3.11 Traffic

This section of the Environmental Impact Report (EIR) describes the existing regional transportation network within the Eden Landing Phase 2 project area and analyzes whether implementation of the project would cause a substantial adverse effect on transportation resources. The information presented is based on a review of the existing regional transportation network within the area and other pertinent federal, state and local regulations, which are presented in the regulatory framework setting section. Using this information as context, an analysis of transportation-related environmental impacts of the project is presented for each alternative. The program-level mitigation measures described in Chapter 2, Alternatives, would be implemented with the project. Therefore, this section only includes additional, project-level mitigation measures as needed.

3.11.1 Physical Setting

Methodology

The development of the baseline conditions, significance criteria, and impact analysis in this section is commensurate to and reliant on the analysis conducted in the 2007 South Bay Salt Pond (SBSP) Restoration Project Final Environmental Impact Statement/Report (2007 Final EIS/R). The project traffic impact analysis is based on the traffic volumes identified by the California Department of Transportation (Caltrans) and local jurisdictions. Construction period project traffic impact analysis is based on the traffic volumes and significance criteria identified in the Traffic Impact Analysis for Eden Landing Phase 2, which is presented as Appendix H to this EIR.

Regional Setting

The Eden Landing Phase 2 portion of the SBSP Restoration Project consists of ponds on the eastern shores of San Francisco Bay (or Bay) in or in the vicinity of the cities of Hayward, Union City, and Fremont. The Eden Landing Ecological Reserve (ELER, or Reserve) is owned and managed by the California Department of Fish and Wildlife (CDFW), in Alameda County. The transportation network in and around San Francisco Bay consists of highways, surface streets, bicycle routes, public transit, railways, passenger ferries, and air transportation facilities.

Highways

The major north-south trending highway on the eastern side of the San Francisco Bay near the Eden Landing Phase 2 project area is Interstate 880, as described below.

- **I-880** extends along the eastern side of the Bay and connects I-80 in Oakland to State Route (SR) 17 in San Jose. I-880 is located east of the Eden Landing Phase 2 area, and travels through the cities of Fremont, Hayward, Milpitas, and Union City among many others.

The major east-west trending highways in the San Francisco Bay near the Eden Landing Phase 2 project area include SR 92 and SR 84, as described below.

- **SR 92**, which originates from I-880 in Hayward and crosses the Bay via the San Mateo Bridge and continues west to Half Moon Bay. In the SBSP Restoration Project area, SR 92 is adjacent to the northern boundary of the Eden Landing pond complex.

- **SR 84**, which originates in the East Bay and crosses the San Francisco Bay via the Dumbarton Bridge, is located several miles to the south of Eden Landing near portions of the of the SBSP Restoration Project that are on the United States Fish and Wildlife Service (USFWS)-owned Don Edwards San Francisco Bay National Wildlife Refuge (Refuge).

Streets and Bicycle Routes

Within each individual jurisdiction in the Eden Landing Phase 2 project area, the street network consists of arterial streets, collector streets, and local streets. Typically, arterial streets are high-capacity roads that accommodate through traffic between highways and urban centers. Collector streets supplement the arterial streets and provide access within residential neighborhoods and commercial and industrial areas. Local streets offer the lowest level of mobility and primarily provide access to bordering properties. Local streets are designed such that ease of access, pedestrian safety, and parking have priority over traffic movement. The street network in the vicinity of the project area is shown on Figure 3.11-1.

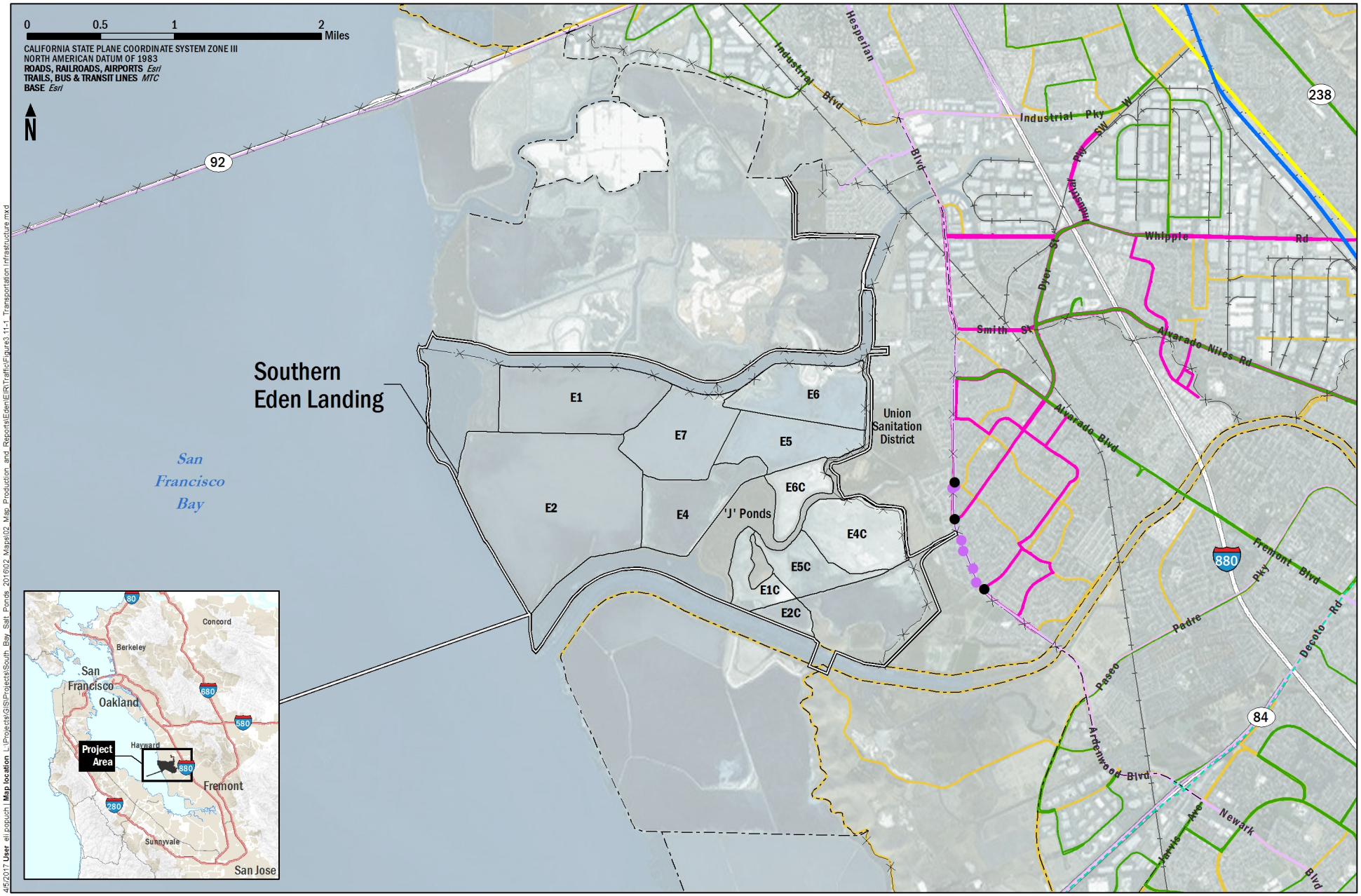
Many designated trails and bicycle routes are present nearby or adjacent to the project area. Bicycle routes are classified as separated off-street paths for the exclusive use of bicycles and pedestrians (Class I), striped bike lanes on a street or highway (Class II), or designated signed routes without a marked lane operating in mixed flow with motor vehicles (Class III). Bicycles may also operate legally on any roadway, regardless of whether a bike route class designation exists. Trails (Class I routes) most appropriate for transportation via bicycle include the Bay Trail, which runs adjacent to much of northern Eden Landing and the East Bay Regional Park District's Alameda Creek Regional Trail, which runs along the Alameda Creek Flood Control Channel (ACFCC). See Section 3.6, Recreation for more detailed information on the regional and local trail network.

Public Transit

The public transit network in the region consists of rail and bus systems. Bay Area Rapid Transit (BART) provides service in the Eden Landing Phase 2 project area, passing through the cities of Hayward, Union City and Fremont generally east of the Eden Landing pond complex. Alameda-Contra Costa Transit District (AC Transit) provides service throughout the East Bay as well as express service across the Dumbarton Bridge and Bay Bridge to San Francisco. In addition, the Union City has its own bus system called Union City Transit, which provides times connections with BART and the Union Landing Transit Center. The Union Pacific Railroad network extends through the region on both sides of the Bay and provides both freight and passenger service. Amtrak's Capitol Corridor route provides intercity rail passenger service between Sacramento and San Jose.

Water Transportation

San Francisco Bay is a major navigational and recreational waterbody that connects the Eden Landing Phase 2 ponds via watercraft. Currently, there are no public ferry routes in the southern portion of San Francisco Bay. The closest passenger ferries are from Oakland and Alameda (north of Eden Landing) across San Francisco Bay to San Francisco and Oyster Point in the City of South San Francisco.



45/2017 User eli.popuch Map location L:\Projects\GIS\Projects\South_Bay_Salt_Ponds_2016\02_Maps\02_Map_Production_and_Reports\Eden\EIR\Traffic\Figure3.11-1_Transportation_Infrastructure.mxd

LEGEND

Bus Stop
- AC Transbay
- Union City Transit

Transit Service
- Union City Transit
- Amtrak Capitol Cor. & Reg. Svc
- Bay Area Rapid Transit
- AC Transbay
- AC Transit
- Dumbarton Express
- Railroad
- Existing Trail
- Proposed Trail
- Bike path
- Eden Landing Phase 2 Project Area
- Southern Eden Landing Ponds

AECOM
South Bay Salt Pond Restoration Project

Figure 3.11-1
Transportation Network

Public Parking Facilities

Public parking is available near southern Eden Landing for the publicly accessible portions of the project area. Table 3.11-1 presents an inventory of the off-street parking, including handicapped parking.

Table 3.11-1 Off-Street Parking near Eden Landing Phase 2 Areas

Location	Number of Spaces	Owner
Eden Landing Ecological Reserve – northern entrance; Bay Trail connection	24 (2 h)	California Department of Fish and Wildlife
Alameda Creek Regional Trail Staging Area	25 (3 h)	East Bay Regional Parks District

Notes: h = handicapped parking spaces

Project Setting

SR 92 bounds the Eden Landing pond complex to the north, and I-880 is approximately two miles to the east. SR 84 is approximately 1.5 miles to the south According to the Caltrans Traffic and Vehicle Data Systems Unit, traffic volumes in 2014 for SR 92 at the San Mateo-Hayward bridge toll plaza (closest measuring point to Eden Landing Road, which leads into northern Eden Landing) were 8,900 vehicles during the peak hour[1] and 106,000 average daily traffic (ADT) during the peak month (Caltrans 2014). According to the Caltrans Traffic and Vehicle Data Systems Unit, traffic volumes in 2014 for I-880 at Whipple Road (which leads to Union City Boulevard and eventually to northern Eden Landing) were 14,000 vehicles during the peak hour[2] and 209,000 ADT during the peak month (Caltrans 2014).

The primary public access to the Eden Landing pond complex is via SR 92 and Eden Landing Road through the ELER and along internal roads that previously supported salt production operations. Access at this location is almost entirely for CDFW staff because the pond complex is mostly off-limits to the public (except for users of existing trails and hunters on specific hunt days). Public access to the Eden Landing pond complex is available only along trails that extend along the perimeter of the pond complex, including those along the east side of the ELER and along the ACFCC. As described in Section 3.7, Recreation Resources, bicyclists and pedestrians are allowed on these trails, but off-trail access is prohibited. Staging areas for the trails occur at various points east of the pond complex along the trails. Roadways in the vicinity of the ELER include Union City Boulevard, Hesperian Boulevard, Eden Landing Road, Arden Road, Dyer Street, Baumberg Avenue, and the residential streets in the Eden Shores development. These roadways are accessible from other local roadways and either SR 92 or I-880. Coyote Hills Regional Park provides access to the southern side of the Alameda Creek Regional Trail.

No AC Transit bus lines travel directly to the Eden Landing pond complex. AC Transit routes along streets bordering Eden Landing include Route 83 that travels along Clawiter Road, Eden Landing Road, and Arden Road; Route S that travels along Eden Shores Boulevard and terminates at the western end of the street; Routes 97 and SB that run along Union City Boulevard. Union City Transit routes 1, 5, 7, 8, and 9 all have portions of their routes along Union City Boulevard.

[1] Peak hour values indicate the volume in both directions; in urban and suburban areas, the peak hour normally occurs every weekday.

[2] Peak hour values indicate the volume in both directions; in urban and suburban areas, the peak hour normally occurs every weekday.

The closest commercial airport is Oakland International Airport, which is approximately 12 miles north of the Phase 2 portion of Eden Landing. The Hayward Executive Airport is approximately 2.5 miles to the north of the Eden Landing pond complex. The Union Pacific Railroad extends through Hayward in the north-south direction between Eden Landing and I-880 (outside of the project area).

3.11.2 Regulatory Setting

State, regional, and local agencies have jurisdiction over the transportation network and over circulation in and around the project area. Caltrans has authority over the state highway system, including mainline facilities and interchanges. Caltrans is responsible for the planning, design, and construction of highway improvements, as well as for operations and maintenance.

The Alameda County Transportation Commission (ACTC) is responsible for county-wide transportation planning. This includes highway and roadway improvements and the operation of public transit systems, shuttles, and carpool, bicycling and pedestrian programs. In addition, this agency is responsible for long-range regional transportation planning in coordination with the Metropolitan Transportation Commission.

Alameda County is responsible for the maintenance of roadways in unincorporated areas of the counties as well as for coordination with ACTC, for regional transportation planning projects.

The cities of Hayward, Union City, and (nearby) Fremont have jurisdiction over their respective city streets, bike paths, public trails, and parking facilities in the project area. These cities have adopted General Plans that include strategies and policies regarding the operation of the transportation network. The General Plans and applicable goals and policies are included below.

City of Hayward

The Hayward General Plan 2040 (City of Hayward 2014) includes the following policies that are relevant to the Eden Landing Phase 2 project:

GOAL LU-1- Promote local growth patterns and sustainable development practices that improve quality of life, protect open space and natural resources, and reduce resource consumption, traffic congestion, and related greenhouse gas emissions.

GOAL M-2 - Connect Hayward to regional and adjacent communities' transportation networks and reduce the impacts of regional through traffic in Hayward.

M-2.1 Regional Coordination - The City shall continue to coordinate its transportation planning with regional agencies (Caltrans, Metropolitan Transportation Commission, and Alameda County Transportation Commission) and adjoining jurisdictions.

M-2.3 Multi-Jurisdictional Transportation - Corridors The City shall work with the Metropolitan Transportation Commission, Caltrans, BART, AC Transit, and adjacent communities to improve city roadways, pedestrian ways, bicycle facilities, and transit corridors to connect with neighboring and regional transportation networks and contribute to a regional multimodal transportation system.

M-2.5 Regional Traffic Impacts The City shall review and comment on development applications in Alameda County and adjoining cities which may impact Hayward's

transportation systems, and shall suggest solutions to reduce negative effects on local circulation and mobility.

GOAL M-4 - Enhance and maintain local access and circulation, while protecting neighborhoods from through traffic.

M-4.3 Level of Service - The City shall maintain a minimum vehicle Level of Service (LOS) E at signalized intersections during the peak commute periods except when a LOS F may be acceptable due to costs of mitigation or when there would be other unacceptable impacts, such as right-of-way acquisition or degradation of the pedestrian environment due to increased crossing distances or unacceptable crossing delays.

GOAL M-11 - Balance the safe and efficient movement of goods with local access and circulation needs.

M-11.1 Goods Movement - The City shall provide an efficient transportation system for the movement of goods and services through and within Hayward, while meeting the safety and mobility needs of all roadway users.

M-11.2 Designated Truck Routes - The City shall require trucks to use designated routes and shall prohibit trucks on local streets to address traffic operations and safety concerns in residential neighborhoods.

City of Union City

Union City's 2002 General Plan Policy Document (2002) includes the following policies that are relevant to the Eden Landing Phase 2 project:

Goal TR-A.1 - To establish a safe, convenient, and efficient roadway system that minimizes peak-hour traffic congestion.

TR-A 1.3 - The City shall continue to implement its policy that traffic LOS will not exceed mid-range LOS D at all signalized intersections on arterial and collector streets, with the exception of intersections on major regional routes, including I-880, Mission Boulevard (SR 238) and the Route 84/Decoto Road corridor. Levels of Service are described in Table TR-4.

TR-A.1.6 - The City shall establish truck routes that will minimize noise impacts and safety hazards on the community. The City shall require all new projects in the Central Technology Center to use Whipple Road as a truck route. The City shall discourage the use of Alvarado-Niles Road as a truck route (see Figure TR-3).

TR-A.1.7 - The City shall identify preferred routes for truck service to businesses that are convenient and in conformance with A.1.6 above.

City of Fremont

The City of Fremont General Plan (2011) includes the following policies that are relevant to the Eden Landing Phase 2 project:

- **Policy 3-3.4 Transportation Systems Management:** Implement transportation systems management measures to reduce peak hour congestion and make the most efficient use of the city's transportation infrastructure.
- **Policy 3-3.5 Transportation Infrastructure Maintenance:** Provide adequate funding to maintain roads, bridges, sidewalks, bike paths, and other transportation facilities in good operating condition.
- **Policy 3-4.1 Relating Vehicle Speed to Reflect Land Use and Community Character:** Manage traffic on arterials and collectors to reduce unnecessary travel delays and maintain efficient vehicle flow. However, auto speed and convenience may be diminished in some locations in order to achieve a more livable, walkable, and attractive community. In general, lower vehicle speeds will be encouraged in pedestrian-oriented areas such as the Town Centers and city center. Roadway design and operation in these areas should emphasize community character, access to adjacent commercial and mixed land uses, and the accommodation of multiple travel modes, rather than vehicle speed.
- **Policy 3-4.4 Mitigating Development Impacts:** Require new development to mitigate its impacts on mobility conditions through traffic impact fees, street and intersection improvements, transportation demand management programs, and other measures.
- **Policy 3-5.2 Regional Trail Development:** Promote and coordinate the planning of pedestrian and bicycle trail systems with Alameda County, Newark, Milpitas, Union City, Santa Clara County, Association of Bay Area Governments, Bay Conservation and Development Commission, East Bay Regional Parks District, San Francisco Public Utilities Commission, Alameda County Flood Control and Water Conservation District (AFCWCD), and other jurisdictions and organizations.
- **Policy 3-6.2 Truck Routes:** Protect residential neighborhoods from intrusion by truck traffic by maintaining and enforcing an efficient system of designated truck routes.
- **Policy 3-7.1 Parking Management:** Manage on-street parking to ensure the efficient use of curbside space, avoid conflicts with residents and neighborhoods, and provide adequate customer parking for local businesses.

3.11.3 Environmental Impacts and Mitigation Measures

Overview

This section includes an analysis of potential short-term (construction) and long-term (operation) traffic impacts of the Eden Landing Phase 2 project. Impact evaluations for the action alternatives are assessed based on the existing conditions described in Section 3.11.2 above; they are not assessed based on the proposed conditions that would occur under the No Action Alternative. This approach mimics what was done for the 2007 Final EIS/R and in the EIS/R for the Phase 2 at the Refuge. In this case, the No Action Alternative represents no change from the current management direction or level of management intensity provided in the Adaptive Management Plan (AMP) and in CDFW management documents for Eden Landing. In addition, mitigation measures are included, as necessary, to reduce significant traffic impacts.

The result of the analysis process was a set of alternatives, including the No Action Alternative, a National Environmental Policy Act (NEPA) term (also referred to as the "No Project Alternative" under California Environmental Quality Act (CEQA), but the NEPA term will be used throughout this EIR).

Significance Criteria

For the purposes of the EIR, a significant traffic impact would occur if the project would result in the following:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, and including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including but not limited to LOS standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The Eden Landing Phase 2 project would not result in an increase in air traffic or require a change to existing air traffic patterns. The project would not increase hazards due to design features or incompatible uses, as the project would involve only restoration of tidal marsh wetlands or other habitat improvements and inclusion of recreational facilities within open space areas away from public roads. Recreational facilities proposed along levees within the boundaries of the southern Eden Landing ponds would be designed in accordance with relevant guidelines and regulations, and would not constitute a hazard for those who use the facilities. The project would not result in inadequate access to local streets, including for emergency access, as road closures are not expected during construction or operation. The project would not result in lengthy delays for transit riders and would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or decrease the performance or safety of such facilities.

As explained in Section 3.1.2, while both Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA and the CEQA Guidelines (AEP 2016) were considered during the impact analysis, impacts identified in this EIR are generally characterized using CEQA terminology; NEPA terms are used for potentially beneficial impacts, if any. Please refer to Section 3.1.2 for a description of the terminology used to explain the severity of the impacts.

Approach to Analysis

Construction

Construction activities under the Eden Landing Phase 2 project would include the transport of equipment, material, and workers to and from the southern Eden Landing ponds. The number of vehicle trips needed for construction of restoration, flood risk management, and recreational features would be greater than the number of vehicle trips needed for construction (or decommissioning/destruction) of dredge material infrastructure. Because these phases of the construction would not be concurrent, the traffic analysis was based on the number of vehicle trips needed during the restoration component of the construction period, to provide traffic estimates commensurate with the highest use during construction.

Access routes to the Eden Landing Phase 2 area would include the major highways surrounding the pond complex and local roadways. Multiple access routes are available from I-880 to the Phase 2 project area. These include various arterial, collector, and local streets that provide access to the ponds from these highways. The access routes would use a combination of Union City Boulevard (collector street), Bettencourt Way (local street), Whipple Road (arterial street), Horner Street (local street), Veasy Street (local street), Carmel Way, and Westport Way.

Staging areas would be established for equipment and material storage within the Eden Landing pond complex itself and avoid affecting local roads or other infrastructure.

Construction-related traffic estimates are provided below. The assumptions and logic behind these estimates are explained fully in Appendix H to this EIR. The most important of those assumptions involve the direction (north or south) from which the off-site material would be trucked and which of two different entry points to southern Eden Landing would be used. The split of those trips was varied by alternative, but in all cases, a maximum of 200 truckloads per day over a 10-hour work day was used in combination with an 11-cubic yard capacity haul truck to assess the greatest possible impact on traffic congestion. In all likelihood, these assumptions are overly conservative, as they would require all of the upland fill material to be available at once and that it could all be hauled in and placed within southern Eden Landing at once, which would require stockpiling and double-handling. In all likelihood, the upland fill material would not all be ready at once and it would only be imported at the rate at which it could be placed.

The alternatives for the Eden Landing pond complex differ with respect to the duration (or months[3] required) for net importing of upland fill material based on the volumes required for construction activities, as shown in Table 3.11-2. These volumes represent a worst-case scenario where habitat transition zones would need to be built entirely with imported upland fill material and no beneficially reused dredge material. In addition, the traffic analysis assumes that work crew transport would be approximately 10 to 20 people per day (assuming a single crew) and that equipment would be imported only once per season.

Intersection Evaluation

This section summarizes the methodologies used to perform peak hour intersection capacity analysis at signalized intersections. In accordance with CEQA requirements, an Environmental Impact Report (EIR) must include a description of the existing physical environmental conditions in the vicinity of the project.

[3] For this analysis, a typical month has 22 work days.

Those conditions, in turn, "will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant" (CEQA Guidelines §15125[a]). A LOS analysis was conducted based on the traffic data collected by AECOM and by utilizing the Synchro 9.0 software package, and based on the methodologies outlined in the Highway Capacity Manual (Transportation Research Board 2000). The resulting LOS and delays were compared for the existing and project conditions. LOS, which measures traffic operating conditions, varies from LOS A to LOS F. Table 3.11-3 presents a description of LOS and provides the associated delays with each LOS for signalized intersections.

Table 3.11-2 Earthwork Volumes, Upland Fill Material Delivery, and Duration by Alternative

ALTERNATIVE	Estimated Earthwork Volume (cubic yards)			MAX TRIPS PER DAY*	DURATION (DAYS)
	Cut	Fill	Net Import		
Eden B	155,000	247,000	92,000	200	42
Eden C	112,000	171,000	59,000		27
Eden D	94,000	248,000	154,000		70

*The maximum truck trips per day are based on the highest number of haul trucks that can safely be moved into and out of the site which is 200. Assumes 11 cy of material per truckload and 10-hour working days.

Table 3.11-3 Level of Service and Average Vehicular Delay Definitions for Signalized Intersections

LOS	Average Vehicular Delay (seconds)	Definition
A	< 10	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. Very low control delay. Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	> 10 and < 20	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted. Occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A.
C	> 20 and < 35	Flow with speeds at or near free-flow speeds. Freedom to maneuver with the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Occurs when a given green phase does not serve queued vehicles and overflow occurs. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35 and < 55	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort. The influence of congestion becomes more noticeable. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and < 80	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing. High delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity (v/c) ratios. Individual cycle failures are frequent.
F	> 80	Represents a breakdown in flow. Oversaturation of the intersection often occurs. Arrival flow rates exceed the capacity of the lane groups. Also, high v/c ratios occur with many individual cycle failures.

Source: Highway Capacity Manual (Transportation Research Board 2000)
LOS = level of service
v/c ratio = volume-to-capacity ratio

Traffic Impacts

The Traffic Impact Analysis for Eden Landing Phase 2 (included as Appendix H to this EIR) was prepared to analyze the impact of construction-related traffic on each of the Action Alternatives. The most

intensive construction activity in terms of added traffic would result from the delivery of upland fill material for the construction of levees and habitat transition zones. Specific quantities (cubic yards) and duration of the import periods are provided in Table 3.11-2. Therefore, the analysis performed focuses on the hourly trips required to deliver the required materials in the shortest time and number of days possible. Construction routes were analyzed to determine the maximum amount of trucks that could feasibly deliver upland fill within a single 10-hour work day. The analysis uses a different mix of northbound and southbound deliveries as well as a maximum number of trips per hour (200 truckloads per day was the maximum).

To operationalize the above-listed significance criteria, the Eden Landing Phase 2 project-level analysis adapted them to specific locations and conditions. To do so, the traffic impact criteria described below were used in evaluating an increase in traffic delay for signalized intersections during the project construction phase based on LOS.

Two of the six study intersections are operated and maintained by Caltrans, while the remaining four are operated and maintained by the City of Union City. Caltrans recommend using the corresponding City's significant impact threshold criteria for the two intersections under their charge. One of the Caltrans intersection falls within the city limits of Hayward and the other is in Union City. For intersection #1 (I-880 northbound ramps / Whipple Road / Industrial Parkway), City of Hayward thresholds have been considered. For the rest of the study intersections, Union City thresholds have been considered.

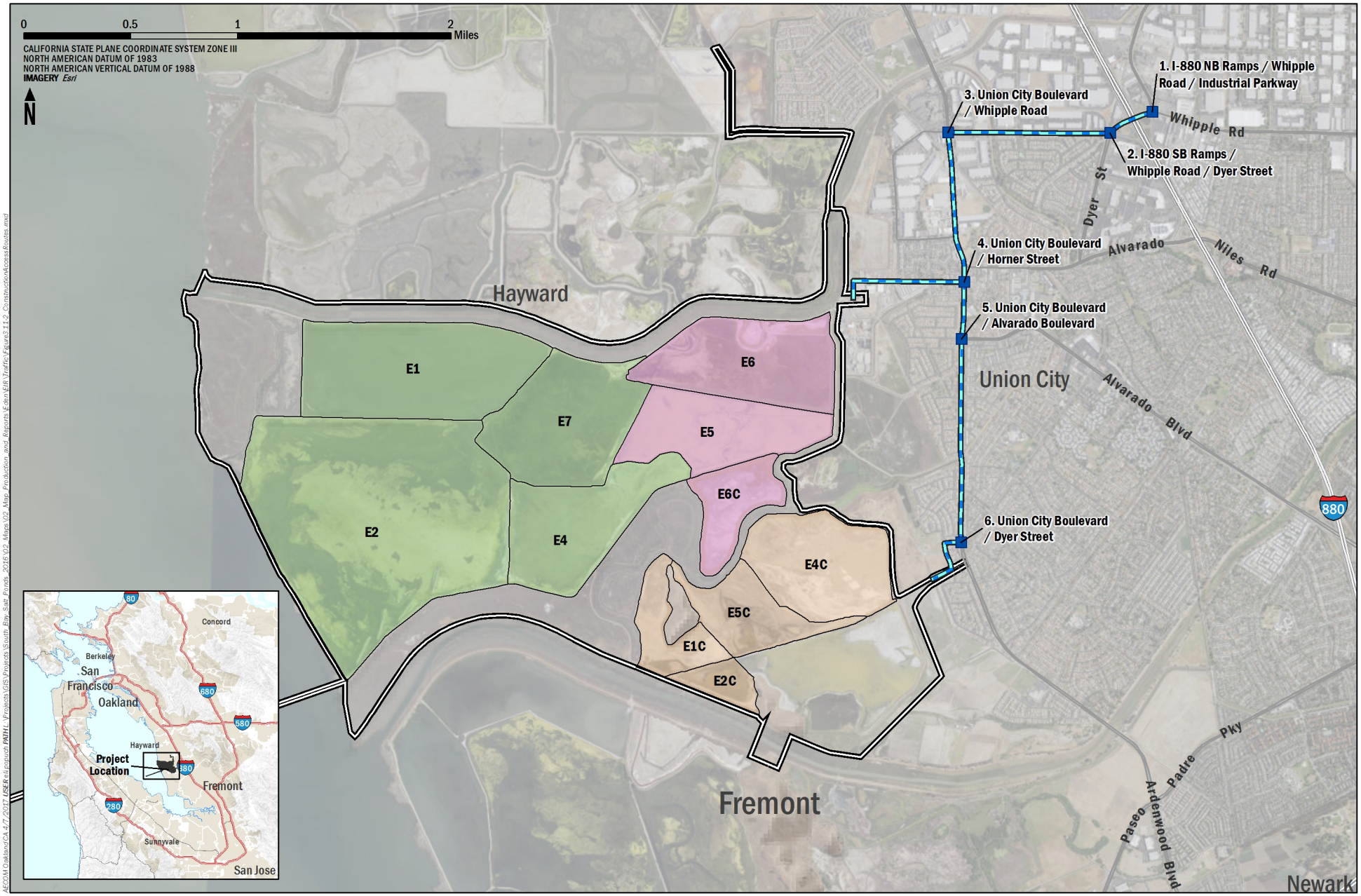
According to the Hayward guidelines for signalized intersections,

- LOS E is treated as an acceptable LOS. If the project causes an intersection operating at LOS E or better to fall below LOS E, then the project is projected to be causing a significant impact.
- For an intersection already operating at unacceptable LOS F, if the project increases the average control delay by 5 seconds or more, the project is projected to be causing a significant impact.

According to the Union City guidelines for signalized intersections,

- LOS D is treated as an acceptable LOS. If the project causes an intersection operating at LOS D or better to fall below LOS D, then the project is projected to be causing a significant impact.

There are two access points to the southern Eden Landing ponds, to be used by trucks carrying upland fill material. The fill material will be transported to the site from I-880 via Whipple Road to Union City Boulevard before accessing the site from Horner Street (North Entrance) and Westport Way (South Entrance). Figure 3.11-2 presents the truck route for transporting material. The estimated project trips using each of the two access points are presented in Table 3.11-4. It is assumed that each truck would carry 11 cubic yards of fill and the number of outbound trips is equal to the number of inbound trips in the same hour. The three Action Alternatives (Alternatives Eden B, C, and D) were then analyzed by comparing the 'with' and 'without' project intersection delay and LOS to determine if any of those alternatives would cause a significant change.



LEGEND

- Study Intersection
- Construction Access Route
- The Bay Ponds
- The Southern Ponds
- The Inland Ponds

AECOM

South Bay Salt Pond Restoration Project

Figure 3.11-2

Construction Access Route and Study Intersections

Table 3.11-4 Trip Generation by Project Alternative

Alternative	Site Access	Access Usage (%)	Inbound Trips / Days	Inbound Trips / Hours
Eden B	North	48	96	10
Eden B	South	52	104	11*
Eden C	North	30	60	6
Eden C	South	70	140	14
Eden D	North	99	198	20
Eden D	South	1	2	1*

Source: AECOM 2016

*Assumes an additional trip for conservative calculation

Operation

Operation and maintenance (O&M) activities at the southern Eden Landing ponds would continue to follow and be dictated by the CDFW's current practices and policies, applicable ACFCWCD operations, and the AMP. The long-term O&M of the alternatives would require approximately one staff person to travel to the ponds one or two times a week to perform activities such as operating the water control structures and performing and/or tracking the need for predator control, general vegetation control, and vandalism repairs. In addition, AMP monitoring activities would occur, which could require additional workers (e.g., staff, researchers, consultants) to access the ponds and conduct monitoring or other studies. The frequency of visits to conduct AMP monitoring activities would depend on the actual activities and would vary by season (e.g., during the bird breeding season there could be more trips to the site than during the non-breeding season). For the purposes of analysis, it is estimated that 10 one-way trips associated with AMP monitoring activities would occur per week.

Implementation of Alternatives Eden B, C, and D are expected to result in an increase in vehicle trips associated with visitors of the new recreational facilities at southern Eden Landing. Section 3.6, Recreation, and its associated Appendix G, explain the method and data used to develop estimates for the numbers of increased recreational visitors to the ponds.

Program-Level Evaluation Summary

The 2007 Final EIS/R evaluated the potential impacts to the transportation network, including nearby roadways, as a result of three programmatic alternatives. The 2007 Final EIS/R found that with the implementation of Programmatic Alternative C, the preferred alternative, there would be less-than-significant impacts to long-term operations-related traffic, and potentially significant impacts associated with short-term construction-related traffic, construction-related wear and tear to haul routes, and parking capacity at regional facilities. Mitigation measures were developed to reduce these impacts to a less-than-significant level. These mitigation measures have been incorporated into the design of each action alternative and are summarized below:

- Recreation facilities will be designed with sufficient parking spaces to accommodate the projected increase in vehicles that access the site unless adequate off-site parking is available to offset the demand for parking spaces.
- If residential streets are included as part of the designated haul routes, videos of the pre-construction and post-construction roadways will be prepared for the purposes of comparison.

Prior to construction, the pre-construction conditions and post-construction requirements of the roadway rehabilitation program will be documented.

The program-level mitigation measure **SBSP Mitigation Measure 3.12-1: Timing of construction-related truck trips** was also included in the 2007 Final EIS/R. This program-level mitigation measure required the landowner (CDFW) to include in construction plans and specifications the requirement that construction-related truck trips, specifically deliveries of fill and equipment, shall occur outside the weekday a.m. and p.m. peak commute traffic hours. This mitigation measure is not feasible to implement in the Eden Landing Phase 2 actions because of the large amount of upland material that needs to be imported by truck to southern Eden Landing in relatively condensed periods of time.

Finding source projects with sufficient quantities of upland fill material is difficult for several reasons. The excavation must occur in a year and season when the SBSP Restoration Project can accept it. Stockpiling material or moving it more than once is prohibitive and would increase environmental impacts. In addition, to be used in a restoration project, the material must pass a screening to demonstrate its lack of contamination. The source project should also be located close enough to the restoration project that bringing it to the project's location would both have fewer environmental impacts and be less expensive than bringing to a landfill or other destination. The number of suitable source projects is likely to be limited by the difficulty of successfully meeting all these criteria. It would not therefore be feasible to further constrain the source projects and dirt brokers/haulers by limiting the hours of material delivery to the non-peak commute periods. Assuming these entities would be willing to comply, their own costs would increase, and they would pass that on to the SBSP Restoration Project, raising associated costs by an estimated 30 percent at a minimum. Collectively, these barriers make the implementation of the restricted hours under **SBSP MM 3.12-1** infeasible.

For these reasons, the analysis for Chapter 3.11 will not uniformly be implementing this mitigation measure and instead conducted a full analysis of the number of truck trips and the impacts associated with them within the Traffic Impact Analysis for Eden Landing Phase 2 (AECOM 2016), which is presented in Appendix H to this EIR.

Project-Level Evaluation

Phase 2 Impact 3.11-1: Potential short-term degradation of traffic operations at intersections and streets due to construction

Alternative Eden A (No Action). Under this alternative, no construction activities would be implemented as part of Phase 2. Southern Eden Landing would continue to be managed through the activities described in the AMP; however, this would be considered part of project operation, not construction. As such, no construction-generated traffic would occur, and there would be no impact.

Alternative Eden A Level of Significance: No Impact

Alternatives Eden B, Eden C, and Eden D. Alternatives Eden B, Eden C, and Eden D would require the import of approximately 92,000, 59,000 and 154,000 cubic yards of upland fill material, respectively, in order to improve levees and create habitat transition zones. Tables 3.11-5 through 3.11-7 present the LOS and delay for Alternatives B, C, and D, respectively. As can be seen from these tables all study intersections, except for I-880 southbound ramps/Whipple Road/Dyer Street, will continue to operate within acceptable levels of service under all three project alternatives. The LOS for the I-880 southbound ramps/Whipple Road/Dyer Street intersection, located in Union City, is currently at an unacceptable

LOS E during the AM peak hours. It is expected to remain at the same LOS under all the project alternatives. The average delay at this intersection is expected to increase by 8.0 seconds in the AM peak hour. Detailed LOS calculation sheets are provided in Appendix H.

An additional delay of 8.0 seconds in the AM peak hour is considered significant. Optimizing the timing at the I-880 southbound ramps/Whipple Road/Dyer Street intersection would mitigate the impact to less than significant. However, this mitigation is not feasible as this intersection is part of a synchronized series of intersections.

Alternatives Eden B, Eden C, and Eden D Level of Significance: Significant and Unavoidable

Table 3.11-5 LOS and Delay for Alternative Eden B

INTERSECTION	PEAK HOUR	No Project (Existing)		With Project Alternative		
		Delay[1] (sec)	LOS	Delay[1] (sec)	LOS	Increase in critical delay[2] (sec)
1. I-880 Northbound Ramps / Whipple Road / Industrial Parkway[3]	AM	55.4	E	56.7	E	n/a
	PM	73.1	E	72.7	E	n/a
2. I-880 Southbound Ramps / Whipple Road / Dyer Street	**AM**	**66.9**	**E**	**74.9**	**E**	**8.0**
	PM	50.7	D	52.1	D	n/a
3. Union City Boulevard / Whipple Road	AM	30.8	C	31.3	C	n/a
	PM	48.1	D	49.0	D	n/a
4. Union City Boulevard / Horner Street	AM	15.3	B	15.8	B	n/a
	PM	22.3	C	22.2	C	n/a
5. Union City Boulevard / Alvarado Boulevard	AM	25.2	C	25.4	C	n/a
	PM	25.2	C	25.5	C	n/a
6. Union City Boulevard / Dyer Street	AM	11.5	B	11.8	B	n/a
	PM	7.6	A	7.8	A	n/a

Source: AECOM 2016

Bold indicates LOS at unacceptable levels

[1] Intersection Control Delay per Highway Capacity Manual 2000 methodology.

[2] Increase in average delay only calculated for intersection at unacceptable level under 'with project' conditions to determine project impact.

[3] Intersection in Hayward; acceptable LOS is E or better.

Table 3.11-6 LOS and Delay for Alternative Eden C

INTERSECTION	PEAK HOUR	No Project (Existing)		With Project Alternative		
		Delay[1] (sec)	LOS	Delay[1] (sec)	LOS	Increase in critical delay[2] (sec)
1. I-880 Northbound Ramps / Whipple Road / Industrial Parkway[3]	AM	55.4	E	56.7	E	n/a
	PM	73.1	E	72.7	E	n/a
2. I-880 Southbound Ramps / Whipple Road / Dyer Street	AM	**66.9**	**E**	**74.9**	**E**	**8.0**
	PM	50.7	D	52.1	D	n/a
3. Union City Boulevard / Whipple Road	AM	30.8	C	31.3	C	n/a
	PM	48.1	D	49.0	D	n/a
4. Union City Boulevard / Horner Street	AM	15.3	B	15.6	B	n/a
	PM	22.3	C	21.9	C	n/a
5. Union City Boulevard / Alvarado Boulevard	AM	25.2	C	25.5	C	n/a
	PM	25.2	C	25.5	C	n/a
6. Union City Boulevard / Dyer Street	AM	11.5	B	11.8	B	n/a
	PM	7.6	A	7.8	A	n/a

Source: AECOM 2016

Bold indicates LOS at unacceptable levels

[1]Intersection Control Delay per Highway Capacity Manual 2000 methodology.

[2]Increase in average delay only calculated for intersection at unacceptable level under 'with project' conditions to determine project impact.

[3]Intersection in Hayward; acceptable LOS is E or better.

Table 3.11-7 LOS and Delay for Alternative Eden D

INTERSECTION	PEAK HOUR	No Project (Existing)		With Project Alternative		
		Delay[1] (sec)	LOS	Delay[1] (sec)	LOS	Increase in critical delay[2] (sec)
1. I-880 Northbound Ramps / Whipple Road / Industrial Parkway[3]	AM	55.4	E	56.7	E	n/a
	PM	73.1	E	72.7	E	n/a
2. I-880 Southbound Ramps / Whipple Road / Dyer Street	AM	**66.9**	**E**	**74.9**	**E**	**8.0**
	PM	50.7	D	52.1	D	n/a
3. Union City Boulevard / Whipple Road	AM	30.8	C	31.3	C	n/a
	PM	48.1	D	49.0	D	n/a
4. Union City Boulevard / Horner Street	AM	15.3	B	17.1	B	n/a
	PM	22.3	C	23.1	C	n/a
5. Union City Boulevard / Alvarado Boulevard	AM	25.2	C	25.2	C	n/a
	PM	25.2	C	25.2	C	n/a
6. Union City Boulevard / Dyer Street	AM	11.5	B	11.5	B	n/a
	PM	7.6	A	7.6	A	n/a

Source: AECOM 2016

Bold indicates LOS at unacceptable levels

[1] Intersection Control Delay per Highway Capacity Manual 2000 methodology.

2 Increase in average delay only calculated for intersection at unacceptable level under 'with project' conditions to determine project impact.

3 Intersection in Hayward; acceptable LOS is E or better.

Phase 2 Impact 3.11-2: Potential long-term degradation of traffic operations at intersections and streets during operation

Alternative Eden A (No Action). Under this alternative, no new activities would take place under Phase 2. CDFW would maintain and operate the ponds as part of the ELER and as described in the AMP. This alternative would not result in an increase in long-term traffic volumes in the area. Therefore, there would be no impact.

Alternative Eden A Level of Significance: No Impact

Alternatives Eden B, Eden C, and Eden D. O&M activities at southern Eden Landing would include water control structure operations and maintenance, levee maintenance, island maintenance, habitat transition zone maintenance, and maintenance of public access and recreational features. CDFW would lead and be responsible for these activities on its lands. In addition, Pacific Gas and Electric Company (PG&E) and ACFCWCD would continue to operate and maintain their respective properties that are included and analyzed as part of the Action Alternatives in the Phase 2 project area. The increase in traffic volumes associated with the routine maintenance and monitoring activities would be minimal.

Under these Action Alternatives, though the Bay Trail spine would be completed through southern Eden Landing and the portion of northern Eden Landing through which it is currently absent. There would also be one or two new viewing platforms and, depending on the alternative chosen for implementation, there could be an additional spur or loop trail off of the Bay Trail network. All of these have the potential to increase demand for recreational visits to the project area and thus increase traffic on the local roads.

Operation of the new recreational facilities is anticipated to result in an increase of up to 150 visitors a day to southern Eden Landing, as described in the Recreation Resources section of this EIR. Based on data of existing recreational use at northern Eden Landing it can be assumed that most of the users (approximately 75 percent) will visit the project area between the hours of 10:00 a.m. and 2:00 p.m. Monday through Friday and on weekends. It can also be assumed that up to 75 percent of users will arrive to the project area via automobile traveling on average with 2 persons per vehicle. This would add approximately 56 vehicles to the project area local roads on average each day. This is not a substantial increase in vehicle traffic relative to the existing traffic volumes of the local network and the vast majority of this traffic would not occur during peak travel periods.

Due to the periodic nature of the operations and maintenance traffic, the limited number of trips generated by workers visiting the ponds, and the minimal increase in recreation visitors, the implementation of any of the Action Alternatives would not result in a substantial increase in traffic volumes compared to the current traffic levels in the area. Therefore, impacts would be less than significant.

Eden Landing Action Alternatives Level of Significance: Less than Significant

Eden Landing Phase 2 Impact 3.11-3: Potential increase in parking demand

Alternative Eden A (No Action). Under this alternative, no new activities would take place under Phase 2. There would be no increase in visitors or parking demand. Therefore, there would be no impact.

Alternative Eden A Level of Significance: No Impact

Alternatives Eden B, Eden C, and Eden D. Under these alternatives, construction staging would be established within the Eden Landing, outside of areas that are open to the public for parking. Therefore,

during the construction phase of the project, there would be no impact on parking demand. Under the various Action Alternatives, however, the Bay Trail spine would be completed through southern Eden Landing and the portion of northern Eden Landing through which it is currently absent. There would also be one or two new viewing platforms and, depending on the alternative chosen for implementation, there could be an additional spur or loop trail off of the Bay Trail network. All of these have the potential to increase demand for recreational visits to the project area and thus the demand for parking.

Existing off-street parking that provides access onto the Bay Trail network or the EBRPD Regional Trail are shown in Table 3.11-1. There are approximately two dozen existing parking areas at each of those locations. In addition, on-street parking is available along several nearby streets, particularly on weekends (when recreational use of the recreation facilities is likely to be higher) because much of the surrounding areas are business parks or other commercial uses. The estimated increase in recreational use from Phase 2 implementation that was conducted for the Recreational Resources section of this EIR projects up to 150 additional recreational users per day, increasing parking demand by up to 56 vehicles per day. These vehicles will likely not be in the project area all at the same time.

The existing off-street parking spaces and the surrounding street parking are anticipated to provide sufficient capacity for the parking demand resulting from the increase in visitors to Eden Landing. In addition, if there is a substantial increase in demand over time, the program-level SBSP Mitigation Measure 3.12-3: Parking at Recreational Facilities would apply here. It states that, "The landowner (CDFW), in coordination with the cities with jurisdiction over the proposed recreation improvements (where applicable), shall design recreational facilities with sufficient parking spaces to accommodate the projected increase in vehicles that access the site, unless adequate off-site parking is available to meet the demand for parking spaces."

As a result, the impacts from any of the three Action Alternatives for Phase 2 at Eden Landing would be less than significant.

Eden Landing Action Alternatives Level of Significance: Less than Significant

Phase 2 Impact 3.11-4: Potential increase in wear and tear on the designated haul routes during construction

Alternative Eden A (No Action). Under this alternative, no new activities would take place under Phase 2. There would be no potential for increase in wear and tear on the haul routes during construction. Therefore, there would be no impact.

Alternative Eden A Level of Significance: No Impact

Alternatives Eden B, Eden C, and Eden D. Under these alternatives, the use of large trucks to transport equipment and haul material to or from the construction areas may affect the road conditions of the designated haul routes. Arterial and collector streets are designed to accommodate a variety of vehicle types, including heavy trucks. However, residential streets are not designed with a pavement thickness to withstand substantial truck traffic. Almost all of the lengths of the construction vehicle access and the material import haul routes from I-880 into southern Eden Landing are on Union City Boulevard, Whipple Road, Dyer Street, and Industrial Parkway. The portions of these roads that would be used by construction vehicles and for material delivery are all classified as designated truck routes. As such, these roads were designed to withstand substantial truck traffic. Therefore, those portions of construction truck trips would not increase wear and tear on these roads, and the impact would be less than significant. On

the smaller, local roads that connect Union City Boulevard to the gated entrances to southern Eden Landing, Horner Street is a major arterial in a commercial/industrial zone that also would have been designed to withstand truck traffic without damage or significant wear and tear.

Smaller roads in areas zoned for residential include Westport Way and Carmel Way. It is possible, though unlikely, that these roads could experiences wear and tear during construction. However, the program-level SBSP Mitigation Measure 3.12-4: Video Record of Road Conditions would apply here. It states that, "If residential streets are part of the designated haul route for any future phases of the SBSP Restoration Project, the landowners shall prepare a video record of road conditions prior to the start-up of construction for the residential streets affected by the project. The landowner (CDFW) shall prepare a similar video of road conditions after project construction is completed. The pre- and post-construction conditions of haul routes shall be reviewed by staff of the local Public Works Department. An agreement shall be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements of the roadway rehabilitation program."

As a result, the impacts from any of the three Action Alternatives for Phase 2 at Eden Landing would be less than significant.

Eden Landing Action Alternatives Level of Significance: Less than Significant

Impact Summary

Phase 2 impacts and levels of significance are summarized in Table 3.11-8. The levels of significance are those remaining after implementation of program-level mitigation measures, project-level design features, the AMP and other management practices and documents. The traffic analysis revealed that even implementation of a project-level mitigation measure that was used in Phase 2 at the Don Edwards National Wildlife Refuge – **SBSP Phase 2 Mitigation Measure 3.11-1** to modify signal timing at congested intersections – was not sufficient to reduce **SBSP Phase 2 Impact 3.11-1** to a level that was less than significant.

Table 3.11-8 Phase 2 Summary of Impacts – Traffic

IMPACT	ALT. EDEN A	ALT. EDEN B	ALT. EDEN C	ALT. EDEN D
Phase 2 Impact 3.11-1: Potential short-term degradation of traffic operations at intersections and streets due to construction.	NI	SU	SU	SU
Phase 2 Impact 3.11-2: Potential long-term degradation of traffic operations at intersections and streets during operation**.**	NI	LTS	LTS	LTS
Phase 2 Impact 3.11-3: Potential increase in parking demand.	NI	LTS	LTS	LTS
Phase 2 Impact 3.11-4: Potential increase in wear and tear on the designated haul routes during construction.	NI	LTS	LTS	LTS

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