

Project Study Report-Project Development Support (PSR-PDS)

To

Request Approval for a Locally Funded Project to Proceed to Project Approval and Environmental Document (PA&ED) Phase

On Route State Route 92

Between 0.5 miles west of the Clawiter Road overcrossing

And 0.4 miles east of the Clawiter Road overcrossing

APPROVAL RECOMMENDED:

Alex Ameri, Director of Public Works
City of Hayward
Project Sponsor, *Accepts risks identified in this
PSR-PDS and attached risk register*

APPROVAL RECOMMENDED:

Celia McCuaig, Acting Deputy District Director
Transportation Planning and Local Assistance

APPROVAL RECOMMENDED:

Val Ignacio, Regional Project Manager

APPROVED:

Dina El-Tawansy, District Director

Date

Vicinity Map



This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

CHRIS BRECHEISEN, P.E. - REGISTERED CIVIL ENGINEER, KIMLEY-HORN *DATE*



Reviewed by:

Celia McCuaig, OFFICE CHIEF, ADVANCE PLANNING

Table of Contents

1. INTRODUCTION	5
2. BACKGROUND	6
3. PURPOSE AND NEED	9
4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT	12
5. DEFICIENCIES.....	17
6. CORRIDOR AND SYSTEM COORDINATION.....	19
7. ALTERNATIVES.....	30
8. RIGHT-OF-WAY	46
9. STAKEHOLDER INVOLVEMENT	51
10. ENVIRONMENTAL COMPLIANCE.....	53
11. FUNDING	55
12. DELIVERY SCHEDULE.....	56
13. RISKS.....	57
14. EXTERNAL AGENCY COORDINATION	57
15. PROJECT REVIEWS	58
16. PROJECT PERSONNEL.....	58
17. ATTACHMENTS.....	59
A. Location Map	
B. Vicinity Map	
C. Preliminary Layouts	
D. Capital Outlay Project Estimates	
E. Typical Cross Sections	
F. Preliminary Environmental Analysis Report (PEAR)	
G. Traffic Engineering Performance Assessment (TEPA)	
H. Right-of-Way Conceptual Cost Estimate (RWCCE)	
I. Transportation Planning Scoping Information Sheet (TPSIS)	
J. Risk Register	
K. Storm Water Data Report (SWDR)	
L. Complete Streets Decision Document (CSDD)	
M. Vehicle-Miles Traveled Decision Document (VMTDD)	
N. Transportation Plan Management (TMP) Data Sheet	
O. Design Scoping Index	
P. PSR-PDS Survey Needs Questionnaire	
Q. HQ Design PSR-PDS Scoping Checklist	

1. INTRODUCTION

The City of Hayward (City), in cooperation with California Department of Transportation (Caltrans) and Alameda County Transportation Commission (Alameda CTC) proposes to upgrade the State Route 92 (SR 92)/Clawiter Road interchange. The proposed upgrade is the second phase (Phase 2) of the “SR 92/Clawiter-Whitesell Interchange and Reliever Route Project” which was intended to provide a local reliever route between SR 92 and Interstate 880 (I-880) via Winton Ave, Clawiter Road, Depot Road and Whitesell St. This reliever route would improve access to and from the industrial area north of SR 92 and west of I-880, improve local circulation, and relieve congestion on major arterials in the area. Phase 1, completed in 2017, was comprised of local street modifications which included the widening of West Winton Avenue at the Hesperian Boulevard intersection, signal phasing modifications, and widening and extension of Whitesell Street between Depot Road and SR 92.

The SR 92/Clawiter-Whitesell Interchange Upgrade Project (project) would improve access to and from SR 92 for the industrial areas and office parks just west of Clawiter Road. The project would improve bicycle and pedestrian access and safety through the interchange while maintaining or improving local traffic circulation/operations.

Project Limits	04-ALA-92-R3.9/R4.9
Number of Alternatives	3 Build Alternatives and 1 No Build
Current Capital Outlay Support Estimate for PA&ED	\$4.0M to \$8.2M (Current 2023) \$4.5M to \$9.1M (Escalated to midpoint 2026)
Current Capital Outlay Construction Cost Range	\$49.6M to \$102.3M (Current 2023) \$68.4M to \$141.1M (Escalated to 2032)
Current Capital Outlay Right-of-Way Cost Range	\$3.8M to \$33.9M (Current 2023) \$4.9M to \$43.3M (Escalated to 2030)
Funding Source	Federal, state, regional, and local
Type of Facility	Freeway: 3 General-Purpose Lanes and 1 HOV lane (HOV only in westbound direction)
Number of Structures	Breakwater Avenue Pedestrian Overcrossing (Br 33-0655) Clawiter Rd Overcrossing (Br 33-0372) Whitesell Street overcrossing SR 92 (New Bridge) Production Avenue overcrossing SR 92 (New Bridge)
Anticipated Environmental Determination or Document	CEQA - Initial Study/Mitigated Negative Declaration (IS/MND) NEPA - Environmental Assessment/Finding of No Significant Impact (EA/FONSI)
Legal Description	In Alameda County, from 0.5 miles west of Clawiter Road overcrossing to 0.4 miles east of Clawiter Road overcrossing.
Project Development Category	3

This PSR-PDS identifies the project scope, schedule, capital cost estimates, and support costs determined to be reasonably necessary to complete needed studies and work in the Project Approval and Environmental Document (PA&ED) phase. A project report will serve as approval of the “selected” alternative and as the formal programming document for the remaining support and capital components of the project. A project report will also program construction and right-of-way costs. Caltrans is providing Quality Management Assessment (QMA) for the project, and it is anticipated that Caltrans would be the lead agency for required National Environmental Policy Act (NEPA) approval and California Environmental Quality Act (CEQA) approval.

2. BACKGROUND

The existing SR 92/Clawiter Road interchange is located in the western end of Hayward and is surrounded by Hayward’s Industrial Technology and Innovation Corridor (HITIC), a large industrial area between the residential areas of Hayward and the San Francisco Bay. The interchange is confined by developed industrial manufacturing and business parks.

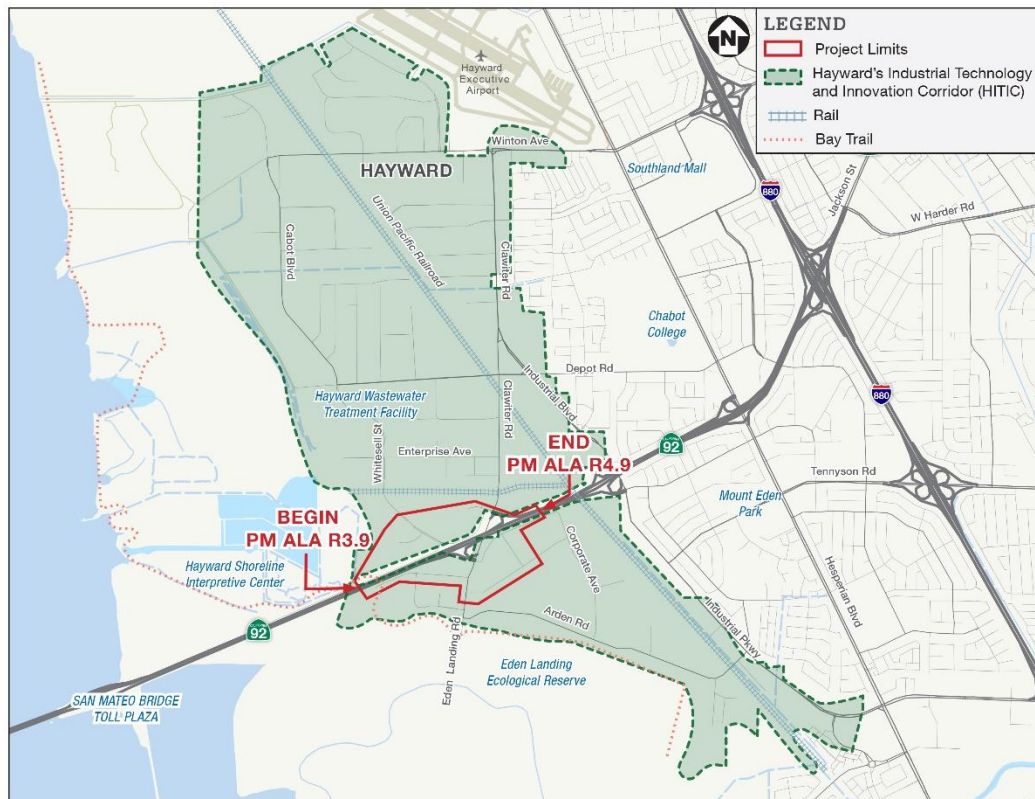


Figure 1: Project Limits and Hayward’s Industrial Technology and Innovation Corridor (HITIC) Limits

The SR 92/Clawiter Road interchange is the western gateway to Hayward from SR 92 and is a partial cloverleaf interchange. The SR 92 mainline runs east and west. It

contains three general-purpose lanes and one High Occupancy Vehicle (HOV) lane in the westbound direction within the project limits. In the eastbound direction, the SR 92 mainline contains three general-purpose lanes. SR 92 crosses three major system interchanges including I-280, US 101, and I-880, as well as crossing the San Francisco Bay via the San Mateo-Hayward Bridge just west of the Clawiter Road interchange.

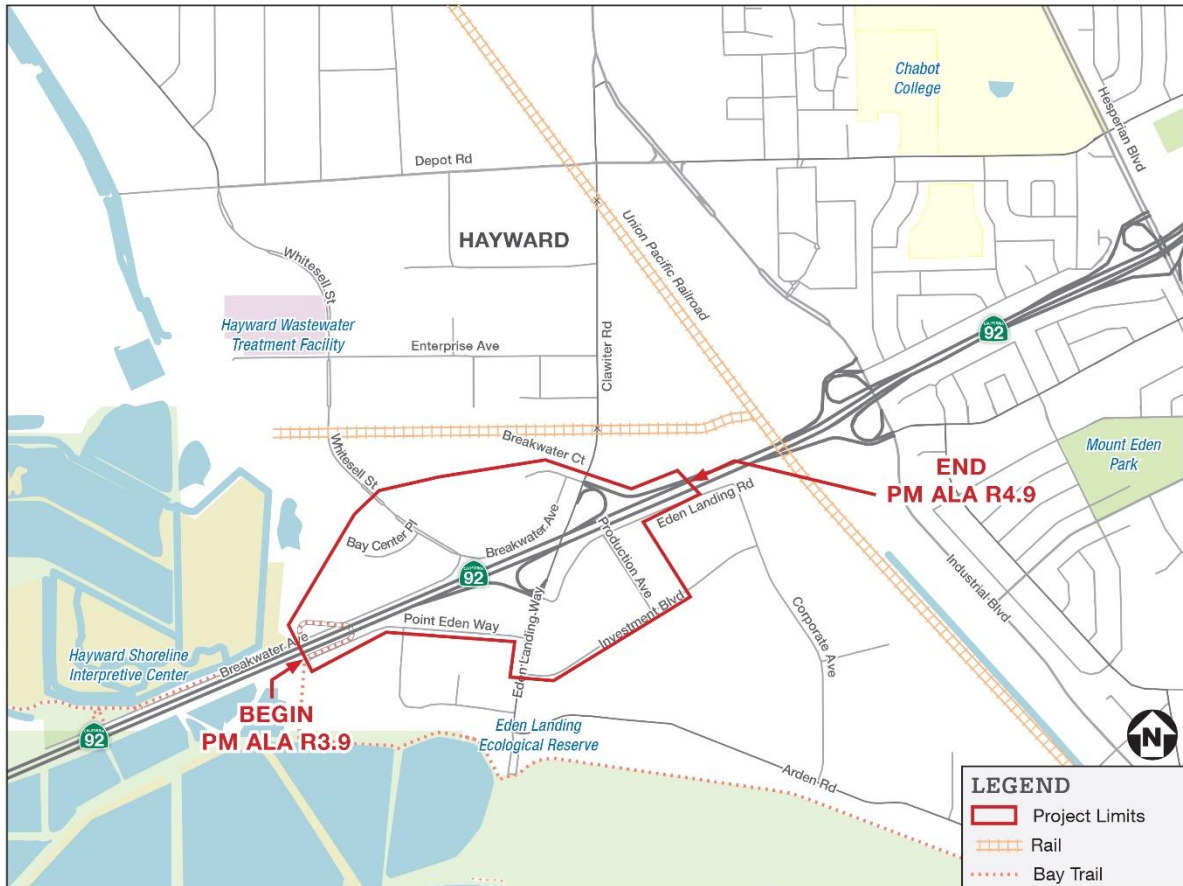


Figure 2: Location Map (Attachment A)

Clawiter Road is a two-lane collector roadway extending in the north-south direction within the project vicinity, running through the center of HITIC. Clawiter Road transitions into Eden Landing Road at the SR 92 eastbound ramp terminal. Clawiter Road/Eden Landing Road provides access to industrial manufacturing and business parks on both sides of SR 92. The posted speed limit on Clawiter Road is 35 mph within the project study area. It is assumed the design speed on Clawiter Road is 40 mph.

Clawiter Road crosses SR 92 on a 4-span prestressed concrete girder overcrossing structure (Br No. 33-0372). The structure was constructed in 1966 with a seismic retrofit modification in 1996. The overcrossing structure has an existing minimum vertical clearance of 15.25 feet over SR 92, which is less than the current Caltrans' standard vertical clearance of 16.5 feet. There is an existing five-foot sidewalk on the southbound side of the Clawiter Road overcrossing structure with no bicycle facilities. There are no

pedestrian or bicycle facilities along Clawiter Road, except the five-foot sidewalk on the existing overcrossing structure. Additionally, the structure has visible signs of impact striking from traffic on SR 92 in both directions of travel.

The City of Hayward initiated the Reliever Route Project in 2008 intended to improve local circulation and access to the industrial/western portion of the city. Phase 1 of the Reliever Route Project focused on improvements to Whitesell Street and was completed in 2017. Whitesell Street is a two-lane road with Class II bike lanes that runs parallel to Clawiter Road at the western end of HITIC. As it approaches SR 92, it curves west becoming Breakwater Avenue which connects to Clawiter Road via two tightly spaced successive intersections. The posted speed limit on Whitesell Street is 30 mph within the project study area. It is assumed the design speed on Whitesell Street is 35 mph. Both Whitesell Street and Clawiter Road are the main north-south collector roads for the industrial/western portion of the city.

The SR 92/Clawiter Road interchange has current and expected increased future heavy truck traffic volumes primarily originating from industrial manufacturing and business parks along Whitesell Street. The heavy truck traffic from Whitesell Street must travel through two consecutively closely spaced intersections (100 feet) from Breakwater Avenue to Clawiter Road prior to accessing the SR 92/Clawiter Road interchange.

Both eastbound and westbound on-ramps (loop on-ramps) to SR 92 have existing ramp metering systems and an HOV preferential lane. The westbound SR 92 on-ramp from Clawiter Road has nonstandard on-ramp geometry including a nonstandard merge length onto the SR 92 mainline. The eastbound SR 92 on-ramp from Clawiter Road enters SR 92 on a dedicated auxiliary lane which ends at the SR 92/I-880 system interchange, with an approximate length of one mile.

The existing bicycle network, where present within the project study area, is primarily Class II facilities. Whitesell Street has Class II bike lanes that end at its intersection with Breakwater Court. Clawiter Road has no bicycle facilities. Eden Landing Road has Class IIB (buffered) bike lanes south of the eastbound ramp terminal and Class II bike lanes east of the ramp terminal. Access to the San Francisco Bay Trail, a generally Class I trail that circles the San Francisco Bay shoreline, is from a Class III facility on Breakwater Avenue north of SR 92 and a Class I pedestrian overcrossing structure connecting from south of SR 92. Existing and planned bicycle infrastructure is shown in **Figure 2** in Section 3 of this document. Section 6 provides a list of planned bicycle improvement projects by the City of Hayward in **Table 6-3**.

AC Transit is the governing transit operator for the City. Currently, there are no active bus routes within the project study area. AC Transit line 83 is an inactive route within the project study area with a nearside bus stop south of the eastbound ramp terminus intersection on Clawiter Road. The route has been suspended due to Covid 19 and has not been reactivated since 2020. AC Transit line 86 is the closest active route to the project study area and crosses Depot Road to the north of the project continuing onto

Industrial Boulevard. There is a transit bus service center, MCI service center, on Point Eden Way which attracts buses for servicing.

The proposed improvements, under all viable alternatives, would maintain the existing transit stop for line 83 near the eastbound ramp terminus intersection. Coordination with AC Transit will occur in the PA&ED phase for any impacts to the bus stop from the raising of the eastbound ramp terminal to accommodate the Whitesell overcrossing structure.

The City of Hayward is the implementing agency working in partnership with the Caltrans and Alameda CTC for completion of the PSR-PDS document for Clawiter Road interchange upgrades and improvements along SR 92. The proposed interchange improvements are intended to improve safety for pedestrians and bicyclists; improve access to the industrial/ western portion of the city in and around the interchange area; and improve traffic operations at the ramp intersections.

This project was included in the State Route 238 Local Alternative Transportation Improvement Program (LATIP) that was created to help fill the highway transportation infrastructure need that occurred when the Route 238 Hayward Bypass project was no longer being pursued. The source of funding for the LATIP projects is from the sale of excess Caltrans right-of-way that was purchased for the Route 238 Hayward Bypass project as set forth in California Government Code sections 14528.5 and 14528.6. The project was defined as the “I-880/Route 92 Reliever – Clawiter/Whitesell Interchange Project” in the LATIP Project Initiation Document (PID), dated November 09, 2009. The LATIP was approved by the California Transportation Commission in May 2010.

This project is listed in the 2020 Alameda Countywide Transportation Plan as a 10-year priority project. It is also listed in the Alameda County Community-Based Transportation Plan 2020. The project is consistent with the City’s 2050 General Plan and the Metropolitan Transportation Commission (MTC) Plan Bay Area (PBA) 2050 Plan.

3. PURPOSE AND NEED

Purpose:

The proposed project has the following primary purposes:

- Improve multimodal access and connectivity for bicyclists and pedestrians traveling across SR 92 at the Clawiter Road interchange, including those accessing regional recreational facilities.
- Improve access to SR 92 from the industrial/businesses located in the western portion of the City of Hayward.
- Improve and optimize traffic operations at the SR 92/Clawiter interchange and along local roadways in proximity to the interchange.

Need:

The proposed project is needed to address the following concerns:

- There is currently a lack of bicycle/pedestrian facilities on Clawiter Road across SR 92. The existing Clawiter Road overcrossing includes sidewalks on the southbound direction and no bicycle facilities, providing limited multimodal access over SR 92. This creates a stressful bicycle/pedestrian environment for accessing the San Francisco Bay Trail and Ecological Eden Landing Reserve from Clawiter Road.
- The City of Hayward initiated a reliever route project in 2008 intended to improve local circulation and access to the industrial/western portion of the city. Phase 1 of the reliever route project, which was completed in 2017, focused on improving Whitesell Street. The primary outcome of this project included improved ingress and egress access and traffic congestion relief along I-880, SR 92, and major arterials in the industrial/western portion of the city, including Winton Avenue, Clawiter Road, and Depot Road. The industrial parcels along Whitesell Street currently access SR 92 through the Clawiter Road interchange. However, the existing configuration of the SR 92/Clawiter Road interchange continues to result in traffic congestion and is deficient in meeting the current and future traffic demand of the industrial/western portion of the city.
- The local intersections near the SR 92/Clawiter Road interchange are closely spaced to the on- and off-ramp intersections, and the existing two-quadrant cloverleaf interchange configuration (Type L-7) at the SR 92/Clawiter Road interchange causes long queuing at the ramp terminus intersections, resulting in inefficient interchange operations.

Modal Interrelationships and System Linkages

The existing bicycle network surrounding the project area has a variety of bicycle facilities. Whitesell Street has Class II bike lanes and there is an existing Class I unpaved San Francisco Bay Trail running from south of the project across SR 92 to the north via a bicycle/pedestrian overcrossing (BPOC) structure. Most of the major collectors/arterials currently have planned bike lanes in the City of Hayward Bicycle Master Plan to be constructed in the near future as part of their active transportation plans as shown in **Figure 2** on the following page. Pedestrian and bicycle access to the San Francisco Bay Trail from north of SR 92 is limited or does not exist.



Figure 2: City of Hayward Existing and Planned Bicycle Infrastructure

Planned Transportation Improvements

The SR 92/Clawiter Rd interchange is identified by the City and Alameda CTC for improved access to SR 92 from the western portion of the city. The planned improvements for this interchange and the surrounding area include enhanced bicycle and pedestrian improvements to improve multimodal facilities and connectivity between the south and north sides of SR 92 and to nearby trails. There are also other planned transportation improvement projects in the project area. The City is also currently constructing Class II bikeways along Depot Rd, west of Whitesell Street and along Cabot Boulevard, north of Whitesell Street. The City's 2020 Bike and Pedestrian Master Plan identifies planned multimodal facilities throughout the city to establish a network of accessible, safe, and integrated bicycle/pedestrian facilities, which this project would incorporate. Approval of this document represents approval of the purpose and need and the range of alternatives to be studied in the PA&ED. Approval of this document does not signify approval of a conceptual alternative.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT (TEPA)

A TEPA was conducted for the project limits utilizing readily available information and applying macro-level analysis. As detailed in **Attachment G**, the TEPA documents the existing traffic conditions of the study corridor using publicly available traffic data and information. The TEPA analysis determines the existing deficiencies and future growth, as well as the potential operations of the proposed SR 92/Clawiter Road interchange alternatives. Additionally, based on this data, the TEPA identifies and defines the scope of work to be completed in the subsequent PA&ED phase of the project, in the form of a Traffic Operations Analysis Report (TOAR). The following provides a summary of the preliminary assessment and key findings of the TEPA.

4A. Existing Conditions Analysis for Intersection Operations

Signalized intersections were evaluated using Synchro 11, a macroscopic analysis and optimization program. Unsignalized intersections were evaluated using the Highway Capacity Manual (HCM) 2000 methodology as applied in Synchro 11. The HCM uses level of service (LOS) as a performance measure. The measures of effectiveness (MOEs) for intersections are average delay (in seconds per vehicle) and LOS, which ranges from A to F.

Intersection traffic operation under the existing year was analyzed based on traffic counts collected in April 2023. The peak hour characteristics for each intersection were examined based on these traffic counts. For each intersection approach, peak hour factors were calculated, and the measured truck volumes were used to calculate the heavy vehicle percentages.

The average delay and LOS under the existing AM and PM peak hours were examined for the following seven out of fifteen study intersections:

7. Whitesell Street/Enterprise Avenue (All-Way Stop)
8. Clawiter Road/Enterprise Avenue (Signalized)
9. Clawiter Road/SR 92 WB Ramps (Signalized)
12. Clawiter Road/SR 92 EB Ramps (All-Way Stop)
13. Industrial Boulevard/SR 92 WB Ramps (Signalized)
14. Industrial Boulevard/SR 92 EB Ramps (Signalized)
15. Industrial Boulevard/Tennyson Road (Signalized)

The results can be found in **Attachment G**, where the TEPA depicts this information in Figures 3.1 and 3.2 and Tables 3.1 and 3.2. It is noticeable from the average daily traffic (ADT) counts that the study area has a high truck percentage, particularly in the SR 92 and Clawiter Road-Whitesell Street interchange area. The study intersections within the TEPA study limits operate with LOS D or better during the AM peak hours, except for the signalized intersection of Industrial Boulevard and SR 92 westbound ramps. This intersection operates at LOS E during the AM peak hours mainly due to heavy traffic from SR 92 accessing Industrial Boulevard. During the PM peak hours, all intersections operate with LOS D or better.

4B. Existing Conditions Analysis for Freeway Operations

The Highway Capacity Software (HCS), a software that incorporates all the freeway segment procedures outlined in HCM Chapters 12, 13, and 14 for basic freeway segments, weaving segments, and merge and diverge segments, respectively, was applied to evaluate traffic conditions on SR 92. The MOEs for freeway segments include demand-to-capacity (d/c) ratio, speed (in mph), density (in passenger cars per mile per lane (pcpmp)), and LOS, which ranges from A to F. The MOE for freeway off-ramps is the 95th percentile queue length (in feet).

In addition to the SR 92 ramps, queues were examined where there is a left or right turn bay at the intersection. No queue was found to exceed the storage capacity. Detailed queue length by turning movement can be found in **Attachment G**.

SR 92 traffic conditions were analyzed for the peak directions only: westbound during the AM peak hours and eastbound during the PM peak hours. Note that there is an HOV lane in the westbound direction between I-880 and the SMH toll plaza. The HOV lane operates between 5:00 AM and 10:00 AM in the morning and between 3:00 PM to 7:00 PM in the afternoon, Monday through Friday.

Analysis was conducted based on PeMS data collected for the typical weekdays in April 2023. On SR 92, between the Industrial Boulevard interchange and the San Mateo-Hayward (SMH) toll plaza, there are twelve PeMS stations in total, with six stations for each direction (including ramps). PeMS data captures the SR 92 mainline traffic counts

as well as the on- and off-ramps from/to Clawiter Road and Industrial Boulevard. Peak hour characteristics were examined based on the PeMS data. For each freeway segment, peak hour factors were calculated, and the measured truck volume was used to calculate the heavy vehicle percentages. Besides PeMS data, SMH toll plaza traffic counts in April 2023 were analyzed and summarized.

SMH toll plaza crosses the San Francisco Bay along SR 92. Drivers pay tolls in the westbound direction on the eastern side of the bridge. The toll plaza was operating under All Electronic Tolling (AET) conditions without manual toll collections. Qualified carpool vehicles that use a designated carpool lane pay a reduced price during the carpool hours mentioned above. Commute bus or vanpool vehicle may cross toll free at any time in designated lanes.

INRIX congestion scans and bottleneck locations were illustrated in the TEPA on SR 92 for both the westbound and eastbound directions. In the westbound direction, traffic at the toll plaza starts to back up at 6:30 AM and vehicle queues do not dissipate until close to 10:00 AM. During the AM peak hour between 7:00 and 8:00 AM, the queue extends northeast along westbound SR 92 all the way to I-880. In the eastbound direction, traffic starts to back up as early as 2:30 PM from I-880 and vehicle queues do not dissipate until around 7:30 PM. During the PM peak hour between 4:00 and 5:00 PM, the queue extends to Clawiter Road and beyond.

Because of the capacity constraints downstream of the study area, the capacity adjustment factors (CAF) and speed adjustment factors (SAF) in the HCS models were modified. The HCS reported speeds were compared to INRIX speeds to ensure the model reflects the existing congestion conditions. For consistency, the modified CAF and SAF values were carried over for the opening year analysis. In the westbound direction, both general-purpose (GP) and HOV lanes were analyzed.

The following summarizes the HCS and INRIX analysis:

Westbound SR 92

During the AM peak hours, the westbound SR 92 GP lanes experience congestion on all freeway segments. The average GP lane speed ranges from 15 mph to 35 mph. Given the high density under the congested condition, six of the seven westbound GP freeway segments operate with LOS E or F. The slowest speed for the GP lanes of 15.2 mph occurs on the freeway segment from the Clawiter Road on-ramp to the toll plaza, which operates with LOS F. The HOV lane experiences relatively less congestion, though three out of the seven HOV freeway segments operate with LOS E. The average HOV lane speed ranges from 40 mph to 52 mph, while the slowest speed of 40.5 mph also occurs on the freeway segment from the Clawiter Road on-ramp to the toll plaza, which operates with LOS E.

Eastbound SR 92

During the PM peak hours, eastbound SR 92 experiences congestion due to the queue backed up from I-880. Four of the seven freeway segments operate with LOS E or F. The average speed ranges from 21 mph to 46 mph, with the slowest speed of 21 mph occurring on the freeway segment from the Industrial Boulevard on-ramp to the Hesperian Boulevard off-ramp, which operates with LOS F.

4C. Opening Year Conditions Analysis

Opening year conditions, in 2035, were assessed under No Build and three Build alternatives. The Synchro and HCS models developed under the existing conditions were updated to reflect the future baseline conditions in 2035 using annual growth rates. The roadway network for the Year 2035 No Build model remained the same as existing conditions. The three Build alternatives were then coded based on the No Build model to reflect the proposed improvements.

Like the existing conditions analysis, each 2035 opening year condition analysis was conducted for the intersections in the study area and on SR 92 freeway segments between the Industrial Boulevard interchange and SMH toll plaza. The No Build and

Build alternatives analyses are summarized below:

No Build Alternative

With the annual growth rate of 2.1% applied till the 2035 opening year, traffic demands under the No Build Alternative would grow by about 28% compared to the existing conditions.

Intersection Operations

Due to increased future traffic demands, all study intersections would experience longer delays. During the AM peak hours, there are two intersections where the LOS would drop from an acceptable LOS to LOS E or F: the Clawiter Road and SR 92 westbound ramps intersection and the Clawiter Road and SR 92 eastbound ramps intersection. Another intersection, the Industrial Boulevard and SR 92 westbound ramps intersection, would drop from LOS E to LOS F. For the PM peak hours, there are also two intersections where the LOS drops from an acceptable LOS to LOS F: the Clawiter Road and SR 92 EB ramps intersection and the Industrial Boulevard and SR 92 eastbound ramps intersection.

Freeway Operations

The already heavily congested SR 92 peak direction is further exacerbated under the 2035 No Build condition due to increased traffic demands. Almost all SR 92 freeway segments would be oversaturated and operate at LOS F. Under the existing AM peak condition, about half of the westbound HOV segments already operate with LOS E.

With the No Build condition, all HOV lanes would operate at LOS F, as the projected HOV demand would exceed capacity.

Build Alternatives

Intersection Operations

The three proposed alternatives would improve local traffic circulation, particularly for those vehicles on Whitesell Street trying to access SR 92. During the AM peak hours, all three alternatives would result in LOS D or better for all intersections in the study area, except for the Industrial Boulevard and SR 92 WB Ramps intersection, which would stay at LOS F. During the PM peak hours, the same trend would exist, except that the new intersection at Clawiter Road and Whitesell Street under Alternative 1 would operate at LOS E.

Freeway Operations

Almost all peak direction SR 92 freeway segments would be oversaturated and operate at LOS E or F in both No Build and Build alternatives. All HOV lanes would operate at LOS F since the project HOV demand would exceed capacity.

There are no proposed freeway improvements under the three alternatives, except that the westbound on- and off-ramp locations would be shifted approximately 1,200 feet to the west in Alternatives 2 and 3. HCS models show that the change of the on- and off-ramp locations would have minimum impact on SR 92 freeway traffic operation. Compared with the No Build Alternative, all Build alternatives would result in a similar LOS since SR 92 freeway segments would remain almost unchanged.

4D. Recommendations

The following recommendations are identified for future traffic study in the PA&ED phase of the work for the SR 92/Clawiter-Whitesell Interchange Upgrade Project:

- Traffic Safety and Collision Analysis: Collision analysis, will be conducted during the PA&ED phase using Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) and other available resources. Safety analysis will be performed based on the Highway Safety Manual (HSM) methods.
- Traffic Data Collection: It is recommended to use the most currently available data such as those collected in 2023 for this project as the baseline conditions. Although PeMS data is available on SR 92, more accurate freeway mainline data collection using cameras is recommended.
- Traffic Study Area: Alternative 3 proposes to realign and extend Clawiter Road over SR 92 to Production Avenue. It is recommended to extend the study limits further east to include the intersection of Eden Landing Road and Production Avenue in the PA&ED phase. In addition, to account for the potential reroute traffic to Depot Road, Depot Road between Whitesell Street and Clawiter Road is recommended to be included in the study area.

- **Traffic Analysis Years:** It is recommended that traffic operational analysis be conducted for Existing, Opening Year 2035, and Design Year 2055 conditions.
- **Traffic Operational Analysis Hours and Tools:** During the PA&ED phase, the consultant team should work with Caltrans D4 and the City of Hayward to determine analysis hours and appropriate tools for mainline freeways and intersections. Traffic operational analysis should be conducted for mainline freeway, ramps, and intersections for either peak periods (5-10 AM) and (3-7 PM) or peak hours (AM and PM). Analysis will be performed using either a micro-simulation tool, such as (e.g., VISSIM) or other tools such as Synchro and HCS. For the selected analysis tool, the latest version should be used.
- **Traffic Forecasting:** Future traffic forecasts will be developed by using the most current Alameda CTC Countywide Travel Demand Model. Traffic forecasting will be estimated by interpolating or extrapolating from the model year scenarios. The Alameda CTC Countywide Travel Demand Model will be updated with all known significant developments that will occur in the area. A Travel Demand Forecasting Methodology Memorandum will be prepared for review and approval before conducting traffic forecasts.
- **Vehicle Miles Traveled (VMT) Analysis:** As per Senate Bill (SB) 743, VMT analysis will be performed for no build and build conditions and reported in the Traffic Forecasting Memorandum and briefly summarized in the TOAR during the PA&ED phase.
- **Bicycle and Pedestrian Analysis:** Include bicycle and pedestrian LOS analysis for all scenarios.

The findings of the PA&ED traffic analysis will be documented in the Draft and Final TOAR, which will be used to help assess the design alternatives in support of the project purpose and need in the next phase.

5. DEFICIENCIES

As described in the previous sections, the project deficiencies at the SR 92/Clawiter Road interchange are mainly operational resulting in inadequate multimodal accommodation and traffic operations. Increased future traffic demands within the project limits and surrounding industrial/western portion of the city are expected to worsen these deficiencies.

Industrial/Western Portion of the City of Hayward

The interchange is located in an industrial zone with manufacturing sites and office parks with high truck volumes. The project study area and surrounding area suffer from the lack of efficient truck access due to prolonged congestion periods on several major arterials, such as Winton Avenue, Clawiter Road, Depot Road, and the regional routes such as I-880 and SR-92, which is limiting economic development. The City is tracking seven development projects, as shown in **Figure 3**, in planning or under construction in

the project vicinity, with many being commercial projects in the industrial corridor. These developments will likely increase truck traffic further in the industrial/western part of the city and reinforce the need for improved circulation and access to SR 92. The planned development projects or projects currently in construction within the western portion of the city are shown in **Figure 3** on the following page. Freeway, ramp, and local road collision data is summarized in **Attachment G**, TEPA.

The existing industrial western portion of the city lacks sufficient access to SR 92 and I-880. The existing SR 92/Clawiter Road interchange currently provides access for the western portion of the city. The interchange configuration is a two-quadrant cloverleaf with deficiency for existing and future traffic demand conditions due to closely spaced local intersections, inefficient access to parcels along Whitesell Street, and the nonstandard width and vertical clearance of Clawiter Road overcrossing structure. The westbound and eastbound loop on-ramps are configured such that through traffic enters the ramp directly into the HOV preferential lane, resulting in merge conflicts for single occupant vehicles needing to merge right to the GP lane. Additionally, there exists a number of multimodal facility gaps for local connectivity along Clawiter Road. There are no bicycle facilities or crossings at the interchange and there is only a 5-foot pedestrian facility on the Clawiter Road overcrossing structure in the southbound direction. The remainder of the interchange lacks pedestrian facilities.

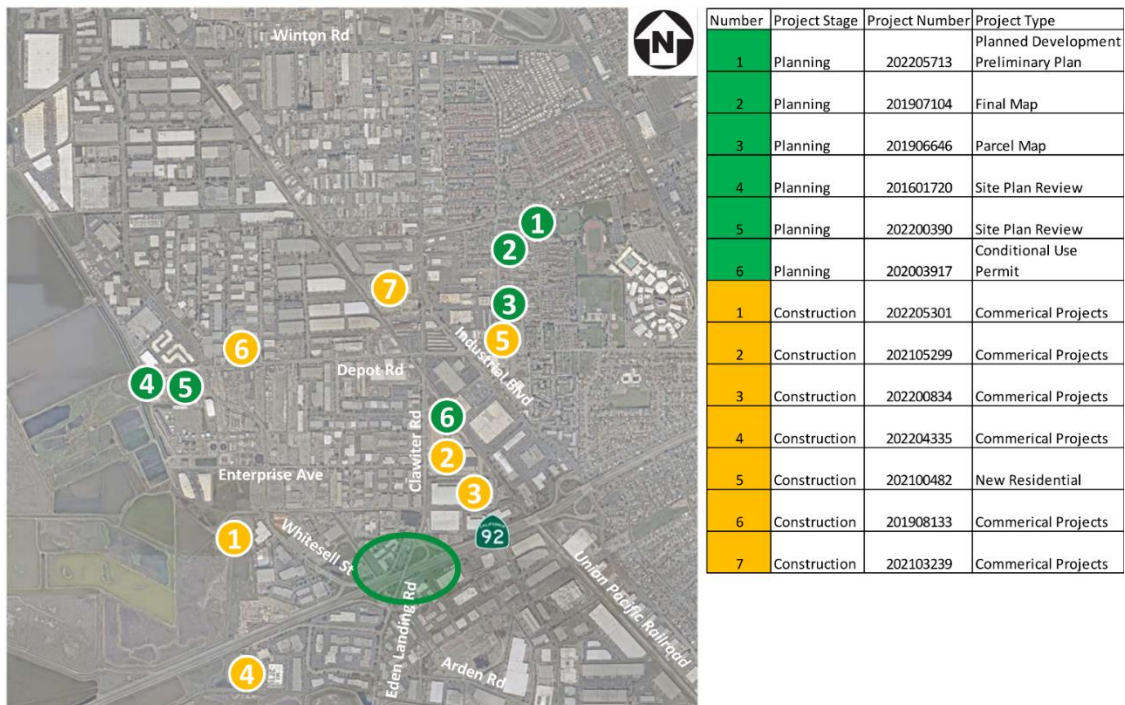


Figure 3: City of Hayward Planned and Construction Site Development Projects

6. CORRIDOR AND SYSTEM COORDINATION

Corridor Overview

SR 92 is a major regional state route acting as an east-west connecting facility, providing access from Half Moon Bay across the San Francisco Peninsula and the SMH Bridge ending in the East Bay at I-880 in Hayward. Therefore, the route is heavily traveled by commuters between the East Bay and the San Francisco Peninsula. SR 92 crosses seven freeways/highways, from west to east: SR 1, SR 35, I-280, SR 82, US 101, I-280, and I-880. SR 92 is also part of the National Highway System, which is a designation for highways essential to the nation’s economy, defense, and mobility by the Federal Highway Administration (FHWA).

Within the project limits, SR 92 is predominantly a seven-lane freeway. There are three GP lanes and one HOV Lane in the westbound direction and three GP lanes with no HOV in the eastbound direction. The westbound HOV lane facility begins at the Hesperian Boulevard interchange and ends at the SMH Bridge Toll Plaza.

California Assembly Bill number 1386 (AB 1386), which was sponsored by the City of Hayward and passed on July 1, 2009, requires Caltrans to deposit proceeds from the sale of surplus properties in the previously planned SR 238 Hayward Bypass corridor into a special fund to provide greater flexibility with respect to the funding of local infrastructure projects. The City partnered with Caltrans, MTC, San Leandro, Alameda County, and Alameda CTC to develop a SR 238 Local Alternative Transportation Improvement Program (LATIP), as required under AB 1386, that addressed transportation problems and opportunities in the area to be served by the unbuilt facilities along or near the SR 238 Hayward Bypass. The SR 92/Clawiter-Whitesell Interchange Upgrade Project is listed as a priority project in the LATIP Project Initiation Document (PID) approved in 2009. The LATIP was approved by the CTC in May 2010.

A. Federal and State Planning

For federal and state planning and design purposes, SR 92 has the following classifications and designations as shown in **Table 6-1**.

Table 6-1: Federal and State Planning

	Functional Classification	Trucking Designations	National Highway System (NHS)	Scenic Highway	Interregional Road System (IRRS)
SR 92	High	STAA*	Other NHS Routes	No	No

State Planning

The SR 92 Transportation Concept Report (TCR) was completed in September 2016. The TCR was developed pursuant to the legal requirement for long-range planning

documents to guide the logical development of transportation systems as required by law and as necessitated by the public, other stakeholders, and system users. The purpose of the TCR is to evaluate current and projected conditions along the route and communicate the vision for the development of each route in each Caltrans District during a 25-year planning horizon. The 25-year concept for the segment in which the project vicinity is located recommends that the segment remains as a 4-6 lane freeway. Strategies that are recommended for this segment include:

- Study feasibility of additional lane (HOV/HOT)
- Continue I/C improvements at SR 82, 101
- Study ramp-braiding in areas of weaving
- Implement TOS elements & ramp metering
- Maintain & improve Park & Ride lots
- Close gaps within the corridor's bicycle network (parallel and intersecting routes)
- Improve pedestrian environment at I/S and I/C in areas with pedestrian demand

Regional Planning

The Metropolitan Transportation Commission (MTC) is the State-designated Regional Transportation Planning Agency and the federal-designated Metropolitan Planning Organization for the San Francisco Bay Area. The MTC is responsible for the Regional Transportation Plan (RTP), a long-range (though financially constrained) planning report for the region. Under Senate Bill 375, along with an updated RTP, each region in California is mandated to develop a Sustainable Communities Strategy (SCS) that promotes compact, mixed-use commercial and residential development that is walkable, bikeable, and close to mass transit, jobs, schools, shopping, parks, recreation, and other amenities to help achieve the greenhouse gas emission reduction target outlined in SB 32.

In partnership with the Regional Planning Agency Association of Bay Area Governments (ABAG), MTC developed Plan Bay Area (PBA) 2050, approved in October 2021. PBA 2050 serves as the San Francisco Bay Area's RTP and SCS and is the latest strategic update to PBA 2040 from 2017. PBA 2050 is comprised of 35 strategies focused on improving housing, economic growth, transportation, and the environment for the Bay Area's nine counties. These strategies serve as a blueprint to inform the nine counties of the Bay Area to plan and create a more resilient and equitable region over the next 30 years and beyond. Each strategy is a public policy or investment to be implemented collaboratively at the city, county, regional, or state level with equity as the priority for execution. An update to PBA 2050, called [Plan Bay Area 2050+](#) is currently underway. This is a limited and focused update to the plan, that will refine select plan strategies using lessons learned from the last three years and will also enable continued progress implementing the strategies of the Plan.

Local Planning

The Alameda County Transportation Commission (Alameda CTC) is a joint powers authority that plans, funds and delivers transportation programs and projects that expand

access and improve mobility to foster a vibrant and livable Alameda County. Alameda CTC also serves as the county's congestion management agency. It is governed by 22 elected officials representing all 14 cities in Alameda County. Alameda CTC coordinates countywide transportation planning efforts; programs local, regional, state and federal funding; and delivers projects and programs including those approved by voters in Alameda County transportation expenditure plans for Measure B, Measure BB, and the Vehicle Registration Fee.

The Alameda Countywide Transportation Plan (CTP) is a long-range policy document that guides future transportation investments, programs, policies and advocacy for all of Alameda County through 2050. The CTP, which is updated approximately every four years, identifies a number of future trends, issues and challenges for the County including safety and more specifically an increase in the number of collisions on roadways. Alameda CTC is currently developing the next update to this plan and is expected to be completed in 2026. There are no projects identified within the vicinity of the project limits.

B. Future Projects

SHOPP

The following projects within the vicinity of EA 04-0Y600K are included in the State Highway Operation and Protection Program (SHOPP) and other funding programs. SHOPP is the State's "fix-it-first" program that funds the repair, safety improvements, some highway operational improvements, and preservation of the State Highway System (SHS).

Table 6-2: SHOPP Projects Located in the Vicinity

PROJ ID	EA	County Route	Post Mile	Funding Source/ Program Year	Legal Description	Work Description
04190 00568	0AA80	ALA 880, 92	N/A	2022 SHOPP/ 2024/25	In Alameda County, on Routes 92 and 880 at various locations.	Replace technology components of Transportation Management System (TMS) elements.
04200 00167	0W050	ALA 880, 92	N/A	2022 SHOPP/ 2025/26	In Alameda County, on Routes 92 and 880 at various locations.	Install trash capture devices.

PROJ ID	EA	County Route	Post Mile	Funding Source/ Program Year	Legal Description	Work Description
04190 00445	0AA14	ALA 92	R2.4 00/6. 800	2022 SHOPP/ 2024/25	In Alameda County In Hayward from 0.2 Mile West of San Mateo-Hayward Main Toll Plaza to Santa Clara Street.	Rehabilitate pavement and upgrade facilities to Americans with Disabilities Act (ADA) standards.
04210 00384	3W520	ALA 880	N/A	2022 SHOPP/ 2022/23	In and near Hayward, on Route 880 at various locations.	Apply polyester concrete overlay to bridge decks and repair asphalt concrete approach slabs. (Bridge Deck Preservation)
04180 00048	0Q180	ALA 880	N/A	2022 SHOPP/ 2022/23	In Alameda County, on Route 880 at various locations.	Construct permanent Best Management Practices (BMPs) to achieve statewide National Pollutant Discharge Elimination System (NPDES) permit compliance units for trash capture and Total Maximum Daily Load (TMDL).
04190 00044	2Q740	ALA 880	N/A	2022 SHOPP/ 2022/23	In Alameda County, on Route 880 at various locations.	Install and upgrade Transportation Management System (TMS) elements including Closed Circuit Television (CCTV) cameras, Vehicle Detection Systems (VDS), Changeable Message Signs (CMS), ramp meters, and fiber optic cable.
04230 00212	3Y240	ALA 880	N/A	2022 SHOPP/ 2022/23	In Alameda County, on Route 880 at various locations.	Repair damaged pavement and replace striping.

PROJ ID	EA	County Route	Post Mile	Funding Source/ Program Year	Legal Description	Work Description
04230 00184	2Y970	ALA Var	N/A	2022 SHOPP/ 2022/23	In Alameda County on various routes at various locations.	Remove hazard trees, replace fencing and signs, and place erosion control.
04230 00206	3Y190	ALA Var	N/A	2022 SHOPP/ 2022/23	In Alameda County on various routes at various locations.	Repair and replace signal poles, light poles, and signal cabinets.
04190 00023	2Q540	ALA Var	N/A	2022 SHOPP/ 2023/24	In various counties, on various routes at various locations.	Replace camera units and related technology components of Closed-Circuit Television (CCTV) camera systems. Components include camera controller, video encoder units, communication and networking equipment, and power distribution assemblies. This is a Design-Build project.

PBA 2050

In the MTC PBA 2050, this project is located in an area designated for priority development (Moffett Park) to meet transportation and planning criteria adopted under ABAG Resolution Number 02-19. This project is also included in the PBA 2050 project list as RTPID No. 21-T06-041 to implement interchange improvements at the SR 92/Clawiter Road interchange. The following projects are located within the vicinity of EA 04-0Y600K in the MTC PBA 2050.

Table 6-3: MTC’s PBA 2050 Projects Located in the Vicinity

County & Route	Sponsor	RTPID	Description	Project Completion Date*
All Bay Area Toll Bridges	MTC	21-T01-005	This program includes funding to operate and maintain the Bay Area’s seven state-owned toll bridges and generally implement the region’s Toll Bridge Program. Improvements include toll bridge rehabilitation, replacement or retrofitting with no new capacity, and toll operations.	Varies
All Bay Area Highways	MTC	21-T01-006	This program includes funding to operate and maintain the Bay Area’s state highways and generally implement the SHOPP. Improvements include resurfacing and/or rehabilitation with no new capacity; preventative maintenance; striping improvements for bicycle and/or pedestrian facilities; and emergency repair.	Varies
ALA 880, SM 92	MTC	21-T05-012	This program includes funding to implement toll infrastructure, such as toll gantries, to collect per-mile tolls charged to vehicles on the Bay Area’s congested freeway corridors with transit alternatives. Toll corridors include I-880 in Alameda County and SR 92 in San Mateo County.	2021-2035
ALA 880	MTC	21-T06-024	This program includes funding to implement interchange improvements in Hayward between Whipple Rd and Industrial Pkwy, and Winton Ave and A St.	2021-2035
ALA 92	MTC	21-T06-041	This program includes funding to implement interchange improvements at Clawiter Rd/Whitesell St.	2021-2035
All Bay Area Highways	MTC	21-T06-048	This program includes funding to implement other programmatic investments to improve interchanges and address highway bottlenecks. This program generally implements county and other local programs and initiatives to programmatically implement highway improvements. Improvements include interchange modifications and minor lane additions, or lane extensions of less than 1/4-mile (i.e., highway or freeway lane, auxiliary lane, or HOV lane). Example investments include implementation of VTA’s Envision Highway Minor Projects.	Varies

County & Route	Sponsor	RTPID	Description	Project Completion Date*
All Bay Area	MTC	21-T06-049	This program includes funding to implement initiatives to maximize the efficiency of freeway and arterial systems through active traffic demand management and multimodal strategies. Improvements include implementation of toll bridge corridor "forward" programs, adaptive ramp metering, adaptive signal timing with transit signal priority, bus on shoulder lanes, congestion pricing on toll bridge corridors, arterial first and last mile solutions, and shared mobility pilot deployments.	Varies
All Bay Area Toll Bridges	MTC	21-T07-051	This program includes funding to support the All-Electronic Tolling Program, which converts the seven state-owned toll bridges to Open Road Tolling. Improvements include procurement of a new toll system and overhead gantries, improvements to roadway infrastructure to allow for high-speed tolling, and support of a regional customer service center.	Varies
All Bay Area	MTC	21-T07-057	This program includes funding to implement technology improvements on the Bay Area's transportation systems. This program generally implements county, transit agency, and other local management systems' travel demand management and emissions reduction technologies programs and initiatives. Improvements include incident management; signal coordination; intelligent transportation systems; traffic operations systems/congestion management systems; ramp metering; computer aided dispatch/automatic vehicle location; fare media; construction or renovation of power, signal, and communications systems; toll management systems; toll media; car and bike share; alternative fuel vehicles and facilities; parking programs; carpool/vanpool; ridesharing activities; information, marketing and outreach; and traveler information.	Varies

County & Route	Sponsor	RTPID	Description	Project Completion Date*
All Bay Area	MTC	21-T08-060	This program includes funding to implement a regional Complete Streets network with an emphasis on improvements near transit and in Equity Priority Communities. It also includes funding to implement county and local initiatives to support active transportation systems. Investments include new and extended bike and pedestrian facilities; minor bicycle and/or pedestrian facility gap closures; minor road diets (less than ¼-mile); ADA compliance; landscaping; lighting; streetscape improvements; secure bike parking at transit stations; and support to local jurisdictions to maintain and expand car-free slow streets. Example projects in Alameda County include East Bay Greenway and Urban Greenways and Trails.	Varies
ALA 92, 880	MTC	21-T12-116	This program includes funding to implement express lanes through HOV lane conversions in Alameda County including SR 92; freeway lane conversions in Alameda County including I-880; new lanes in Alameda County including I-880.	2021-2035
ALA 880	ReX (Basic)	21-T12-127	This program includes funding to implement new express bus service in Alameda County along I-880 between Downtown Oakland (19 th St BART Station) and Redwood City (Caltrain Station). Improvements include high-frequency service (10-minute peak headways) and station area amenities such as upgraded local bus stops, taxi/TNC loading zones, and improved bicycle/pedestrian infrastructure.	2021-2035

STIP

The California State Transportation Improvement Program (STIP) is the biennial five-year plan adopted by the California Transportation Commission for future allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway, and transit improvements. There are no projects in the project vicinity included in the STIP.

The list of projects shown in **Table 6-2** and **Table 6-3** may not be inclusive of all projects listed in the 2022 SHOPP and MTC’s RTP. Further coordination with the Office of System & Regional Planning will be conducted in the PA&ED phase to obtain the full list of relevant projects within the project vicinity.

Complete Streets

A Complete Street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users. All transportation improvements (new

and retrofit) are viewed as opportunities to improve safety, mobility, and access for all travelers, including public transit users, bicyclists, and pedestrians. **Attachment L** contains the Complete Streets Decision Document for this project. This project Purpose and Need is consistent with the goals of Complete Streets and Caltrans Deputy Directive 64-R2. Improvements to local roads at the SR 92/Clawiter Road interchange have considered all modes of transportation including pedestrians, bicyclists, transit, and motorists by implementing Caltrans Complete Streets Policies. Such improvements include upgraded sidewalks, bikeways, and consideration for more pedestrian/bicycle friendly ramp intersection geometry to support and enhance the larger bicycle and pedestrian network in the area through improved connectivity.

The 2020 City of Hayward Bike and Pedestrian Master Plan identifies planned multimodal facilities throughout the city to establish a network of accessible, safe, and integrated bicycle/pedestrian facilities, which this project would incorporate. There are several initiatives and plans identified to provide bicycle facilities adjacent to local roadways within the HITIC including Clawiter Road, Depot Road, and Breakwater Avenue. All the alternatives presented in this document are consistent with this approach.

The following projects are listed in the 2020 City of Hayward Bike and Pedestrian Master Plan within the vicinity of the project study area:

Table 6-4: 2020 City of Hayward Bike and Pedestrian Master Plan Projects Located in the Vicinity

Project ID	Priority Rating	Corridor Name	From	To	Proposed Facility Recommendations
175A, 175B, 176A	High	San Francisco Bay Trail	Eden Shores Neighborhood San Mateo Bridge Overcrossing Eden Landing Rd	San Mateo Bridge Overcrossing Winton Ave Connection Eden Landing Rd	Class I Multi-Use Path (All Ages & Abilities)
113A, 113B, 113C	High	Depot Rd/Cathy Wy	Cabot Blvd Industrial Blvd Adrian Ave	Industrial Blvd Adrian Ave Calaroga Ave	Class IV Separate Bikeway (All Ages & Abilities) Class II Bike Lane (All Ages & Abilities) Class II buffered Bike Lane (All Ages & Abilities)
116A	Medium	Industrial Blvd	Hesperian Blvd	Clawiter Rd	Class IV Separated Bikeway (All Ages & Abilities)

Project ID	Priority Rating	Corridor Name	From	To	Proposed Facility Recommendations
114A, 114B	Low	Breakwater Ave	San Francisco Bay Trail Whitesell St	Whitesell St San Francisco Bay Trail	Class II Bike Lane (All Ages & Abilities)
131A	Low	Eden Landing Rd/Clawiter Rd	San Francisco Bay Trail	Arden Rd	Class III Bike Boulevard (All Ages & Abilities)
131B	Low	Eden Landing Rd/Clawiter Rd	Arden Rd	Clawiter Rd	Class II Buffered Bike Lane (All Ages & Abilities)
131C	Low	Eden Landing Rd/Clawiter Rd	Eden Landing Rd	Breakwater Ave	Class IV Separated Bikeway (All Ages & Abilities)
131D	Low	Eden Landing Rd/Clawiter Rd	Breakwater Ave	Depot Rd	Class IV Separated Bikeway (All Ages & Abilities)

The Alameda CTC 2022 Alameda Countywide Bikeway Network Plan outlines a comprehensive plan to develop an interconnected network of bikeways throughout Alameda County with a focus on improving bicycle infrastructure and safety. The document identifies key routes, strategies, and funding priorities to promote active transportation and enhance the overall bicycle experience within the county. All the alternatives presented in this document are consistent with the design recommendations and implementation of bikeways to consider facilities for all ages and abilities.

The project would also be consistent with the Alameda CTC 2019 Countywide Active Transportation Plan (CATP). SR 92 is identified in the CATP as an interruption of the local bicycle and pedestrian network in the western portion of Hayward toward the SMH Bridge. Improving multimodal access across SR 92 and to the San Francisco Bay Trail is aligned with the CATP goals and objectives for the county and city. This project would also play a major role in connecting the local residents of the city with a planned bikeway project on the SMH Bridge listed in all of the aforementioned active transportation plans and the City of Hayward Bike and Pedestrian Master Plan.

In the PA&ED phase, the project will coordinate with the Caltrans Office of Landscape Architecture to receive input on any Complete Street aesthetic elements for this project.

The District 4 2018 Bicycle Plan evaluates bicycle needs on and across the Bay Area’s state transportation network. It identifies infrastructure improvements to enhance bicycle safety and mobility and remove some of the barriers to bicycling in the region. This plan builds on the 2017 California State Bicycle and Pedestrian Plan, *Toward an Active California*, and will guide District 4 and its partners to develop an integrated bicycle network for the Bay Area. The District 4 2018 Bicycle Plan does not include any proposed improvements at the SR 92/Clawiter Road interchange. A top tier project (Project Number: SMAI-92-C01) is identified for a Class I facility along SR 92 between San Mateo and Hayward along the SMH Bridge. Additionally, the San Francisco Bay Trail, which is within the project study area, is included as an existing bicycle network for Bay Area bicycle highway opportunities to utilize.

Climate Change

Sea level rise (SLR) is an integral part of climate change discussions, the effects of which will have impacts on all modes of transportation located near the coast and bay. Screening criteria are used to assess whether an individual project will potentially be impacted by SLR. This project is located near the San Francisco Bay and in an area vulnerable to SLR according to available mapping. It has been noted in **Attachment I** that the west end of the project study area would be affected in some capacity by SLR if the level rises by over 5.75 feet (1.75 meters) or there is a storm surge of 5.75 feet (1.75 meters) per the Caltrans Climate Change Vulnerability Assessment Map.

According to the SLR map published by the National Oceanic and Atmospheric Administration Coastal Services Center, SR 92 itself is not subject to SLR, but the surrounding areas west of the SR 92/Clawiter Interchange are impacted. Nearby low-lying areas would be subject to the effects of SLR the most, which include the San Francisco Bay Trail and a limited portion of Breakwater Avenue west of Whitesell Street. There are no projects identified in the MTC’s PBA 2050 to address SLR within the project study area or within the surrounding area.

The project will provide needed interchange improvements that will reduce congestion and improve accessibility and safety to the industrial/western portion of the city from SR 92. One of the goals of transportation routes located near the coast is to ensure reliable transportation routes are available. In consideration of these factors, the project will warrant further consideration of SLR in the PA&ED phase.

The City of Hayward is currently updating its Climate Action Plan (CAP) to outline a strategy to achieve carbon neutrality by 2045. The purpose of the CAP is to make Hayward a more environmentally and socially sustainable community by reducing greenhouse gas emissions. Currently the Hayward 2040 General Plan functions as the CAP and community risk reduction plan. This project will incorporate any pertinent information from the CAP pertaining to this project study area in the PA&ED phase.

To the extent a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, greenhouse gas emissions may be

reduced. As the purpose of the project is to improve and optimize access to SR 92 and provide more inviting multimodal facilities, the project could result in carbon dioxide (CO₂) emission reductions. The interchange improvements are freeway operational refinements which would not increase capacity of SR 92, generate additional trips, or increase VMT. This is documented further in the Vehicle Miles Traveled Decision Document (VMTDD) in **Attachment M**.

Classified Landscaped Freeway

A classified landscaped freeway is a section of freeway with ornamental vegetation planting that meets the criteria established by the California Code of Regulations, Outdoor Advertising Regulations, Title 4, Division 6. Between post mile 4.27 and 6.23 (just west of the Clawiter Rd interchange to the I-880 interchange) SR 92 is listed as a Classified Landscape Freeway. The project will require minimization efforts to ensure that the proposed project and work maintains the status of classified landscape freeway. Efforts may include protecting existing trees during construction activities and returning staging and equipment storage areas to pre-existing conditions. If trees or vegetation are damaged or removed, a reevaluation of the work and potential required replacement planting will need to be conducted. Additionally, planting will be placed in areas of demolished ramps to preserve this status.

7. ALTERNATIVES

This section provides a discussion of the No Build Alternative, and the Build Alternatives under consideration.

A. No Build Alternative

Under the No Build Alternative, the existing SR 92/Clawiter Road two-quadrant cloverleaf (Type L-7) interchange would remain unchanged, except for existing planned and programmed improvements to the SR 92 corridor, and development in the western portion of the City of Hayward. The existing traffic operations would worsen as volumes increase due to the interchange configuration including unaddressed insufficient intersection spacing combined with absent/conflicting multimodal crossings at uncontrolled intersections. The No Build Alternative represents the baseline alternative and offers a basis for the analysis and evaluation of the Build Alternatives. The No Build Alternative does not meet the Purpose and Need.

B. Build Alternatives

The Build Alternatives included in this PSR-PDS are intended to provide a range of improvements to evaluate during the PA&ED phase, define an adequate footprint for environmental technical studies, provide opportunities to meet geometric standards to the extent feasible, minimize environmental impacts, and provide cost-effective solutions.

The project proposes to improve traffic operations at the SR 92/Clawiter interchange and access to and from the western portion of the City of Hayward, construct ramp terminus intersections, construct local street improvements, improve bicycle and pedestrian access and connectivity, and accommodate future planned growth and development consistent with City and multimodal transportation plans for the project area.

Alternative 1: Combined Whitesell/Clawiter Interchange

The existing SR 92 eastbound ramps on Clawiter Road/Eden Landing Road would be reconfigured to a new partial diamond interchange with a signalized ramp terminus intersection on Whitesell Street. Whitesell Street would be extended with a new overcrossing structure over SR 92. The new overcrossing structure would provide two travel lanes in each direction along Whitesell Street including Class IV bicycle facilities and sidewalks. The proposed overcrossing structure would be 100' wide and approximately 375' long. The type of structure would be determined in the PA&ED phase during the structure type selection process.

The existing westbound Clawiter Road on- and off-ramp to SR 92 would remain. Sidewalks would be constructed to the north and south of the existing Clawiter Road overcrossing structure to close the existing sidewalk gap between the overcrossing structure and the local intersections. Additionally, sharrows would be placed to denote a Class III system on the existing overcrossing structure. Additional traffic calming measures along Clawiter Rd will be studied further in the PA&ED phase. The new signalized intersection of Whitesell Street and Clawiter Road would be raised with retaining walls to minimize right of way acquisitions. The type of retaining wall would be selected in the PA&ED phase.

The two interchanges at Whitesell Street and Clawiter Road would functionally operate as one interchange. The existing driveway to the Bay Center Business Park would be reconstructed and maintained from Whitesell Street.

Breakwater Avenue, connecting Whitesell Street to Clawiter Road, would be realigned to direct traffic under the Whitesell Street overcrossing structure, and would include Class II or IV bicycle facilities.

Alternative 2: Diamond Interchange with Partial Access

The existing SR 92/Clawiter Road interchange would be relocated to Whitesell Street for all travelers to access SR 92 at a new diamond interchange with signalized ramp terminus intersections. Whitesell Street would be extended with a new overcrossing structure over SR 92. The overcrossing structure would provide two through travel lanes in each direction along Whitesell Street, Class IV bicycle facilities, and sidewalks. The proposed overcrossing structure would be 100' wide and approximately 445' long. The type of structure would be determined in the PA&ED phase during the structure type selection process.

The existing westbound SR 92 loop on-ramp from Clawiter Road and the existing eastbound on- and off-ramps from Clawiter Road to SR 92 would be removed. Pending future traffic forecasting to be performed during the PA&ED phase, the existing westbound off-ramp to Clawiter Road could be maintained. Sidewalks would be constructed to the north and south of the existing Clawiter Road overcrossing structure to close the existing sidewalk gap between the structure and the local intersections. Additionally, sharrows would be placed to denote a Class III system on the existing overcrossing structure. Additional traffic calming measures along Clawiter Rd will be studied further in the PA&ED phase. The new signalized intersection of Whitesell Street and Clawiter Road would be raised with retaining walls to minimize right of way acquisitions. The type of retaining wall would be selected in the PA&ED phase.

The two interchanges at Whitesell Street and Clawiter Road would functionally operate as one interchange if the additional westbound off-ramp to Clawiter Road is warranted. Breakwater Avenue would be closed between Clawiter Road and Whitesell Street. A new roadway would be constructed through two parcels to connect Breakwater Court to Whitesell Street. The intersection of Whitesell Street/Bay Center Place/Breakwater Avenue would be a new signalized intersection.

A new roadway connection to maintain access to Breakwater Avenue would be constructed from Bay Center Place to Breakwater Avenue, including right-of-way impacts through the Bay Center Business Park. The roadway would include Class II or Class IV bicycle facilities.

Alternative 3: Whitesell Street Diamond Interchange

The existing SR 92/Clawiter Road interchange would be relocated to Whitesell Street for all travelers to access SR 92 at a new diamond interchange with signalized ramp terminus intersections. Whitesell Street would be extended and realigned with a new overcrossing structure over SR 92 until the Point Eden Way and Eden Landing Road intersection. The overcrossing structure would provide two through travel lanes in each direction along Whitesell Street including Class IV bicycle facilities and sidewalks. The proposed overcrossing structure would be 112' wide and approximately 280' long. The type of structure would be determined in the PA&ED phase during the structure type selection process.

The existing eastbound and westbound on- and off-ramp from Clawiter Road to SR 92 would be removed. The existing Clawiter Road overcrossing structure would be demolished and removed and the existing intersection at Eden Landing Road and Clawiter Road would be removed. Clawiter Road would provide local connectivity with a new overcrossing structure over SR 92 to Production Avenue, with one through lane in each direction. This overcrossing structure would not have access to SR 92. Multimodal facilities for pedestrians and bicycles would be provided on the new Production Avenue overcrossing structure, including Class IV bicycle facilities and sidewalks. The proposed

overcrossing structure would be 50' wide and approximately 220' long. The type of structure would be determined in the PA&ED phase during the structure type selection process.

Breakwater Avenue would be closed between Clawiter Road and Whitesell Street. A new roadway would be constructed through two parcels connecting Breakwater Court to Whitesell Street. The intersection of Whitesell Street/Bay Center Place/Breakwater Avenue would be a new signalized intersection.

A new roadway connection to maintain access to Breakwater Avenue would be constructed from Bay Center Place to Breakwater Avenue, including right-of-way impacts through the Bay Center Business Park. The roadway would include Class II or Class IV bicycle facilities.

Eden Landing Road would be reconfigured and partially raised to connect Production Avenue and Whitesell Street. The connection to Whitesell Street would be a “right in/right out” only intersection.

C. Nonstandard Features

The Build Alternatives will not improve all of the existing nonstandard features and will include new nonstandard boldface and underlined design features, such as paved shoulder width, horizontal minimum clearance to objects, cross slopes, and stopping sight distance.

The nonstandard features are identified from available topography-mapping survey information provided by Caltrans as-builts and also from Hayward as-builts for the Phase 1 Local Reliever Route Project which completed construction in 2017. A more detailed survey will be executed in future phases to identify locations for nonstandard features within the project limits. **Table 7-1** provides a list of anticipated nonstandard features, both existing and proposed, for the Build Alternatives with anticipated approximate locations, since no survey has been performed as part of this work. All nonstandard features identified do not conform to the design standards of the seventh edition Caltrans Highway Design Manual (HDM). A Design Standard Decision Document (DSDD) will be developed during the PA&ED phase to document design decisions including the nonstandard features that will be part of the Build Alternatives.

Table 7-1: Design Standard Risk Assessment

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 1 Alt 2	Index 201.4 Stopping Sight Distance at Grade Crests (Boldface Standards) (P)	Figure 201.4 shows the minimum standards for stopping sight distance related to design speed for motorists. [250' for 35 mph] [360' for 45 mph]	Crest curve on proposed SR 92 eastbound on-ramp from Whitesell St: (P) 235' SSD (S) 250' SSD	High	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.
Alt 1 Alt 2			Crest curve on existing Clawiter Rd OC: (P) 257' SSD [35 mph] (E) 257' SSD [35 mph] (S) 360' SSD [45 mph]	Medium	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.
Alt 1 Alt 2 Alt 3			Crest curve on proposed Whitesell St OC: (P) 257' SSD [35 mph] (S) 360' SSD [45 mph]	Medium	Standard vertical curve would require significant raising of the Eden Landing Rd and Clawiter Rd intersection and approach roadways. Additionally, the intersection at Bay Center Pl would need to be raised.
Alt 1 Alt 2	Index 201.5 Stopping Sight Distance at Grade Sags (Boldface Standards) (P)	Figure 201.5 shows the minimum standards for stopping sight distance related to design speed for motorists. [250' for 35 mph] [360' for 45 mph]	Sag curve on proposed SR 92 eastbound on-ramp from Whitesell St: (P) 160' SSD (S) 430' SSD	Low	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 1 Alt 2		[430' for 50 mph]	Sag Curve south of existing Clawiter Rd OC: (P) 280' SSD [35 mph] (E) 280' SSD [35 mph] (S) 360' SSD [45 mph]	Medium	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.
Alt 1 Alt 2			Sag Curve north of existing Clawiter Rd OC: (P) 280' SSD [35 mph] (E) 280' SSD [35 mph] (S) 360' SSD [45 mph]	Medium	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.
Alt 1 Alt 2 Alt 3			Sag Curve north of proposed Whitesell St OC: (P) 250' SSD [35 mph] (S) 360' SSD [45 mph]	Medium	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing. Standard vertical curve would require significant raising of the Eden Landing Rd and Clawiter Rd intersection and approach roadways. Additionally, the intersection at Bay Center Pl would need to be raised.
Alt 3	Index 201.6 Stopping Sight Distance on Horizontal Curves	Where an object off the pavement such as a bridge pier, building, cut slope, or natural growth restricts sight distance, the minimum radius	Concrete Barrier on West side of Realigned SB Whitesell St: (P) 263' SSD [35 mph] (S) 360' SSD [45 mph]	Medium	A standard stopping sight distance around this curve would require the retaining wall and concrete barrier to be

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
	(Boldface Standards) (P)	of curvature is determined by the stopping sight distance. Available stopping sight distance on horizontal curves is obtained from Figure 201.6.			pushed an additional 19' from the roadway requiring row acquisition and building demolition.
Alt 1 Alt 2	Index 208.4 Bridge Sidewalks (Boldface Standards) (E)	The minimum width of a bridge sidewalk shall be 6 feet.	Clawiter Rd overcrossing sidewalk width: (P) No Change (E) 5'	High	Existing condition. Standard sidewalk width would require reconstruction of Clawiter Rd overcrossing.
Alt 1 Alt 2	Index 302.1: Shoulder Width (Boldface Standards) (P)	The shoulder widths given in Table 302.1 shall be the minimum continuous usable width of paved shoulder on highways. [6 or more lanes: Paved Shoulder Left: 10' Paved Shoulder Right: 10']	Eastbound SR 92 on-ramp outside shoulder from proposed CHP pullout to east side of Clawiter Rd overcrossing: (P) Var 5' to 8' (S) 8'	High	Standard shoulder would require reconstruction of Clawiter Rd overcrossing.
Alt 2		[Multilane ramps: Paved Shoulder Left: 4' Paved Shoulder Right: 8']	Westbound SR 92 right shoulder from 400' east of Clawiter Rd overcrossing to proposed westbound SR-92 off-ramp to Whitesell St.: (P) 6' -10' (E) 2'-10' (S) 10'	High	Standard shoulder would require reconstruction of Clawiter Rd overcrossing.
Alt 2			Westbound SR 92 off-ramp right shoulder from beginning of proposed westbound SR 92 off-ramp	High	Standard shoulder would require reconstruction of Clawiter Rd overcrossing.

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 2 Alt 3			to Whitesell St to 100' west of the beginning of proposed westbound SR 92 off-ramp to Whitesell St: (P) Var 4' to 8' (S) 8' Westbound SR 92 right at existing Bridgewater Ave pedestrian overcrossing: (P) Var 2' to 10' (E) 6.5' (S) 10'	High	Standard shoulder would require reconstruction of pedestrian overcrossing.
Alt 1 Alt 2	Index 308.1: Cross Section Standards for Local Streets with Connection to State Facilities (Boldface Standards) (E)	Where a local facility crosses over or under a freeway or expressway and connects to the State facility (such as ramp terminal intersections), the minimum design standards for the cross section of the local facility are different. They shall be at least equal to those for a conventional highway with the exception that the outside shoulder width shall match the approach roadway, but not less than 4', and as shown below. Shoulder width shall not be less than 5 feet when railings or other lateral obstructions	Clawiter Rd outside shoulders between Eden Landing Rd and Breakwater Ave: (P) No Change (E) 2'	High	Standard approach shoulders would require bridge widening. No proposed modifications to Clawiter Rd overcrossing. Widening will not likely be approved due to age of structures.

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
		are adjacent to the right edge of shoulder. If gutter pans are used, then the minimum shoulder width shall be 3 feet wider than the width of the gutter pan being used.			
Alt 2	Index 308.1 Minimum Width of 2-Lane Overcrossing (Boldface Standards) (E)	The minimum width of 2-lane overcrossing structures shall not be less than 32 feet face of curb to face of curb.	Clawiter Rd overcrossing structure: (P) No Change (E) 28'	High	Standard curb to curb distance would require bridge widening. No proposed modifications to Clawiter Rd overcrossing. Widening will not likely be approved due to age of structures.
Alt 1	Index 308.1: Minimum Width of 2-Lane Overcrossing (Boldface Standard) (E)	The minimum width for two-lane overcrossing structures at interchanges shall be 40 feet curb-to-curb	Clawiter Rd overcrossing structures: (P) No Change (E) 28'	High	Standard curb to curb distance would require bridge widening. No proposed modifications to Clawiter Rd overcrossing. Widening will not likely be approved due to age of structures.
Alt 1 Alt 2	Index 309.1: Minimum Horizontal Clearances (Boldface Standards) (P)	The minimum horizontal clearance to all objects, shall be equal to the standard shoulder width of the highway facility as stated in Table 302.1. A minimum clearance of 4 feet shall be provided where the standard shoulder width is less than 4	Horizontal clearance from edge of traveled way to concrete barrier on eastbound SR 92 on-ramp below the Clawiter Rd overcrossing: (P) 7.5' (E) 10' (S) 10'	High	Standard horizontal clearance would require reconstruction of Clawiter O/C overcrossing.

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 2		feet. Approach rail connections to bridge rail may require special treatment to maintain the standard shoulder width.	Horizontal clearance from edge of traveled way to concrete barrier on westbound SR 92 below the Clawiter Rd overcrossing: (P) 6' (E) 2' (S) 10'	High	Standard horizontal clearance would require reconstruction of San Francisco Bay Trail overcrossing.
Alt 2			Horizontal clearance from edge of traveled way to concrete barrier on westbound SR 92 off-ramp below the Clawiter Rd overcrossing: (P) 4' (S) 8'	High	
Alt 2 Alt 3			Horizontal clearance from edge of traveled way to concrete barrier on westbound SR 92 below the San Francisco Bay Trail pedestrian overcrossing: (P) 1.5' (E) 10' (S) 10'	Low	
Alt 1 Alt 2	Index 309.2: Vertical Clearances	Freeways and Expressways, All construction except overlay projects – 16 feet 6	Clawiter Rd overcrossing: (P) No Change (E) 15'-3" EB SR 92	Medium	Existing conditions, no proposed replacement of

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
	(Boldface Standards) (E)	inches shall be the minimum vertical clearance over the roadbed of the State facility (e.g., main lanes, shoulders, ramps, collector-distributor roads, speed change lanes, etc.).	<i>(E) 15'-5" WB SR 92</i>		Clawiter Rd overcrossing or lowering of SR 92.
Alt 1	Index 501.3: Interchange Spacing (Boldface Standards) (E)	The minimum interchange spacing shall be one mile in urban areas, two miles outside of urban areas, and two miles between freeway-to-freeway interchanges and other interchanges.	Spacing westbound SR 92 between Industrial Blvd and Clawiter Rd: (P) No Change (E) 0.65 mi	High	Maintaining or improving existing condition
Alt 1			Spacing eastbound SR 92 between Whitesell St and Industrial Blvd: (P) 0.81 mi (E) 0.65 mi	High	
Alt 2			Spacing between Whitesell St and Industrial Blvd: (P) 0.81 mi (E) 0.65 mi	High	
Alt 3			Spacing between Whitesell St and Industrial Blvd: (P) 0.81 mi (E) 0.65 mi	High	
Alt 1	Index 502.2: Partial Interchanges (Boldface Standards) (E)	Isolated off-ramps or partial interchanges shall not be used because of the potential for wrong-way movements	(P) Westbound SR 92 ramps on Clawiter Rd create a partial interchange. <i>(E) Cloverleaf interchange at Clawiter Rd.</i>	Medium	Maintaining existing access condition for westbound SR 92 ramps, standard interchange on Clawiter would require realignment of the local roadway and right-of-way acquisition.

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 1	Index 504.3: Distance Between Ramp Intersection and Local Road Intersection (Boldface Standards) (E)	The minimum distance (curb return to curb return) between ramp intersections and local road intersections shall be 400 feet.	Intersection spacing between westbound SR 92 ramps and Breakwater Ct along Breakwater Ave: (P) No Change (E) 60'	High	Existing condition, standard intersection spacing would require realignment of the local roadway network and right-of-way acquisition. Improving the existing condition in most locations.
Alt 1			Intersection spacing between westbound SR 92 ramps and Whitesell St along Clawiter Rd: (P) 260' (E) 300'	High	
Alt 2			Intersection spacing between westbound SR 92 ramps and Bay Center Pl along Whitesell St: (P) 330' (E) 60'	High	
Alt 2			Intersection spacing between eastbound SR 92 ramps and Whitesell St along Clawiter Rd: (P) 250' (E) 300'	High	
Alt 3			Intersection spacing between eastbound SR 92 ramps and Whitesell St along Clawiter Rd: (P) 240' (E) 300'	High	
Alt 1	Index 504.7 Weaving Sections (Boldface Standards) (E)	Between interchanges, the minimum entrance ramp-to-exit ramp spacing, measured as shown on Figures 504.2A	Weaving distance on westbound SR 92 between Industrial Blvd and Clawiter Rd:	High	Improving existing weaving distance between interchanges

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 2		and 504.2B shall be 2,000 feet in urban areas, 5,000 feet outside urban areas, and 5,000 feet between freeway-to-freeway interchanges and other interchanges.	(P) No Change (E) 1100' Weaving distance on westbound SR 92 between Industrial Blvd and Whitesell Rd: (P) 1885' (E) 1100'		
Alt 1	Index 504.8: Access Rights Opposite Ramp Terminals (Boldface Standards) (E)	For new construction or major reconstruction, access rights shall be acquired on the opposite side of the local road from ramp terminals to preclude driveways or local roads within the ramp intersection.	76 gas station driveway at Breakwater Ave inside Caltrans R/W.	High	Existing Condition
Alt 1	Index 504.8 Access Rights Opposite Ramp Terminals (Boldface Standards) (E)	For new construction or major reconstruction, access rights shall be acquired on the opposite side of the local road from ramp terminals to preclude driveways or local roads within the ramp intersection.	SR 92 ramp terminals at Clawiter Rd share intersection with Breakwater Ave.	High	Existing condition
Alt 1	Index 202.5 Superelevation Transition <u>(Underline Standards)</u> (P)	A superelevation transition should be designed in accordance with the diagram and tabular data shown in Figure 202.5A to satisfy the requirements of safety, comfort and pleasing appearance.	Tangent length between reversing curves on SR 92 eastbound off-ramp to Whitesell St: (P) 275'	High	The rate if change of the cross slope has been limited to 6 percent per 100 feet.
Alt 2			Tangent length between reversing curves on SR 92	High	

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 2			eastbound off-ramp to Whitesell St: (P) 200'	High	
Alt 3			Tangent length between reversing curves on SR 92 westbound off-ramp to Whitesell St: (P) 50'	High	
Alt 3			Tangent length between reversing curves on SR 92 eastbound off-ramp to Whitesell St: (P) 225'	High	
Alt 3			Tangent length between reversing curves on SR 92 westbound off-ramp to Whitesell St: (P) 205'	High	
Alt 1 Alt 2	Index 204.4 Vertical Curve Length <u>(Underline Standards)</u> (P)	For algebraic grade differences of 2 percent and greater, and design speeds equal to or greater than 40 miles per hour, the minimum length of vertical curve in feet should be equal to 10V, where V = design speed. [450' for 45 mph]	Sag curve on proposed SR 92 eastbound on-ramp from Whitesell St: (P) 200' (S) 450'	Medium	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.
Alt 1 Alt 2			Sag Curve south of existing Clawiter Rd OC: (P) 300' (E) 300' (S) 450'	Medium	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.
Alt 1					

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/ Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alt 2			Sag Curve north of existing Clawiter Rd OC: (P) 300' (E) 300' (S) 450'	Medium	Standard vertical curve would require reconstruction of Clawiter Rd overcrossing.
Alt 1 Alt 2 Alt 3			Crest Curve on proposed Whitesell St OC: (P) 400' (S) 450'	Medium	Standard vertical curve would require significant raising of the Eden Landing Rd and Clawiter Rd intersection and approach roadways. Additionally, the intersection at Bay Center Pl would need to be raised.
Alt 1 Alt 2 Alt 3			Sag Curve north of proposed Whitesell St OC: (P) 250' (S) 450'	Medium	
Alt 1 Alt 2 Alt 3	Index 304.1 Side Slope Standards (Underline Standards) (P)	For new construction, widening, or where slopes are otherwise being modified, embankment (fill) slopes should be 4:1 or flatter.	Slopes will likely be steeper than 4:1 in some areas to conserve right of way.	High	
Alt 2 Alt 3	Index 310.2: Outer Separation (Underline Standards) (P)	In urban areas and in mountainous terrain, the width of the outer separation should be a minimum of 26 feet from edge of traveled way to edge of traveled way.	Outer separation from westbound SR 92 on-ramp from Whitesell St to Breakwater Ave: (P) 14' (E) 16'	High	Standard outer separation would increase right of way impacts from realigning Breakwater Ave.
Alt 1	Index 504.2: Ramp Entrance and Exit Standards (Underline Standards) (E)	Design of freeway entrances and exits should conform to the standard designs illustrated in Figure 504.2A-B (single lane), and Figure	Existing westbound SR 92 on-ramp from Clawiter Rd does not follow this figure.	Medium	Existing condition, standard ramp would require reconstruction of Clawiter Rd overcrossing.

Alternative	Design Standard from Highway Design Manual	Standard Design Requirement	Location/Description (P) – Proposed (E) – Existing (S) - Standard	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
		504.3K (two-lane entrances and exits) and/or Figure 504.4 (diverging branch connections), as appropriate.			
Alt 3	Index 504.3: Distance Between Ramp Intersection and Local Road Intersection <u>(Underline Standards)</u> (E)	The preferred minimum distance should be 500 feet.	Intersection spacing between westbound SR 92 ramps and Bay Center Pl along Whitesell St: (P) 430' (E) 60'	High	Improving existing condition, preferred intersection spacing would require realignment of the local roadway network and right-of-way acquisition.

D. Aesthetic Treatments/Architectural Features

Within the project area, there are two existing architectural features along or adjacent to the SR 92 mainline: Breakwater Avenue Pedestrian Overcrossing and Clawiter Rd Overcrossing. To provide a consistent corridor aesthetic, proposed bridge structures, sound walls, and retaining walls aesthetic treatment will be consistent and pre-approved by the District 4 Caltrans Office of Landscape Architecture. Additionally, new overpass railing/fencing, slope paving, and other architectural features are to be in line with other features along the corridor. A Wall/Barrier Aesthetic Report will be completed in the PA&ED phase.

The City of Hayward would like to provide additional aesthetic treatments, as this interchange is a gateway into the city on eastbound SR 92. These treatments have yet to be determined and will be explored further in the PA&ED phase.

E. Pavement Structural Section

The pavement structural section for the proposed local road and ramps will be studied further in the PA&ED phase via a Life Cycle Cost Analysis in close coordination with the Caltrans Office of Materials and Pavement.

Rehabilitating existing pavement utilized for the project will be considered to maintain consistency of all pavement surfaces within the project limits.

F. Alternatives Considered but Determined Not Viable

The following alternatives were developed during the course of the Alternative Analysis study or identified through stakeholder interaction. The alternatives were evaluated and have been removed from further study with the exception of all roundabout alternatives which were included for evaluation in the Step 1 ICE process. A brief description of each alternative and the reasoning for removal from consideration as a viable alternative are provided below.

New Clawiter Road Overcrossing

The existing Clawiter Road overcrossing structure would be replaced with a new structure to accommodate all modes of travel including bicycle and pedestrian paths. The interchange configuration would remain with changes only to incorporate Complete Street elements. The intersection distance between Breakwater Avenue and Clawiter Road would not be improved and there would still be a queuing concern backing onto Breakwater Avenue. Access to the industrial parcels located within the HITIC from SR 92 would not be improved.

To raise the new overcrossing structure to meet the minimum vertical clearance over SR 92 of 16.5 feet, the Clawiter Road profile would be required to be raised also. There are high-voltage transmission lines crossing over Clawiter Road 130 feet south

of the existing overcrossing structure. Raising the profile would result in a conflict with the existing transmission towers, requiring them to be raised or relocated to maintain the minimum 30-foot clearance required with these type of transmission lines. The new structure would be larger than the existing overcrossing structure which would require additional right-of-way to the north and south of SR 92. The westbound SR 92 on-ramp would also have reduced storage capacity from the widening of Clawiter Road to provide multimodal movements in both directions.

Adjustment or relocation of the existing electrical high-voltage transmission lines is considered a fatal flaw because it would be both disruptive and cost prohibitive. The alternative also does not meet the purpose and need. Therefore, this is not a viable alternative and should be eliminated from further consideration and not advance into the PA&ED phase of the project.

Single Point Urban Interchange (SPUI)

The SR 92 access from Clawiter Road would be directed to Whitesell Street with a SPUI interchange configuration on a new Whitesell Street overcrossing structure. The SPUI interchange configuration would increase the local intersection spacing, improving traffic operations. The multimodal accommodations for bicycle and pedestrian movements would not be ideal due to longer paths of travel to cross over SR 92 along Whitesell Street. Structure costs for a SPUI configuration would be excessively high, including a deep structure depth. The larger structure would also require the profile to be higher than other alternatives considered to provide a standard minimum vertical clearance, resulting in higher and longer retaining walls to conform with the intersection of Eden Landing Road/Clawiter Road/Whitesell Street.

The alternative does not meet the project purpose and need and should be eliminated from further consideration and not advance into the PA&ED phase of the project.

Diverging Diamond Interchange

The SR 92 access from Clawiter Road would be directed to Whitesell Street with a Diverging Diamond Interchange (DDI) configuration on a new Whitesell Street overcrossing structure. The DDI configuration would increase the local intersection spacing, resulting in improved traffic operations. The skew would also be improved compared to the existing Clawiter Road overcrossing structure with SR 92 to increase the local intersection spacing. Multimodal accommodations for bicycle and pedestrian movements would not be ideal due to multiple crossings with SR 92 ramp traffic and increased paths of travel. The alignment curvature to develop the envelope of the DDI and conform with the existing Whitesell Street would not be ideal given the high truck traffic volumes combined with steep profile grades to cross over SR 92. This combination and alignment curvature would result in potential truck overturning concerns. Reversing curvature would also result in nonstandard stopping sight distance features.

The alternative does not meet the project purpose and need and should be eliminated from further consideration and not advance into the PA&ED phase of the project.

Partial Cloverleaf and Diamond Interchange

The SR 92 access from Clawiter Road would be directed to Whitesell Street with a partial cloverleaf configuration for the westbound ramp terminal intersection and a diamond interchange configuration for the eastbound ramp terminal intersection. The interchange SR 92 access would be on a new Whitesell Street overcrossing structure. The partial cloverleaf configuration for the westbound ramps would allow the existing Breakwater Avenue local road connection to remain. The westbound SR 92 off-ramp to Whitesell Street would back up onto the mainline onto the auxiliary lane during peak periods with limited ramp storage capacity. There would also be nonstandard access control with Breakwater Avenue across from the westbound on and off-ramps at the ramp terminal intersection. The local intersection spacing with the westbound ramp terminal intersection and the Bay Center Place/Whitesell Street intersection would be approximately 200 feet.

The alternative does not meet the project purpose and need and should be eliminated from further consideration and not advance into the PA&ED phase of the project.

Roundabout Intersections

The SR 92 access from Clawiter Road would be directed to Whitesell Street with a diamond interchange configuration with multilane roundabout intersections. The Caltrans Design functional group also provided a preliminary roundabout intersection configuration with single lane roundabouts located in the existing loop on-ramps at Clawiter Road. The existing Clawiter overcrossing would be demolished and Clawiter Road traffic would be directed to Whitesell Street with a new Whitesell Street overcrossing structure. Both the multilane and the Caltrans single lane roundabout intersection configurations have similar deficiencies at this project site.

The roundabout concepts would not improve traffic flow, reduce traffic congestion, or enhance safety due to the small local intersection spacing. The westbound SR 92 ramp terminal intersection is located in close proximity (less than 200 feet) to an adjacent signalized intersection and ramp metering signals; any potential queues extending back from the on-ramp metering and downstream signalized intersections could spill into the roundabout and disrupt its performance. Additionally, the profile grades along Whitesell Street would be greater than 4 percent at the roundabout intersections, resulting in truck overturning concerns which is not ideal for the predominant heavy truck traffic volumes in the western portion of the city. The roundabouts would also provide significantly less length between the ramp terminals and SR 92 meaning that many non-standard crest and sag curves would be required to get the ramps down to the meet the grade of the mainline profile. More details about

the traffic operations of the Roundabout Intersection alternatives are provided in the ICE Step 1.

The alternative does not meet the project purpose and need and should be eliminated from further consideration and not advance into the PA&ED phase of the project.

Single Rotary Interchange

The SR 92 access from Clawiter Road would be directed to Whitesell Street with a single rotary intersection configuration. This configuration would ideally address intersection spacing with local intersections, but the layout at this location does not achieve that outcome with the Clawiter Road/Eden Landing Road/Whitesell Street intersection. The required profile and size of the rotary causes the westbound SR 92 off-ramp and the eastbound SR 92 on-ramp to be in conflict with the existing high-voltage electrical transmission lines. The minimum vertical clearance with electrical transmission lines of this voltage is 30 feet and only 15 feet clearance is achievable.

Adjustment or relocation of the existing high-voltage electrical transmission lines is considered a fatal flaw because it would be both disruptive and cost prohibitive. The alternative also does not meet the purpose and need. Therefore, this is not a viable alternative and should be eliminated from further consideration and not advance into the PA&ED phase of the project.

Whitesell Street Underpass with SR 92

The existing SR 92 eastbound ramps on Clawiter Road/Eden Landing Road would be reconfigured to a new partial diamond interchange with a signalized ramp terminus intersection on Whitesell Street. Whitesell Street would be extended with an underpass below SR 92 with a structure on the mainline and over Breakwater Avenue. The underpass would improve the profile grades and maintain the existing Breakwater Avenue access. There are SLR impacts within the project study area near the western limits of the project which would be worsened with an underpass design. According to the Caltrans Climate Change Vulnerability assessment maps, the west side of the project study area from the Clawiter Road overcrossing will be affected by 1.75 meters of SLR. The underpass would therefore become an SLR issue which would not be aligned with the climate change approach by the City and other regional agencies. The design which does not consider climate change appropriately is a fatal flaw for this project.

The alternative does not meet the project purpose and need and should be eliminated from further consideration and not advance into the PA&ED phase of the project.

8. RIGHT-OF-WAY

A. Right-of-Way

The Build Alternative Right of Way Conceptual Cost Estimate (RWCCE) is included in **Attachment H**. There are right-of-way impacts anticipated for all alternatives due to the layout configuration, resulting in right-of-way acquisition. All other right-of-way impacts are related to utilities.

Access control is anticipated to be maintained at Breakwater Court across from the westbound ramp terminal intersection if the Build Alternative 1 progresses to the PS&E phase.

B. Utilities

During the PA&ED phase through the utility verification process, all existing utilities impacted will be assessed and the project team will coordinate with utility owners to identify potential utility conflicts. Positive location will be performed during the design phase, as reasonably required, or an exception to this policy will be established. The following is a list of the public utility companies within the project limits and their associated utility, as shown in parentheses. All utilities will be reassessed in the PA&ED phase for conflicts with the Build Alternatives, including:

- Alameda County Flood Control and Water Conservation District
- Alameda County Water District (Water)
- AT&T (Telephone)
- City of Hayward (Water, Sewer)
- Comcast (Television)
- Oro Loma Sanitary District (Sewer)
- PG&E (Gas, Electric)

It is anticipated that utility relocations will be required for the Build Alternatives, which include PG&E low-voltage overhead power poles and lines crossing Whitesell Street and Breakwater Avenue, streetlights, and traffic signals. For Build Alternatives 2 and 3, overhead telephone lines crossing near the intersection of Breakwater Court and Clawiter Road are anticipated to require utility relocation as well. Additionally, several underground sewer, water, and gas lines, and their respective maintenance holes, may require adjustment to final grade.

The Alameda County Flood Control and Water Conservation District does not have any known facilities that are in conflict with improvements located within the vicinity of the project study area. Therefore, it is not anticipated that any facilities or structures owned and operated by the district will be impacted by the project. Any impacted existing or planned facilities would be coordinated with the district during the PA&ED phase.

As stated above, in the PA&ED phase of the project, the design team will confirm impacts with the utility owners through the utility verification process. Positive

location, as prescribed in Chapter 17 of the Project Development Procedures Manual, will be performed, as required, either prior to or concurrent with the design phase.

C. Railroad

There are no railroad crossings within the project limits. It is not anticipated that the Build Alternatives will have railroad impacts, and it is assumed there will be no railroad agreement. There are two railroad crossing locations adjacent to the project limits: the first is to the east of the project area along SR 92, where an overhead structure over the Union Pacific Railroad (UPRR) exists, while the second railroad crossing is an at-grade UPRR rail crossing with Clawiter Road to the north of the project area.

D. Airspace Freeway Lease Areas

There is one airspace freeway lease area located within the project limits. The following is the location detailing the street, city, and post mile of the area:

- Breakwater Avenue, Hayward, CA, Parcel No. FLA-04-ALA-92-01 – Post Mile 4.0

It is not anticipated the Build Alternatives will impact this airspace freeway lease area. In the PA&ED phase, this will be further assessed for impacts and if any new areas are determined to be impacted, the project team will coordinate with Caltrans Right-of-Way Airspace.

9. STAKEHOLDER INVOLVEMENT

The following key stakeholders have been identified for this project and consist of representatives from the following agencies/companies:

- City of Hayward
- Caltrans
- Alameda CTC

The City, Caltrans, and their partner agencies are supportive of this project and have participated in the development and review throughout the PSR-PDS process.

As part of the project initiation phase, a high-level evaluation of nine alternative concepts that address the project purpose and need was conducted. These concepts were analyzed and screened for benefits, disadvantages, and fatal flaws as described in **Section 7.F**. The three recommended alternatives that addressed the project purpose and need without identified fatal flaws were brought forth to City of Hayward at the June 28th, 2023 City Council Infrastructure Committee meeting,

where comments were taken from both the committee members and the public. Feedback received from the committee included:

- Desire for Class IV bike lanes to increase safety in the interchange.
- Request to consider constructing an undercrossing instead of an overcrossing.
- Highlighted that aesthetics will be important for an overcrossing structure as a gateway to the City.

During the PA&ED phase at the minimum, the following stakeholders will be engaged to help develop the project components:

- City of Hayward
- Caltrans
- County of Alameda
- Alameda CTC

Public Engagement

The project area is considered a priority community that experiences transportation and environmental burdens at a higher rate than other communities. CalEnviroScreen 4.0 is a comprehensive screening methodology that combines multiple environmental, health, and socioeconomic indicators to produce an overall score for each census tract in California. The area north and south of SR 92, including the majority of the City’s HITIC, is considered a disadvantaged community according to this screening methodology and Senate Bill (SB) 535, which assesses and identifies California climate investments to benefit disadvantaged communities. The CalEnviroScreen 4.0 percentile is 74% (greater than the threshold of 39.34% to be considered disadvantaged) and the pollution burden is 80%. Asian Americans make up the majority of the census tract population with 48.29% of the current residents in this defined disadvantage community. Providing improved multimodal connections from the San Francisco Bay Trail and office/business centers will be vital to connecting this community in the industrial/western portion of the City.

A Public Engagement Plan (Plan) will be developed in PA&ED phase to help ensure the City, in partnership with Caltrans, proactively communicates key project benefits and concerns and to achieve stronger ties, understanding, and communication with the public and with partner agencies/stakeholders. This Plan aims to inform the public and key stakeholders by enhancing communications and outreach around key project milestones.

It is anticipated that the project development will include public engagement meetings and public information campaigns, in varying media, so the public may learn about the project and its proposed improvements. Public in-person/virtual forums will be hosted, and information will be provided online to educate the public. The public will have the opportunity to submit their feedback or comments during the environmental phase.

The Draft Environmental Document will be circulated for public review during the PA&ED phase.

10. ENVIRONMENTAL COMPLIANCE

A Preliminary Environmental Analysis Report (PEAR) was prepared to determine the anticipated environmental issues and the required environmental document is included as **Attachment F**. The anticipated level of CEQA environmental document for the project is an Initial Study with Mitigated Negative Declaration (IS/MND). As currently defined, the project does not appear to include elements that would result in significant and unavoidable impacts. A traffic analysis will be developed during the PA&ED phase to determine if the project would result in measurable and substantial induced VMT. If during the PA&ED phase the project scope changes or through the traffic analysis it is determined the project would result in measurable and substantial induced VMT, the appropriate level of CEQA document would be an EIR. It is anticipated that the Caltrans District 4 Office of Environmental Analysis will make the class of action determination that the NEPA environmental document type for this project would be a routine Environmental Assessment (EA).

The following technical reports determined from the PEAR should be prepared during the PA&ED phase to analyze potential environmental impacts under the Build Alternatives:

- Community Impact Assessment (environmental justice and equity evaluation, and 4(f) memorandum included)
- Standard Visual Impact Assessment
- Historic Property Survey Report
- Archaeological Survey Report
- Historic Resources Evaluation Report
- Location Hydraulic Study (Sea-Level Rise memorandum included)
- Water Quality Assessment Report
- Storm Water Data Report
- Preliminary Geotechnical Report
- Paleontological Evaluation Report
- Initial Site Assessment
- Air Quality Report (Mobile Source Air Toxics and Greenhouse Gas Emissions and Energy Analyses included)
- Noise Study Report (Construction Noise Assessment and Construction Vibration Analysis included)
- Natural Environment Study – Minimal Impact
- Biological Assessment
- Aquatic Resources Delineation Report

It is anticipated that the following regulatory permits/approvals would be required for the proposed project:

- Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Permit
- Protected Tree Pruning or Removal Permit from the City of Hayward Protected Trees Ordinance (Section 10-15.20)

According to SLR maps from the San Francisco Bay Conservation & Development Commission (BCDC), the western portion of the project site is vulnerable to sea level rise ranging from 3 (low risk aversion) to 10 (extreme risk aversion) feet, the range expected after 2100. There is more information regarding SLR for this project in **Section 6** under the subsection climate change.

The project site is near estuarine and marine wetlands located approximately 0.5 miles west of the SR 92 Clawiter/Whitesell interchange. None of the Build Alternatives include work within the area designated as estuarine and marine wetlands. Prior to the preparation of the Natural Environment Study (NES), an aquatic resources delineation will be necessary to ascertain if the aquatic features described above are jurisdictional waters of the U.S. and State. If the wetland is in fact jurisdictional and construction of the project would impact waters of the U.S. and State, the project may require mitigation and the following permits:

- San Francisco Bay RWQCB 401 Water Quality Certification Permit
- U.S. Army Corps of Engineers (USACE) Section 404 Permit
- 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW)

The project site is located outside of Fire Hazard Severity Zones (FHSZs) and areas of wildfire concern. Therefore, the urbanized area surrounding the project site has a low risk for wildfire.

The project site is located in Census tract 4317.01, in block groups 060014371011 and 060014371014 identified in the Environmental Protection Agency's 2024 Environmental Justice (EJ) screening data. Block group 060014371011 is in the 89th national percentile for minority populations and is therefore considered an EJ block group. In the PA&ED phase, the Community Impact Assessment will evaluate impacts for EJ and Equity.

11. FUNDING

The project PID phase has been funded by a combination of Alameda CTC Measure BB funding and City of Hayward local funds. It is anticipated that the subsequent project phases would seek funding from a combination of federal, state, regional and local funding sources, including Alameda CTC, Senate Bill 1 (SB1), and the State Route 238 LATIP (AB 1386). As per the LATIP, this project is prioritized to address the mainline system deficiencies along SR 92 at Clawiter interchange and was estimated to cost \$52 million in 2007 dollars. Individual projects with independent utility and logical termini, if identified for this project, may proceed when funding sufficient to implement a project is identified. It has been determined that this project is eligible for Federal-aid funding. The PSR-PDS serves as a scoping document to program for the next phase of the project.

A. Capital Outlay Project Estimate

A programming-level cost estimate was developed for the project to help define the scope of work and identify viable project Build Alternatives. The escalated (2032) opinion of probable cost for the project, including support costs, right-of way, and construction, ranges from approximately \$95.3 million to \$233 million. There will be right-of-way acquisition necessary as part of this project for all Build Alternatives. The total right-of-way cost component ranges from approximately \$4.9 million to \$43.3 million. The range of project costs is based on potential project alternatives and major areas of risk, with appropriate consideration for contingency. Estimated costs are subject to change as new and more detailed information becomes available.

The Capital Outlay Project Estimate is included as **Attachment D** and the RWCCE is included as **Attachment H**.

Table 11-1: Estimated Capital Project Costs

	Range of Estimate		Source of Funds	
	Construction	Right-of-Way	Construction	Right-of-Way
Alternative 1: Combined Whitesell/ Clawiter Interchange	\$49.6M \$68.4M*	\$3.8M	TBD	TBD
Alternative 2: Diamond Interchange with Partial Access	\$71.5M \$98.6M*	\$26.1M	TBD	TBD

Alternative 3: Whitesell Street Diamond Interchange	\$102.3M \$141.1M*	\$33.9M	TBD	TBD
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*Costs shown are escalated values per **Attachment D**

The level of detail available to develop these project cost estimates is only accurate within the above ranges and is useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit state-programmed capital outlay funds.

B. Capital Outlay Support Estimate

The current estimated support costs for the PA&ED phase of this project range from approximately \$4.0 million to \$8.2 million. Escalated to the mid-point of the PA&ED phase (2025) these costs range from \$4.5 million to \$9.1 million,

The Capital Outlay Project Estimate is included as **Attachment D** which includes the support cost estimate on the cover page of each alternative.

C. Cooperative Agreement

The executed Cooperative Agreement No. 04-2874 (September 19, 2022) between Caltrans and the City of Hayward authorized the development of the PSR-PDS. The approval of this PSR-PDS would serve as the authorized document for Caltrans to execute a new cooperative agreement with the City for the development of PA&ED phase.

12. DELIVERY SCHEDULE

Project Milestones	Scheduled Delivery Date (Month/Year)
PID APPROVAL	April/2024
BEGIN PA&ED	January/2025
DED/DPR CIRCULATION	January/2027
COMPLETE PA&ED	December/2027
BEGIN PS&E	January/2028
COMPLETE PS&E	June/2030
RIGHT-OF-WAY CERTIFICATION	June/2030
BEGIN CONSTRUCTION	April/2031

The anticipated funding fiscal year for construction is 2031/2032.

13. RISKS

A risk register has been created as part of the PSR-PDS and is included as **Attachment J**. The risk register is an assessment of potential risks and project impacts that may occur in subsequent phases and would be updated throughout the project development process. In accordance with the Caltrans Risk Management Handbook, a Level 3 risk register with probabilistic quantitative analysis is required for projects based on an estimated total project cost greater than \$75 million. A quantitative assessment has been prepared for identified risks and the assignment of cost and schedule impacts are based on risk evaluation for this phase of the project. As additional studies are completed as part of the PA&ED phase, a more detailed and quantitative approach to define and describe the risks can be completed.

In summary, the key risks included in the risk register are as follows:

- Cost increase due to supply and demand model and inflation
- Approval of nonstandard features
- Traffic operational risks include approval of the traffic operational analysis for interchange modifications and ramp metering policy exceptions
- Environmental risks include potential delay in technical studies
- Construction risks include cultural or paleontological resources found during construction, hazardous materials in the vicinity of the site, interference with other projects in the vicinity, and weather impacts
- Organizational risks include lack of stakeholder support and local community objections

The approval from Caltrans of nonstandard features risk will continue to be assessed in the PA&ED phase of the project.

14. EXTERNAL AGENCY COORDINATION

The project requires the following coordination:

U.S. Army Corps of Engineers
Department of the Army Permit
Clean Water Act Section 404

Regional Water Quality Control Board
Clean Water Act Section 401
Water Quality Certification

Caltrans
Agreements and project approval

Other

Hayward – Tree Removal Permit
 City of Hayward – Development Permit – Planning Division
 City of Hayward – Encroachment Permit
 City of Hayward – Grading & Clearing Permit

15. PROJECT REVIEWS

Field Review _____	Date _____
District Maintenance _____ <i>Monique Nguyen</i>	Date _____
District Traffic Safety Engineer _____ <i>Saif Mamoon</i>	Date _____
Headquarters Project Delivery Coordinator <i>Richelle Perez</i>	Date _____
Project Manager _____ <i>Val Ignacio</i>	Date _____
FHWA _____ <i>Lanh Phan</i>	Date _____
District Safety Review _____ <i>Haixiong Xu</i>	Date _____
Constructability Review _____ <i>Jeffrey Hupe</i>	Date _____
Other _____	Date _____

16. PROJECT PERSONNEL

Agency & Role/Title	Name	Phone Number
Caltrans Project Manager	Val Ignacio	(510) 286-5086
Caltrans Design	Morteza Azimi	(510) 286-5157
Caltrans Advance Planning	Warwick Cheung	(510) 960-0894
Caltrans Advance Planning	Mimy Hew	(510) 960-0917
Caltrans Environmental	Thomas Rosevear	(510) 506-1508
Caltrans Right-of-Way	Michael O’Callaghan	(510) 529-5881
Caltrans Traffic Operations	Rod Otto	(510) 715-8867
Caltrans Office of Traffic Engineering	Bahman Zarechain	(510) 421-6292
Caltrans Pedestrian and Bicycle	Gregory Currey	(510) 821-0517
Caltrans Forecasting	Phil Cox	(510) 960-0903
Caltrans Maintenance	Monique Nguyen	(510) 286-4446
Caltrans HQ Sustainability	Tony Dang	(279) 234-2885
Caltrans D4 Sustainability	Mark Leong	(510) 960-0868
City of Hayward Project Manager	Sheena Patel	(925) 357-5071
City of Hayward Director of Public Works	Alex Ameri	(510) 583-4720
Kimley-Horn Project Manager	Parag Mehta	(925) 965-7703
Elite Transportation Group Traffic Lead	Lin Zhang	(510) 673-9656
Kimley-Horn Engineering Lead	Sherina Lam	(916) 859-3657
Kimley-Horn Deputy Project Manager	Chris Brecheisen	(925) 965-7706
Circlepoint Environmental Lead	Arun Bird	(925) 487-1766

17. ATTACHMENTS

- A. Location Map (1)
- B. Vicinity Map (1)
- C. Preliminary Layouts (3)
- D. Capital Outlay Project Estimates (32)
- E. Typical Cross Sections (10)
- F. Preliminary Environmental Analysis Report (PEAR) (34)
- G. Traffic Engineering Performance Assessment (TEPA) (479)
- H. Right of Way Conceptual Cost Estimate (RWCCE) (15)
- I. Transportation Planning Scoping Information Sheet (TPSIS) (20)
- J. Risk Register (2)
- K. Storm Water Data Report (SWDR) (86)
- L. Complete Streets Decision Document (CSDD) (6)
- M. Vehicle-Miles Traveled Decision Document (VMTDD) (3)
- N. Transportation Management Plan (TMP) Data Sheet (15)
- O. Design Scoping Index (8)
- P. PSR-PDS Survey Needs Questionnaire (1)
- Q. HQ Design PSR-PDS Scoping Checklist (6)