Notes from XCAP meeting on September 23, 2020:

Keith Reckdahl did a presentation on the Trench alternative for South Palo Alto.

The committee discussed creating a list of technical questions to ask AECOM as well as things the committee would like to know more about.

List of issues where more information is needed, but can only happen at the next level of review:

1. Geotechnical and soil analysis (regardless of alternatives selected)
2. Groundwater - how would flow be impacted in Hybrid, Trench or Underpass and what considerations need to be made regarding leakage
3. Creeks - understand creek flows, siphons, pumps and their potential impacts and mitigations (Trench)

Questions for AECOM:

1. What are the main cost drivers for each alternative? How can we drive the prices down? For example, what would it take to get the price of the trench down to $300M?
2. What assumptions, if changed, would significantly lower costs and or reduce complexity? For example, the tracks can't clear Adobe creek in a trench even at 2% grade due to the vertical curvature needed for freight trains. If freight trains could reduce operating speeds from 50mph to 35 mph, would that offer the design flexibility needed to clear Adobe creek?
3. What other technical assumptions, if loosened would provide significant design flexibility, or reduce costs, or cut construction time, etc. In other words, what would AECOM suggest we ask Caltrain to think about in order to address the issues identified for each of the alternatives.
4. In the presentation, a cost per linear foot metric seems to indicate that the price of Palo Alto's trench is much higher than other similar projects. Why?
5. What is the cost per linear foot for each of the alternatives (Trench, tunnel, hybrid, viaduct and Underpass)?
6. For the underpass designs, is it feasible to raise the tracks by 1-2 feet? If so, how could that improve the underpass design, particularly for the slope of the bike/ped path and the functioning of the Park Avenue intersection.
7. Has Caltrain approved the "swinging" of the tracks in a viaduct alternative from its current location to the East side of the ROW? How is this design affected by

given Caltrain's Rail Corridor Use Plan indicating they don't want to encumber land that might be needed for 4 tracks?

8. An XCAP member is interested in understanding the light planes that would result from the Viaduct design. Given the alternative is at 5% engineering, what is the margin of error in feet regarding the exact East/West position of the Viaduct.

Ideas for items to highlight for Caltrain's Corridor-wide grade separation study:

1. Can UP operating speeds be reduced to 35 mph in key locations to allow for more design flexibility regarding vertical curvature?
2. What drives the vertical clearance of the corridor and can vertical clearance assumptions be changed? Background: The Caltrain EIR describes the compromise made between UP and Caltrain in the Draft EIR for Caltrain Electrification, Caltrain explained that in order to electrify the historic bridge (1902) that goes over San Francisquito Creek in Palo Alto, it would need to hang the wires from the bridge itself. Union Pacific objected to Caltrain saying it would limit their ability in the future to run taller freight on the corridor because it would impact the vertical clearance levels (height). The current clearance of the historic bridge is 21' 3". The addition of wires would reduce the clearance levels by two feet. This would still be sufficient for the tallest freight trains currently in use, which are 18.92 ft, but preclude Plate H (double-stack) freight trains between San Francisco and Santa Clara.
3. Under what conditions will a higher than 1% grade be allowed?
4. Reducing construction duration helps reduce costs and disruption - what type of phasing be used to help reduce construction time?