

## Drozd, Doug@HSR

---

**From:** Mike Forster <mike@mikeforster.net>  
**Sent:** Thursday, August 11, 2016 10:15 AM  
**To:** HSR boardmembers@HSR  
**Cc:** mlf2  
**Subject:** FW: Subject: Caltrain 2.0: 1) Grade separations less than \$800M; 2) Battery electrification less than \$700M

**Importance:** High

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

California HSR Board of Directors

Everyone,

I would like to bring to your attention two unsolicited reports that I have submitted to the Caltrain Board of Directors and to the California Assembly and Senate transportation committees. These reports advocate alternative approaches to Caltrain grade separations and electrification. The Caltrain Board has responded to me that these reports have been referred to Caltrain staff for review.

A summary of the key points of these reports is in the email to the Caltrain Board below. The full reports are at: [www.mikeforster.net/caltrain](http://www.mikeforster.net/caltrain).

This communication to you was prompted by the recent news that the HSR Authority has voted to support the Caltrain grade separation and electrification projects.

I look forward to your consideration of these reports.

Thank you.

Mike Forster, Systems Engineer [Senior Manager, Systems and Software Engineering (retired)]  
PO Box 390600, Mountain View, CA 94039-0600  
[mike@mikeforster.net](mailto:mike@mikeforster.net)  
650 464 9425 mobile

=====

---

**From:** Mike Forster [<mailto:mike@mikeforster.net>]  
**Sent:** Friday, July 1, 2016 5:20 PM  
**To:** 'board@caltrain.com' <[board@caltrain.com](mailto:board@caltrain.com)>  
**Subject:** Subject: Caltrain 2.0: 1) Grade separations less than \$800M; 2) Battery electrification less than \$700M  
**Importance:** High

July 1, 2016 (also sent as a letter via USPS dated June 15, 2016)

Caltrain Board of Directors  
State Senator Jerry Hill  
Assembly Member Richard S. Gordon  
State Senate Transportation and Housing Committee  
Assembly Transportation Committee

Everyone,

I respectfully request that the alternatives below to the current Caltrain plans for grade separations and for electrification be considered.

The full reports are at: [www.mikeforster.net/caltrain](http://www.mikeforster.net/caltrain).

One report is Caltrain 2.0 - Elevated Crossings. This report advocates a single project to finish grade-separating Caltrain by elevating Caltrain tracks above the remaining grade crossings with these characteristics:

- \* Elevates 16 miles of tracks and platforms for 6 stations.
- \* Lowers only 2 existing grade crossings to become automobile underpasses.
- \* All gradients are less than 1%.
- \* Quieter than current grade crossings.
- \* Can be made visually attractive.
- \* Recovers over 10 miles of right-of-way under elevated tracks for other purposes.
- \* For less than \$800M.

The other report is Caltrain 2.0 - Battery-Powered. This report advocates replacing the planned OCS electrification approach with battery-powered independently-powered electric multiple units (IPEMUs) or battery locomotives, with these characteristics:

- \* Feasible with advancing battery technologies.
- \* Less impact to surroundings and operations.
- \* Easily extendable to additional locations.
- \* Visually more attractive.
- \* Less expensive - perhaps \$615M or less vs. \$1.5B for OCS electrification.
- \* Separates Caltrain from CA HSR - CA HSR would terminate in San Jose.

Thank you very much for taking time to consider these alternatives. If you have any questions, please contact me.

Mike Forster, Systems Engineer [Senior Manager, Systems and Software Engineering (retired)]  
PO Box 390600, Mountain View, CA 94039-0600  
[mike@mikeforster.net](mailto:mike@mikeforster.net)  
650 464 9425 mobile

## Drozd, Doug@HSR

---

**From:** David DePinto <ddepinto@depintomorales.com>  
**Sent:** Friday, August 12, 2016 1:51 PM  
**To:** Richard, Dan@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Arellano, Genoveva@HSR; HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR legislation@HSR; HSR news@HSR; HSR info@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Richard, Dan@HSR; HSR boardmembers@HSR; Arellano, Genoveva@HSR; HSR palmdale\_burbank@HSR; velasquezj@pbworld.com  
**Cc:** Felipe Fuentes; Rebecca Valdez; Claudia Rodriguez; Yolanda.Fuentes@lacity.org; Bell, Tony; DeGonia, Jarrod; Lamb, Teresa; kbarger@lacbos.org; Robles, Enrique; michael.aguilera@mail.house.gov; mayor.garcetti@lacity.org; Jankiewicz, Joe; Senator.Liu@senate.ca.gov; Susan Wong; councilmember.martinez@lacity.org; councilmember.krekorian@lacity.org; Ricardo.benitez@asm.ca.gov; assemblymember.lopez@assembly.ca.gov; scott.wilk@asm.ca.gov; sheila@bos.lacounty.gov; Jim Dantona; vickere.murphy@sen.ca.gov; Daniel; Kenny.LaSalle@mail.house.gov; elizabeth.jimenez@lacity.org; Ackley Padilla; aayala@bos.lacounty.gov; Sylvia Ballin; Joel Fajardo; max.reyes@lacity.org; ana.guerrero@lacity.org; Asatur Hovhannisyan; Fukushima, Steve; eveline.bravoayala@sen.ca.gov; william.ulmer@asm.ca.gov; jim.leahy@asm.ca.gov; jordan.langdon@mail.house.gov; Englund, Nicole; Pichardo, Nelson; Michael Murphy; Matthew Levesque; Marsha McLean; btrujillo@bos.lacounty.gov; Karo Torossian; Roberto, Jody; Leia Hernandez; TimBen Boydston; sean.macneil@asm.ca.gov; Brian Gavidia; monica.ratliff@lausd.net; eric.moody@lacity.org; Perry, Dave; suzanne.reed@sen.ca.gov; sean.macneil@asm.ca.gov; Christian Griffith; Gonzalez, David  
**Subject:** Reminder of Unfinished Business  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear CHSRA:

I'm going to keep this brief (hard to do) as I'm headed to the east coast for my son's start of college and will be out of town for a week (as are others in our group who are dealing with similar typical summer-ending activities).

I've had numerous exchanges with outreach consultant Genoveva Arrellano about the Authority's desire for continuation of community meetings, open houses, etc. On behalf of our communities, our response has been consistent that we do not believe meetings set up by CHSRA that simply relate to "your agenda" will be productive unless and until the Authority addresses the unfinished business we have pointed out in numerous communications, and for which the Authority has not provided any acceptable response. We're not interested in a back and forth with or excuses from the Authority on this. We want to the Authority to do its job, as a state agency and out of respect for our communities, properly. As you know from our communications, as well as that of our elected officials, such as the entire LA County Board of Supervisors, the Authority has failed to be responsive to community and elected official input.

The starting point for future dialogue remains scheduling and completion of a board member site visit to both the Big Tujunga Wash and the footprint of the devastating Station Fire. Not only have we been requesting such a meeting since last August 2015 when Katherine Perez-Estolano departed the board to run for state Senate, but board member Lorraine Paskett committed to conduct such a visit at your April 2016 board meeting in Anaheim, a request that was noted and confirmed by project section director Michelle Boehm by email shortly after. Despite numerous reminders and requests from us, nothing has happened.

As you know, our other issues are removal of infeasible and unilaterally opposed E2 from further consideration in environmental studies, addition of new alternatives to the studies, and proper execution of the "supposed" upfront, independent environmental studies that are plagued by improperly designed scopes of work, incomplete studies and the blatant conflict of interest involving the Mineta Institute.

We've been advised that dates and venues for future meetings have been chosen and that notifications may be forthcoming from the Authority as soon as today. We think that is a very callous, process-driven and problematic course of action. Our community is waiting to see if you are listening...

Sincerely,

Dave DePinto

President, Shadow Hills Property Owners Assn.

Member, SAFE Coalition

cc: SAFE Coalition members

--

David J. DePinto  
818-352-7618 office  
818-352-6781 fax  
310-502-7928 mobile

## Drozd, Doug@HSR

---

**From:** HSR boardmembers@HSR  
**Subject:** FW: Urban Planners and Parking

----- Forwarded message -----

**From:** Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
**Date:** Tue, Aug 16, 2016 at 1:47 PM  
**Subject:** Urban Planners and Parking  
**To:** Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

To all- Interesting article re parking and urban planning:

[http://www.govtech.com/fs/perspectives/Why-Parking-Lots-are-Urban-Planners-Newest-Enemy.html?utm\\_content=buffer26a9f&utm\\_medium=social&utm\\_source=twitter.com&utm\\_campaign=buffer](http://www.govtech.com/fs/perspectives/Why-Parking-Lots-are-Urban-Planners-Newest-Enemy.html?utm_content=buffer26a9f&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer)

Mr. Brett Hedrick: Please forward this up to GM.

Dan Richard: This will be of interest to your people planning HSR stations. I recently met with Dan Zack at the City of Fresno Planning Dept. on an unrelated matter. I asked him what I should tell Dan Richard, and he said "tell him we don't need a lot of **street level** parking around the HSR station in Fresno". Apparently your top person in Fresno is pushing for that. He added that Uber is working well in Fresno.

I told you a few months ago that self driving cars will impact your HSR stations. Palo Alto does not want a station because it would require land for parking, or there just is no such land at the Alma St. Caltrain station. With self driving cars, riders could summon their car to meet them at the station while they travel on HSR. It seems fantastic, but big money is being put into self driving cars by Ford, GM, Toyota, et. al.

Toyota is establishing a center to study and develop artificial intelligence near Stanford. It will cost \$1 billion and employ 200 top level researchers. They apparently think that such people come out of Stanford and, of course, they do.

This article re Ford is now ~15 minutes old: [Be sure to see the ~26 minute video on Ford's Utube channel here.](#) Big announcement in Silicon Valley today by Ford. They will produce autonomous vehicles by 2021. GM will find this interesting.

[http://seekingalpha.com/news/3203782-ford-produce-mass-market-autonomous-vehicle?source=email\\_rt\\_mc\\_readmore&uprof=44#email\\_link](http://seekingalpha.com/news/3203782-ford-produce-mass-market-autonomous-vehicle?source=email_rt_mc_readmore&uprof=44#email_link)

LH

## Drozd, Doug@HSR

---

**From:** David DePinto <ddepinto@depintomorales.com>  
**Sent:** Sunday, August 21, 2016 8:29 AM  
**To:** Richard, Dan@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR legislation@HSR; HSR news@HSR; HSR info@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Richard, Dan@HSR; HSR boardmembers@HSR; Arellano, Genoveva@HSR; HSR palmdale\_burbank@HSR; velasquezj@pbworld.com; Arellano, Genoveva@HSR  
**Cc:** Felipe Fuentes; Rebecca Valdez; Claudia Rodriguez; Yolanda.Fuentes@lacity.org; Bell, Tony; DeGonia, Jarrod; Lamb, Teresa; kbarger@lacbos.org; Robles, Enrique; michael.aguilera@mail.house.gov; mayor.garcetti@lacity.org; Jankiewicz, Joe; Senator.Liu@senate.ca.gov; Susan Wong; councilmember.martinez@lacity.org; councilmember.krekorian@lacity.org; Ricardo.benitez@asm.ca.gov; assemblymember.lopez@assembly.ca.gov; scott.wilk@asm.ca.gov; sheila@bos.lacounty.gov; Jim Dantona; vickere.murphy@sen.ca.gov; Daniel; Kenny.LaSalle@mail.house.gov; elizabeth.jimenez@lacity.org; Ackley Padilla; aayala@bos.lacounty.gov; Sylvia Ballin; Joel Fajardo; max.reyes@lacity.org; ana.guerrero@lacity.org; Asatur Hovhannisyan; Fukushima, Steve; eveline.bravoayala@sen.ca.gov; william.ulmer@asm.ca.gov; jim.leahy@asm.ca.gov; jordan.langdon@mail.house.gov; Englund, Nicole; Pichardo, Nelson; Michael Murphy; Matthew Levesque; Marsha McLean; btrujillo@bos.lacounty.gov; Karo Torossian; Roberto, Jody; Leia Hernandez; TimBen Boydston; sean.macneil@asm.ca.gov; Brian Gavidia; monica.ratliff@lausd.net; eric.moody@lacity.org; Perry, Dave; suzanne.reed@sen.ca.gov; sean.macneil@asm.ca.gov; Christian Griffith; Gonzalez, David; Weikel, Dan; george.skelton@latimes.com; Dana Bartholomew; ralph.vartabedian@latimes.com; Stephen Scauzillo; editor@THEFOOTHILLSPAPER.COM; hillard.gloria@gmail.com; Diana Martinez; denyse@citywatchla.com; Luke Money; Saul Gonzalez; dmanzer@scvhistory.com  
**Subject:** August 31 Meeting Date - Another CHSRA Oversight???

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

Dear CHSRA's Dan Richard, Jeff Morales, Michelle Boehm and Board Members:

Our last communication to you was just before I left to take my son to college on the east coast. I returned last night. The last line in that email asked if you were listening to this community.

Clearly not. We've asked repeatedly for CHSRA to leave this community alone until it responded to our many requests and to not attempt to schedule your perfunctory, substance-less, Critical Path Management meetings at all or at least until post-Labor Day and the end of summer. As you did with scheduling the meeting originally on National Night Out, and then bothered us at the outset of the Station Fire, you've now scheduled a working group meeting on August 31, the last night of the legislative session. We will never know if you knew that or not, but the net result is that our legislators and their staffs are, for the most part, tied up working on the pressing business that goes along with the end of the session. So, they will be unable to attend the meeting and see first-hand that there is no new information and that your outreach effort remains seriously flawed.

Dan Richard, as the CHSRA chairman, you once inexcusably accused me of harassing your staff with emails and requests. You've yet to retract that statement, as all we seek is responsiveness and accountability from our state agency on a tax-funded project that would destroy our communities. We repeat our request for local board member, Lorraine Paskett, to tour our area as she personally said she would at your board meeting in Anaheim, and for a board meeting or a special board meeting to be held in the northeast San Fernando Valley. It's now been a full year since Katherine Perez-Estolano resigned from the board to seek elected office and our requests for a board member meeting are now one year old. Your excuse for months was that the Governor appoints the board and that you'd try but you could not control that. Similarly, Dan, you said there never was a commitment to hold a board meeting in the San Fernando Valley, but we've documented that we worked with your team to identify venues for such a meeting prior to it being scheduled in downtown LA in June 2015.

To us, these excuses don't matter. All we know is we've gone one year now with requests for that unfulfilled board member visit and more than a year for the board meeting to be held here, locally. So, we'll ask again for those meetings, as we continue to await responses to all the unfinished business communicated in prior letters. Let's not call that harassment.

Dave DePinto

President, Shadow Hills Property Owners Assn.

Member, SAFE Coalition

--

David J. DePinto  
818-352-7618 office  
818-352-6781 fax  
310-502-7928 mobile



## BOARD OF SUPERVISORS COUNTY OF MADERA

MADERA COUNTY GOVERNMENT CENTER  
200 WEST FOURTH STREET/MADERA, CALIFORNIA 93637  
(559) 675-7700 / FAX (559) 673-3302 / TDD (559) 675-8970

MEMBERS OF THE BOARD

BRETT FRAZIER  
DAVID ROGERS  
RICK FARINELLI  
MAX RODRIGUEZ  
TOM WHEELER

RHONDA CARGILL, Chief Clerk of the Board

---

August 23, 2016

Dan Richard, Chairman  
California High-Speed Rail Authority  
770 L Street, Suite 620  
Sacramento, CA 95814

### **Invitation to Hold Board of Directors Meeting at the Madera County Government Center**

Dear Chairman Richard;

The Madera County Board of Supervisors would like to invite the California High-Speed Rail Authority (Authority) Board of Directors to hold an upcoming board meeting at the Madera County Government Center.

As you know, Madera County is a significantly important region for the high-speed rail project, and we have been called the “backbone” of high-speed rail. Construction started in our county, and we are home to the Wye, which will serve as a crucial junction for the system. In addition, the project’s only Phase 1 direct connection to Amtrak’s San Joaquin Intercity Passenger Rail Service will be located here.

Given Madera County’s significance and our commitment to the success of the project, we welcome the Board of Directors to hold an upcoming meeting here to increase dialogue between the Authority and our constituents.

We look forward to welcoming the Authority’s Board of Directors to Madera County.

Sincerely,

Supervisor Rick Farinelli, Chairman of the Board

cc: Jeff Morales, CEO  
Diana Gomez, Central Valley Regional Director

**Drozd, Doug@HSR**

---

**From:** Bakersfield New Homes <newhomesofbakersfield@gmail.com>  
**Sent:** Tuesday, August 23, 2016 10:44 AM  
**To:** Richard, Dan@HSR; Morales, Jeff@HSR; HSR boardmembers@HSR  
**Subject:** EIR/EIS Comment  
**Attachments:** VA Emails.pdf

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

Dear Chairman Richard and Mr. Morales,

I understand that the draft EIR/EIS for BFSSA/LGA has not been released yet. With that being said, I respectfully request that the attached emails be included on the record as part of the EIR/EIS comments and that CHSRA study and include the impacts of BFSSA/LGA on veterans care including, but not limited to cost, availability of care, and foregone resources for veterans.

Thank you,

Ryan May



---

**From:** Savoy, Raymond (CFM) [mailto:Raymond.Savoy@va.gov]  
**Sent:** Thursday, April 14, 2016 9:26 AM  
**To:** Milton, Steven@HSR  
**Cc:** Bittancourt, Melisa@HSR; Hendry, Amanda (CFM); Rai, Christine M. (CFM); Kaplan, Jessica (CFM); Pinkney, Radonya D. (CFM)  
**Subject:** RE: Meeting on Bakersfield "F" Street Station with the VA

Steven,

After much discussion, VA has determined to cancel the solicitation, it is not prudent to move forward with the outpatient clinic locating on 1700 Golden State Ave. Please keep updated on the outcome of the Board meeting.

Thanks,  
Ray Savoy  
Contracting Officer  
☎ 202-632-5571 Office  
202-280-8795 Cell

-----Original Appointment-----

**From:** Milton, Steven@HSR

**Sent:** Tuesday, December 22, 2015 1:23 PM

**To:** Milton, Steven@HSR; Gomez, Diana@HSR; Leonardo, Mike@HSR; Bittancourt, Melisa@HSR; [stepha@bakersfieldcity.us](mailto:stepha@bakersfieldcity.us); [dmcisaac@bakersfieldcity.us](mailto:dmcisaac@bakersfieldcity.us); [jkitchen@bakersfieldcity.us](mailto:jkitchen@bakersfieldcity.us); Alan Tandy ([atandy@bakersfieldcity.us](mailto:atandy@bakersfieldcity.us)); [stephanie.perez@dot.gov](mailto:stephanie.perez@dot.gov); Grebe, Don@HSR; Don Anderson ([danderson@bakersfieldcity.us](mailto:danderson@bakersfieldcity.us)); Savoy, Raymond (CFM); Stenlund, Kimberly ([Kimberly.Stenlund@am.jil.com](mailto:Kimberly.Stenlund@am.jil.com)); [Bill.Craig@am.jil.com](mailto:Bill.Craig@am.jil.com); [Radonya.Pinkney@va.gov](mailto:Radonya.Pinkney@va.gov); Rai, Christine M. (CFM); Hendry, Amanda (CFM)

**Subject:** Meeting on Bakersfield "F" Street Station with the VA

**When:** Thursday, January 07, 2016 10:30 AM-12:00 PM (UTC-08:00) Pacific Time (US & Canada).

**Where:** Phone conferance (877) 913-8734 Participant Code 7302269

VA team,

The High Speed Rail Authority would like to set up a meeting with the VA for the first week of January.

I am setting the time for Thursday at 10:30 am.

Ray: We would also like to know if your representative on this project from General Services would be able to attend this meeting?

We plan to have the City of Bakersfield and our Central Valley Director attend this meeting.

An agenda will follow.

Thank you,

Steven Milton PE, PMP

Central Valley High Speed Rail Assistant Regional Delivery Manager

1401 Fulton Street, Suite 200

Fresno, CA 93721

Office Phone (559) 445-5158

Cell Phone (559) 907-5957

## Drozd, Doug@HSR

---

**From:** Adam Cohen <apcohen@berkeley.edu>  
**Sent:** Thursday, August 25, 2016 12:02 PM  
**To:** Dumond, Melissa@HSR; Morales, Jeff@HSR  
**Cc:** Richard, Dan@HSR; HSR boardmembers@HSR; stephanie.perez@dot.gov; Dan Leavitt  
**Subject:** Online Comments Regarding Public Workshops  
**Attachments:** Message 1.JPG; Message 2.JPG; Message 3.JPG; Email.JPG

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

Hi Melissa, Jeff,

I hope things are going well. There are a lot of negative comments being posted online about the Bakersfield Station Area planning process. Attached is a just a handful.

I am concerned that people are expressing anger towards the CHSRA because the alternatives presented on Tuesday did not have any station area planning around the hybrid, in spite being the approved route. Additionally, the CHSRA has repeatedly said with respect to BFSSA/LGA that the preferred designation is:

"NOT an approval or tentative approval or adoption of anything"

"Provides public a more meaningful opportunity to review and comment on 'Preferred Alternative' prior to decision(s)"

"Identification of the "Preferred Alternative" in the Draft Supplemental EIR/EIS also provides efficiencies"

I raised this issue with CHSRA staff a few months ago and was informed that this was the "city's process" - or words to that effect. Unfortunately, the public doesn't view it this way because CHSRA staff were present and participated in Tuesday's public meeting when the consultant implied that F Street had already been selected.

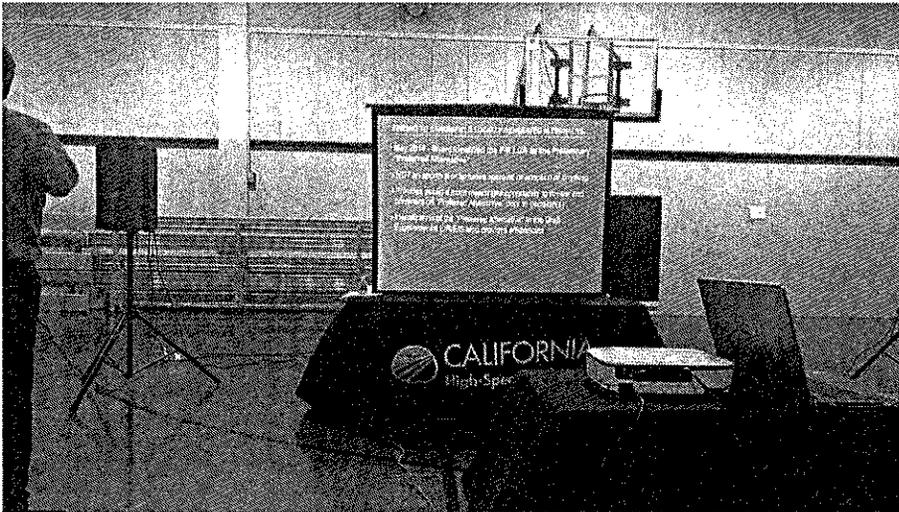
The public is also highly concerned about comments between city staff and the CHSRA potentially implying that the environmental process has a predetermined outcome and that the CHSRA may not be interested in a true locally generated alternative/actual public comment. Multiple tables requested that an alternative station site along LGA in the vicinity of Baker St be examined. I too raised this issue repeatedly with the authority for months and never received a reply as to whether this was feasible or the process for getting this studied.

Moving forward, I think it is prudent that the authority now complete station area planning alternatives around the hybrid station given the CHSRA's presence and participation at Tuesday's meeting. Even if F Street is selected and Amtrak is not relocated, wouldn't it make sense to conduct transit oriented development and station area planning at both stations and conduct a study of circulation between both facilities? The public would like to see the CHSRA and the Joint Powers Authority partner to see how Bakersfield can work with two stations, particularly given the significant public investment that has already been made building a new Amtrak station at Truxtun and S St.

Thank you for your time and consideration on this matter.

Very respectfully,

Adam Cohen



Jake Williams from Riviera/Westchester

1d ago

I'm all for it being by the convention center. But last night they made it sound like that was impossible. I walked out. One, because some homeless guy they let in came and sat next to me. He was covered in scabies and constantly scratched his scabs and open sores. Then the lady on the other side of me was disagreeing with everything and when I asked her where she lived she said on the east side and she doesn't frequent downtown. Just build it wherever. I'm over it!!

Jake Williams from Riviera/Westchester

21h ago

Now last night I kept asking why they wouldn't just put it by Amtrak. And all I got was reasons not to. Now this makes more sense. They want f/golden state. No! Leave it next to the rest of the trains and be done with it

Karen Liascos from Riviera/Westchester

19h ago

I Want to thank Adam very much for posting this info. He is the only reason I even heard about it at all. I feel like the city is being very hush hush and shady on their plans. I agree with the other comments this town needs serious help. Born here 42 years ago, but it has become so full of issues, I can't even pump gas without my pepper spray in hand. It gives me hope from your comments that you guys feel the same and we need a change. I wish the new Mayor the best of luck but its strong, good citizens that will need to stand up and make sure things get better in Bakersfield and God forbid they get any worse. Lets all work together and make it happen!

Thanked! Flag

**From:** [Morales, Jeff@HSR](mailto:Morales_Jeff@HSR)  
**To:** Alan Tandy  
**Cc:** [Gomez, Diana@HSR](mailto:Gomez.Diana@HSR); [Steven L. Tejlia](mailto:Steven.L.Tejlia)  
**Subject:** Re: Thank you  
**Date:** Tuesday, May 10, 2016 4:12:17 PM

---

Alan - thanks to you, Steve and your team. Sorry you had to wait through all that public comment, but we got to the right outcome.

We'll keep working to move things forward - thanks

Jeff Morales  
California High-Speed Rail Authority

On May 10, 2016, at 3:52 PM, Alan Tandy <[atandy@bakersfieldcity.iis](mailto:atandy@bakersfieldcity.iis)> wrote:

That went well in our view. We thank you for the staff recommendation and pledge to continue to work with you on open questions and concerns as the Environmental document moves forward.

Again thank you

## Drozd, Doug@HSR

---

**From:** Loran Harding <loran.harding@stanfordalumni.org>  
**Sent:** Friday, August 26, 2016 2:05 AM  
**To:** HSR boardmembers@HSR  
**Subject:** Fwd: Miami light rail

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

----- Forwarded message -----

**From:** **Loran Harding** <loran.harding@stanfordalumni.org>

**Date:** Fri, Aug 26, 2016 at 1:59 AM

**Subject:** Fwd: Miami light rail

**To:** Loran Harding <loran.harding@stanfordalumni.org>, Dan Richard <danrichard@mac.com>, dennisbalakian <dennisbalakian@sbcglobal.net>, David Balakian <davidbalakian@sbcglobal.net>, Mayor <mayor@fresno.gov>, CityManager <citymanager@fresno.gov>, "sal.quintero" <sal.quintero@fresno.gov>, esmeralda.soria@fresno.gov, "paul.caprioglio" <paul.caprioglio@fresno.gov>, "lee.brand" <lee.brand@fresno.gov>, Mark Kreutzer <mlkreutzer@yahoo.com>, huidentalsanmateo <huidentalsanmateo@gmail.com>, hennessy <hennessy@stanford.edu>, "city.council" <city.council@cityofpaloalto.org>, "Greg.Gatzka" <Greg.Gatzka@co.kings.ca.us>, Joel Stiner <jastiner@gmail.com>, Tranil Thomas <soulja92y@hotmail.com>, Leodies Buchanan <leodiesbuchanan@yahoo.com>, Mark Standriff <mark.standriff@fresno.gov>, midge@thebarretts.com, mike <mike@electriclaboratories.com>, "scott.mozier" <scott.mozier@fresno.gov>, beachrides <beachrides@sbcglobal.net>, bearwithme1016@att.net, "robert.andersen" <robert.andersen@fresno.gov>, bmcewen <bmcewen@fresnobee.com>, bretthedrick <bretthedrick@hedrickschevy.com>, Cathy Lewis <catllewis@gmail.com>, Doug Vagim <dvagim@gmail.com>, Raymond Rivas <financialadvisor007@gmail.com>, firstvp@fresnopoa.org, finerlo@wildelectric.net, Gary Turgeon <garyt@michaelautomotive.com>, "steve.hogg" <steve.hogg@fresno.gov>, jerry ruopoli <jrwiseguy7@gmail.com>, kclark <kclark@westlandswater.org>, nick yovino <npyvovino@gmail.com>, Paul Dictos <paul@dictos.com>, popoff <popoff@pbworld.com>, President <President@whitehouse.gov>, pavenjitdhillon@yahoo.com, "richard.wenzel" <richard.wenzel@aec.com>, rosenheim@kpix.cbs.com, Steve Wayte <steve4liberty@gmail.com>, terry <terry@terrynagel.com>, thomas.esqueda@fresno.gov, Jason Tarvin <jasontarvin@gmail.com>, "david.valenstein" <david.valenstein@dot.gov>, Dan Walters <dwalters@sacbee.com>, Daniel Zack <daniel.zack@fresno.gov>

Friday, August 26, 2016

Mr. Dan Richard  
Chairman of the Board  
California High Speed Rail Authority

Dan- I sent you the attached on April 25, 2016. You have not told me not to distribute it widely, so now I shall.

A few items have come to my attention since 4-25-16:

I see now that Altamont Corridor Express (ACE) trains from Stockton come to the Santa Clara Station. I did not mention that in my analysis below. Also, Capitol Corridor trains began stopping at the Santa Clara station on May 21, 2012. These two facts bolster my argument for pushing HSR service on from San Jose Diridon to the Santa Clara Caltrain station, the central idea of my long analysis attached here.

Last week the State of California awarded \$20 million to help finance the extension of BART on across San Jose to the Santa Clara Caltrain station. I mention the BART extension in my analysis. The ~\$6.4 billion it will cost will be on the ballot in Santa Clara County in November, 2016.

This morning, KCBS reported that the (merely) U.S. Secretary of Transportation was at the Santa Clara Caltrain station yesterday. I believe that he talked about federal money to help with the BART extension across San Jose to Santa Clara.

Wikipedia says this about the Santa Clara Station (California):

"The station was considered for California High Speed Rail, but was rejected on the grounds that it was too close to nearby, and much larger, Diridon Station in San Jose... Rather, it was decided that two Peninsula stations would be sufficient, one in Palo Alto or Redwood City, and the other serving the larger (than San Jose Mineta) San Francisco International Airport"

As to that, I believe that the above, plus all of my analysis in the attached, justifies pushing HSR on as far as the Santa Clara Caltrain station. There is land to be had on the (San Jose Mineta Airport) side of the Caltrain tracks there. You might have to resort to eminent domain, but Santa Clara looks like a logical place for a major transportation hub.

Also, Ford Motor Co. announced about two weeks ago that it will build a large research campus in the Palo Alto area to develop autonomous vehicles, as well as spend money for research on this at MIT and in Germany. Toyota announced a few months ago that it will spend \$1 billion on a similar campus near Stanford (and MIT).

Elon Musk has hinted at a bus type vehicle from Tesla. This Ford, Toyota and Tesla effort will help with transporting HSR riders from a Santa Clara station to their jobs in Silicon Valley, making a HSR stop in Santa Clara even more logical. Something a lot better than diesel buses appears to be in the offing.

Mr. L. William Harding  
Fresno, Ca.

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

Date: Mon, Apr 25, 2016 at 12:13 AM

Subject: Fwd: Miami light rail

To: Dan Richard <[danrichard@mac.com](mailto:danrichard@mac.com)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

Date: Sun, Apr 24, 2016 at 6:48 PM

Subject: Fwd: Miami light rail

To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

Sun. April 24, 2016

Dan- One more comment about the attached. You see me underline that "development by others in the significant amount of empty land on the north side (airport side) of the tracks at the Santa Clara Caltrain stop should be discouraged". Please look at the Google satellite images in the link I provide in the attached. It is most interesting.

I am suggesting that a major hub for Caltrain, HSR, BART, and express buses transporting commuters arriving on those systems on throughout Silicon Valley, could be built at the Santa Clara Caltrain stop or station. It would have to be built on this land on the "airport side" of the Caltrain/HSR tracks, I would think. The purpose of this email is to urge all involved to **acquire enough of that land now**, or at least get City of Santa Clara officials to prevent anyone from building on it.

I am talking about the land from Brokaw Rd. on the north down to Newhall St. on the south, all on the airport side of the tracks. There are at least two big complexes of buildings that front on Brokaw Rd. and Coleman Ave. on the north. They are not labeled on the satellite image. Just south of what is marked "Coolbox Portable Storage" there is a strip of rust-colored land that runs south to Newhall St. Roughly estimating from the satellite image, that might be 150' deep from the tracks and a quarter of a mile long. If so, this is land that should be isolated or acquired now by CHSRA, Caltrain and BART. All involved could build here a combined HSR, BART and Caltrain station. Land should also be available for express buses adjacent to this complex.

Notice that from the rust-colored strip of land **out to** Coleman Ave. there is **a lot** of additional land. I see earthmoving equipment in there on the satellite image, so, unfortunately, something is being built there. It might be 1/8 of a mile from the tracks out to Coleman Ave. So if you had **all** of that, you would have a piece of land 1/8 by 1/4 of a mile in size, enough for a huge complex. The rust-colored strip of land might be all that you, BART and Caltrain would need. Your station planners could tell you by looking at this image for two minutes.

I should think that you would want to acquire access for express buses to drive out from the rust-colored land onto Coleman Ave. to proceed out to DeLaCruz Blvd and to Central Expressway.

I do not know what your rules are for acquiring land long before you build a HSR station. Complicating that are the rules that BART follows for building a BART station. **My whole point here** is that the rust-colored strip of land, and maybe parts of the land from it out to Coleman Ave., should somehow be protected from development now.

If you agree with my analysis in the attached emails, you will want to work with BART and Caltrain to design a combined HSR, BART and Caltrain station on the airport side of the tracks at the current Santa Clara Caltrain stop. Again, the proximity of Mineta San Jose Airport and the Central Expressway up through Silicon Valley make this a logical development for all of the agencies, it seems to me.

The fact that BART might not come across San Jose to the Santa Clara Caltrain station until 2025, at a cost of a mere \$4.5 billion, complicates all of this. But presenting these ideas to all involved might get the planning process moving faster.

The immediate need, I think, is to determine how much land you would need for a combined station and to acquire that land before anyone else builds on it. Maybe Caltrain and BART could help pay for the land.

I'll wait a couple of weeks before I forward this far and wide, at least until Mon., May 9. If I hear from you in that time to hold up on doing that, I won't send it out.

Mr. L. William Harding  
Fresno, Ca.

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Fri, Apr 22, 2016 at 10:06 PM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Fri, Apr 22, 2016 at 9:53 PM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Fri, Apr 22, 2016 at 4:18 PM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Mon, Apr 18, 2016 at 2:38 AM  
Subject: Fwd: Miami light rail  
To: Dan Richard <[danrichard@mac.com](mailto:danrichard@mac.com)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Mon, Apr 18, 2016 at 2:33 AM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Mon, Apr 18, 2016 at 1:58 AM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Sun, Apr 17, 2016 at 5:05 PM  
Subject: Fwd: Miami light rail  
To: Dan Richard <[danrichard@mac.com](mailto:danrichard@mac.com)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Sun, Apr 17, 2016 at 4:46 PM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Sun, Apr 17, 2016 at 3:15 PM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

Sun. 4-17-16

Dan- Here is a the Mineta San Jose International Airport and surrounding area on Google Maps: Scroll down to the satellite image. One can click below the word "satellite" and get labels on streets and buildings.

<http://www.skybrary.aero/index.php/KSJC>

Click and drag and zoom in and out. You see the large terminal on the north side of the airport, closest to the Bayshore Freeway, Hwy 101. BTW, the south side of the airport is for private planes. Note that W. Trimble Rd. runs from 101 along the north edge of the airport, and JUST along the north edge. As it proceeds toward El Camino Real, it becomes DeLaCruz Blvd. where the **Central Expressway ends by dead-ending into it southbound.**

DeLaCruz then crosses the Caltrain tracks on a complicated overpass and this puts vehicular traffic down onto El Camino Real northbound. Just south of that point, we see the Santa Clara Police bldg., and south of it on El Camino is the Santa Clara Caltrain station, if it can be called a station.

Looking at that, I wonder how one would install a large hub for BART, Caltrain, HSR, and room for numerous express buses that could carry commuters on HSR from the Central Valley to their jobs in Silicon Valley. Notice the large parking lot in front of the Santa Clara Caltrain station. Railroad Ave. comes in from El Camino and connects with Benton St. Together, they surround the parking lot. There is a long shed-like structure labeled So. Bay Historical Railroad. The property is bound on the north along the Caltrain tracks on the El Camino side of the tracks by the Santa Clara Police bldg. and on the south by the "Candlewood Suites Silicon Valley/San Jose".

Buses currently deliver Caltrain passengers to San Jose Airport from the Santa Clara Caltrain station. In fact, I found that a Bus 10 does that and can even be free. It's about a 10 min. ride. So no "people-mover" required, although one is discussed.

I will be most interested to see how BART will install a station there when it comes six miles across San Jose to get to Diridon Station and then on to the Santa Clara Caltrain/ HSR station.

I do not know how far along the tracks it is from the San Jose Caltrain Station to the one in Santa Clara. 3 or 4 miles? You would have to electrify that stretch to get your HSR trains to Santa Clara. Because of the proximity of the Santa Clara station to San Jose Airport, and to the Central Expressway for the express buses, it may be worth it to make that stretch the first one you attempt to electrify. Your line will be electrified northbound into your San Jose HSR station, so it is "just" a matter of continuing the electrification on another 3 or 4 miles north.

There appears to be significant empty land on the north side of the Caltrain tracks at the Santa Clara station. This empty land is labeled "Cool Box Portable Storage" on the Google satellite images. This empty land lies roughly between Brokaw Rd. on the north and Newhall St. on the south, all on the "airport" side of the tracks. Perhaps that is where northbound HSR passengers from the C. V. could disembark HSR to get to express buses. These could then drive out north along the north side (airport side) of the tracks to get to DeLaCruz Blvd. to connect with Central Expressway for the drive north into S.V. I should think that they could go out onto Coleman Ave. and proceed to DeLaCruz. No need to get onto El Camino and to go over the complicated overpass over the tracks. Again, notice the large amount of wonderfully bare land from "Cool Box Portable Storage" and south, clear down to Newhall St. It runs deep away from the tracks in one place.

If you agree with me that it would be wonderful for all involved for HSR to run north to the Santa Clara Caltrain station at an early date, you will want to start working with BART, with Caltrain to electrify their tracks from San Jose to the Santa Clara station, and the with the City of Santa Clara. Development by others in the parking lot in front of the station, elsewhere along the south side (El Camino side) of the tracks, and in the significant amount of empty land on the north side (airport side) of the tracks, should be discouraged.

It makes great sense to me for HSR to push north to Santa Clara at an early date. Silicon Valley high-income, high-tech workers can buy beautiful new homes in Fresno with their obscenely high S.V. rent payments. Express buses in S.V. can deliver them from their jobs to a Santa Clara station fairly quickly via the Central Expressway. Central Valley residents will ride HSR to easily access Mineta San Jose airport since they are currently gouged viciously to fly from FYI (Fresno) to either SFO or LAX. When BART comes to the Santa Clara station, perhaps with your encouragement, C.V. residents will have even more reason to ride HSR to Santa Clara. Levi Stadium in Santa Clara will also attract riders to HSR.

I hope that you see the value of pushing on north to Santa Clara at an early date. For that to make the most sense, co-operation with BART, Caltrain on electrification, the City of Santa Clara and, perhaps, Silicon Valley employers would be helpful at this point.

Mr. L. William Harding

Fresno, Ca.

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Sat, Apr 16, 2016 at 1:47 PM  
Subject: Fwd: Miami light rail  
To: Dan Richard <[danrichard@mac.com](mailto:danrichard@mac.com)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Sat, Apr 16, 2016 at 11:56 AM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

Saturday, April 16, 2016

Mr. Dan Richard  
Chairman of the Board  
California High Speed Rail Authority

Dan- Here's a good article re BART to San Jose. Not news to you.

[http://www.mercurynews.com/bay-area-news/ci\\_25302661/bart-extension-san-jose-is-moving-right-along](http://www.mercurynews.com/bay-area-news/ci_25302661/bart-extension-san-jose-is-moving-right-along)

BART will terminate southbound near 101 just south of where 101 crosses 880.

At the Milpitas BART station, riders can transfer to the VTA light rail system to go to Silicon Valley Cos. along Tasman Drive.

Notice that "the hope is that someday BART will go on west for six miles across San Jose to the **Santa Clara** Caltrain station". A route to the San Jose Caltrain station would be shorter than one to the Santa Clara Caltrain station. (**See discussion below**). If BART did go to your SJ station (**it will, apparently**), northbound HSR riders could transfer from HSR there and take BART up the East Bay clear to San Francisco and even into SFO.

LH- Note: Here is discussion of the BART extension west across San Jose that might happen by 2025:

[https://en.wikipedia.org/wiki/Silicon\\_Valley\\_BART\\_extension](https://en.wikipedia.org/wiki/Silicon_Valley_BART_extension)

In this discussion, we read under "Proposed San Jose/Santa Clara Extension" that

"The line would continue to the proposed San Jose Diridon Train Station and the proposed BART subway station would be called "Diridon/Arena". It would either terminate there, allowing for a future extension to the proposed Santa Clara Caltrain Station, or go all the way to that (Santa Clara) station in the same phase of construction".

Running BART across San Jose to the Santa Clara Caltrain station does make sense in that that station is very near to Mineta San Jose International Airport. Also, the Santa Clara Caltrain Station is very close to where Central Expressway begins, at DeLaCruz Blvd. along the northern edge of Mineta San Jose Airport. Express buses could run from the Santa Clara Caltrain (and HSR) station, therefore, to take HSR riders to their jobs in Silicon Valley via Central Expressway.

SO, if you could electrify Caltrain from your San Jose HSR station to the Santa Clara Caltrain Station, HSR riders could disembark HSR at the Santa Clara station and

- 1) Board BART( by 2025) to go back east across San Jose and north up the East Bay as far as to San Francisco and even to SFO, or
- 2) Walk across the platform and take Caltrain north as far as San Francisco, or
- 3) Board express buses to go to their jobs all over Silicon Valley, or
- 4) Take a 10-minute bus ride right into San Jose Airport, or
- 5) Take express buses to Levi Stadium.

It has struck me that San Jose is sort of south of the bulk of Silicon Valley, and that Santa Clara is more on target. Those express buses would have an easier time departing the Santa Clara station than departing your San Jose HSR station to get to places like Page Mill Road in Palo Alto. That is because the Central Expressway up through Silicon Valley terminates south-bound at DeLaCruz Blvd. along the northern edge of San Jose Airport, and close to the Santa Clara Caltrain station.

BTW, Central Expressway runs as far north as the Caltrain Station in Palo Alto. It then continues ~another half mile further north where it crosses the Caltrain tracks and merges north-bound into El Camino Real about even with the northern edge of Stanford land and of, not coincidentally, Santa Clara County. As Central Expressway enters Palo Alto northbound, it becomes Alma St.

For the reasons stated above, to run BART on across San Jose to the Santa Clara Caltrain station and to run HSR on north to the Santa Clara station would make great sense. Riders from all over the BART system could get to Caltrain and to HSR and have access to Mineta San Jose Airport. HSR riders could get to BART and to express buses during the commute to get to jobs all over Silicon Valley, and have easy access to San Jose Airport when they need that.

I think it would make sense for CHSRA to work closely with BART and Caltrain to make the Santa Clara Caltrain station a major hub for HSR, BART, Caltrain and some conveyance into nearby San Jose Airport from the Santa Clara station. Extending BART across San Jose to the Santa Clara Caltrain station AND electrifying the Caltrain line from San Jose up to at least the Santa Clara Caltrain station at an early date could all be part of a unified package.

BTW, from 1995 to 2000, I lived a few blocks south-west of the University of Santa Clara in Santa Clara.

Mr. L. William Harding  
Fresno, Ca.

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Sun, Mar 27, 2016 at 2:36 PM  
Subject: Fwd: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

----- Forwarded message -----

From: **Loran Harding** <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>  
Date: Sun, Mar 27, 2016 at 12:05 PM  
Subject: Miami light rail  
To: Loran Harding <[loran.harding@stanfordalumni.org](mailto:loran.harding@stanfordalumni.org)>

Sun. 3-17-16

Dan- Here is a mildly interesting article re light rail for Miami.

[http://www.theguardian.com/business/2016/mar/26/miami-light-rail-project-mass-transit-hitachi-ansaldo?utm\\_source=esp&utm\\_medium=Email&utm\\_campaign=GU+Today+USA+-+Version+CB+header&utm\\_term=163994&subid=9481247&CMP=ema\\_565](http://www.theguardian.com/business/2016/mar/26/miami-light-rail-project-mass-transit-hitachi-ansaldo?utm_source=esp&utm_medium=Email&utm_campaign=GU+Today+USA+-+Version+CB+header&utm_term=163994&subid=9481247&CMP=ema_565)

KCBS has reported this in recent days:

1) San Francisco is #2 in terrible highway traffic in the **U.S.** and San Jose is #5. I gathered that Los Angeles is #1. In the world, Mexico City is #1. With only 20 or 30 million people inside the city limits, you can see why.

2) The Bay Area has seen a population growth of 400,000 people in some recent time period, maybe ten years, but has added only 54,000 housing units. That has produced the humanitarian crisis in housing costs there. I don't think you can emphasize too much **the role that HSR from San Jose to Fresno can play in addressing that.**

But then, to make that argument, you have to say how Silicon Valley workers will get onto HSR trains bound for their affordable homes in Fresno.

Assume that San Jose is the northern HSR terminus, for now. Light rail runs up First St. in San Jose, goes on north, winds around in Santa Clara, crosses the Central Expressway to get to the Caltrain line, and ends northbound across the platform from it in Sunnyvale or Mt. View. You know all of this. Riders on that light rail

can therefore get as far north as SF or as far south as Gilroy on Caltrain with one transfer. I wonder how many riders use that light rail to get to the Caltrain stop in Mt. View I refer to.

It would have been wonderful if the southbound **light rail** went to the San Jose Caltrain station (and hence to the San Jose HSR station) **instead of** down First St. in San Jose. It's a long ways from First St. in San Jose up to the San Jose Caltrain station. Light rail then continues WAY south in San Jose. It runs along Hwy. 85 in south San Jose, and a lot of condo-style housing has developed near the stations there.

What if that light rail line ran a little further south along Hwy. 85 to a HSR **stop** in south San Jose? Just musing. HSR riders from the Central Valley could get off there, board light rail, and proceed north to the S. V. companies in and north of San Jose. You would be leveraging the clever planning that the light rail builders did and the growth of jobs near that line. It could be a HSR stop only during the rush hour, say 6 AM to 9 AM and 4 PM to 7 PM. (But see my idea of express buses from the San Jose HSR station (or the Santa Clara Caltrain station) to S.V. employers, below. That would work better, I think).

3) KCBS says that BART to San Jose will be completed in 2017. Also, BART will go from the current ~669 cars to over 1,000 cars. BART is immensely popular. Since you were President of the BART board, you can take some credit for that.

I wonder how far it will be from the San Jose BART station to the San Jose HSR station. We can't seem to win on getting regional commuters in the Bay Area to HSR in San Jose. They can get off of light rail on First St. in San Jose or get off of BART in NE San Jose, but then they have a problem in getting to the San Jose HSR station if they live in Fresno. So light rail won't go to the San Jose HSR station, and BART in San Jose won't go it either, at least until ~2025..

A solution to this issue is to run HSR to the Santa Clara Caltrain/HSR station and to run BART across San Jose to Diridon Station and on to the Santa Clara Caltrain/HSR station. I outline this above in my emails of April 16 and 17, 2016. "Just" extending HSR north to the Santa Clara Caltrain/HSR station, even without BART across San Jose, would permit commuters from the Central Valley to get to employment in Silicon Valley via express buses using Central Expressway, permit them to access Mineta San Jose Airport, permit them to access Caltrain, and permit them to get to Levi Stadium on express buses. If they work east of Diridon Station, they could disembark HSR at that station and board express buses taking them to jobs in central, north and east San Jose.

Maybe this is where Uber, or express buses, come in. You take HSR from Fresno to the San Jose HSR station, then Uber right to your place of employment in Silicon Valley. One could envision express buses lined up at the San Jose HSR station or at the San Jose BART station: some going to Intel in Santa Clara, some going to National Semi there, some going to Applied Materials there, some to various HP facilities in S.V. Perhaps that is the solution. You need some conveyance that takes HSR or BART riders into Silicon Valley right to their destination, and express buses (even such buses run by the S.V. employers) could do that. People drive to work now in S.V., but if HSR is going to get them to affordable housing in Fresno, some scheme to get Silicon Valley workers from a San Jose HSR station to their jobs, and visa versa, will have to be developed.

Volume of riders Fresno to S.V.: How many workers are there in S.V. 400,000? What percent would leave their \$2,300 a month tiny, old apartments in Santa Clara and buy a house in Fresno? One could buy a beautiful, big new \$400,000 house here with that as one's mortgage payment. Say 50,000 S.V. workers did that. Say a HSR train can carry 1,000 people. You'd need 50 **trains** per morning running Fresno to San Jose. I just mention it since it would require a huge increase in your rolling stock. This should be a fun problem for your financial people to address.

As to that, what would prevent you from having trains long enough to carry 5,000 riders? Ten such trains departing the Central Valley at intervals could transport 50,000 riders. You wouldn't be blocking grade crossings with long HSR trains.

What will happen then, given the outrageous cost of housing in Silicon Valley, is that if you run HSR San Jose to Fresno, and to Hanford and Bakersfield, HSR will become a commuter line in the morning and evening. Perhaps it was never envisioned as a commuter rail line, but that is what it will be during the rush hours. If you provide a way to get from San Jose to Fresno in one hour, people with good jobs in Silicon Valley will buy homes in Fresno. I am sure of it. The gradient in housing costs over the 165 miles SJ to Fresno must be one of the steepest in the world. You will charge them to ride the trains, but the issue of most of the trains only being used from 6 AM to 9 AM and from 4 PM to 7 PM is one you will have to consider. That is six hours out of the 18 hours per day that I think you plan the trains to run- one third of the daily schedule. Most of the trains, BTW, would dwell all day at the San Jose station after the morning commute, and dwell at the Fresno, Hanford and Bakersfield stations over night after the evening commute. So you'd have to make provisions for them to be so parked at those time.

Hope these thoughts are helpful. It's fun to think about all of this.

BTW, in the article above about light rail in Miami, notice that it says that Hillary Clinton wants to spend \$275 billion on infrastructure upgrades of various sorts. Since Fresno to San Jose will rapidly become a commuter rail line, maybe that portends more federal funding for Calif. HSR. Your people could start now to make the case that California HSR will be a commuter rail line, at least part of the time.

Mr. L. William Harding  
Fresno, Ca.

**Drozd, Doug@HSR**

---

**From:** Bob Thompson <bob.thompson3672@gmail.com>  
**Sent:** Friday, August 26, 2016 12:13 PM  
**To:** Alan Tandy  
**Subject:** Re: In Response to Alan Tandy's Actions Against Kern County Veterans

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

Mr Tandy,

The fact is the city decided to intentionally displace the VA clinic, the County Dept of Veterans Affairs, and Golden Empire Transit. You easily could have developed another route or the approved route. But according to the CHSRA, the city developed the "locally generated alignment" - not the CHSRA. Don't blame the CHSRA for the city's alignment. It's time you take responsibility for your city's actions rather than blaming everyone else.

Bob

On Fri, Aug 26, 2016 at 11:54 AM, Alan Tandy <[atandy@bakersfieldcity.us](mailto:atandy@bakersfieldcity.us)> wrote:

Mr. Thompson,

The City of Bakersfield has no control at all over either the Veterans Administration or High Speed Rail. We became aware that both were pursuing the same site and they were both made aware of it. They selected their own paths- which includes a solicitation for the VA clinic now.

Good day.

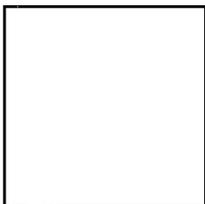
**From:** Bob Thompson [mailto:[bob.thompson3672@gmail.com](mailto:bob.thompson3672@gmail.com)]  
**Sent:** Friday, August 26, 2016 10:27 AM  
**To:** Alan Tandy  
**Subject:** In Response to Alan Tandy's Actions Against Kern County Veterans

Mr. Tandy,

As a veteran, I read your letter with a mixture of sadness, and anger. You are saying, on the record, that the City of Bakersfield values high-speed rail at F Street and Golden State Avenue more than a new VA clinic at that site. I am troubled that you would allow a public infrastructure project to delay needed services to Kern County veterans. **It's very clear that YOU and the CITY feels high-speed rail is more important than veterans who defended your freedom.** As you continue to defend "Tandy's folly" perhaps you should consider your comments and your position more closely.

Respectfully,

Bob



## **Drozd, Doug@HSR**

---

**From:** M S Alam <alammsalam@ymail.com>  
**Sent:** Thursday, September 01, 2016 8:34 AM  
**To:** HSR boardmembers@HSR  
**Subject:** Re: TODAY INVISIBLE TRAIN IS NOT DREAMING.

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

On Aug 22, 2016 1:08 PM, alammsalam@ymail.com M S Alam wrote:

>  
> Chairman  
> Mr. Dan Richard  
> California High-speed Rail Authority  
> Sacramento CA,  
> USA.  
>  
> Honourable Chairman  
> Mr. Dan Richard  
> With due respect,  
>  
> Sheibu Railway co. Planning to celebrate 100 year 2018 their successful history of business development.  
>  
> President Mr. Takashi Goto, Sheibu Railway Co. interested to present the Japan Nation a wonderful Invisible Train.  
>  
> Kazuyo Sejima Architecture of Japan, famous in this line, appointed and working for Invisible Train. Please you may visit Google search " Invisible Train Japan " recent pictures.  
>  
> You may read many news reports about the issue that, it's covered in a reflective surface. Not disappear from landscape.  
>  
> May i draw your kind attention,  
> today invisible Train is not dreaming. If you interested for the formula i very much interested to contract MOU with you for your only invisible train project. Just required for few months researches, if you please allow me to confirm confidential highly technological opportunities.  
>  
> Highly appreciated for your any questions about the issue.  
>  
> Thanks and best regards,  
> Yours faithfully,  
>  
> M. S. Alam  
> Em:alammsalam@ymail.com  
> Cell:+8801715445969  
> Address: 33 chha, Mohakhali, Banani, Dhaka, Bangladesh.

Roland Lebrun  
[ccss@msn.com](mailto:ccss@msn.com)  
September 11 2016

Metropolitan Commission  
Programming & Allocations Committee 9/14 Meeting  
Item 3.B Caltrain Modernization Project Status Update

Dear Chair Wiener and members of the Programming & Allocation Committee,

Thank you for agendizing an update on the Caltrain Modernization Project.  
The intent of this letter is to highlight emerging issues not covered by the staff presentation.

### Capacity

I would like to thank MTC for providing relief for the so-called “Caltrain capacity crisis”. Six of the eleven Metrolink cars parked behind the CEMOF maintenance facility have been put into service and half of the Caltrain fleet now consists of 6-car (762 seats) trains. This reconfiguration has resulted in a significant reduction in standing-room-only trains during peak.

Unresolved issues:

How could Caltrain’s proposed \$551M train order possibly handle the current passenger seat demand let alone a doubling when the Downtown Extension (DTX) to the Transbay terminal opens? Specifically, how could six 450-seat trains/ hour possibly carry 6,300 passengers/direction let alone 60,000 passengers/direction in a 24-hour period?

<http://mtc.legistar.com/gateway.aspx?M=F&ID=785a8a9b-28bf-41d3-9f74-3413cd5128a9.pdf>

(slide 9)

### Rolling stock Costs

The award to Stadler Rail is approximately \$225M (70%) above similar procurements in Europe

Client	Manufacturer/model	Year	Contract (\$M)	#units	Unit cost	Reference
SNCF Lux	Stadler KISS	2010	\$84	24	3.49	<a href="http://www.railway-technology.com/ne">http://www.railway-technology.com/ne</a>
Deutsche Bahn	Bombardier Twindexx	2011	\$483	137	3.53	<a href="http://www.railway-technology.com/pr">http://www.railway-technology.com/pr</a>
Deutsche Bahn	Bombardier Twindexx	2012	\$210	64	3.28	<a href="http://www.railway-technology.com/pr">http://www.railway-technology.com/pr</a>
STIF & SNCF	Bombardier Omneo	2015	\$442	168	2.63	<a href="http://www.railway-technology.com/ne">http://www.railway-technology.com/ne</a>
AeroExpress	Stadler KISS	2016	\$205	62	3.31	<a href="http://www.railway-technology.com/ne">http://www.railway-technology.com/ne</a>
SNCF	Bombardier Omneo	2016	\$38	16	2.38	<a href="http://www.railway-technology.com/ne">http://www.railway-technology.com/ne</a>
<b>Caltrain</b>	<b>Stadler KISS</b>	<b>2016</b>	<b>\$551</b>	<b>96</b>	<b>5.74</b>	<a href="http://www.caltrain.com/Assets/__Ag">http://www.caltrain.com/Assets/__Ag</a>

## Obsolete EMU specification

One of the apparent reasons for the staggering railcar costs (and resulting loss of seating capacity) is a requirement for two sets of doors to accommodate different platform heights for High Speed Rail. It has now become apparent that the FRA will not allow the deployment of Very High Speed EMUs in the United States and will mandate loco-hauled trains (similar to the French TGV) for safety reasons. This train configuration eliminates the requirement for high floors and enables level-boarding platform compatibility @ +/- 22 inches.

## Irregularities with the EMU procurement process

**The Caltrain EMU RFP was not issued through the SamTrans procurement website:** <http://procurement.samtrans.com/openbids.aspx> (page 2). There is no reasonable explanation for not releasing the RFP through normal procurement channels and this may have resulted in non-competitive bidding (both cost and capacity) culminating with a single proposer.

## Impact of CBOSS on electrification costs

The staff presentation does not mention Caltrain's new signaling system which is over one year late and at least \$17M over budget. There are strong indications that this system will never work and that there is budget for a complete resignaling imbedded in the actual electrification costs. This is the only plausible explanation for the staggering cost of "electrification" of 51 route miles @ \$1,253M (**\$24.5M/route mile**)

*"Cost to design and install high speed rail electrification system from Boston, MA to New Haven, CT (primarily two track mainline railroad) was approximately **\$2 million per mile** (contract cost) but nearly \$4 million per mile (according to the federal auditor's review)."*

<http://www.reconnectingamerica.org/assets/Uploads/bestpractice101.pdf> (page 4: average costs).

## Timing of the electrification project

Similar projects around the World wait for the completion of all capital improvements prior to electrification while Caltrain will make it very difficult to implement large capital projects such as grade separations and reconstruction of stations @ Diridon, South San Francisco and Transbay let alone track improvements required for high speed rail.

Please refer to the appended November 30<sup>th</sup> 2014 letter to the Caltrain Board for additional details.

Sincerely,

Roland Lebrun.

Roland Lebrun  
ccss@msn.com  
30 November 2014

Dear Chair Nolan and Honorable members of the Caltrain Board of Directors,

The intent of this letter is to substantiate and elaborate on the comment I made at the November Board meeting that the time has come to revisit the entire approach to the Caltrain modernization program.

**Background:**

In April 2012, the 9 funding partners co-signed the High Speed Rail Early Investment Strategy MOU that should have resulted in Caltrain electrification at a cost of \$785M and new rolling stock (EMUs) for \$440M (total cost \$1.225B) by 2019.

<http://www.caltrain.com/Assets/Caltrain+Modernization+Program/Documents/Executed+9+Part+MOU.pdf>

In April 2014, the Caltrain Board approved a \$122.4M set of consultant contracts:

- Project Delivery Director: \$4.3M
- Systems Safety Specialist: \$4.0M
- Project Management: \$23.5M
- EMU Vehicle Consultant: \$42.4M
- Electrification consultant: \$48.2M

<http://www.caltrain.com/Assets/Caltrain+Modernization+Program/Documents/CalMod+Procure.Fact+Sheet+3.11.14.pdf>

On November 6<sup>th</sup> 2014, SamTrans staff and consultants presented the Caltrain Board with the following update:

- New cost estimate of \$958M for 150 track miles (**\$6.4M/mile vs. \$1.6M in the UK**)
- 90-minute off-peak headway during construction (vs. 30-minute headway requirement)
- **6 years of construction (1 year longer than 2,000 miles of electrification in the UK)**
- No revenue service until 2021 (new rolling stock was due in 2015-2018 timeframe)
- No increase in capacity until after electrification (projected 21% increase in ridership will occur 5 years before electrification)
- No improvement in San Jose to San Francisco travel times (**exposure to litigation**)
- No electrification of Main Track 1 (MT-1) between Santa Clara and Tamien, making it impossible to run service to Tamien during peak or emergencies (signal/switch failures)
- Additional "Management Reserve": \$28M
- "Vehicle Management Oversight": \$65M (**50+% over April consultant contract**)
- "Defer purchase of one 6-car EMU train set offset by need to purchase 3 used electric locomotives": \$20M
- "~75% diesel vehicle conversion to EMUs", making it impossible to operate a high-capacity electrified blended system

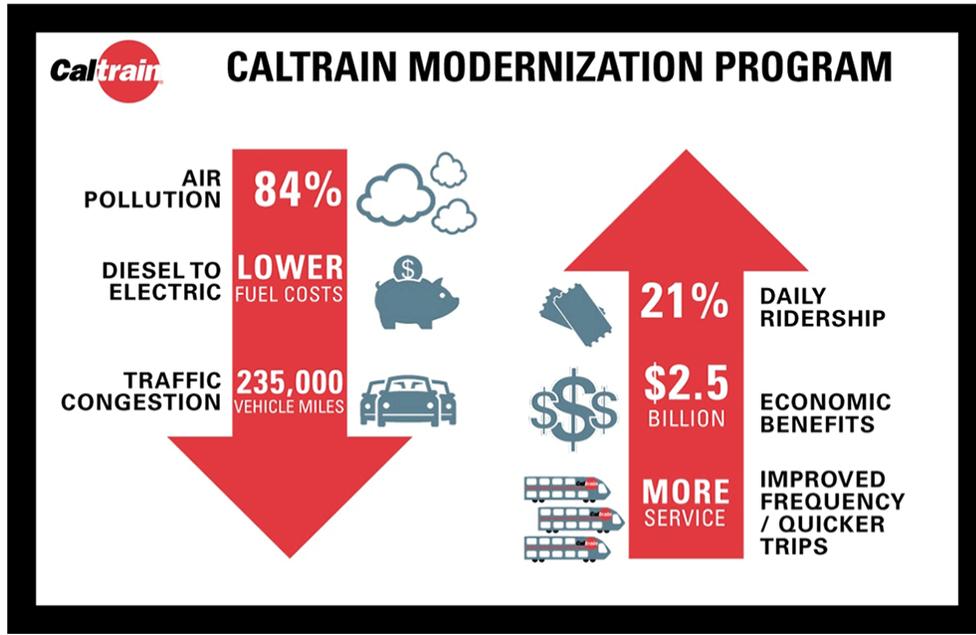
<http://www.caltrain.com/Assets/Agendas+and+Minutes/JPB/Board+of+Directors/Presentations/2014/11-6-14+JPB+BOD+CalMod+Cost+and+Schedule+Update.pdf>

## Analysis:

In October 2008, a similar set of issues were raised during a UK Railway Engineers forum entitled “Making Electrification Happen”

Forum proceedings are appended to this letter. Here are sample extracts in *italic*:

- “*Just declaring the electrified railway as a good thing to have is not in itself sufficient.*”

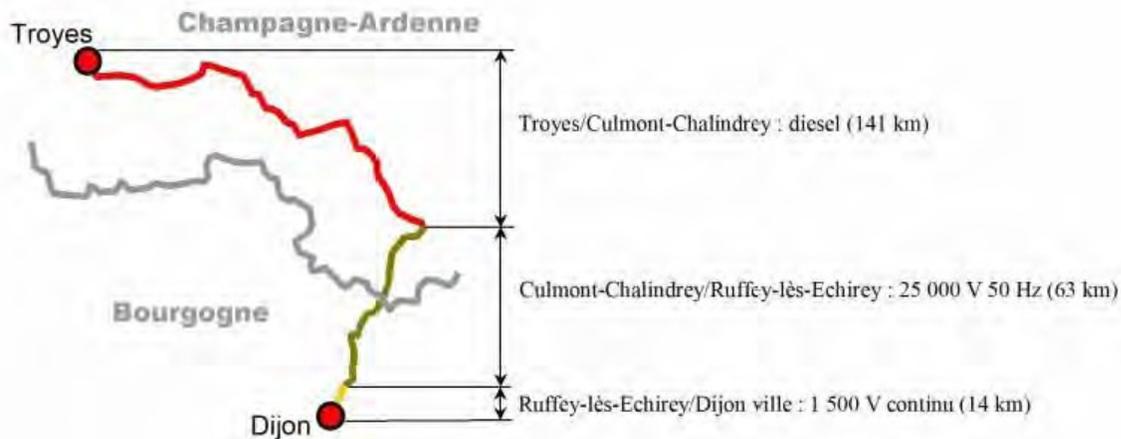


- “*The reduction in carbon emissions is useful but not a deciding factor.*”
- “*Electricity and diesel fuel prices are not that much different.*”
- “*The business case is heavily dependent on traffic density.*”
- “*The rollout of electrification can be done more quickly and at reduced cost.*”
- “*The current RSSB figure for electrification of \$1.4-1.6M per track mile needs to reduce to \$1.1-1.25M*”
- “*A 1-mile section needs to be achievable in an 8 hour week night possession.*”
- “*Ways of reducing costs, particularly for possession management, must be found.*”
- “*Project management must be sized to scope.*”
- “*Track must be in its final design position so as to avoid later adjustment.*”
- “*To be successful, a set of competence standards must be built up.*”
- “*The Bi-mode IEP (Hybrid InterCity Express) may be a key factor in maintaining through services.*”

## Discussion:

- Caltrain is experiencing a significant capacity crunch that needs to be addressed urgently through an improved signaling system and enhanced infrastructure (one or more passing stations at Palo Alto, Redwood City and/or Hillsdale).
- 75% of the existing rolling stock is due for replacement in the next couple of years.
- The current approach to Caltrain modernization will not be able to cope with the expected increase in ridership.

- France (AGC BiBi hybrid trains), the UK (InterCity Express bi-modes) and Spain (Alvia S-730) all faced similar challenges which were addressed through the introduction of hybrid trains capable of operating on the existing infrastructure regardless of the type of electrification (if any). Example: Troyes to Dijon:



### Recommendations:

- Immediate moratorium on electrification and vehicle consultant activities (\$110M saving)
- Postponement of electrification RFP until cost and schedule issues have been resolved
- Engage ACE and Capitol Corridor on joint EMU procurement (economies of scale)
- Issue RFP for bi-level bi-mode (hybrid) EMUs with a maximum speed of 125 MPH
- Issue RFP for an entity with demonstrable railway modernization expertise, specifically:
  - Substantial network capacity improvements (minimum 100% over 20 years)
  - Increased operating speeds (minimum 100 MPH)
  - Experience installing 1 mile of electrification in an 8-hour weekday night possession
  - Successful implementation of high-speed blended systems including freight

I hope that you will find this information useful.

Sincerely,

Roland Lebrun

Cc:

California High Speed Rail Authority  
Metropolitan Transportation Commission  
San Francisco County Transportation Authority  
Santa Clara Valley Transportation Authority  
City of San Jose  
City and County of San Francisco  
Transbay Joint Powers Authority

# Making Electrification Happen

Electrification has become fashionable, so said one of the speakers at the recent Railway Engineers Forum seminar on Making Electrification Happen. With virtually no electrification schemes being undertaken in the UK over recent years (CTRL excepted), the change in attitude has come about because of concerns on climate change and the realisation that oil prices will continue to increase as supplies dwindle. Even the DfT has done a U turn in the past 12 months. **The proponents of electrification all point to the benefits but much needs to be done before electric trains begin running over new routes.** The seminar looked at what needs to happen in terms of finance, engineering and resources. The downsides of electrification must not be overlooked and ways of minimising the impact of these are important.

## The Mobile Factory

An inspired key note speech by Steve Yianni, the Network Rail Director of M&E Engineering set the scene and demonstrated that much thought has gone into how **the roll out of electrification can be done more quickly and at reduced cost.** Two factors have to be in place before work can start:

- **The Business Case**, which will be developed as a partnership between funders, customers and suppliers, and which becomes part of the NR Route Utilisation Strategy (RUS).
- **The Operational Plan, to achieve a roll out with sufficient capacity to deliver at the right cost and timescale.**

Key to both of these will be the Mobile Factory – **a means of installing electrification infrastructure within existing possession patterns and without significant disruption to train services.** In effect, **a 1.5km tension length section** based on masts at 50-60 metre spacing, **needs to be achievable in an 8 hour week night possession**, inclusive of take up and give back time. To do this the ‘factory’ will consist of:

- 3 x Piling and Mast Trains
- 1 x Feeder and Return Wire Train
- 1 x Cantilever and Registration Assembly Train
- 1 x Catenary and Contact Wire Train
- 1 x Inspection and Measurement Train including Earthing assurance

Normally **the ‘factory’ will operate on a single track with other tracks kept open for traffic.** The use of bi-directional signalling will be key to this. The ‘factory’ will be capable of reaching both lines of a 2 track railway if a complete possession is obtained. Designed primarily for plain line sections, adaptation for junctions, bridges, tunnels, etc needs to happen when work will be done during weekend possessions.

Later speakers confirmed the concept of a mobile factory as workable. Keith Warburton, the Head of Electrification Design in Balfour Beatty Rail gave an insight on the costs for both a blockade and possession type approach

	<b>Blockade</b>	<b>Blockade</b>	<b>Possession</b>	<b>Possession</b>
<b>Description</b>	Proportion	Typical Cost per Single Track km	Proportion	Typical Cost per Single Track km
Survey & Design	3%	£11k	3%	£14k
Materials	44%	£157k	38%	£189k
Construction	45%	£158k	40%	£200k
<b>Project Mgmt</b>	<b>8%</b>	<b>£29k</b>	<b>19%</b>	<b>£94k</b>
<b>Total</b>	<b>100%</b>	<b>£355k</b>	<b>100%</b>	<b>£497k</b>

Unsurprisingly, the blockade approach is cheaper as the engineer has unrestricted access to the railway. However, **criticism of blockades is increasingly vehement because of the disruptive impact. Ways of reducing costs, particularly for possession management, must be found.** Planning, design and engineering principles are too often forgotten.

- Do a survey well ahead of design, in a single pass and collect data electronically including 3D modelling linked to material supply and signal siting
- Design work to promote a single installation activity with minimal or no stage work
- Use standard spans and tension lengths, and employ new technology / methodology but only when proven

- Maximise use of like parts by a ‘one size fits all’ design with a standardised geometry and easy calculation of balance weights and droppers
- **Ensure track is in its final design position so as to avoid later adjustment**
- Construction activities to have no unknowns as to access availability, plant utilisation and resource deployment
- **Project management to be sized to scope**

Mark Simmons from Plasser demonstrated by video sequence a ‘mobile factory’ in use on Austrian Railways (OBB). Particularly impressive was the installation of masts by a rotating ‘central gripper’ mounted on a wagon and inserted into the ground by piling. Machine and trains have a jolt free control to enable catenary and wire to be installed at final tension and stagger. **All this is achieved in 5 hour work blocks in 2 possessions.** A reminder was given that mechanised piling and erection had been trialled on the ECML in the 1980s, when 6 piles per hour had been achieved.

### **Likely Routes for the Passenger Railway and the Business Case**

**Studies on various routes have looked at fuel/energy costs, train reliability and passenger capacity in analysing whether electrification would be beneficial.** Jim Morgan, the Director of Passenger Development in First Group, suggested the criteria necessary for electrification to show advantages over diesel were:

- Capital costs – rolling stock provision linked in with energy costs and carbon emission, also bridge and clearance works
- Variable track access costs – these must allow for OLE maintenance including performance and reliability expectations
- Staff costs – any train crew implications
- Revenue impact – is the ‘sparks’ effect on passenger growth still valid

There will be pluses and minuses here. Electric trains should be cheaper and lighter, thus causing less track wear.

**The current RSSB figure for electrification of £550-650k per track km needs to reduce to £450-500k.** On board energy costs need to be accurately metered and regenerative braking must help. System losses have to be addressed with better driving techniques and lower train idle time costs. The availability of rolling stock and where to cascade displaced stock to, will be a major factor. Taking all these considerations into account, the likely routes for electrification are:

- GWML from Airport Junction to Bristol, Cardiff and Oxford
- MML from Bedford to Sheffield via Derby plus Nottingham
- Cross Country to link up existing and proposed electrified routes
- North Trans Pennine from Liverpool and Manchester to York

There will be an impact on through services that exist today and it is acknowledged that this is a difficult problem.

**The hybrid version of the new IEP may be one answer but diesel haulage off the wires and slick cross connections may have to suffice.**

Richard Davies, the Head of Strategic Planning in ATOC added that **the business case was heavily dependent on traffic density**, where rail has typically doubled its usage in 20 years. **Electricity and diesel fuel prices are not that much different** but the delta may be the deciding factor. **The reduction in carbon emissions is useful by not a deciding factor**. In addition to the main line routes, there was a good case for suburban routes around Manchester, Liverpool, Leeds and Cardiff. **Inclusion of diversionary routes is unlikely as the business case is weak.**

### **The Freight Situation and the case for In-Fill**

A totally different view comes across from the Freight Sector. Graham Smith, the EWS Planning Director, whilst supporting electrification, stated that gauge enhancement was the top priority. At present, the gaps between electrified lines were too numerous and **having to do frequent locomotive changes made operation expensive and time consuming.** Hence, the freight companies have invested heavily in diesel traction, with electric locomotives being only a small percentage of the fleet. Increasing electric freight usage would need the gaps to be filled and 31 schemes were tabled, many of them being very short distances. Doing some of these in the CP4 period

would be advantageous as it would allow the engineering and implementation skills to be built up in non sensitive areas. It would also be necessary to acquire a fleet of electric locomotives, which need to be less complicated (and expensive) than the CI 92, with all the different voltage and signalling systems that these embrace. **The ‘last mile’ problem on how to access sidings and loading facilities without having a resident diesel shunter on site is another challenge.**

### **Maintenance and Reliability**

**If electrification is to be expanded, then some of the present maintenance problems have to be overcome**, so says Kevin Lydford, NR’s Head of Electrification. **Electrified infrastructure should have a 90 year life, with contact wire renewal between 40-50 years and piece part renewal every 30 and 60 years.** New designs should minimise routine maintenance and not need regular adjustment. Booster transformers should be eliminated in favour of 50kV auto transformer systems, and Sub Stations and Track Sectioning Cabins must be made simpler and cheaper. **Inspection trains to check height and stagger, dynamic force measurement and wire wear are vital** with MENTOR and the NMT fulfilling this role currently. Combating theft and vandalism is another challenge, with designs needing to be more capable of withstanding the interests of less desirable elements within society. Pantographs have to be compatible with the electrification infrastructure and be regularly and reliably maintained

**Establishing whole life costs is important and buying cheap equipment initially will lead to significant problems.** The balance between Capex and Opex must be right for equipment with such a long life. **Too many entanglements and de-wirements happen and the ensuing poor reliability undermines the business case.** If the wires are down, the chances are you will not get home that night!

### **Resources, Expertise and Contracts**

Jeremy Candfield, the Director General of RIA, set out the resource challenge to make all this happen. With no electrification having been undertaken in England and Wales in recent years, the skill base has dispersed and a recruitment and training initiative is essential. Competent people will be in great demand and NR will have to compete for engineers having heavy current expertise needed for the LUL renewal programme, the National Grid refurbishment and overseas rail projects. **To be successful, a set of competence standards must be built up and supplier confidence must be gained by having continuity of work in a programme visible for all to see.** In addition to the electrical engineering aspects which the RIA ELECTIG group are studying, **expertise will be needed in:**

- **Possessions and uninterrupted working**
- **Single line working**
- **Depot provision and management**
- Planning paths to site
- Materials and engineering train management
- Testing

The proposal for a Rail Skills Academy is being driven forward by RIA members but ultimately the companies involved must be the dominant driver in getting trained people in place.

**Getting the right contract conditions in place can make a difference** according to Ross Hayes an engineer working in the legal sector, and obeying EU rules is another complication. Two options exist:

- **Framework contracts**, whereby contractors enter into an agreement based on work requirements and price. **Broad order quantities are defined and work packages can be awarded under the framework.** These are normally time limited to 4 years but utilities (including railways) can get this waived providing competition rules are not misused
- **Term contracts**, where work is committed in relatively simple repetitive work packages

**Contractors generally prefer the latter as these are less open ended.** Choosing the right terms and conditions is equally important – ICE, IMechE, NEC, etc – and using a standard that is recognised by industry is always the best bet.

## The CTRL and Scottish Experience

Recent electrification projects have only been the CTRL and the Airdrie – Bathgate link. Both have yielded or are yielding valuable lessons. Dominic Kelsey and Mark Howard from Bechtel emphasised the importance of getting power supply points right. These cost around £200k for every km of route energised and are thus an expensive item. The CTRL has three – Barking, Sellindge and Singlewell – and all 3 have compensation devices to eliminate variations to the catenary voltage under different current conditions. Much design and planning effort went into these but cost-saving opportunities are there to be had. The CTRL had also to contend with the interface between 50kV and 3<sup>rd</sup> rail 750v and this continues to be a maintenance challenge. Difficulties with Notified Body acceptance were an unwanted inconvenience and the required paperwork was massive, out of all proportion to the desired end result.

Bill Reeve, the Director Rail Delivery in Transport Scotland, gave a positive message in that an additional 350 single track kms of electrification has been approved by the Scottish Parliament beyond Airdrie – Bathgate. This will include the main E&G line plus extending to Dunblane. However, **present costs are in the order of £1M per single track km, about double the desired amount.** Some of this is due to having to rebuild the resource and manufacturing capability but interestingly, construction and wiring is less than all the other activities. **There is an urgent need to revise standards** and this must be done in partnership with Network Rail before any further schemes are authorised.

## The DfT View and the Day in Retrospect

David Clarke, the DfT's Deputy Director of Rail Services endorsed most of what had gone before but showed a simplified matrix on how electrification might proceed.

High	Suburban Route Extensions plus short In Fills √	Main Line Electrification √ ?
	Single Line Branches √ ?	Long Secondary & Diversionary Routes X
	Low	High

Cost of Construction

Clearly the big question mark is on the future viability of main line projects but single line feeder routes like those existing at St Albans Abbey, Braintree, Southminster, North Berwick are not ruled out. **The optimum timing is to electrify when rolling stock replacement is due and getting rid of diesel traction from under the wires is also important.** New ideas for energy storage to cover gaps in the wires will be welcome. **The Bi-mode IEP may be a key factor in maintaining through services.** The implementation of ERTMS and associated signal siting issues needs to be better understood. **The ultimate challenge is to reduce the cost of running the railway.**

Altogether a fascinating day and those in attendance should be better informed on the challenges that an ongoing electrification programme will present. **Just declaring the electrified railway as a good thing to have is not in itself sufficient.** The promoters must understand the downsides and come up with solutions to overcome these.

**Drozd, Doug@HSR**

---

**From:** Thom <skilos.thom@gmail.com>  
**Sent:** Sunday, September 04, 2016 12:05 PM  
**To:** HSR news@HSR; HSR boardmembers@HSR; HSR Southern California@HSR; HSR Central Valley@HSR; HSR info@HSR; HSR legislation@HSR; HSR bakersfield\_palmdale@HSR  
**Subject:** High Speed Rail  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Looking at your map of the route of the high speed rail, it shows 'alternative 1' going somewhere around one half to a mile from property that I own and live. Why have I not received any notification of any meetings, proposed route plans or anything about the project? And from what I've heard the majority of people in the areas of 'alternatives 1 and 2' have received no information. The last I had heard the route would be running along the current railroad tracks and/or State Hwy 14, between Mojave and Palmdale. Where ever you announce anything is not reaching the people that may be affected.

Thomas Johnson  
8520 Mojave Tropico Rd  
Mojave, Ca 93501

[skilos.thom@gmail.com](mailto:skilos.thom@gmail.com)

--  
Thom

**Drozd, Doug@HSR**

---

**From:** David DePinto <ddepinto@depintomorales.com>  
**Sent:** Tuesday, September 06, 2016 10:22 AM  
**To:** HSR palmdale\_burbank@HSR; HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR legislation@HSR; HSR news@HSR; HSR info@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Richard, Dan@HSR; HSR boardmembers@HSR; Arellano, Genoveva@HSR; HSR palmdale\_burbank@HSR; velasquezj@pbworld.com; Richard, Dan@HSR; Boehm, Michelle@HSR; velasquezj@pbworld.com; Morales, Jeff@HSR; Bell, Tony; DeGonia, Jarrod; Lamb, Teresa; kbarger@lacbos.org; Robles, Enrique; michael.aguilera@mail.house.gov; mayor.garcetti@lacity.org; Jankiewicz, Joe; Senator.Liu@senate.ca.gov; Susan Wong; councilmember.martinez@lacity.org; councilmember.krekorian@lacity.org; Ricardo.benitez@asm.ca.gov; assemblymember.lopez@assembly.ca.gov; scott.wilk@asm.ca.gov; sheila@bos.lacounty.gov; Jim Dantona; vickere.murphy@sen.ca.gov; Daniel; Kenny.LaSalle@mail.house.gov; elizabeth.jimenez@lacity.org; Ackley Padilla; aayala@bos.lacounty.gov; Sylvia Ballin; Joel Fajardo; max.reyes@lacity.org; ana.guerrero@lacity.org; Asatur Hovhannisyan; Fukushima, Steve; eveline.bravoayala@sen.ca.gov; william.ulmer@asm.ca.gov; jim.leahy@asm.ca.gov; jordan.langdon@mail.house.gov; Englund, Nicole; Pichardo, Nelson; Michael Murphy; Matthew Levesque; Marsha McLean; btrujillo@bos.lacounty.gov; Karo Torossian; Roberto, Jody; Leia Hernandez; TimBen Boydston; sean.macneil@asm.ca.gov; Brian Gavidia; monica.ratliff@lausd.net; eric.moody@lacity.org; Perry, Dave; suzanne.reed@sen.ca.gov; sean.macneil@asm.ca.gov; Christian Griffith; Gonzalez, David; Gonzalez, David Arellano, Genoveva@HSR  
**Cc:**  
**Subject:** SAFE Coalition Response to CHSRA Letter re: Santa Ana Sucker Fish  
**Attachments:** Common Ground Final NEPA-EIS CHSRA Letter.pdf  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

California High Speed Train Authority:

Your explanation below is far too narrow and defensive to be credible. You are splitting hairs and hiding behind "process" and bogus environmental studies.

We are well aware of the situation in San Bernardino in which the water flow is regulated. You seem to feel that is more significant than what is proposed for the Big Tujunga Wash. We do not. **The situation proposed for the Big Tujunga Wash with E2 is far worse.**

We view and have demonstrated clearly with hundreds of comments, a site visit and testimony that the impact of E2 on the Big Tujunga Wash and all its assets is far more threatening than the situation described in the Times' article. We are very familiar with the flow of Haines Canyon Creek and well aware of the proposed location of the E2 route. The movement of the refined route a few hundred yards in either direction has no positive or mitigable effect on the damage, risk and massive disruption that the construction phase or the ongoing operations would present to the Santa

Ana Sucker fish, other wildlife, the water source, trail use in the Wash, noise in the area, visual impacts, air quality, cumulative impacts and more.

CHSRA is hiding behind studies and process and continuing to hold our communities hostage. In addition, based on your own emails which we discovered through a public document request, CHSRA has knowingly engaged in a conflict of interest that led to the bogus Equine Study and unethically attempted to utilize Mineta for the incomplete tunneling and water studies as well. Those studies, if done properly, would have proven fairly and publicly that E2 was fatally flawed and infeasible. In your recent communications, CHSRA tries to separate them from other environmental studies as if they don't matter or they don't really count. That's not going to work. Fact is the upfront studies were done under the auspices of the Authority, paid for by tax dollars and it must own the results. Each of those studies must be redone following the community involvement process called for in the attached document and they must be done with independent, credible research organizations. They are now almost a year behind schedule so we call for the Authority to stop wasting time and re-engage with communities and local elected officials. We will not forget the intent of those studies, nor will we allow the Authority to sweep the matter under the rug. That's what we call being railroaded and the Authority is not going to do that to our communities.

This has crossed the line into unethical behavior by a state agency against residents, businesses, communities and open space and protected lands. We will state again, the Authority's continued publication of false and misleading studies, timelines and schedules, such as the Authority's original proclamations that the DEIR would be completed in June 2016, and now sometime in early 2017, are unethical. Anything that knowingly misleads our communities and elected officials is wrong. The evidence is overwhelming that E2 is infeasible, as is public and elected official opinion, and the Authority is clearly stone-walling.

CHSRA is hiding behind a falsified and arbitrary environmental review process, wasting tax dollars in the process. The presence of the Creek and the Fish, combined with our other input, is a show stopper and a fatal flaw. And the Authority is well aware of that fact. E2 must be removed now from any further consideration. With the change in the business plan to focus on northern California, the Authority may no longer hide behind time constraints and time urgency - there is plenty of time, about 7 years of additional time to be exact, for the Authority to remove E2 and to add other alternatives for study in the environmental review process. We've proposed a no-Burbank alternative for two years and been ignored. We've proposed new routes be studied from Burbank to Palmdale and been ignored.

We'll again recommend the Authority, after removing E2, study a new alternative of improvements to Metrolink and light rail from Palmdale to Burbank to its environmental studies. There would be no impacts on the Big Tujunga Wash, no new impacts to Angeles National Forest and San Gabriel Mountains National Monument, no impacts to Acton and Aqua Dulce. No impacts to Lake View Terrace, Shadow Hills, Pacoima or Sun Valley. No further impacts to our water and wildlife. Only **improvements** to the environments and quality of life all along the existing train lines: removal of grade crossings, electrification, cleaner air, faster times, and more. And, such an alternative would save many BILLIONS of dollars. We can hear the Authority now saying, "we can't study that because of the increased time it would add to the route from northern to southern California."

To that we say, remove E2, re-deploy your consultants, take our tax dollars, study it and figure it out!

Dave DePinto

President, Shadow Hills Property Owners Assn.

Member, SAFE Coalition

On 8/30/2016 9:47 AM, California High-Speed Rail Authority wrote:

Dear Mr. DePinto,

Thank you for your continued correspondence with the California High-Speed Rail Authority regarding your concerns with the Palmdale to Burbank Project Section. We are in receipt of your most recent communication dated August 25, 2016 regarding the Santa Ana Sucker Fish and the attached Los Angeles Times article dated August 22, 2016 regarding this species in San Bernardino and Colton.

We understand your and others repeated concern about the endangered Santa Ana Sucker Fish in the Big Tujunga Creek, and how you deem it makes Alternative E2 a "show stopper." The presence of any endangered species within our project section is always a concern; however, our detailed evaluation will need to be completed prior to making any judgment on the E2 alternative or any other project alternative.

Specifically, the issue of the endangered Santa Ana Sucker Fish will undergo environmental review in accordance with state and federal laws and in consultation with state and federal resource agencies, including the United States Forest Service, California Department of Fish and Wildlife, the Army Corps of Engineers, and the Regional Water Quality Control Board. The Authority also consults with other experts in the field as we evaluate the potential impacts of the alternatives being studied and possible ways to reduce, minimize and avoid impacts of the project.

For your information, the issue in San Bernardino and Colton is very different than the type of effect that could occur in the Big Tujunga Wash with the E2 alternative. In San Bernardino/Colton, maintenance of the water treatment plant results in shutting off the flow of water which results in the river drying out. This is not the case for the High-Speed Rail project. The E2 alternative would cross Big Tujunga Wash on a viaduct or bridge structure similar to how the I-210 freeway now crosses the wash, but in a different location. E2 could require constructing some supports in the Wash, but these supports would not affect the amount of water that flows down Big Tujunga Wash. We are evaluating the potential impacts of placing supports and constructing a viaduct across Big Tujunga Wash on the Santa Ana Sucker Fish and its habitat. This analysis is being done in consultation with state and federal resource agencies listed above. Again, we have not yet completed this analysis, but the results will be reported in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS), which will be released for public comment next spring 2017 with preliminary preferred alternative being announced in advance of the Draft EIR/EIS document.

Thank you again for your considerable time and attention to the high-speed rail program. We appreciate your diligence in representing your community.

Sincerely,

The Palmdale to Burbank Project Team  
California High-Speed Rail Authority  
Palmdale\_Burbank@hsr.ca.gov  
(800) 630-1039

## Drozd, Doug@HSR

---

**From:** David DePinto <ddepinto@depintomorales.com>  
**Sent:** Wednesday, September 07, 2016 2:39 PM  
**To:** HSR palmdale\_burbank@HSR; HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR legislation@HSR; HSR news@HSR; HSR info@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Richard, Dan@HSR; HSR boardmembers@HSR; Arellano, Genoveva@HSR; HSR palmdale\_burbank@HSR; velasquezj@pbworld.com  
**Cc:** Bell, Tony; DeGonia, Jarrod; Lamb, Teresa; kbarger@iabcos.org; Robles, Enrique; michael.aguilera@mail.house.gov; mayor.garcetti@lacity.org; Jankiewicz, Joe; Senator.Liu@senate.ca.gov; Susan Wong; councilmember.martinez@lacity.org; councilmember.krekorian@lacity.org; Ricardo.benitez@asm.ca.gov; assemblymember.lopez@assembly.ca.gov; scott.wilk@asm.ca.gov; sheila@bos.lacounty.gov; Jim Dantona; vickere.murphy@sen.ca.gov; Daniel; Kenny.LaSalle@mail.house.gov; elizabeth.jimenez@lacity.org; Ackley Padilla; aayala@bos.lacounty.gov; Sylvia Ballin; Joel Fajardo; max.reyes@lacity.org; ana.guerrero@lacity.org; Asatur Hovhannisyan; Fukushima, Steve; eveline.bravoayala@sen.ca.gov; william.ulmer@asm.ca.gov; jim.leahy@asm.ca.gov; jordan.langdon@mail.house.gov; Englund, Nicole; Pichardo, Nelson; Michael Murphy; Matthew Levesque; Marsha McLean; btrujillo@bos.lacounty.gov; Karo Torossian; Roberto, Jody; Leia Hernandez; TimBen Boydston; sean.macneil@asm.ca.gov; Brian Gavidia; monica.ratliff@lausd.net; eric.moody@lacity.org; Perry, Dave; suzanne.reed@sen.ca.gov; sean.macneil@asm.ca.gov; Christian Griffith; Gonzalez, David; Gonzalez, David  
**Subject:** Following Up On Authority's Response re: Unfinished Business  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear California High Speed Train Authority:

We continue to await the Authority's follow through on the board member site visit, as Ms. Paskett **committed** to do at the Anaheim board meeting earlier this year. The public really does not care how calendars within the Authority are managed but we do care that it honors its word. There is one high speed train Authority as far as we are concerned, and I think you'd all agree with that. Our communities have been requesting this site visit since August 2015 when Katherine Perez-Estolano resigned from the Board. The Board cannot and should not try to do its job without getting input from communities and witnessing potential damage in person. This is a very clear and time sensitive request that has been pending more than a year and counting.

Separately, our request for a board meeting in the northeast San Fernando Valley is nearly a year and a half old. To be clear on the communications with Dan Richard, he at first denied the Authority had any plans or commitment for a meeting in the northeast San Fernando Valley. He was wrong. I provided evidence that we as well as the Authority's outreach consultant had researched locations for such a meeting in the northeast San Fernando Valley prior to the June 2015 meeting being held downtown on a work day. Still, there's been no action taken by the Authority.

The Authority has the discretion and latitude to schedule a monthly meeting here at any time or to convene a special board meeting in this locale.

Regarding the open house meetings, they truly appear to be a waste of time as there is no new information according to the Authority since April of this year. People who attended the recent round of meetings said there was no new information and that CHSRA staff paid little attention to their questions and concerns. As a result, we continue to view the current round of meetings as an abuse of the community outreach and transparency process. These meetings should have occurred in and around the time of the most recent SAA Report, but the Authority breached its own process at that time by revealing the contents of the SAA Report at the San Fernando Valley COG meeting.

If the Authority truly wishes to tout its transparency and community outreach, it would be good form to practice it. Our communities continue to await your substantive response.

Dave DePinto

President, Shadow Hills Property Owners Assn.

Member, SAFE Coalition

On 8/30/2016 9:16 AM, California High-Speed Rail Authority wrote:

Dear Mr. DePinto,

Thank you for your recent email of August 21, 2016 and continued correspondence with the California High-Speed Rail Authority regarding your concerns with the Palmdale to Burbank Project Section.

As you noted, the planned summer Community Working Groups were postponed due to the devastating Sand Fire. These meetings were rescheduled as soon as reasonably possible in the interest of getting back out to the community promptly. In addition, as it has been communicated to you, following this round of small group meetings, the Authority will host larger public Open House meetings in the project area including one on Thursday, September 22 in the San Fernando Valley at the Fernangeles Recreation Center. Public Open House meetings will also be held in Palmdale and Acton/Agua Dulce on September 14 and 17, respectively.

With regard to the Board member meeting/tour, this request has been submitted. Each Board member manages their own calendar and can choose to accept invitations to visit project areas at their own discretion. As private citizens who have volunteered to serve, the board members manage their own schedules.

With regard to the Board meeting locations, Chairman Richard has stated in previous correspondence with you, the Authority's practice is to have Board meetings in communities around the state and to tie those meetings to immediate decisions. We do expect that a Board meeting will be held in the Los Angeles area over the coming year. The exact schedule and location is yet to be determined, but your request for a meeting in the San Fernando Valley has been received and will continue to be considered.

Thank you again for your considerable time and attention to this project. We appreciate your dedication to representing your community.

Sincerely,

Palmdale to Burbank Project Team  
California High-Speed Rail Authority  
[palmdale\\_burbank@hsr.ca.gov](mailto:palmdale_burbank@hsr.ca.gov)  
(800) 630-1039

--

David J. DePinto  
DePinto Morales Communications Inc.  
818-352-7618 office  
818-352-6781 fax  
310-502-7928 mobile

**Drozd, Doug@HSR**

---

**From:** David DePinto <ddepinto@depintomorales.com>  
**Sent:** Wednesday, September 14, 2016 10:29 PM  
**To:** Boehm, Michelle@HSR; Arellano, Genoveva@HSR  
**Cc:** Richard, Dan@HSR; HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR legislation@HSR; HSR news@HSR; HSR info@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Richard, Dan@HSR; HSR boardmembers@HSR; Arellano, Genoveva@HSR; HSR palmdale\_burbank@HSR; velasquezj@pbworld.com; HSR palmdale\_burbank@HSR; Morales, Jeff@HSR  
**Subject:** Unfinished Business  
  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear CHSRA:

Please update us on potential dates for the site visit with Board Member Paskett. Could we propose this Friday around mid-day since you're all in town?

Also, please fill us in on your plans to withdraw the Mineta Conflict of Interest Study and to complete the unfinished studies related to seismic, water, equines and tunneling.

Finally, please update us on what action are you taking about holding a special board meeting in the NE San Fernando Valley and adding the new alternative we proposed that would study investments in Metrolink and light rail from Palmdale to Burbank in lieu of the damaging and highly expensive above ground and Forest routes?

Dave DePinto

President, Shadow Hills Property Owners Assn.

Member, SAFE Coalition

--

David J. DePinto  
818-352-7618 office  
818-352-6781 fax  
310-502-7928 mobile



September 14, 2016

Mr. Dan Richard  
Chairman  
California High-Speed Rail Authority  
770 L Street, Suite 620  
Mailstop 1  
Sacramento, CA 95814

Mr. Jeff Morales  
Chief Executive Officer  
California High-Speed Rail Authority  
770 L Street, Suite 620  
Mailstop 1  
Sacramento, CA 95814

RE: PROPOSED CALIFORNIA HIGH-SPEED RAIL HEAVY MAINTENANCE FACILITY (HMF) IN THE CENTRAL VALLEY OF CALIFORNIA

Dear Mr. Richard and Mr. Morales:

As a Supervisor of Merced County, I am writing to inquire about the status of the California High-Speed Rail Heavy Maintenance Facility (HMF) which is planned to be located in the Central Valley of California. Since 2004, Merced County along with numerous other regional organizations and community groups have worked with the CHSRA in multiple capacities to support a state-of-the-art transportation system that would transform the Central Valley.

Over the last twelve years of continuous support, we worked with our elected officials to assist in high-speed rail transitioning from a concept to a tangible infrastructure project. We have worked with changing leadership and realize that given the evolution of the project, criteria, timelines and specifications have changed. The purpose of this letter, to gain clarity about the HMF specifications, selection and construction timeline as well as the anticipated number of jobs associated with the development of the facility.

For purposes of history, in 2010, the Greater Merced High-Speed Rail Committee proudly responded to the CHSRA's Request for Expressions of Interest Identifying Potential Heavy Maintenance Facility Sites and submitted a proposal to then CHSRA Executive Director Mehdi Morshed. At the time the CHSRA provided HMF specifications and requirements and asked for regions to provide proposals of interest outlining the land use benefits of their sites, financial incentives, economic benefits to the State of California and the community.

## Board of Supervisors

John Pedrozo  
Supervisor, District One

Hubert "Hub" Walsh, Jr.  
Supervisor, District Two

Daron McDaniel  
Supervisor, District Three

Deldre F. Kelsey  
Supervisor, District Four

Jerry O'Banion  
Supervisor, District Five

James L. Brown  
County Executive Officer

Merced County  
Administration Building  
2222 "M" Street  
Merced, CA 95340  
(209) 385-7366  
(209) 726-7977 Fax  
[www.co.merced.ca.us](http://www.co.merced.ca.us)

Equal Opportunity Employer

*Striving for  
Excellence*

Additionally, it was very important for sites to describe the environmental impacts that such a development would incur. The criteria provided by CHSRA was that the site needed to be approximately 154 acres, located close to the mainline trunk of the HST system with connectivity to the highway road network and access to utilities including water, gas, electricity, sewer, and communications. The HMF building footprint would encompass 14.5 to 19.3 acres (or 631,000 to 840,000 sq. ft.) and up to 1,500 HMF employees would be needed during peak shifts.

The Greater Merced High-Speed Rail Committee submitted several HMF sites, but was most optimistic about the Castle Commerce Center site because of the size, sole ownership by the County, zoning, vacancy, rail access, highway access, utilities, potential electricity cost savings and finally that the site is an established brownfield already substantially remediated and cleared for industrial uses. Given that the US Department of Defense is the responsible party, there are also multiple funding sources that are uniquely available to this site versus others in the Central Valley of California.

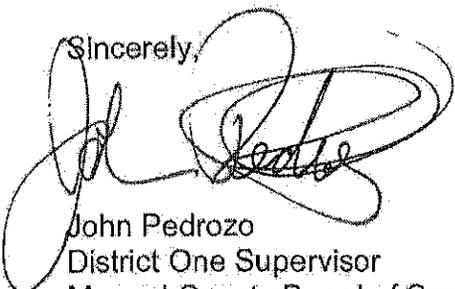
So in follow up to our proposal from approximately six years ago, I would like to inquire the status of the HMF site selection and construction timeline. Merced County representatives were told by local CHSRA staff that the proposed Castle HMF site was "out of the running" and "was not being considered." Yet, recently I was informed by another CHSRA staff member that this was not the case at all.

So the purpose of my letter is to get clarity and responses to the following four questions outlined below.

1. What is the CHSRA's timeline for the selection of the HMF site in the Central Valley of California? What sites are on the short list?
2. What is the updated number of jobs that will be created as a result of the HMF development?
3. Who is the best CHSRA staff contact to direct questions regarding the HMF selection and development?
4. Assuming the Castle site in Merced County is still in the running, what are the updated HMF specifications?

I appreciate your review of my letter and am hopeful to get a response from you soon. If you would like to discuss this letter in further detail, feel free to contact me at 209-385-7457.

Sincerely,



John Pedrozo  
District One Supervisor  
Merced County Board of Supervisors

cc: Congressman Jim Costa, 16th Congressional District  
Senator Anthony Cannella  
Senator Cathleen Galgiani  
Assemblyman Adam Gray

## **Drozd, Doug@HSR**

---

**From:** Al Moncada <al@almoncada.com>  
**Sent:** Monday, September 19, 2016 7:41 AM  
**To:** Harrison, Bill; Johnson, Bob@cityoflodi; Scott Haggerty; Christina Fugazi; Steve Dresser; Mike Maciel; dmoorhead@ci.manteca.ca.us; Moses Zapien; HSR boardmembers@HSR  
**Cc:** stacey@acerail.com; Dan Leavitt; Chris Kay  
**Subject:** \*\* Today's Perspective, Manteca Bulletin \*\*  
**Attachments:** Manteca needs to get on track.pdf; Manteca needs to get on track.jpg

**Importance:** High

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

Commissioners, ladies, and gentlemen,

Last week I wrote an Open Letter to the ACE Board of Directors which was published in my local newspaper the Manteca Bulletin. In that letter, I was critical of ACE for inviting Congressman Jeff Denham to host one of his Town Hall meetings onboard ACE. I am still very much critical, and I hope both, ACE and Congressman Denham reconsider their plans which I find inappropriate since the Congressman has nothing to do with ACE funding.

I understand it is an election year, and the Congressman is now saying he is for HSR, however as long as the California High-Speed Authority works towards the betterment of our State, and on a feasible and reliable plan ahead, the Congressman will have no logical reason to oppose the development at hand. Be no concerned of his Chairmanship of the House Committee on Transportation and Infrastructure because as long as you have Californians' support, he will follow through. Besides, Congressman Denham may not well be in Congress next year, so please keep your options open.

I join thousands in the Central Valley who are for ACE partnership with the California High-Speed Authority connectivity. I have written another article which appears today in my local paper front page as Perspective. I call for my city leaders to unify and work with all of you to connect our valley with the rest of the State. See <http://www.mantecabulletin.com/section/160/article/137797/>

Thank you, and keep up the good work!

Al Moncada  
[www.almoncada.com](http://www.almoncada.com)

## **Manteca needs to get on track**

By Al Moncada

Let's face it; no one likes change, especially when we are in our comfort zone! And that's what is happening with High-Speed Rail in California.

In 2008, Californians gave their okay to build a High-Speed Rail, or HSR, to connect Los Angeles with the San Francisco Bay Area. Once completed, we will travel by rail from San Francisco to Disneyland in less than 3 hours, at speeds of approximately 150 mph. There will be stops, terminals on the way, so Californians would be able to visit many cities in between; cities that remain unserved by major airlines. Now, what does this mean for Mantecans, and how do we fit into the equation?

This weekend I had the opportunity to see my oldest daughter at work. I attended an event she organized in Tracy. There were lots of people in attendance. The Keynote speaker thanked her for the outstanding job of bringing together so many folks under the same roof. I felt extremely proud of her so this morning I looked for the old Hi8 camera stored away a long time ago, so I could play video tapes of her growing up; video tapes from 17 years ago! I wanted to reassure myself that the woman getting praises the night before was the same little girl I didn't want grow too fast. You see, I didn't want her to change back then; I wanted her to slow down because I was uncertain how life would turn out for her. But after seventeen years, a college degree, and many sacrifices, I realized change is real. So far life has turned out perfect for her.

Our city was the "Gateway to Yosemite" less than 30 years ago. Mantecans can still remember when we did not have the 120 Bypass. At one point drivers had to drive via Yosemite Avenue, through downtown Manteca, to get to Yosemite National Park. But then change came; the 120 Bypass was built, and Downtown Manteca came to a halt. Businesses started to close down because of lack of visitors, and a ghost made itself a home on an empty street after sundown. Many didn't want change then, many do not want it now, and that's what the High-Speed Rail means to Manteca, change.

The Altamont Corridor Express, or ACE, held an informational hearing last week in our city on it's newest project, ACEforward. The public was brought up to speed on the latest developments regarding the expansion of ACE from Manteca to Merced, the connecting terminal to the California High-Speed Rail system, and upgrades to the current line up to San José, and Bay Area Rapid Transit, or BART.

The ACEforward connection in Merced will translate to more than 4.5 million passengers coming through the Central Valley with additional terminals in Livingston/Atwater, Turlock, Modesto, and Ripon. The Manteca/Lathrop ACE station can be moved to the Transit Center downtown. By 2025, nine years from now, Manteca could see an excess of more than 285,000 passengers getting off and on at our Transit Center.

The US High Speed Rail Association, a leading force behind HSR movement in the US, states that *"The national high speed rail network will create millions of good jobs, stimulate the economy, create entirely new industries, be the catalyst for the next real estate boom, save*

*businesses money, increase mobility, reduce dependence on oil, reduce our annual \$700 billion trade deficit (purchasing foreign oil), and significantly increase national security.*" If so, ACE connectivity with the California HSR in Merced will bring a most needed and noticeable economic improvement to our city. But, it would require competition with other Central Valley cities connecting to the network.

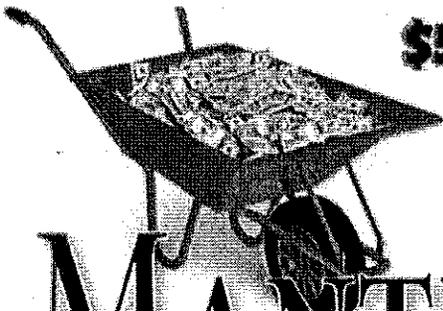
We need to look into preparing ourselves for the avalanche that is upon us; the California HSR. If we do not start planning towards a proactive and economically progressive future, we will end up empty handed again. Yes, we had the 2008 recession which set us back a few steps, but what that all means is that our city leaders did not plan for rainy days. We cannot afford to be on sidelines either, or be unresolved.

I don't like change; I like my space, my comfort zone. I didn't want my daughter to grow up too fast, but life got in the middle, and she did, for the better. If I had not been cautious, planned strategically and regrouped after the recession, God knows where she would be today. A lesson can only be objective if we apply it. What I know about the future is that I want it to be better for our new generation. Mantecans deserve better than one AMC Theater or a Walmart or a Target. We need a robust downtown representative of who we are, a family city.

I'd like to fast forward to 2025 when my youngest daughter returns home from graduate school, to visit or stay, but to enjoy her city's downtown. Enjoy a night or day out shopping, dining or dancing or when she doesn't have to go over the Altamont Pass to shop in Livermore. I'd like to imagine her getting on ACEforward to Merced, and change to the California High-Speed Rail to visit friends in Southern California; no traffic, no long lines to wait in at SFO, no delays; just plain enjoyment of our beautiful Central Valley landscape.

Manteca has been dealt with a nice hand from a deck of cards. California HSR/ACE offers us that good hand, how we prepare ourselves to win is entirely achievable; not planning for a foreseeable future is foolish.

\*\* Al Moncada is a Board Member of the Central Valley Hispanic Chamber of Commerce

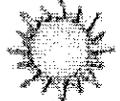


# \$57,500 FOR BRANDING

City Council should use it to sell employers on Manteca

► See DENNIS WYATT, Page A4

Today: Tomorrow:



100/60

92/56

# MANTECA BULLETIN

LOCAL NEWS MEANS THE WORLD TO US

www.MantecaBulletin.com MONDAY, SEPTEMBER 19, 2016 Vol. 106, No. 223 PRICE 50¢

## Manteca needs to get on track

Let's face it; no one likes change, especially when we are in our comfort zone! And that's what is happening with High Speed Rail in California.

In 2008, Californians gave their okay to build a High Speed Rail, or HSR, to connect Los Angeles with the San Francisco Bay Area. Once completed, we will travel by

rail from San Francisco to Disneyland in less than 3 hours, at speeds of approximately 150 mph. There will be stops, terminals on the way, so Californians would be able to visit many cities in



AL MONCADA  
Manteca Resident

### PERSPECTIVE

between; cities that remain unserved by major airlines. Now, what does this mean for Mantecans, and how do we fit into the equation?

This weekend I had the opportunity to see my oldest daughter at work. I attended an event she organized in Tracy. There were lots of

people in attendance. The keynote speaker thanked her for the outstanding job of bringing together so many folks under the same roof. I felt extremely proud of her so this morning I looked for the old Hi8 camera stored away a long time ago, so I could play video

SEE PERSPECTIVE, PAGE A2

### PERSPECTIVE FROM PAGE A1

tapes of her growing up; video tapes from 17 years ago! I wanted to reassure myself that the woman getting praised the night before was the same little girl I didn't want grow too fast. You see, I didn't want her to change back then; I wanted her to slow down because I was uncertain how life would turn out for her. But after 17 years, a college degree, and many sacrifices, I realized change is real. So far life has turned out

perfect for her.

Our downtown was the "Gateway to Yosemite" less than 30 years ago. Mantecans can still remember when we did not have the 120 Bypass. At one point drivers had to drive via Yosemite Avenue, through downtown Manteca, to get to Yosemite National Park. But then change came; the 120 Bypass was built, and Downtown Manteca came to a halt. Businesses started to close down because of lack of visitors, and a ghost made itself a home on an empty street after sundown. Many

didn't want change then, many do not want it now, and that's what the High-Speed Rail means to Manteca, change.

The Altamont Corridor Express, or ACE, held an informational hearing last week in our city on its newest project, ACEforward. The public was brought up to speed on the latest developments regarding the expansion of ACE from Manteca to Merced, the connecting terminal to the California High-Speed Rail system, and upgrades to the current line up to San Jose, and Bay Area Rapid Transit, or BART.

The ACEforward connection in Merced will translate to more than 4.5 million passengers coming through the Central Valley with additional terminals in Livingston/Atwater, Turlock, Modesto, and Ripon. The Manteca airport ACE station can be moved to the Transit Center downtown. By 2025, nine years from now, Manteca could see an excess

of more than 285,000 passengers getting off and on at our Transit Center.

The US High Speed Rail Association, a leading force behind HSR movement in the US, states that "The national high speed rail network will create millions of good jobs, stimulate the economy, create entirely new industries, be the catalyst for the next real estate boom, save businesses money, increase mobility, reduce dependence on oil, reduce our annual \$700 billion trade deficit (purchasing foreign oil), and significantly increase national security." If so, ACE connectivity with the California HSR in Merced will bring a most needed and noticeable economic improvement to our city. But, it would require competition with other Central Valley cities connecting to the network.

We need to look into preparing ourselves for the avalanche that is upon us; the California HSR. If we do not start plan-

ning towards a proactive and economically progressive future, we will end up empty handed again. Yes, we had the 2008 recession which set us back a few steps, but what that all means is that our city leaders did not plan for rainy days. We cannot afford to be on sidelines either, or be unresolved.

I don't like change; I like my space, my comfort zone. I didn't want my daughter to grow up too fast, but life got in the middle, and she did, for the better. If I had not been cautious, planned strategically and regrouped after the recession, God knows where she would be today. A lesson can only be objective if we apply it. What I know about the future is that I want it to be better for our new generation. Mantecans deserve better than one AMC Theater or a Walmart or a Target. We need a robust downtown representative of who we are, a family city.

I'd like to fast forward

to 2025 when my youngest daughter returns home from graduate school, to visit or stay, but to enjoy her city's downtown. Enjoy a night or day out shopping, dining or dancing or when she doesn't have to go over the Altamont Pass to shop in Livermore. I'd like to imagine her getting on ACEforward to Merced, and change to the California High-Speed Rail to visit friends in Southern California; no traffic, no long lines to wait in at SFO, no delays; just plain enjoyment of our beautiful Central Valley landscape.

Manteca has been dealt a nice hand from a deck of cards. California HSR/ACE offers us that good hand, how we prepare ourselves to win is entirely achievable; not planning for a foreseeable future is foolish.

Al Moncada is a Board Member of the Central Valley Hispanic Chamber of Commerce.

Law Offices of  
**Stuart M. Flashman**  
5626 Ocean View Drive  
Oakland, CA 94618-1533  
(510) 652-5373 (voice & FAX)  
e-mail: [stu@stufash.com](mailto:stu@stufash.com)

September 23, 2016

Hon. Michael Cohen, Director of  
Finance  
California Department of Finance  
State Capitol, Room 1145  
Sacramento, CA 95814

Re: Legality of approving a Final Funding Plan for the California High-Speed Rail Authority pursuant to Streets & Highways Code Section 2704.08(d).

Dear Mr. Cohen,

I am writing to you on behalf of my clients: the Transportation Solutions Defense and Education Fund, the California Rail Foundation, and the Community Coalition on High-Speed Rail, in the wake of the Legislature's recent passage of Assembly Bill 1889. That bill purports to "clarify" language contained in California Streets & Highways Code §2704.08, which was approved by California voters in November 2008 as part of Proposition 1A, the Safe, Reliable, High-Speed Passenger Train Bond Act for the Twenty-First Century.

While AB 1889 has not yet been signed by the Governor, I wanted to put you on notice that, as my clients have already indicated to the Legislature during its consideration of the bill, the bill violates Article XVI, Section 1 of the California Constitution. It does so by materially changing the terms of Proposition 1A after its approval by the voters without referring that change to the voters for their ratification.

I expect that, assuming the Governor does not veto the bill because of its unconstitutionality, once it is signed, the California High-Speed Rail Authority plans to prepare, approve, and send to you for your approval, one or more Final Funding Plans, as described in Streets & Highways Code §2704.08(d), for your consideration and approval. I also expect that the funding plan(s) will rely on AB 1889 in determining that the usable segment(s) involved will be, when the construction proposed in the funding plan is complete, "suitable and ready for high-speed train operation." However, that assertion will be fraudulent and contrary to the voters' intent when they approved Proposition 1A.

The meaning of the language in question in §2704.08 was abundantly clear when it was presented to the voters. The Legislature may not, after the fact, attempt to "clarify" that language in a way that fundamentally alters the expressed voters' intent. Consequently, my clients will be filing an action for declaratory and injunctive relief challenging the validity of AB 1889. You will be named as a respondent and defendant in that suit, as your approval of the funding plan(s) would be a necessary step towards the illegal expenditure of the bond funds, and the lawsuit will seek to enjoin that approval, as well as other steps that would involve or lead to the illegal expenditure of public funds. Please feel free to contact me if you need more information.

Most sincerely

  
Stuart M. Flashman

**Drozd, Doug@HSR**

---

**From:** David DePinto <ddepinto@depintomorales.com>  
**Sent:** Thursday, September 29, 2016 6:01 PM  
**To:** HSR palmdale\_burbank@HSR  
**Cc:** HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR legislation@HSR; HSR news@HSR; HSR info@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Richard, Dan@HSR; HSR boardmembers@HSR; Arellano, Genoveva@HSR; HSR palmdale\_burbank@HSR; velasquezj@pbworld.com  
**Subject:** Fwd: Re: Following Up On Authority's Response re: Unfinished Business

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

Please make sure my response to Dan Richard's misleading and redundant email is entered into the record and part of our comments related to the Palmdale to Burbank Project Section. Thank you.

Dave DePinto

----- Forwarded Message -----

**Subject:** Re: Following Up On Authority's Response re: Unfinished Business

**Date:** Thu, 29 Sep 2016 13:26:01 -0700

**From:** David DePinto <ddepinto@depintomorales.com>

**To:** Richard, Dan@HSR <Dan.Richard@hsr.ca.gov>, Bell, Tony <TBell@lacbos.org>, DeGonia, Jarrod <JDeGonia@lacbos.org>, Lamb, Teresa <Teresa.Lamb@mail.house.gov>, kbarger@lacbos.org, Robles, Enrique <Enrique.robles@mail.house.gov>, michael.aguilera@mail.house.gov, mayor.garcetti@lacity.org, Jankiewicz, Joe <joe.jankiewicz@mail.house.gov>, Senator.Liu@senate.ca.gov, Susan Wong <susan.s.wong@lacity.org>, councilmember.martinez@lacity.org, councilmember.krekorian@lacity.org, Ricardo.benitez@asm.ca.gov, assemblymember.lopez@assembly.ca.gov, scott.wilk@asm.ca.gov, sheila@bos.lacounty.gov, Jim Dantona <Jim.Dantona@lacity.org>, vickere.murphy@sen.ca.gov, Daniel <Daniel.Cedeno@sen.ca.gov>, Kenny.LaSalle@mail.house.gov, elizabeth.jimenez@lacity.org, Ackley Padilla <ackley.padilla@lacity.org>, aayala@bos.lacounty.gov, Sylvia Ballin <sbballin@sfcity.org>, Joel Fajardo <fajardo.joel@gmail.com>, max.reyes@lacity.org, ana.guerrero@lacity.org, Asatur Hovhannisyan <asatur.hovhannisyan@lacity.org>, Fukushima, Steve <steve.fukushima@sen.ca.gov>, eveline.bravoayala@sen.ca.gov, william.ulmer@asm.ca.gov, jim.leahy@asm.ca.gov, jordan.langdon@mail.house.gov, Englund, Nicole <NEnglund@bos.lacounty.gov>, Pichardo, Nelson <Nelson.Pichardo@asm.ca.gov>, Michael Murphy <MMURPHY@santa-clarita.com>, Matthew Levesque <mlevesque@santa-clarita.com>, Marsha McLean <MMCLEAN@santa-clarita.com>, btrujillo@bos.lacounty.gov, Karo Torossian <karo.torossian@lacity.org>, Roberto, Jody <jody.roberto@sen.ca.gov>, Leia Hernandez <leiajaneen80@yahoo.com>, TimBen Boydston <TBOYDSTON@santa-clarita.com>, sean.macneil@asm.ca.gov, Brian Gavidia <brian.gavidia@lacity.org>, monica.ratliff@lausd.net, eric.moody@lacity.org, Perry, Dave <DPerry@lacbos.org>, susanne.reed@sen.ca.gov, Christian Griffith <christian.griffith@asm.ca.gov>, Gonzalez, David <david.gonzalez3@lausd.net>, Boehm, Michelle@HSR <Michelle.Boehm@hsr.ca.gov>, Morales, Jeff@HSR <Jeff.Morales@hsr.ca.gov>, Arellano, Genoveva@HSR <garellano@arellanoassociates.com>, velasquezj@pbworld.com, Griffiths,

Diane <diane.griffiths@sen.ca.gov>, Worth Girvan, Barri <Barri.Girvan@sen.ca.gov>, monica.ratliff@lausd.net <monica.ratliff@lausd.net>, Karo Torossian <karo.torossian@lacity.org>, councilmember.wesson@lacity.org, Vanessa Rodriguez <vanessa.rodriguez@lacity.org>

**Dear Mr. Richard and Elected Officials and Staff:**

**This is yet another non-response, unfortunately. We've requested action, not meaningless explanations, not passing of the buck and not deflection away from the major issues raised by our long-standing communications.**

**I've outlined our questions and comments to this communication from Dan Richard within your paragraphs below and highlighted them appropriately. Please scroll down. Our requests remain unfulfilled, thus, they remain "unfinished business," open issues and further examples of the inadequate community outreach and response by the Authority to concerns raised in our communities about high speed rail and above ground routes, in particular.**

**Should any of the elected officials included on this correspondence have any questions or concerns, please contact me directly at 310-502-7928. Thank you.**

Sincerely,

**Dave De Pinto**

**President, Shadow Hills Property Owners Assn.**

**Member, SAFE Coalition**

On 9/29/2016 10:51 AM, Richard, Dan@HSR wrote:

Elected Officials, Staff and Community Leaders:

Since you all were included on this and other correspondence, I wanted to make sure you had a chance to review the California High-Speed Rail Authority's response to the questions asked and issues raised. Our response is below. Please do not hesitate to contact me should you have any questions regarding this information.

Sincerely,

Dan Richard  
Chair, California High-Speed Rail Authority Board

-----  
Dear Mr. DePinto,

We are in receipt of your most recent communications, dated September 6<sup>th</sup>, 7<sup>th</sup>, and 14<sup>th</sup>, in which you ask several of the same questions about the Palmdale to Burbank (P-B) Project Section that you have previously submitted, and that have been previously answered. Specifically, these include the following topics: escorted board member tours of the section, a board meeting in the San Fernando Valley, the independent technical studies, and specific issues related to the E2 alignment currently under consideration.

As we've stated in previous correspondence, the Authority Board is not organized geographically and there are no specific representatives for a given region. The Board is made up of appointees of the Governor, the State Senate, and the State Assembly. Once appointed, each board member manages their calendars individually. Neither the staff nor any other board member exercises direction over when and how an individual member conducts their business as members of the Board. At this point, this information has been clearly and repeatedly explained.

**Board Member Paskett committed in person to me to conduct a site visit with us at your spring board meeting in Anaheim. Ms. Paskett is most appropriate as she lives within 10 miles of the E2 route and expressed familiarity with the overall area. She asked me to contact Michelle Boehm, which I did, to schedule the activity. Our request was acknowledged by Michelle, but the meeting has not been scheduled. As far as we are concerned, there is but on Authority and, we'd assume you all work together and communicate with one another. This matter has now been pending nearly 6 months, and there has been zero interaction with your Board since Ms. Perez-Estolano, who did visit with us, resigned from the Board in August 2015.**

**Action Needed: When we place our request in-person to a board member, when that board member accepts the meeting invitation, and a senior management representative is asked to facilitate the meeting, we'd appreciate having the date scheduled.**

Regarding the request for a Board meeting in the San Fernando Valley, Chairman Richard has noted that the Authority's practice is to have Board meetings in communities around the state and to tie those meetings to immediate decisions. With that in mind, we anticipate that a Board meeting will be held in the Los Angeles area over the coming year. While the location and timing of the meeting is yet to be determined, we anticipate that a meeting in the San Fernando Valley will take place prior to final decisions on the Palmdale to Burbank route alignment and completion of the environmental document.

**The meeting in the San Fernando Valley is long overdue as the Palmdale to Burbank project section is a highly controversial section. We'd received inquiries and requests for information from your outreach consultant that the June 2015 meeting would be in the San Fernando Valley and even assisted that consultant in identifying and evaluating venues. With no further word, the Board meeting was scheduled in downtown Los Angeles, on a work day, making it most inconvenient for stakeholders to participate. Still hundreds of our people attended, but thousands were denied the opportunity.**

**Action Needed: We continue to request either a Board Meeting or a SPECIAL Board Meeting be scheduled immediately in the Northeast San Fernando Valley so that our residents and your Board may conveniently interact. How could you move toward anything approaching a draft environmental document without such a meeting in the most impacted and potentially damaged communities?**

As to the equine, tunnel and groundwater reviews that had previously been released, these reports provided insight into what was generally known within the academic and scientific community regarding these key topic areas. They also provided us with a sense of what has and has not been successful on past similar projects throughout the world. These independent studies were performed by a variety of researchers so their existence is not under our direct control.

These studies exist, and as such are part of the record of the project; we cannot withdraw them, nor would we seek to do so. They do not provide the final word on any of the topics presented, and no such representation has ever been made by the

Authority or the researchers who completed them. The analysis that goes into the 20 detailed technical reports required for the environmental document is conducted independent of these prior efforts. Therefore, for all the reasons stated here there is no basis for the request to withdraw them. We fully appreciate that individuals may disagree with the information provided in one or more of the studies, and members of the public have and will continue to have ample opportunity to provide more specific feedback to the Authority on areas of particular concern and/or disagreement.

**The above non-response conveniently does not mention a seismic study, which was included in the Board's unanimous Motion at their June 2015 meeting, was never done. In addition, the above non-response does not address the conflict of interest involving several of the studies, does not address that the hydrology study was not completed, and does not address that the studies were not conducted transparently, as our communities and elected officials had requested - namely, in collaboration with the community and in collaboration with a range of qualified organizations so that independent, expert input would be received.**

**To be clear, the conflict of interest we have been raising since December 2015 is that no less than 5 present or former CHSRA board members, management and/or contractors sit on the Mineta Transportation Institute Board of Trustees. At a minimum, that relationship with Mineta provides clear basis for withdrawal of the studies, and calls into question any findings and ethics related to their selection. Separately, we've criticized the findings of several of the studies as biased, weak, flawed and unsupported by facts and evidence. The studies are the product of CHSRA and CHSRA must "own" them and not try to distance itself from them or sweep them under the carpet. The work done by CHSRA and its lack of transparency seriously call into question the independence and quality of any future/upcoming environmental studies. CHSRA cannot shirk responsibility.**

**Action Needed: Due to the conflict of interest with the Mineta Transportation Institute, which authored the biased Equine Study, as well as Mineta's involvement in the tunneling study, there is basis for withdrawal of those two studies. Second, the entire aspect of the selection of Mineta, the biased studies and the incomplete studies ARE part of the environmental review process, as would any comment or research submitted by any individual or organization. Thus, those studies compromise the integrity of your environmental review process and are at the root of much of the distrust which CHSRA has fostered with our communities. CHSRA mismanaged the study process in such a way as to produce biased studies that support CHSRA's objectives and threaten damage to our communities. For the studies to conclude that horses and high speed trains may co-exist in the Burbank to Palmdale project section is ludicrous. The studies were voted on unanimously by the CHSRA Board, and overseen and put together by CHSRA senior management. As such, they bear the CHSRA name and CHSRA is responsible for their design and content. They must be re-done in the manner requested by our communities and elected officials.**

We acknowledge your position regarding the proposed E2 alignment and your request to remove it from consideration due to various concerns about environmental impacts, including to the Santa Ana sucker fish, among others. As stated previously, E2 is currently still included as one of the three project alternatives being analyzed in the formal environmental document. We have received you and your community's comments on this issue, and a wide variety of other issues, and these comments are included as part of the project record. These important issues will be considered as the environmental process advances. However, as we have noted previously, no alternative alignments will be removed during the development of the draft environmental document in order to preserve the legal and technical sufficiency of that document.

**Again, your response is one of inaction. As we've stated for nearly two years, the SAA Reports and selection of alternatives were seriously flawed and community and elected official input was ignored in the process. The E2 Route is infeasible. There is greater community and elected official input and opposition to above ground E2 than any other route proposed in California, and far more substantive examples of fatal flaws and show stoppers than any other route proposed in California. While**

**environmental justice was used as a reason to refine the SR14 route, environmental justice issues were ignored along the Refined E2 Route in Lake View Terrace and Sun Valley. It is abundantly clear via historical studies, your own core drillings, and the opinion of your own Chief Geologist as expressed at recent community meetings, that soil and geological conditions throughout Angeles National Forest, the Big Tujunga Wash and downstream into Sun Valley and Burbank will not safely tolerate high speed train construction and operations.**

**Action Needed: Act on the abundance of scientific facts, in-house professional opinion, local agency input, the unanimous Motion approved by the LA County Supervisors, the pending motions by the LA Unified School District and LA City Council, along with substantive community and elected official input to immediately remove E2 from further consideration due to the abundance of fatal flaws and show stoppers.**

Finally with regards to your recent comments about the Metrolink corridor we offer the following information. We are strong proponents of regional transportation and transit systems and have worked hard to advance plans for the high-speed rail system that connect with these existing services. In 2012, LA Metro studied improvements to the Metrolink corridor in order to improve service. This study concluded that, at extremely high expense, a reduction in travel time between the Antelope Valley and the San Fernando Valley could be achieved. However it did not conclude that the time saved would make the trip fast enough to meet the Authority's statutory requirement for service between Los Angeles and San Francisco and thus this particular approach does not meet the purpose and need of the high-speed rail project and is not under consideration as one of the alternatives at this time. That being said, we are working with Metro, Metrolink, and other regional transportation providers to look at projects to improve service, as connectivity to high-speed rail is critical to meeting our statewide objectives.

**This is a most important and relatively new aspect of our ongoing communications and discussions. You give credence to the merit of our suggestion, yet you will not include it as a studied option. What are you waiting for? We have raised this suggestion for nearly 6 months with good reason and good basis. First, it was recommended by knowledgeable METRO board member and Glendale City Councilmember, Ara Najarian, in spring 2016.**

**Second, this parallels the solution CHSRA advanced in northern California in the Peninsula and Silicon Valley. The lessons learned there should have taught CHSRA that you can't force high speed train construction and operations into densely populated residential areas, business districts or sensitive environmental areas. The northeast San Fernando Valley is a working class, diverse socio-economic community. If we had a wealth Beverly Hills, a La Canada, Pasadena or Silicon Valley community in this region, would we be treated differently? We think so as we've heard repeatedly that CHSRA expected the routes through the Forest and our communities to be the path of least resistance. CHSRA needs to treat public safety in southern California and the northeast San Fernando Valley with the same care and respect accorded to wealthy northern California communities.**

**Third, seeing the aftermath of the train crash in Hoboken, New Jersey, this morning, and several recent crashes here in the San Fernando Valley, our local rail safety solution would be widely welcomed by the public and elected officials. Your SAA Reports and route alternatives are fundamentally flawed, as we've stated for more than two years, in that 220 MPH trains, running every 10-12 minutes have no place in either residential, business or sensitive environmental areas. Even CHSRA wins under this scenario, as your schedules would be expedited and the price tag for the Palmdale to Burbank segment, now pegged at \$12 billion, would be significantly reduced. That's a good deal for an agency that lacks the funds to complete the southern California project sections and had to recently reverse course with its new business plan as a result. We reject the excuse of train speeds as a reason not to study such an alternative. CHSRA has played fast and loose, or used flexible legal interpretations, with just about every other requirement it faces, so this is one more that the Agency should modify or adapt to. Plus, the time requirement of a non-stop train is a farce anyway. This is an easy fix.**

**Action Needed: remove the E2 alternative, study only tunneled alternatives anywhere near residential, business and sensitive environmental areas, and study transitioning all high speed train plans into improvements to existing Metrolink and light rail services.**

The ultimate outcome of this detailed evaluation process will be the identification of a preferred alternative for inclusion in the draft environmental document, which is planned for the spring of 2017. We will continue to solicit feedback from the public on this project section. To date, we have gone beyond the legally required outreach so that all parties, including you and the community members you represent, have an opportunity to provide input into the process, and the final decisions that will be made. We will continue to do so until the conclusion of this process.

**For two years, CHSRA predicted the draft environmental studies (DEIR/DEIS) would be completed in June 2016. That did not happen. Less than a year ago, CHSRA reversed direction and moved its focus to northern California. The "predicted" start date for operations in southern California moved from 2022 to 2029. That's 7 years. CHSRA has ample time not to rush its process by promoting false and misleading schedules. CHSRA needs to slow down, modify its SAA Reports to include a true range of alternatives not possessing fatal flaws, and must study the "Najarian" concept discussed above. CHSRA has 7 more years to do this than they did prior to the release of the new business plan.**

**Action Needed: Stop holding our communities hostage! Stop papering us and our elected officials with non-responsive emails, studies and community meetings. Revise your studied alternatives immediately.**

Sincerely,

**Dave DePinto  
President, Shadow Hills Property Owners Assn.  
Member, SAFE Coalition**

As always, your comments, along with those of all stakeholders, are a part of the record of the project. All comments and feedback received are considered as we move forward with the environmental process.

Sincerely,

The Palmdale to Burbank Project Team  
California High-Speed Rail Authority  
[Palmdale\\_Burbank@hsr.ca.gov](mailto:Palmdale_Burbank@hsr.ca.gov)  
(800) 630-1039

---

**From:** David DePinto [<mailto:ddepinto@depintomorales.com>]

**Sent:** Wednesday, September 07, 2016 2:39 PM

**To:** HSR palmdale\_burbank@HSR; HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR legislation@HSR; HSR news@HSR; HSR info@HSR; Boehm, Michelle@HSR; Morales, Jeff@HSR; Richard, Dan@HSR; HSR boardmembers@HSR; Arellano, Genoveva@HSR; HSR palmdale\_burbank@HSR; [velasquezj@pbworld.com](mailto:velasquezj@pbworld.com)

**Cc:** Bell, Tony; DeGonia, Jarrod; Lamb, Teresa; [kbarger@lacos.org](mailto:kbarger@lacos.org); Robles, Enrique; [michael.aguilera@mail.house.gov](mailto:michael.aguilera@mail.house.gov); [mayor.garcetti@lacity.org](mailto:mayor.garcetti@lacity.org); Jankiewicz, Joe; [Senator.Liu@senate.ca.gov](mailto:Senator.Liu@senate.ca.gov); Susan Wong; [councilmember.martinez@lacity.org](mailto:councilmember.martinez@lacity.org); [councilmember.krekorian@lacity.org](mailto:councilmember.krekorian@lacity.org); [Ricardo.benitez@asm.ca.gov](mailto:Ricardo.benitez@asm.ca.gov);

assemblymember.lopez@assembly.ca.gov; scott.wilk@asm.ca.gov; sheila@bos.lacounty.gov; Jim Dantona; vickere.murphy@sen.ca.gov; Daniel; Kenny.LaSalle@mail.house.gov; elizabeth.jimenez@lacity.org; Ackley Padilla; aayala@bos.lacounty.gov; Sylvia Ballin; Joel Fajardo; max.reyes@lacity.org; ana.guerrero@lacity.org; Asatur Hovhannisyany; Fukushima, Steve; eveline.bravoayala@sen.ca.gov; william.ulmer@asm.ca.gov; jim.leahy@asm.ca.gov; jordan.langdon@mail.house.gov; Englund, Nicole; Pichardo, Nelson; Michael Murphy; Matthew Levesque; Marsha McLean; btrujillo@bos.lacounty.gov; Karo Torossian; Roberto, Jody; Leia Hernandez; TimBen Boydston; sean.macneil@asm.ca.gov; Brian Gavidia; monica.ratliff@lausd.net; eric.moody@lacity.org; Perry, Dave; suzanne.reed@sen.ca.gov; sean.macneil@asm.ca.gov; Christian Griffith; Gonzalez, David; Gonzalez, David  
**Subject:** Following Up On Authority's Response re: Unfinished Business

Dear California High Speed Train Authority:

We continue to await the Authority's follow through on the board member site visit, as Ms. Paskett **committed** to do at the Anaheim board meeting earlier this year. The public really does not care how calendars within the Authority are managed but we do care that it honors its word. There is one high speed train Authority as far as we are concerned, and I think you'd all agree with that. Our communities have been requesting this site visit since August 2015 when Katherine Perez-Estolano resigned from the Board. The Board cannot and should not try to do its job without getting input from communities and witnessing potential damage in person. This is a very clear and time sensitive request that has been pending more than a year and counting.

Separately, our request for a board meeting in the northeast San Fernando Valley is nearly a year and a half old. To be clear on the communications with Dan Richard, he at first denied the Authority had any plans or commitment for a meeting in the northeast San Fernando Valley. He was wrong. I provided evidence that we as well as the Authority's outreach consultant had researched locations for such a meeting in the northeast San Fernando Valley prior to the June 2015 meeting being held downtown on a work day. Still, there's been no action taken by the Authority. The Authority has the discretion and latitude to schedule a monthly meeting here at any time **or to convene a special board meeting in this locale.**

Regarding the open house meetings, they truly appear to be a waste of time as there is no new information according to the Authority since April of this year. People who attended the recent round of meetings said there was no new information and that CHSRA staff paid little attention to their questions and concerns. As a result, we continue to view the current round of meetings as an abuse of the community outreach and transparency process. These meetings should have occurred in and around the time of the most recent SAA Report, but the Authority breached its own process at that time by revealing the contents of the SAA Report at the San Fernando Valley COG meeting.

If the Authority truly wishes to tout its transparency and community outreach, it would be good form to practice it. Our communities continue to await your substantive response.

Dave DePinto

President, Shadow Hills Property Owners Assn.

Member, SAFE Coalition

On 8/30/2016 9:16 AM, California High-Speed Rail Authority wrote:

Dear Mr. DePinto,

Thank you for your recent email of August 21, 2016 and continued correspondence with the California High-Speed Rail Authority regarding your concerns with the Palmdale to Burbank Project Section.

As you noted, the planned summer Community Working Groups were postponed due to the devastating Sand Fire. These meetings were rescheduled as soon as reasonably possible in the interest of getting back out to the community promptly. In addition, as it has been communicated to you, following this round of small group meetings, the Authority will host larger public Open House meetings in the project area including one on Thursday, September 22 in the San Fernando Valley at the Fernangeles Recreation Center. Public Open House meetings will also be held in Palmdale and Acton/Agua Dulce on September 14 and 17, respectively.

With regard to the Board member meeting/tour, this request has been submitted. Each Board member manages their own calendar and can choose to accept invitations to visit project areas at their own discretion. As private citizens who have volunteered to serve, the board members manage their own schedules.

With regard to the Board meeting locations, Chairman Richard has stated in previous correspondence with you, the Authority's practice is to have Board meetings in communities around the state and to tie those meetings to immediate decisions. We do expect that a Board meeting will be held in the Los Angeles area over the coming year. The exact schedule and location is yet to be determined, but your request for a meeting in the San Fernando Valley has been received and will continue to be considered.

Thank you again for your considerable time and attention to this project. We appreciate your dedication to representing your community.

Sincerely,

Palmdale to Burbank Project Team  
California High-Speed Rail Authority  
[palmdale\\_burbank@hsr.ca.gov](mailto:palmdale_burbank@hsr.ca.gov)  
(800) 630-1039

## Drozd, Doug@HSR

---

**From:** Bob F <BobFif@hotmail.com>  
**Sent:** Thursday, October 06, 2016 12:23 PM  
**To:** HSR info@HSR; HSR Northern California@HSR; HSR Central Valley@HSR; HSR Southern California@HSR; HSR boardmembers@HSR; HSR news@HSR; HSR sbprogram@HSR; san.francisco-san.jose@hsr.ca.gov; HSR Central Valley Wye@HSR  
**Subject:** Improved Transportation  
**Attachments:** Drawings.pdf; 2327PA.pdf

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

Although I graduated from UC Berkeley in 1972 with a degree in Electrical Engineering and Computer Science, and spent the bulk of my career designing computer products for Xerox, I have always been interested in improving transportation. In ~1984 while traveling the rails of Europe, I pondered if it was at all possible to combine the advantages of an Express route with the convenience of accommodating Local routing and came up with a practical solution. I worked with a mechanical engineer who is also a patent attorney to finally produce the attached.

**This is a presently implementable concept that will provide Express transportation service to EVERYONE AT THE SAME TIME regardless of their origin and destination within a rail system.** To make use of this non-stop any-point-to-any-point express feature, passengers would need to move up a passenger car or two while the train is moving. (This is not a vehicle on the highway or even a plane in the sky. No seat belts are even necessary for a train car traveling the rails.) It is very acceptable to have people moving from passenger car to passenger car while a train is underway. This may be unnecessary in future versions, but for now, this trivial action of moving between passenger cars (once upon initial coupling to a non-stop "core" train and once again upon reaching a desired destination) is necessary if one wants to make use of the non-stop feature. Every passenger could still board such a passenger train in the same manner as they have done in the past and still make it to their destination, but it could take much longer.

Taking this non-stop concept to the next level and incorporating an interleaving technique would further expand the "All-Express" benefit. One possible example involves a practical means to efficiently go non-stop within any station along a Bay Area loop to and from anywhere along the coast from Santa Cruz to San Diego as well as non-stop to and from anywhere along a railroad line reaching from Oakland into Sacramento. That is, any passenger at any station in the system can go **non-stop** to any other station in the system which could number over a hundred. Stations could include at least the following ...

San Francisco, Oakland, Hayward, Fremont,

San Jose, Los Gatos, Scotts Valley, Santa Cruz, Capitola, Aptos, Watsonville, Monterey, Cambria, San Luis Obispo, Santa Barbara, Santa Monica, Los Angeles, San Diego,

Sacramento, Stockton, Tracy, Livermore, Pleasanton, Dublin,

Santa Clara, Sunnyvale, Mountain View, Los Altos, Redwood City, San Carlos, etc. etc..

As presently proposed, the High Speed Rail System between Sacramento and LA doesn't seem to provide anything more than what existing airports have provided for years at a much less cost and at a far less negative impact on so many landowners. More stations cannot be added without negatively impacting (and

possibly even bogging down) the performance of this overall "high-speed" transportation system, so stations will always tend to be few and far between, over such a vast distance. This excessive interval between stations aspect is very detrimental to a surface transportation implementation. This is especially unfavorable in the many, many cases where residents are miles and miles from any station, yet the railroad runs through their property. To further add insult, they also have to contribute to its unreasonable cost and forever maintenance (60+ billion dollars and climbing way beyond what even voters initially approved). The cost to performance ratio is already way out-of-hand. It is understandable that so many are critical of this project.

Properly incorporating an "All-Express" enhancement would make for a much better and more worthwhile rapid surface transportation system. To be able to go non-stop to and from anywhere along the High Speed Rail route would benefit properties and passengers immensely. More and more stations can be spread along the route (which would make for a passenger train system that makes sense over an air system) without negatively impacting any efficiency. In fact, development along the route would be encouraged with the addition of more and more stations that won't penalize any benefits of any express routes. In the next 100+ years, just that aspect would be immensely appreciated. More people could make use of this system and people would tolerate greater distances from their jobs. Housing would undoubtedly expand by orders of magnitude in formerly isolated and undesirable areas. Trains would undoubtedly get longer and longer (hopefully a balance can be maintained).

If any concern arises of the practicality for the presently proposed High Speed Train to accommodate this desirable "All-Express" feature, the proposed high-speed train could alternate with a "slower" version that does. That is, the same rails could concurrently accommodate both types of trains, with possibly the "All-Express" trains running more frequently. (This aspect could also be phased in at some later date).

This "All-Express" concept could also eventually be retrofitted to BART (whether or not it ever circles the Bay) to eliminate every rider presently having to stop at every station in-between their origin and destination. This non-stop benefit for all would shorten everyone's travel time significantly, which would further improve ridership. (As an incentive to help balance ridership throughout the day, riders could be charged less during non-commute times.)

Please give this concept some thought and circulate. The more who understand how this concept can accomplish its benefits, will help make it happen in our lifetime. This is not rocket science. Anyone with an understanding of high school physics can understand the concept presented. This is also not the sophisticated technology of tomorrow and does not require the artificial intelligence of a self-driving car. This could have been implemented with technology of over 50 years ago. While I do have a patent pending, I will not ask for compensation from whoever implements this first because everyone can benefit from improvements in transportation.

Bob Fifield

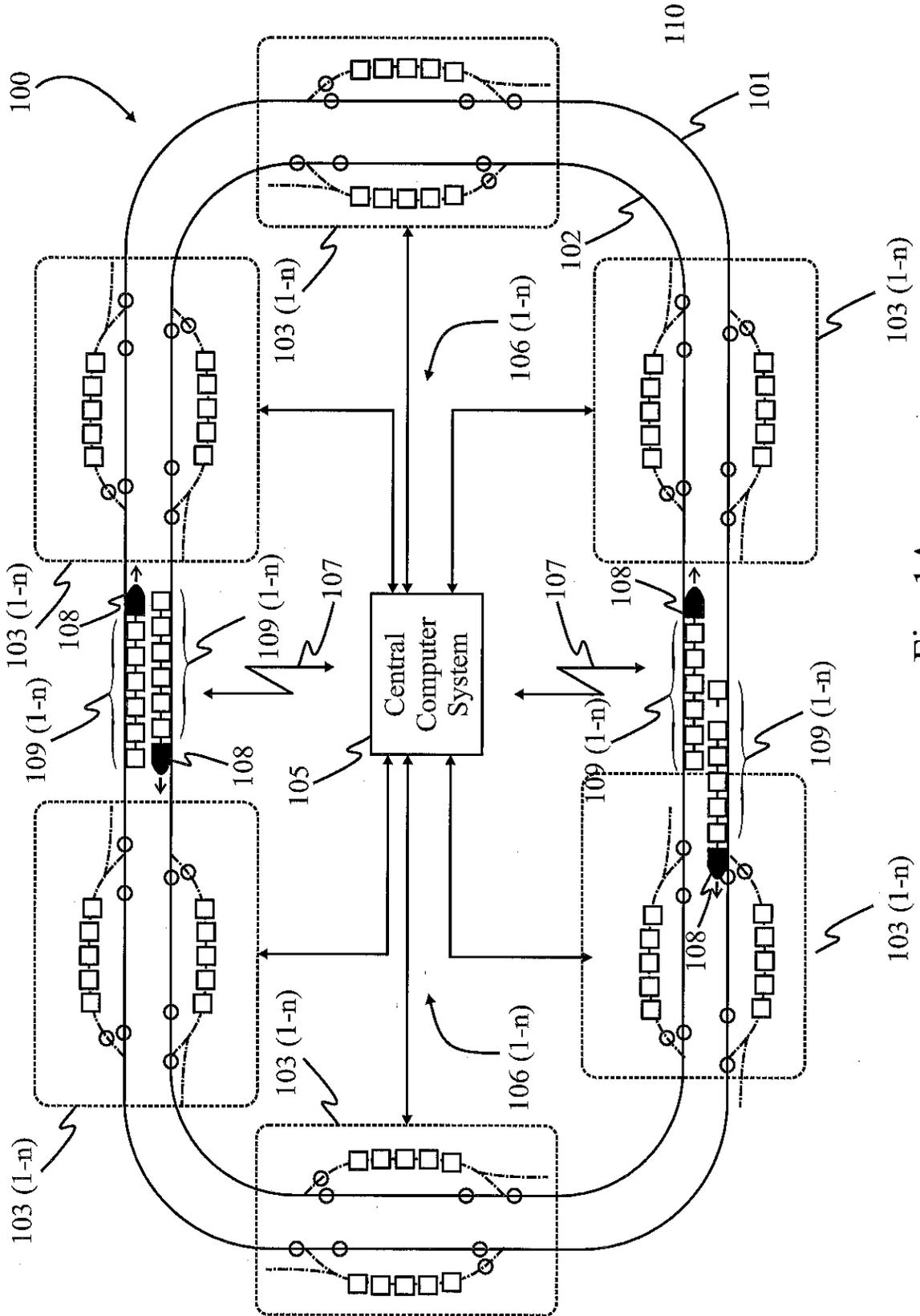


Fig. 1A

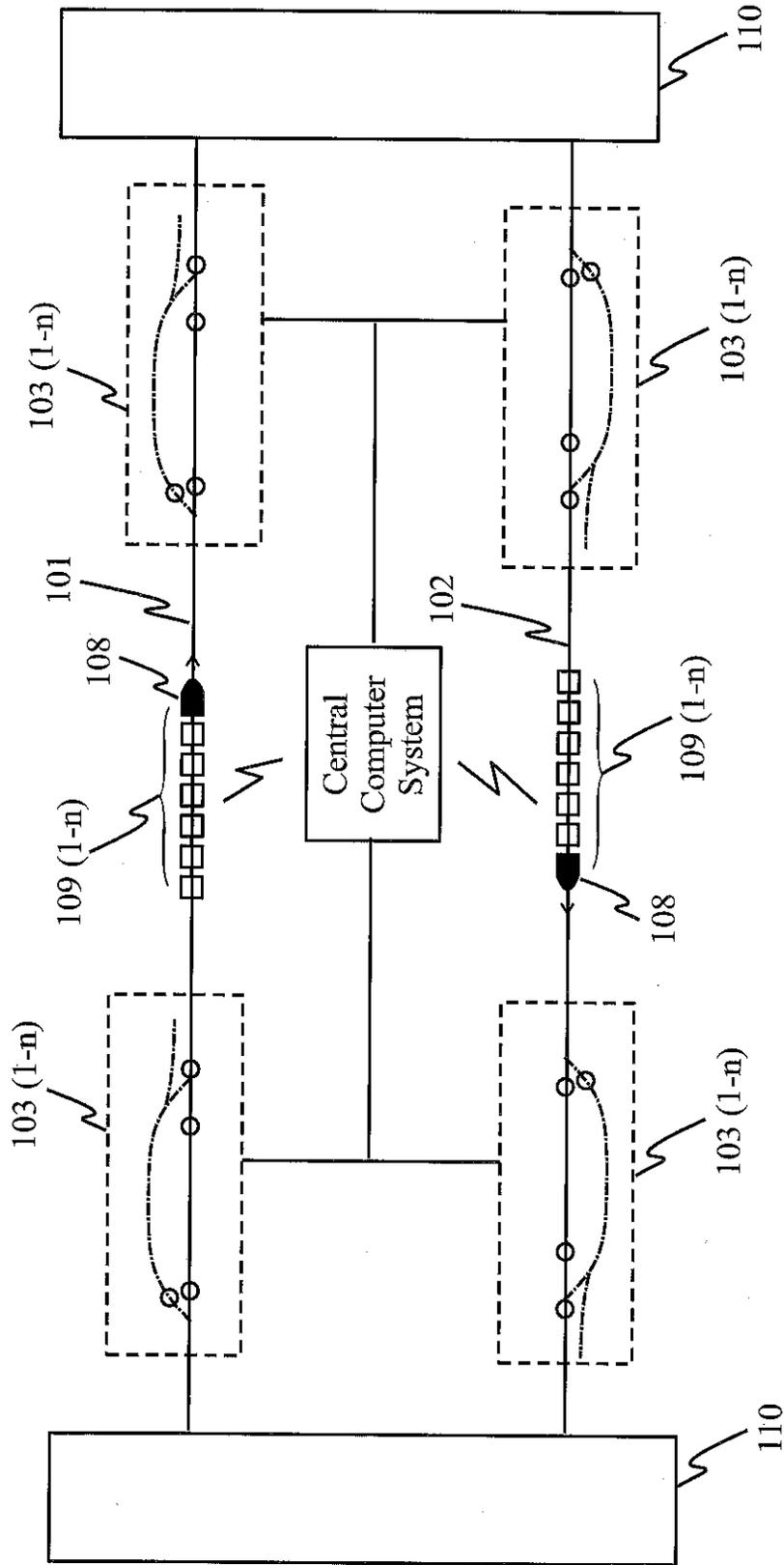


Fig. 1B



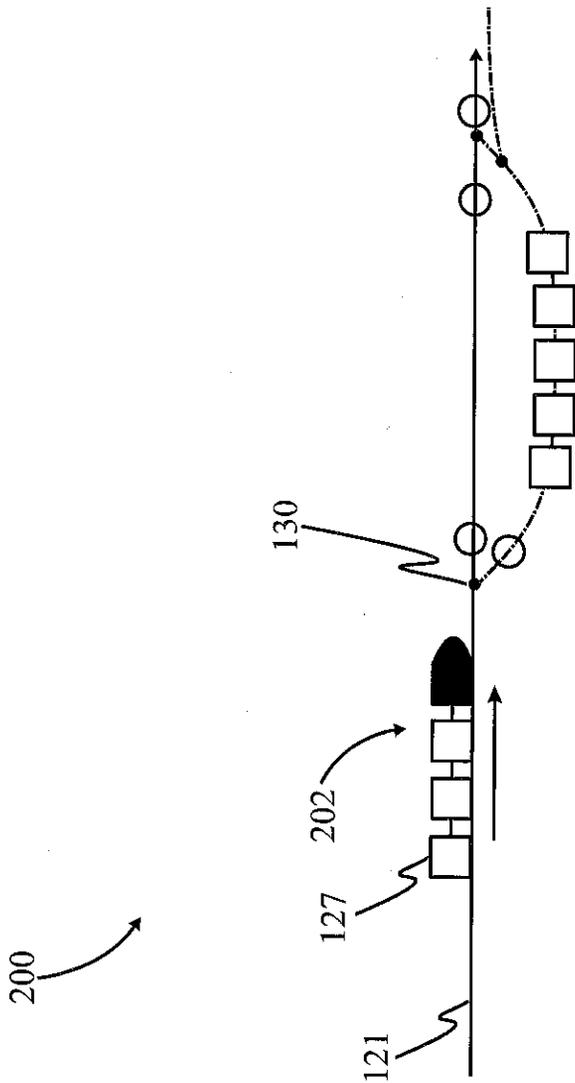


Fig. 2A

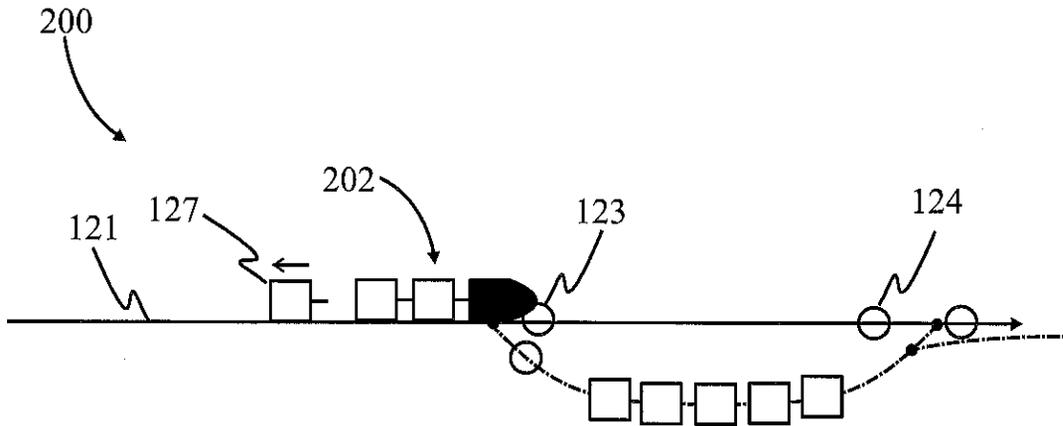


Fig. 2B

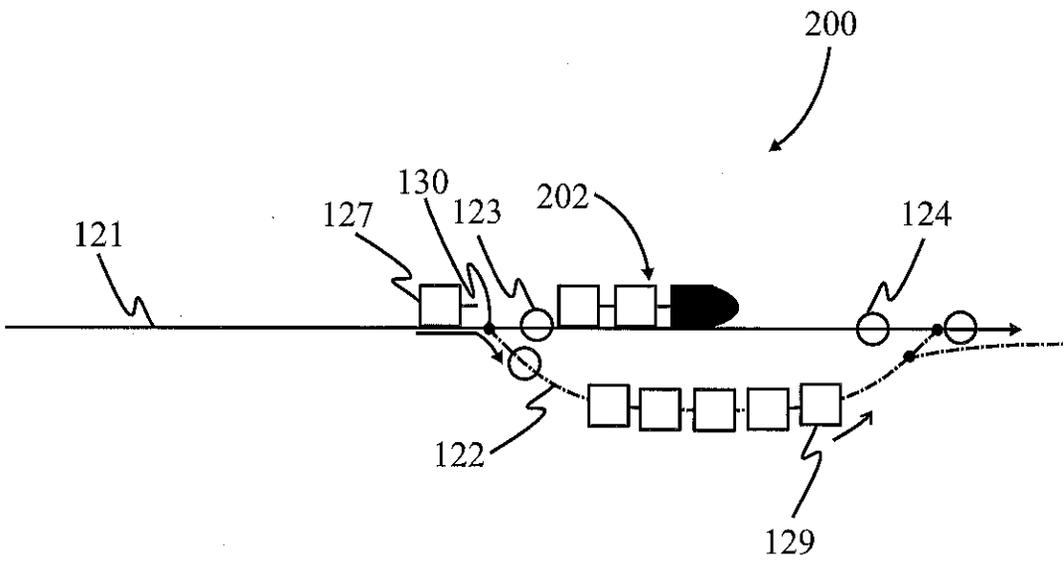


Fig. 2C

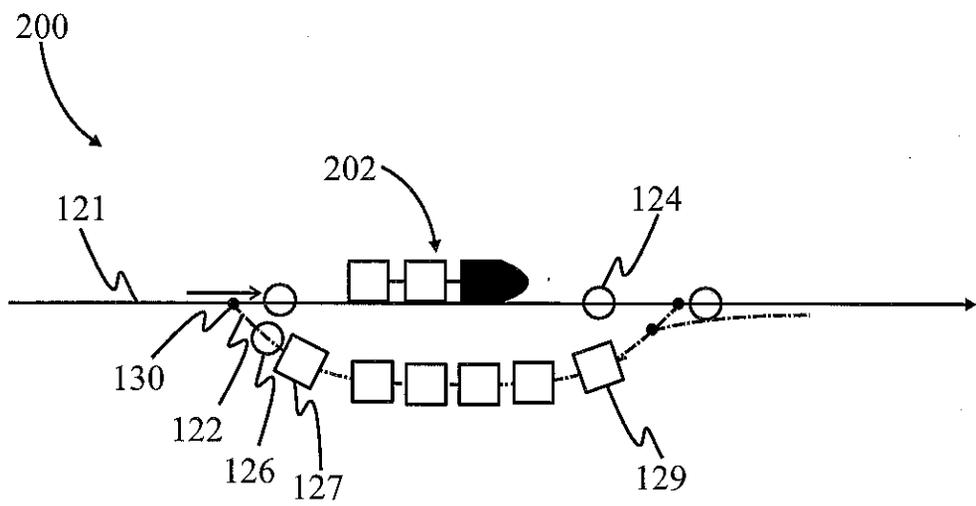


Fig. 2D

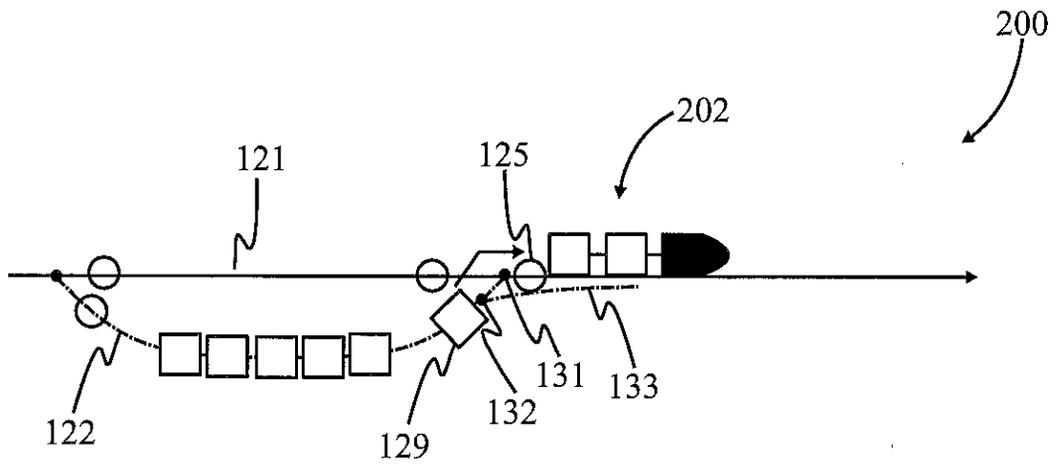


Fig. 2E

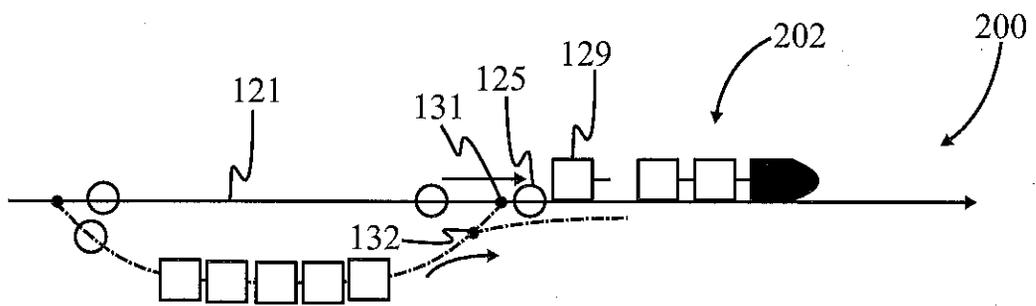


Fig. 2F

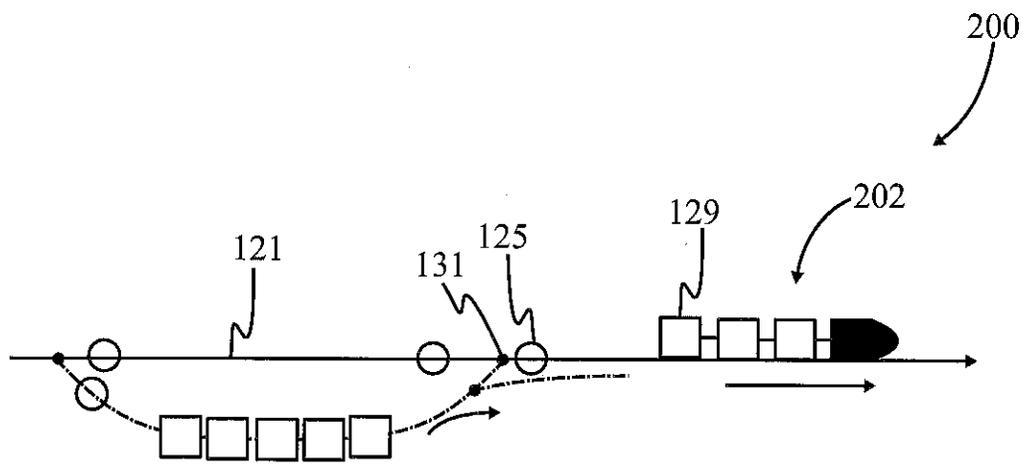


Fig. 2G

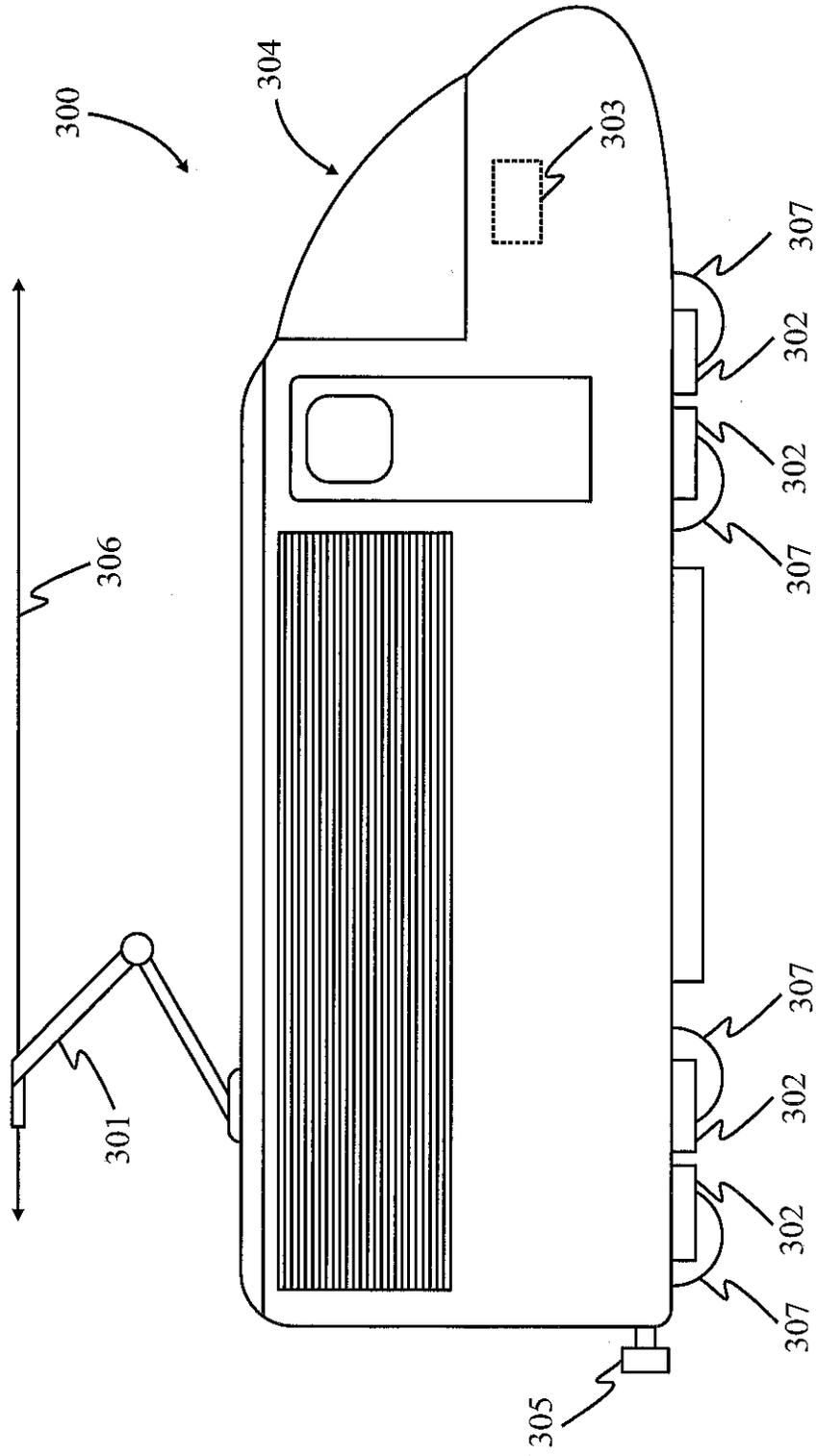


Fig. 3

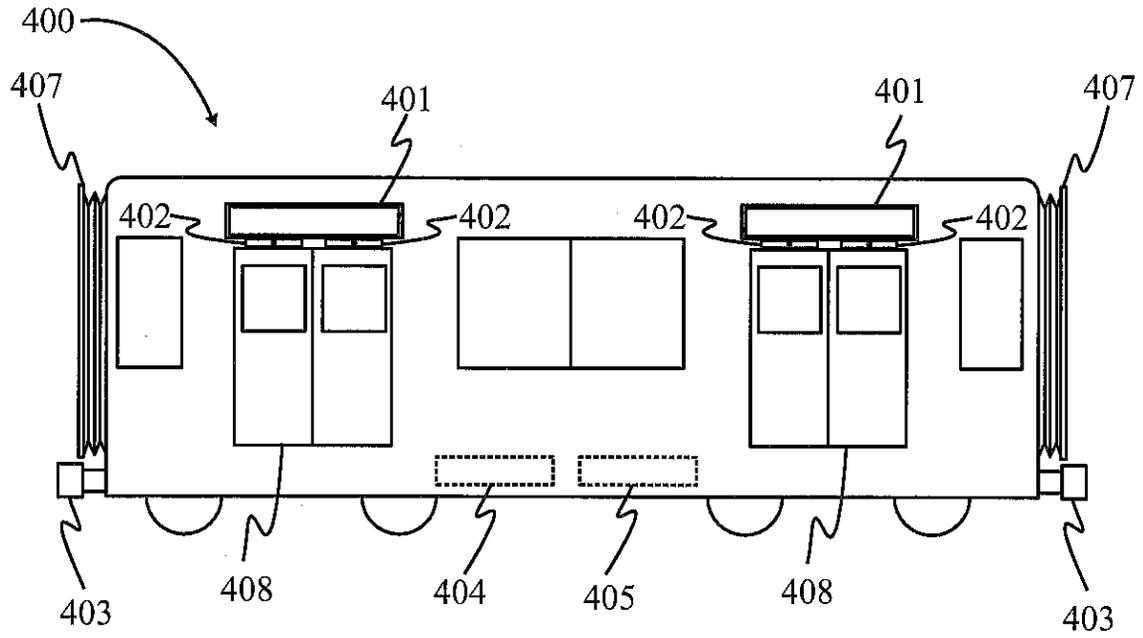


Fig. 4A

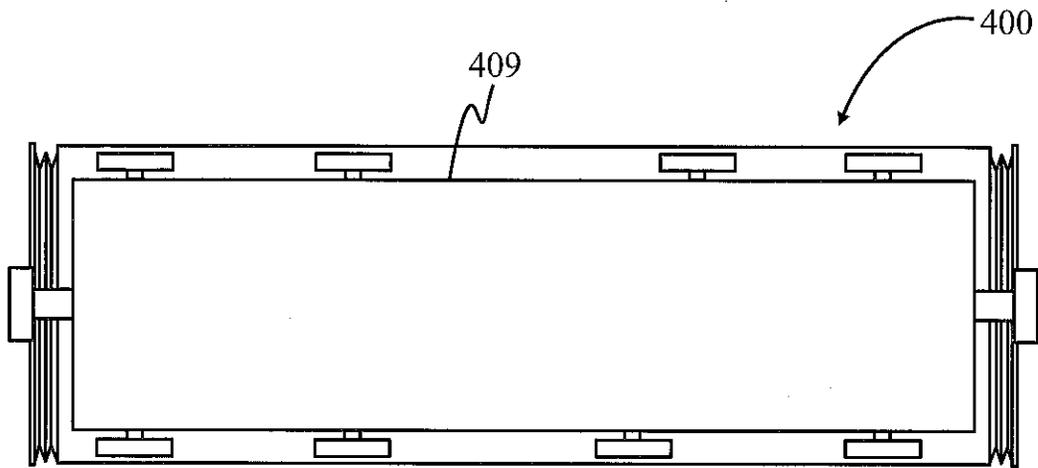


Fig. 4B

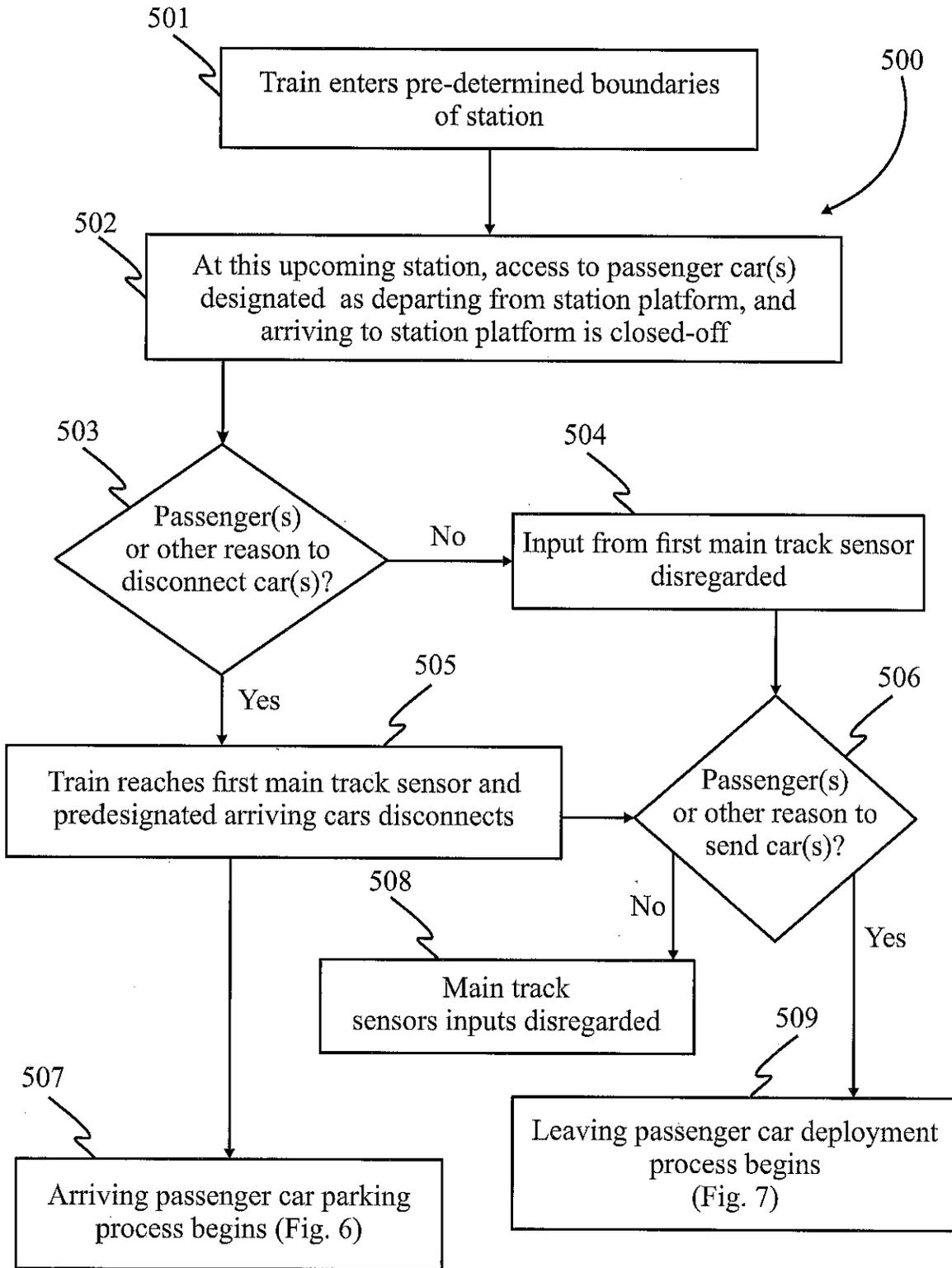


Fig. 5

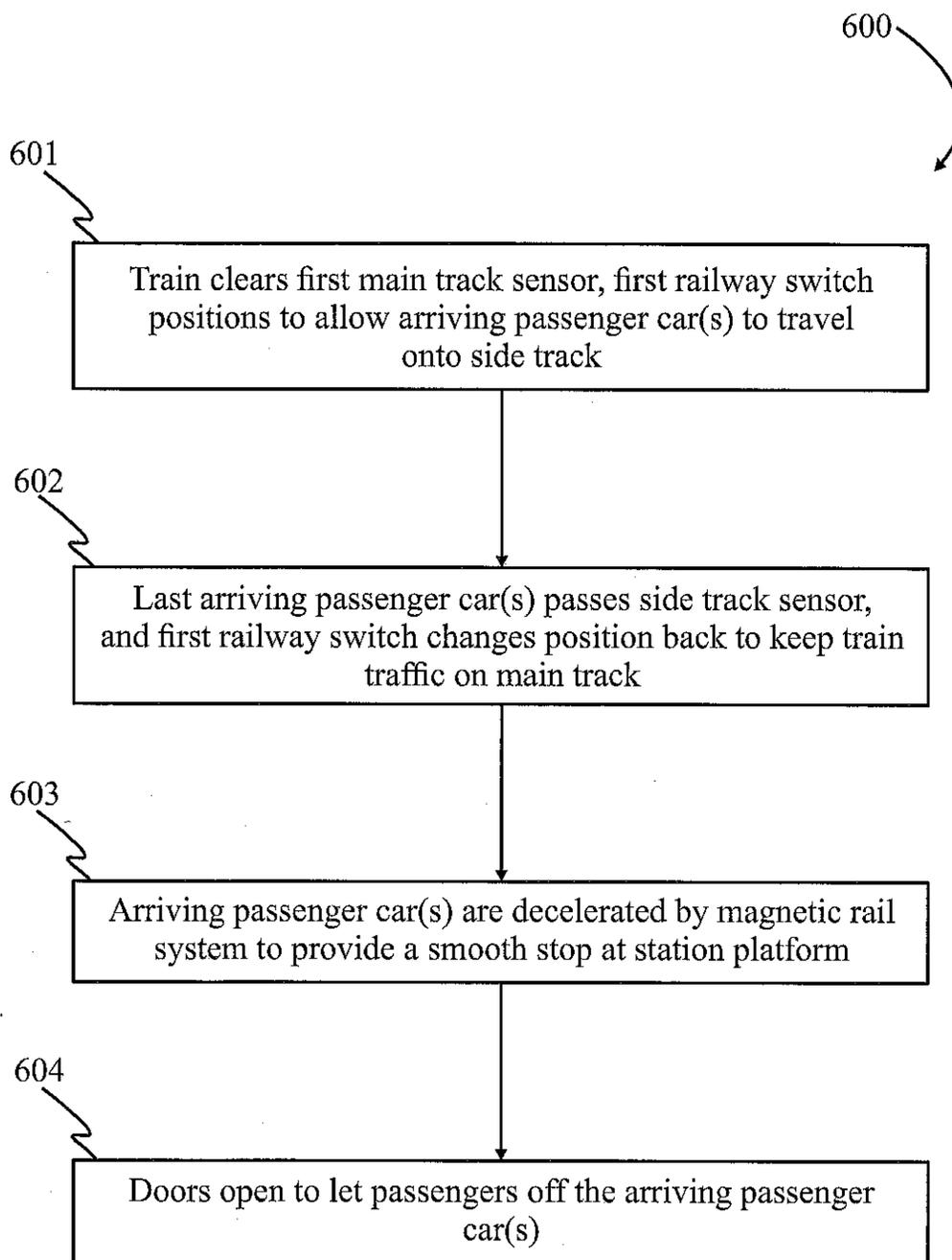


Fig. 6

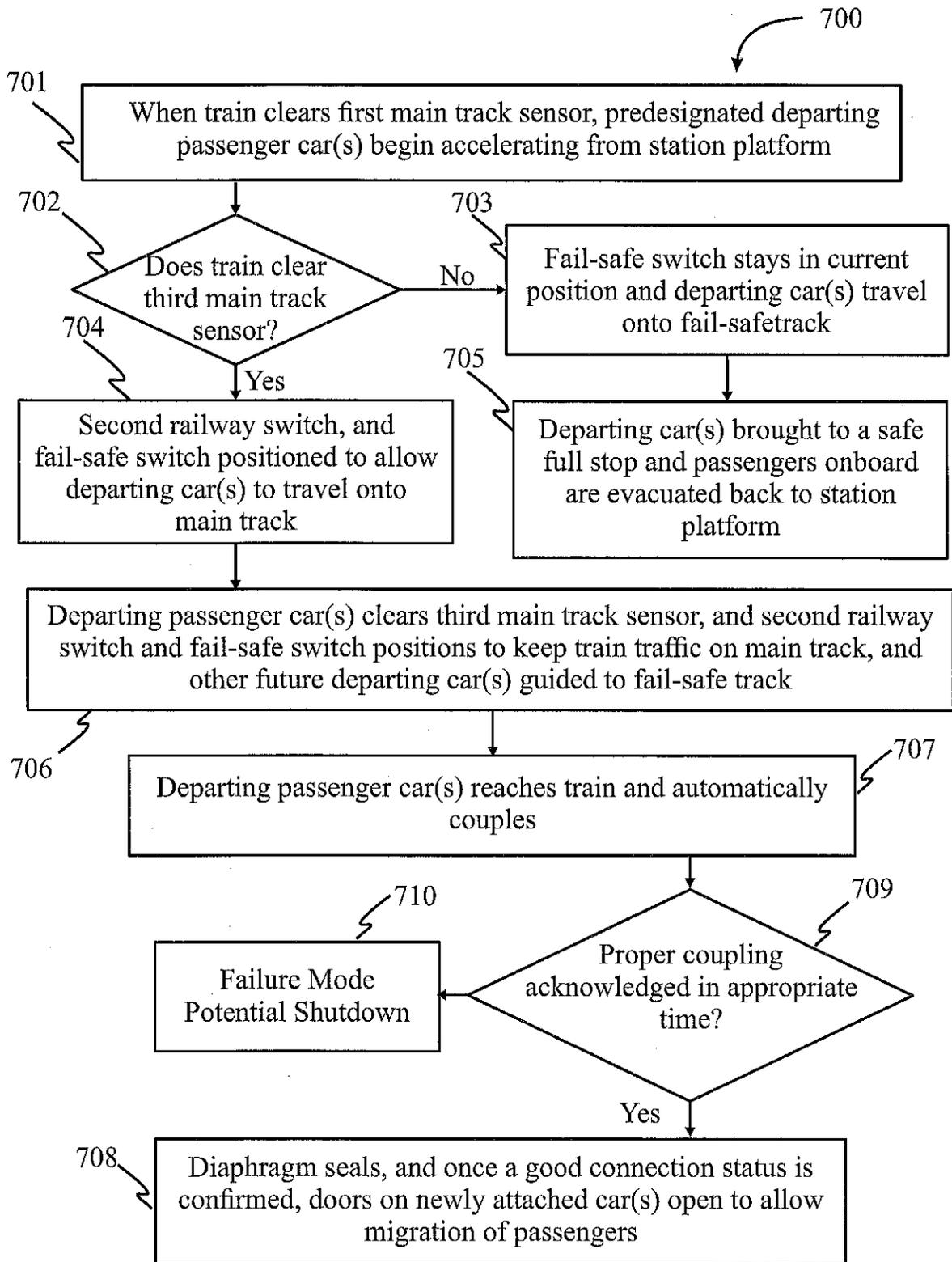


Fig. 7

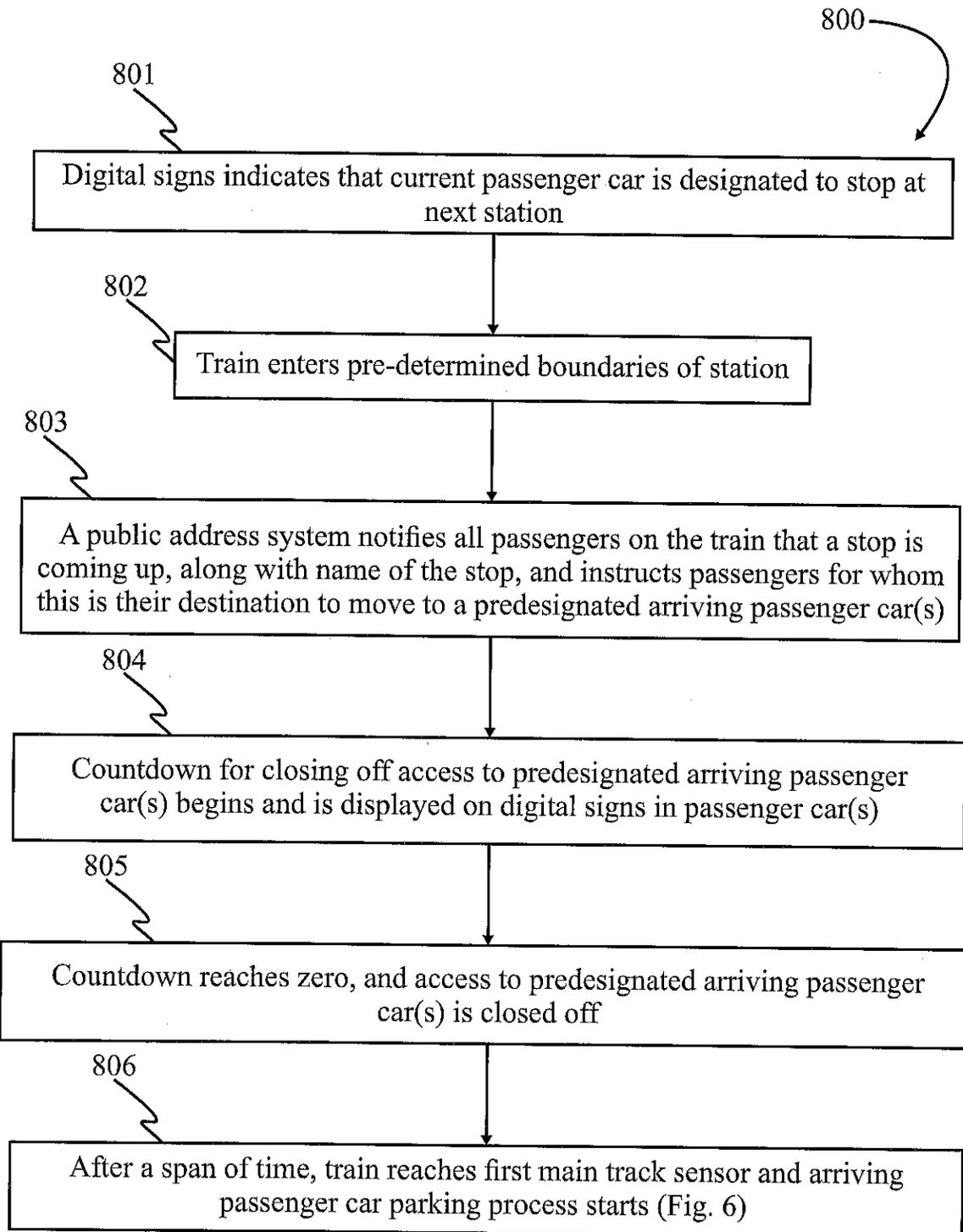


Fig. 8

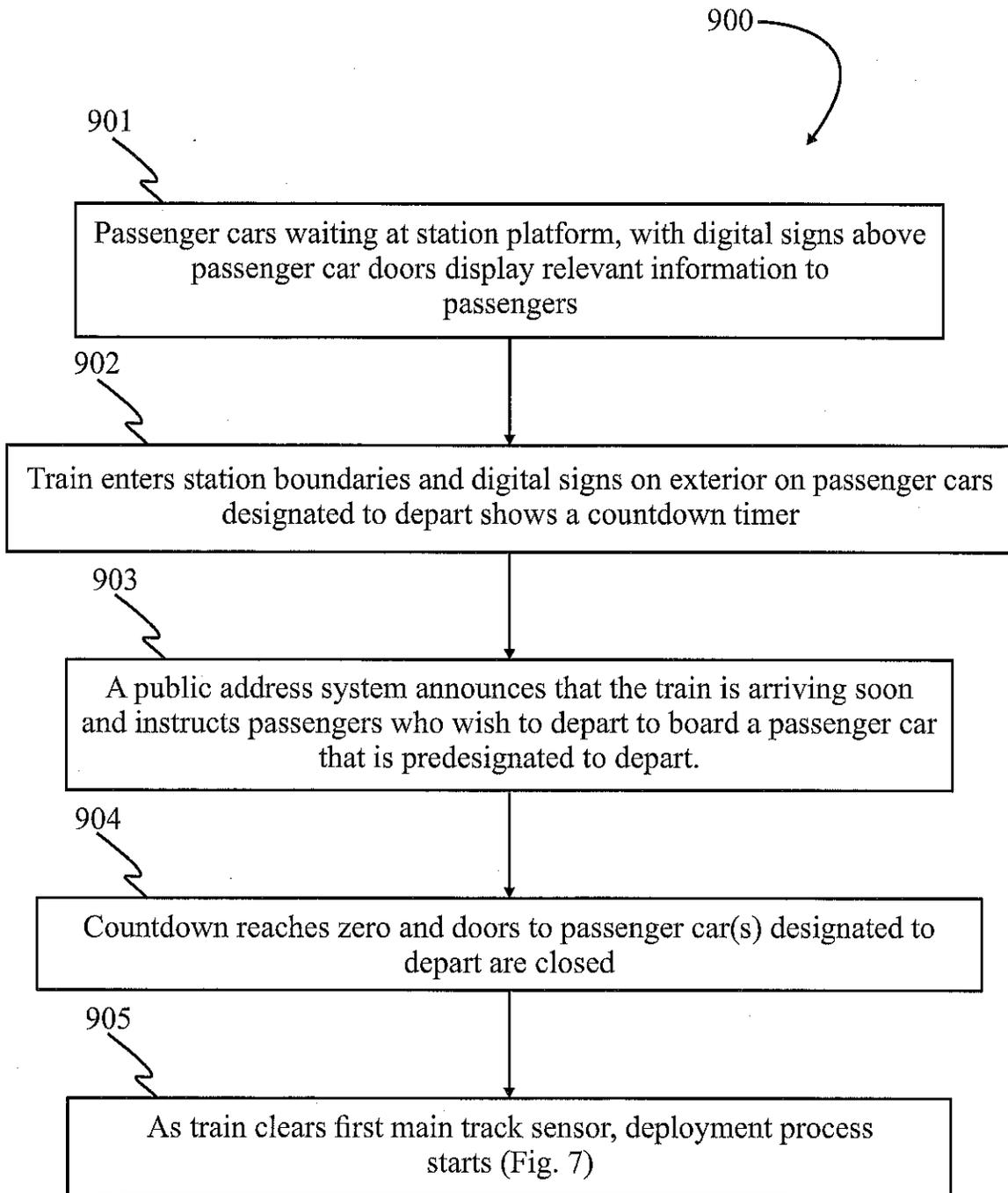


Fig. 9

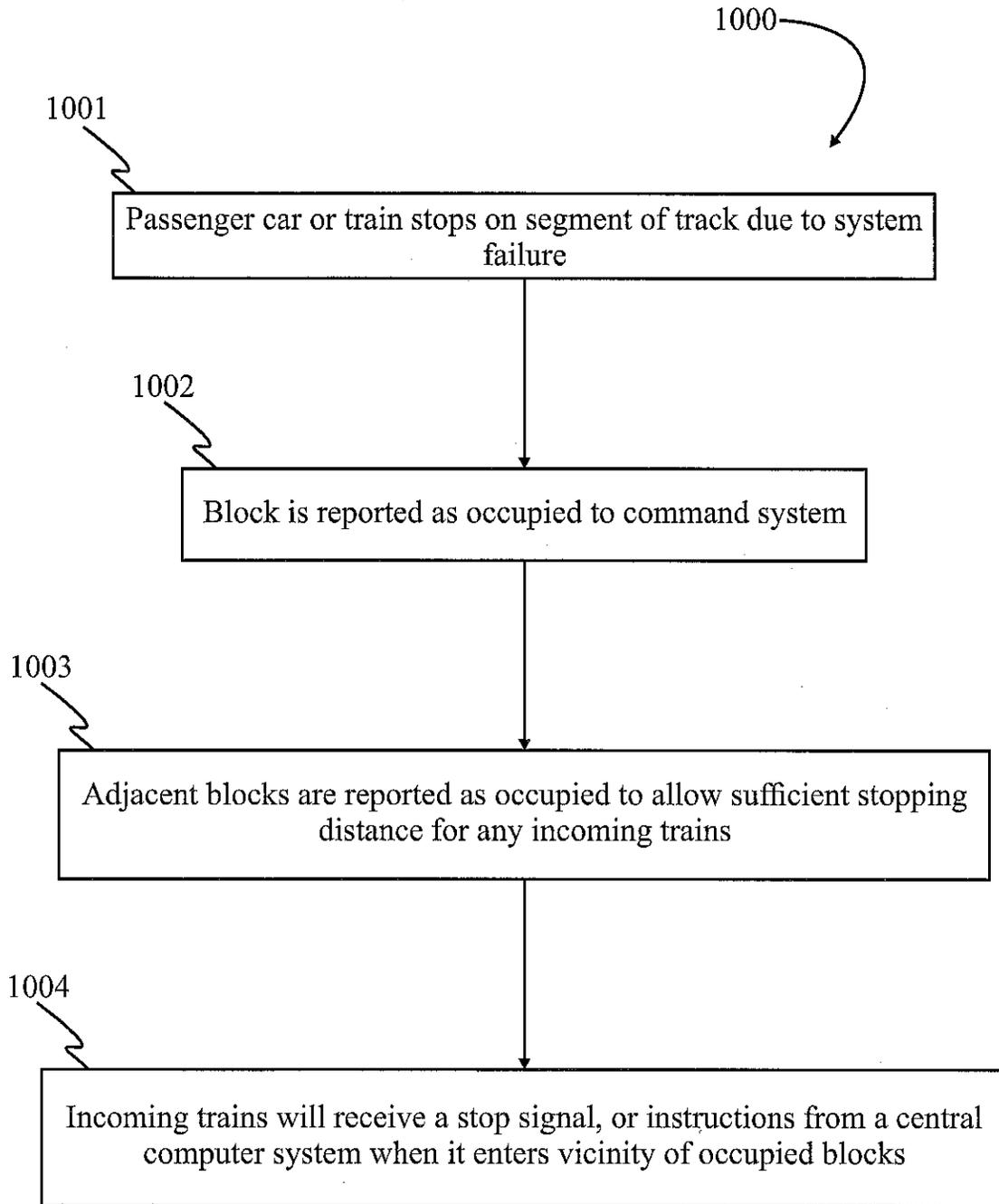


Fig. 10

## EXPRESS TRAIN SYSTEM

### BACKGROUND OF THE INVENTION

5 1. Field of the Invention

The present invention is in the field of train systems. More specifically, in the area of rapid transit.

2. Description of Related Art

10 In the field of rapid transit systems, there have been many innovations on the technology side. The very first locomotives were powered by steam. Then came the gas and diesel locomotives. Then came electric motor locomotives. Today, there are systems that run using various types of magnetic propulsion. Regardless of all the innovation, and increases in speed capabilities, many problems remain.

15 Scheduling systems used today may have set times for each stop, so that commuters know when they should be at a certain location. This may be an important factor, especially when there are infrequent stops made by the trains. A set schedule may also result in time that may be considered wasted if there are infrequent passengers getting off or on at that particular stop. With the help of history and records of ridership  
20 gathered from various forms of public transportation, the number of stops at less active locations are decreased. Fewer stops may result in a shorter time between an origin and destination. However, this creates another problem - fewer stops may lead to faster travel time overall, but it may be an inconvenience to people who depend on public transportation and are required to commute from less popular areas. This may lead to  
25 people deciding not to use public transportation at all, and, instead, decide to use personal transportation out of convenience.

Therefore, what is clearly needed is a system that doesn't adhere entirely to the old scheduling system, while allowing for more stops, with little or no time penalties for additional stops.

## BRIEF SUMMARY OF THE INVENTION

In one embodiment of the invention a train system is provided, comprising a first  
5 main track, passing each one of a plurality of geographically-separated passenger stations  
in a sequential order, a locomotive traveling at a controlled, pre-determined speed on the  
first main track, a plurality of passenger cars, each capable of individual locomotion and  
of automatic coupling and decoupling to other passenger cars and to the locomotive, each  
having passages that may be opened to allow passengers to move from car to car, and that  
10 may be closed to prevent passengers from moving from car to car, a portion of the  
plurality of passenger cars coupled to one another and to the locomotive, forming a train  
moving at the controlled, pre-determined speed on the first main track, side tracks at each  
passenger station joined to the main track by a first remotely-operable switch before and  
by a second remotely-operable switch after the associated passenger station, the side  
15 tracks each having a load/unload region at the associated passenger station, and a central  
computer system tracking the locomotive and all passenger cars, remotely switching the  
first and second remotely-operable switches at each passenger station, and managing  
locomotion of each passenger car while decoupled from the train. The central computer  
system operates the first and second switches of a side track at a passenger station,  
20 decouples a last car of the train ahead of each passenger station and operates the first  
remotely operable switch to shunt the decoupled car onto the side track, resets the first  
switch after the decoupled car is on the side track, closes and accelerates a newly-loaded  
car from the load/unload region onto the main track after the train has passed the second  
switch, by operating the second switch, manages locomotion of the newly loaded car to  
25 join the train by coupling to the last car of the train, and manages locomotion of the  
decoupled car to decelerate gradually and stop at the load/unload station.

In one embodiment the train system further comprises a series of sensors located  
both on the main track both before and after the station, and at various points on the side  
track, the sensors noting position of trains and cars, and transmitting information to the  
30 central computer system. Also in one embodiment the first main track makes a loop,

passing each of the plurality of separated passenger stations in the loop, and repeating the loop. Also in one embodiment the two main tracks make a loop within a loop, with each main track having a side track at each passenger station. In one embodiment the main computer system manages passenger guidance displayed both inside and outside each  
5 passenger car, depending upon the position and deployment of each car.

In one embodiment passengers are guided by announcements and displays inside cars coupled to a moving train to move to correct cars designated for arrival at the station of their desired destinations. Also in one embodiment cars designated as arriving cars for an approaching station are closed to passenger movement between cars at some  
10 predetermined distance from the arriving station. Also in one embodiment passengers at a station are guided by displays on cars designated for departure and by announcements of what cars to enter and at what time. In one embodiment cars designated for departure are closed for passenger entry at a pre-determined time based on position of a train passing the station on the main track. And in one embodiment a fail-safe switch is  
15 positioned on the side track between the station loading platform and the switch entering the main track, and the fail-safe switch switches a departing car onto a fail-safe track to be safely decelerated in the event that a train has not passed the station at a pre-determined time.

In another aspect of the invention a method is provided, comprising decoupling a  
20 car carrying passengers destined for a passenger station, at the end of a train running on a main track at a controlled speed past the passenger station, before a first side-track switch ahead of the passenger station, operating the first side-track switch after the train has passed the first side-track switch to shunt the decoupled car that has not yet arrived at the side-track switch, onto a side track, resetting the side track switch after the decoupled car  
25 is on the side track, decelerating the decoupled car to stop at a platform along the side track at the station, to open and allow passengers in the car to depart, accelerating a car having passengers loaded at the platform and destined for other stations, along the side track away from the platform toward the main track while the train passes the station on the main track, operating a second side-track switch after the train has passed the station

and cleared the second side track switch, to allow the accelerating car leaving the station to enter the main track behind the passing train, resetting the second side track switch after the accelerating car has entered the main track behind the train, and coupling the accelerating car to the end of the train as it reaches the last car of the train.

5           In one embodiment of the method switches are operated and decoupled cars are accelerated and decelerated, and coupling and decoupling is accomplished under control of one or both of a central computer system and on-board computers on the cars, in communication with the central computer system. Also in one embodiment control by the main computer system is accomplished with signals from sensors along the main  
10 track and the side track, both before and after the station, and at various points on the side track, the sensors noting position of trains and cars, and transmitting information to the central computer system. Also in one embodiment the passenger station is one of a plurality of passenger stations on the first main track, which makes a loop, passing each of the plurality of passenger stations in the loop, and repeating the loop. And in one  
15 embodiment there are two main tracks making a loop within a loop, with each main track having a side track at each passenger station.

          In one embodiment of the method the main computer system manages passenger guidance displayed both inside and outside each passenger car, depending upon the position and deployment of each car. Also in one embodiment passengers are guided by  
20 announcements and displays inside cars coupled to a moving train to move to correct cars designated for arrival at the station of their desired destinations. Also in one embodiment cars designated as arriving cars for an approaching station are closed to passenger movement between cars at some predetermined distance from the arriving station. In one  
embodiment passengers at a station are guided by displays on cars designated for  
25 departure and by announcements what cars to enter and at what time. And in one embodiment cars designated for departure are closed for passenger entry at a pre-determined time based on position of a train passing the station on the main track.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Fig. 1A is an overview diagram according to one embodiment of the present invention.

Fig. 1B is an overview diagram according to another embodiment of the present

5 invention.

Fig. 1C is an expanded view of a station shown in Fig. 1A and 1B according to one embodiment of the current invention.

Fig. 2A is an illustration showing a train having an engine and three cars approaching a station.

10 Fig. 2B is an illustration demonstrating what occurs as the train of Fig. 2A reaches a first main track sensor according to one embodiment of the present invention.

Fig. 2C is an illustration demonstrating what occurs as a train clears a first main track sensor according to one embodiment of the present invention.

15 Fig. 2D is an illustration demonstrating what occurs as an arriving passenger car clears a side track sensor according to one embodiment of the current invention.

Fig. 2E is an illustration demonstrating what occurs as a train clears a third main track sensor according to one embodiment of the present invention.

20 Fig. 2F is an illustration demonstrating what occurs as a departing passenger car exits a side track and clears a third main track sensor according to one embodiment of the present invention.

Fig. 2G shows train 202 with car 129 joined to the train, with the train traveling away from the station.

Fig. 3 is a side view of an electric locomotive that may be used in various embodiments of the present invention.

25 Fig. 4A is a side view of a passenger car that may be used in various embodiments of the present invention.

Fig. 4B is a view of the underside of a passenger car that may be used in various embodiments of the present invention.

Fig. 5 is a flowchart that outlines the operation of an express train system from the perspective of a train currently traveling on a main track according to one embodiment of the present invention.

5 Fig. 6 is a flowchart that outlines an arriving car parking process according to one embodiment of the present invention.

Fig. 7 is a flowchart that outlines a departing car deployment process according to one embodiment of the present invention.

10 Fig. 8 is a flowchart that outlines the operation of an express train system from the perspective of the one or more arriving passenger cars according to one embodiment of the present invention.

Fig. 9 is a flowchart that outlines the operation of an express train system from the perspective of a station platform according to one embodiment of the present invention.

Fig. 10 is a flowchart that outlines how an emergency involving stopped cars on a main track is handled according to one embodiment of the present invention.

15

## DETAILED DESCRIPTION OF THE INVENTION

20 Fig. 1A shows an overview of a train system 100 according to one embodiment of the present invention. This embodiment shows a train system 100 that utilizes two main tracks 101 and 102, but it is possible to create a system which utilizes any number of main tracks, including, but not limited to, a system that uses one main track with a well-planned series of rail switches to ensure safe operation. Each set of tracks 101 and 102 in train system 100 in this example is dedicated to a single direction for a plurality of trains  
25 running concurrently, and each set of tracks 101 and 102 are divided into segments, known as blocks in the art. In embodiments of the invention trains travel at a controlled speed on the main tracks, and do not stop at passenger stations, although there may be accommodations in the system to take trains out of operation for service or repairs. Passengers and freight are added to train, and subtracted from a train, by switching

individual cars on and off the main tracks at load/unload stations, and coupling and decoupling the cars as needed.

Trains may include, but are not limited to, a locomotive 108, and one or more passenger cars 109. Some embodiments may utilize semi-permanent cars attached to locomotive 108 which may include, but are not limited to, a dining car, and a passenger car that does not automatically decouple, as do most passenger cars, as described in detail below. Locomotive 108 and passenger car 109 will be explained in further detail with reference to Figs. 3, 4A, and 4B. It should be understood the locomotive 108 may be any sort of drive locomotive that is known in the art, and that in some circumstances, cars may be self-driven, and no separate locomotive may be needed.

Train system 100 has a plurality of stations 103(1-n), which are described in further detail with reference to Fig. 1C, and elsewhere in the specification. Stations 103(1-n) may be connected to a central computer system 105 via connections 106(1-n). Connections 106(1-n) may be, but are not limited to, a hardwired Ethernet connection, or a wireless broadcast. The central computer system also communicates over Wireless connection 107(1-n) to and from vehicles that include, but are not limited to, locomotives, passenger cars, and other semi-permanently attached cars. The data being transmitted may be encrypted to prevent unauthorized access, and may use any communications protocol commonly known in the art. The central computer system 105 may automatically control many aspects of the system, including, but not limited to, braking and acceleration of trains, locomotives, and passenger cars; controlling rail switching; track positioning, data relating to trains, locomotives, and passenger cars; and handling and issuing of emergency alerts.

Although no sidings, depots, or any other structures commonly found in a modern train system are shown in this embodiment, it is understood that these structures are not precluded from being implemented in a system without diverging from the core concept and scope of the present invention.

This concept may be implemented on a variety of configurations. Configurations could include one long run with the loop at both ends that would result in trains re-

encountering stations in a different order than a simple circular arrangement. In some arrangements, a loop may not even be necessary at both ends. The trains could actually regularly come to a complete stop at either or both ends with the "non-stop" aspect implemented at the stations in-between. Fig. 1B is an overview of an embodiment of the present invention showing a non-circular configuration that may result in trains regularly coming to a complete stop at both ends. This allows for a train that does not necessarily have to be electric. In this embodiment, while the main core train may not stop at stations in the middle of the configuration, passenger cars may be deployed to and from any station as needed. There are two main tracks shown, labeled 101 and 102, as in Fig. 1A. The end areas 110 may be turn-around facilities combined with service and maintenance services.

Almost any mix of a variety of types of configurations and full stops (at ends of routes) may be possible to provide an express route for all. By strategic placing of rail switches, train systems can interleave via the passenger car queue (128) or even the main tracks to further expand the possibility of non-stop direct routes.

Fig.1C is an expanded view of a station 120 that is one side of a station that was presented in plurality in Fig. 1A and 1B as element number 103(1-n). In this embodiment the top and bottom halves depicted in 103(1-n) are functionally identical. In this regard, only components from half of station 103(1-n) are expanded upon. Station 120 may have a main track 121 that passes through the station, analogous to one of main tracks 101 or 102 of Fig. 1A and 1B. There may also be a series of sensors, including a first main track sensor 123, a second main track sensor 124, and a third main track sensor 125, in place along main track 121. Additionally, a side track 122 may have a side track sensor 126. These sensors (123, 124, 125, and 126) may be used for operations that may require a more precise standard of timing than with a tracking system. Sensors 123, 124, 125, and 126 may utilize any form of sensing including, but not limited to, proximity sensor, infrared sensor, motion sensor, radar, or sonar.

In addition to main track 121, each station 120 may have a side track 122 that may be accessible via a first railway switch 130. Side track 122 may lead to a station

platform where an arriving passenger car 127 may unload passengers or packages. In some embodiments, there may be a train and platform dedicated for delivery of packages or other freight. Each station 120 may have a number of passenger cars 128(1-n) available for loading of passengers or packages. When a departing passenger car 129 is ready to be deployed to join a passing train it may be accelerated along side track 122 away from the loading platform to get back onto main track 121 through switching of a second railway switch 131. Optionally, to allow a switchless merge, a type of automatic-merging may be possible without the need for switch 131. The steps for this process are described below in Figs. 2A-2F.

In the event of a system failure, a fail-safe railway switch 132 will route the deploying passenger car 129 onto a fail-safe track 133, where the departing passenger car 129 may be safely and comfortably decelerated. This illustration depicts only 5 passenger cars being utilized for each half, but it should be understood that the only limit that pertains to the number of cars that may be deployed, on standby for loading, and arriving may be space allotted to each station.

Any number of these station modules (120) may be inserted along train routes without impacting express times. It would be possible for such stations to be conveniently positioned every mile along a train route without slowing down any express routing.

The system in this embodiment will make use of a hybrid system in which the main tracks provide a source of voltage powering an electric locomotive, and side track 122 may use an electromagnetic rail system to provide locomotion to passenger cars 109(1-n) without needing to equip each passenger car with its own engine or motors, although in some embodiments the passenger cars may indeed be self-powered in any way known in the art. There may also be an embodiment in which main tracks are on a different ground elevation from platforms found in station 120. For instance, main tracks may be underground, and station 120 may be above ground. (While man-made braking and propulsion systems may fail, this arrangement guarantees infallible gravitational forces that will help slow-down incoming rail cars and help speed-up outgoing cars.) It

should be understood that any combination of train systems may be used without diverging from the teachings of the inventive concept of the present invention.

Fig. 2A is an illustration showing a train 202 having three cars approaching a station on a main track 121. Figs. 2B to 2G are stop-motion examples of the steps that may occur as the train travels past the station on a main track. In Fig. 2B a train 202 travels by a main track 121 and reaches and triggers a first main track sensor 123 at a station 200. Train 202 at that point receives instructions from central computer system 105 to decouple any passenger cars, necessarily at the rear of the train, predesignated as an arriving car 127. This particular example shows one car 127 decoupling as train 202 reaches a first main track sensor 123, but it should be understood that more cars may be decoupled depending on the number of passengers that intend to stop at this station 200. Another passenger car may become designated as an arriving car if the current passenger car cannot accommodate the number of passengers scheduled for arrival at the station. In this case, an onboard computer system may report the status to the central computer system 105 and the next car up may also become designated as an arriving car.

In Fig. 2C train 202 clears first main track sensor 123 and a first railway switch 130 is positioned by control of central computer system 105 to allow arriving passenger car 127 to travel off of main track 121 and onto side track 122 that leads to a passenger platform. Side track 122 in this embodiment uses an electromagnetic rail system to provide locomotion as well as slowing and stopping power for any passenger cars that happen to be on side track 122. Side track 122 begins decelerating arriving passenger car 127 as soon as it enters side track 122. Train 202 keeps traveling on the main track 121 at its controlled speed without stopping. In one embodiment, a departing passenger car 129 predesignated to deploy from station 200 begins to accelerate by the electromagnetic rail system of side track 122 when the train clears the first main track sensor 123. In another embodiment, deployment of passenger car 129 is held off until the train clears the second main track sensor 124.

In Fig. 2D decoupled passenger car 127 clears a side track sensor 126, which causes railway switch 130 to reset into a position to allow a next train to pass. Arriving

passenger car 127 continues to be decelerated by the electromagnetic rail system until it reaches a complete stop behind any other cars at the station that will be automatically moved forward as necessary to make room for the arriving car. When it is safe to do so, doors may open to allow passengers to get off of arriving passenger car 127.

5           In Fig. 2E train 202 clears a third main track sensor 125, and as a result a second railway switch 131 and a fail-safe switch 132 are switched to allow the departing passenger car 129 to leave side track 122 and to enter main track 121. In a fail scenario, such as a case where the train 202 doesn't clear the third main track sensor 125 in time, departing passenger car 129 may not enter the main track, and may be directed to a fail-  
10 safe track 133 where departing passenger car 129 may be safely and comfortably decelerated by the electromagnetic rail system and allow passengers to be evacuated.

          In Fig. 2F departing passenger car 129 successfully makes it onto main track 121 and clears the third main track sensor 125. This puts fail-safe switch 132 and second railway switch 131 back into position to handle the fail scenario, and to keep train traffic  
15 on main track 121. At some point, departing passenger car 129 has built up enough speed from the electromagnetic propulsion system to catch up to train 202. Once departing passenger car 129 reaches train 202, it automatically couples with train 202. Once a solid connection is confirmed by an onboard computer system, passengers are allowed to move freely to and from the now attached departing passenger car 129. Fig. 2G shows train  
20 202 with car 129 joined to the train, with the train traveling away from the station.

          Fig. 3 shows an example of an electric locomotive 300 that may be used to implement various embodiments of the present invention. Electric locomotive 300 may have a pantograph 301 mounted on the roof in order to receive power from an overhead powerline 306. Powerline 306 is commonly implemented in an electric rail system, and  
25 may be present over the entire lengths of the main tracks. Alternatively, power may be received from the undercarriage over a powered "third rail" system that may be present over the entire lengths of the main tracks, or from rails through the wheels, for example. The power received by pantograph 301 or the powered rail or rails is passed through an

internal system of electronic components to power traction motors 302. Traction motors 302 provide torque to wheels 307 to move the train along a track.

Each locomotive may have a driver cab 304, where a conductor may reside during operation of the electric locomotive 300. The driver cab 304 may have an onboard  
5 computer system 303, previously described, and its functions may include, but are not limited to, automatically keeping track of the status of various components of the locomotive, controlling emergency systems in the case of system failure, and sending and receiving status updates for passenger data and passenger cars that may connect and disconnect throughout the operation of this embodiment of the present invention.

10 Computer system 303 may allow a conductor to engage certain functions manually if a circumstance in which it is necessary arises.

Electric locomotive 300 may also have a coupler 305 with fully automatic capabilities. In some embodiments, cars that are semi-permanent fixtures in a train may be used. In such cases, coupler 305 may not necessarily be a fully-automatic coupler.

15 Fig. 4A is an illustration of an example passenger car 400 that may be used in various embodiments of the present invention. Passenger car 400 may have one or more doors 408 to allow passengers to enter or leave passenger car 400. This illustration only shows two sets of doors, but more or fewer doors may be used. Each set of doors 408 may have an exterior electronic sign 401 installed overhead, along with an automatic  
20 passenger counter (APC) system 402. Electronic sign 401 may be used to display information including, but not limited to, countdown until the passenger car 400 departs, or closing of doors, using data gathered by APC system 402, to display the number of passengers that are currently onboard the passenger car 400, whether the passenger car is available for boarding, and current designation status. Passenger car 400 may have a  
25 diaphragm 407 in place at both ends to create a weatherproof seal after being coupled with other passenger cars, so that passengers may comfortably move from one passenger car to another regardless of weather conditions.

Passenger car 400 may have a battery 404 to power electronics onboard, including, but not limited to, interior signage, exterior signage, emergency braking

systems, and an onboard computer 405. Onboard computer 405 may be responsible for, but is not limited to, automatically sending and receiving status updates to the central computer system, receiving instructions from the central computer system or onboard computer systems of other cars, control of doors on passenger car 400, and adjusting  
5 displays installed in the interior to present relevant information to onboard passengers.

Fig. 4B is an illustration of the underside of passenger car 400 according to one embodiment. Passenger car 400 may have a ferromagnetic plate 409 securely attached to provide enough magnetic polarity to interact with an electromagnetic rail system. The operation described above regarding one station, one side track and one train on one main  
10 track is meant to describe the operation at any of the plurality of stations regardless of the number of main tracks, trains, directions, and so forth.

Fig. 5 is a flowchart of a method 500 that outlines the operation of an express train system from the perspective of a train currently traveling on a main track according to one embodiment of the present invention. At step 501, the train enters a pre-  
15 determined boundary for an upcoming station. This boundary may be determined in a variety of ways, including, but not limited to, a measure of time, a geo-fence, and any method used in the art to determine presence of a train on a segment of track, such as a block system. At step 502, access to one or more predesignated arriving passenger cars, at the end of the train, is closed off, and passengers, who have been previously directed to  
20 this car as designated for their destination station, are instructed to be seated, or secure their positions to prepare for stopping. Access to one or more predesignated departing cars waiting at the upcoming station platform is also closed off. This may occur after a pre-determined timespan after entering the station boundaries, so that passengers may have time to move to a correct passenger car. There may be another period of time from  
25 when access is closed off to the beginning of step 503 in order to allow passengers to secure themselves. At step 503, if no passengers are reported to be onboard any predesignated arriving passenger car and a need has not arisen to replenish pending outgoing passenger cars (i.e. 128) at the upcoming stations, step 504 occurs. At step 504 any input from the first main track sensor is disregarded. Returning to step 503, if there

are passengers on board one or more designated arriving passenger cars or a need has arisen to transfer passenger cars to upcoming stations, step 505 occurs. At step 505, the train reaches a first main track sensor. Passenger cars that have been designated as arriving cars, automatically decouple from the train. At step 507, one or more arriving  
5 passenger cars begin a parking process which is described below with reference to Fig. 6 in a method 600. At step 506, if no passengers are reported to be onboard any of the designated departing cars and it is determined that cars do not need to be sent from this station to another station, step 508 occurs. At step 508, input from the second and third main track sensors are disregarded. Returning to step 506, if there are passengers  
10 onboard one or more predesignated departing passenger cars or it is determined that cars need to be sent from this station to another station (passenger car queue 128 approaching full capacity or request of pending shortage of passenger cars from other stations, among others are possibilities), step 509 occurs. At step 509, a departing passenger car deployment process begins which is described below in Fig. 7 in a method 700.

15 Fig. 6 is a flowchart of a method 600 that describes an arriving car parking process according to one embodiment of the present invention. At step 601, the train clears the first main track sensor, in other words, all currently connected cars and locomotive have passed the first main track sensor, and a first railway switch (130) positions to guide one or more arriving cars (127) onto a side track (122). At step 602 the  
20 one or more arriving cars clears a side track sensor and the first railway switch changes back to its previous position to keep further train traffic on the main track. At step 603, arriving passenger cars are gradually, and comfortably decelerated by the electromagnetic rail system, until they come to a full stop. At this point, the one or more arriving cars receive a signal from a central computer system to allow unloading of passengers. At  
25 step 604, doors open on the one or more arriving passenger cars, allowing passengers to get off.

Fig. 7 is a flowchart of a method 700 that describes a departing car deployment process according to one embodiment of the present invention. At step 701 the train clears the first main track sensor (this can be held off until the train clears the second

main track sensor). Departing passenger cars begin to be accelerated by the electromagnetic rail system of the side track. At step 702, the third main track sensor may report to the central computer system whether the train has passed. If the train has not passed within a certain window of time, step 703 comes into effect. A fail-safe  
5 switch maintains its current position and guides one or more deploying cars onto a fail-safe track. At step 705, the one or more departing passenger cars are decelerated to a full stop by the electromagnetic rail system of the side track, and onboard passengers are evacuated. If the third main track sensor reports that the train has properly passed, step 704 occurs. At step 704 a second railway switch 131 and fail-safe railway switch 132 are  
10 positioned to allow one or more departing vehicles to travel onto the main track. At step 706, the one or more departing cars clears the third main track sensor, and the second railway switch and fail-safe railway switch return to their previous positions, which guides any future departing cars to the fail-safe track, while keeping train traffic on the main track.

15 It should be noted that real-time communication between the on-board and central computer systems, and feedback control is utilized to ensure that the departing passenger car achieves the correct speed at the right time to avoid the fail-safe system operation, which will only come into effect if, for some reason, the train traveling at a controlled speed on the main track is somehow delayed in clearing the third main track sensor.

20 At step 707, the one or more departing cars catch up to the train and automatically couple. Distance between the train and one or more departing cars may be determined with methods such as, but not limited to, use of proximity sensors, and global position tracking data recorded and analyzed by a central computer system. If the speed of the one or more departing cars as they close in to the train is determined to be unsafe, the  
25 central computer system may engage an emergency braking system present on every passenger car through wireless signals received by an onboard computer. The electromagnetic propulsion system used on side track 122 is also incorporated for some distance on the main track both before and after the side track switches, to manage car locomotion and deceleration for any car decoupling from the main train, and locomotion

and acceleration for cars leaving a station and approaching a passing train to couple. If decoupling or coupling is not confirmed within a certain distance, this is flagged to the central computer to determine what to do next (system shutdown or some type of a work around).

5           At step 709 it is determined whether a proper coupling of the departing car was accomplished in a pre-determined time window. If yes, control passes to step 708.

          At step 708, once the departing car or cars are safely coupled, a seal is formed by the diaphragm installed at the ends of every passenger car. Once a solid coupling connection is confirmed by the local onboard computer system of the one or more newly  
10 attached departing cars, passengers may move to other attached passenger cars.

          If, at step 709, it is determined that the departing car did not properly couple to the train, then control passes to step 710, and an emergency mode is entered, which may result in the train being stopped, and steps taken to retrieve the departing car and its passengers.

15           Fig. 8 is a flowchart of a method 800 that outlines operation of an express train system from the perspective of the one or more arriving passenger cars according to one embodiment of the present invention. At step 801, if a passenger car becomes designated as an arriving car, digital signs in that car may display that information to passengers. The digital signs may include, but are not limited to, marquee style lights with the ability  
20 to display alphanumeric characters and symbols, a digital map with a list and indicator for each station present in a train system, and display screens, such as, but not limited to, monitors or television screens. At step 802, the train enters boundaries of an upcoming station. At step 803, a public announcement system announces to all onboard passengers that the next stop is coming up, and instructs passengers who wish to disembark at this  
25 station to move to one or more designated arriving cars located at the end of the train. At step 804, a countdown begins and is displayed on the digital displays. Undesignated cars may have displays that instructs passengers to move to a designated arriving car if they wish to stop at the upcoming station, while designated cars may have displays that indicates that the present car is designated as an arriving car. At step 805, the countdown

reaches zero and access to the one or more designated arriving cars are closed, and the public address system may instruct passengers to be seated, or secure their positions. After a period of time, step 806 occurs. At step 806, the train reaches a first main track sensor (123), and the arriving car parking process outlined in Fig. 6 begins.

5            Fig. 9 is a flowchart of a method 900 that outlines operation of an express train system from the perspective of a station platform according to one embodiment of the present invention. At step 901, passenger cars are waiting at station platform. Digital signs mounted on the exterior of each car display relevant information which may include, but is not limited to, number of passengers currently onboard that particular car,  
10            and whether that particular car has been designated for departure. At step 902 a train enters station boundaries, and the exterior digital displays may now display a countdown until access to one or more departing cars will be closed. At step 903, a station public address system announces that departure will be happening soon, and instructs passengers to board a predesignated departing car if they wish to depart on the next train. At step  
15            904, countdown on digital displays on one or more departing cars reaches zero, and access to the one or more departing cars is closed-off. At step 905, as the train clears the first main track sensor, the one or more predesignated departing cars begin the deployment process of Fig. 7. (This action can also be held off until the train clears the second main track sensor.)

20            Fig. 10 is a flowchart of a method 1000 that outlines how an emergency involving stopped cars on a main track may be handled according to one embodiment of the present invention. This embodiment may implement an automatic block signaling system (ABS), in which lengths of tracks are divided into segments, referred to as blocks. These blocks are reported to a central computer system as occupied whether it is an emergency  
25            situation or not. For the purposes of this method, an emergency scenario involving vehicles stopped on one or more blocks will be used.

In step 1001, one or more passenger cars may have become decoupled due to system failure, or an entire train may have stopped due to system failure. In step 1002, the one of more blocks that are occupied with stopped vehicles are reported to the central

computer system as occupied. In step 1003, blocks adjacent to the one or more blocks with the stopped vehicles are marked as occupied by the central computer system. In step 1004, any incoming trains will receive a stop signal, or instructions from the central computer system to an onboard computer system of an incoming to automatically brake  
5 before a collision occurs.

It will be apparent to one with skill in the art, that the embodiments described above are specific examples of a single broader invention which may have greater scope than any of the singular descriptions taught. There may be many alterations made in the descriptions without departing from the spirit and scope of the present invention.

CLAIMS

1. A train system, comprising:

5 a first main track, passing each one of a plurality of geographically-separated passenger stations in a sequential order;

a locomotive traveling at a controlled, pre-determined speed on the first main track;

10 a plurality of passenger cars, each capable of individual locomotion and of automatic coupling and decoupling to other passenger cars and to the locomotive, each having passages that may be opened to allow passengers to move from car to car, and that may be closed to prevent passengers from moving from car to car, a portion of the plurality of passenger cars coupled to one another and to the locomotive, forming a train moving at the controlled, pre-determined speed on the first main track;

15 side tracks at each passenger station joined to the main track by a first remotely-operable switch before and by a second remotely-operable switch after the associated passenger station, the side tracks each having a load/unload region at the associated passenger station; and

20 a central computer system tracking the locomotive and all passenger cars, remotely switching the first and second remotely-operable switches at each passenger station, and managing locomotion of each passenger car while decoupled from the train;

25 wherein the central computer system operates the first and second switches of a side track at a passenger station, decouples a last car of the train ahead of each passenger station and operates the first remotely operable switch to shunt the decoupled car onto the side track, resets the first switch after the decoupled car is on the side track, closes and accelerates a newly-loaded car from the load/unload region onto the main track after the train has passed the second switch, by operating the second switch, manages locomotion of the newly loaded car to join the train by coupling to the last car of the train, and manages locomotion of the decoupled car to decelerate gradually and stop at the load/unload station.

2. The train system of claim 1 further comprising a series of sensors located both on the main track both before and after the station, and at various points on the side track, the sensors noting position of trains and cars, and transmitting information to the central  
5 computer system.
3. The train system of claim 1 wherein the first main track makes a loop, passing each of the plurality of separated passenger stations in the loop, and repeating the loop.
- 10 4. The train system of claim 3 comprising two main tracks making a loop within a loop, with each main track having a side track at each passenger station.
5. The train system of claim 1 wherein the main computer system manages passenger guidance displayed both inside and outside each passenger car, depending upon the  
15 position and deployment of each car.
6. The train system of claim 5 wherein passengers are guided by announcements and displays inside cars coupled to a moving train to move to correct cars designated for arrival at the station of their desired destinations.  
20
7. The train system of claim 6 wherein cars designated as arriving cars for an approaching station are closed to passenger movement between cars at some predetermined distance from the arriving station.
- 25 8. The train system of claim 6 wherein passengers at a station are guided by displays on cars designated for departure and by announcements of what cars to enter and at what time.

9. The train system of claim 8 wherein cars designated for departure are closed for passenger entry at a pre-determined time based on position of a train passing the station on the main track.
- 5 10. The train system of claim 1 wherein a fail-safe switch is positioned on the side track between the station loading platform and the switch entering the main track, and the fail-safe switch switches a departing car onto a fail-safe track to be safely decelerated in the event that a train has not passed the station at a pre-determined time.
- 10 11. A method, comprising:
- decoupling a car carrying passengers destined for a passenger station, at the end of a train running on a main track at a controlled speed past the passenger station, before a first side-track switch ahead of the passenger station;
  - operating the first side-track switch after the train has passed the first side-track
  - 15 switch to shunt the decoupled car that has not yet arrived at the side-track switch, onto a side track;
  - resetting the side track switch after the decoupled car is on the side track;
  - decelerating the decoupled car to stop at a platform along the side track at the station, to open and allow passengers in the car to depart;
  - 20 accelerating a car having passengers loaded at the platform and destined for other stations, along the side track away from the platform toward the main track while the train passes the station on the main track;
  - operating a second side-track switch after the train has passed the station and cleared the second side track switch, to allow the accelerating car leaving the station to
  - 25 enter the main track behind the passing train;
  - resetting the second side track switch after the accelerating car has entered the main track behind the train; and
  - coupling the accelerating car to the end of the train as it reaches the last car of the train.

12. The method of claim 11 wherein switches are operated and decoupled cars are accelerated and decelerated, and coupling and decoupling is accomplished under control of one or both of a central computer system and on-board computers on the cars, in  
5 communication with the central computer system.

13. The method of claim 12 wherein control by the main computer system is accomplished with signals from sensors along the main track and the side track, both before and after the station, and at various points on the side track, the sensors noting  
10 position of trains and cars, and transmitting information to the central computer system.

14. The method of claim 11 wherein the passenger station is one of a plurality of passenger stations on the first main track, which makes a loop, passing each of the plurality of passenger stations in the loop, and repeating the loop.  
15

15. The method of claim 14 comprising two main tracks making a loop within a loop, with each main track having a side track at each passenger station.

16. The method of claim 12 wherein the main computer system manages passenger  
20 guidance displayed both inside and outside each passenger car, depending upon the position and deployment of each car.

17. The method of claim 16 wherein passengers are guided by announcements and displays inside cars coupled to a moving train to move to correct cars designated for  
25 arrival at the station of their desired destinations.

18. The method of claim 17 wherein cars designated as arriving cars for an approaching station are closed to passenger movement between cars at some predetermined distance from the arriving station.

19. The method of claim 17 wherein passengers at a station are guided by displays on cars designated for departure and by announcements what cars to enter and at what time.

- 5 20. The method of claim 19 wherein cars designated for departure are closed for passenger entry at a pre-determined time based on position of a train passing the station on the main track.

ABSTRACT OF THE DISCLOSURE

A train system has a locomotive traveling at a controlled speed on a main track, with passenger cars capable of locomotion and of automatic coupling and decoupling, forming a train on the main track. Appropriate passenger cars are decoupled and switched onto a side track at stations to unload passengers while the rest of the train passes the stations without stopping. Passenger cars loaded with passengers at these stations are then deployed to couple-up with the train after it has passed the station. This combines local service with express service. Operation in most cases is guided by a central computer system.

**Drozd, Doug@HSR**

---

**From:** Jacki Ayer <airspecial@aol.com>  
**Sent:** Tuesday, October 04, 2016 1:29 PM  
**To:** stephanie.perez@dot.gov; HSR palmdale\_burbank@HSR  
**Cc:** Boehm, Michelle@HSR; velasquezj@pbworld.com; Arellano, Genoveva@HSR; HSR boardmembers@HSR  
**Subject:** Jacqueline Ayer Comments on the Joint FRA/CHSRA EIR/EIS document undergoing preparation for the Palmdale-Burbank segment  
**Attachments:** Comment letter submitted Oct 4 2016.pdf; HSR Comment Letter Attachment.pdf; Exhibit A - FINAL.pdf; Exhibit B - FINAL.pdf; Exhibit C - FINAL.pdf; Exhibit D - FINAL.pdf; Exhibit E - FINAL.pdf; Exhibit F - FINAL.pdf; Exhibit G - FINAL.pdf  
**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dear Mr. McLoughlin and Ms. Perez;

Attached please find my comment letter (and associated attachment and exhibits) submitted regarding the Palmdale-Burbank Section pursuant to the "Request for Comment" solicitation issued by CHSRA at Community Workshops hosted in September, 2016. If you have any questions or are unable to open any of the attached files, please do not hesitate to contact me at [AirSpecial@aol.com](mailto:AirSpecial@aol.com).

Regards

Jacqueline Ayer

Mark A. McLoughlin  
Director of Environmental Services  
California High Speed Rail Authority  
770 L Street  
Sacramento, CA 95814  
Submitted 26 pages (total) via Electronic Mail to:  
[Palmdale\\_Burbank@hsr.ca.gov](mailto:Palmdale_Burbank@hsr.ca.gov)

October 4, 2016

Stephanie Perez  
Environmental Protection Specialist  
Office of Program Delivery  
Federal Railroad Administration,  
1200 New Jersey Ave., SE. (Mail Stop 20),  
Washington, DC 20590  
Submitted 26 pages (total) via Electronic Mail to:  
[stephanie.perez@dot.gov](mailto:stephanie.perez@dot.gov)

Subject: Comments on the Impact Assessment Methodologies and Alternatives that will be Presented in the Environmental Studies Prepared Pursuant to the Palmdale-Burbank Section of the California High Speed Rail Project.

Reference: Request for Comment Solicited by CHSRA in September, 2016

Dear Mr. McLoughlin and Ms. Perez;

It is my understanding that the California High Speed Rail Authority ("CHSRA") and the Federal Railway Administration ("FRA") intend to jointly release a Draft Environmental Impact Report/Environmental Impact Statement ("EIR/EIS") within the next 6 months for the "Palmdale-Burbank" section of the High Speed Rail ("HSR") Project, and that the alternatives considered therein are limited to the project configurations that are generally described in the "Supplemental Alternatives Analysis" Report issued by CHSRA in April, 2016. If true, then it appears that both CHSRA and FRA have chosen to disregard all of the facts and evidence provided by the residents of Acton which demonstrate why the HSR must be configured in an underground alignment within Acton.

This letter is submitted pursuant to the "Request for Comments" solicited by CHSRA at "Open House" meetings hosted in September, 2016<sup>1</sup>, and it constitutes the last attempt that I will make to convince CHSRA and FRA to include underground route alternatives within Acton in the Draft EIR/EIS document issued for the Palmdale-Burbank segment. The reasons are set forth in the attached, and they include technical details pertaining to substantial deficiencies noted in the FRA "noise exposure" assessment methodologies and

<sup>1</sup> [http://www.hsr.ca.gov/docs/programs/statewide\\_rail/proj\\_sections/palmdale\\_burbank/Palmdale\\_Burbank\\_Open\\_House\\_Flyer\\_Summer\\_2016.pdf](http://www.hsr.ca.gov/docs/programs/statewide_rail/proj_sections/palmdale_burbank/Palmdale_Burbank_Open_House_Flyer_Summer_2016.pdf)

in the application of published FRA "Noise Impact Criteria" to quiet rural areas like Acton. They also point to specific instances where CHSRA staff have deliberately misrepresented the scope and scale of the HSR project in a manner which grossly under-represents HSR project impacts in Acton. They also clarify the extent to which prior EIR/EIS documents certified by CHSRA and adopted by FRA failed to provide the projected community noise levels mandated by FRA and CHSRA reporting requirements and (more importantly) CEQA and NEPA.

The attached information provides details pertaining to technical matters I raised in Scoping Comments that were timely submitted in August and September, 2014. It also lays the groundwork for the many technical and legal issues that will be raised at bar if underground alternatives are not considered for the Community of Acton.

If you have any questions regarding the attached, please do not hesitate to contact me at [AirSpecial@aol.com](mailto:AirSpecial@aol.com).

Regards;

/S/ Jacqueline Ayer  
Jacqueline Ayer

Attachment and Exhibits A through G

cc: CHSRA Board of Directors: [boardmembers@hsr.ca.gov](mailto:boardmembers@hsr.ca.gov)  
Southern California Regional Director Michelle Boehn: [mboehm@hsr.ca.gov](mailto:mboehm@hsr.ca.gov)  
Parsons-Brinkerhoff Project Manager Juan Carlos Velasquez: [velasquezj@pbworld.com](mailto:velasquezj@pbworld.com)  
Arellano & Associates Principal Genoveva Arellano: [garrellano@arellanoassociates.com](mailto:garrellano@arellanoassociates.com)

**The Time Interval that is Established to Review the Draft EIR Must Extend to a Minimum of 120 days.**

The Draft Environmental Impact Report (“DEIR”) review period established by CEQA is intended to allow the public to fully review the draft document and facilitate meaningful participation in the environmental review process, and it presumes that the DEIR complies with the maximum 300 page limit recommended by the CEQA Guidelines [see Section 15141]. Notably, Volume 1 of the DEIR prepared by CHSRA for the Fresno-Bakersfield segment was nearly 1500 pages in length (not counting appendices, technical reports, and other supplemental documents) which is 5 times more than what the CEQA Guidelines recommend. Presumably, the DEIR prepared for the Palmdale-Burbank segment will be equally lengthy. Therefore, it is essential that the public review period established for the Palmdale-Burbank DEIR provide sufficient time to enable the public to fully review and provide meaningful comment thereon; to achieve this, a minimum time interval of 120 days is required.

**The Noise Model and Calculations that FRA & CHSRA Use to Predict Noise Impacts for a 220 MPH “Steel Wheel” HSR are Entirely Theoretical and Not “Proven”.**

The noise calculation procedures that CHSRA will employ are set forth by the Federal Railway Administration (“FRA”) in the adopted “High Speed Ground Transportation Noise and Vibration Impact Assessment” Guidelines Manual (hereafter referred to as the “Manual”). It is of paramount importance that the Palmdale-Burbank record reflect the fact that the calculation procedures described in the FRA Manual and which CHSRA will rely on to assess the impacts of a 220 mph train rolling through Acton *have never been validated because no noise or vibration measurements have ever been done on an actual “steel wheel” trainset traveling at 220 miles per hour.* In other words, the noise and vibration levels and impact analyses that will be presented in the DEIR are based *entirely* on theoretical extrapolations and mathematical predictions. Worse yet, NONE of these noise prediction models provide any indication of their accuracy; this is a significant problem, because an “error bar” of only 10% will substantially underestimate the number of properties predicted to experience significant noise impacts according to FRA’s assessment criteria. Recent studies demonstrate that actual noise generated by high speed trains can be significantly higher (>5 dBA) than what the calculated models predict [see study published 3 months ago [http://www.iiav.org/archives\\_icsv\\_last/2016\\_icsv23/content/papers/papers/full\\_paper\\_640\\_20160521094309250.pdf](http://www.iiav.org/archives_icsv_last/2016_icsv23/content/papers/papers/full_paper_640_20160521094309250.pdf) - Figures 4-6]. Worse yet, these “theoretical” noise calculations become less reliable as the train speed increases beyond 170 mph because (as the FRA Manual affirms) “the sound level due to aerodynamic sources increases rapidly with increasing speed” [page 4-19]. What is really surprising is that, although the FRA Manual explicitly affirms that “aerodynamic noise” is a far more significant factor at 220 mph, it fails to address the extent to which it affects the accuracy of the theoretical calculations which the FRA Manual sets forth. None of these shortcomings are addressed anywhere in the FRA Manual, and they are expressly ignored in all of CHSRA’s “environmental planning” and

“environmental guidelines” documents. Certainly none of these concerns were addressed in any of the EIR/EIS documents that have been certified by CHSRA to date, and nowhere has CHSRA ever addressed how the modeled noise projections will be validated or what steps will be taken to mitigate excessive noise levels that were ignored because the models were substantially underpredictive. This is not acceptable for the EIR/EIS prepared for the Palmdale-Burbank segment, which must fully address modeling errors and assess accuracy margins in a meaningful way, and incorporate corrections to account for such errors to ensure conservative impact assessment results. Additionally, the Mitigation Monitoring Plan prepared as part of the EIR/EIS must provide for “followup” noise measurements and the implementation of corrective measures when it is determined that actual noise levels are higher than those predicted by the EIR/EIS predicted.

### **The Freeway Sound Walls Approved by CalTrans in the Vicinity of the Vasquez High School Must be Factored into CHSRA’s “Cumulative Analysis.”**

The California Transportation Department (“CalTrans”) and the Los Angeles County Metropolitan Transportation Authority (“Metro”) have approved the construction of sound walls along the 14 freeway in the vicinity of Red Rover Mine Road to protect the adjacent Vasquez High School from noise intrusions emanating from the freeway (see page 4 of: [http://media.metro.net/projects\\_studies/soundwalls/images/post\\_1989\\_retrofit\\_soundwall\\_list\\_081513.pdf](http://media.metro.net/projects_studies/soundwalls/images/post_1989_retrofit_soundwall_list_081513.pdf)). Per Metro’s policy this sound wall will reduce noise levels by a minimum of 5 dBA (Page 2 item 6 of: [http://media.metro.net/projects\\_studies/soundwalls/images/soundwalls\\_policy.pdf](http://media.metro.net/projects_studies/soundwalls/images/soundwalls_policy.pdf)). This project has been approved by State and local agencies, and is therefore a “reasonably foreseeable project” which must be considered in FRA’s and CHSRA’s noise impact analysis of the proposed SR14 route. Specifically, FRA’s and CHSRA’s noise impact analysis must assume that existing noise levels at the campus boundary will be permanently reduced by at least 5 dBA in the near future. This will serve to reduce “baseline” ambient noise levels, and shift the assumed “Existing Noise Exposure Level” referred to in Figure 3-1 to lower baseline conditions on the left.

### **FRA’s “Noise Impact Criteria” that will be Used in the Palmdale-Burbank DEIR Fail to Properly Consider Noise Impacts on Rural and other “Non-Urban” Areas.**

The HSR “Noise Impact Criteria” which CHSRA intends to implement for the Palmdale-Burbank segment EIR are published in the FRA Manual [Figure 3-1] and they establish three impact categories: “no impact”, “moderate impact”, and “severe impact”. It is understood that CHSRA will not consider project modifications or implement mitigation measures unless HSR noise impacts exceed the “severe” thresholds established by Figure 3-1, therefore, it is necessary to analyze these “severity” thresholds to ensure they properly consider the wide spectrum of existing ambient noise conditions that will be degraded by HSR operations. Because Acton is a relatively quiet rural community that has (on average) low ambient noise

levels, the EIR will establish “severe” (aka “significant”) impacts based on what Figure 3-1 identifies as low existing noise exposure levels (reported as 24 hour “average” Ldn noise values) Therefore it is this low noise interval (40-55 dBA) that is considered herein.

First, it is noted that neither CHSRA nor FRA consider it “significant” if the HSR project *triples* the average noise level in a quiet area. This is clearly depicted in Figure 3-1, which shows that a 15 dBA noise increase (or a tripling of noise “loudness”<sup>1</sup>) is not considered a “severe” impact in any quiet area that has an existing average noise level of 43 dBA. Even more surprising, Figure 3-1 establishes that no HSR noise impacts are ever deemed “severe” until they cause outdoor noise to *exceed* the 55 dBA “outdoor activity” protection level established by EPA and others (as discussed in more detail below). In other words, CHSRA and FRA consider it “insignificant” if the outdoor noise environment is degraded to such an extent that it impairs outdoor activities and even speech. Additionally, for rural areas that are currently at the 55 dBA limit for “acceptable” outdoor conditions, Figure 3-1 establishes that no significant degradation occurs even if the noise level increases above 61 dBA (which is higher than what is experienced by most urban dwellers<sup>2</sup>). It is clear that these “Noise Impact Criteria” are not intended to preserve the outdoor environment in quiet communities like Acton. To the contrary, they actively facilitate noise increases to such an extent that they successfully convert quiet rural environments into loud urban environments. To understand why these “Noise Impact Criteria” fail to prevent (or even consider) the degradation of rural outdoor environments, it becomes necessary to study how these criteria were developed.

According to Section A.3 of the FRA Manual, the “Noise Impact Criteria” thresholds were derived from “research” (in the form of the “Schultz Curve” depicted in Figure A-5), EPA findings, and “relevant literature” such as HUD standards and EPA publications. As set forth below, an analysis of these cited references reveals that the FRA “Noise Impact Criteria” only reflect circumstances which occur in the urban environment and do not take into account any of the cited research addressing quiet rural (non-urban) areas. In other words, the “research” cited by the FRA Manual *does not support* the application of FRA’s “Noise Impact Criteria” to non-urban areas (like Acton) which have existing ambient noise exposure levels at or below 55 dBA. Indeed, the “research” papers and reports cited in the FRA Manual draw a clear distinction between “significant” noise impacts in “quiet” environments and “significant” noise impacts in “loud” environments. These distinctions are completely obliterated by the FRA “Noise Impact Criteria”, which were derived solely from an “urban platform” and without consideration for the rural environment. These facts are set forth in detail over the following paragraphs, which carefully consider each and every “research” element cited as justification for the FRA “Noise Impact Criteria” in Sections A.2 and A.3 of the FRA Manual.

---

<sup>1</sup> On average, each 10 dBA noise increase doubles the loudness of the noise [FRA Manual page 2-3]. Therefore a 10 dBA increase is generally perceived as doubling the “loudness”, and a 15 dBA increase essentially triples the “loudness.”

<sup>2</sup> See Figure 4 from the EPA “Levels Document” – Condensed version found cited on Page A-13 of the FRA Manual.

The “Schultz Curve”: The “Schultz Curve” (depicted in Figure A-5) was derived from a technical paper titled “Synthesis of Social Surveys on Annoyance” authored by T.J. Schultz and published in 1978 by the “Journal of the Acoustical Society of America” (“JASA”). The “Schultz Paper” was actually a compilation of 11 urban noise studies that measured human “annoyance” as a function of noise level. It considered noise profiles along urban streets in Paris, London, and elsewhere, and it also considered noise levels in urban areas surrounding airports in England, Switzerland, and various Scandinavian countries. Based on the urban research presented in the Schultz paper, the FRA Manual concludes that “very few people are highly annoyed when the Ldn is 50 dBA” and “an increase in Ldn from 50 to 55 dBA results in an average of 2 percent more people highly annoyed” [See Page A-14; bullet item 3]. These conclusions form the foundation of FRA’s “Noise Impact Criteria” (depicted in Figure 3-1) yet they are *entirely unsupported* by the Schultz Paper, and are completely erroneous:

- These conclusions are derived from the “low end” of the fitted “Schultz Curve” published in the JASA paper and depicted in Figure A-5 of the FRA Manual. However, the author (T.J. Schultz) himself admits that the “Schultz Curve” does not properly address the data collected “at the low end”, and he suggests various solutions to achieve a better “curve fit” which would (in some cases) be completely arbitrary (see JASA Vol 64 No. 2 page 391). Moreover, Mr. Schultz clearly identifies the 50 dBA Ldn noise level as being “outside the data range” anyway, and he explicitly argues against “extrapolating the fitted curve beyond the range of the given data set” [see page 391, column 1]. Therefore, the author’s own words explicitly contradict FRA’s conclusion that “very few people are highly annoyed when the Ldn is 50 dBA”
- The Schultz paper explicitly demonstrates that more than 10% of urban populations are so significantly disturbed by an average (“Ldn”) noise level of 55 dBA that it interrupts conversation, disturbs sleep, and interferes with conversation [see Figure 23]. This fact unequivocally controverts FRA’s assertion that “an increase in Ldn from 50 to 55 dBA results in an average of 2 percent more people highly annoyed.” More importantly, there is no doubt that these substantial adverse impacts on more than 10% of the population constitute a “significant effect on the environment” as that phrase is contemplated in CEQA, Therefore, and according to the Schultz Paper itself, projects which increase ambient noise levels to 55 dBA do indeed create “severe impacts” in every sense of the word. The FRA Manual ignores all of this, and it incorrectly concludes that the Schultz Paper somehow supports a conclusion that increasing noise levels to 55 dBA is not “significant”. This conclusion is abjectly false and is entirely repudiated by very same Schultz “research” that it purports to reflect.
- Figure A-5 shows very clearly that the fitted curve does not accurately represent the data points plotted for noise values below 55 dBA; all but one of the data points lie *well above the curve*. As Figure A-5 shows, four times more people are “highly annoyed” by noise levels approaching 55 dBA than what the “Schultz Curve” predicts. What this means is that the “Schultz Curve” demonstrably under-predicts human “annoyance” at noise levels below 55 dBA and *provides no basis* for FRA’s conclusion that “an increase in Ldn from 50 to 55 dBA results in an average of 2 percent more people highly annoyed”.

- With regard to what constitutes an “acceptable environmental noise exposure”, the Schultz paper explicitly clarifies that achieving and maintaining a Noise Standard of 55 dBA **is the desired condition** [see page 389 column 1]. Under no circumstance does the Schultz paper state (or even suggest) that it is reasonable to exceed the 55 dBA noise standard in areas that already meet the 55 dBA standard, and it certainly does not in any way advocate or support FRA’s contention (embodied in Figure 3-1) that areas which already meet the 55 dBA standard will not be “severely impacted” if ambient noise levels increase significantly and even exceed 61 dBA. Moreover, there is nothing in the Schultz Paper that supports FRA’s contention (reflected in Figure 3-1) that 55 dBA is merely the “lower bound” limit for determining the “significance” of noise impacts; to the contrary, the Schultz Paper affirmatively establishes 55 dBA as the “upper bound” limit for such determinations, and in fact it limits the consideration of increases beyond the 55 dBA standard only in those urban areas where existing conditions already exceed the 55 dBA standard.
- The Schultz Paper is essentially a compilation of urban noise studies addressing the “annoyance” responses of urban residents to different urban noise levels occurring within urban communities (such as Paris, London, Vienna, Copenhagen, Basel, Brussels, and 7 unnamed US cities) and adjacent to large urban airports (such as Heathrow and Munich). The Schultz Paper makes it clear that these studies assessed noise impacts exclusively in the urban environment, and measured human “annoyance” only in urban areas. Therefore, the Schultz Paper is narrowly constrained to consider human noise “reactions” only in urban areas where high noise profiles are already “woven into” the fabric of the community. It does not consider rural environments, and it certainly does not assess human “annoyance” to increased sound levels in essentially quiet areas (like Acton) where ambient Ldn noise levels are less than 50 dBA. The Schultz Paper clearly indicates 1) That its scope is constrained only to urban environments; and 2) That its conclusions regarding increases in “acceptable” noise limits beyond 55 dBA ONLY APPLY to urban environments where the 55 dBA noise limit is already exceeded [see page 389]. The FRA Manual **ignores** all of these constraints that are clearly stated in the Schultz paper. Worse yet, the FRA Manual uses the urban data from the Schultz Paper to derive “noise impact criteria” which are applied uniformly to all environments (including rural and wilderness areas). The FRA Manual fails to consider that people living in quiet rural areas respond differently to increased noise levels than people living in urban areas where existing ambient noise levels are already quite high (see for example the “EPA Levels Document” discussed below). Moreover, the FRA Manual fails to cite *any* noise studies that address human noise “annoyance” response in areas where ambient noise levels are 50 dBA or less. Therefore, FRA has absolutely no basis for imposing on rural communities the urban-based “Noise Impact Criteria” that are depicted in Figure 3-1, and it certainly lacks any justification for the standard imposed by Figure 3-1 that rural areas with an ambient Ldn noise level of only 43 dBA are not “severely impacted” by a nearly threefold increase in ambient noise to 58 dBA.

- The “annoyance” reactions addressed in the Schultz Paper are demonstrably biased low because (as the paper itself admits) “annoyance” response data were often collected from people located **indoors** who were responding to noise events **outdoors** [page 378] Because these people hardly heard the noise, they provide a “low annoyance” response (which skews the results with a low bias). The Schultz paper found very poor correlation between noise levels and “annoyance” response when the respondents were located indoors with their windows closed. This seems like an obvious thing which should have been accounted for in the studies that were “synthesized” in the Schultz Paper, but apparently it was not. Schultz actually makes the following recommendation: “If one wishes to increase dramatically the correlation between the measured noise and the subjective response of the subjects, one should open the windows so that the official survey microphone and the noise to which the subjects are actually exposed are the same” [page 378]. The author also posits the argument that half of the sample population at each noise exposure who respond below the median may “have simply not heard the noise measured in the survey”. The “biasing” elements of the Schultz study (such as the fact that only indoor annoyance responses were addressed) are even more troubling when they are considered against the urban backdrop where these studies were conducted. Why? Because it renders them even more inapplicable to Acton’s quiet, rural environment where residents spend much of their time “outdoors”. It is flat out **impossible** to infer or predict the extent to which an Acton resident will be “annoyed” by an 85 dBA HSR noise event occurring every 3 minutes based on noise reactions from people sitting indoors who occasionally react to urban street noises outside their windows. Such an idea is absurd, yet, that is precisely what CHSRA and FRA are doing when they assess HSR noise impacts on Acton based on the “Noise Impact Criteria” set forth in Figure 3-1 of the FRA Manual.
- The FRA Manual considers all noise impacts through the “urban lens” of the Schultz Paper, and because it uses this “urban lens” to assess noise impacts on rural areas, it draws conclusions which utterly contradict the Schultz Paper itself. For instance, the Schultz Paper states categorically that the standard for an “acceptable” environmental noise exposure is 55 dBA (Ldn), and it does not under any circumstance recommend increasing this 55 dBA “acceptability” limit in any area where it is already met. Yet, incredibly, FRA’s “Noise Impact Criteria” deems an increase in ambient noise levels from 55 dBA to 61 dBA to be “insignificant”. In other words, the FRA Manual uses the urban studies considered in the Schultz Paper to shift the “acceptability” baseline from 55 dBA to 61 dBA for all areas (both rural and urban) in a manner that is utterly contrary to the foundational principals upon which the entire Schultz Paper is based. Worse yet, the “Noise Impact Criteria” (provided by Figure 3-1 of the FRA Manual and derived from the urban-based Schulz Paper) clearly establish that no area (whether it be a monument, a cemetery, or a wilderness) is considered “severely impacted” by a project unless the project results in ambient noise levels **exceed** the 55 dBA urban baseline!!! Clearly, the “low end of the FRA “Noise Impact Criteria” is utter nonsense because it *contradicts in every way possible* the very same “Schultz paper” that it purports to reflect.

- The Schultz paper designates the 55 dBA noise exposure level as not only an “acceptable” standard, but also a “desirable” standard for areas where existing ambient noise levels do not exceed 55 dBA [see page 389 column 1]. The Schultz Paper also expressly limits its consideration of the circumstances under which the 55 dBA noise standard could be exceeded to only those urban areas where the ambient noise level already exceeds 55 dBA. Yet incredibly, the FRA Manual *flat out ignores* all of Schultz’s research establishing 55 dBA as the acceptable and desirable standard for non-urban areas where ambient noise levels are at or below 55 dBA. Instead, it arbitrarily establishes 61 dBA as the “threshold of significance” for areas that meet the 55 dBA standard, and it declares that project noise levels below this 61 dBA threshold constitute “less than significant” impacts. In other words, the FRA Manual establishes that non-urban areas which already meet the 55 dBA standard (and therefore have an “acceptable environmental noise exposure”) are not “severely impacted” by any project unless noise levels rise above 61 dBA. The FRA “Noise Impact Criteria” essentially turned the Schultz Paper on its head by establishing that projects impacts are not “significant” even if they generate noise levels which exceed Schultz’s “desired and acceptable” 55 dBA standard! Nothing about the Noise Impact Criteria established by the FRA Manual for “quiet” (<55 dBA) areas is supported by the Schultz Paper. Indeed, the manner in which the FRA Manual incrementally increases the “acceptable noise threshold” in areas which meet the 55 dBA standard is entirely inconsistent with, and wholly unsupported by, the very Schultz study it purports to reflect.
- The Schultz Paper was published nearly 40 years ago before ‘high speed’ trains exceeding 180 mph were developed, and it considered historic urban noise profiles predominated by mid- and high-frequency noise sources. It is firmly established that noise profiles of high speed trains traveling in excess of 200 mph differ significantly from slower trains, and that the noise profiles of faster trainsets include substantial low-frequency components [[http://www.uic.org/cdrom/2008/11\\_wcrr2008/pdf/S.1.1.4.4.pdf](http://www.uic.org/cdrom/2008/11_wcrr2008/pdf/S.1.1.4.4.pdf)]. The Schultz paper never considered low-frequency noise levels introduced into the urban environment by 220 mph HSR trains, and it certainly never accounted for significant low-frequency aerodynamic noise elements introduced by HSR projects into rural areas like Acton. This further repudiates FRA’s reliance on the Schulz paper to establish appropriate HSR “Noise Impact Criteria” for rural communities like Acton.

The US. EPA “Levels Document” establishes that, to protect the “health and welfare” of farming and residential areas (like Acton) where people spend considerable amounts of time in the outdoors, the average noise levels (both “Ldn” and “Leq”) *should remain below 55 dBA* [Table VII in the “EPA Levels Document – Condensed Version” at <https://nepis.epa.gov/>]. This is utterly contradicted by the FRA “noise impact criteria”, which *unequivocally* establish that it is “insignificant” if a project causes outdoor noise levels to exceed this 55 dBA “health and welfare” threshold (see FRA Figure 3-1). In fact, Figure 3-1 clearly establishes that FRA deems it acceptable to nearly the double the noise in areas that meet (or nearly meet) EPA’s recommended 55 dBA level. Moreover, the FRA “Noise Impact Criteria” also completely ignore the EPA’s explicit warning that urban community noise response factors should not be applied to non-urban areas (like Acton) which have a significantly quieter ambient

environment [page 21 of “Levels Document” – condensed version]. There is no doubt that applying the urban-based FRA “Noise Impact Criteria” to Acton is utterly contradictory to the EPA’s “Levels Document” in every way possible. The only way to render FRA’s “Noise Impact Criteria” in a manner that is consistent with the EPA “Levels Document” is to revise the “Severe Impact” curve to intersect the point where the “Existing Noise Level” [x axis] value is 55 dBA and the “Project Noise Exposure” [y axis] is also 55 dBA.

HUD Standards are intended to achieve the goal of providing a suitable living environment. HUD has established that outdoor Ldn noise levels which exceed 75 dBA provide an unacceptable living environment, and does not authorize HUD development in such areas. HUD has also established that outdoor Ldn noise levels which exceed 65 dBA provide a *normally* unacceptable living environment, and requires that all new HUD construction in such areas include noise attenuation features to mitigate outdoor noise impacts. Yet, in a number of scenarios, the FRA “Noise Impact Criteria” do not consider project impacts to be “significant” even when they increase noise levels beyond the 65 dBA HUD threshold<sup>3</sup>. In fact, the FRA “Noise Impact Criteria” do not even consider the noise degradation impacts of HSR operation until the ambient noise level is 68 dBA as evidenced by Figure 3-1 (which deems moderate noise increases to be “insignificant” up until existing noise levels reach 68 dBA.) For all these reasons it is clear that FRA’s “Noise Impact Criteria” are patently inconsistent with adopted HUD standards.

CHABA Guidelines: Address the “Health and Welfare” effects of noise in *urban and suburban* environments [page 33 paragraph 2 accessed via <https://nepis.epa.gov/>]. Regarding the “Health and Welfare” effects of noise on *urban/suburban* areas, the CHABA Guidelines advocate a “single indicator” method (page 34 para 2) that is based on the “Schultz Curve” , and calculated based on the 1978 Schultz Paper [Page 37 equation 2a]. The “Single Indicator” method recommended by the CHABA Guidelines for urban/suburban environmental is clearly embodied in the FRA “Noise Impact Criteria”. **However**, the CHABA Guidelines *do not recommend* the use of the “single indicator” method for assessing noise impacts on rural areas (see page 64 paragraph 2) or where “environmental degradation” can occur due to new noise sources being introduced in quiet areas (like Acton). In fact, the CHABA Guidelines clearly draw a “bright line” distinction between the assessment of noise impacts on urban/suburban areas (addressed in Section 2.2) and the assessment of noise impacts on rural and other areas that will experience “environmental degradation” due to project noise impacts (addressed in Section 2.4) . CHSRA *completely ignores this distinction*, and it blindly applies the “single indicator” method to **all** environments by slapping the urban-based “Noise Impact Criteria” depicted in Figure 3-1 onto every single impact assessment that it prepares. For instance, CHSRA does not consider a serenely quiet areas

---

<sup>3</sup> As clearly shown in Table 3-1 of the FRA Manual, an area with an existing average ambient noise level of 64 is not deemed significantly impacted until the average noise level exceeds 65.5 dBA, and an area with an average noise level of 65 dBA is not deemed significantly impacted until the project noise increase exceeds 66 dBA.

with an existing ambient noise level of only 43 dBA to be “significantly impacted” by a project even if the average noise level is tripled! Equally important, the CHABA Guidelines explicitly identify the 55 dBA threshold as the “point of significant adverse noise effects” (page 31 paragraph 1). *This assertion is completely ignored by the FRA Manual*, which establishes that “significant adverse noise effects” do not occur until noise levels substantially **exceed** 55 dBA [Table 3-1]. There is no doubt that the FRA “Noise Impact Criteria” fail to comport with the CHABA Guidelines and in fact they explicitly contradict these guidelines in the manner in which they address “Environmental Degradation” and noise impacts on quiet rural areas like Acton.

DOT Report No UMTA-MA-06-0099-79-3: This document is cited in footnote 74 of the FRA Manual, and it considers urban noise impacts of conventional trainsets traveling through urban and suburban Paris and London, and slightly faster trainsets (126 mph) traveling through various Japanese communities. The urban study portions of this DOT report are not particularly relevant to the matters raised herein (which consider only impacts on rural areas). However, the portions of the DOT report that address the Japanese study are perhaps relevant because they appear to consider receptors outside of an urban environment. The DOT report notes that the receptor “annoyance” is driven by 2 independent factors: the peak noise exposure (SEL) and the train frequency (trips per day). According to the DOT report, the Japanese study indicates that high annoyance occurs even with relatively slow (126 mph) trains and at relatively low peak (SEL) sound levels (less than 75 dBA as shown in Table I). These results demonstrate that high annoyance will occur at receptors located more than 11,000 feet (or 2 miles) from a 220 mph train traveling on flat ground at grade in areas (like Acton) where there is little ground attenuation and receptors have a “direct line of site” to the HSR tracks (see attached calculation sheet marked Exhibit A). The Japanese data also shows that “startle” occurs even with slow (126 mph) trains and at peak sound levels (SEL) as low as 80 dBA [see Table I]. These results demonstrate that human “startle” reactions will occur at receptors located more than 5000 feet from a 220 mph train traveling on flat ground at grade in areas (like Acton) where there is little ground attenuation and most receptors will have a “direct line of site” to the HSR tracks (see attached calculation sheet marked Exhibit B). Remarkably, none of this information is reflected *anywhere* in the FRA Manual. To the contrary, the FRA Manual categorically refuses to consider receptor noise impacts based on peak (SEL) noise levels, and instead considers only 24 hour “average” (Ldn) noise levels (see Sections 3, 4 and 5 of the FRA Manual). The FRA Manual also refuses to acknowledge that “startle” effects can and will occur on receptors located more than 50 feet from a high speed train traveling at 220 mph (see Figure 4-2).

Other Publications: The FRA Manual cites two additional studies as justification for the “Noise Impact Criteria” that it adopts. One study is a 1991 paper that “updates” the original Schultz paper published in 1978 by the JASA, and the other is a “French High Speed Rail Noise Survey” of the TGV-Atlantique line published in 1993. The latter does not consider noise impacts of train speeds that exceed 180 mph, and merely points out that nighttime noise impacts should be factored into any “noise impact criteria” that are developed. This is not in dispute, therefore the “French High Speed Rail Noise Survey” is not addressed further. However, the “Shultz Update” paper is foundationally important, and is therefore addressed

in detail here. The "Schultz Update" considers 15 additional urban noise studies, and combines data from these additional urban noise studies with the urban noise data presented in the original "Schultz Paper" published in 1978. Like the original "Schultz Paper", the "Schultz Update" Paper focusses exclusively on urban noise profiles, and it does not controvert any of the points addressed in the "bullet item" discussion presented above. However, the "Schultz Update" Paper does call into substantial question whether the "Original Schultz Curve" accurately represents "annoyance" response at noise levels below 60 dBA. First, the "Schultz Update" paper clarifies that, when a "Revised Schultz Curve" is fitted to the new data, it reveals that "annoyance" on the low-end of the noise range (below 60 dBA) is significantly higher than what was predicted by the "Original Schultz Curve" [see page 229 column 2]. For instance, it is noted that annoyance levels at a 57.5 dBA noise level are nearly twice as high as what is predicted by the "Original Schultz Curve" [See Figure 14]. The "Schultz Update" paper also includes a "95% confidence Interval" analysis of the combined datasets [plotted in Figure 15] and the "annoyance response" [tabulated in Table III]. These "95% confidence interval" analyses reveal "considerable uncertainty" regarding "percentages of respondents highly annoyed" [page 231 column 2]. The "Schultz Update" paper does not attempt to reconcile the differences between the "Original Schultz Curve" and the "Revised Schultz Curve"; to the contrary, the "Schultz Update" Paper states categorically that these curves are "simply convenient data fitting functions, devoid of physical meaning" [page 233]. This statement is *simply extraordinary*, given the extent to which FRA and CHSRA have relied on the "Schultz Curve" to determine whether or not California citizens are "severely impacted" by the HSR Project. Not only does the "Schultz Update" Paper abjectly confirm each and every criticism levied previously herein (see the "bullet item" discussion above); but it also invalidates the FRA "Noise Impact Criteria" because it relegates the "Schultz Curve" upon which these criteria are based to nothing more than a "data fitted function" that is "devoid of meaning"! Above all, the "Schultz Update" Paper demonstrates that, in the ambient noise range applicable to quiet rural areas like Acton (<55 dBA) actual human "annoyance" response levels are *significantly higher* than what is predicted by the urban-based "Schultz Curve". The exceedingly high "error margin" embodied in the "Schultz Curve" at low ambient noise levels proves beyond the shadow of a doubt that the "Schultz Curve" is entirely unreliable in this "low noise" regime, and that both FRA and CHSRA grievously err in their reliance on the "Schultz Curve" to establish "noise impact criteria" for quiet rural areas like Acton.

All of the shortcomings of FRA's adopted urban-based "Noise Impact Criteria" can only be corrected by developing Non-Urban "Noise Impact Criteria" based on "annoyance" studies conducted in areas that have ambient noise conditions below 60 dBA. Neither FRA nor CHSRA have taken these simple steps to ensure appropriate noise impact criteria are relied upon in the Palmdale-Burbank Segment EIR. Instead, they intend to (wrongly) apply the urban-based noise impact criteria established in Figure 3-1 of the FRA manual; thereby providing fertile ground for any number of successful CEQA and NEPA lawsuits.

**FRA's "Noise Exposure Assessment" Methodology fails to properly capture HSR "Peak Noise" and "Train Frequency" impacts.**

The DOT study discussed above concluded that it is necessary to consider both peak noise levels and train frequency to properly assess rail noise impacts on a community. In other words, DOT contends that a reasonable rail noise exposure assessment methodology should properly account for both the peak noise level experienced by a receptor and how often that peak noise level occurs at the receptor's location. This is because "noise level" and "noise frequency" are individually significant factors in determining human "annoyance" response to noise, and when these factors have significant magnitudes (i.e. high noise level and high noise event frequency) and occur contemporaneously in a single project, their individual contributions to human "annoyance" reactions become even more cumulatively considerable. Therefore, it is imperative that rail projects like HSR correctly consider both the high noise levels that will be generated, and the high frequencies at which these noise events will occur, to ensure that their cumulatively considerable noise exposure impacts are properly assessed.

The noise exposure assessment methodology adopted by the FRA Manual and used by CHSRA to assess HSR noise impacts purports to achieve this two-fold purpose by using a logarithmic function which reconciles peak noise levels with daytime and nighttime train frequencies to derive a 24 hour average "Day-Night" or "Ldn" exposure value. This logarithmic function provides a "weighted average" sound exposure over that accounts for increased sensitivities to nighttime noise by applying a weighting factor to train "passby" events that occur between 10 PM and 7 AM. According to the FRA Manual, this "24 hour cumulative noise exposure" methodology properly and reasonably accounts for both peak noise levels and train frequencies. However a careful assessment of this FRA "noise exposure" assessment methodology reveals that it does a very poor job of both.

To assess the efficacy of the FRA methodology and to determine the extent to which the FRA calculated Ldn "noise exposure" levels actually characterize the "peak noise" and "train frequency" factors they are supposed to represent, a number of "peak noise" and "train frequency" profiles are summarized in Exhibit C, along with their corresponding Ldn "noise exposure" levels calculated according to the FRA methodology. By comparing these calculated FRA Ldn results to HUD's Ldn thresholds for "unacceptable" living environments, we are able to explore various HSR operating scenarios that (according to FRA's methodology) meet HUD's livability standards. The results are startling;

- According to FRA's methodology, a residence that is exposed to a peak noise of 87 dBA (equivalent to a jack hammer operated 50 feet away) with each HSR train "passby" is deemed to meet HUD's minimum 75 dBA threshold *even if a train passes by once every 11 seconds*. No reasonable person would ever consider living in a place where the outdoor noise is equivalent to a jack hammer goes off every 11 seconds, yet (and incredibly), FRA's methodology concludes that such a place does in fact meet HUD's minimum 75 dBA livability threshold.

- According to FRA's noise exposure assessment methodology, a residence that is exposed to a peak noise of 82 dBA (equivalent to a metro train traveling at 50 mph just 50 feet away) with each train "passby" is deemed to meet HUD's minimum 75 dBA threshold *even if a train were to pass by once every 4 seconds*. Such a conclusion is ridiculous, because no reasonable person would ever agree to live 50 feet from a metro track where 50 mph trains go by every 4 seconds. Yet, according to FRA's methodology, such a place meets HUD's minimum 75 dBA livability threshold.
- FRA's methodology concludes that the noise exposure at a residence which experiences 75 dBA daytime noise events every 7 seconds is only 65 dBA *which is "fully acceptable" under HUD's most stringent standards!* It is difficult to imagine how any reasonable person would consider it acceptable to live in a place where a kitchen blender goes off every 7 seconds from 7 am to 10 pm, but that is precisely what FRA concludes, thus demonstrating the deep flaws extant in the FRA noise assessment methodology.
- As shown in Exhibit C, the FRA methodology concludes that a residence "noise exposure" is less than 73 dBA even if it continuously experiences 75 dBA daytime train events *every second!* Though some of these scenarios involve extreme train frequencies that may not be physically possible, they clearly demonstrate that "peak noise" levels are not really reflected in the FRA's methodology until train frequencies are so high that they push the limit of credibility. In other words, the FRA methodology diminishes peak noise events so substantially that they are hardly reflected in FRA "noise exposure" calculations.
- Exhibit C is also useful in determining whether FRA's methodology properly accounts for "train frequency". The values reported in Exhibit C indicate that, within a physically possible range of train schedules (up to 30 trains per hour), FRA's methodology renders the "train frequency" parameter virtually insignificant. For instance, increasing the daytime train frequency by a factor of 10 (from 1 train per hour to 10 trains per hour) only increases FRA's calculated noise exposure level by 2 dBA. In fact, (and as Exhibit C demonstrates) FRA's methodology is so insensitive to "train frequency" that it registers a negligible (3.9 dBA) difference between "one 87 dBA train event every hour" and "one 87 dBA train event every 3 minutes". Humans are sensitive to "train frequency", and an 87 dBA "jack hammer" noise event that occurs once every three minutes from 7AM to 10PM will elicit a very strong adverse reaction compared to an 87 dBA noise event that occurs just once per hour. FRA's methodology obliterates this distinction, and effectively masks "train frequency" impacts to such an extent that they are hardly represented in FRA's calculated "noise exposure".

There is no dispute that FRA's "cumulative noise exposure" methodology does indeed consider both peak (SEL) noise levels and train frequency (as evidenced by the equations provided in Section 5 of the FRA Manual), However, the manner in which FRA's methodology integrates these factors essentially dilutes their effect and it marginalizes their impact to such an extent that they hardly matter. "Peak Noise" levels that exceed 75 dBA and "train frequency" levels that exceed 20 trains per hour are each individually considerable project elements which warrant their own "stand alone" impact assessment *in addition to an*

integrated impact assessment which properly considers how these two elements amplify each other in regards to adverse human reactions. FRA's methodology does not do this, and in fact it renders the impacts of a 75 dBA train event occurring 20 times an hour to be so minor that it warrants absolutely no concern at all. This is because FRA's methodology integrates "train frequency" with "peak noise" in a way that neutralizes them both.

### **FRA's HSR "Noise Exposure Assessment" Methodology Fails to Correctly Address Rural Community Noise Impacts**

To truly understand the extent to which FRA's high speed rail "noise exposure" assessment methodology fails to properly address rural "community impacts", it is useful to look at the results derived from FRA's methodology through the lens of FRA's "Noise Impact Criteria" set forth in Figure 3-1 of the FRA Manual. This is accomplished by a "scenario" analysis which considers various HSR operations in different "quiet" zones within a rural community like Acton:

Scenario 1: Existing noise levels is 56 dBA: A relatively quiet residential area that has an existing average ("Ldn") noise level of 56 dBA and is nearly a mile from the train with a "line of sight" view of the tracks will experience an 82 dBA noise event every 2.7 minutes starting at 6 AM according to CHSRA's proposed operating schedule (Exhibit B). To be clear, an 82 dBA noise event is equivalent to a metro train traveling at 50 mph just 50 feet away. Nonetheless, according to the FRA "Noise Exposure Assessment" methodology, this noise impact is not deemed "significant". The notion that a project does not pose "significant adverse impacts" on a quiet residential area when it clearly introduces noise levels equivalent to a metro train running by at least three minutes is **absurd on its face**. Yet, that is precisely what FRA's methodology and "Noise Impact Criteria" conclude.

Scenario 2: Existing noise levels is 50 dBA: A very quiet residential area that has an existing average noise level of 50 dBA and is nearly two miles from the HSR train with a "line of sight" view of the tracks will experience a 79 dBA noise event every 2.7 minutes starting at 6 AM (Exhibit D). Though a 79 dBA noise event is louder than a blender operating just 3 feet away, the FRA's "Noise Exposure Assessment" methodology does not deem this impact to be "significant". The notion that a project does not pose a "significant adverse impact" on a very quiet residential area when it continually introduces noise levels equivalent to a kitchen blender is **absurd on its face**. Yet, that is precisely what FRA's methodology concludes.

Scenario 3: Existing noise levels is 45 dBA: A serenely quiet residential area that has an existing average noise level of 45 dBA and is more than 3 miles from the HSR with a "line of sight" view of the tracks train will experience 77 dBA noise events every 2.7 minutes starting at 6 AM (Exhibit E). A 77 dBA noise event is louder than a kitchen blender, yet this is not deemed to pose any noise impact on this serenely quiet area. The notion that a project does not pose a significant impact on such a quiet place when it clearly introduces noises that are louder than a kitchen blender on at least once every 3 minutes is **absurd on its face**. Yet, that is precisely what FRA's methodology and "Noise Impact Criteria" conclude.

**FRA's "Noise Exposure" Assessment Methodology Reconciled with FRA's "Noise Impact Criteria" Demonstrate that CHSRA's Alternatives in Acton Will Not Reduce HSR Noise Impacts to a "Less than Significant" Level and Therefore Violate CEQA.**

All of CHSRA's HSR project alternatives include extensive "above-ground" sections that traverse Acton's quiet neighborhoods. Though mitigation measures such as sound walls may reduce noise levels near the HSR track, these measures will not reduce noise impacts to a level that is "less than significant" even according to FRA's own flabby impact thresholds. Consider the following scenarios:

1. Near Aliso Canyon, more than 1,000 feet of track will be constructed on elevated structures and embankments in an area that has a very low (<50 dBA) ambient noise level. As shown in Exhibit F, any receptor that has a "line of sight" to the train and is located within 2,000 feet of the track will continually experience peak noise levels of 85+ dBA<sup>4</sup>. Even according to FRA's flawed noise exposure methodology, this results in a "cumulative Ldn noise exposure level" of 65 dBA which constitutes a "severe" impact requiring mitigation because it exceeds the 59.5 dBA "impact" threshold set forth in Figure 3-1. The "mitigation" will probably take the form of a sound wall, however such mitigation is generally ineffective at reducing the low frequency aerodynamic noise that will be generated by the HSR traveling at 220 mph<sup>5</sup>. And, even if we accept the highly dubious presumption that sound barriers will reduce noise in Aliso Canyon by 5 dBA, that will still not reduce the "cumulative Ldn noise exposure level" below the 59.5 dBA "severe impact" threshold, and it will not prevent the introduction of excessive (81 dBA) noise levels throughout the federally protected "Aliso-Arrastre" Special Interest Area. In other words, no amount of "mitigation" applied to the HSR project will protect the Aliso Canyon area in general and the Aliso-Arrastre Special Interest Area in particular from significant HSR noise impacts. Therefore, the HSR must be constructed in an underground configuration in the Aliso Canyon area. There is nothing inherently challenging or difficult in placing the train underground in the vicinity of Aliso Canyon, and CHSRA engineers have never identified any factors that would prevent such a configuration. Moreover, doing so does not affect "route constructability" because it will not increase the resulting tunnel length beyond 8.5 miles, which is substantially shorter than many other tunnels that CHSRA proposes to construct for the Palmdale-Burbank segment. Additionally, putting the train underground in the vicinity of Aliso Canyon will not substantially increase cost, because it only adds one-half mile of additional tunneling along a route where CHSRA already proposes 24+ miles of tunnel. In other words, tunneling in the Aliso Canyon area only adds 2% more "tunnel length", which does not render this project "modification" to be fiscally infeasible. Yet, for reasons that are not clear, CHSRA has steadfastly refused to consider any underground configurations in the Aliso Canyon area despite constant urging from the public over the last 2 years.

<sup>4</sup> Atmospheric absorption is negligible (<0.4 dBA per 1000 feet) because at 220 mph, low frequency aerodynamic noise will be a major consideration and because Acton is at a 3000 ft with typical relative humidity levels exceeding 40% and an average temperature of approximately 70 degrees.

<sup>5</sup> As FRA acknowledges: "The attenuation of sound by a barrier is frequency dependent; all other things being equal, the higher the frequency of the noise, the greater the barrier attenuation. Because the sound energy for aerodynamic sound sources is in the low frequencies (below 500 Hz), these sources are inherently difficult to shield with a barrier" [See page 4-19 of the FRA Manual].

2. Along the 14 Freeway in Acton, more than a mile of HSR track is proposed on elevated structures and embankments in a residential area near Red Rover Mine Road that is adjacent to the newly constructed Vasquez High School. The elevated portion will exceed 1,000 feet in length, therefore slab construction will be used [per CHSRA's Guidelines – page 3.4-2] resulting in a 5 dBA increase in noise [FRA Manual page 5-30]. On the north side of the freeway, the HSR will traverse the mouth of Red Rover Canyon approximately 700 feet north of the freeway, and much of the Canyon will have a “direct line of site” to the HSR tracks. A number of residential and commercial structures will be located within 1000 feet of the elevated tracks and will experience peak noise levels exceeding 93 dBA (Exhibit G) and a “cumulative Ldn noise exposure” level of 73 dBA. Even with “sound wall” mitigation, HSR noise levels up Red Rover Canyon at 1,000 feet north of the HSR elevated structure will still exceed 88 dBA “peak” and 68 dBA “cumulative”. The existing ambient noise level at this location is relatively low (less than 65 dBA) because it is located more than 1,700 feet from the freeway and partially shielded from freeway noises on the west side by topography. Therefore, even with “sound wall” mitigation, HSR noise levels in Red Rover Canyon 1000 feet north of the tracks will still exceed the 66.1 dBA “impact” threshold set forth in Figure 3-1 of the FRA Manual, and it will introduce excessive (85+ dBA) noise levels at all locations within a mile of the elevated tracks. The only way to avoid these significant impacts is to construct the HSR in an underground configuration in the vicinity of Red Rover Mine Road. There are no technical or other issues preventing CHSRA from constructing the HSR underground in the vicinity of Red Rover Mine Road. In fact, CHSRA engineers openly admit that the only reason that the HSR project is configured above ground at this location is because it is simply CHSRA's “preference” to do so. Moreover, “undergrounding” this portion of the project would not affect “route constructability” because it will not create a tunnel that is longer than what CHSRA already proposes to construct on other route alternatives. Putting the train underground in the vicinity of Red Rover Mine Road will not substantially increase cost, because it only adds one mile of additional tunneling along a route where CHSRA already proposes 24+ miles of tunnel, and it eliminates the need to construct elevated structures over the 14 freeway. In other words, tunneling in the Red Rover Mine Road area adds only 4% more “tunnel length” and is not technically or economically infeasible. Yet, and for reasons that have never been clear, CHSRA has steadfastly refused to consider any underground configurations near Red Rover Mine Road despite constant urging from the public over the last 7 years. .

Significant noise effects on Aliso Canyon and in the Red Rover Mine Road area will not be mitigated to a level that is “less than significant” by using sound barriers or any other mitigation measures that CHSRA has resorted to for other HSR project segments. Significant noise impacts on these areas will only be properly addressed by modifying the project alternatives to traverse these areas in an underground configuration. As CHSRA is aware,

such project modifications are technically and economically “feasible” as that term is contemplated in CEQA. CHSRA is also aware of its obligation under CEQA to adopt a finding that it has incorporated technically and economically feasible alterations to the HSR project that avoid significant effects on the environment [CEQA Statute 21081]. For years, CHSRA

has deliberately limited the scope of HSR project alternatives in Acton to only those that include above ground alignments near Aliso Canyon and Red Rover Mine Road while simultaneously developing underground routes that fully protect every single community between Palmdale and Pacoima EXCEPT ACTON. CHSRA's myopic perspective has artificially and improperly constrained the range of alternatives being considered for the Palmdale-Burbank Section in a manner that is utterly contrary to CEQA. This has been pointed out time and again in writing and verbally at public meetings and at stakeholder meetings with CHSRA staff. It is now pointed out again with this submittal and in a manner which clarifies that all administrative remedies regarding this issue have been exhausted.

### **CHSRA Staff Deliberately Misinformed the Public Regarding Train Frequencies and Underrepresented Actual Train Passby Rates by a Factor of 4**

At the Community meeting held September 17, 2016 in Acton, CHSRA staff told members of the public that the HSR would traverse Acton only "6 or so times per hour". This statement is patently false. According to Section 2.71 of CHSRA's "Project Level Environmental Methodology Guidelines" and CHSRA's current "Operations and Service Plan", 11 trains per hour will be traveling through Acton *in each direction* during peak hours. This corresponds to 22 trains per hour, or one train every 2.7 minutes. During off peak hours, 7 trains are projected in each direction per hour, corresponding to 14 trains per hour or one train every 4.3 minutes until after midnight (because the trains leaving San Francisco at 11:30 pm will not travel through Acton until 2 in the morning).

### **CHSRA has not Developed Technically Credible or Legally Defensible "Noise Impact Criteria" for Assessing HSR Impacts on Animals**

The community of Acton is an equestrian community, but it is also a community that is home to a wide assortment of animal facilities and rescue operations. Animals that are cared for and housed in Acton facilities include llamas, emus, lions, cattle, pigs, ducks, cats, sheep, tigers, dogs, goats, chickens, turkeys, geese, doves, rabbits and donkeys. ALL of the proposed HSR alignments in Acton travel above ground through and over such facilities, and will generate significant low- and mid- frequency sound levels exceeding 100 dBA outside of the HSR "right of way" areas. CHSRA's treatment of noise impacts across this wide spectrum of animal types is the same: no significant noise impacts are deemed to occur if the noise level in the vicinity of any animal is less than 100 dBA. CHSRA has absolutely no data to support this 100 dBA "animal impact criteria"; as FRA points out: "There are no established criteria relating high-speed train noise and animal behavior" [page 3-2 of the FRA Manual]. In fact, tabulated data provided by the FRA Manual clearly show that animal "disturbance" response thresholds can be as low as 77 dBA [Table A-1 in the FRA Manual]. What is most remarkable is that CHSRA has relied on this "interim" threshold for more than 8 years and has employed it *in every single project EIR/EIS that it has certified*, and in all that time, it has never done any studies or taken any steps to establish the efficacy or assess the reasonableness of this

assumption. For all intents and purposes, CHSRA has implemented this “interim” threshold as if it had the full weight and authority of a formally adopted standard, and it has done so with impunity and without regard for whether it is reasonable or appropriate. *This is not acceptable for the Community of Acton, where noise levels exceeding 90 dBA will occur more than 600 feet from the tracks.* Prior to commencing any noise assessment of the Acton area, CHSRA must develop reasoned and defensible “animal response” thresholds that properly address the wide range of animals that call Acton “home”.

The Community of Acton is also home to a number of wild animals (both large and small), and it is the primary linkage between the Sierra Pelona range and the San Gabriel Mountains. Acton’s large wildlife includes mountain lions, coyotes, deer, bobcats, and raptors such as red tailed and cooper’s hawks. Acton is also home to a number of protected species such as the red legged frog and the San Diego coast horned lizard. ALL of the proposed HSR alignments in Acton travel above ground through and over habitat where these species are found, and all of the proposed alignments will create low frequency sound levels exceeding 100 dBA outside the HSR track “right of way”. CHSRA has established a 100 dBA “interim” threshold to evaluate wildlife noise impacts, and has implemented this “interim” threshold for more than 8 years. In all that time, it had never conducted any studies to determine whether it reasonably represents an appropriate noise response indicator for the wide spectrum of wildlife that are present in all of the HSR corridors in Acton. In other words, CHSRA utterly lacks the information necessary to establish the technical credibility or legal sufficiency of this 100 dBA “interim” wildlife impact criteria, therefore it has no basis for relying on this “interim” criteria for assessing wildlife impacts in Acton.

### **CHSRA Staff have Provided Conflicting Descriptions of HSR Routes Through Acton**

The “Refined” Alternatives E1 and E2 described in CHSRA’s “Supplemental Alternatives Analysis Report” issued in April, 2016 depict the HSR Route as crossing Arrastre Canyon “above ground”. Yet, CHSRA staff have repeatedly told Acton residents that the E1 and E2 alternatives traverse Arrastre Canyon underground in a “cut and cover” configuration. Before issuing the Draft EIR/EIS document, CHSRA Board of Directors must clearly set forth which configuration is under consideration in the environmental review process, and communicate this determination to the Community of Acton *forthwith*.

### **Heritage Resources in the ANF are Eligible for the National Register of Historic Places.**

The proposed E1 and E2 routes transition underground at the boundary of the USFS’ Aliso-Arrastre Special Interest Area ([http://www.fs.usda.gov/Internet/FSE\\_MEDIA/stelprdb5311720.pdf](http://www.fs.usda.gov/Internet/FSE_MEDIA/stelprdb5311720.pdf)). This SIA was designated because, among other things, it contains extensive heritage resources. The USDA Land Management Plan (“LMP”) requires that these sites be protected to the same extent as properties deemed eligible for the National Register of Historic Places, and this must be reflected in EI/EIS that is jointly issued by CHSRA and FRA.

## **CHSRA and FRA are Required to Provide Noise Contour Maps (or Equivalent) of Predicted Sound Exposure Levels in Acton.**

CHSRA's "Environmental Methodology Guidelines" state (on page 3.4-14) that the EIR "shall conform to the requirements and topics set forth in Section 11.1 (The Technical Report on Noise and Vibration) and Section 11.1.1 (Organization of Technical Report) of the FRA 2012 guidance manual". Section 11.1.1 of the FRA Manual specifies that the computed noise levels predicted by the noise assessment model must be "tabulated AND illustrated by contours, cross sections, or shaded mapping" [page 11-2]. Despite these clearly stated reporting requirements, neither FRA nor CHSRA have ever provided any noise level illustrations in any of the HSR EIR/EIS documents certified to date. At most, CHSRA has reported a "range of noise levels" applicable to an entire segment, and it has mapped points of "severe" impact and "less than severe" impact without indicating any actual noise levels. Because of this, the public has been unable to analyze CHSRA's calculated results to confirm their accuracy or completeness. *This is unacceptable.* The DEIR/DEIS that is issued by FRA and CHSRA for the Palmdale Burbank segment must comply with CHSRA's and FRA's reporting standards, and include noise contour (or equivalent) illustrations which clearly establish the peak noise levels that Acton residents are projected to experience with and without mitigation. Consistent with DOT's *Railroad Noise Emission Compliance Regulations*, these illustrations must depict noise levels extending from the 100+ dBA level occurring at the HSR track right-of-way out to either the 73 dBA noise level (if  $L_{max_{fast}}$  data are plotted), or out to 73 dBA (if  $L_{max_{slow}}$  data are plotted).

Moreover, both CEQA and NEPA demand that actual noise projections be provided in the DEIR/DEIS because both require the environmental document to clearly identify the "effects" of a project on the environment<sup>6</sup> And, both CEQA and NEPA define "effects" to include "direct effects" which "are caused by the project and occur at the same time and place"<sup>7</sup> In other words, the only way that CHSRA and FRA can comply with CEQA and NEPA regulations is to include in the DEIR/DEIS the peak noise levels that will be created within Acton at the time that the HSR passes through Acton. These state- and federally-imposed requirements are not met by simply plotting "Ldn" values because "Ldn" values merely reflect "bulk" noise levels averaged over a 24 hour period; they do not in any way reflect actual noise levels occurring "at the time and place" of an HSR passby event. This has been pointed out time and again in writing and verbally at public meetings and stakeholder meetings with CHSRA and FRA staff. It is now pointed out again with this submittal and in a manner which makes clear that all administrative remedies regarding this issue have been exhausted.

---

<sup>6</sup> NEPA - 1502.16(a) of the CEQ Regulations for Implementing NEPA. CEQA - Guidelines Section 15126.2(a).

<sup>7</sup> NEPA - 1508.8 of the CEQ Regulations for Implementing NEP. CEQA - Guidelines Section 15358.

# EXHIBIT A: SUB- SOURCE SEL CALCULATIONS FOR HIGH SPEED TRAIN OPERATIONS

EQUATIONS AND SOURCE REFERENCE LEVELS OBTAINED FROM CHAPTER 5 OF THE FRA MANUAL  
 TRAINSET DATA FROM CHSRA "ENVIRONMENTAL METHODOLOGY GUIDELINES" VERSION 5 (JUNE, 2014)

Train Characteristics: VHS EMU operated at:

Train speed:	220 mph	Trains per day "Daytime"	250 7 AM - 10 PM
Number of EMU cars:	8	Trains per day "Nighttime"	50 10 PM - 7 AM
Assumed length of each EMU car:	85	Daytime trains/hr (Vd)	16.67
Lenpower (train noise):	680	Nighttime trains/hr (Vn)	5.56
Lenpower (aero noise at nose):	85	Barrier height (Hb):	0 feet (no barrier)
Number of Passenger cars:	N/A	Train elevation:	0 feet (at grade)
Length of Passenger cars:	N/A	Receptor height:	5 feet
Lentrain:	680	Distance (D):	11000 feet
Ground Characteristics:	HARD	Shielding:	NONE
Ground Factor (G):	0		

<b>RESULTS AT 11,000 FEET FROM TRACK</b>	
With NO Sound Wall Mitigation	
Cumulative SEL:	78.55
Ldn:	57.90
With 5 Dba "Sound Wall" Mitigation:	
Cumulative SEL:	73.55
Ldn:	52.90

## Subsource Component:

Subsource Component:				SUBSOURCE SEL AT 50 FEET:	SUBSOURCE SEL AT DISTANCE ASSESSED:			
Propulsion	len definition	lenpower	S/Sref: no speed adjustment	SELpropulsion:	86.243	Distance:	11000 feet	
	height	2	k log (S/Sref): no speed adjustment			D/50	220	
	SELref	86	lenpower	680	SEL/10	8.624	10*log(D/50)	23.4
	lenref	643	len/lenref:	1.058	10^ASEL/10:	4.21E+08	SELpropulsion:	62.819 at 11000 feet
	Sref	none	log(len/lenref):	0.024	SEL/10	6.282	10^ASEL/10:	1.91E+06
	K	none	10 log (len/lenref):	0.243				
Wheel Rail	len definition	lentrain	S/Sref: 2.444	SELwheelrail:	99.07	Distance:	11000 feet	
	height	1	k log (S/Sref): 7.764			D/50	220	
	SELref	91	lentrain	680	SEL/10	9.91	10*log(D/50)	23.424
	lenref	634	len/lenref:	1.073	10^ASEL/10:	8.07E+09	SELwheelrail:	75.644 at 11000 feet
	Sref	90	log(len/lenref):	0.030	SEL/10	7.564	10^ASEL/10:	3.7E+07
	K	20	10 log (len/lenref):	0.304				
AERO Nose	len definition	lenpower(@nose)	S/Sref: 1.222	SELaero-nose:	94.890	Distance:	11000 feet	
	height	10	k log (S/Sref): 5.229			D/50	220	
	SELref	89	lenpower(@nose):	85	SEL/10	9.489	10*log(D/50)	23.424
	lenref	73	len/lenref:	1.164	10^ASEL/10:	3.08E+09	SELaero-nose:	71.466 at 11000 feet
	Sref	180	log(len/lenref):	0.066	SEL/10	7.147	10^ASEL/10:	1.4E+07
	K	60	10 log (len/lenref):	0.661				
AERO Wheel	len definition	lentrain	S/Sref: 1.222	SELaero-wheel:	94.533	Distance:	11000 feet	
	height	5	k log (S/Sref): 5.229			D/50	220	
	SELref	89	lentrain	680	SEL/10	9.453	10*log(D/50)	23.424
	lenref	634	len/lenref:	1.073	10^ASEL/10:	2.84E+09	SELaero-wheel:	71.109 at 11000 feet
	Sref	180	log(len/lenref):	0.030	SEL/10	7.111	10^ASEL/10:	1.3E+07
	K	60	10 log (len/lenref):	0.304				
AERO Pantograph	len	NA	S/Sref: 1.222	SELaero-pantograph:	91.229	Distance:	11000 feet	
	height	15	k log (S/Sref): 5.229			D/50	220	
	SELref	86	lentrain no length adjustment		SEL/10	9.123	10*log(D/50)	23.424
	lenref	NA	len/lenref: no length adjustment		10^ASEL/10:	1.33E+09	SELaero-pantograph:	67.805 at 11000 feet
	Sref	180	10 log (len/lenref): no length adjustment		SEL/10	6.780	10^ASEL/10:	6.0E+06
	K	60						

Cumulative Noise Exposure (SEL at 50 ft)	101.97	Cumulative SEL:	78.546
Train passby at 50 feet		Train passby at 11000 feet	
Daytime Leq	78.588	Daytime Leq	55.164
Nighttime Leq	73.817	Nighttime Leq	50.393
Ldn	81.321	Ldn	57.896

TRAIN TRIPS (assumes HSR Service Plan in Appendix 2-C from 6AM-Midnight)			
Peak thru Acton/hr (ea direction):	11		
Total Peak thru Acton/hr:	22	2.73 minutes between trains	
Offpeak thru Acton/hr (ea direction):	7		
Total off Peak thru Acton/hr:	14	4.29 minutes between trains	
Daytime:		Nighttime:	
7AM - 10 pm (15 hours)		10AM - 7 pm (9 hours)	
Total # offpeak hrs:	10	Total # offpeak hrs:	2
Total # peak hrs:	5	Total # peak hrs:	1
Total # peak trains	110	Total # peak trains	22
Total # offpeak trains	140	Total # offpeak trains	28
TOTAL DAYTIME TRAINS:	250	TOTAL NIGHTTIME TRAINS:	50

WITH 5 dBA "SOUND WALL" REDUCTION	
Cumulative SEL:	73.546
Train passby at 11000 feet	
Daytime Leq	50.164
Nighttime Leq	45.393
Ldn	52.896

# EXHIBIT B: SUB- SOURCE SEL CALCULATIONS FOR HIGH SPEED TRAIN OPERATIONS

EQUATIONS AND SOURCE REFERENCE LEVELS OBTAINED FROM CHAPTER 5 OF THE FRA MANUAL  
 TRAINSET DATA FROM CHSRA "ENVIRONMENTAL METHODOLOGY GUIDELINES" VERSION 5 (JUNE, 2014)

Train Characteristics: VHS EMU operated at:

Train speed:	220 mph	Trains per day "Daytime"	250 7 AM - 10 PM
Number of EMU cars:	8	Trains per day "Nighttime"	50 10 PM - 7 AM
Assumed length of each EMU car:	85	Daytime trains/hr (Va)	16.67
Lenpower (train noise):	680	Nighttime trains/hr (Vn):	5.56
Lenpower (aero noise at nose):	85	Barrier height (Hb):	0 feet (no barrier)
Number of Passenger cars:	N/A	Train elevation:	0 feet (at grade)
Length of Passenger cars:	N/A	Receptor height:	5 feet
Lentrain :	680	Distance (D):	5000 feet
Ground Characteristics:	HARD	Shielding:	NONE
Ground Factor (G):	0		

RESULTS AT 5,000 FEET FROM TRACK	
With NO Sound Wall Mitigation	
Cumulative SEL:	81.97
Ldn:	61.32
With 5 Dba "Sound Wall" Mitigation:	
Cumulative SEL:	76.97
Ldn:	56.32

## Subsource Component:

### SUBSOURCE SEL AT 50 FEET:

### SUBSOURCE SEL AT DISTANCE ASSESSED:

<b>Propulsion</b>	len definition	lenpower	S/Sref:	no speed adjustment	SELpropulsion :	86.243	Distance:	5000 feet
	height	2	k log (S/Sref):	no speed adjustment			D/50	100
	SElref	86	lenpower	680	SEL/10	8.624	10*log(D/50)	20.0
	lenref	643	len/lenref:	1.058	10^SEL/10:	4.21E+08	SELpropulsion :	66.243 at 5000 feet
	Sref	none	log (len/lenref):	0.024			SEL/10	6.624
	K	none	10 log (len/lenref):	0.243			10^SEL/10:	4.21E+06
<b>Wheel Rail</b>	len definition	lentrain	S/Sref:	2.444	SELwheelrail :	99.07	Distance:	5000 feet
	height	1	k log (S/Sref):	7.764			D/50	100
	SElref	91	lentrain	680	SEL/10	9.91	10*log(D/50)	20.000
	lenref	634	len/lenref:	1.073	10^SEL/10:	8.07E+09	SELwheelrail :	79.068 at 5000 feet
	Sref	90	log (len/lenref):	0.030			SEL/10	7.907
	K	20	10 log (len/lenref):	0.304			10^SEL/10:	8.1E+07
<b>AERO Nose</b>	len definition	lenpower(@nose)	S/Sref:	1.222	SELaero-nose :	94.890	Distance:	5000 feet
	height	10	k log (S/Sref):	5.229			D/50	100
	SElref	89	lenpower(@nose):	85	SEL/10	9.489	10*log(D/50)	20.000
	lenref	73	len/lenref:	1.164	10^SEL/10:	3.08E+09	SELaero-nose :	74.890 at 5000 feet
	Sref	180	log (len/lenref):	0.066			SEL/10	7.489
	K	60	10 log (len/lenref):	0.661			10^SEL/10:	3.1E+07
<b>AERO Wheel</b>	len definition	lentrain	S/Sref:	1.222	SELaero-wheel :	94.533	Distance:	5000 feet
	height	5	k log (S/Sref):	5.229			D/50	100
	SElref	89	lentrain	680	SEL/10	9.453	10*log(D/50)	20.000
	lenref	634	len/lenref:	1.073	10^SEL/10:	2.84E+09	SELaero-wheel :	74.533 at 5000 feet
	Sref	180	log (len/lenref):	0.030			SEL/10	7.453
	K	60	10 log (len/lenref):	0.304			10^SEL/10:	2.8E+07
<b>AERO Pantograph</b>	len	NA	S/Sref:	1.222	SELaero-pantograph :	91.229	Distance:	5000 feet
	height	15	k log (S/Sref):	5.229			D/50	100
	SElref	86	lentrain no length adjustment		SEL/10	9.123	10*log(D/50)	20.000
	lenref	NA	len/lenref: no length adjustment		10^SEL/10:	1.33E+09	SELaero-pantograph :	71.229 at 5000 feet
	Sref	180	10 log (len/lenref): no length adjustment				SEL/10	7.123
	K	60					10^SEL/10:	1.3E+07

Cumulative Noise Exposure (SEL at 50 ft) 101.97 Cumulative SEL: 81.970

Train passby at	50 feet	Train passby at	5000 feet
Daytime Leq	78.588	Daytime Leq	58.588
Nighttime Leq	73.817	Nighttime Leq	53.817
Ldn	81.321	Ldn	61.321

TRAIN TRIPS (assumes HSR Service Plan in Appendix 2-C from 6AM-Midnight)			
Peak thru Acton/hr (ea direction):	11		
Total Peak thru Acton/hr:	22	2.73 minutes between trains	
Offpeak thru Acton/hr (ea direction):	7		
Total off Peak thru Acton/hr:	14	4.29 minutes between trains	
<b>Daytime:</b>		<b>Nighttime :</b>	
7AM - 10 pm (15 hours)		10AM - 7 pm (9 hours)	
Total # offpeak hrs:	10	Total # offpeak hrs:	2
Total # peak hrs:	5	Total # peak hrs:	1
Total # peak trains	110	Total # peak trains	22
Total # offpeak trains	140	Total # offpeak trains	28
TOTAL DAYTIME TRAINS:	250	TOTAL NIGHTTIME TRAINS:	50

### WITH 5 dBA "SOUND WALL" REDUCTION

Cumulative SEL:	76.970
Train passby at	5000 feet
Daytime Leq	53.588
Nighttime Leq	48.817
Ldn	56.321

# EXHIBIT C: FRA "NOISE EXPOSURE" ASSESSMENT ANALYSIS

EQUATIONS AND NOISE EQUIVALENCY LEVELS OBTAINED FROM FRA MANUAL

"Daytime" is defined as 7AM to 10 PM

"Nighttime" is defined as 10 PM to 7 AM (9 hour time interval)

Noise Level Description FRA Manual Fig. 2-2	SEL	Trains/hr		Leq		Ldn	Daytime Train Frequency
		Daytime	Nighttime	Daytime	Nighttime		
JACK HAMMER at 50 feet	87	1	2	51.4	54.4	60.50	One Train per hour (daytime)
	87	4	2	57.4	54.4	61.40	One train every 15 minutes (daytime)
	87	6	2	59.2	54.4	61.91	One train every 10 minutes (daytime)
	87	10	2	61.4	54.4	62.79	One train every 6 minutes (daytime)
	87	20	2	64.4	54.4	64.41	One train every 3 minutes (daytime)
	87	30	2	66.2	54.4	65.59	One train every 2 minutes (daytime)
	87	60	2	69.2	54.4	67.93	One train every minute (daytime)
	87	100	2	71.4	54.4	69.85	One train every 36 seconds (daytime)
	87	120	2	72.2	54.4	70.57	One train every 30 seconds (daytime)
	87	360	2	77.0	54.4	75.07	One train every 10 seconds (daytime)
METRO TRAIN TRAVELING 50 MPH at 50 feet	87	600	2	79.2	54.4	77.23	One train every 6 seconds (daytime)
	87	3600	2	87.0	54.4	84.94	One train every second (daytime)
	82	1	2	46.4	49.4	55.50	One Train per hour daytime
	82	4	2	52.4	49.4	56.40	One train every 15 minutes (daytime)
	82	6	2	54.2	49.4	56.91	One train every 10 minutes (daytime)
	82	10	2	56.4	49.4	57.79	One train every 6 minutes (daytime)
	82	20	2	59.4	49.4	59.41	One train every 3 minutes (daytime)
	82	30	2	61.2	49.4	60.59	One train every 2 minutes (daytime)
	82	60	2	64.2	49.4	62.93	One train every minute (daytime)
	82	100	2	66.4	49.4	64.85	One train every 36 seconds (daytime)
KITCHEN BLENDER at 3 feet	82	120	2	67.2	49.4	65.57	One train every 30 seconds (daytime)
	82	360	2	72.0	49.4	70.07	One train every 10 seconds (daytime)
	82	600	2	74.2	49.4	72.23	One train every 6 seconds (daytime)
	82	3600	2	82.0	49.4	79.94	One train every second (daytime)
	75	1	2	39.4	42.4	48.50	One Train per hour daytime
	75	4	2	45.4	42.4	49.40	One train every 15 minutes (daytime)
	75	6	2	47.2	42.4	49.91	One train every 10 minutes (daytime)
	75	10	2	49.4	42.4	50.79	One train every 6 minutes (daytime)
	75	20	2	52.4	42.4	52.41	One train every 3 minutes (daytime)
	75	30	2	54.2	42.4	53.59	One train every 2 minutes (daytime)
CLOTHES WASHER at 3 feet	75	60	2	57.2	42.4	55.93	One train every minute (daytime)
	75	100	2	59.4	42.4	57.85	One train every 36 seconds (daytime)
	75	120	2	60.2	42.4	58.57	One train every 30 seconds (daytime)
	75	360	2	65.0	42.4	63.07	One train every 10 seconds (daytime)
	75	600	2	67.2	42.4	65.23	One train every 6 seconds (daytime)
	75	3600	2	75.0	42.4	72.94	One train every second (daytime)
	65	1	2	29.4	32.4	38.50	One Train per hour daytime
	65	4	2	35.4	32.4	39.40	One train every 15 minutes (daytime)
	65	6	2	37.2	32.4	39.91	One train every 10 minutes (daytime)
	65	10	2	39.4	32.4	40.79	One train every 6 minutes (daytime)
AIR CONDITIONER at 3 feet	65	20	2	42.4	32.4	42.41	One train every 3 minutes (daytime)
	65	30	2	44.2	32.4	43.59	One train every 2 minutes (daytime)
	65	60	2	47.2	32.4	45.93	One train every minute (daytime)
	65	100	2	49.4	32.4	47.85	One train every 36 seconds (daytime)
	65	120	2	50.2	32.4	48.57	One train every 30 seconds (daytime)
	65	360	2	55.0	32.4	53.07	One train every 10 seconds (daytime)
	65	600	2	57.2	32.4	55.23	One train every 6 seconds (daytime)
	65	3600	2	65.0	32.4	62.94	One train every second (daytime)
	55	1	2	19.4	22.4	28.50	One Train per hour daytime
	at 3 feet	55	4	2	25.4	22.4	29.40
55		6	2	27.2	22.4	29.91	One train every 10 minutes (daytime)
55		10	2	29.4	22.4	30.79	One train every 6 minutes (daytime)
55		20	2	32.4	22.4	32.41	One train every 3 minutes (daytime)
55		30	2	34.2	22.4	33.59	One train every 2 minutes (daytime)
55		60	2	37.2	22.4	35.93	One train every minute (daytime)
55		100	2	39.4	22.4	37.85	One train every 36 seconds (daytime)
55		120	2	40.2	22.4	38.57	One train every 30 seconds (daytime)
55		360	2	45.0	22.4	43.07	One train every 10 seconds (daytime)
55		600	2	47.2	22.4	45.23	One train every 6 seconds (daytime)
55	3600	2	55.0	22.4	52.94	One train every second (daytime)	

# EXHIBIT D: SUB- SOURCE SEL CALCULATIONS FOR HIGH SPEED TRAIN OPERATIONS

EQUATIONS AND SOURCE REFERENCE LEVELS OBTAINED FROM CHAPTER 5 OF THE FRA MANUAL  
 TRAINSET DATA FROM CHSRA "ENVIRONMENTAL METHODOLOGY GUIDELINES" VERSION 5 (JUNE, 2014)

Train Characteristics: VHS EMU operated at:

Train speed:	220 mph	Trains per day "Daytime"	250 7 AM - 10 PM
Number of EMU cars:	8	Trains per day "Nighttime"	50 10 PM - 7 AM
Assumed length of each EMU car:	85	Daytime trains/hr (Vd)	16.67
Lenpower (train noise):	680	Nighttime trains/hr (Vn)	5.56
Lenpower (aero noise at nose):	85	Barrier height (Hb):	0 feet (no barrier)
Number of Passenger cars:	N/A	Train elevation	0 feet (at grade)
Length of Passenger cars:	N/A	Receptor height	5 feet
Lentrain:	680	Distance (D):	10000 feet
Ground Characteristics:	HARD	Shielding:	NONE
Ground Factor (G):	0		

RESULTS AT 10,000 FEET FROM TRACK	
With NO Sound Wall Mitigation	
Cumulative SEL:	78.96
Ldn:	58.31
With 5 Dba "Sound Wall" Mitigation:	
Cumulative SEL:	73.96
Ldn:	53.31

## Subsource Component:

Propulsion	len definition	lenpower	S/Sref:	no speed adjustment	SUBSOURCE SEL AT 50 FEET:	SUBSOURCE SEL AT DISTANCE ASSESSED:
	height	2	k log (S/Sref):	no speed adjustment	SELpropulsion: 86.243	Distance: 10000 feet
	SELref	86	lenpower	680	SEL/10 8.624	D/50 200
	lenref	643	len/lenref:	1.058	10^ASEL/10: 4.21E+08	10*log(D/50) 23.0
	Sref	none	log (len/lenref):	0.024		SELpropulsion: 63.233 at 10000 feet
	K	none	10 log (len/lenref):	0.243		SEL/10 6.323
						10^ASEL/10: 2.11E+06
Wheel Rail	len definition	lentrain	S/Sref:	2.444	SELwheelrail: 99.07	Distance: 10000 feet
	height	1	k log (S/Sref):	7.764		D/50 200
	SELref	91	lentrain	680	SEL/10 9.91	10*log(D/50) 23.010
	lenref	634	len/lenref:	1.073	10^ASEL/10: 8.07E+09	SELwheelrail: 76.058 at 10000 feet
	Sref	90	log (len/lenref):	0.030		SEL/10 7.606
	K	20	10 log (len/lenref):	0.304		10^ASEL/10: 4E+07
AERO Nose	len definition	lenpower(@nose)	S/Sref:	1.222	SELaero-nose: 94.890	Distance: 10000 feet
	height	10	k log (S/Sref):	5.229		D/50 200
	SELref	89	lenpower(@nose):	85	SEL/10 9.489	10*log(D/50) 23.010
	lenref	73	len/lenref:	1.164	10^ASEL/10: 3.08E+09	SELaero-nose: 71.880 at 10000 feet
	Sref	180	log (len/lenref):	0.066		SEL/10 7.188
	K	60	10 log (len/lenref):	0.661		10^ASEL/10: 1.5E+07
AERO Wheel	len definition	lentrain	S/Sref:	1.222	SELaero-wheel: 94.533	Distance: 10000 feet
	height	5	k log (S/Sref):	5.229		D/50 200
	SELref	89	lentrain	680	SEL/10 9.453	10*log(D/50) 23.010
	lenref	634	len/lenref:	1.073	10^ASEL/10: 2.84E+09	SELaero-wheel: 71.523 at 10000 feet
	Sref	180	log (len/lenref):	0.030		SEL/10 7.152
	K	60	10 log (len/lenref):	0.304		10^ASEL/10: 1.4E+07
AERO Pantograph	len	NA	S/Sref:	1.222	SELaero-pantograph: 91.229	Distance: 10000 feet
	height	15	k log (S/Sref):	5.229		D/50 200
	SELref	86	lentrain no length adjustment		SEL/10 9.123	10*log(D/50) 23.010
	lenref	NA	len/lenref: no length adjustment		10^ASEL/10: 1.33E+09	SELaero-pantograph: 68.219 at 10000 feet
	Sref	180	10 log (len/lenref): no length adjustment			SEL/10 6.822
	K	60				10^ASEL/10: 6.6E+06

Cumulative Noise Exposure (SEL at 50 ft) 101.97

Train passby at 50 feet	Train passby at 10000 feet
Daytime Leq 78.588	Daytime Leq 55.578
Nighttime Leq 73.817	Nighttime Leq 50.807
Ldn 81.321	Ldn 58.310

## WITH 5 dBA "SOUND WALL" REDUCTION

Cumulative SEL:	73.960
Train passby at	10000 feet
Daytime Leq	50.578
Nighttime Leq	45.807
Ldn	53.310

TRAIN TRIPS (assumes HSR Service Plan in Appendix 2-C from 6AM-Midnight)			
Peak thru Acton/hr (ea direction):	11		
Total Peak thru Acton/hr:	22	2.73 minutes between trains	
Offpeak thru Acton/hr (ea direction):	7		
Total off Peak thru Acton/hr:	14	4.29 minutes between trains	
Daytime:		Nighttime:	
7AM - 10 pm (15 hours)		10AM - 7 pm (9 hours)	
Total # offpeak hrs:	10	Total # offpeak hrs:	2
Total # peak hrs:	5	Total # peak hrs:	1
Total # peak trains	110	Total # peak trains	22
Total # offpeak trains	140	Total # offpeak trains	28
TOTAL DAYTIME TRAINS:	250	TOTAL NIGHTTIME TRAINS:	50

# EXHIBIT E: SUB- SOURCE SEL CALCULATIONS FOR HIGH SPEED TRAIN OPERATIONS

EQUATIONS AND SOURCE REFERENCE LEVELS OBTAINED FROM CHAPTER 5 OF THE FRA MANUAL  
 TRAINSET DATA FROM CHSRA "ENVIRONMENTAL METHODOLOGY GUIDELINES" VERSION 5 (JUNE, 2014)

Train Characteristics: VHS EMU operated at:

Train speed:	220 mph	Trains per day "Daytime"	250 7 AM - 10 PM
Number of EMU cars:	8	Trains per day "Nighttime"	50 10 PM - 7 AM
Assumed length of each EMU car:	85	Daytime trains/hr (Vd)	16.67
Lenpower (train noise):	680	Nighttime trains/hr (Vn)	5.56
Lenpower (aero noise at nose):	85	Barrier height (Hb):	0 feet (no barrier)
Number of Passenger cars:	N/A	Train elevation:	0 feet (at grade)
Length of Passenger cars:	N/A	Receptor height:	5 feet
Lentrain:	680	Distance (D):	16000 feet
Ground Characteristics:	HARD	Shielding:	NONE
Ground Factor (G):	0		

<b>RESULTS AT 16,000 FEET FROM TRACK</b>	
With NO Sound Wall Mitigation	
Cumulative SEL:	76.92
Ldn:	56.27
With 5 Dba "Sound Wall" Mitigation:	
Cumulative SEL:	71.92
Ldn:	51.27

## Subsource Component:

Propulsion	len definition	lenpower	S/Sref:	no speed adjustment	SUBSOURCE SEL AT 50 FEET:	SUBSOURCE SEL AT DISTANCE ASSESSED:
	height	2	k log (S/Sref):	no speed adjustment	SELpropulsion : 86.243	Distance: 16000 feet
	SELref	86	lenpower	680	SEL/10 8.624	D/50 320
	lenref	643	len/lenref:	1.058	10^ASEL/10: 4.21E+08	10*log(D/50) 25.1
	Sref	none	log(len/lenref):	0.024		SELpropulsion : 61.191 at 16000 feet
	K	none	10 log (len/lenref):	0.243		SEL/10 6.119
						10^ASEL/10: 1.32E+06
Wheel Rail	len definition	lentrain	S/Sref:	2.444	SELwheelrail : 99.07	Distance: 16000 feet
	height	1	k log (S/Sref):	7.764		D/50 320
	SELref	91	lentrain	680	SEL/10 9.91	10*log(D/50) 25.051
	lenref	634	len/lenref:	1.073	10^ASEL/10: 8.07E+09	SELwheelrail : 74.016 at 16000 feet
	Sref	90	log(len/lenref):	0.030		SEL/10 7.402
	K	20	10 log (len/lenref):	0.304		10^ASEL/10: 2.5E+07
AERO Nose	len definition	lenpower(@nose)	S/Sref:	1.222	SELaero-nose : 94.890	Distance: 16000 feet
	height	10	k log (S/Sref):	5.229		D/50 320
	SELref	89	lenpower(@nose):	85	SEL/10 9.489	10*log(D/50) 25.051
	lenref	73	len/lenref:	1.164	10^ASEL/10: 3.08E+09	SELaero-nose : 69.838 at 16000 feet
	Sref	180	log(len/lenref):	0.066		SEL/10 6.984
	K	60	10 log (len/lenref):	0.661		10^ASEL/10: 9634898
AERO Wheel	len definition	lentrain	S/Sref:	1.222	SELaero-wheel : 94.533	Distance: 16000 feet
	height	5	k log (S/Sref):	5.229		D/50 320
	SELref	89	lentrain	680	SEL/10 9.453	10*log(D/50) 25.051
	lenref	634	len/lenref:	1.073	10^ASEL/10: 2.84E+09	SELaero-wheel : 69.482 at 16000 feet
	Sref	180	log(len/lenref):	0.030		SEL/10 6.948
	K	60	10 log (len/lenref):	0.304		10^ASEL/10: 8875048
AERO Pantograph	len	NA	S/Sref:	1.222	SELaero-pantograph : 91.229	Distance: 16000 feet
	height	15	k log (S/Sref):	5.229		D/50 320
	SELref	86	lentrain no length adjustment		SEL/10 9.123	10*log(D/50) 25.051
	lenref	NA	len/lenref: no length adjustment		10^ASEL/10: 1.33E+09	SELaero-pantograph : 66.178 at 16000 feet
	Sref	180	10 log (len/lenref): no length adjustment			SEL/10 6.618
	K	60				10^ASEL/10: 4.1E+06

Cumulative Noise Exposure (SEL at 50 ft)	101.97	Cumulative SEL:	76.918
Train passby at 50 feet		Train passby at 16000 feet	
Daytime Leq	78.588	Daytime Leq	53.537
Nighttime Leq	73.817	Nighttime Leq	48.766
Ldn	81.321	Ldn	56.269

TRAIN TRIPS (assumes HSR Service Plan in Appendix 2-C from 6AM-Midnight)			
Peak thru Acton/hr (ea direction):	11		
Total Peak thru Acton/hr:	22	2.73 minutes between trains	
Offpeak thru Acton/hr (ea direction):	7		
Total off Peak thru Acton/hr:	14	4.29 minutes between trains	
Daytime:		Nighttime :	
7AM - 10 pm (15 hours)		10AM - 7 pm (9 hours)	
Total # offpeak hrs:	10	Total # offpeak hrs:	2
Total # peak hrs:	5	Total # peak hrs:	1
Total # peak trains	110	Total # peak trains	22
Total # offpeak trains	140	Total # offpeak trains	28
TOTAL DAYTIME TRAINS:	250	TOTAL NIGHTTIME TRAINS:	50

WITH 5 dBA "SOUND WALL" REDUCTION	
Cumulative SEL:	71.918
Train passby at 16000 feet	
Daytime Leq	48.537
Nighttime Leq	43.766
Ldn	51.269

# EXHIBIT F: SUB- SOURCE SEL CALCULATIONS FOR HIGH SPEED TRAIN OPERATIONS

EQUATIONS AND SOURCE REFERENCE LEVELS OBTAINED FROM CHAPTER 5 OF THE FRA MANUAL  
 TRAINSET DATA FROM CHSRA "ENVIRONMENTAL METHODOLOGY GUIDELINES" VERSION 5 (JUNE, 2014)

Train Characteristics: VHS EMU operated at:

Train speed:	220 mph	Trains per day "Daytime"	250 7 AM - 10 PM
Number of EMU cars:	8	Trains per day "Nighttime"	50 10 PM - 7 AM
Assumed length of each EMU car:	85	Daytime trains/hr (Vd)	16.67
Lenpower (train noise):	680	Nighttime trains/hr (Vn):	5.56
Lenpower (aero noise at nose):	85	Barrier height (Hb):	0 feet (no barrier)
Number of Passenger cars:	N/A	Train elevation:	0 feet (at grade)
Length of Passenger cars:	N/A	Receptor height:	5 feet
Len <sub>train</sub> :	680	Distance (D):	2000 feet
Ground Characteristics:	HARD	Shielding:	NONE
Ground Factor (G):	0		

<b>RESULTS AT 2,000 FEET FROM TRACK</b>	
With NO Sound Wall Mitigation	
Cumulative SEL:	85.95
Ldn:	65.30
With 5 Dba "Sound Wall" Mitigation:	
Cumulative SEL:	80.95
Ldn:	60.30

## Subsource Component:

Propulsion	len definition	lenpower	S/Sref:	no speed adjustment	SUBSOURCE SEL AT 50 FEET:	SUBSOURCE SEL AT DISTANCE ASSESSED:	
	height	2	k log (S/Sref):	no speed adjustment	SEL <sub>propulsion</sub> :	86.243	Distance: 2000 feet
	SELref	86	lenpower	680	SEL/10	8.624	D/50 40
	lenref	643	len/lenref:	1.058	10^SEL/10:	4.21E+08	10*log(D/50) 16.0
	Sref	none	log (len/lenref):	0.024			SEL <sub>propulsion</sub> :
	K	none	10 log (len/lenref):	0.243			70.222 at 2000 feet
							SEL/10 7.022
							10^SEL/10: 1.05E+07
Wheel Rail	len definition	len <sub>train</sub>	S/Sref:	2.444	SEL <sub>wheelrail</sub> :	99.07	Distance: 2000 feet
	height	1	k log (S/Sref):	7.764	SEL/10	9.91	D/50 40
	SELref	91	len <sub>train</sub>	680	10^SEL/10:	8.07E+09	10*log(D/50) 16.021
	lenref	634	len/lenref:	1.073			SEL <sub>wheelrail</sub> :
	Sref	90	log (len/lenref):	0.030			83.047 at 2000 feet
	K	20	10 log (len/lenref):	0.304			SEL/10 8.305
							10^SEL/10: 2E+08
AERO Nose	len definition	lenpower(@nose)	S/Sref:	1.222	SEL <sub>aero-nose</sub> :	94.890	Distance: 2000 feet
	height	10	k log (S/Sref):	5.229	SEL/10	9.489	D/50 40
	SELref	89	lenpower(@nose):	85	10^SEL/10:	3.08E+09	10*log(D/50) 16.021
	lenref	73	len/lenref:	1.164			SEL <sub>aero-nose</sub> :
	Sref	180	log (len/lenref):	0.066			78.869 at 2000 feet
	K	60	10 log (len/lenref):	0.661			SEL/10 7.887
							10^SEL/10: 7.7E+07
AERO Wheel	len definition	len <sub>train</sub>	S/Sref:	1.222	SEL <sub>aero-wheel</sub> :	94.533	Distance: 2000 feet
	height	5	k log (S/Sref):	5.229	SEL/10	9.453	D/50 40
	SELref	89	len <sub>train</sub>	680	10^SEL/10:	2.84E+09	10*log(D/50) 16.021
	lenref	634	len/lenref:	1.073			SEL <sub>aero-wheel</sub> :
	Sref	180	log (len/lenref):	0.030			78.513 at 2000 feet
	K	60	10 log (len/lenref):	0.304			SEL/10 7.851
							10^SEL/10: 7.1E+07
AERO Pantograph	len	NA	S/Sref:	1.222	SEL <sub>aero-pantograph</sub> :	91.229	Distance: 2000 feet
	height	15	k log (S/Sref):	5.229	SEL/10	9.123	D/50 40
	SELref	86	len <sub>train</sub>	no length adjustment	10^SEL/10:	1.33E+09	10*log(D/50) 16.021
	lenref	NA	len/lenref:	no length adjustment			SEL <sub>aero-pantograph</sub> :
	Sref	180	10 log (len/lenref):	no length adjustment			75.208 at 2000 feet
	K	60					SEL/10 7.521
							10^SEL/10: 3.3E+07

Cumulative Noise Exposure (SEL at 50 ft) 101.97

Train passby at	50 feet	Cumulative SEL:	85.949
Daytime Leq	78.588	Train passby at	2000 feet
Nighttime Leq	73.817	Daytime Leq	62.568
Ldn	81.321	Nighttime Leq	57.797
		Ldn	65.300

TRAIN TRIPS (assumes HSR Service Plan in Appendix 2-C from 6AM-Midnight)			
Peak thru Acton/hr (ea direction):	11		
Total Peak thru Acton/hr:	22	2.73 minutes between trains	
Offpeak thru Acton/hr (ea direction):	7		
Total off Peak thru Acton/hr:	14	4.29 minutes between trains	
Daytime:		Nighttime :	
7AM - 10 pm (15 hours)		10AM - 7 pm (9 hours)	
Total # offpeak hrs:	10	Total # offpeak hrs:	2
Total # peak hrs:	5	Total # peak hrs:	1
Total # peak trains	110	Total # peak trains	22
Total # offpeak trains	140	Total # offpeak trains	28
TOTAL DAYTIME TRAINS:	250	TOTAL NIGHTTIME TRAINS:	50

## WITH 5 dBA "SOUND WALL" REDUCTION

Cumulative SEL:	80.949
Train passby at	2000 feet
Daytime Leq	57.568
Nighttime Leq	52.797
Ldn	60.300

# EXHIBIT G: SUB- SOURCE SEL CALCULATIONS FOR HIGH SPEED TRAIN OPERATIONS ON ELEVATED STRUCTURE WITH SLAB CONSTRUCTION

EQUATIONS AND SOURCE REFERENCE LEVELS OBTAINED FROM CHAPTER 5 OF THE FRA MANUAL  
 TRAINSET DATA FROM CHSRA "ENVIRONMENTAL METHODOLOGY GUIDELINES" VERSION 5 (JUNE, 2014)

Train Characteristics: VHS EMU operated at:

Train speed:	220 mph	Trains per day "Daytime"	250 7 AM - 10 PM
Number of EMU cars:	8	Trains per day "Nighttime"	50 10 PM - 7 AM
Assumed length of each EMU car:	85	Daytime trains/hr (Vd)	16.67
Lenpower (train noise):	680	Nighttime trains/hr (Vn):	5.56
Lenpower (aero noise at nose):	85	Barrier height (Hb):	0 feet (no barrier)
Number of Passenger cars	N/A	Train elevation:	0 feet (at grade)
Length of Passenger cars	N/A	Receptor height:	5 feet
Lentrain:	680	Distance (D):	1000 feet
Ground Characteristics:	HARD	Shielding:	NONE
Ground Factor (G):	0		

<b>RESULTS AT 1,000 FEET FROM TRACK</b>	
With Elevated Slab Construction adding 5 dBA	
Cumulative SEL:	93.96
Ldn:	73.31
With 5 Dba "Sound Wall" Mitigation:	
Cumulative SEL:	88.96
Ldn:	68.31

## Subsource Component:

Propulsion	len definition	lenpower	S/Sref:	no speed adjustment	SUBSOURCE SEL AT 50 FEET:	SUBSOURCE SEL AT DISTANCE ASSESSED:
Propulsion	height	2	k log (S/Sref):	no speed adjustment	SELpropulsion: 86.243	Distance: 1000 feet
	SElref	86	lenpower:	680	SEL/10: 8.624	D/50: 20
	lenref	643	len/lenref:	1.058	10^SEL/10: 4.21E+08	10*log(D/50): 13.0
	Sref	none	log(len/lenref):	0.024	SELwheelrail: 99.07	SELpropulsion: 73.233 at 1000 feet
	K	none	10 log (len/lenref):	0.243	SEL/10: 9.91	SEL/10: 7.323
Wheel Rail	len definition	lentrain	S/Sref:	2.444	10^SEL/10: 8.07E+09	10^SEL/10: 2.11E+07
	height	1	k log (S/Sref):	7.764	SEL/10: 9.489	Distance: 1000 feet
	SElref	91	lenpower:	680	10^SEL/10: 3.08E+09	D/50: 20
	lenref	634	len/lenref:	1.073	SEL/10: 9.123	10*log(D/50): 13.010
	Sref	90	log (len/lenref):	0.030	10^SEL/10: 1.33E+09	SELwheelrail: 86.058 at 1000 feet
AERO Nose	len definition	lenpower{@nose}	S/Sref:	1.222	SEL/10: 7.822	10^SEL/10: 4E+08
	height	10	k log (S/Sref):	5.229	SELaero-nose: 94.890	Distance: 1000 feet
	SElref	89	lenpower{@nose}: 85		SEL/10: 9.453	D/50: 20
	lenref	73	len/lenref:	1.164	10^SEL/10: 2.84E+09	10*log(D/50): 13.010
	Sref	180	log (len/lenref):	0.066	SELaero-wheel: 94.533	SELaero-nose: 81.880 at 1000 feet
AERO Wheel	len definition	lenpower{@nose}	S/Sref:	1.222	SEL/10: 7.822	10^SEL/10: 1.5E+08
	height	10	k log (S/Sref):	5.229	SELaero-wheel: 94.533	Distance: 1000 feet
	SElref	89	lenpower{@nose}: 85		SEL/10: 9.453	D/50: 20
	lenref	73	len/lenref:	1.164	10^SEL/10: 2.84E+09	10*log(D/50): 13.010
	Sref	180	log (len/lenref):	0.066	SELaero-pantograph: 91.229	SELaero-wheel: 81.523 at 1000 feet
AERO Pantograph	len definition	lenpower{@nose}	S/Sref:	1.222	SEL/10: 7.822	10^SEL/10: 1.4E+08
	height	15	k log (S/Sref):	5.229	SELaero-pantograph: 91.229	Distance: 1000 feet
	SElref	86	lenpower{@nose}: 85		SEL/10: 9.123	D/50: 20
	lenref	NA	len/lenref: no length adjustment		10^SEL/10: 1.33E+09	10*log(D/50): 13.010
	Sref	180	log (len/lenref): no length adjustment		SEL/10: 7.822	SELaero-pantograph: 78.219 at 1000 feet

Cumulative Noise Exposure (SEL at 50 ft)	101.97	Cumulative SEL:	88.960
Train passby at	50 feet	Train passby at	1000 feet
Daytime Leq	78.588	Daytime Leq	65.578
Nighttime Leq	73.817	Nighttime Leq	60.807
Ldn	81.321	Ldn	68.310

## WITH 5 dBA "SOUND WALL" REDUCTION

Cumulative SEL:	83.960
Train passby at	1000 feet
Daytime Leq	60.578
Nighttime Leq	55.807
Ldn	63.310

TRAIN TRIPS (assumes HSR Service Plan in Appendix 2-C from 6AM-Midnight)	
Peak thru Acton/hr (ea direction):	11
Total Peak thru Acton/hr:	22 2.73 minutes between trains
Offpeak thru Acton/hr (ea direction):	7
Total off Peak thru Acton/hr:	14 4.29 minutes between trains
Daytime:	Nighttime:
7AM - 10 pm (15 hours)	10AM - 7 pm (9 hours)
Total # offpeak hrs:	Total # offpeak hrs:
Total # peak hrs:	Total # peak hrs:
Total # peak trains:	Total # peak trains:
Total # offpeak trains:	Total # offpeak trains:
TOTAL DAYTIME TRAINS:	TOTAL NIGHTTIME TRAINS:



RECEIVED

Agenda Item: ID16-1094 (4-C)

Date: 9/15/16

2016 SEP 12 PM 4 35

# FRESNO CITY COUNCIL

CITY CLERK, FRESNO CA



## Supplemental Information Packet

Agenda Related Item(s) – ID16-1094

Contents of Supplement: Amended Resolution

### Agenda Item Title

RESOLUTION - To Support High Speed Rail

#### **Supplemental Information:**

Any agenda related public documents received and distributed to a majority of the City Council after the Agenda Packet is printed are included in Supplemental Packets. Supplemental Packets are produced as needed. The Supplemental Packet is available for public inspection in the City Clerk's Office, 2600 Fresno Street, during normal business hours (main location pursuant to the Brown Act, G.C. 54957.5(2)). In addition, Supplemental Packets are available for public review at the City Council meeting in the City Council Chambers, 2600 Fresno Street. Supplemental Packets are also available on-line on the City Clerk's website.

#### **Americans with Disabilities Act (ADA):**

The meeting room is accessible to the physically disabled, and the services of a translator can be made available. Requests for additional accommodations for the disabled, sign language interpreters, assistive listening devices, or translators should be made one week prior to the meeting. Please call City Clerk's Office at 621-7650. Please keep the doorways, aisles and wheelchair seating areas open and accessible. If you need assistance with seating because of a disability, please see Security.

construction are minimized and mitigated appropriately, allowing several businesses the opportunity to expand; and

WHEREAS, the City of Fresno has built a successful partnership with the Authority to plan and construct high-speed rail in Fresno.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Fresno as follows:

1. The Fresno City Council fully supports the high-speed rail project including the location of facilities, such as the heavy and light maintenance facilities, train manufacturing, and passenger station, in or near the City of Fresno, and directs staff to transmit this resolution to the Office of the Governor and the California High-Speed Rail Authority.

\* \* \* \* \*

**CITIZENS FOR CALIFORNIA HIGH-SPEED RAIL ACCOUNTABILITY**

Post Office Box 881  
Hanford, California 93232  
559-469-6685 (Cell/Text)  
[frank.oliveira.gm@gmail.com](mailto:frank.oliveira.gm@gmail.com) (Most Direct)  
[cchsraorg@gmail.com](mailto:cchsraorg@gmail.com) (General Group Contact)  
<http://www.cchsra.org/> (Website)  
<https://www.facebook.com/#!/groups/CAAHSR/> (Face Book)  
[www.twitter.com/CCHSRA](http://www.twitter.com/CCHSRA) (Twitter)



Date: October 11, 2016

To: **Governor Edmund Brown**

Via: **California High-Speed Rail Authority Board**  
770 L Street, Suite 620  
Sacramento, CA 95814  
916-324-1541

Subject: **OCTOBER-2016 CALIFORNIA HIGH-SPEED RAIL AUTHORITY BOARD MEETING  
PUBLIC COMMENTS**

Since Governor Brown vetoed AB2847 which would have imposed reasonable reporting requirements upon the High-Speed Rail Authority and expressed his belief that you can police yourselves, please consider the following 17-Facts and Questions.

**Fact 1-** Your Business Plan projects the HSR Project will be financed with yet to be captured quarterly Cap & Trade proceeds for decades to come. Was that responsible planning?

**Fact 2-** The Governor promoted your plan. Was that responsible governance?

**Fact 3-** Your plan to use future Cap & Trade funding was allowed by the Senate and Assembly leadership. Was that responsible oversight?

**Fact 4-** The May Cap & Trade auction shorted you \$125M +/- per the California Air Resources Board. What is your contingency for this situation?

**Fact 5-** The May Cap & Trade auction shortage was not discussed at your June Board Meeting. Was that responsible project management?

**Fact 6-** Your July Board Meeting was canceled. Suspicious timing in keeping with your lost \$125M +/-.

**Fact 7-** Your August Finance/Audit Committee failed to discuss the missing \$125M +/- cash flow. Was that responsible project management?

**Fact 8-** Your August Finance/Audit Committee offered no funding contingencies to address the missing \$125M +/- cash flow. Was that responsible project management?

**Fact 9-** The missing \$125M +/- cash flow matter eerily was not discussed at your August Board Meeting. Was that responsible project management?

**OCTOBER-2016 CALIFORNIA HIGH-SPEED RAIL AUTHORITY BOARD MEETING PUBLIC COMMENTS**

October 11, 2016

Page-2 of 2

**Fact 10-** Your Board did not respond to Public questions regarding the missing \$125M +/- cash flow at your August Board Meeting. Was that your demonstration of your accountability to the Public?

**Fact 11-** Your August Cap & Trade Auction shorted you another \$125M +/- of cash flow and you canceled your September Board Meeting. Was that responsible project management?

**Fact 12-** Your September Finance/Audit Committee was also canceled. Was that responsible project management?

**Fact 13-** The Cap & Trade Auction has shorted you 90% +/- of its funding since last May. That is a quarter of a billion dollars so far. Is continued construction using this unreliable funding source responsible?

**Fact 14-** Based on Cap & Trade Auction performance, you will be shorted more than \$1.5 Billion of your cash flow by May-2019. Is continued construction without a reliable funding source responsible?

**Fact 15-** Based on AB32, the Cap & Trade Auctions will end in 2020. Without stable funding sources is construction responsible and even in sync with your Business Plan?

**Fact 16-** Based on Prop1A, private sector funds will be used to build the project but none exist after 8-years. Without private funding and without Cap & Trade funds is continued construction responsible?

**Fact 17-** A discussion of your missing \$250M or your contingencies for future Cap & Trade shortages is not reflected on today's agenda or your Finance/Audit Committee's agenda. Did you just solve the problem internally?

Based on these 17-Facts, you cannot build a functional project. Is continued construction responsible?

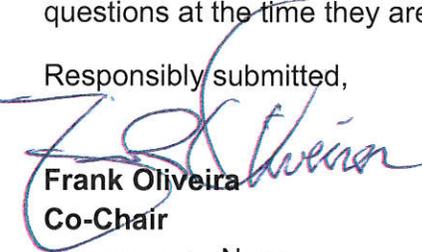
Based on these 17-Facts, you should be aware by now that you are hemorrhaging Cap & Trade funding. Are you going to publically explain someday where you are going to secure your lost cash flow and how you will secure funding in the future?

Based on these 17-Facts should the Senate and Assembly leadership shutdown your construction until tangible funding is identified and secured or will they too ignore the obvious?

The next Cap & Trade Auction will be in November.

We will take your explanations after Public Comments, we know it is not your practice to answer public questions at the time they are asked.

Responsibly submitted,



**Frank Oliveira**

**Co-Chair**

Attachments: None

Ec: File