



Steering Committee Meeting Minutes
SR-710 Tunnel Technical Study
November 18, 2009 6:00 p.m.
San Marino Crowell Library



STATE ROUTE 710 TECHNICAL STUDY
FINAL

I. CALL TO ORDER –

The meeting was called to order at 6:10 pm.

INTRODUCTIONS AND MEETING OVERVIEW

The following people attended the meeting:

<p>SC Members Present:</p> <p>Naresh Amaty, Manager of Transportation Planning, Southern California Association of Governments (SCAG)</p> <p>Lynda Bybee, Deputy Executive Officer of Regional Communications, Los Angeles County Metropolitan Transportation Authority (Metro)</p> <p>Michael Cano, Transportation Deputy, Office of Los Angeles County Supervisor Michael D. Antonovich, 5th District</p> <p>Nicholas Conway, SGVCOG (Alternate for Robert Urteaga)</p> <p>Stephen A. Del Guercio, Councilmember, City of La Cañada Flintridge</p> <p>Lee Dolley, Representative, City of Alhambra</p> <p>Philip C. Putnam, Councilmember, City of South Pasadena</p> <p>Eugene Sun, Mayor, City of San Marino</p> <p>Edel Vizcarra, Planning and Transportation Deputy, Office City of Los Angeles Councilmember Jose Huizar, 14th District</p> <p>David Worrell, Representative, City of Pasadena</p>	<p>Absent/No Alternate Present:</p> <p>Ms. Nicole Englund, Transportation Deputy, Office of Los Angeles County Supervisor Gloria Molina, 1st District</p> <p>Stephen Zurn, Director of Public Works, City of Glendale</p> <p>Elected Officials:</p> <p>Julianne Hines, District Director, Office of Assemblymember Anthony Portantino, 44th District</p> <p>Susan Wong, Field Deputy, Office of Councilmember Ed P. Reyes, 1st Council District</p> <p>Steven Placido, Vice Mayor, City of Alhambra</p> <p>Ann Wilson, Senior Management Analyst, City of La Cañada Flintridge (TAC Member)</p>
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<p>Caltrans District 7 Staff: Abdi Saghafi, Project Manager Deborah Harris, Chief, Media Relations & Public Affairs Maria Raptis, Public Information Officer Pratheep Piratheepan, Geotechnical Lead Design Unit, Derek Higa, Senior Transportation Engineer Ainsley Chiang, Transportation Engineer John Ehsan, Caltrans Senior Planner</p> <p>Metro Staff: Doug Failing, Executive Director of Highway Programs Lynda Bybee, Deputy Executive Officer of Regional Communications</p>	<p>Technical Consultants: Yoga Chandran, Project Manager, CH2M HILL Ramon Chavez, Senior Geologist, CH2M HILL Steve Dubnewych, TBM Expert, Jacobs Engineering Steve Klein, Tunnel Structure Lead, Jacobs Engineering Bruce Schell, Senior Geologist, Earth Mechanics Ravee Raveendra, Senior Project Engineer</p> <p>Community Facilitation Consultants: Rebecca Barrantes, The Sierra Group Glenda Silva, The Sierra Group Rena Salcedo, GCAP Services Debbie Rusas, GCAP Services Katherine Padilla, KP&A John Limon, KP&A</p>
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The meeting started at approximately 6:10 p.m.

Welcome: Doug Failing, Metro Executive Director of Highway Programs

Doug Failing, Metro Executive Director of Highway Programs, facilitated the introductions of present SC members, Caltrans staff, Metro staff, consultants, representatives of elected officials and additional guests.

Meeting Overview: Doug Failing, Metro Executive Director of Highway Programs

Mr. Failing mentioned that the Technical Advisory Committee (TAC) met on November 5, 2009 and proceeded to highlight the meeting objectives, which were to review the findings of the exploration program, summarize contents of the SR-710 Tunnel Draft Geotechnical Summary Report (Draft Report), and discuss planned outreach activities. He noted that at the last joint Committee meeting additional technical studies proposed in Task Order No. 5 were presented, adding that committee members provided valuable input and very clearly requested a postponement of these activities until a better point in time. Mr. Failing then thanked the Steering Committee (SC) members for their input on Task Order No. 5, adding that the overwhelming response received by the SC was utilized by Caltrans and Metro to make the decision. He informed the SC that they should have received a letter from Randy Iwasaki, Caltrans Director, notifying them that Task Order No. 5 would not proceed. Mr. Failing then acknowledged the geotechnical team and those who contributed to the Draft Report for their tremendous effort.

Mr. Failing then turned the meeting over to Yoga Chandran.

Draft Geotechnical Summary Report: Yoga Chandran/Geotechnical Team

Mr. Chandran acknowledged the Caltrans geotechnical staff for assisting with field exploration activities and data analysis, Prof. Geoff Martin of Metro, for assisting with the review process, and CH2M HILL technical team for their tremendous efforts considering the time constraints.

The guiding principles of the study were reviewed, which are to: respect route neutrality; clearly communicate the purpose and scope of the study; consider all practical routes; and develop reliable geotechnical information for tunnel options. He added that all of these principles had been upheld throughout the study process.

The following objectives of the study were reviewed:

- Investigate a total of 5 zones
- Collect geotechnical, geological, and hydro-geological information for each zone
- Use the information obtained to perform geotechnical related screening

The main tasks accomplished under the scope of the study were discussed next, including review of existing information; completion of field exploration, totaling 25 deep core borings, 17



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seismic reflection lines and 78 surface wave measurements; evaluation of the data; and preparation of a Draft Geotechnical Summary Report.

Finally, Mr. Chandran began to discuss the Draft Report. He reviewed the organization of the report, which consists of five volumes, with the main report contained in Volume 1, which is the main text, and the remaining volumes containing appendices with detailed data. He reviewed a summary of observations for each zone, highlighting key information collected as listed below.

Below is a summary of observations pertaining to major sections in Volume 1 of the Draft Report:

- Section 2 – Data Collection & Review: Multiple sources of existing data were utilized, and they provided the basis for determining the activities required in the exploration program for the study. Examples of existing data utilized included local basin water wells, sewer tunnels, faults, seismic, and gas information.
- Section 3 – Exploration Summary: A table summarizing all exploration activities for each zone, such as the number of borings completed during the study and the number of existing borings used was reviewed. This table was provided on page 11 in the TAC meeting PowerPoint presentation.
- Section 4 – Summary of Data & Faulting: A map using dots to show the information collected during the study was shown, with an emphasis placed on the faulting information. The Raymond Fault, which crossed Zones 2, 3, and 4, was indicated as the most important. Mr. Chandran noted that the extension of the Alhambra Fault is shown for the first time in this map and was not previously thought to extend as far as it did, adding that this was CH2M Hill's contribution. Both are considered active faults.
- Section 5 – Groundwater Conditions: There are a total of five groundwater basins, including San Gabriel Basin, Raymond Basin, Eagle Rock Basin, San Fernando Basin, and the Central Basin. The review of the groundwater conditions indicates that the tunnel does not affect the surface water features.
- Section 6 – Hazardous Waste Studies: A summary showing the findings from a hazardous waste study was presented. These findings were mainly based on historical documents, information and databases. Contaminated groundwater and soil was identified in Zones 1, 4, and 5. There are also a few isolated contaminated areas that are not considered to be an issue in the zones. This map is different from the one shown before, because the Environmental Protection Agency (EPA) just updated their map and the boundaries have been changed. For example, they removed the limits from Zone 4. The technical team was advised by the EPA and others not to change this map or use any variations of this map due to liability issues. Zone 1 has a containment system in place. Zone 4 is still being evaluated limits of contamination and a Record of Decision is expected within the next 2 years. Once the Record of Decision is accepted containment plans can be developed. In Zone 5, a Record of Decision has been completed and containment expected in the next few years.

Mr. Chandran noted that Sections 7 – 11 pertain to subsurface soil conditions of the five zones. Maps showing the plain view and cross section view for each zone were presented.



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Note: sedimentary rock is soft rock, and igneous and metamorphic rock is hard rock.

- Section 7 – Consists of Zone 1 findings. Zone 1 consists of fairly uniform material, which primarily consists of sedimentary rock of the Puente formation, which is weak sandstone. There is also some alluvium in the northwest corner, which is part of the Superfund Site. The groundwater table for the alluvium is within 20 – 50 feet below ground surface. There are no known active faults in this zone. There is a potential for gassy conditions, which must be taken into consideration for design and construction activities. There have already been two tunnels constructed in Zone 1 and they were successfully completed.
- Section 8 - Consists of Zone 2 findings. Zone 2 mostly consists of Topanga and Puente formations. Both of these materials are fairly uniform and fairly similar from a tunneling perspective. There are also some Fernando formations in a small portion of the zone. As with Zone 1, there is some alluvium, which is fairly shallow. Some of the alluvium is in the portal area and most of it is in the mid-section of Zone 2. This zone is slightly more variable than Zone 1. There is one active fault in the northwest corner of the zone. Depending on the tunnel alignment, it may affect the portal area but not the tunnel area. Groundwater is about 20 feet below ground surface.
- Section 9 - Consists of findings for Zone 3. There is more variation in the material types. The southern half is mostly Puente and Topanga formations, similar to what you see in Zones 1 and 2. There is also some hard rock encountered, and alluvium in the northern portion of the zone. Zone 3 includes the active Raymond Fault as well as two potentially active faults, the Eagle Rock and San Rafael Faults. On the Raymond Fault, a displacement of 4 feet is expected as a result of seismic activity. The groundwater depths are variable.
- Section 10 - Consists of findings for Zone 4. This zone consists mostly of alluvium. The tunnel would be predominantly within the alluvium zone. The Puente formation mostly exists at the southern end of the zone. There are two active faults: the Raymond and Alhambra Wash Faults. The faults act as a groundwater barrier. There is a potential for high groundwater inflows in alluvium and a potential for caving soils. The Superfund Site is located in the central portion of the zone.
- Section 11 - Consists of findings for Zone 5. This is similar to Zone 4. Zone 5 is mostly in alluvium. There is a potential for high groundwater inflows in alluvium and a potential for caving soils. Puente and Fernando formations are mostly present in the southwest portion. The Alhambra Wash Fault, which is an active fault, is in this zone. There is a Superfund Site located in the mid portion of Zone 5. The surface water feature would impact the east portal zone and would be a constraint from a tunneling perspective.

Mr. Chandran then summarized the technical team's findings for each zone. These are detailed in a table on page 41 of the PowerPoint presentation. The meeting was handed over to Steve Klein.



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Tunneling Considerations: Steve Klein, Geotechnical Team

Mr. Klein provided an overview of the findings regarding the geotechnical feasibility of constructing a tunnel in any of the zones. Key geotechnical factors for tunneling, such as type of material, uniformity, and groundwater were quickly highlighted. Mr. Klein stated that it was determined to be feasible to tunnel in all five zones from a geotechnical point of view, adding that each zone has some challenges. He also noted that there is technology available to address these challenges, citing constant improvement of tunnel construction since the 1950s, extending their availability to build tunnels in complex geotechnical conditions through methods used in Los Angeles and world-wide.

He addressed the topic of ground stability, which is an issue mostly in alluvium and soil deposits because these materials are not strong enough to resist the movements in a tunnel. This is normally a major issue in urban areas. Mr. Klein informed attendees that this would be extensive in Zones 4 and 5, but would also occur somewhat in Zone 3 and in the portal areas of Zones 1 and 2. He noted that tunneling machines have been developed to address such issues and showed the tunnel technology used to build a highway tunnel in Madrid, a 50 foot diameter Earth Pressure Balance Machine. A similar machine was also used in the Metro Eastside Extension project. It allows you to seal out the groundwater pressure and avoid material from invading the tunnel. You can tunnel without loss of ground or damage to surface conditions using these types of machines. He also referred to a Slurry Tunnel Boring Machine (TBM), which involves installation of a water tight lining and is designed to resist ground loads. The same technique was used for the Metro Arrowhead Tunnel project in San Bernardino and could be used for this project. Mr. Klein stated that specialized testing for the gaskets showed that it could withstand 900 feet of external groundwater pressure, which is roughly three times what has been done worldwide.

Mr. Klein addressed the issue of uniformity of materials, showing a portion of Zone 3, which contains soil, weak sedimentary rock, and hard rock. Tunnel Boring Machines have been developed to go through a variety of materials. A machine utilized for the Riverside Badlands tunnel, dealt with variances in geotechnical materials, was shown to demonstrate existing tunneling capabilities. The specific capabilities of the TBM with rock/soil cutterhead were reviewed; the machine is adaptable to excavate variable geological conditions.

Mr. Klein discussed natural gas, noting that the Puente formation, which contains high amounts, has been found in various tunnels throughout Los Angeles. The Northeast Interceptor Sewer Tunnel, which is partially located in Zone 1, was provided as a recent example of tunneling through gassy conditions. He added that proper safety precautions and equipment selection is key and these types of tunnels are closely regulated by California Occupational Safety and Health (Cal OSHA) to ensure that safety issues are being properly handled. Mr. Klein explained that ventilation is critical in removing natural gases from a tunnel. Useful features to account for the existence of natural gas in a tunnel would be special electrical connections that are spark-free to prevent ignitions, and a safety feature that shuts all power down during construction if gas



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levels reach a certain point. He stressed that gassy conditions have been encountered in a number of projects in Los Angeles and tunnels have been built safely through the use of such techniques.

He moved along to the topic of active faults, stating Zones 2, 3, 4 and 5 contain active faults. If a tunnel is built across an active fault, it is possible that a large earthquake could shear a tunnel if it were not designed to compensate for fault displacement. He stated that in an instance where a tunnel would cross a fault, one would have to build an oversized vault section within the tunnel that could withstand the movement in the event of an earthquake. Metro has accounted for this situation in the Metro Red Line Hollywood Hills Tunnel. A schematic showing the configuration of such a vault was shown. Mr. Klein added that this concept considers a possible displacement of about 7.5 feet as the result of an earthquake and a similar concept is used for the Metro Red Line Hollywood Hills project to mitigate a displacement of 6.5 feet. He also added that his firm designed this concept for the East Bay Municipal Utility District and they won an innovation award this year from the American Society of Engineers for using this technology. Mr. Klein briefly reviewed another technique utilizing segmental linings to deal with fault crossings if less movement was anticipated.

Finally, the issue of contaminated soil and groundwater was discussed. Mr. Klein stated that this is a potential safety hazard and liability issue, adding that they cannot allow the plume to migrate and must dispose of contaminated material properly. He noted that disposal costs can be significant depending on the nature of the contaminants. A solution utilizing a pressurized machine, where you can tunnel through the groundwater without having to do de-water outside of the tunnel envelope, was discussed. The issue of contaminated soil mainly impacts Zones 1, 4 and 5.

Mr. Klein summarized the geotechnical challenges he covered, adding that technology exists today to address these challenges and that ultimately tunneling is feasible in all zones. He closed by reviewing the Tunnel Technical Study schedule, pointing out that a Final Geotechnical Summary Report would be issued in early 2010, after a cycle of community and committee meetings are completed.

Rebecca Barrantes then reviewed comments and questions provided by the Technical Advisory Committee (TAC) during the November 5, 2009 meeting. Items are included on presentation Slides 61 and 62 of the Steering committee (SC) Meeting No. 6 presentation. Doug Failing gave a brief overview of what the next steps would consist of, which would begin with Caltrans and Metro reporting the geotechnical findings to their respective Boards, soliciting additional feedback from the committees and community, utilizing this information to complete the Final Report, and presenting the Final Report to the Committees and Metro Board. Finally, they would identify a series of next steps based on input from their governing bodies. Next, Ms. Barrantes solicited questions from the Committee, which are summarized below.



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Questions, Answers, and Comments following the presentation:

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- Nick Conway: Was there any consideration given to breaking down the differences in how each geotechnical factor impacted the respective zones in terms of construction challenges versus operating challenges? (Referring to Slide 41 of the meeting presentation)
- Y. Chandran: No, we have not done so. This comment was also received at the last TAC meeting, where someone suggested that the geotechnical challenges be separated into construction related and performance related. We will make those changes to the report later when we finalize the report.
- Mike Cano: What kinds of formations exist in the Eastside Extension and North Hollywood project tunnels? Are any formations similar to those encountered in the zones of this study?
- S. Klein: The Eastside Extension was built in a Fernando formation, which is similar to formations encountered in the northeast interceptor sewer in Zone 1. It is a very similar sedimentary rock formation and is weak from a rock perspective, but fairly stable from a soil perspective. The formations in the Hollywood Hills have various types of granitic rock similar to Zone 3.
- Y. Chandran: Section 12 of the Draft Geotechnical Summary Report discusses similarities in formations encountered in the study zones and existing tunnels.
- Edel Vizcarra: The Metro Red Line project encountered the Hollywood Fault and gassy conditions. Are those similar challenges to those found in these zones?
- Y. Chandran: Yes, the challenges are similar.
- Stephen Del Guercio: We have been provided with a lot of data and certain challenges have been identified for tunneling. What we have not done is discussed what the data means. If something is a challenge, is it a challenge in terms of safety and operations, or in terms of design cost? In terms of relative ranking between these challenges (not zones), I am not getting a sense of which are easy and which are difficult. For example, soil and groundwater contamination do not strike me as a big concern. Based on



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the presentation, we have technology that can deal with the challenges of contaminated groundwater. Groundwater is also only toxic in terms of drinking water, but not when one comes into contact with it in other ways. If we were to look at another challenge, such as active faults, from what I understand there is a larger concern due to potential fault rupture. Not identifying the implications for these challenges, in terms of safety and design costs, does not make the information useful to whoever is going to read it as the next step. What I would hope is that as a Committee, we could be a part of that next step and have that discussion in the appropriate forum because we now have the data needed to discuss these types of things. I understand that there is earthquake risk for active faults. I do appreciate your designs, but I would like to know how concerned we should be about the risks. Should we consider a strategy of designing around the risks or should we avoid the risk by going to another location? What are the costs associated with the risks? Will it cost five times more because a certain route is chosen? The public wants to know these things and that is what we found out when we did our public outreach. The public wanted to know about cost and safety. With all due respect, simply saying that we have good technology without providing the reader of the report with the background and implications of the data is a shortcoming. If this is not addressed now, it certainly should be. That is the public forum that I had in mind when I signed up for the Committee, to come here and be able to understand and then go back and share with the community, so the public has trust and makes informed judgments that are based on good data analysis.

Y. Chandran:

That is an excellent question. We intentionally steered away from characterizing the geotechnical challenges in terms of degree of difficulty because this was requested by the Committee in SC and TAC Meeting No. 5 when we presented the data from the exploration activities. We were told not to make any conclusions and to instead present unbiased data and let the Committee review and make decisions about what is major or minor based on their interpretation. We can go back and do that, but we did not take that step on purpose because it was requested not to during one of the committee meetings. In terms of cost, this is a key component; however we do not want to look at costs based on geotechnical data alone. We need to look at other factors, in addition to geotechnical data; otherwise we will get a skewed view of the cost. This is something that can be looked at in the future at the next step.

S. Klein:

This information alone may not mean a lot to you, but it is what is needed to develop a feasible design and construction concept for the tunnel. If we address these challenges, we can come up with a design and construction concept for a tunnel in any one of these zones. Once we



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have that, we can go to the business of determining costs. We are in a process and have completed the first step by doing comprehensive evaluation (as represented in the report). We have collected significant information that allows us to go to the next step. These are not all of the challenges because we highlighted the key challenges.

Edel Vizcarra: I understand the concerns of the City of La Canada Flintridge and ultimately Zone 3 would affect your city, but we hope that this does not become a scare tactic, where the risk of faults would be characterized in a way that would encourage people to look at Zones 1 and 2 instead. When people hear “fault,” they automatically think that the tunnel is going to cave. If you are going to list whether there are faults and what the negative impacts are, you should do the same for other challenges, such as high gas potential and soil contamination.

Stephen Del Guercio: That is exactly my point, which is to give decision makers all of the information needed to determine if something is a showstopper or not, such as cost. I am using that (faults) as one example.

Edel Vizcarra: I agree; however it seemed that in your comment you indicated that faults are the biggest concern. In reviewing the table provided in the presentation, I can see that Zone 1 is the only zone without active faults and I do not want it to get shifted over there.

Stephen Del Guercio: I am simply saying that faults do rupture and that is fairly significant.

Edel Vizcarra: Yes, and there are explosions when gasses are encountered.

Mike Cano: In prior discussions we worked on better defining what the scope of this study was. Addressing some of these issues and trying to overlay evaluative criteria was something to be done in another study effort, not in this one. This study effort was very clearly and narrowly defined.

Y. Chandran: Yes, our understanding was that looking at cost, design and construction implications were to be done in a future study effort. We were directed to present the data and facts and let the Committee make determinations based on what was presented. We steered away from making our own interpretations.

David Worrell: I agree with the general thrust of Steve’s question. We start with the conclusion that all routes are feasible. I can say that everything is feasible as long as you do not care about how much money it costs. I understand your approach that there are a lot more issues in addition to geotechnical that need to be considered; however we have spent tons of money to get to this point and all we have is a chart that shows



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challenges and a comment that we are presenting data to the Steering Committee and Technical Advisory Committee to make decisions on. If you were making a presentation to the Board of Directors of a company, they would be extremely disappointed with this because the obvious question that people have is what the data means. I cannot conclude a meaning from any of this. How can I make a decision on any of this? This is geotechnical data that is not accompanied with any advice as to what it means. This may make sense to the technical people, but this does not make sense to me. We need a little more help in figuring out what this means. What am I going to tell the City of Pasadena? What does “all routes are feasible” mean?

D. Failing:

What started the study was that very question. I had the conversation with a number of elected officials who were concerned that Caltrans and Metro were putting out the idea of a tunnel when it was not clear if it was feasible at all. We had to answer that question before we could consider any next steps. It was very clear that they did not want us to proceed any further than that. It was also very clear that they wanted us to maintain route neutrality and not look at specific routes. Instead, we looked at zones. The team has been really challenged with this task. If there is a concern about this, you can point back to me because we have been very limiting on the team. They would like to do a lot more than this, but I have been very limiting based on that commitment made at a political level to keep this down to these specific questions before anyone looks at making a further step. I worked very hard to hold them back because that is how I saw the mission of the questions I was asked.

David Worrell:

What would you have to find to conclude that tunneling was not feasible? I am not being argumentative. I do not have a position on this. I am not for or against tunneling. I am not for or against a specific zone. This presentation tells me that we have giant technical capabilities and we can solve any tunneling problem.

D. Failing:

What I gather from the presentation is that there are technical challenges that we have solved before in the area and there is nothing that would cause us to completely avoid x, y, or z. I do think there were issues raised that do not indicate a challenge within a zone that is limited to that entire zone. We are simply being told that if we were to focus on that zone, certain challenges should be considered. This study went through a very careful deliberative process that ultimately indicates there are no showstoppers and we can deal with anything within any of the zones within a relative comfort zone. This is my interpretation. If we do decide to proceed, we can rely on the more technical environmental type of questions that would be asked, such as whether a project has a



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purpose or need met, and what are issues that, from a true environmental standpoint, would define a certain zone. My interpretation of your question is that you are asking if we are going to present something just to throw the Committee off track, get them to agree to go forward and then bait and switch the tunnel. I can say very clearly that the answer is no. The question that I was asked to proceed with has been answered.

Lynda Bybee:

I felt that the team produced examples of similar geotechnical conditions where tunnels have been successfully constructed and those problems solved. We have the recent example of our Gold Line Extension, which is a mile and three quarters long in similar formation. We had absolutely no settlement and no incidents with that tunnel. We have had seismic activity since we tunneled under the Cahuenga Pass and have had no incidents there. There are practical examples of this in the Draft Report. The point is that as professionals in this area, we have seen these conditions before and we have solutions for these.

Mike Cano:

I would like to commend you because you have done very good work here. I also recognize the interesting political constraints put on you, such as route neutrality, which was not a concept that my boss supported because it seemed to dilute the point of the study. You also had limited funding. This process has gone on for a long time and there are a lot of different facets to it that have answered a very basic question. Tunneling is technically feasible. The next step is to go back to the Metro Board to see if they have received Measure R money and what is to be spent on the project. Obviously, they are going to have more information than before to make a decision but that is a future task order for a different Board, not this Board. I can understand the frustration of this Board for not having the answers to questions such as cost, financing and different issues that were never part of the scope of the study. I do not want to criticize the study team for doing what we told them to do from the beginning, which has been as political as it has been technical. I would like to congratulate you and I hope that we can move on to the next step.

Nick Conway:

What would be the cost and time involved with addressing the additional issues that have been raised?

Y. Chandran:

Task Order No. 5 attempted to address some of those issues. The timeline to complete that was 3 to 4 months. The task order would have addressed these issues at a conceptual level. I believe the fee to complete that was about \$1 million dollars.

Nick Conway:

At the last meeting, we scoped down the product that we received tonight. There were many other elements in that task that I think could have been done. Now certain questions have been raised tonight that



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would require you to go back and get that information, primarily as they relate to this exhibit, such as to flush it out more and discuss in greater detail the impacts associated with each one of these conditions, put some numbers to it and ultimately get the cost effectiveness in broad terms.

Y. Chandran: We can look at details, in terms of what needs to be done from a design or conceptual standpoint and address those geotechnical challenges. If we had to do that in all five zones in that detail, we would have to go back and analyze that more to determine a timeline.

Nick Conway: I am not asking for an answer tonight. I think that before you advance this, questions have been raised about trying to get a clear picture with the hope of getting consensus. The Committee should get that information back because we scoped this down to get to this point. Maybe without having to dismiss everything, we could go back and pick up certain subtasks and finish that effort now.

Y. Chandran: We will consult with Metro and Caltrans regarding that.

Lee Dolley: I understood this to be a feasibility study. This was not to find out all the environmental concerns, but whether tunneling could be done or not. We are in the process of commenting on 150 pages of geotechnical information. This information is not unclear. There could be a lot of next steps and I am looking forward to them. I have never in my 40 to 50 years encountered a Committee like this. It is extraordinary that this happened and it is a good thing.

Philip Putnam: Some of these issues have not been addressed. For example, the fault issue is not just about whether it is an active fault, but is also about whether the tunnel crosses perpendicular to the fault, runs parallel to the fault before it crosses the fault, and issues like that. There are a lot of similar issues for the other geotechnical challenges that have not been discussed. Are these problems being fleshed out at this stage or are they going to be dealt with at a later time?

Y. Chandran: In general, when crossing a fault, you want to cross perpendicularly. We did not focus on specific alignments, and we did not discuss that in detail. Perhaps we can include some of that information in the report. That is a valid request and we should address that in the conceptual portion of the report.

Philip Putnam: These are all valid questions that were addressed by Del Guercio and the representative of Pasadena, but I do not know how you can address them without knowing more about an alignment. I do not see how that can be done.



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- Y. Chandran: Yes, it is true. Some type of an alignment is necessary to quantify certain things.
- Philip Putnam: Are you going to assume a couple of potential alignments to discuss those? Are you going to boil this down? We had discussions before and it seemed like Zones 4 and 5 would parallel existing surface routes. It would not make any sense from a transportation perspective. I do not know when you plan on eliminating some of these routes on the basis of common sense. Not that I want to tunnel in any of the other zones, you cannot study everything.
- D. Failing: In my opinion, the time to begin eliminating things would be at one of those next steps. This is hypothetical. If you go into environmental phase, when you start scoping, you begin whittling down things that are not probable and put a little data behind it. For instance a traffic analysis may show that Zones 4 and 5 would be less desirable. Again, I very firmly directed this team not to conduct traffic analysis on any of the zones because it would cloud route neutrality. I am hard pressed to suggest a step that begins to eliminate routes for nothing other than a geotechnical issue.
- Philip Putnam: I am not suggesting you to do that or that it is appropriate here. I am wondering what the next steps are and how this gets addressed moving forward.
- D. Failing: I look forward to having that conversation with the Metro Board.
- Mike Cano: Does this body (Committee) that has been constituted expire in March when the presentation is done or does it shift in terms of the scope? I do not want to see parallel decision making bodies. The MTA Board would be the primary decision making body.
- D. Failing: The input received from the body has been invaluable, whether I agree or disagree with what was said or not. It has been invaluable to shaping data sets. The SC and TAC are currently constituted at the time that this study is accepted and done. If there are next steps going forward, it would be my recommendation that if not this very same body, that a similar advisory body be constituted, because, again, the input has been invaluable. Nothing is done in a vacuum anymore. I can make recommendations, but have a Board that will tell me what they think and I would follow that.
- Lynda Bybee: Typically our outreach on major projects includes advisory committees and sometimes multiple committees to address the issues.



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- Nick Conway: We are supposed to get our comments in and then get a draft report. Is that what the process is?
- Y. Chandran: We accept your comments and will have a series of three community meetings. Based on your comments, we will incorporate them into the presentation. Once we receive feedback from the community meetings, we plan to finalize the report in the February or March timeframe, where we will incorporate comments from both committees and feedback from the community.
- Nick Conway: Returning to the question that I had earlier, because we scoped this down to specific points, can we go back and pick up one or two of the subtasks (from Task Order No. 5) to address questions raised by Steve and others. When does that get played into this? Does it? Will that get kicked to the next step?
- D. Failing: I will sit back with the team and play that back. We have received good comments. Can we do something at a conceptual level that still keep us in the concept of route neutrality to address these issues in a relatively decent time frame and present that to the public and go forward with that? That is a good question, we need to address that, and we need to take a little time to take a look at that and have a conversation with our technical experts and make a decision on that as we go forward. I think that can be addressed relatively quickly yet we would need to keep it within the concept of our overall principles. We will have that discussion.

Next Steps: Rebecca Barrantes, Community Facilitation Team

Ms. Barrantes explained plan for the next steps in the study, with a focus on the outreach process and upcoming meetings. She noted that comments requested from the TAC and SC regarding the draft report will be due November 30, 2010. She also informed them that three regional community meetings would be held mid-January to early February of 2010, where the public will review the presentation provided at this meeting with modifications based on the comments provided. She noted that the report is in draft stages throughout this process, but the final report will be completed in late February or early March. The breakdown is as follows:

- Comments due from Committees: November 30, 2009
- Community Meetings: Mid-January to early February 2010 to review the Finalized Draft Geotechnical Report
- Final Summary Report: Late February to early March 2010
- Committee Meetings: Late February to early March 2010 to review the Final Geotechnical Report



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Moving along to the public outreach process, Ms. Barrantes provided the scheduled dates for the upcoming regional community meetings.

- La Canada Flintridge, Glendale, Northeast Los Angeles – January 20, 2010 at Wilson Middle School.
- Pasadena, South Pasadena, and San Marino – This will take place at the San Marino Center on January 26, 2010.
- El Sereno, Monterey Park, Alhambra – This will take place at the Los Angeles Christian Presbyterian Church during the week of February 2, 2010

Ms. Barrantes pointed out that all of these meetings would take place from 6 pm to 8 pm. Mr. Edel Vizcarra interrupted to comment on the community meeting schedule. The following questions and requests ensued.

Questions, Answers, and Comments following the presentation:

Edel Vizcarra: It appears that each meeting is held for three cities, but in Northeast Los Angeles there are six or seven different communities that are just as large as any city. Would it make sense to have one individual meeting for Northeast Los Angeles?

D. Failing: I will take this as guidance from the Steering Committee.

Nick Conway: Piggybacking off the concerns of Northeast Los Angeles, we have potential corridors going to the San Gabriel Valley. How are the 1.5 million people in the east San Gabriel Valley going to be brought into this decision making process to express their views on the feasibility of having a tunnel in the San Gabriel Valley?

R. Barrantes: Are you specifically referring to Zones 4 and 5?

Nick Conway: I would urge those cities east of San Marino up to the foothills to have at least 2-3 input sessions if we are going based off communities and population centers. You cannot just have one meeting for the San Gabriel Valley.

Ms. Barrantes informed the attendees that the SR-710 Tunnel Technical Study Draft Geotechnical Summary Report is available on DVD at public library locations listed on the website and also on the study website (www.710tunnelstudy.info). She noted that it would be available in Spanish and Chinese by the end of the week.



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A Committee member commented that additional libraries would need to be provided with copies of the report in light of Mr. Conway's requests for additional community meetings in the San Gabriel Valley.

Lastly, Ms. Barrantes reviewed the next steps which included continued feedback on the draft report, submittal of comments and completion of the Final Report, followed by a presentation to the committees.

Meeting was adjourned at 7:50 PM.