

APPENDIX G

**State Route 37 Corridor Planning and  
Environmental Linkages Study  
Level 2 Evaluation Criteria  
Screening Memorandum**

# Memorandum

**To:** TAMMY MASSENGALE  
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**Subject:** **STATE ROUTE 37 PLANNING AND ENVIRONMENTAL LINKAGES STUDY LEVEL 2 EVALUATION CRITERIA SCREENING MEMORANDUM**

This memorandum summarizes work by California Department of Transportation (Caltrans) District 4 as part of the *State Route 37 Planning and Environmental Linkages Study* (SR 37 PEL Study).

This memorandum documents how the PEL Study Project Management Team (PEL Study Team) engaged the three Technical Working Groups (TWGs) in applying Level 2 Evaluation Criteria to the alternatives carried forward after application of Level 1 Evaluation Criteria. It further documents how the PEL Study Team iterated the results of that screening through the TWGs, the project's Stakeholder Working Group (SWG), and ultimately the Executive Steering Committee (ESC).

For additional background, please refer to previous memoranda on Evaluation Criteria and Alternatives. These memos are incorporated by reference.

## 1. BACKGROUND

In previous engagement with the three TWGs, the SWG, and the general public in December 2021 and January 2022, the PEL Study Team finalized the initial alignments to serve as prospective alternatives, as well as the Level 1 Evaluation Criteria. As documented in previous memoranda, the PEL Study Team found that *alignment-level* information was adequate to conduct the Level 1 Evaluation. However, both Level 2 screening (covered in this memo) and Level 3 screening (addressed in a subsequent memo) would be conducted at the *alternatives* level.

For each alignment in Level 1 (and later, each alternative in Level 2 and 3 screening), a determination is made as to whether an alignment or alternative is

carried forward in the SR 37 PEL Study, and if so, how it is carried forward (as a core concept or a supplemental element).

- **Carried forward as a Core Concept**—Standalone improvement that directly meets the SR 37 PEL Study's Purpose and Need.
- **Carried forward as a Supplemental Element**—Additional improvement that does not fully meet the Purpose and Need on its own but improves the core concepts.
- **Eliminated**—Core concept or supplemental element that does not meet the Purpose and Need identified for the SR 37 PEL Study.
- **Not Recommended**—Core concept or supplemental element that will not be evaluated further in the SR 37 PEL Study because of comparatively negligible benefits or higher impacts than other concepts/elements.

## 2. RESULTS OF LEVEL 1 SCREENING

In February 2022, the PEL Study Team asked the TWGs to consider each of the eight alignments against the Level 1 Evaluation Criteria, which were derived from the project Purpose and Need. Through the three February 2022 TWG meetings, the PEL Study Team presented relevant criteria along with the following to each of the three TWGs (Environmental, Design, and Traffic), deeply engaging each TWG on how the alignments fare in terms of the criteria.

- Pertinent background information
- A reminder of how the criterion related to the project Purpose and Need
- Initial observations about how each alignment did or did not meet a particular criterion

Drawing on the feedback from these meetings, in March 2022, the PEL Study Team presented its Level 1 screening recommendations to the three TWGs as well as the larger SWG. As the final step in the Level 1 screening process, the PEL Study Team delivered its Level 1 screening recommendations to the ESC, seeking its concurrence.

The Level 1 screening resulted in the following recommendations:

- **Alignments Carried Forward as Core Concepts (to be developed into alternatives and Level 2 screening)**
  - Alignments 1, 4, 5 & 6, 7, 8, and 9
- **Alignments Eliminated**

- Alignments 2 and 3

- **Modal Choices**

- Floating Bridge Eliminated
- Ferries Carried Forward as a Supplemental Element

### **3. INITIATION OF LEVEL 2 SCREENING**

Prior to the Level 2 screening, each of these *alignments* were more fully developed into *alternatives*. While an alignment is little more than a line on a map indicating general placement of a corridor, an alternative includes more specifics regarding the number and width of lanes, identification of portions that would be at grade, on structure, or on embankment, and the inclusion of pedestrian and bicycle facilities.

Prior to the Level 2 screening and for the sake of simplicity and clarity, the PEL Study Team combined Alternatives 5 and 6 into a single Alternative because each would use the existing SR 37 right-of-way and differ only in construction methods (Alternative 5 includes a raised causeway; Alternative 6 includes a levee-protected roadway). The combined Alternative was subsequently labeled Alternative 5/6.

The PEL Study Team initiated Level 2 screening with the TWGs in May 2022. In May 2022 TWG meetings, the TWGs were asked to consider the Level 2 Evaluation Criteria in relation to the alternatives evolved/carried forward for review from Level 1. Refer to the May 2022 TWG presentations (Appendix A) for additional detail. Questions and discussion from each meeting were recorded and included in the meeting record (Appendix B).

During the Level 2 screening, in response to stakeholder feedback on Alternative 9, the PEL Study Team developed and introduced a new alternative designated Alternative 10.

Alternative 9 proposed a direct overbay crossing between Novato and Vallejo. The overbay crossing was similar to that of Alternative 7, but Alternative 9 omitted the southerly extension of SR 121 towards a new overwater interchange with the new overbay crossing. The direct connection of Alternative 9 received favorable feedback but also sparked concern that the south end of SR 121 at Sears Point would in effect be rendered a dead end, presuming that a new overbay crossing would lead to the abandonment of the existing SR 37

roadway. Alternative 10 was conceived to maintain connectivity with SR 121 via the existing SR 37 corridor between Novato and Sears Point.

TWG members were given the opportunity to provide additional thoughts and comments on the application of the Level 2 Evaluation Criteria to the alternatives (see Appendix B).

## **4. SYNTHESIZING TECHNICAL WORKING GROUP INPUT; INITIAL LEVEL 2 SCREENING RECOMMENDATIONS**

To organize feedback from the three May 2022 TWG meetings and foster decision-making, the PEL Study Team prepared a summary matrix (Appendix C). This matrix organized input and considerations of how each alternative met, partially met, or did not meet Level 2 Evaluation Criteria and was a tool the PEL Study Team used in making screening recommendations.

### **4.1 ALTERNATIVES TO BE CARRIED FORWARD AS CORE CONCEPTS**

Alternatives 5/6, 8, 9, and 10 were found to be strongest in meeting the Level 2 Evaluation Criteria. These four alternatives were recommended to be carried forward as core concepts. Key aspects leading to this recommendation are summarized below. For further detail, please refer to Appendix C.

- **Alternative 5/6**—Alternative 5/6 would not induce vehicle miles traveled (VMT) in a four-lane scenario, Caltrans found, using the National Center for Sustainable Transportation (NCST) VMT calculator.<sup>i</sup> Alternative 5/6 would generally maintain existing travel patterns and connections, particularly for Vallejo residents. There is a preference for a causeway design for environmental reasons. TWG feedback included noting that a causeway could allow restoration of natural hydrology and would have the least impact on natural habitats.
- **Alternative 8**—Alternative 8 would not induce VMT in a four-lane scenario according to NCST VMT calculations but would result in substantially different traffic patterns. Alternative 8 would not maintain access to existing routes but would utilize other existing other roadways. Alternative 8 would, however, be effective in being located generally outside the area threatened most acutely by sea-level rise.

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<sup>i</sup> <https://travelcalculator.ncst.ucdavis.edu/>

- **Alternative 9**—Alternative 9 is similar to Alternative 7 in providing a direct connection between Novato and Vallejo. However, Alternative 9 would omit the southerly extension of SR 121 that would meet the new cross-bay alternative at an overwater intersection, avoiding the potential feasibility issues associated with an overwater interchange. Additionally, Alternative 9 would not induce VMT in a four-lane scenario according to NCST VMT calculations and would generally maintain travel patterns. Alternative 9 may have more impacts on aquatic resources, and fill could be required on both ends of the alignment in areas with important habitat.
- **Alternative 10**—Alternative 10 would generally maintain travel patterns and access. However, Alternative 10 would result in some induced VMT. According to NCST VMT calculations, Alternative 10 in a four-lane scenario would result in a level of VMT inducement that appears potentially feasible to mitigate. However, Alternative 10 may have more impacts on aquatic resources, and fill could be required on both ends of the alignment that would impact important habitat.

The following three alternatives were recommended to be eliminated for faring worst in meeting Level 2 Evaluation Criteria. Key aspects leading to this recommendation are summarized below. For further detail, please refer to Appendix C.

- **Alternative 1**—Alternative 1 would result in substantial induced VMT according to NCST VMT calculations. Alternative 1 would maintain travel patterns on the west but not on the east and would not serve Vallejo, an Equity Priority Community, well. Alternative 1 would have a new footprint for over half the alignment with environmental impacts associated with numerous wetlands and high-quality migration corridors creating impediments for wildlife movement into and out of the bay.
- **Alternative 4**—Alternative 4 would have substantial induced VMT according to NCST VMT calculations and would not serve Vallejo, an Equity Priority Community, well. It would have a new footprint for over half the alignment with large environmental impacts associated with numerous wetlands and high-quality migration corridors creating impediments for wildlife movement into and out of the bay.
- **Alternative 7**—The feasibility of an overwater interchange as part of Alternative 7 is questionable because it would require a system-to-system interchange in the middle of the bay. This feature would present

considerable design, construction, and maintenance issues. Comparatively, Alternative 10 offers connectivity to SR 121 but without the problematic overwater interchange and also includes the western portion of SR 37 to provide access, which Alternative 7 does not provide. Alternative 7 would also result in some induced VMT according to NCST VMT calculations and would generally maintain travel patterns. In addition, Alternative 7 would result in substantial impacts on aquatic critical habitat and would require new fill within the bay, affecting aquatic migratory species movement.

## **4.2 MODAL RECOMMENDATIONS**

Reflecting on the “modal menu” previously presented to the TWGs, the PEL Study Team proposed recommendations for bringing forward three supplemental travel modes in addition to roadway vehicle travel (i.e., auto, bus, truck).

### **4.2.1 Bike and Pedestrian**

Many comments were received on the bike/pedestrian portion of the design. Concerns centered on aesthetics, access refuge stations, and safety, with safety concerns including wind and vehicle spray. As stated in the Level 1 screening, Caltrans policy requires the inclusion of safe bike and pedestrian facilities with any alternative carried forward to construction.

### **4.2.2 Rail**

While specific additional evaluation of rail as a mode was not conducted as part of Level 2 screening, design took into consideration the possibilities of resolving the existing at-grade crossing just east of the SR 121 intersection. Also, while none of the alternatives expressly include rail facilities, most of the alternatives carried forward (5/6, 9, and 10) would allow for a new rail line to be constructed alongside. Accordingly, rail was carried forward to Level 3.

### **4.2.3 Ferries**

The PEL Study Team took a closer look at ferry service as part of Level 2 screening. While expansion of ferry service may be feasible particularly at locations with existing stations (Vallejo and Larkspur), the mode is less appealing as a standalone alternative when evaluating the ability of ferry service to meet travel demand and accommodate SR 37 users. In 2019, the average daily trip (ADT) count for the existing SR 37 corridor was 37,500, with a projected 2040 ADT

of 44,000 (MTC 2022). Ferry service would not be able to accommodate the ADT in 2019 or 2040. Ferry service makes sense for passengers wishing to move between Vallejo and Larkspur but is exceptionally challenging for passengers with alternative destinations. Furthermore, in a 2019 Water Transit Feasibility Study of the Bay Area determined that only expanded service between Vallejo and San Francisco would generate sufficient ridership. Other routes within the Bay Area did not have the ridership to be feasible at this time (STA 2019). Therefore, ferries were carried forward as a supplemental element—but not a core concept—to Level 3.

### **4.3 DESIGN OPTIONS**

Reflecting on design options presented to the TWGs, the PEL Study Team gathered the following input on embankment versus causeway as well as a shoulder running lane.

#### **4.3.1 Embankment and Causeway**

The PEL Study team considered embankment and causeway designs for all alternatives. Feedback from the TWGs was that extensive use of embankments would have substantial adverse environmental consequences, particularly on marsh habitat. The feasibility of constructing such a long embankment was also called into question. The recommendation for moving design options forward to Level 3 is to evaluate a majority-causeway design, with limited areas of embankment where absolutely necessary (e.g., making the transition from at-grade to causeway structures).

#### **4.3.2 Shoulder Running Lane**

The Design TWG identified the roadway shoulder as optional shoulder running lanes, which would be open for use during peak periods. Such lanes could be managed for HOV or buses only. Comments included making sure it is clear it is not a full-time lane, as well as addressing incident management. The PEL Study Team will consider this feedback moving into Level 3.

#### **4.3.3 Tunnel**

The PEL Study team also considered the viability of a tunnel design at this stage. The tunnel design had been introduced as an initial design option due to its resilience to sea-level rise. Alongside the Level 2 screening process, the PEL Study Team considered underwater tunneling and concluded that its costs far exceed that compared to a causeway structure. During construction, unpredictable



challenges could be impeded by accommodating existing submerged utilities or encountering different soil types. These uncertainties increase risk associated with construction, increasing potential cost. The use of a tunnel design would also substantially degrade pedestrian and cyclist opportunities to use the route. Therefore, the tunnel design option was dismissed from further consideration.

#### **4.3.4 Number of Lanes**

All six-lane scenarios were recommended not to be carried forward because they would result in substantial induced VMT according to NCST VMT calculations. Accordingly, only four-lane design options were recommended to be carried forward for each alternative to Level 3.

## **5. FEEDBACK ON AND FINALIZATION OF LEVEL 2 SCREENING RECOMMENDATIONS**

In July and August 2022, the PEL Study Team shared its Level 2 screening recommendations with the working groups (refer to Appendix D). The working groups provided feedback and comments on the initial recommendations.

The following are the finalized Level 2 screening recommendations for items for alternatives to be carried forward as core concepts:

- **Alternative 5/6**—Alternative 5/6 encompassed the causeway and embankment options along the existing SR 37 alignment. As carried forward, Alternative 5/6 reflects a primarily causeway design with limited embankment. The causeway option was preferred by the TWG members because it would have substantially fewer impacts on existing resources. The San Francisco Bay Conservation and Development Commission advised Caltrans (in a July 29, 2022 meeting) that it considered Alternative 5/6 to be an upland option as the area is currently above sea level.
- **Alternative 8**—Alternative 8 would not require fill material within the bay and would be predominantly outside of potential sea-level rise impacts within uplands.
- **Alternative 9**—Alternative 9 is the shortest route, although there was concern related to fill material being placed within the open bay when there are upland options available.
- **Alternative 10**—Alternative 10 would also be carried forward, although like other overbay crossings, generated concern related to fill material being placed in the bay given upland options available.

## **5.1 EXECUTIVE STEERING COMMITTEE CONCURRENCE ON LEVEL 2 SCREENING RECOMMENDATIONS**

As the final step in the Level 2 screening process, the PEL Study Team delivered its Level 2 screening recommendations to the ESC, seeking its concurrence.

The PEL Study Team presented its revised Level 2 screening recommendations to the ESC on July 6, 2022. The presentation summarized the overall process to date, including the identification of initial alignments, the Level 1 screening recommendations, development of Level 2 Evaluation Criteria, Level 2 screening recommendations, and how TWG/SWG input was considered at each of these stages.

Following the presentation, members of the ESC expressed their concurrence with the Level 2 screening recommendations to carry forward Alternatives 5/6, 8, 9, and 10 as core concepts, and to eliminate from consideration Alternatives 1, 4, and 7.

## **5.2 NEXT STEPS**

With the ESC's concurrence on the Level 2 screening recommendations, the PEL Study Team will apply Level 3 Evaluation Criteria to the alternatives carried forward. The PEL Study Team will continue working through the TWGs and SWG in applying the Level 3 Evaluation Criteria to the following alternatives, design options, and modal choices:

- **Alternatives**
  - Alternatives 5/6, 8, 9, and 10
- **Additional Modes**
  - Bike/Pedestrian
  - Ferries as a Supplemental Element
  - Rail
- **Design Choices**
  - Primarily causeway design, with the majority of roadway proposed on causeway
  - Four-lane design options with shoulders sufficiently wide for peak period use

The PEL Study Team will ultimately be making Level 3 screening recommendations to be reviewed and validated by the TWGs/SWG and for ESC concurrence.

## **6 APPENDICES**

- A. May 2022 TWG Presentations
- B. Summaries of Comments from May 2022 TWG Meetings
- C. Summary Matrix of Level 2 Screening Recommendations
- D. July 2022 TWG Presentations

## **7 REFERENCES**

Metropolitan Transportation Commission (MTC). 2022. State Route 37 Ultimate Sea Level Rise Resilience Design Alternatives Assessment Marin-Sonoma (US 101 – SR 121). Prepared by TYLIN International for Metropolitan Transportation Commission. February.

Solano Transportation Authority (STA). 2019. *Water Transit Feasibility Study*. Prepared by Economic & Planning Systems, Inc. for Solano Transportation Authority. July. <https://sta.ca.gov/wp-content/uploads/2019/07/Water-Transit-Services-Feasibility-Study-7-22-19-2.pdf>. Accessed August 16, 2022.