



MEMORANDUM

To | Carey Lando, County of Marin Public Works
From | Victoria Eisen
Date | January 24, 2017
Project | Alto Tunnel Investigation
Subject | Questions and answers from Jan. 18, 2017 community meeting

This memo provides a summary of the questions (Q) that participants at the January 18, 2017 community meeting to kick off the Alto Tunnel Investigation meeting asked and the responses (A) provided by County staff and members of the County's consulting team at the meeting. These individuals are:

- Carey Lando, Senior Projects Planner, County of Marin Department of Public Works
- Carol Ravano, Geotechnical Engineer, McMillen Jacobs Associates
- Shawn Spreng, Geotechnical Engineer, McMillen Jacobs Associates
- Mike Cox, Project Manager, Drill Tech Drilling & Shoring
- Victoria Eisen, Community Engagement lead, Eisen | Letunic

References to the project website refer to www.walkbikemarin.org/projects_alto.php.

- Q1. I'd like to call out that the gentleman passing out materials, with an MCBC nametag, in no way represents the Marin County Bicycle Coalition.
A1. OK, thank you.
- Q2. Will all written questions be documented and answered in meeting minutes?
A2. There will be no minutes of this meeting; however, we will post tonight's PowerPoint presentation and transcribe the questions we hear and the responses we provide.
- Q3. Do you feel this is a smart exercise given that the project will majorly contribute to GHGs?
A3. We will complete the fieldwork as expeditiously as possible, which will limit the time trucks and the drill rig need to run and, therefore, their greenhouse gas emissions.
- Q4. How many years of van shuttle could be afforded for each \$1million cost of the tunnel being considered?
A4: If a pathway through the Alto Tunnel is eventually pursued, CEQA and NEPA environmental analyses will be required, which would evaluate alternatives to the pathway, such as a shuttle.
- Q5. When would the gunite section of the tunnel (northern portion) be studied if this went forward?
A5. The laser scanner we will use for this study cannot see into the gunite portion of the tunnel. To see this section of the tunnel requires physically entering the tunnel, whereas this study is investigating the tunnel portions that have not been seen in decades. If reopening the tunnel is pursued after this study, investigating the condition of the gunite section will be included in that work.

- Q6. If nothing is done, will the tunnel collapse and what/who would fund the repairs?
- A6. We do not know the condition of the tunnel interior, including whether or not it is at risk of collapse. This study will help answer your first question. If reopening the tunnel is pursued subsequent to the study, your other questions will be among those that will need to be answered.
- Q7. The deliverable for Task 2.1 is a work plan. Is this plan complete? Is this plan available to the public?
- A7. Task 2.1 of the Alto Tunnel Study is to develop a work plan. The draft work plan was presented tonight; when it is finalized, it will be posted to the project website.
- Q8. How did the estimate of use by one million people come about?
- A8. The Mill Valley to Corte Madera Corridor Study (see http://walkbikemarin.org/projects_millvalley.php) estimated a range of potential users – by bike and on foot – projected to use a pathway connecting Mill Valley and Corte Madera that travels through the Alto Tunnel. These estimates were based on user counts of the Sandra Marker Trail and Mill Valley to Sausalito pathways.
- Q9. Will you take the cost of a bicycle/pedestrian underpass at the Tamalpais/Corte Madera Avenue intersection into consideration when estimating the cost of a pathway through the Alto Tunnel? Also the cost of a sound wall along the close adjacent homes in Corte Madera?
- A9. The improvements to that intersection were estimated as part of the Mill Valley/Corte Madera Corridor Study. If a pathway through the Alto Tunnel is pursued, these components will be looked at again.
- Q10. Will the project determine the costs to stabilize the entire tunnel if it is not restored/reopened? It seems like the County/City/Union Pacific Railroad will incur costs even if the tunnel is not reopened, true?
- A10. If this study reveals imminent structural issues, the responsible agency(ies) will be identified.
- Q11. Please define “property owners” in Task 2.2. Several properties adjacent to (the tunnel) didn’t receive any notification of the study.
- A11. The “property owners” referred to in Task 2.2 of the Alto Tunnel Study are those whose title reports include references to the tunnel below their properties. These parcels were identified in the Right-of-Way Study, published in November 2015 (see <http://walkbikemarin.org/documents/Project%20-%20Alto%20Tunnel%20Study/AltoROWResearchResults-rev2-clean.pdf>). Property owners directly adjacent to tunnel were also invited to attend last week’s meeting with property owners.
- Q12. Will soil samples be taken during the drilling process to facilitate future studies?
- A12. No.
- Q13. It was stated the scope of work was just establishing the condition of the tunnel, yet Task 4.1 includes design for tunnel reconstruction and an updated cost estimate. So is it correct the scope of work is much more than establishing the condition of the tunnel?
- A13. Yes, the Alto Tunnel Study will investigate the condition of the previously uninspected portions of the tunnel and update the cost estimates of reopening the tunnel and constructing a pathway within it.

- Q14. The scan will show current surface conditions inside the tunnel. How do you analyze the integrity of the surrounding rock and earth that surrounds the tunnel?
- A14. If, after this study, decision-makers opt to continue pursuing the possibility of someday reopening the Alto Tunnel, another necessary step will be a geotechnical study that will include soil borings, which would provide this information.
- Q15. What/how will this drilling/laser view study determine the possibility of collapse for the tunnel, regardless of reopening the tunnel? And the cost to shore it up without reopening the tunnel so it does not damage properties and homes over the tunnel?
- A15. This study will obtain the best information possible given the level of financial resources available.
- Q16. It seems that the weakest scans are at both portals – the most dangerous part of the tunnel and owned by UP. Why would we ever want to relieve them of this massive liability?
- A16. The County's Real Estate Study identified the owners of each segment of the Alto Tunnel. We will not initiate the process of obtaining property easements or transfers unless and until the decision is made to pursue a pathway through the tunnel.
- Q17. If the tunnel is in bad shape, wouldn't strengthening the hole prevent further collapse? It would be the safer solution.
- A17. If the tunnel is going to be reopened to the public, the tunnel lining will be strengthened in some manner. This investigation will tell us the condition of the current tunnel lining.
- Q18. What credibility could any cost estimate on plans based on a laser scanner here without direct access or photos have? Can't tell the condition of the timbers or walls.
- A18. While we would like to have manned access to the tunnel, at this point we are not able to do so. The laser scan will provide a level of information that will enable us to get a relative idea of the condition of the tunnel interior, i.e. the condition of the timber sets, collapses, voids in the crown, and will allow us to use this information to update the cost estimate.
- Q19. How can you possibly make an intelligent estimate without looking at integrity of structure? No construction company would ever do so.
- A19. While we would like to have manned access to the tunnel, at this point we are not able to do so. The laser scan will provide a level of information that will enable us to get a relative idea of the condition of the tunnel interior, i.e. the condition of the timber sets, collapses, voids in the crown, and will allow us to use this information to update the cost estimate.
- Q20. Puerto Suello tunnel burned and collapsed. Its estimate was \$20m to open but SMART just refurbished and opened it for \$3m total. What, aside from its greater length, creates the \$30-\$60m cost estimate for the Alto Tunnel? How much less than the costs removed by contingency could this tunnel cost actually be?
- A20. The Puerto Suello Tunnel was rehabilitated after a tunnel fire in July 1961 and a concrete lining was installed in 1967. Also, it cost much less to bring the tunnel up to standards for passenger train passage than the Alto Tunnel will cost for pedestrian/bike passage. Rehabilitation in the Puerto Suello tunnel consisted of mostly improving drainage. The Alto Tunnel, if it is reopened, would require structural lining improvements and need to meet the much higher standards of a pathway, including ventilation, lighting, emergency phone boxes and the like.

- Q21. We've been waiting for the tunnel since 1958. What was the structural condition of the tunnel when it was closed? Does present-day technology simplify its restoration?
- A21. Please see the Alto Tunnel Scoping Study-Volume II (see http://walkbikemarin.org/documents/mv_cm_study/VOL%202%20Engineering%20Summary-c.pdf). This document summarizes the known information about the tunnel as of 2001. As far as present-day technology simplifying its restoration, the rehabilitation design and construction methods will depend on the existing condition of the tunnel.
- Q22. If you were able to access the tunnel, what investigation would you do to evaluate feasibility? Photos, soil samples, testing of wood supports?
- A22. If we were able to access the tunnel, we would deploy a team of geologists and geotechnical, tunnel and structural engineers, in addition to safety personnel, to evaluate the visible geology and groundwater flow in the tunnel, the condition and structural integrity of the timber sets and lagging, the ground behind the sets, the invert, the drainage, and any voids and collapses. Geotechnical borings may be considered for the investigation, depending on the conditions observed in the tunnel.
- Q23. How do we know that this survey, including borings, isn't going to cause issues with tunnel integrity?
- A23. The hole we'll be drilling is very small (less than six inches in diameter) and will be cased with a robust steel pipe. There may be some localized instability where the hole opens up into the tunnel, such as small rocks being pushed aside, but we do not expect any impacts to the tunnel greater than that.
- Q24. Do you have a contingency plan if there is a collapse at or very near the borehole's point of entry into the tunnel? Are you assuming that you'll have clear line of sight?
- A24. No, we do not expect the boring and scanning process to have any significant impact on the tunnel structure (see previous response). We chose our boring sites to optimize visibility between known obstructions.
- Q25. Can the digital scanner determine the density of an obstruction it encounters (i.e., distinguish between concrete and Franciscan shale)?
- A25. No, but we will be able to discern individual features, such as the surface of tunnel walls or any obstructions we find, which will give us some information about what we're seeing. For instance, the location of sets and lagging boards, whether upright or in a skewed or fallen position, voids in the crown, collapses in the inverts, groundwater in ditches, or splintering of timber sets.
- Q26. Since the purpose is to refine the estimate to reconstruct the tunnel, will you factor in the increase in costs of steel, concrete, labor etc. since the estimate was done 8 years ago?
- A26. Yes.
- Q27. With the laser scan, do you have an estimate of the margin of error for an estimated cost to reopen the tunnel?
- A27. Any information we obtain from this study will reduce the margin of error from the previous study.

- Q28. What if you drill into an area in the tunnel that does not allow you to “see” a large enough area? Can you drill additional holes? If not, would the study results be good enough to accomplish the objectives?
- A28. Our laser scanner can only see between collapses and other solid features. Additional holes would be possible, but between needing to avoid blocking major roadways and private property, we are very limited in terms of places we can drill from. One possibility is the Camino Alto Open Space preserve, but it would be very difficult to get a drill rig onto that hilly property.
- Q29. What if the tunnel is filled up with water – no airspace? Can the investigative device see through water?
- A29. No, the scanning device cannot see through water.
- Q30. Is there asbestos in the rock being pulverized during hammer drilling?
- A30. The Franciscan rock may contain some serpentine, which can have naturally occurring asbestos, which can be dangerous when airborne. The best way to minimize asbestos-related danger is to suppress any dust with water, as we will be doing when we pump water into and out of the drill pipe.
- Q31. What kind of geologic material is present in the tunnel area?
- A31. Franciscan complex rocks, greywacke, shales, serpentinite.
- Q32. It would be inexpensive to obtain samples during drilling. How much more would it cost? It would provide valuable information.
- Q32. The process of drilling a hole to allow access by the laser scanner is relatively quick, about 100 feet per day, whereas rock cores are much slower and more expensive.
- Q33. Where will all the water go after the sludge is filtered out? Down the road? Down the north canyon? Down the south canyon?
- A33. The water and drill spoils (i.e., rock that’s drilled out of the hole) will be contained and stockpiled onsite. The water will be pumped to a storage tank and trucked out. The soil will be trucked out and disposed of at an approved location.
- Q34. Will you be able to sample water to see if treatment will be required?
- A34. The water will be transported, tested and disposed of offsite in compliance with all regulations.
- Q35. How will you avoid major water tunnel and water main, gas main and fiber optics?
- A35. There are a lot of utilities beneath the Chapman site. A few days before we begin drilling there, we’ll notify the owners of all of the utilities using the Underground Service Alert (USA) service to ensure that we avoid coming into contact with any of them. In addition, the location and angle of the Chapman borings have been designed to avoid coming into contact with the Marin Municipal Water District tunnel that is located above and parallel to the Alto Tunnel.
- Q36. What, if any, chemicals are in the drilling fluid?
- A36. There are no chemicals in the drilling fluid; it is just water to control the dust (see A29).
- Q37. Unfortunately, the Chapman Park area acts as a natural amphitheater & drilling/construction noise reverberates throughout the valley. How will the project mitigate this?

A37. The area geography may reflect noise generated by the drill, but it won't magnify it. Greater than 30-100 feet from the drilling site, noise is expected to be similar to a loud conversation.

Q38. Will Chapman be open during non-work hours (5p-7a) and weekends?

A38. No, Chapman will be closed to all traffic from 7am Tues, Feb 14 to 5pm, Mon, Mar 13.

Q39. Will Chapman be closed 24/7 for approximately 3 weeks?

A39. Chapman will be closed 24/7 for approximately four weeks.

Q40. Will staging occur prior to 7:00a? For example, some construction sites have trucks arrive and running at 6:00a.

A40. No, neither the trucks nor the drill will start up until 7am.

Q41. Does road closure affect bicycle and pedestrian traffic? Will Camino Alto be closed, or just Chapman? Will roads be open after work hours?

A41. Yes, the closure will affect all modes. No, traffic on Camino Alto will not be affected by the drilling. No, roads will not be open after work hours because the drill rig cannot be repositioned until the hole is completed.

Q42. What sort of liability insurance will be required? In the event of problems such as a gas transmission break or water line break, who will be liable: the Town of Corte Madera, or County, or both?

A42. The contract with the McMillen Jacobs Associates team requires extensive insurance. You can obtain details at

http://marin.granicus.com/DocumentViewer.php?file=marin_78af8f231a754a6b34d394a8bcd65e52.pdf.