

Follow up to Measurable Criteria Questions

Date: January 15, 2020

From: Staff

Re: Follow up to Questions from XCAP Measurable Criteria Group from Jan. 8, 2020

The questions below were submitted by the XCAP Measurable Criteria Group at the Jan. 8, 2020 XCAP meeting. They requested that staff give high level follow up to these questions for the Jan. 15, 2020 XCAP meeting. Below are staff's initial responses to the questions.

Questions for City Council

~~• [Criteria E] What level of funding is feasible? Is there more guidance on this topic based on the city's recent tax discussions? (This question was removed by the XCAP at the Jan. 8, 2020 XCAP meeting).~~

Questions for Staff First Set of Questions

- [Criteria D] What is the cost of pumping water from Oregon Expressway underpass today? Who pays for it?

Santa Clara County is the responsible agency for Oregon Expressway as it is a County road. They maintain the street and pay all associated operating costs, including the cost to pump water. In prior communication, County staff indicated that about 125 million gallons of groundwater is extracted annually. The estimated cost shared by the County is approximately \$400,000 annually which includes continuous pumping and cleanup. Of note, the need to pump is linked to the volume of water that comes onto the street (so rainier years would mean higher costs than less wet years, for example). Also note that comparison to Oregon Expressway might not be one-to-one with a rail grade separation underground alternative in terms of pumping needed.

- [Criteria H] Kingsley is a local/collector street in the Comp Plan; what do we need to consider when proposing increased traffic on Kingsley?

The Comprehensive Plan does not set a traffic threshold for any given street. Thus, our consideration for Kingsley would be to keep the traffic volumes at a reasonable level given the mitigation planned for that street.

- [Criteria H] Are there metrics already collected by the City in the normal course of business that could help quantify this criteria?

The Criteria H, “Maintain access to neighborhoods, parks, and schools along the corridor, while reducing regional traffic on neighborhood streets,” does not have any existing relevant data collected at the City. The closest thing would be the typical walking distance to a park but that metric is not the most useful for this criteria. Collection of data such as traffic volumes has been part of the ongoing grade separation studies.

- [Criteria I] What visual mitigation options do we have for each alternative?

Refer to the answer below to this question.

- [Criteria J] How do we measure the alternatives against Vision Zero goals?

All of our grade separation planning is linked to reducing pedestrian, bicycle, and motor vehicle collisions. Every alternative currently under consideration for grade separation reduces the number of conflict points in these intersections and thus increases safety. That said, the City of Palo Alto has not formally adopted a Vision Zero goal.

Questions for Consultants–Second Set of Questions

- [Criteria C] Can we get a preliminary bike/ped plan for the Embarcadero mitigations?

The exhibits, 3D renderings and cost estimates for the Embarcadero/Alma intersection improvements include crosswalks, a pedestrian bridge over Embarcadero (near the Town and Country driveway), and replacement of the stairways adjacent to the Alma St vehicular bridge that would have to be replaced to accommodate widening (or replacement) of the bridge.

The current scope of services provides “rough” designs rather than specificity needed to detail ped/bike elements. More detailed ped/bike improvements, with input from the community, will be developed during the next phase of the project (environmental and preliminary engineering).

- [Criteria D] How do the Oregon Expressway pumping costs compare to potential pumping for below grade options in South PA?

The Oregon Expressway Underpass is not pumping a creek, only a low point in the road caused by the underpass. Since we don't currently have information about the pump at

Oregon Expressway we can only come up with some very rough guesses at annual operating cost, but an estimate in the \$2,000 to \$4,000 range seems reasonable. Of greater concern than cost may be the volume of groundwater extracted (125 million gallons per year).

Adobe Creek is obviously a different situation because it is a creek system with a large watershed. Based on the pump sizes we estimate the operating cost to be on the order of \$40,000 to \$80,000.

As referenced above, pumping costs are highly dependent on the environment. But we would need to follow up (given the short timeframe to answer these questions) with any information on the estimated difference in cost between Oregon and the below grade alternatives under consideration.

- [Criteria G] How can rail noise/vibration be estimated at this stage of design, if it can?

A general noise and vibration analysis could be conducted for each alternative using methods outlined in the Federal Transit Administration's (FTA's) Transit Noise and Vibration Impact Assessment Manual. A comparison of total potential impacts for each alternative could then be done.

- [Criteria G] What methods do we have to compare the expected/worst case/best case rail noise and vibration for the different alternatives?

See response to previous question. Also please note that the FTA Noise and Vibration Manual includes different levels of analysis for different project phases. The "general assessment" method is most appropriate for the environmental/planning phase of the project when multiple alternatives are under consideration. Note: we are still in the planning phase of this project. Environmental would come after the Council decides on preferred alternatives.

- [Criteria G] Can we estimate the number of train horns in 2030 for each alternative as well as No Build?

For the No Build Alternative in 2030, all train locomotives that are not in a "Quiet Zone" are required to sound their horns approaching an at-grade crossing. This is the same as the existing condition, except with more trains in the future (approximately 114 daily commuter trains in 2030 versus 92 today in 2020), about a 24% increase.

Any alternative that eliminates the at-grade crossing (by grade separation or by elimination, at Churchill Avenue for example) will also eliminate all train horn noise except as needed, in emergency situations. See the link below on Caltrain's website for more info about horn noise:

http://www.caltrain.com/about/MediaRelations/news/Caltrain_to_Reduce_Horn_Noise.html

Based on federal rule, local government agencies may restrict the usage of train horns at railroad crossings which meet specified criteria (as reviewed and approved by the Federal Railroad Administration). These crossings are then considered to be within a "Quiet Zone". More information about Quiet Zones can be found on CPUC's website:

<https://www.cpuc.ca.gov/General.aspx?id=2969>

- [Criteria I] What visual mitigation options do we have for each alternative?

All alternatives will seek to provide replacement landscaping, where feasible. The trench alternative and to some extent the tunnel alternative, will have the greatest limitation to replacement planting along the corridor because trees with deep roots will be prohibited in areas where tie-backs (behind the trench walls) are located.

To minimize the visual impact of aerial structures for the hybrid and viaduct alternatives, the depth of the structures can be minimized by reducing the span lengths (column spacing). In addition, aesthetic treatments on the façade of the structure, such as that used on the Holly Street Undercrossing in San Carlos, can be implemented to soften the structure's appearance.

- [Criteria J] What are the range of mitigations available for construction duration and disruption? Please list and describe?

To minimize construction duration, there are a few measures that can be taken to increase the contractor's work zone and mobility and thus, reduce the length of time to complete the project; such as:

- *Implementing road closures*.*
- *Providing longer work windows, including weekend, early morning and night time hours for relatively low-noise activities.*

** This measure can be effective and will be considered on a case-by-case basis. For example, during construction of Redwood City's Jefferson Avenue Undercrossing, the City decided to close Jefferson Avenue during construction to minimize the overall construction duration.*

Minimizing public disruption and inconvenience, such as avoiding/minimizing road closures and detours will likely increase the overall construction duration.

Construction staging for a grade separation project is often complicated with many factors to be considered including overall duration, public inconvenience/disruption (for all modes of travel), and contractor and public safety. Construction strategies will be evaluated in more detail during the next phase of the project.