



Technical Advisory Committee Meeting Minutes
S.R. 710 Tunnel Technical Study
October 16, 2008 3:00 p.m.
Luminarias Restaurant
3500 W Ramona Blvd., Monterey Park, California



I. CALL TO ORDER –

The meeting was called to order at 3:14 pm.

II. INTRODUCTIONS AND MEETING OVERVIEW

The following people attended the meeting:

<p>TAC Members:</p> <p>Amir Alam, Senior Civil Engineer- LA County Public Works, Representative for County Supervisor, Gloria Molina, 1st District (Also an alternate for Pat Dechellis, Deputy Director- LA County Public Works, Representative for County Supervisor, Michael D. Antonovich, 5th District</p> <p>Shahrzad Amiri, Deputy Executive Officer, METRO</p> <p>Richard A. Gutschow, City of South Pasadena</p> <p>Paul Habib, Northeast Area Director/Public Works and Capital Construction representative, Office of LA Councilman Jose Huizar CD-14</p> <p>Bahman Janka, Transportation Administrator, City of Pasadena</p> <p>Thomas E. Mitchell, Assistant Traffic & Transportation Administrator, City of Glendale</p> <p>Pratheep Piratheepan, Geotechnical Design Unit, Caltrans District 7</p> <p>Eugene Sun, Councilmember, City of San Marino</p> <p>Ann Wilson, Senior Management Analyst, City of La Cañada Flintridge</p>	<p>TAC Member Alternates Present:</p> <p>Tony Catenacci, Interim Transportation Manager, City of South Pasadena (Alternate for Richard Gutschow)</p> <p>Marisa Creter, SGVCOG (Alternate for Nicholas Conway)</p> <p>Fred Dock, Director, Department of Transportation, City of Pasadena (Alternate for Bahman Janka)</p> <p>Ryan Kuo, Associate Transportation Planner, SCAG (Alternate for Philip Law)</p> <p>Absent/No Alternate Present:</p> <p>Ing Jones, Civil Engineering Associate, Department of Public Works, Bureau of Engineering</p> <p>Mary K. Swink, Director of Public Works, City of Alhambra</p> <p>June Yotsuya, City Manager, City of Monterey Park</p>
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<p>Caltrans District 7 Staff</p> <p>Abdi Saghafi, Project Manager</p> <p>Deborah Harris, Chief, Media Relations & Public Affairs</p> <p>Deborah Robertson, Deputy District Director for External Affairs</p> <p>Derek Higa, Senior Transportation Engineer</p> <p>Shiva Karimi, Senior Transportation Engineer</p> <p>Fariborz Gahvari, Senior Transportation Engineer</p> <p>Community Facilitation Consultants:</p> <p>Rebecca Barrantes, The Sierra Group</p> <p>Ed Salcedo, The Sierra Group</p> <p>Enrique Gasca, The Sierra Group</p> <p>Rena Salcedo, The Sierra Group</p> <p>Katherine Padilla, KP&A</p> <p>John Limon, KP&A</p>	<p>Elected Officials:</p> <p>Joseph Martinez, Transportation Liaison, Office of Congresswoman Hilda Solis, 32nd District</p> <p>John Hisserich, Constituent Services, Office of Assemblymember Paul Krekorian, 43rd District</p> <p>Julianne Hines, District Director, Office of Assemblymember Anthony Portantino, 44th District</p> <p>Technical Consultants:</p> <p>Ayman Salama, Project Manager, CH2M HILL</p> <p>Yoga Chandran, Technical Lead Engineer, CH2M HILL</p> <p>Steve Klein, GE, PE, Tunnel Structure Lead, CH2M HILL</p> <p>Hubert Law, Geotechnical Lead, CH2M HILL</p> <p>Alexander Rudolph, Ventilation Lead, ILF consultant to CH2MHILL</p>
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For the purpose of review, Committee Member’s names are spelled out during the question and answer periods. Project Staff names are denoted by their first initial and spelling of their last name.



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The meeting started at approximately 3:14 p.m.

Welcome: A. Saghafi, Project Manager, Caltrans District 7

Abdi Saghafi, Caltrans Project Manager, opened the meeting by welcoming the Technical Advisory Committee (TAC) members and public. Introductions of TAC members (or alternates), consultants, representatives of elected officials and additional guests followed shortly. He also thanked Monterey Park Councilwoman Sharon Martinez and Luminarias Restaurant for assistance in securing the site.

Committee members proceeded to introduce themselves followed by members of the audience, Caltrans staff and consultants.

Meeting Overview: R. Barrantes, Community Facilitation Team

Rebecca asked the TAC to review the August 21, 2008 Minutes and email edits to egasca@thesierragr.com. She reminded all attendees to sign-in in order to record their participation. She also informed the TAC that Committee Participation Evaluation forms would be provided after the meeting. Major items from the previous meeting were reviewed, including the exploration zone boundaries, consensus evaluation criteria, and additional information requested on boring sites and tunnel systems.

Questions:

Amir Alam: Before we discuss the new items, can we address some of the items from the last TAC meeting? I am assuming that one of the tasks will include researching existing data available.

A. Salama: Yes, this assumption is correct. Yoga will go over this in more detail.

Amir Alam: The project area is split into 5 zones. The Screening Study is proposing to consider geotechnical characteristics and compare and draw conclusions for the feasibility. If we go to what was decided in the last meeting, we are proposing to conduct geotechnical borings, but not really focus on faults. You are not going to perform any fault investigations, correct? You agree that there is already extensive data on faults in this area.

A. Salama: Correct.

Amir Alam: I want to discuss the purpose of the Study. This is a screening study and is not a study for the design of the tunnel. For screening purposes, we do not need specific contact information for each zone because we have the data



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for the general engineering properties of the geological units in this area. The third item mentioned is groundwater levels. Again, this information is readily available from the numerous groundwater wells in the area. Given what we just discussed, I don't believe you have provided enough information to justify the need for 33 geological borings at this stage. For the screening study, it appears that this data is already out there. By not doing the borings, we can save a significant amount of time and money.

Y. Chandran: This is an excellent point because we do have the general characteristics of the material there. The biggest difficulty is context. For example, is the bedrock 10 feet, 50 feet or 200 feet below? If we look at the Zones 4 and 5 tunneling through the alluvial area, it is high risk. The data shows that this material exists in this area but we do not know exactly at what depth and at this point it's all guess work. Groundwater table information, the open file report, indicates historic information in one zone, but no information in another zone. While we can adapt, we can not tell you whether a tunnel would be going through soft rock, then alluvial, and then through something else. We can't exactly tell you what will be expected in one zone versus the next and at what depth. In regard to your fault question, we are not performing any fault trenching. We will be using available data and aerial photos for this study.

Amir Alam: I think you can safely conclude, regardless of what shallow depth the water table is, that the tunnel will be below groundwater level.

Y. Chandran: For the depth we are looking at, we don't have all the information we need. Right now, we are looking at active faults. We have done preliminary studies.

Amir Alam: This is a concern for the design, but in the screening study you are going to be in the water. A tunnel will be at a depth of least 150 feet and you can safely assume that you will be below the historic high groundwater level. For this screening, won't you agree that we have enough data out there?

Y. Chandran: We may be able to say that for Zones 4 and 5. But I cannot say that with 100% certainty for Zones 1-3. We need more data. We have looked at the Los Angeles County data but have not been able to find information at the depths that we need. We will continue to research and if the data is there, we will find it.



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- Amir Alam: As far as the fault information goes, you can't be expected to find the location of the fault to the nearest foot because we don't have an alignment yet.
- Y. Chandran: Right now we are looking at faults that are active like the Raymond fault and the Eagle Rock fault. The research for the predicted activity levels has been done.
- Amir Alam: You can agree that at least for the faults, no additional information is required through the borings.
- Y. Chandran: Yes. If we have a boring that is close to a fault and we are able to capture some additional data, then that would be great. But no, we are not boring to find more information on faults.
- Amir Alam: So for the geological/geotechnical condition, wouldn't you agree that for the screening study we have enough data for the general characteristics of each geological unit?
- Y. Chandran: Yes. We have data but we need data more specific to the zones we are looking at.
- Richard Gutschow: We need tunneling data. We have plenty of data for the geological formations. Tunneling data (available) is very limited and we don't know enough about that.
- S. Klein: There is a general indication of the properties of these zones but we have to get more. We are going deeper than probably any of the existing borings that have been completed in this area. We need enough data to have a firm technical basis for comparing the geological conditions between each zone. We need to consider specific geological conditions in these zones to mitigate certain risks.
- Amir Alam: Even if we are given an alignment, conditions can change 100 to 200 feet away. The directive of the SC is to maintain route neutrality and see what can be learned from geotechnical aspects. If we could, based on the geotechnical data, rule out some zones we will. I feel that the purpose of the study can be achieved with the data that is already out there.
- R. Barrantes: Are there any other comments?



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Richard Gutschow: I think you have to get other characteristics of the rock to make a comparison on tunnel construction. You are going to be evaluating the cost of a structure through a certain formation. In a regular alignment, you are going to need a lot more borings. But we can get close enough to get the feasibility of different alignments. My concern is which types of testing and borings will be used for the study.

Amir Alam: I agree. But this information is needed for the design, not for this study. You don't need that information if you are just going to rule out zones. For example, in Zone 1 you can say that you will be tunneling through 50% alluvial and 50% granite. You are just making general characterizations of each zone. We are just at a basic screening study at this phase. With the scenario laid out, the best case is that 12 out of 33 borings would be feasible. We need to get an alignment.

Richard Gutschow: I think we need more information than that.

Amir Alam: With the study you will be getting data and it will be used for the design phase. But, with the scenario laid out, the best case is that for 12 out of 33 borings the data would be utilized. In the worst case, in Zones 4 and 5, only 4 out of the 33 borings will actually be used. I don't think it's a good use of resources. We should get an alignment first, and then do the detailed exploration.

R. Barrantes: Let's recap on questions:

- 1) Why not use geotechnical data already out there?
- 2) What is the justification for the 33 borings?

Can we keep these questions in mind as we continue with the presentation of the Tunnel Education Workshop and discussion of the boring plan and data? A lot of the information we will hear may help address these questions.

All: Committee members agreed to continue with presentation.

Tunnel Education Workshop: CH2MHILL

Ayman Salama opens up the presentation by discussing the difference between using a tunnel structure versus a highway structure. He states that major benefits of using the tunnel structure



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are that you can build to avoid interaction with right of way, highly urbanized areas, Superfund sites, highly contaminated areas or historical buildings.

S. Klein continued the presentation by providing an overview of the uniqueness of tunnel structures. He explained the difference between highway tunnels and mass transit tunnels. He discussed tunnel systems from a general overview, particularly modern tunnel systems in operation or planning or design stages in the United States and internationally.

S. Klein: Modern tunnel systems contain message boards, lighting, and a communications center that monitors traffic inside the tunnel. The physical environment is also monitored in tunneling, including carbon monoxide levels. Ventilation is a key element. Ventilation expert Alexander Rudolf from Austria is available to address ventilation questions. Another important item is the motorist aid station. In the U.S. cross passages must be constructed at 200 foot intervals.

Y. Chandran: Began discussion of geological conditions and considerations that go into a tunnel design. Key factors that influence tunnel methods are: variations in soil conditions, boulders, hard rock/soft rock, groundwater conditions, hazardous materials, and faulting. In the planning/conceptual stage there are a few borings conducted and limited geological mapping is completed. After the planning stage, an increased number of borings are done during the exploration program and will increase the confidence in what is found by further exploration.

Yoga reviewed components of the exploration plan, including geotechnical aspects, subsurface conditions, suggested boring depths, field-testing, tunnel seismic behavior, and factors affecting seismic performance.

S. Klein: There are 2 methods for designing a tunnel to deal with faults. The first method is a tunnel within a tunnel (method has been used by METRO). The second method is the fault crossing method, which is used when only a few feet of movement are expected.

Questions following Tunnel Education Workshop:

R. Barrantes: Are there any questions based upon the information that was just presented?



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Paul Habib: I want to clarify that we are going in with the assumption that there are no on/off ramps, only a start point and an end point.

A. Saghafi: We do not know if there are going to be on or off ramps at this time.

R. Barrantes: We will follow up on Paul Habib's and Amir Alam's questions when we return from the break.

BREAK: The TAC breaks for 15 minutes. After the TAC returns, Rebecca informs members that she would like to continue from the last meeting when the Steering and Technical Advisory Committees (SC and TAC) came to a consensus about boring for the zones.

R. Barrantes: METRO conducted a tunnel feasibility assessment, looked at a specific alignment and did limited geotechnical borings in certain areas. This study is building upon that to look at a broader area in a route neutral manner in order to study the geotechnical conditions in that area. The SC and TAC took on that charge and came to a consensus about the exploration zone boundaries for purposes of geotechnical studies by conducting borings in the 5 zones. The Committees will review the data we will be getting from the screening report.

This is an iterative process. We are taking this one step at a time and are being very deliberate about it. It is important that we understand it before moving forward. The presentation will be handed back over to Yoga to discuss the boring sites and process and screening.

Boring Plan Sites and Permit Process: Y. Chandran and A. Saghafi

Y. Chandran: I would like to recap the last meeting and present findings based on data from research.

- Defined 5 potential zones for exploration
- Not looking at tunnel design or feasibility at this point. We want to collect geotechnical, hydrological, and geological information for each zone. This information will be used specifically for screening.
- Key factors influencing tunneling include faulting, geological material uniformity, and groundwater conditions.
- In summary, there are a total of 33 borings in 5 zones and 19 geophysical lines.



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- Will determine properties, conduct testing and collect as much data from these borings. These are not inexpensive and we do not want to have to repeat testing.

Based on last meeting, a preliminary schedule has been developed. We will start by getting encroachment permits from each city that we plan to drill in. We will review each boring site to ensure we are not near anything sensitive. We will have the chance to move sites to a convenient spot if needed and still get the data we are looking for. A drilling program will be completed by CH2MHILL and supported by Caltrans. Our plan is to start drilling in late November, assuming that we get the required encroachment permits. The schedule for drilling is based on using one drill rate for each of the crews. We will look into doubling that rate so the schedule will get shorter and we can have more time to evaluate and do additional testing if needed.

Questions following Boring Plan Site and Permit Process:

- Eugene Sun: Why do you want two crews, one by Caltrans and one by CH2MHILL?
- Y. Chandran: We want to expedite the process. We have 33 borings and each can take 7 to 10 days to complete. We are close to the rainy season and using two crews could help with the timeline.
- Eugene Sun: You didn't exactly answer my question. Why are there two crews working on drilling?
- A. Saghafi: We want to expedite the process and with two crews working in parallel, we get the 33 borings done faster.
- Eugene Sun: Are they performing the same tests?
- A. Saghafi: Yes, they are performing the same tests. The only difference is that our crews are not equipped to do the testing. Our drill crews are coming from Sacramento and will be doing the actual boring. They will provide the raw data to CH2M to process. We are limited with our crew as far as doing testing at boring sites. The other reason is costs. We are trying to save money by having some done by Caltrans and some by CH2MHILL.
- Y. Chandran: Planned activities moving forward are to obtain hazardous waste clearances. We have to search potential contaminated sites within each



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boring location so we can complete borings with appropriate health and safety precautions. We also have to apply for encroachment permits. Initial borings are planned in Los Angeles, Pasadena, South Pasadena and Alhambra. The first borings will be in these cities. We will be approaching these cities for encroachment permits. The borings will be done by both CH2MHILL and Caltrans crews and will begin in late November. Depending on difficulty or ease, it will take 7 to 10 days to complete each boring. That will include drilling, boring, and doing all the necessary testing. We need ideally 50 feet long and 20 feet wide spaces for drilling. We have done drilling in less space but that is the ideal workspace for vertical boring. We do have some inclined borings and may need a little bit more space depending on the direction of the inclination.

Bahman Janka: What is the duration of the boring?

Y. Chandran: It is from 7 to 10 days.

I want to present some recent findings we obtained through data research within the last 2 to 3 weeks. We identified Superfund sites in Zones 4 and 5. They are mostly due to contaminated groundwater. In this area, the depth of the groundwater is 50 to 150 feet. If we have a tunnel in that zone, it is going to be about 200 feet below ground surface.

Yoga reviewed the maps to show the zones that have Superfund sites.

If a tunnel were to be built in these two areas, they would most likely go through the Superfund sites. The Superfund law was enacted to protect the communities from hazardous waste. These are generally not small sensitive zones, but are massive and not easy to clean up. The EPA has regulations on how clean up needs to be done. Generally, the owner or generator of the waste is responsible for cleaning Superfund sites. If contamination is moved to a different area, that party is responsible for cleaning up that contaminated material. The key is that if you transport the waste to a different zone you are responsible for cleaning it up. If excavating in Superfund sites, we need to get approval from the EPA and have to use a contract that will certify us to work on a Superfund site. We are still in the early stages of information gathering. We are still looking at these zones to evaluate the level of contamination (light green to red indicates the contamination level) and the measures that need to be taken to contain contamination. Finally, we recommend to proceed with borings



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in Zones 1, 2, and 3 and to postpone borings in Zones 4 and 5 until we obtain additional information on the Superfund sites.

R. Barrantes: We will PDF and email the TAC presentation to committee members tomorrow. We will also share this with the SC members.

Eugene Sun: How many borings are in Zones 1, 2, and 3?

Y. Chandran: There are 25 borings total in Zones 1, 2, and 3. There are 8 borings in Zones 4 and 5.

Ann Wilson: You say the tunnel would likely go through a Superfund site. Can you identify Superfund sites on the zone maps? Never mind, this is on the second map provided.

TAC Member: Who are we recommending this to?

R. Barrantes: We are recommending this to the TAC for your input and then your input goes to the SC.

A. Saghafi: I want to add to Yoga's comment about borings in Zones 4 and 5. If the committee decides, we can still do geophysical lines, which require two sites in Zone 4 and two sites in Zone 5. These are non-intrusive and non-invasive types of measurements. If the committee desires, we can proceed with the geophysical lines. This will give us some information about these two sites. We need to hear from the committee on borings and if we should proceed at these sites.

Amir Alam: What additional information related to the Superfund sites are you obtaining?

Y. Chandran: There are a number of studies that have been done within the last 8 to 10 years, including groundwater data, measurements and movements of contamination. I am trying to get those boring logs so we can identify levels of contamination and we know what to expect within the tunnel zones or where we think the tunnel is going to be. Those are the chosen routes in the future.

Amir Alam: When do we expect to have this information?



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- Y. Chandran: We have some information but have not reviewed it. I hope to have this information within the month or by the next meeting. This depends on the volume of data received.
- Amir Alam: If we are going to do borings, I agree that Zones 4 and 5 be delayed until we get more information related to the Superfund sites. I would like a concise answer to my previous question on the technical justification for the borings at the screening stage where we are only comparing the zones relative to each other.
- Eugene Sun: I would like to see you do an extensive study and review the existing data you already have, make an assumption, and just do one of several of the borings to verify or check these assumptions. If it verifies your assumption, you can use existing data. If this does not verify assumptions, you can continue with testing/boring.
- Y. Chandran: We did look for data that extends to tunnel elevation or potential tunnel depth for Zones 1, 2 and 3, and to a degree 4 and 5. Most were borings done for structures and were very shallow. They were 50 feet wide at best and maybe 100 feet down. The tunnel will be deeper than that. We will look at existing data and if it comes out that any borings are no longer necessary, we will probably not do them. The approach will be to look through as much data as we can and provided the data we find we can say whether we have a little more comfort level than what we have right now and can make appropriate decisions. Right now, I do not have enough information to determine if we can do tunneling in these zones.
- Eugene Sun: With the existing information that is already there, I am sure you will be able to use it to make a preliminary determination of the proposed zones. Then you drill limited number of borings just to check your assumptions. If it makes sense, use existing data. If not, then you continue borings.
- Y. Chandran: We located borings to try and capture the radiations on a geological level. Through boring activities we could get information on what you can find in one place versus another and make comparisons. If that information is already available, then we will use it. On an area like this, we have to do boring on some level to get some confidence level. What that level of boring is can be determined as suggested, which is to look at what you have, make a comparison and determine boring activities.



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- A. Saghafi: As was stated previously, the number of borings recommended are the minimum required; however your point is well taken that there is existing data out there. As Yoga mentioned, there are several shortcomings within existing data. One is that there is not a lot of data available for tunnels in these geophysical formations. Another is that data was not obtained at the depths that we are talking about of 150 to 200 feet below ground. Be assured that we will use existing data to help complete the picture before starting to gather new geotechnical data.
- Thomas Mitchell: From what it appears, there is not data available that goes below 100 feet or gets in the area that the tunnel would be, is that correct? So the purpose is not to supplement existing data that you may or may not have reviewed, but to get new information. Without that information you can't make any informed decisions on any of these zones, is that correct?
- A. Saghafi: That is correct. The existing information will give us other data such as fault locations, geological information, etc. To know exactly what is down there, at 200 feet below the surface, you have to do the borings.
- Thomas Mitchell: I can appreciate the gentlemen's concern over saving time and money, but I would have to defer to the experts regarding this. I think we all understand that if you don't have good data, it makes it difficult to make an informed decision.
- A. Saghafi: Yes. We think (CH2MHILL and Caltrans) that we need to proceed with the borings. The direction that we received from the previous TAC meeting was to move forward. As a matter of fact, before he left Mr. Habib asked me to inform committee members that he is in favor of proceeding with the borings because he feels that those were needed and that's what we agreed to in the last meeting.
- NOTE: Mr. Paul Habib had to leave early but he indicated to Abdi Saghafi that he is in favor of performing the borings, as already decided by the TAC.
- Amir Alam: I agree with that. If we don't have the information of what geological unit we are going to be in at 150 to 200 feet, you absolutely need to do borings. There are zones in which the contacts are horizontal, and if one is near 150 to 200 feet, then you are unsure about what unit you are going to be in. In other areas, where the contents are vertical or inclined and you are pretty sure which unit you are going to be in at that depth. All I am asking is that



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if you look at the existing data and if you are sure which unit you are in, then it really doesn't matter at the screening stage what the exact strength parameters are at this point because you are not doing the design. As long as you know which unit you are in, then that is fine. But if there is a question of which unit you are in, then yes- that is the technical justification for the boring.

- Y. Chandran: If you look at the cross sections that we give, this is based on shallow information. Whether it is vertical, inclined, horizontal is based on an extrapolation of very limited data. The borings that we have proposed are at a minimum level. Is it adequate? Maybe not, but this will at least give us some comfort level to say this is what it is going to be and what the characteristics are. This is what we think it is going to be based on our experience with the area and we try to interpret it as best as we can. These limited borings can help us to understand so that with some level of confidence know for Zones 1, 2, and 3 what that variation is. Right now it is difficult to say that based on what we have looked at. We will continue to look for data that will help us to get a better level of confidence than what we have. The boring program will take some time and we will continuously look for data to help increase the confidence level in the data that we have.
- Amir Alam: Can I request that you plot your proposed borings on the geological cross-sections that we have so we can see approximately where along the cross-sections the borings are going to be for each zone?
- Y. Chandran: Yes, the reason we did not do this is because the borings are scattered in each direction. We can do a projected plotting.
- Shahrzad Amiri: Will you be back in November before you go out to do borings? Will you have another meeting?
- A. Saghafi: If the committee so chooses to, yes.
- Shahrzad Amiri: Will the TAC meet before the team goes out to begin borings?
- A. Saghafi: The TAC can meet if the committee chooses to do so.
- Shahrzad Amiri: I think people still have specific questions related to the borings. I think your recommendations, especially the second bullet point, are good under



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the circumstances. I personally would not want you to do anything with Zones 4 and 5 until you find out more about what the consequences would be. METRO is helping to fund this and we are not looking to clean things up. I do not see a schedule attached per city for borings of Zones 1, 2, and 3. I think we might want to have another gathering to iron things out. We are already in October and I don't know when in November the borings are planned.

- A. Saghafi: I agree. Did we send the list of boring locations by city? Yes, we did but they did not have dates. There are a couple of variables that we may or may not have control over. One is hazardous waste clearance. One of the reasons we did not specifically nail down dates at this time is because we have to find out how long it takes to get clearance for each location. This is called an ISA (Initial Site Assessment). The other variable is lane closures. We have asked CH2MHILL to assist us with this because our maintenance crews are busy with everything that is going on with the fires. That is why we gave a ballpark date of mid to late November. If needed, we will meet before we go into borings, to answer some of these questions.
- Shahrzad Amiri: I just think that whenever we have the borings, whether we start in November or December, we need to address these questions.
- A. Saghafi: Because putting these meetings together is a big task, if the committee agrees that we do not have to meet face to face to address concerns about the borings, we can do this electronically. If the committee decides that we need to meet, we can do that.
- Y. Chandran: One of the reasons we did not put together the specific schedule of the borings is due to encroachment permit process with each city. Additionally, once we have the encroachment permits, sometimes there are constraints that we find out about once we get there.
- R. Barrantes: Can I recommend that once we have the schedule that we put it out to the whole TAC as well as the SC? That would go a long way in answering some of those questions. Plus we have not gone through the slide that talks about the public notification program, which is another big issue, which is to tell people when we are going to be out there. Right now, I don't even know when we would be doing that, so I guess I have some questions too.



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- Fred Dock: Not that we are special or anything in Pasadena, but in looking at the proposed borings I noticed that at least 4 out of 6 of the borings will require closing of the street. I would like to ask that we begin to share traffic control strategies. We would be happy to work with you, at least on a preliminary basis. We also have a construction moratorium that goes from the middle of December to the middle of January. During this time, no construction can take place in the city. You need to be aware of that as well.
- R.Barrantes: Yes I believe the City of Los Angeles has a moratorium during the holidays
- Amir Alam: One other request I would have is that prior to the next meeting, if you could provide a detailed outline of the proposed screening study that would be helpful. I would like details on what kind of analysis, what kind of statistical data, what comparisons are going to be made. If you could provide an outline, that would be appreciated.
- Y. Chandran: We already have some of the outline for this part of the study.
- R. Barrantes: We are now at 5:05 p.m. I do not want to cut off discussions or questions if there are still some out there. Are we okay with continuing?
- ALL: Committee agreed to continue meeting to finish agenda items.
- Ann Wilson: On the surface, I think that following the various different times that a tunnel has been studied, most people have wanted as much information as possible. It is not to be critical of information that followed from other studies, but it was not the intent to provide a lot more information, technically speaking. Many people are interested in having as much information as possible. If you are not sure of anything, our city would be very much in favor of finding out for sure. If that means going deeper in doing the boring, that would be a very good reason for spending that money. I am in favor in erasing any doubt. As far as having another meeting, I do not think that we need another meeting. If people want it, that's fine but I do not see the reason in having another meeting right now
- Shahrzad Amiri: The last thing I want is another meeting. If our next meeting is in March, then fine, go ahead and start borings in April. I don't think we are at a point now where I feel comfortable with boring activities in mid-November and not knowing on October 16th what the plans are. There are



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some questions. I personally don't know if you have to bore every single inch of something to get that level of certainty. I don't know how much certainty you get with 8 borings or 100 borings. I think this is part of the educational process that you need to deal with. I am not part of a geotechnical team. It is important for us to find out exactly what we need to as part of the boring process for this study. Our tunnel advisory panel is pretty confident that you already have existing data and maybe they have some information that CH2MHILL does not.

Ann Wilson: The meeting is not a big deal. If we need to meet, I will meet. I do feel strongly about the other issue, which is gaining as much information as possible. I kind of wonder why we are here if we don't need to be. If we already had the data, then why are we meeting? I think we need to review our goal, or our charge. I heard a lot of stuff previously about comparing the routes, zones. I think that we are just finding out if there is a reason to eliminate one or more of them. I don't think it's our charge to compare or prioritize which is better. This is not a route determination. It is just saying that this is the geotechnical information. I don't think it is the job of the consultant to compare and prioritize.

A. Saghafi: I agree. To add to Ann's comments, and as was stated previously by Mayor Putnam, we are not asking the TAC to make any decisions. We are simply presenting the info that becomes available to us and asking for input of committee members. The final decisions will be made by Caltrans in cooperation with METRO and with input from our technical consultants.

Richard Gutschow: The existing information that we all talk about is the basis for the exploration that we want to propose as it exists. I can tell you that existing information is usually collected by USGS and is based upon tests that are shallow and don't represent high end data. In order to get data that is meaningful and supports what you are proposing as far as design and feasibility, you have to go out and drill. I am very comfortable with borings proposed for all of the zones that will give us site specific information at that depth. You have to trust the experts. I trust CH2MHILL and Caltrans as far as their ideas where the exploration is concerned.

John Hisserich: This segways into public notification. As you are aware some of these will be completed in areas that never previously considered themselves any



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part of the SR-710 extension. Public notices will go out and the drills will start. This is going to invoke a lot of public comment. We are going to have to deal with this in the district office and we need to have a very clear explanation to give the public. You need to anticipate that there will be a fair amount of backlash within the community.

Public Notification Program: R. Barrantes

R. Barrantes: We have had discussions with Caltrans regarding how best to go about that. We have a comprehensive public outreach program and this kick starts that into high gear. We need to reach out to and talk to the cities and elected officials at the State and Federal levels and provide full briefings. Most importantly, you raised the issue of where these borings are and we need to begin there.

We need to do a field survey of all the boring sites and determine if they are near hospitals, schools, businesses. We will see what our challenges are in terms of the staging of the equipment for the proposed duration of time and based on that we will build our program to make people aware of what is actually going to occur.

John Hisserich: I think that is all good and I appreciate that. It does raise issues for communities that have never considered themselves at all a part of the project. The sequential questions are even more complicated than the temporary one caused by the drilling.

R. Barrantes: You are right. We will have to start from the beginning. We will explain to the community why we are doing borings when they had never heard about it previously. There are some council districts in Los Angeles that are not at this table; however we will be working with them to inform them and bring them up to speed. There are also some cities that never considered that they would be included in the study area.

As part of that process, we have to educate them on the study and the scope. We will have to do the public noticing, fact sheets, and distribute this information through various networks. We have a website and information line. Field outreach is also very important.

We will have the time to put our public notification into high gear so that they are aware before they ever see a boring machine in their community.



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Wrap-up: R. Barrantes and K. Padilla

R. Barrantes: We are going to recap what has been said. Katherine has documented the main points of this discussion. We will also get the minutes out more quickly than we have previously so you have time to review them. We will also make sure the SC has the minutes. It is important that you communicate what you have heard to your respective SC members. We will also get the presentation emailed to you.

Recap on main points from this meeting.

- 1) Why not rely on existing data? This is a key component, but we need to supplement this with borings. We are in agreement regarding the delay of Zones 4 and 5 for now.
- 2) There is agreement to proceed with borings in Zones 1, 2 and 3 and to postpone borings Zones 4 and 5 for now until more information is obtained about Superfund sites.
- 3) Is there a need for another meeting to discuss the boring sites and schedule in detail?
- 4) There was a request to provide a detailed screening report and what is the end product.
- 5) There was a request to revisit the goal of the TAC.

The committee was asked for a showing of hands regarding having another meeting to review boring activities. Most members said they either do not see a need for another meeting or they could go either way. Only two members (Ms. Amiri and Mr. Alam) were in favor of another meeting to discuss the borings in detail.

R. Barrantes: Why don't we strike a compromise and make every effort to get you the detail of the borings and scheduling? We could also provide the outline of what the actual report would include in terms of results would be very useful to you. I think that based on that we can decide whether we will be able to meet again.

Richard Gutschow: It is critical that we get this started before the winter. We need to make a decision right now. If we wait until February, we have lost 3 or 4 months



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- Shahrzad Amiri: We are not talking about meeting just for the sake of meeting. I can pick up the phone and call Abdi anytime, but I thought that part of this process was to know collectively what is going on. I am not a city and have not dealt with cities, but know that the borings that METRO did do as part of the initial study took some planning and some time.
- Y. Chandran: We had a consensus on proceeding with the drillings and that it is best to work with each individual city regarding specific details.
- Ann Wilson: I agree with Yoga. My concept of the process is that you would meet with each individual city. I don't feel the need to get involved with what is going on with Pasadena or South Pasadena and whether you can get appropriate permits or not. I just want you to proceed where we can proceed.
- Shahrzad Amiri: When are you going to make a decision about Zones 4 and 5? There are so many things that are unclear and those are issues that you need to resolve.
- Yoga Chandran: I don't think we have enough data regarding Zones 4 and 5 yet.
- R. Barrantes: We want to come back to the TAC with additional information related to the Superfund sites. Whatever we discuss goes right to the SC.
- Shahrzad Amiri: So we can brief the SC?
- R. Barrantes: Absolutely, that is what we want you to do.
- Shahrzad Amiri: I would like to recommend that before you do the borings, you make sure that representatives for Zones 4 and 5 are at the SC and TAC table during the next meetings.
- A. Saghafi: I would like to requests that TAC members help with permitting process, especially with encroachment permits. I also want to address Mr. Habib's question before break about whether there will be intermediate access provided to the tunnel. We don't know that yet until we go to the next level of the effort. Going back to Mr. Alam's question about the tests that would be done at each boring site, this information is in slide 24 of the presentation. Regarding Alam's main question regarding justification for the technical study of the borings, we will provide a more detailed answer to that as well as his other question regarding the final product of this effort.



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R. Barrantes: We will be looking at other locations for future meetings. We would like each city to be a part of this study. We are depending on you to share this information with your SC member. We will email the presentation from this meeting to you.

Abdi provided his cell phone number for the TAC to contact him if they have any questions.

Meeting was adjourned at 5:20 PM.