



SR-710 Tunnel Technical Study
San Marino Community Meeting Summary
June 2, 2009
San Marino Center
6:30 – 8:30 pm
FINAL Draft

INTRODUCTION

On June 2, 2009, Caltrans held a community meeting to inform community stakeholders about the SR-710 Tunnel Technical Study. The meeting took place at the San Marino Center in the City of San Marino. Over 25 community members attended.

SR-710 Study Team members who attended included the following project management staff from Caltrans: Doug Failing, Caltrans District 7 Director; Abdi Saghafi, SR-710 Tunnel Technical Study Project Manager; and Pratheep Piratheepan, Geotechnical Lead. Other Study Team members who participated in the meeting were: Ayman Salama of CH2MHILL; Steve Dubnewych of Jacob Engineering; Bruce Shell of Earth Mechanics; Rebecca Barrantes and Glenda Silva of The Sierra Group (TSG); Rena Salcedo, Debbie Rusas and Claudia Gonzalez of GCAP Services; and Katherine Padilla, John Limon and Thelma Herrera, of Katherine Padilla & Associates.

MEETING FORMAT

The meeting began at 6:30 pm with an informal Open House. There were informational displays set up in the lobby that depicted a range of topics, including: The Study Background and Public Involvement Process; The Technical Advisory Committee and the Steering Committee, both of which provide Study oversight; research methodologies of The Exploration Program; examples of subsurface soil and rock samples that are being collected as part of the Study; and modern tunnel building techniques. The Open House format provided community members with the opportunity to ask questions and engage in one-to-one conversations with knowledgeable Study Team Members.

The audience was welcomed by City of San Marino Mayor, Eugene Sun. Mayor Sun thanked Caltrans for providing the community meeting and introduced Caltrans District 7 Director, Mr. Doug Failing.

Mr. Failing introduced Caltrans staff, as well as the Technical and Outreach Team members present. He then welcomed former Mayor of San Marino Mr. Jean Dryden; Adam Carter, Field Representative for Assemblymember Anthony Portantino; and Monica Aleman and John Tang representing Assemblymember Mike Eng.

Mr. Failing informed the attendees of Caltrans' commitment to Congressman Adam Schiff to study the feasibility of a tunnel in the San Gabriel Valley in a route neutral manner. He added that during the meeting, the technical team would discuss the testing conducted during the study. He also made it clear that they had not started an environmental document and that although there were



questions that could not be answered at the time, such question would be captured so they could be addressed if they were to proceed with an environmental document.

The Presentation portion of the meeting was convened at approximately 7:10 pm.

The meeting was turned over to Rebecca Barrantes, who provided a brief overview of the presentation. She reviewed the ground rules for conduct during the meeting, especially during the Question & Answer component. She informed the audience that the meeting would be documented and recorded, and that a meeting summary would be posted on the study website.

Steve Dubnewych and Ayman Salama, part of the Study Team's geotechnical experts, then provided a PowerPoint presentation that addressed the benefits of a tunnel; important safety features and emergency systems utilized in tunnels; modern tunnel systems constructed in Madrid, Shanghai, and Paris; The Exploration Program that is currently underway to determine subsurface soil, rock and other geological conditions within the Study Area; and geological factors and their influence on tunnels. They also provided a summary of geotechnical testing performed in each of the 5 zones within the study area and identified Super-fund sites in Zones 4 and 5.

Following the geotechnical presentation, the outreach process, including exploration program and community meeting notification, was described by Rebecca Barrantes. The public involvement process for the study was reviewed, indicating frequency and timeframe for Steering and Technical Advisory Committee meetings, Community meetings, newsletters, presentations, and reports. Upcoming Community and Committee meeting dates were provided. Finally, the Study information office location and contact number was provided.

COMMUNITY DIALOGUE

After the presentation, community members participated in a Question & Answer session. Mr. Failing and members of the Study Team listened, sometimes asking questions for clarification, and responded. The session was facilitated by Rebecca Barrantes. Topics discussed included: tunnel ventilation systems; the cost of the Study, screening parameters; potential portal locations and emergency preparedness considerations.

The questions and comments offered by community members are categorized and appear below. Responses from Caltrans Director Failing and Study Team Members are indicated in italics.

Study Costs

- By the time the report is ready, how much will the Study have cost? Who is paying for that?

We are willing to pay \$7.1 million and not a penny more. The funds are being provided out of Federal, state, and local funds. Los Angeles County Metro has money on the table, the State of California has money on the table, and the Federal government have money on the table.



Research and Testing Methodology

- When will screening be conducted? According to which screening criteria parameters (provided during the committee meetings) will the screening of the routes be done? Which of the 10 screening parameters do you propose?

The screening will begin as soon as we get the lab testing and we will be working on it in parallel to this phase. Screening parameters selected were limited to only 3 based on recommendation of the Steering Committee and Technical Advisory Committee. We are only using the screening parameters authorized by the committees.

- On some of the documents, you use the word practical. You also use the word feasibility. Will the screening include technical feasibility and also include practical (cost benefit)?

We are tasked with the geotechnical feasibility to do a tunnel. We are not conducting a cost benefit analysis on any particular corridor or a specific route because we are being route neutral. The appropriate time where we could look at specific routes or cost benefit projections and analysis would be during the environmental document phase.

- Can you tell me what geological information would preclude you from selecting one zone over the other? What would cause you to determine that one zone is not feasible?

Variation of geological properties is one factor that will impact feasibility and the rate of progress on drilling. You can tunnel through most geological conditions; however there are some factors like faulting, where there is variation in geological material (i.e. variation from rock to alluvial or soft soil to hard soil) that must be considered when selecting borings.

There is no single factor or issue that would preclude a tunnel from being built. The problem is when you compound various negative issues. Almost all of the routes may go through a fault zone and that has been addressed before and regularly. But if it were to go through a fault zone and if the materials were squeezing ground, and there was methane gas and other issues, a zone would be removed because there were too many issues. If there are numerous issues, that would preclude however none of those factors alone would be enough.

Regarding faults, we live in southern California and have constructed a lot of infrastructure over faults. The biggest issue is the type of ground displacement that we would have to deal with. In terms of gas, right now we have better technology than we did when constructing red line. For example, we have slurry TBMs, where the gasses are in a closed circuit and you don't even get exposed to the gas underground anymore.

Our suspicion is that the Study is not going to say you can't tunnel in any of these, but instead if you are going to tunnel in these zones, you may want to consider "x." For example, there may be fault issues or potential hazardous waste issues. We would suspect that the study would indicate that



certain areas would be more costly, or would be best to avoid for specific reasons. The traffic study might tell us to go in a certain route that is highly used. These things would be part of a potential cost benefit analysis if we were to move forward.

Route Neutral Study

- Why are we considering a connection to the east instead of north?

At this time, we are not considering making a connection at any specific place. The commitment we have made is to look at whether tunneling is feasible in a route neutral manner. We are really looking at feasibility in the San Gabriel Valley. We picked the zones based on considering their potential to be route neutral. In the environmental environment phase, we will be dealing with selecting a possible route for building a tunnel. At that time, we will be looking at traffic data and other things. The zones to the east have relatively few borings and geophysical lines because they are relatively uniform. We included the zones to the east because we did not want to be criticized for not maintaining tunnel neutrality.

Tunnel

- In 2005, Southern California Earthquake Center (SCEC) came up with a model that showed that an earthquake on the San Andreas Fault would excite the entire San Gabriel Valley much more than previously thought. The “shakeout” scenario was a 7.8 and the Caltrans model showed an 8.3. Are we taking into consideration this type of information in designing tunnels?

Yes, we have worked very closely with Caltech on all of the scenarios that they generated. We actively participated with them in the shake out analysis, studies, planning and results of that analysis. We are involved with the Southern California Integrated Earthquake Network. We have actively supported a number of research studies within the Los Angeles area and have created special zones where they can get additional data about what happens during earthquakes and how the ground moves in San Gabriel Valley. We will investigate all scenarios available. I think there was a lot of surprise from the San Gabriel Valley regarding the results of the “shakeout” scenario. This scenario assumes that the earthquake will happen towards San Bernardino and that because of the way the valleys are shaped, it will bring the waves into the San Fernando Valley through the San Gabriel Valley, in Pomona valleys, in Los Angeles and spread out to the basin. All of these scenarios will be analyzed, not only when we look at tunnels, but also when we look at bridges.

- The map shows that in Zone 3, the length of the tunnel would be 4.5 to 5.4 miles. Is that length from portal to portal, or does that include approach to tunnel? Also, in the MTA study, it says that the length of the tunnel is going to be 6.2 miles. It sounds like a lot of homes will be impacted.

The distance would include the approach to the tunnel entrance. Again, we have not engineered that perfectly. We are simply trying to provide rough lengths in each zone for comparison. 6.2 miles is the distance from route I-10 to the route SR-710. 4.5 miles is the actual distance of the gap from the existing end near Valley Boulevard to California Boulevard. For our purposes, we are assuming it is



some place in Zone 3 and we are including some potential length in there. Again, if we are assuming there is an Environmental Document phase that would be the point where we deal with specific lengths. The entire concept of a tunnel is to minimize impact to homes.

- Are you anticipating any mid-tunnel interchanges?

At this point in time, we are only looking at tunnel geotechnical feasibility. There was a preliminary analysis done earlier as to whether it was beneficial or not to have a mid tunnel access. The traffic analysis did not suggest that there would be any benefit to putting in an interchange. The preliminary analysis looked at Zone 3 and determined that there was no benefit of putting in an interchange versus the cost of doing so. No similar analysis has been done in any of the other zones.

- What is the effect of pollution that would be produced from a tunnel on the people and environment?

We have not completed specific studies related to pollution but there is technology available to address this. Tunnels have been built in other cities and countries that use scrubbers on top of the ventilation systems, which remove a majority of the contaminants to safe levels.

This issue will not be treated lightly. A highly technical analysis will need to be done when looking at what the amount of vehicles will be, the improvement that will be made to vehicles as far as emissions, ability to collect emissions, scrubber technologies available, and dispersion of emissions (wind patterns). This information will become very site specific and will be the most important question to address if we get to the environmental document phase.

- It is my understanding that the tunnel scrubbers clean particulate matter and do not filter any of the gases. More specifically, they clean PM 10 but not the PM 2.5. Please comment on that.

The ventilation shafts and systems that are used in Sweden are of particular interest because they and are addressing the issue of particulate matter due to exceedingly long tunnels there. They have been experimenting with new tunnel scrubbing technology in Japan in order to address nitrous oxide and other types of greenhouse gases. Yes, there are technologies that exist today that can deal with some of the major pollutants out there. We hope to take advantage of these. We anticipate that there will be additional tunnel technology advancements in the future. Whatever system we build, we want to be aware of the possibility of adding on to it. In addition to scrubbing, one of the major things that has been done in the past, is the design for dispersion and stack height. Scrubbing takes care of a certain portion, but design of the stack height ventilation so that the tunnel appropriately releases these gases has traditionally been one of the most significant methods of reducing pollution at ground level.

- How theoretically possible would it be to build the southern portal between the 60 and I-10 freeways?



Between the 60 and 10 would be nearly impossible. In the discussions we have had with Mayor Antonio Villaraigosa and Councilmember Jose Huizar, they have expressed their desire to see the portal begin as far south as possible. Moving the portal south of the I-10 freeway would be relatively impossible due to the existing volume of traffic on the freeway. Certainly, we have had a number of discussions with them about this. Again, we have not done an environmental study and have only completed preliminary analysis that suggests that the portal would begin at Valley Blvd.

Study Conclusion

- I have heard that the only way the tunnel will be built is as a toll tunnel. Can you comment on that?

We are conducting a route neutral tunnel geotechnical feasibility study. We are not discussing building at this time and the State has not developed an official position that it would have to be a tunnel. There is legislation that was introduced by Senator Gil Cedillo that has passed out of the Senate and is headed to the Assembly which would limit closing this corridor specifically to a tunnel. The issue of tolls is not addressed in legislation or official decisions. Certainly we are all aware that the State of California is financially challenged. It has been no secret that we have been approached at the State and local level by investors who are interested in this; however there are other possible sources of funding and no decisions have been made on how that may be done.

Other

- Has Caltrans hired a successor to Dr. Belgian, the chief seismologist who retired a couple years ago?

Yes, there is a new seismologist on staff and of course there is existing staff.

- The rate of lung cancer and emphysema will be much more than found in the normal population. Have you considered this problem for those living near the tunnel?

This is absolutely true. In fact, here in California and in District 7 we have been working very closely with the Environmental Protection Agency (EPA) and the USC School of Medicine to develop a new series of methods to be able to assess the impacts of existing facilities. For example, we are looking at traffic around or on your city streets around/from the freeways and the impacts that this has on a broader area. We have developed ability to complete these kinds of studies in advance because we do not want to wait until there is an impact to people. We are looking forward to what the results may be.

- I have a statement. I want to talk about diversion range. If you had a tunnel with a toll, many trucks will not want to use the tunnel due to the toll. If you charge \$4 then 25% of trucks will be on the surface streets (Fremont Avenue and Huntington Drive.) If you charge \$5 then 30% would be on the surface streets and if you charged \$6 then 35% would be on the surface streets, and so on. I see an increase in truck traffic on Fremont Avenue when you build a tunnel. I have this data from the Metro feasibility study. I have the data and would like to provide to Eugene Sun for distribution to his city council members.



Mr. Failing noted that the participant providing the information, cited data from a study that she had previously deemed as inadequate. He also added the following:

I am not familiar with the data from of the study. This is certainly the type of question that would be addressed in the environmental document phase.

- Can existing interchanges on the I-10 Freeway be re-configured in order to support a southern portal?

This is a great question. I really look forward to your input when we do scoping at the environmental document stage, should we get there. It is a good question for scoping.

- One advantage of having the freeway portal go through a reconfigured I-10 freeway interchange is that there would be less pollution because we would not have the automobiles idling so much and I think that would help. That would be a positive thing. Of course, there would be pollution from trucks and that is something we would have to consider.

That has always been the traditional analysis. You could attract additional traffic into the tunnel that is not currently going up the streets. That is why we do environmental documents. Does the aggregate traffic going faster spew less pollution than the individual vehicles on the street? Those are important questions. That is why we do environmental documents and air quality analysis, and depending on what those answers are, we look at doing mitigation like scrubbers and air stacks and other technologies. We also look at the region overall. We look at the existing corridor and its impacts. We also look at benefits through the region. There is absolutely no question that it would be beneficial throughout the entire region. Those are the kind of things we would look at, assuming we get to an environmental document. We will take these questions very seriously.

- One of the issues that did not address specific to road tunnels is fire. That requires a lot of water and a lot of ventilation. In the Metro Red Line, Phase 1, when we kicked the fire ventilators on, we had to be out of the tunnel because of the wind. Those were small tunnels. This is a larger tunnel and the smoke stack ventilation must be horrendous. Can you comment on the lack of discussion regarding fire and road tunnels, especially given the Swiss examples?

We have not investigated this aspect of design because we are only focusing on the geotechnical at this stage. In terms of ventilating tunnels, this is only one example of ventilating the tunnel (jet stacks). We do not have to have a stack; we can have vent ducts, which can be compartmentalized so that if there is a fire it will be contained in a specific area and you wouldn't see the smoke. There are many ways of handling these situations that we have not yet studied.

The analysis that people conduct and the whole theory of addressing fires have changed dramatically since the Mount Blanc fire in the mountains. There are a series of groups of people that have been experts in how you address this solely in tunnels. Assuming a tunnel is feasible, that would



be an important question that would be addressed. We would assume at this time that we would take advantage of whatever the state of the art is.

NEXT STEPS

The meeting concluded at approximately 8:15 pm. At the meeting conclusion, Rebecca Barrantes, Outreach Project Manager, thanked the community of San Marino for their participation and assured them that they would be kept informed throughout the Study.