CITY OF PALO ALTO

OFFICE OF THE CITY MANAGER

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March 14, 2024

Dina El-Tawansy
District Director
Caltrans Bay Area
111 Grand Ave
Oakland, CA 94612
dina.el-tawansy@dot.ca.gov

Subject: City of Palo Alto's Review and Comments on Proposed SR 82/ El Camino Real Bikeway Project

Dear Ms. El-Tawansy,

Thank you for your continuous effort to enhance transportation infrastructure and safety along State Route (SR) 82/ El Camino Real. The City of Palo Alto values Caltrans' dedication to promoting a safer and more sustainable transportation environment, especially for vulnerable road users such as bicyclists.

Following your recent proposal for adding new bikeways along SR 82, the City has engaged Fehr & Peers to conduct a comprehensive review of the plan in alignment with Caltrans' Design Information Bulletin-94 (DIB-94) and the Safe System Approach. The Safe System Approach recognizes the role of kinetic energy (speed and vehicle mass) and exposure as the root causes of severe injuries and fatalities, and requires a redundant, holistic, and proactive approach to address systemic risk. The core principles of the approach are to first reduce speed, and then to separate users in space and time consistent with the contextually appropriate speed. Caltrans has committed to Vision Zero (eliminating fatalities and severe injuries) and adopted the Safe System Approach as the roadmap to achieving that goal. The attached review aims to ensure that the proposed bikeway design effectively addresses the key principles of reducing speed and separating users in space and time, thereby mitigating the risk of severe injuries and fatalities.

The attached review has identified several concerns regarding the current proposal, including:

The high-speed conditions for both through and turning movements are not adequately addressed, posing significant risks to vulnerable road users.
The proposed design includes stretches of conventional bicycle lanes with insufficient protection, especially at intersections, leading to high-stress conditions for bicyclists.
Introduction of new conflict points with buses for bicyclists, particularly those transitioning from sidewalk to on-street biking, could increase the risk of accidents.

In light of these findings, the City of Palo Alto requests Caltrans to:

a) Assess the applicability of DIB-94 to the current bike lane proposal and explore modifications to align with its principles.
b) Provide detailed feedback on the memo's review and consider integrating the suggested improvements into the repaving project.
c) Inform us about the feasibility and timeline for proposing a plan that fully complies with DIB-94 and addresses the identified issues.

Our community appreciates Caltrans' open engagement and willingness to discuss these critical aspects during public meetings. We believe that through collaborative efforts, we can achieve a design that not only enhances safety but also encourages a shift towards more sustainable modes of transportation.

We look forward to your response and continued partnership in making El Camino Real a safer and more welcoming corridor for all users.

Sincerely,

Ed Shikada

City Manager
City of Palo Alto

cc: Nick Saleh
Philip Kamhi, Chief Transportation Official
Sylvia Star-Lack, Transportation Planning Manager

FEHR PEERS

Memorandum

Date: March 11, 2024

To: City of Palo Alto - Philip Kamhi, Chief Transportation Official and Sylvia Star-Lack, Transportation Planning Manager

From: Fehr & Peers - Steve Davis, PE and Meghan Mitman, AICP, RSP_{2I}

Subject: **Review of El Camino Real Proposed Repaving Design in Palo Alto, California**

SJ21-2081.10

We have performed a review of the proposed repaving/restriping plan from Caltrans for the El Camino Real (State Route 82) Corridor in the City of Palo Alto. Our review considered the consistency of the proposed design with Caltrans' complete streets and safety policies[1] and national complete streets design best practices[2], as well as the City's ongoing Bicycle Pedestrian Transportation Plan (BPTP) update and safety action plan efforts. It also considered the role of the El Camino Real Corridor in the City's land use plans, in particular planned high-density housing along the corridor, and the compatibility of the proposed design with the land use context and mode shift goals to meet the City's sustainability, affordable housing, and climate goals.

The best practice references for our review are rooted in the Safe System Approach, which recognizes the role of kinetic energy (speed and vehicle mass) and exposure as the root causes of severe injuries and fatalities, and requires a redundant, holistic, and proactive approach to address systemic risk. The core principles of the approach are to first reduce speed, and then to separate users in space and time consistent with the contextually appropriate speed. Caltrans has committed to Vision Zero and adopted the Safe System Approach as the roadmap to achieving that goal.[3]

[1] In particular, Caltrans newly-released Design Information Bulleting 94 (DIB 94), "Complete Streets Contextual Design Guidance: https://dot.ca.gov/-/media/dot-media/programs/design/documents/dib-94-010224-a11y.pdf

[2] In particular, the newly-released NCHRP 1036: Roadway Cross-Section Reallocation Guide: https://www.trb.org/Publications/Blurbs/182870.aspx and FHWA Safe System Roadway Design Hierarchy: https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-01/Safe_System_Roadway_Design_Hierarchy.pdf

[3] See Director's Policy on Road Safety DP-36: https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/policy/dp_36-a11y.pdf

With this lens, overall we conclude the following:

- The proposed design does not address the high-speed conditions for through and turning movements, which contribute to the greatest kinetic energy risk (and therefore severe injury and fatality risk) for vulnerable road users in the corridor. In particular, the proposed design retains the number of vehicle travel lanes, retains wide travel lanes, removes the "friction" associated with on-street parking, and does not address turning movement speed at the intersections/conflict points. High speed and/or uncontrolled vehicle conflict points for pedestrians walking along and across El Camino Real are not addressed. A representative sample of design features are depicted in **Figure 1**.
- With frequent stretches of conventional bicycle lanes (Class II), some areas where bicycle lanes drop altogether (Class III), and no protected treatments for bicyclists at intersections as shown in **Figure 1**, high stress conditions persist for bicyclists traveling the corridor and these weakest links lead to an overall high stress condition that is likely to limit mode shift potential.
- As shown in **Figure** 1, new conflict points with bicyclists and buses may be introduced for bicyclists that currently ride on the sidewalk but shift to on-street riding in the new condition.

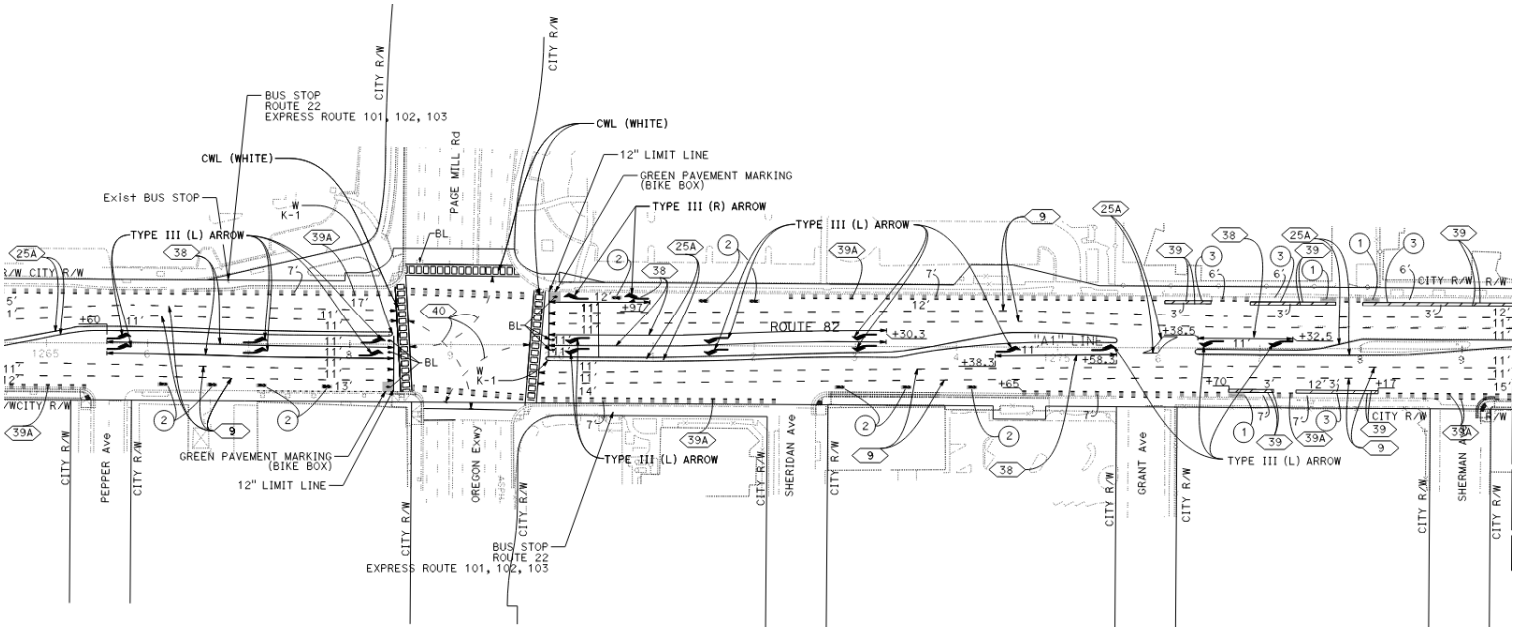

Figure 1: Proposed El Camino Real modifications showing Class II and Class III bicycle facilities, including conflict markings through bus stops, in the vicinity of Page Mill Road / Oregon Expressway
Source: Caltrans Draft 1/22/2024 Pavement Delineation Plans

As such, it is anticipated that the typical candidate bicycling populations would be affected in the following positive (+) or negative (-) ways:

TYPE OF BICYCLIST	EXISTING CONDITIONS	PROPOSED CALTRANS CONFIGURATION	POTENTIAL LOWER STRESS DESIGN
STRONG AND FEARLESS	Currently riding on the street	+ Will continue riding on the street and benefit from new separated (Class IV) facilities in some stretches	+ Will continue riding on the street and benefit from new separated facilities as well as easy access to turns off and on ECR
ENTHUSED AND CONFIDENT (OR BICYCLE DEPENDENT)	Currently riding on the sidewalk, at times contra-flow	+/- Will either continue to ride on the sidewalk or shift to the street and now face new conflicts with buses and more challenging turns onto and off of ECR	+ Will likely shift to on-street riding, removing the challenges associated with contra-flow sidewalk riding
INTERESTED BUT CONCERNED	Not currently riding on ECR	- Likely to continue to avoid ECR or choose to drive instead because of weakest links	+ May be open to riding on ECR, including a wider range of ages and abilities (i.e., 8-80 year olds)

Recommendations to consider regarding these concerns include:

- In the short term, as adjustments to the proposed design:
    - Eliminate the bus/bicycle conflict and long stretches of conventional bicycle lanes with conflict markings by considering/piloting stop-in-lane bus stops and shared bike lane/boarding islands (such as present in the pilot on El Camino Real in South San Francisco shown in **Figure 2**)

Figure 2: Pilot separated bikeway with bus boarding island accommodating bicyclists implemented in South San Francisco in coordination with Samtrans and Caltrans
Source: Silicon Valley Bicycle Coalition[4]

    - Where sufficient width is not available for both right-turn lanes and separated bicycle lanes, consider alternative treatments based on intersection characteristics, such as restriping a through lane to a shared through-right lane to maintain separated bicycle lanes, separating signal phasing for right turning vehicles and through bicyclists, and/or implementing a protected intersection.

[4] https://bikesiliconvalley.org/news/2023/8/pilot-project-pitches-protected-bike-lanes-on-el-camino-real-to-south-san-francisco-residents

    - Provide "paint and plastic" protected intersections, dedicated intersections, and two-stage turn opportunities, consistent with NACTO's "Don't Give Up at the Intersection"[5] guidance for addressing weakest links for low stress design.
    - Narrow lane widths in accordance with DIB 94 to increase buffer space and/or bicycle lane width.
    - Provide "paint and plastic" geometric reconfiguration at intersections to slow turning speeds and shorten pedestrian crossing distances.
    - Review all signals to provide leading pedestrian intervals, protected left turn (or split) phasing where feasible, and adequate pedestrian clearance intervals.
    - Provide "No Right Turn On Red" signage as required for addition of bicycle boxes, particularly where the proposed plans provide space for bicycles to stop at the front of shared through-right or dedicated right-turn lanes.
    - Consider extension of separation treatments on Class IV facilities at intersections with minor side streets in lieu of 50 to 200 feet of dashed bike lane line, allowing an increase in the amount of physical separation provided on the corridor consistent with Safe System Approach goals.
- In the medium term:
    - Consider removing one travel lane in each direction and restoring on-street parking to slow traffic, allow protected corners at intersections, shorten crossing distances, provide a more substantial buffer for bicyclists, and be more compatible with the mode shift goals, context, and safety needs of the corridor.
    - Convert all quick-build enhancements to permanent treatments, including reviewing all signalized intersection geometry and controls, especially those with skewed/high speed angles and/or missing crosswalk legs.
    - Determine additional midblock crossings that may be needed to serve desire lines for pedestrians and bicyclists traveling to key destinations in the corridor, including bus stops.
    - Review access management opportunities to reduce conflict points.

[5] https://nacto.org/publication/dont-give-up-at-the-intersection/