

Susan MacAdams
Transit Consultant
269 S. Beverly Drive, Unit 1187
Beverly Hills, CA 90212

August 4, 2014

Mark A. McLoughlin
Director of Environmental Services
California High-Speed Rail Authority
Southern California Regional Office
700 N Alameda, Room 3-532
Los Angeles, CA 90012

ATTN: Palmdale to Burbank Project Section

Dear Mr. McLoughlin;

The recent proposal from the California High Speed Rail Authority regarding the tunneling from Burbank to Palmdale overlooks a major deterrent from tunneling under the San Fernando corridor: the flood control channels. These channels are missing from the maps to be used for the public scoping meetings.

The San Fernando corridor has suffered from great flooding in years past.

<http://www.kcet.org/socal/departures/columns/la-river/los-angeles-flood-of-1938-channelization.html>

As a result, flood control channels were built. In the center of the schematic map, below, the Burbank Western Channel parallels the 5 Freeway. The proposed HSR closely parallels these two systems to the south.

http://www.watershedhealth.org/Files/map/51_LACDPW%20and%20ACOE%20Flood%20Control%20Channels.pdf

In the photograph, below, the bottom of the Burbank Western channel is about 25 feet below the road surface at Magnolia.

http://en.wikipedia.org/wiki/Burbank_Western_Channel

On the map, the proposed HSR route turns northwards and tunnels under the 5 Freeway and the Burbank Western Channel. The track alignment criteria prohibits sharp

turns in the alignment which means the tunnel will go under the channel and the freeway in a wide curve at a diagonal angle. A very long curved diagonal angle. There will be many structural underpinning problems along the 5 Freeway, the major interstate trucking commerce connection between southern California and all points north.

In order to get a preliminary idea of the magnitude of the alignment problems, for estimating purposes, the outside diameter of the HSR tunnel boring machine is about 30 feet (or more) with the tracks about 5 feet above the bottom of the tunnel.

The top of the tunnel boring machine must be at least 10 feet below the bottom of the drainage channel, unless, at the intersection of the Burbank Channel and HSR alignment, the construction is cut and cover technique. That could save about 10 feet of additional depth required for tunneling under the channel. But this construction method is more expensive than tunneling and there is grave doubt the Army Corps of Engineers would ever allow such a proposal. What if there was another flood during the three years of construction and there was a long gaping hole at the bottom of the channel?

Horizontal Analysis of HSR tunneling under the Burbank Western Channel:

25 feet (depth of channel) + 10 feet (minimum distance between bottom of channel and top of tunnel boring machine) + 30 feet (diameter of tunnel boring machine) - 5 feet (bottom of tunnel to top of rail) = 60 feet below current roadway surfaces.

The HSR track must be at least 60 feet below the surface before it can cross under the Burbank Western Channel.

Vertical analysis of HSR tunneling under the Burbank Western Channel:

HSR design criteria limits the profile decent to 3%. For every 100 linear feet, the tracks may descend 3 feet. Therefore, to descend 60 feet, HSR needs 2000 linear feet of track, a distance of more than one third mile.

This 2000 foot portal/tunnel section runs parallel to the 5 Freeway before achieving a depth of sixty feet before it can turn northwards.

Where will this one third mile piece of infrastructure that parallels the 5 Freeway be located? Please discuss.

Please discuss and include in the estimate for underpinning the 5 Freeway. This is a very complex and expensive proposition and should be included as it could double or triple the amount of expense of tunneling under the freeway.

In addition, tunneling underneath the Los Angeles River basin network has always been a hazard. Like all other ancient river basins throughout Los Angeles County, there is a mixed face of debris: large boulders, soft sand and occasional deposits of tar and oil. Not good for tunnel boring machines. Not recommended.

Tunneling under the Los Angeles River was proposed in order to build the Orange Line Extension into East LA. When the Red Line Union Station platform was built, the stub outs for the Orange Line tunnels into East LA were constructed and can still be seen from the east end of the station platform. Extending the tunnels did not occur for a number of reasons with the mixed face geological conditions and oil deposits cited as one of the major factors. As your offices are nearby this site, it is recommended that you visit the Red Line Platform at Union Station and observe the tunnel stub-outs.

In recent years, HSR tunnels were proposed under the LA River in the vicinity of Union Station and dropped for the same geological reasons. There should be a record of these alignments in your offices.

Thank you for your attention to this matter.

Susan MacAdams
susan.macadams@gmail.com