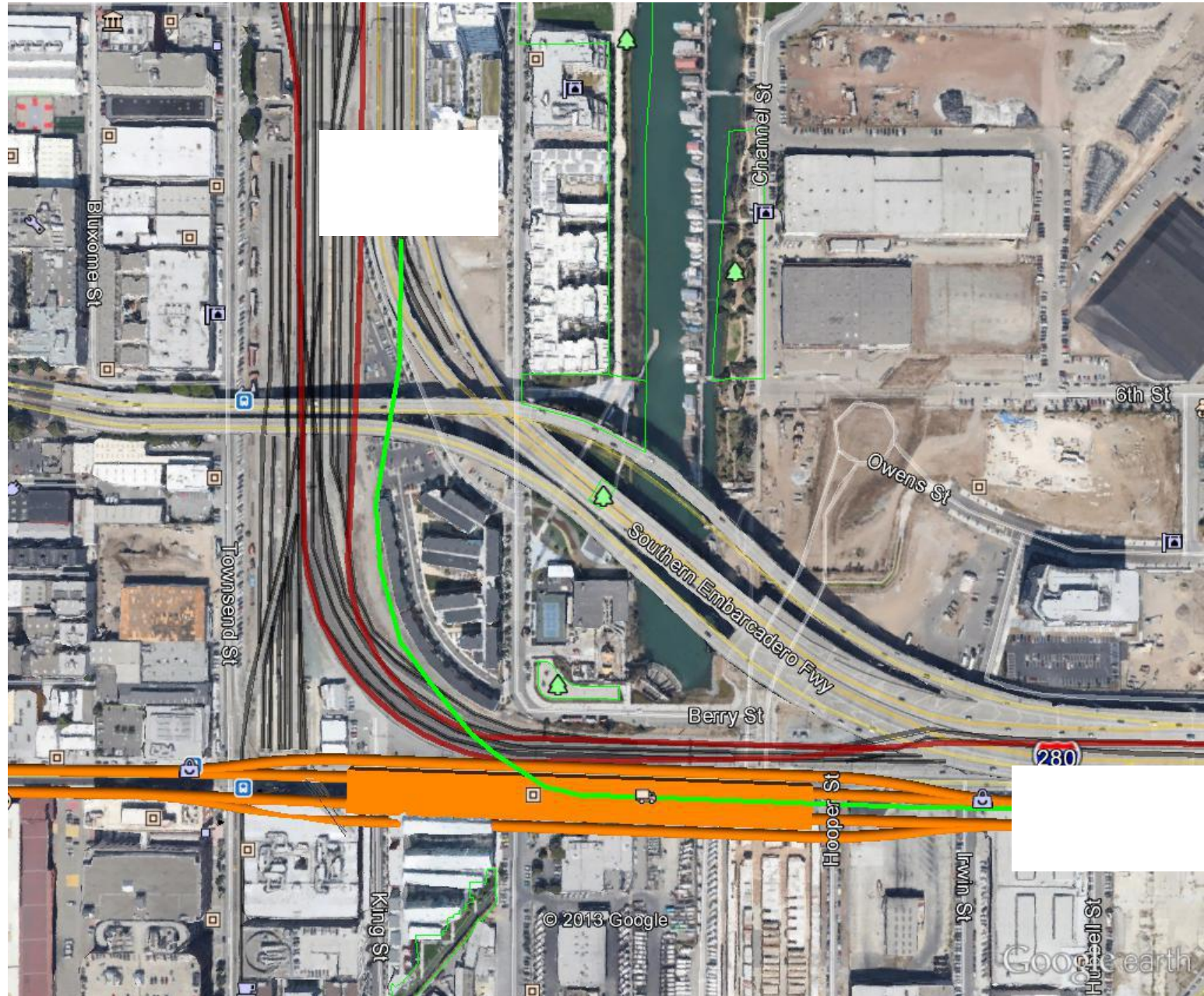
# DTX South Portal @ 23rd



# DTX South to Mission Bay station



# Mission Bay station (7<sup>th</sup> & King)



# Mission Bay station



Southbound DTX

Under 7<sup>th</sup> Street  
(future Grand Boulevard)

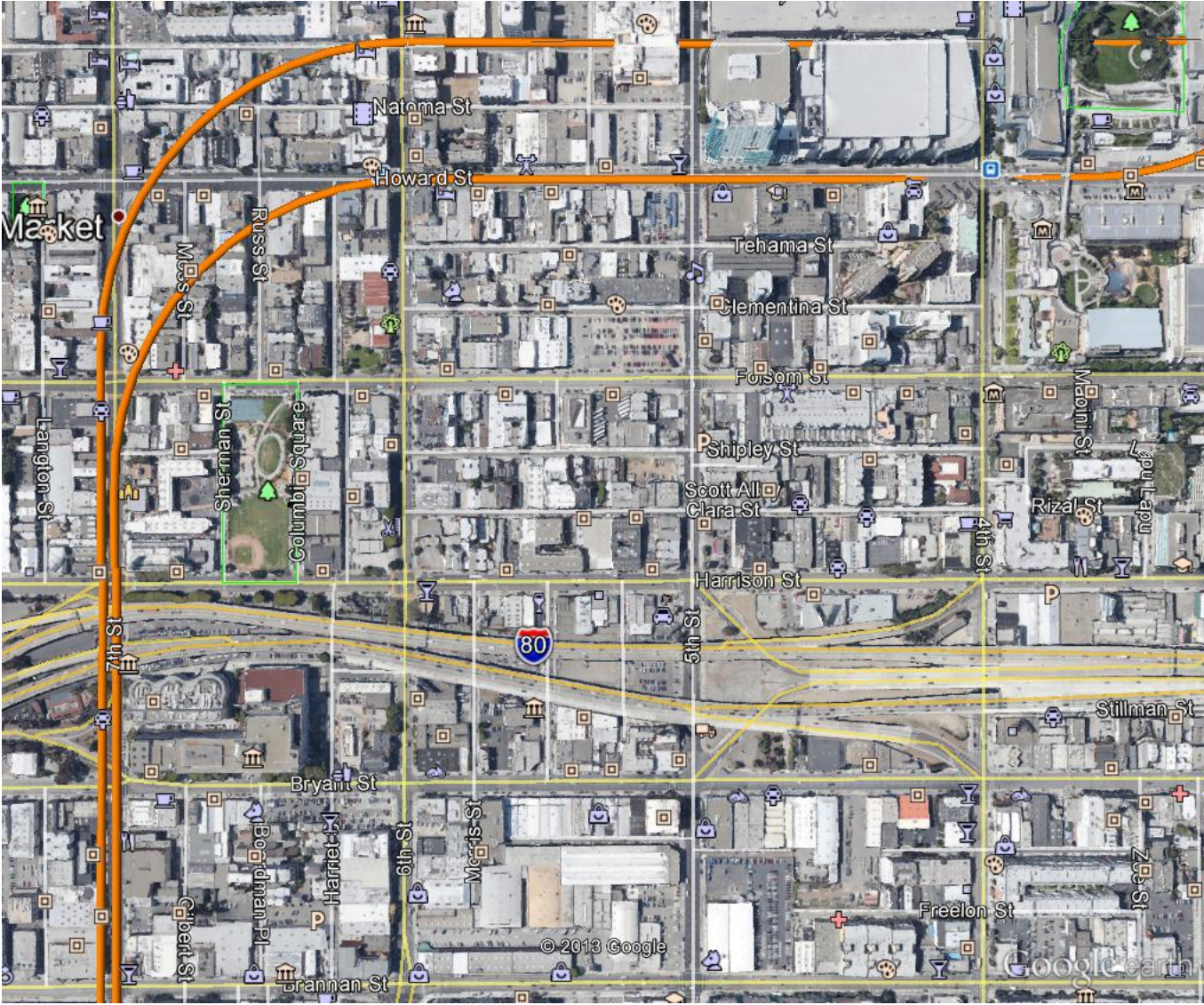
Northbound DTX  
(under existing tracks)



# DTX South score card

- No construction impacts on Caltrain operations
- Mission Bay station (redevelop 4<sup>th</sup> & 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)

# DTX North



# Crossing the Central Subway

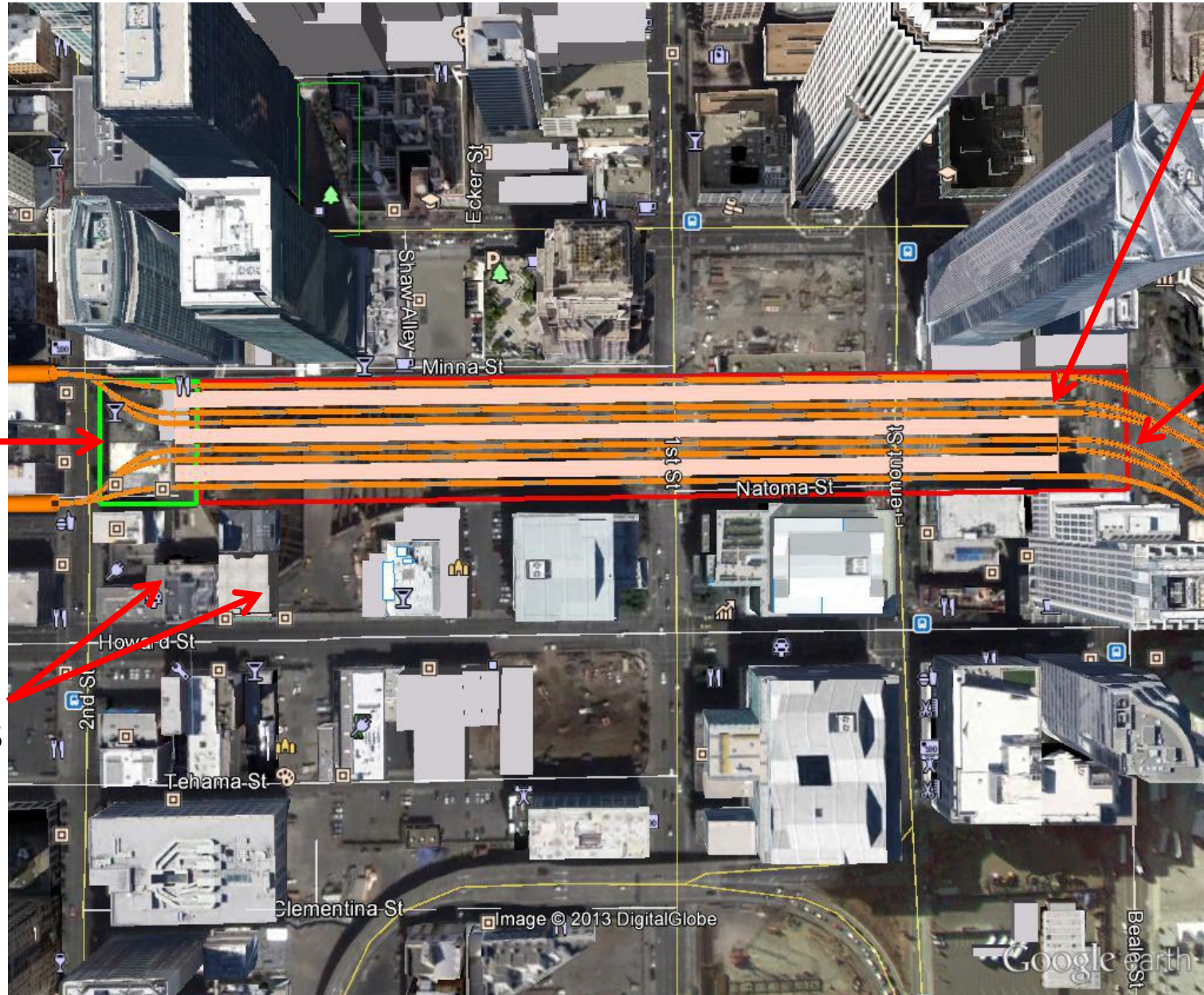


# Crossing the Central Subway

- 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 4<sup>th</sup> & TTC: 2,000 feet
- Maximum climb @ 3.5%: 70 feet
- Minimum depth at entry to TTC: 56 feet

# Transbay train box

1,330 feet  
platforms

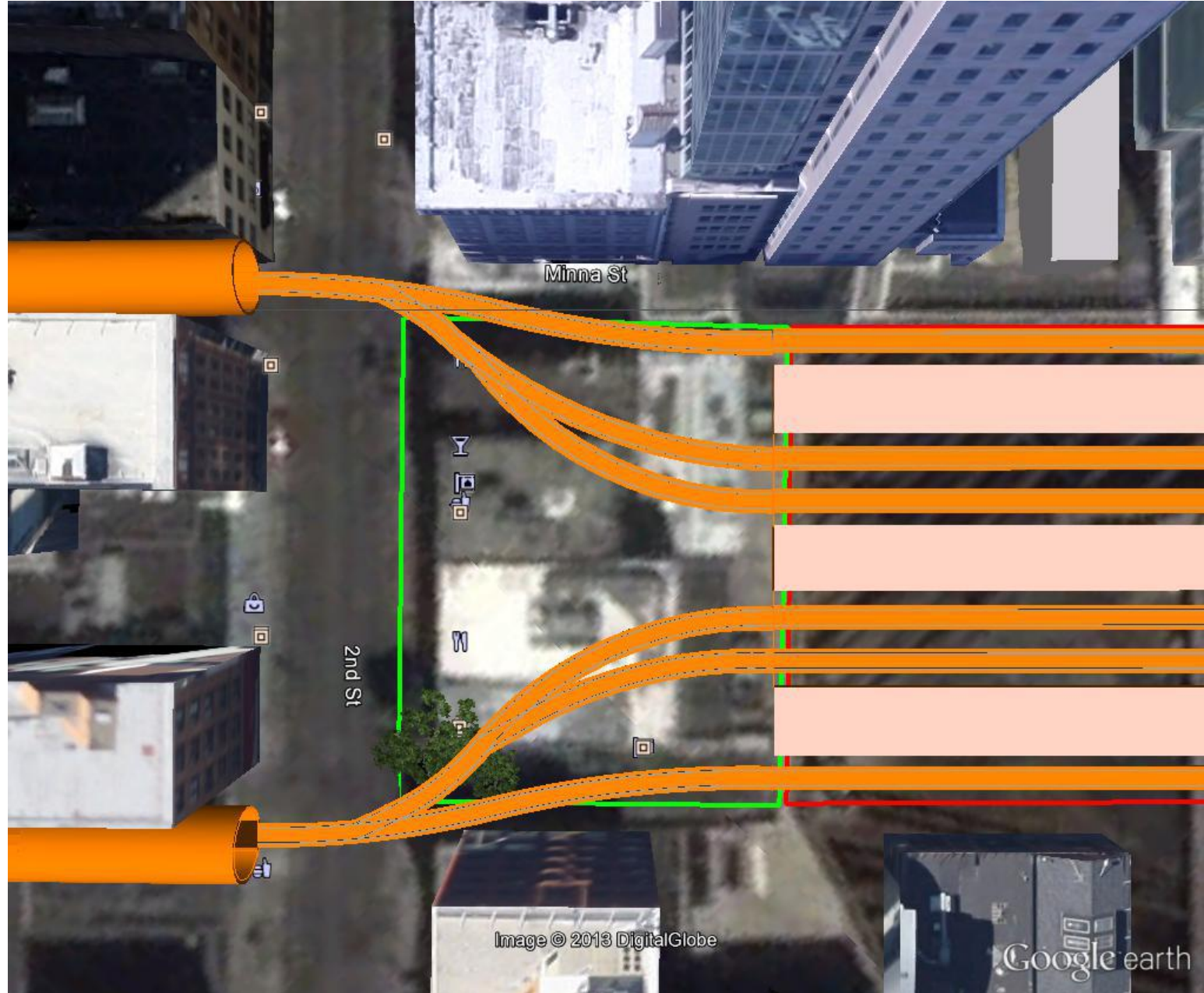


Park →

Beale Street

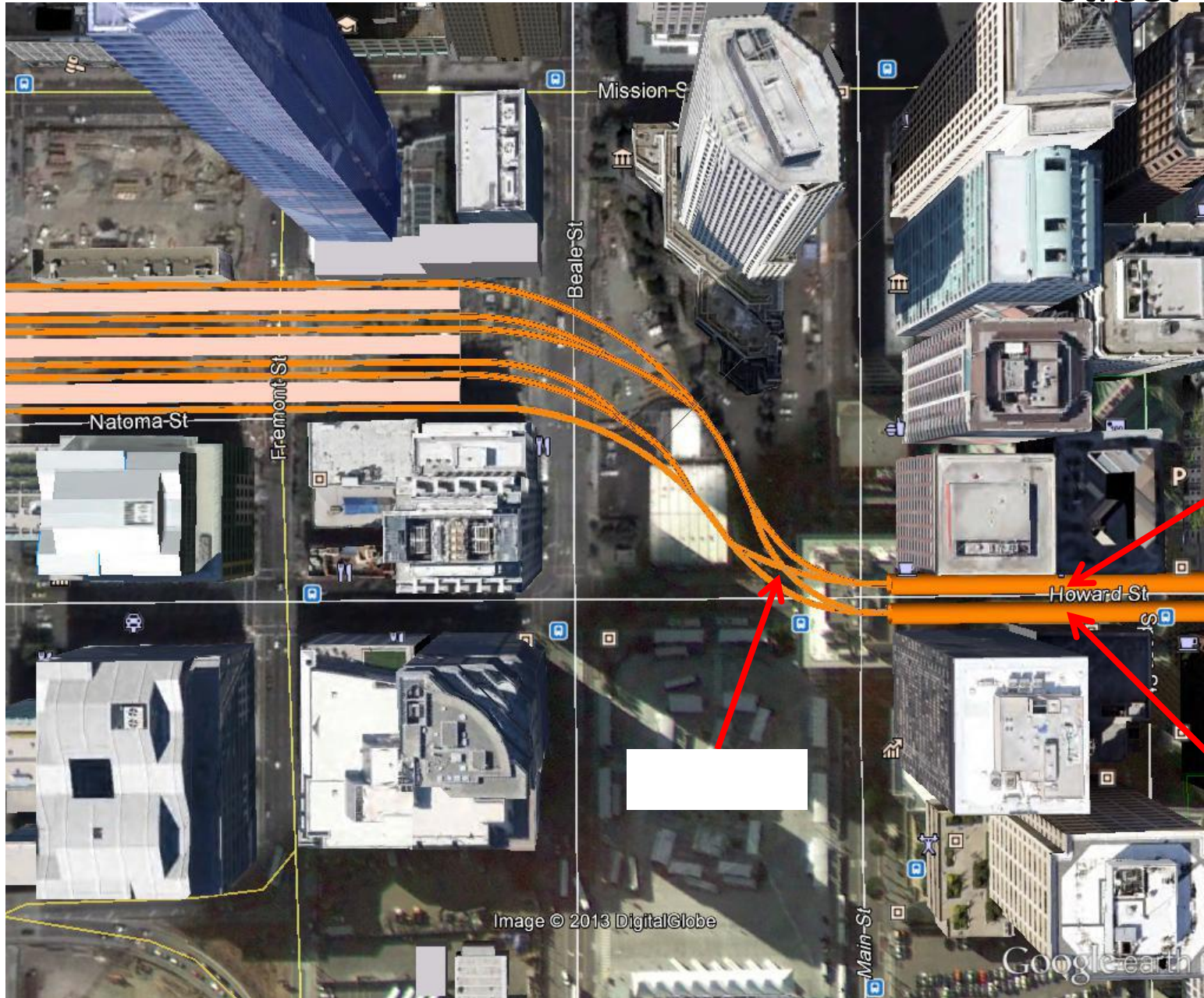
Future Towers →

# Track layout at TTC entry (2<sup>nd</sup> street)



# Embarcadero Extension

Main Street



Train Storage

Future Bay Tunnel

# 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 (7<sup>th</sup> & King)
- Muni (Central Subway) connection @ 7<sup>th</sup> & 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

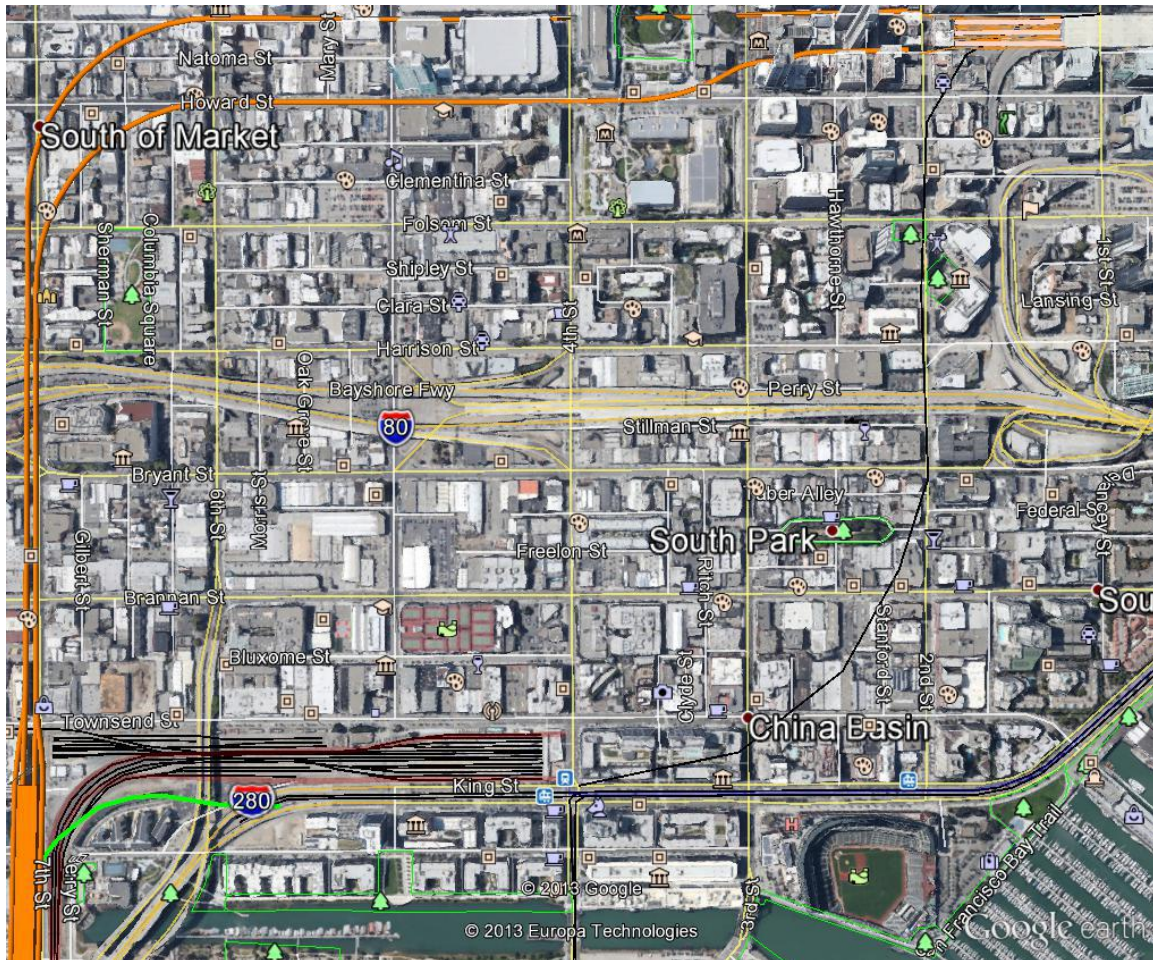
Roland Lebrun  
CCSS@MSN.COM

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.

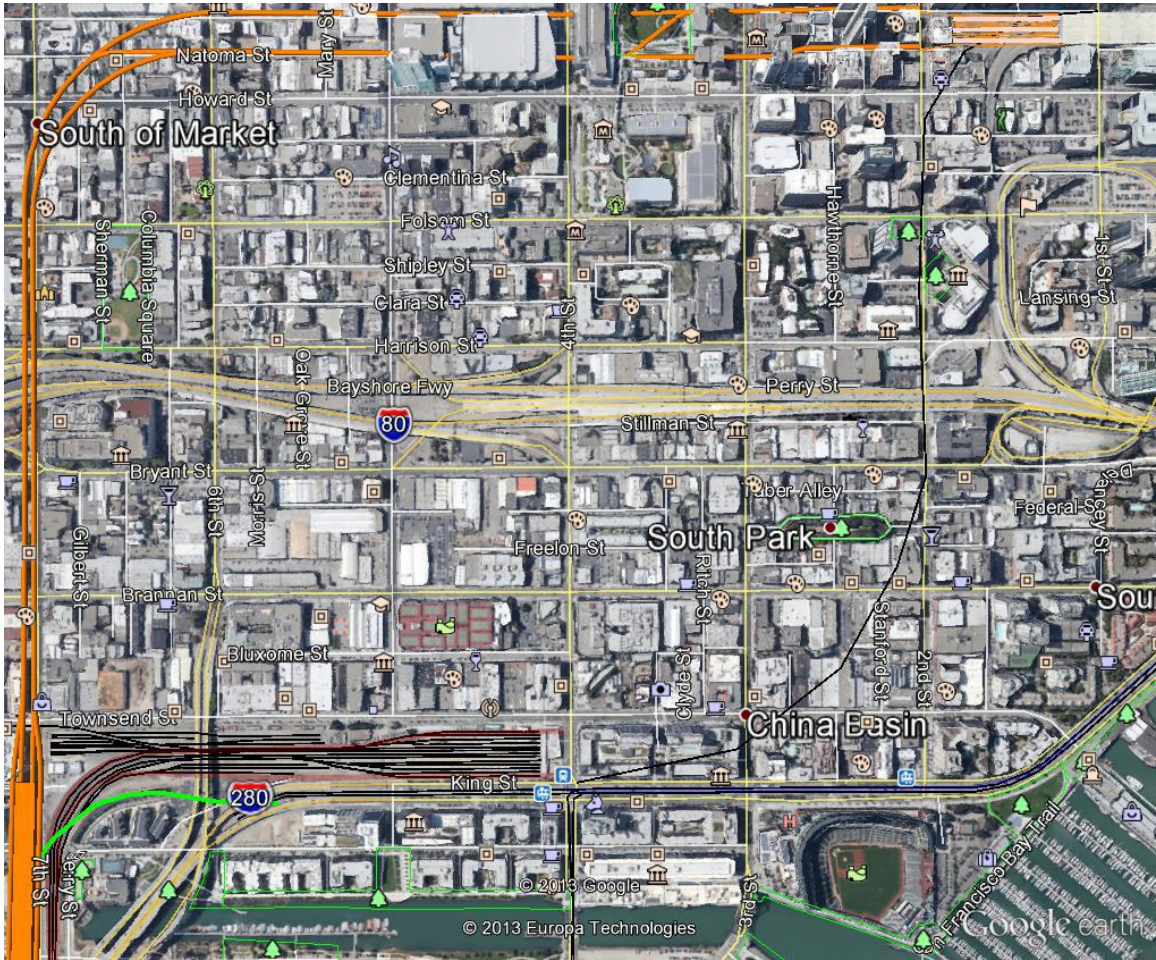
The refined alignment enables the implementation of Crossrail crossover designs and construction techniques to deliver a track layout with the same capacity as the connection between the HS1 tunnels and St Pancras platforms 11, 12 & 13.

Background:

The current northbound DTX tunnel proposal avoids existing building foundations by veering east off 7<sup>th</sup> Street under Howard before lining up with Natoma east of 3<sup>rd</sup> Street.



The refined northbound tunnel alignment lines up with Natoma east of 7<sup>th</sup> Street and runs deep enough to avoid any current or future building foundations between 7<sup>th</sup> and 3<sup>rd</sup> Street, including Moscone Center which is understood to have foundations supported by micropiles extending 100 feet below the surface.

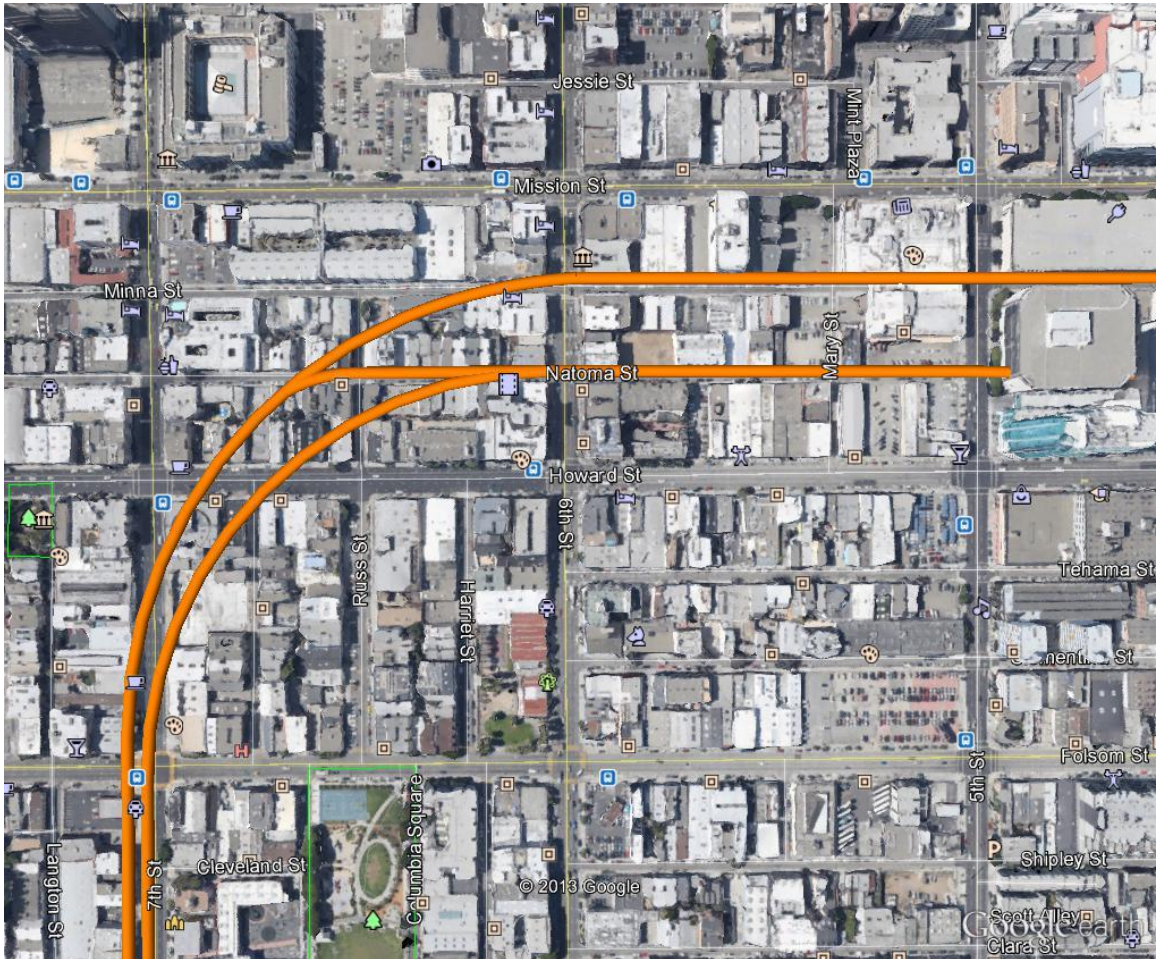


Moving the northbound DTX tunnel alignment to Natoma makes it feasible to connect the two tunnels with additional crossovers as follows:

- 1) Crossover from Northbound to Southbound tunnel between 3<sup>rd</sup> and 4<sup>th</sup> 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).



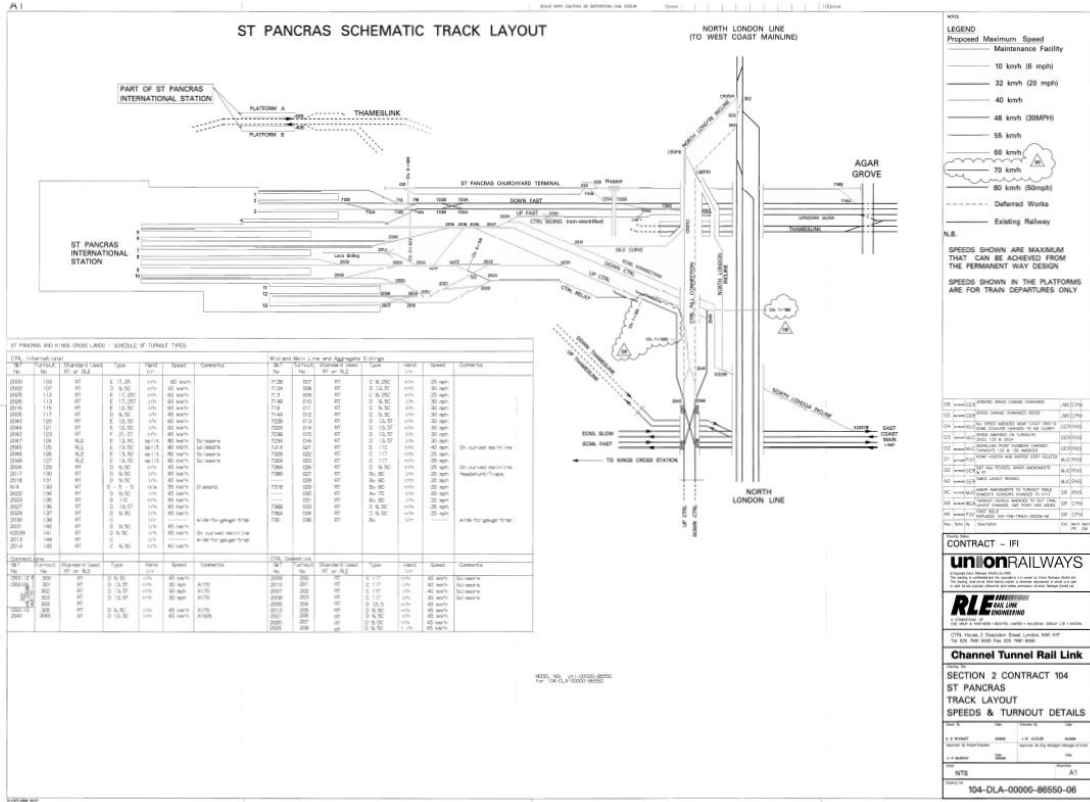
2) Crossover from Northbound to Southbound tunnel between 6<sup>th</sup> & 7<sup>th</sup> Street.  
This crossover is for southbound traffic originating from TTC platforms 4, 5 & 6 which should be reserved for low-volume traffic (maximum 4 trains/hour) because southbound trains originating from these platforms can potentially interfere with northbound traffic between 7<sup>th</sup> 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

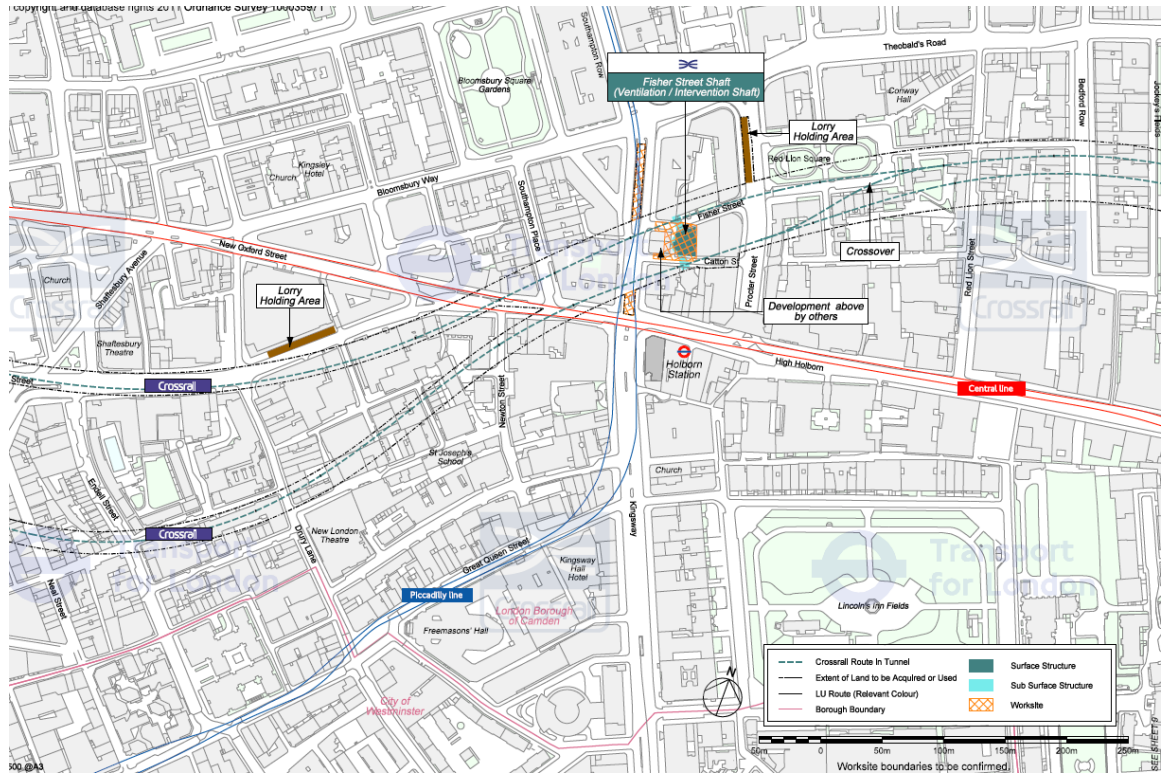


# 2012 Summer Olympics timetable (12 trains/hour)

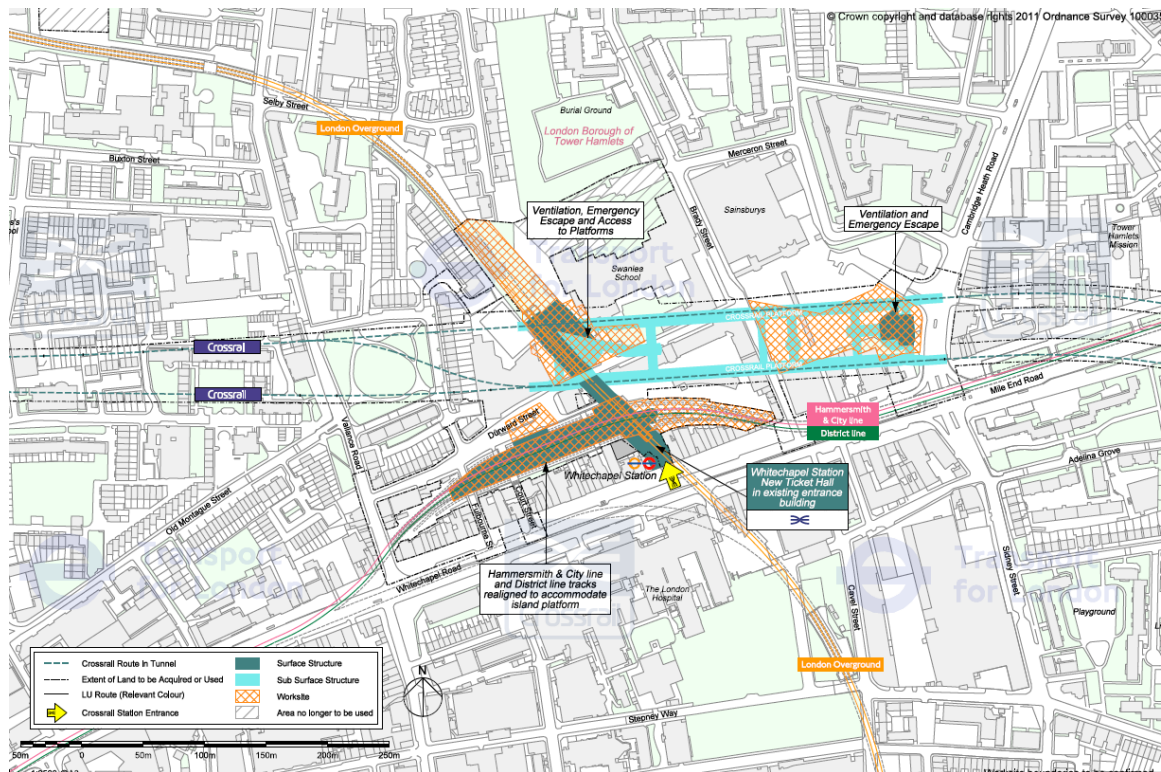
Station	Service	0000	0005	0010	0015	0020	0025	0030	0035	0040	0045	0050	0055	0100	0105	0110	0115	0120	0125	0130	0135	0140	0145	0150	0155	0200	0205	0210	0215	0220	0225	0230	0235	0240	0245	0250	0255	0300	0305	0310	0315	0320	0325	0330	0335	0340	0345	0350	0355	0400	0405	0410	0415	0420	0425	0430	0435	0440	0445	0450	0455	0500	0505	0510	0515	0520	0525	0530	0535	0540	0545	0550	0555	0600	0605	0610	0615	0620	0625	0630	0635	0640	0645	0650	0655	0700	0705	0710	0715	0720	0725	0730	0735	0740	0745	0750	0755	0800	0805	0810	0815	0820	0825	0830	0835	0840	0845	0850	0855	0900	0905	0910	0915	0920	0925	0930	0935	0940	0945	0950	0955	1000	1005	1010	1015	1020	1025	1030	1035	1040	1045	1050	1055	1100	1105	1110	1115	1120	1125	1130	1135	1140	1145	1150	1155	1200	1205	1210	1215	1220	1225	1230	1235	1240	1245	1250	1255	1300	1305	1310	1315	1320	1325	1330	1335	1340	1345	1350	1355	1400	1405	1410	1415	1420	1425	1430	1435	1440	1445	1450	1455	1500	1505	1510	1515	1520	1525	1530	1535	1540	1545	1550	1555	1600	1605	1610	1615	1620	1625	1630	1635	1640	1645	1650	1655	1700	1705	1710	1715	1720	1725	1730	1735	1740	1745	1750	1755	1800	1805	1810	1815	1820	1825	1830	1835	1840	1845	1850	1855	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2100	2105	2110	2115	2120	2125	2130	2135	2140	2145	2150	2155	2200	2205	2210	2215	2220	2225	2230	2235	2240	2245	2250	2255	2300	2305	2310	2315	2320	2325	2330	2335	2340	2345	2350	2355	2400	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2500	2505	2510	2515	2520	2525	2530	2535	2540	2545	2550	2555	2600	2605	2610	2615	2620	2625	2630	2635	2640	2645	2650	2655	2700	2705	2710	2715	2720	2725	2730	2735	2740	2745	2750	2755	2800	2805	2810	2815	2820	2825	2830	2835	2840	2845	2850	2855	2900	2905	2910	2915	2920	2925	2930	2935	2940	2945	2950	2955	3000	3005	3010	3015	3020	3025	3030	3035	3040	3045	3050	3055	3100	3105	3110	3115	3120	3125	3130	3135	3140	3145	3150	3155	3200	3205	3210	3215	3220	3225	3230	3235	3240	3245	3250	3255	3300	3305	3310	3315	3320	3325	3330	3335	3340	3345	3350	3355	3400	3405	3410	3415	3420	3425	3430	3435	3440	3445	3450	3455	3500	3505	3510	3515	3520	3525	3530	3535	3540	3545	3550	3555	3600	3605	3610	3615	3620	3625	3630	3635	3640	3645	3650	3655	3700	3705	3710	3715	3720	3725	3730	3735	3740	3745	3750	3755	3800	3805	3810	3815	3820	3825	3830	3835	3840	3845	3850	3855	3900	3905	3910	3915	3920	3925	3930	3935	3940	3945	3950	3955	4000	4005	4010	4015	4020	4025	4030	4035	4040	4045	4050	4055	4100	4105	4110	4115	4120	4125	4130	4135	4140	4145	4150	4155	4200	4205	4210	4215	4220	4225	4230	4235	4240	4245	4250	4255	4300	4305	4310	4315	4320	4325	4330	4335	4340	4345	4350	4355	4400	4405	4410	4415	4420	4425	4430	4435	4440	4445	4450	4455	4500	4505	4510	4515	4520	4525	4530	4535	4540	4545	4550	4555	4600	4605	4610	4615	4620	4625	4630	4635	4640	4645	4650	4655	4700	4705	4710	4715	4720	4725	4730	4735	4740	4745	4750	4755	4800	4805	4810	4815	4820	4825	4830	4835	4840	4845	4850	4855	4900	4905	4910	4915	4920	4925	4930	4935	4940	4945	4950	4955	5000	5005	5010	5015	5020	5025	5030	5035	5040	5045	5050	5055	5100	5105	5110	5115	5120	5125	5130	5135	5140	5145	5150	5155	5200	5205	5210	5215	5220	5225	5230	5235	5240	5245	5250	5255	5300	5305	5310	5315	5320	5325	5330	5335	5340	5345	5350	5355	5400	5405	5410	5415	5420	5425	5430	5435	5440	5445	5450	5455	5500	5505	5510	5515	5520	5525	5530	5535	5540	5545	5550	5555	5600	5605	5610	5615	5620	5625	5630	5635	5640	5645	5650	5655	5700	5705	5710	5715	5720	5725	5730	5735	5740	5745	5750	5755	5800	5805	5810	5815	5820	5825	5830	5835	5840	5845	5850	5855	5900	5905	5910	5915	5920	5925	5930	5935	5940	5945	5950	5955	6000	6005	6010	6015	6020	6025	6030	6035	6040	6045	6050	6055	6100	6105	6110	6115	6120	6125	6130	6135	6140	6145	6150	6155	6200	6205	6210	6215	6220	6225	6230	6235	6240	6245	6250	6255	6300	6305	6310	6315	6320	6325	6330	6335	6340	6345	6350	6355	6400	6405	6410	6415	6420	6425	6430	6435	6440	6445	6450	6455	6500	6505	6510	6515	6520	6525	6530	6535	6540	6545	6550	6555	6600	6605	6610	6615	6620	6625	6630	6635	6640	6645	6650	6655	6700	6705	6710	6715	6720	6725	6730	6735	6740	6745	6750	6755	6800	6805	6810	6815	6820	6825	6830	6835	6840	6845	6850	6855	6900	6905	6910	6915	6920	6925	6930	6935	6940	6945	6950	6955	7000	7005	7010	7015	7020	7025	7030	7035	7040	7045	7050	7055	7100	7105	7110	7115	7120	7125	7130	7135	7140	7145	7150	7155	7200	7205	7210	7215	7220	7225	7230	7235	7240	7245	7250	7255	7300	7305	7310	7315	7320	7325	7330	7335	7340	7345	7350	7355	7400	7405	7410	7415	7420	7425	7430	7435	7440	7445	7450	7455	7500	7505	7510	7515	7520	7525	7530	7535	7540	7545	7550	7555	7600	7605	7610	7615	7620	7625	7630	7635	7640	7645	7650	7655	7700	7705	7710	7715	7720	7725	7730	7735	7740	7745	7750	7755	7800	7805	7810	7815	7820	7825	7830	7835	7840	7845	7850	7855	7900	7905	7910	7915	7920	7925	7930	7935	7940	7945	7950	7955	8000	8005	8010	8015	8020	8025	8030	8035	8040	8045	8050	8055	8100	8105	8110	8115	8120	8125	8130	8135	8140	8145	8150	8155	8200	8205	8210	8215	8220	8225	8230	8235	8240	8245	8250	8255	8300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## Red Lion Square (London WC1) Crossrail crossover



## Whitechapel Crossrail station (London E14) crossover



**Drozd, Doug@HSR**

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**From:** Troy Kendal <troykendal100@gmail.com>  
**Sent:** Sunday, June 24, 2018 6:53 PM  
**To:** HSR boardmembers@HSR  
**Subject:** Re : Train Station & Bridge design

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Board Members

I am writing today to confirm my support for the the longterm success of the California high speed rail.

I have relocated to Sacramento California.... as I look forward to stopping by the office to introduce myself later this week.

As you know from my previous emails my interest in the project is vast. This strategic interest includes aspects of historic one belt one road initiative -

The Fresno train station design (sent sent digitally previously on email from [troykendal@icoud.com](mailto:troykendal@icoud.com)) is strategically in partnership