
5.0 Evaluation of Alternatives

5.1 Summary of Alternatives Analyzed

This FEIS studies three alternatives: the No-Action Alternative and two Action Alternatives. Under the No-Action Alternative, no train or bus infrastructure and services would be constructed in the Project area, road extension and bridges would not be built, and no improvements would be made to Refugio Creek. Existing services would remain unchanged except for transportation improvements identified and programmed in the regional transportation plans (see Section 3.1 Traffic and Transportation Systems). Both Action Alternatives would construct a transit center station along the UPRR track alignment at the Hercules Waterfront that would include a terminal station, center platform and grade separation, extensions of John Muir Parkway and Bayfront Boulevard, ferry plaza and connection facility for future ferry connection, emergency vehicle access, bus and vehicle transit loop and drop off areas, extensions of the Bay trail and Creekside trail, pedestrian bridge crossing of the railroad tracks to Hercules Point, lighted parking areas, pedestrian walkways, and plazas. The Action Alternatives considered are:

- ◆ Alternative 1: Transit Station West of Refugio Creek
- ◆ Alternative 2: Transit Station East of Refugio Creek

Two Track Options (A and B), which differ in the method to relocate the existing UPRR tracks, are evaluated in the FEIS. Track Option A would utilize shoofly (temporary) tracks to allow active rail traffic to bypass work areas during construction of the Hercules ITC. Track Option B would eliminate the need for shoofly tracks and add a third dedicated station track through the Hercules ITC site, which would reduce freight and passenger train conflicts and allow freight trains to bypass the site while passenger trains are at the station. Section 5.2 presents the operational impacts and benefits of these two track options.

5.2 Operational Impacts and Benefits of Track Options A and B

5.2.1 Track Option A

Track Option A consists of the construction of a new center platform, realigning the existing UPRR main track 2 (MT2) to the inland side of the platform, relocating and shortening an existing industry siding track, and relocating an existing No. 20 crossover to the east.

Passenger train operation at the new station would be similar to other Capitol Corridor stations on the line with center platforms. The Capitol Corridor trains utilize directional running through this segment of the corridor. That is, the eastbound trains use one main track and the westbound trains use the other main track. All the passenger trains would stop at the station to load and unload passengers. All passengers would use the same platform and board the east- or westbound trains from the south or north side of the platform, respectively. This type of operation provides passengers with a consistent commuter experience, always boarding or disembarking the train from the same side of the platform.

The new station stop, while not changing the Capitol Corridor trains' basic operations, does have a substantial impact to overall trip times for all passenger trains. The increased trip time times resulting from the new station, in turn, could potentially impact ridership and operating costs. These impacts are not mitigated under this track option.

Freight operations on the rail line would not be directly affected by the new station since freight operations are primarily restricted to nighttime operations when passenger trains do not operate. A limited number of freight trains can operate on the line during mid-day service hours. UPRR train dispatchers must be able to clear all the freight trains from the main line before the start of the evening passenger commuter service. Since there is a limited number of locations to hold a long freight train along this corridor, the presence of freight trains would likely result in substantial delays to the Capitol Corridor passenger trains.

Track Option A also results in substantial temporary operational impacts during the construction of the project. The construction staging plan involves a three-stage track construction plan consisting of: construction of a double-track shoofly (Stage 1); construction of a new MT2 and removing the double-track shoofly (Stage 2); and construction of retaining walls and other non-track facilities (Stage 3). Stages 1 and 2 involve 15 separate construction steps, and a total of seven track outages. The outage time can range from 24 to 48 hours. These outages will likely occur on weekends and would require CCJPA to provide bus service to passengers to bypass the project site.

5.2.2 Track Option B

Track Option B consists of the construction of a new 7,800-ft long station track, a new center platform between MT2 and the new station track, and construction of a new No. 20 crossover at the east end of the station track. The existing industrial siding will remain in place and the existing No. 20 crossover within the limits of the station platform would be removed.

Passenger operations would essentially be the same as Option A, except that westbound passenger trains would cross over from MT1 to MT2 when entering the station and eastbound passenger trains would cross over from MT2 to the new station track when entering the station. Increased trip times for Option B are essentially the same as Option A.

Freight operations would also be essentially the same as in Option A except that the new station track would now allow UPRR train dispatchers to hold a freight train on MT1 without interfering with passenger operations. The new station track provides a location for a faster train to overtake a slower train without impacting opposing traffic on the other main track.

Track Option B improves the overall reliability of passenger operations on the line, and mitigates the increased trip times with Track Option A, by providing additional infrastructure to accommodate the joint use of freight and passenger rail. For example, a dispatcher would now have a place to hold a freight train through the end of the morning peak period rather than having passenger trains experience delays while the freight train reaches UPRR's Desert or West Oakland Yard. It also provides a place to hold either a disabled freight or passenger train off the main line while allowing normal train operations to resume on the main lines. This improved reliability would likely result in a reduction to recovery times in the train schedules offsetting the increased trip times. Improved operational reliability would also offset potential ridership losses due to increased trip times.

Track Option B significantly reduces the temporary operational impacts during the construction of the project over Option A. The construction staging plan involves a simplified two-stage track construction plan consisting of: construction the new station track and new No. 20 crossover (Stage 1); and construction of retaining walls and other non-track facilities (Stage 2). Stage 1 involves three construction steps and potentially two or three track outages. The outage time would range from 24 to 48 hours. As with Option A, these outages will likely occur on weekends requiring CCJPA to provide bus service to passengers to bypass the project site.

5.3 Supporting the Project Purpose and Need

As described more fully in Chapter 1, the Hercules ITC aims to fulfill the following project objectives:

1. Reduce congestion on I-80 by providing alternative to single occupant vehicle commutes.
2. Expand use of alternate transportation services by providing coordinated intermodal transit connections to rail, bus, bicycle, pedestrian and future ferry service for work, recreation, and education.
3. Implement a station design that satisfies existing regulatory and owner/operator guidelines and policies mandated by UPRR, CCJPA, Amtrak, and WETA.
4. Improve emergency response opportunities by expanding transportation alternatives to the Bay Bridge including rail and future ferry service.
5. Support Transit Oriented Development (TOD) and “new urbanist” standards by expanding transportation links within Contra Costa County.
6. Improve safety along the railroad corridor by providing completely grade-separated access over railroad tracks and retaining walls and fences along the waterfront.
7. Implement the goals and objectives in the General Plan to develop transportation facilities to provide access to the region and establish trail linkage between Pinole and Rodeo.
8. Improve Refugio Creek and reduce the risk of local flooding while enhancing ecological values.
9. Implement the General Plan, WDMP, and Waterfront NOW Initiative and their directive to construct an intermodal transit center on Block I, consistent with state and federal regulations.
10. Promote public access and views toward the San Pablo Bay.

A discussion of how each of the project alternatives fulfills each objective of the project’s Purpose and Need is included below.

The No-Action Alternative would partially respond to the deficiencies in the regional transportation network and goals established in the project Purpose and Need by implementing infrastructure improvements that have been identified and funded by regional transportation plans. However, without the proposed Hercules ITC project, there would be no additional transit options available to the residents of Hercules and nearby communities, and no reduction in vehicular trips on the regional highway system as a result of modal shifts. Also, without the intermodal facility, there would be no support of TOD standards. Public access and safety would not be improved, and the improvements to Refugio Creek would not be implemented.

The Action Alternatives would more fully support the Purpose and Need by adding alternative modes of travel for trans-bay commuters and midday travelers destined for San Francisco, South Bay, or Sacramento areas for work or entertainment. Train service and potential future ferry service would provide additional access and capacity to the congested trans-bay transportation network, including the Bay Bridge and the BART trans-bay tube, and provide emergency access between San Francisco and the East Bay in the event of a natural or man-made disaster. With Alternative 1 or 2, most new transit riders are diverted from automobile travel, thus reducing congestion on I-80 and other major roadways and highways. Additionally, the Action Alternatives would complete a needed section of the San Francisco Bay Trail and provide connection to the Bay Trail connector, a local Hercules trail providing bicycle commuters expanded commuting options.

As Table 5.3-1 shows, each of the two Action Alternatives fulfills the 10 project objectives discussed in Chapter 1. However, only Track Option B meets all 10 objectives, compared to Track Option A. Since Track Option B mitigates the increased trip time and provides greater operational reliability for freight and passenger rail service, it satisfies the UPRR and CCJPA policies and guidelines. CCJPA does not provide any formal commitment to provide service to a station but rather has a Train Station Policy (Policy) that includes guidelines and minimum requirements for a proposed station to be considered. Minimum requirements include basic facilities, minimum distance between stations, coordination with UPRR, mitigation for impacts to service (travel time), etc. As noted in the Policy, mitigation for service impacts can include track and signal improvements to increase track speed, reduced station dwell times, relocation of station stops, incorporating skip stops, express service, and/or limited service. Track Option B includes these measures, and, as a result, meets all project objectives.

Table 5.3-1 Project Alternatives and Satisfaction of Key Objectives

| Project Objective | No-Action Alternative | Alternative 1 - Track Option A | Alternative 1 -Track Option B | Alternative 2 -Track Option A | Alternative 2 -Track Option B |
|---|-----------------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1. Reduce congestion on I-80 by providing alternative to single-occupant vehicle commutes | x | ✓ | ✓ | ✓ | ✓ |
| 2. Expand use of alternate transportation services by providing coordinated intermodal transit connections to rail, bus, bicycle, pedestrian and future ferry service for work, recreation, and education | x | ✓ | ✓ | ✓ | ✓ |
| 3. Implement a station design that satisfies existing regulatory and owner/operator guidelines and policies mandated by UPRR, CCJPA, Amtrak, and WETA. | x | x | ✓ | x | ✓ |
| 4. Improve emergency response opportunities by expanding transportation alternatives to the Bay Bridge including rail and future ferry service | x | ✓ | ✓ | ✓ | ✓ |
| 5. Support Transit Oriented Development (TOD) and "new urbanist" standards by expanding transportation links within Contra Costa County | x | ✓ | ✓ | ✓ | ✓ |
| 6. Improve safety along the railroad corridor by providing completely grade-separated access over railroad tracks and retaining walls and fences along the waterfront | x | ✓ | ✓ | ✓ | ✓ |
| 7. Implement the goals and objectives in the General Plan to develop transportation facilities to provide access to the region and establish trail linkage between Pinole and Rodeo | x | ✓ | ✓ | ✓ | ✓ |
| 8. Improve Refugio Creek and reduce the risk of local flooding while enhancing ecological values. | x | ✓ | ✓ | ✓ | ✓ |
| 9. Implement the General Plan, WDMP, and Waterfront NOW Initiative and their directive to construct an intermodal transit center on Block I, consistent with state and federal regulations. | x | ✓ | ✓ | ✓ | ✓ |
| 10. Promote public access and views toward the San Pablo Bay. | x | ✓ | ✓ | ✓ | ✓ |
| ✓ satisfies objective x does not satisfy objective | | | | | |

5.4 Environmental Considerations

5.4.1 No-Action Alternative

With the exception of traffic impacts associated with increasing congestion, the No-Action Alternative would not produce construction- or operation-related impacts resulting from the new transit center. However, the transportation and environmental benefits of the Action Alternatives would not occur under this alternative.

5.4.2 Action Alternatives

Both Action Alternatives provide benefits to the environment by establishing additional modes of commuting between San Francisco, the South Bay, the East Bay, and the Sacramento areas, thereby removing cars from congested roadways. The Action Alternatives would provide regional bus and rail connections and promote bicycle and pedestrian modes of travel by expanding local and regional trail connectivity. Additionally, the Action Alternatives would facilitate connection to future ferry service that would provide an additional mode of travel as well as offer an additional emergency means of crossing the San Francisco Bay if a natural or man-made catastrophe disabled the Bay Bridge or the BART tube.

As discussed in Chapter 2, Alternatives Considered, several alternatives were eliminated due to the design and safety constraints for the location of the station platform. Amtrak and the CCJPA restrict construction of stations to locations that are tangent (straight) and meet minimum length requirements. Within the City, only the two Action Alternatives provide adequate track length at a location on the existing train tracks that is tangent. Alternative 1 would situate the Hercules ITC station at approximately the center of the platform west of Refugio Creek. Alternative 2 would situate the Hercules ITC at the easternmost edge of the platform east of Refugio Creek.

Both Action Alternatives result in potentially significant impacts to the environment, most of which can be mitigated. Both projects would require the construction of John Muir Parkway, Bayfront Boulevard and bridge, and the UPRR Bridge replacement that would result in discharges of fill to waters of the U.S. and the loss of wetlands. Both Action Alternatives would also complete the restoration and realignment of Refugio Creek and the North Channel to address local flood risk and to improve hydraulic conveyance and ecological function. Both Action Alternatives would also provide a transit terminal structure to provide connection to a future ferry.

Alternative 1 differs from Alternative 2 in that construction of the station west of Refugio Creek would require an additional bridge and would result in additional wetland impacts for the Transit Loop to provide bus and vehicle drop-off and parking bays that are removed from traffic and pedestrians. Parking would be provided by a temporary surface level parking lot across Refugio Creek until additional parking is made available by the Bayfront Development. However, Alternative 1 would provide less overall parking to support the Hercules ITC than would be provided for under Alternative 2. Alternative 2 incorporates a three-story parking structure adjacent to the Hercules ITC that would not be available under Alternative 1.

5.4.3 Track Options A and B

There are differences in the environmental impacts associated with Track Options A and B. With Track Option A, both Action Alternatives would construct the temporary shoofly track that would place railroad traffic closer to existing residential areas. This temporary significant impact would not be avoidable. However, once complete, the separation of grade would create an effective barrier and improve noise and vibration of the railroad traffic to adjacent residential areas. Implementation of Track Option B would generate short-term noise impacts to residents at Victoria by the Bay at the northeastern section of the UPRR corridor where the third track would be installed. With the incorporation of mitigation measures, potential noise and vibration impacts would be minimized. Track Option B would also temporarily restrict views of the shoreline and Bay for residents of Victoria by the Bay. Construction of Track Option B would occur in the area of buried archaeological site P-07-002570; however, with careful controls on construction excavation in the area, it is expected that the site will be avoided during construction. Construction activities in the northeastern portion of the project area proximate to habitat adjacent to the project boundaries for Track Option B have the potential to harm or harass CRLF if individuals enter the project site during construction. Avoidance, mitigation, and conservation measures developed in consultation with the USFWS would reduce the potential adverse effects. Due to the larger footprint, Track Option B would result in a small increase in wetland loss of 0.25 acre.

Track Option B has a number of beneficial effects as compared to Track Option A. Track Option B eliminates the need to construct the shoofly tracks and avoids the need to route traffic closer to residents temporarily during construction of the Hercules ITC. Additionally, Option B would require fewer piles reducing noise and vibrations impacts. Most significantly, implementation of Track Option B is anticipated to shorten the duration of temporary noise and traffic impacts from construction from approximately 30 months to 24 months.

5.5 Cumulative Impacts

A cumulative impact is “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 C.F.R. §1508.7).

With implementation of either of the Action Alternatives and Track Options, there would be no cumulative impacts on the following resources: traffic and transportation, land use, socioeconomics, parks and recreation, utilities, and public facilities and services. Since construction air quality, noise and vibration impacts would be mitigated, there are neither individual nor cumulative impacts on these resources. Accordingly, with mitigation, there would be no cumulative impacts to biological resources.

ETA has made public knowledge of its intent to develop ferry service from downtown San Francisco to the City. Ferry service is therefore reasonably foreseeable as a project and must be

considered for cumulative impacts. Consequently, the environmental impacts of both Action Alternatives with the addition of ferry service are considered.

Both Action Alternatives would include the development of a bay side terminal structure that would support future ferry service. Under both Action Alternatives, an emergency vehicle access (EVA) would be constructed at the same location and connect to the platform at the westernmost edge. If the ferry service from San Francisco is provided to Hercules, the EVA would connect to the ferry platform/terminal so that emergency vehicles could drive directly to the ferry terminal.

Under Alternative 2, this EVA would result in an additional bridge across Refugio Creek located on the San Pablo Bay side of the railroad tracks. The EVA could not be constructed at a location east of Refugio Creek adjacent to the ITC station due to grade difference and geometric constraints. Additionally, in case of a catastrophic emergency (e.g., train or ferry on fire), a safe egress from the station building to a stable sanctuary such as Hercules Point should be provided. The construction of additional length of EVA on the bay side of the railroad tracks would be completed nearly entirely in aquatic habitats and result in greater impacts to special aquatic sites such as wetlands and mudflats (refer to CWA Section 404(b)(1) discussion below).

With both Action Alternatives and Track Options, there would be cumulative impacts on visual resources, water resources, soils, and hazardous materials. The eventual build-out of the HB project to the east and west of the Hercules ITC complex and the existing residential and commercial development to the south and west would serve to add to the incremental effects of the light and glare emanating from the Hercules ITC and ferry terminal area, and would result in additional light and glare in combination with approved development projects that are scattered throughout the study area. Additionally, the proposed bridge to access the future Hercules Point Park would also alter views towards Hercules Point. Cumulative development in Hercules ITC site would obstruct and alter views looking west over the Bay. Cumulative visual effects are anticipated to be significant and unavoidable.

If the Hercules Bayfront project is constructed at the same time as the proposed project, there could be cumulative impacts resulting from topsoil erosion and uncontrolled runoff of stormwater from both projects. Stormwater may be contaminated with sediments of other pollutants that could affect surface water quality and sedimentation. In addition, inadvertent spills of petroleum products and chemical substances during construction could affect water quality. Also, cumulative impacts may result from the routine transport, use, or disposal of hazardous materials or through the accidental upset or release of hazardous materials from both projects. Stormwater contaminated with hazardous materials could affect surface and groundwater quality. Accidental releases of hazardous materials into the air could affect public health.

5.6 Clean Water Act: Section 404(b)(1) Considerations

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the USACE for activities that result in the discharge of dredged or fill material into waters of the United States, including wetlands (33 USC 1344). The CWA requires the USACE, when issuing the permit, to follow the U.S. Environmental Protection Agency's (EPA) guidelines (Guidelines) under Section 404(b)(1) of the CWA. EPA's Guidelines prohibit discharges of dredged or fill material into waters of the U.S. if a practicable alternative to the proposed project exists that would have less adverse impacts on the aquatic ecosystem, so long as the alternative would not have other significant adverse environmental impacts.

Selection of the preferred alternative must also satisfy the basic purpose of the project and meet the purpose and need for the action. These criteria are provided in Section 1 and Section 5.3 of this FEIS. According to the Guidelines, where the activity associated with a discharge which is proposed for a special aquatic site does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly stated otherwise.

While the construction of the train and bus station is not a water-dependent project, providing connection to future ferry service would be a water dependent requirement for the project. Additionally, the improvements proposed to Refugio Creek to provide hydraulic conveyance and improved ecological function are also "water dependent."

According to the Guidelines, mitigation is required to offset unavoidable impacts. In determining mitigation, Section 230.10(a) allows the issuance of a permit for only the least environmentally damaging practicable alternative. The primary goal of this section is to select an alternative that avoids impacts to the extent practicable. Once it has been shown that the impacts have been avoided to the maximum extent practicable, then the project must show that it has minimized any unavoidable impacts. Finally, such impacts that cannot be avoided and have been identified to have the minimal impact require compensatory mitigation.

Both Action Alternatives would result in unavoidable impacts to waters of the U.S. Unavoidable impacts to waters of the U.S. have been reduced the minimum level necessary to complete the project while meeting necessary engineering, safety and logistical considerations. Unavoidable impacts would be compensated for through the restoration and construction of comparable and suitable habitats at locations in the vicinity of the project along Refugio Creek and the North Channel.

A comparison of impacts to waters of the U.S. associated with both Action Alternatives is provided in Table 5.6-1.

Table 5.6-1 Comparison of Impacts to Waters of the U.S., Including Wetlands for Alternatives 1 and 2

| Project Component | Alternative 1 Total Impacts (Acres) | Alternative 2 Total Impacts (Acres) |
|---|-------------------------------------|-------------------------------------|
| Permanent Impacts | | |
| Bay Trail | 0.072 | 0.108 |
| Emergency Vehicle Access ¹ | 0.151 | 0.404 |
| John Muir Parkway, Bayfront Blvd, and Bridge | 0.027 | 0.037 |
| Promenade | 0.026 | NA |
| Parking/Facilities | 0.0 | 0.008 |
| Railroad | 0.249 | 0.243 |
| Station Building | 0.105 | 0.13 |
| Station Platform | 0.052 | 0.037 |
| Transit Loop Drive and Bridge | 0.022 | NA |
| Track Option B | 0.223 | 0.223 |
| Total | 0.926 | 1.190 |
| Temporary Impacts | | |
| North Channel Restoration ² | 0.219 | 0.219 |
| Refugio Creek Restoration ² | 7.140 | 7.061 |
| Total | 7.360 | 7.280 |
| Total of Permanent and Temporary Impacts | 8.28 | 8.47 |
| ¹ Impacts associated with the Bay Trail are included to incorporate all potential impacts associated with the project in determining the alternative requiring the least amount of fill. ² Impacts associated with the restoration of Refugio Creek and North Channel would be temporary. Areas will be restored and revegetated after construction. | | |

EPA's guidelines prohibit discharge of dredged or fill material into waters of the U.S., including wetlands, if a practicable alternative to the proposed discharge exists that would have less adverse impacts on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental impacts (40 CFR 230[a]). An alternative is considered practicable if it is available and capable of being implemented after considering cost, existing technology, and logistics in light of overall project purposes. Practicable alternatives may include siting a project in areas not owned by an applicant that could be reasonably obtained by the project applicant to achieve the basic project purpose (40 CFR 230.10[a][2]).

If a project is not water dependent (i.e., does not require access to or siting in special aquatic sites to fulfill the basic project purpose) and the project proposes a discharge into a special aquatic site, EPA's guidelines presume that a less environmentally damaging practicable alternative exists, unless the project applicant can clearly demonstrate otherwise (40 CFR 230.10 [a][2]). Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. Thus, if a project is not water dependent and would result in the discharge of dredged or fill material into a special aquatic

site, the project applicant must clearly refute the presumption that a less environmentally damaging practicable alternative exists that would not result in a discharge to a special aquatic site (40 CFR 230.10 [a][3]).

EPA's guidelines suggest a sequential approach to project review in which mitigation measures are considered only after the project applicant shows that no practicable alternatives are available to achieve the basic project purpose. Once it is determined that no practicable alternatives are available, EPA's guidelines require that appropriate and practicable steps be taken to minimize potential adverse effects on the aquatic ecosystem (40 CFR 230.10[d]). Such steps may include actions controlling discharge location; treatment of material to be discharged; effects of material after discharge; method of dispersion; as well as actions related to technology, minimization of impacts to plant and animal populations, and minimization of adverse effects on human use potential (40 CFR 230.70-230.77).

Guidance issued by the Corps also states that the level of detail required in analyzing practicable alternatives must be commensurate with the severity of the environmental impact, as determined by the functions of the aquatic resource and the nature of the proposed activity. Thus, for projects with relatively minor impacts to the aquatic environment, extensive testing, evaluation or analysis is not expected or intended (U.S. Army Corps of Engineers, Guidance on Flexibility of the 404(b)(1) Guidelines and Mitigation Banking, Regulatory Guidance Letter 93-02 [August 23, 1993]).

Permanent impacts to waters of the United States associated with this project total only 0.926 acre. These impacts would result from the construction of the Intermodal Transit Center and all appurtenant features. Temporary and beneficial impacts to Refugio Creek and North Channel are the result of the restoration of these creeks and total 7.360 acres.

5.6.1 Comparison of Action Alternatives

The two alternatives differ principally in the location of the station structure either west of Refugio Creek (Alternative 1) or east of Refugio Creek (Alternative 2). The station structure would be similar and would result in comparable impacts and discharges to construct the facility. However, the necessary access road network to support the facility would differ. Alternative 1 includes a Transit Loop which would provide bus and commuter access to the station and would require a crossing of Refugio Creek; whereas, Alternative 2 would include the traffic loop but no crossing east of Refugio Creek. Additionally, construction of the ferry plaza station structure would also require the development and construction of an emergency vehicle access to the bay side station structure. Due to geographic, engineering, and safety constraints, the emergency vehicle access for both alternatives would approach the station structure from the west end of the platform. Extending the emergency vehicle access to the Alternative 2 (east of Refugio Creek) location would result in an additional crossing of Refugio Creek on the bay side of the UPRR. This emergency vehicle crossing for Alternative 2 would require a greater footprint and discharge into waters of the U.S. and wetlands than the Transit Loop Crossing for Alternative 1.

Construction of the proposed project will result in direct impacts to a variety of aquatic habitats, including wetlands and other waters of the U.S., including impacts to Northern Coastal Salt Marsh (comprising California cordgrass tidal marsh and pickleweed tidal marsh), pickleweed brackish marsh, intertidal mudflat, cattail marsh, seasonal wetland, and freshwater intermittent drainage.

Construction of the proposed project will require discharges of fill material into waters of the U.S. to construct the station structure and related facilities as well as to realign Refugio Creek, construct the new meandering channel and establish the new mouth of the creek in San Pablo Bay. Materials discharged into waters of the U.S. would be comprised of clean fill, rock and/or concrete and fill; the station building, bridges, and other structures will be supported by driven piles. Refugio Creek would be realigned by first dewatering the area using cofferdams (as described in Chapter 2) and then excavating the new floodplain and a meandering low flow channel. Impacts resulting from each of the project elements are provided in Table 5.6-1.

As discussed in previous sections and above, both Action Alternatives would result in similar impacts to the environment concerning traffic, hazards, aesthetics, etc. However, the Action Alternatives differ with respect to impacts to biological resources and aquatic habitats, especially when considering cumulative effects. Consequently, the least environmentally damaging practicable alternative and the environmentally superior alternative is Alternative 1.

5.6.2 Track Options A and B

Construction of the Track Options A and B include nearly identical construction for the majority of the project; however Track Option B includes an additional dedicated station track, which would serve as an approximately 7,800 foot-long siding. The additional track extends the project along the UPRR approximately 800 feet to the west and almost 3000 feet to the east. Along the last 1,500 feet at the northeastern extent, the project would require some minor track maintenance work which will not extend off of the existing UPRR ballast. Construction of the dedicated station track will result in additional impacts to ruderal habitat within the UPRR corridor as well as some minor impacts to wetlands and waters of the U.S. Additional impacts to waters of the U.S. and wetlands would be comprised of approximately 0.003 acre of impacts to brackish stream, 0.005 acre of cattail marsh, 0.016 acre of mudflat, 0.009 acre of pickleweed brackish marsh and 0.190 acre of seasonal wetland. Impacts to aquatic resources resulting from Track Options A and B are summarized in Table 5.6-1.

5.6.3 Comparison of Alternatives to Meet the Project Purpose

While the project will result in direct effects to aquatic habitats, it is important to note that due to the historic industrial activity of the site, much of the existing habitats are of poor or marginal value. The project includes many improvements will result in significant enhancements to the overall ecological health and water quality of the Bay. The project includes restoration of the Refugio Creek and North Channel corridors that will increase the overall acreage of aquatic habitats while improving their function and value. The existing

Refugio Creek channel is highly incised with vertical banks that have been stabilized with concrete bags. The existing UPRR Bridge is inadequate in passing storm flows. The project will open the channel corridor and create flatter and lower banks that will provide for increased tidal influence and will diversify vegetation to include a mosaic of low and high tide marsh as well as riparian habitat. Currently, significant flow constraints exist at the UPRR Bridge with the three 72-inch culverts beneath the service road and at the earthen pedestrian bridge upstream. Restoration of Refugio Creek will remove these constraints to flow and create a wider, approximately 200-foot, corridor that will improve hydrologic conveyance and ecological value. Additionally, it is expected that increasing the wetland vegetation and tidal marsh areas will improve nutrient and sediment retention, and the wider channel is anticipated to improve flows out to San Pablo Bay, as well as tidal influence upstream into the upper reaches of Refugio Creek.

Both alternatives 1 and 2 with the implementation of Track Option A meet the all of the objectives and selection criteria noted above. However, Track Option A does not satisfy a key objective of the basic purpose (i.e., does not satisfy the owner/operator guidelines mandated by UPRR, CCJPA and Amtrak). Only Track Option B meets all of the project's key objectives to meet the project's basic purpose.

Additionally, while Track Option B would result in slightly greater discharges to aquatic resources, Track Option B offers significant logistical benefits to construction scheduling and duration.

5.6.4 Selection of the Least Environmentally Damaging Practicable Alternative

No practicable alternatives exist for the proposed Hercules Intermodal Transit Center project that would have fewer impacts to the aquatic environment.

Avoidance of waters of the United States as well as minimization of unavoidable impacts has been accomplished by careful project design. Of the more than 10 acres of wetlands within the project area, only 0.968 will be permanently filled as a result of the proposed project. Avoidance of the waters of the U.S. on the properties has been accomplished to the maximum extent practicable.

In accordance with the Corps guidance for evaluation of alternatives under the 404(b)(1) Guidelines, the proposed Hercules Intermodal Transit Center project achieves the overall project purpose. As discussed in previous sections and above, both Action Alternatives would result in similar impacts to the environment concerning traffic, hazards, aesthetics, etc. However, the Action Alternatives differ with respect to impacts to biological resources and aquatic habitats, especially when considering cumulative effects. Consequently, the least environmentally damaging practicable alternative is Alternative 1 with Track Option B.

5.7 Project Cost and Schedule

The differences in the required project elements result in construction cost differences for each Action Alternative. The estimated costs to construct the Action Alternatives by phase are presented in Table 5.7-1. The construction work associated with Track Options A and B are elements of Phase 1 only; therefore the difference in project cost between Alternatives 1 and 2 with Track Options A and B occurs in Phase 1. The project elements included in Phase 1 are: John Muir Parkway Extension; Bayfront Boulevard Extension and Bridge; UPRR Track Relocation; Railroad Bridge Replacement; Relocation of Existing Utilities; Station Platform and Emergency Vehicle Access; Station Building; Bay Trail and Promenade; Creekside Trail; Refugio Creek and North Channel Restoration; Transit Loop and Bridge; Creekside Park; and, Transit Parking. Additional clarification of the phases for the project is provided in Section 2.2.1. As the table shows, there is a \$5.6 million differential to implement Track Option B over Track Option A.

Table 5.7-1 Comparison of Construction Costs for Alternatives 1 and 2

| Phase | Alternative 1 & Track Option A | Alternative 2 & Track Option A | Alternative 1 & Track Option B | Alternative 2 & Track Option B |
|--------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 1 | \$68.1 M | \$73.1 M | \$73.7 M | \$78.7 M |
| 2 | \$3.7 M | \$3.7 M | \$3.7 M | \$3.7 M |
| 3 | \$5.0 M | \$6.0 M | \$5.0 M | \$6.0 M |
| Total | \$76.8 M | \$82.8 M | \$82.4 M | \$88.4 |

Construction of Phase 1 of the Action Alternatives with Track Option A will take 30 months. With Track Option B, the construction of Phase 1 would take 24 months.

5.8 The Preferred Alternative

After review of the Draft EIR/EIS, the City and FTA selected a preferred alternative based on the project information presented in the Draft EIR/EIS as well as additional project study and design of the potentially preferred alternative. The Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) permits the preferred alternative to be developed to a higher level of detail than the other alternatives for only the following reasons: (1) to facilitate the development of mitigation measures; or (2) to facilitate concurrent compliance with other applicable environmental laws. While not preventing the lead agencies from making an impartial decision on the appropriate course of action, the preferred alternative was developed to a higher level of detail than the other alternatives under review to facilitate the development of mitigation measures and concurrent compliance with other environmental laws.

5.8.1 City of Hercules Locally Preferred Alternative

After release of the Draft EIR/EIS, the City of Hercules reviewed the findings of the environmental document and prepared a staff recommendation for Alternative 1 with Track Option B as the locally preferred alternative (see Appendix D). In a letter dated June 13, 2011, City staff recommended that the ITC be located west of Refugio Creek (Alternative 1) because the location:

- ◆ Has adequate tangent track length (sufficient area for straight track, as required by Union Pacific Railroad (UPRR));
- ◆ Is consistent with the Waterfront District Master Plan, which limits the location of a train station to the Bayfront Boulevard Main Street (T5-MS) zone, i.e., blocks E, G, and I parcels that are all on land west of Refugio Creek; and;
- ◆ Enjoys active support from nearby residents.

Staff further recommended Track Option B since this option:

- ◆ Eliminates the need for two shoofly tracks
- ◆ Simplifies project construction staging needs;
- ◆ Shortens overall construction duration;
- ◆ Eliminates culvert strengthening and temporary railroad bridge extension;
- ◆ Reduces cost of retaining wall through the station area;
- ◆ Reduces cost of center platform;
- ◆ Minimizes interruptions and operational impacts to through-traffic and passenger services;
- ◆ Minimizes freight-vs-passenger train conflicts;

- ◆ Improves on-time train service along the corridor for long-term operations; and,
- ◆ Enjoys active assistance and support from key stakeholders, including the host railroad (UPRR), managing authority (Capitol Corridor Joint Powers Authority), and operating agency (AMTRAK) to obtain timely design review permits.

In August 2011, the City of Hercules approved the Final EIR for the Hercules ITC project which recommended Alternative 1 with Track Option B.

5.8.2 Selection of the Preferred Alternative

Since Action Alternative 1 is identified as the Least Environmentally Damaging Practicable Alternative (see Section 5.6 above), and there are several benefits associated with Track Option B over Track Option A, the combination of Alternative 1 with Track Option B is the Preferred Alternative and has been developed to a higher level of design (see Figure 5.8-1).

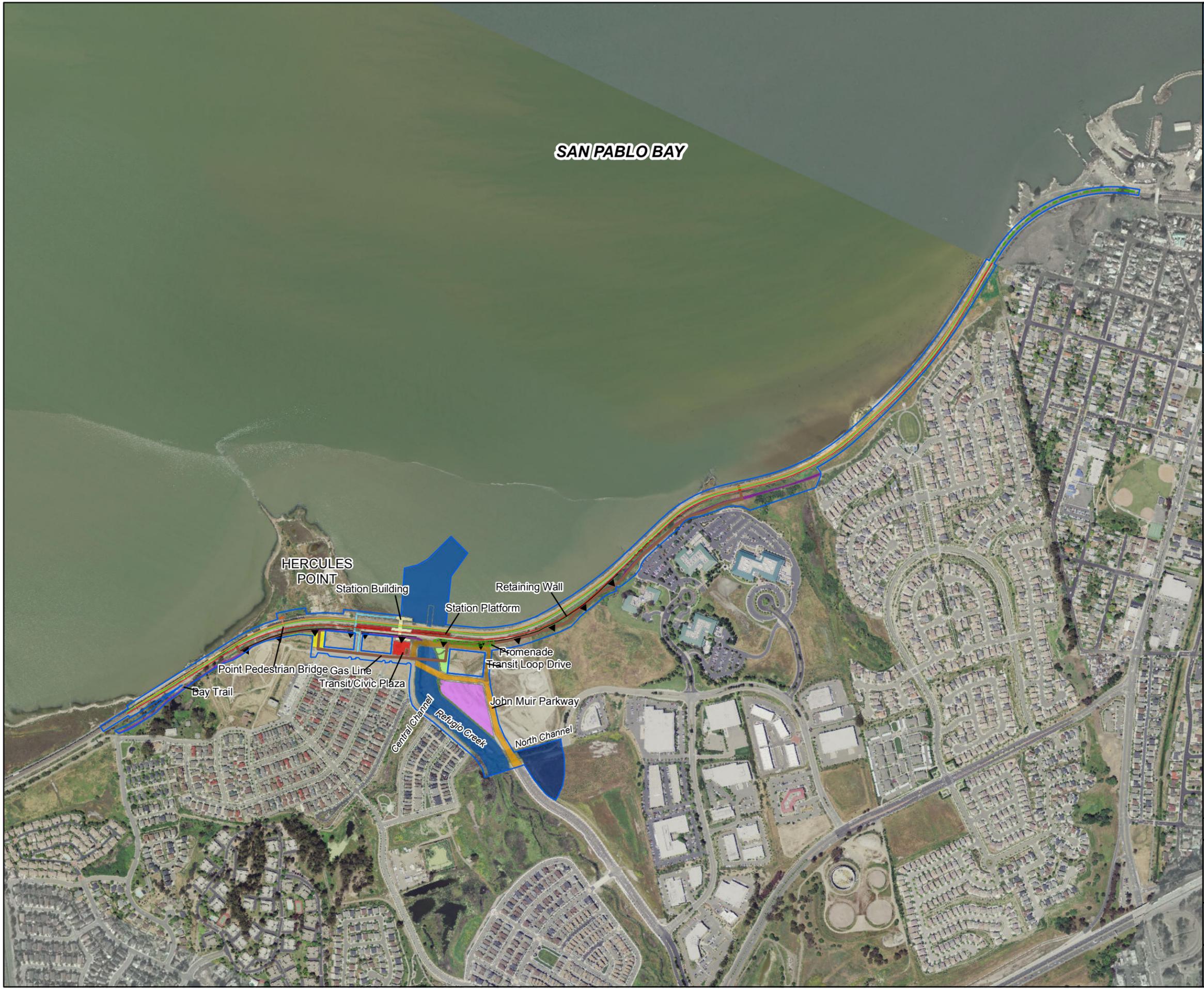
In October 2010, the UPRR provided written acknowledgement to the City of Hercules to move forward with the design of Alternative 1 with Track Option B (see Appendix D). Final UPRR approval for the Project will not be provided until they have completed review of the final design.

The City has been coordinating with CCJPA throughout the development of the project. As discussed in Section 5.3, CCJPA does not provide any formal commitment to provide service to a station but rather has a Train Station Policy that includes guidelines and minimum requirements for a proposed station to be considered. If the proposed station meets the minimum requirements, CCJPA will consider providing service but reserves the right to refuse service for other reasons. For the Hercules ITC project, CCJPA noted in 2010 that a proposed station stop in Hercules would result in increased travel time and would require mitigation. The City worked with HDR to conduct a value engineering effort in May 2010 to identify cost saving measures and mitigation measures to address the impacts to service. Track Option B was developed as part of the value engineering effort. The improvements in Track Option B include a dedicated station track (7,800-foot siding) which will reduce freight and passenger conflicts on the main tracks and mitigate the travel time impact of adding a station stop. Since Track Option B incorporates the required mitigation for service effects, Track Option B is preferred over Track Option A.

5.8.3 Mitigation Measures for the Preferred Alternative

Table 5.8-1 identifies the mitigation measures identified for each of the impacts that result from implementation of the Preferred Alternative.

This page intentionally left blank.



Legend

- Project Boundary
- Retaining Wall
- Gas Line
- Bay Trail
- Cafe/Retail
- Creekside Park and Plaza
- Creekside Trail
- Emergency Vehicle Access
- Interim Transit Parking Lot
- John Muir Parkway, Bayfront Blvd, and Bridge
- Landside Ramp
- North Channel Restoration/Wetland Mitigation Area
- Point Pedestrian Bridge
- Pointside Viewing Platform
- Promenade
- Railroad Plaza
- Refugio Creek Restoration
- Station Building
- Station Platform
- Transit Loop Drive and Bridge
- Transit/Civic Plaza
- New Main Track No. 1
- New Main Track No. 2
- New Station Track No. 1
- Track Maintenance

1 in = 800 ft (at tabloid layout)

0 62.5 125 250 Meters

0 250 500 1,000 Feet

Figure 5.8-1: Alternative 1 Option B

City of Hercules
Hercules Intermodal Transit Facility
Contra Costa County, California

Data Sources: Map information was compiled from the best available sources. No Warranty is made for its accuracy or completeness. Topographic Base Map, Aerial photography from ESRI ArcGIS Online; Hydrography from National Hydrography Dataset; NWI Data from U.S. Fish and Wildlife Service and soils data from USDA NRCS Soil Survey. Data is State Plane Feet, NAD83 Zone 3.



This page intentionally left blank.

Table 5.8-1 Summary of Environmental Impacts and Proposed Mitigation Measures for the Preferred Alternative

| FEIS Section | Environmental Area/Impact | Impact | Mitigation |
|--------------|--|---|---|
| 4.1 | Traffic and Transportation Systems <i>TRANS-5</i> | Construction of the project will introduce additional large (haul) trucks and other related traffic that could result in potentially adverse safety impacts to pedestrians. | Contractor will develop and implement traffic safety plan in coordination with the City. |
| 4.4 | Cultural Resources <i>CULT-1a</i> | The project may adversely affect unidentified archaeological resources during construction | Prior to construction, project crews will be briefed on the identification of cultural materials. If cultural materials are encountered, construction within 100 feet will stop, the City will be notified and a qualified archaeologist will examine and document the materials. The archaeologist will coordinate with responsible agencies as appropriate to develop mitigation measures prior to resuming construction in the area of the discovery. The archeologist will oversee implementation of the procedures once they have been determined. |
| 4.4 | Cultural Resources <i>CULT-1b</i> | The project has the potential to affect previously identified archaeological site P-07-002570 during construction. | To ensure successful avoidance, both an archaeological and tribal monitor will be present during construction within 100 feet of the known location of the archaeological deposit. In the event intact archaeological deposits are exposed, construction at the find location will be stopped and new measures will be designed and implemented in consultation with the SHPO and tribes. |
| 4.4 | Cultural Resources <i>CULT-2</i> | Construction of the project may adversely affect unidentified human remains. | Prior to construction, project crews will be briefed on the potential to identify human remains. If remains are encountered, construction within 100 feet will stop. The City will be notified. The Contra Costa County Coroner will be contacted to evaluate the find. If the Coroner determines that the remains are Native American, the City will coordinate with the Native American Heritage Commission. |
| 4.4 | Cultural Resources <i>CULT-3</i> | Construction of the project may adversely affect unidentified paleontological resources | Prior to construction, project crews will be briefed on the potential to identify paleontological resources. If materials are encountered, construction within 100 feet will stop and the City will be notified. A qualified paleontologist will examine, document and evaluate the find. The paleontologist will coordinate with the responsible agencies regarding the development of appropriate mitigation measures. The paleontologist will oversee implementation of the procedures once they have been determined. |
| 4.5 | Visual and Aesthetic Resources <i>VAR-3</i> | Implementation of the project would create new sources of substantial light and glare and would result in significant adversely affected day and nighttime views in the area. | Prior to the approval of the final project design plans, the project applicant shall submit a Final Lighting Plan for review and approval by the City Planning Commission. The Final Lighting Plan shall be in compliance with the General Plan, the WDMP, and all other applicable City codes, as required by the City Planning authorities. The Final Lighting Plan shall specify reasonable measures to minimize light spillover and glare from the completed facility, such as screened/hooding lighting, automatic dimmers, or strategically placed landscaping. |

| FEIS Section | Environmental Area/Impact | Impact | Mitigation |
|--------------|---|---|--|
| 4.5 | Visual and Aesthetic Resources VAR Cumulative Impacts | The eventual build-out of the Hercules Bayfront project to the east and west of the Hercules ITC and the existing residential and commercial development to the south and west would add to the incremental effects of the light and glare emanating from the Hercules ITC and ferry terminal area, and would result in additional light and glare in combination with approved development projects scattered throughout the study area. Cumulative development in the study area would obstruct and alter views looking west over the Bay. Cumulative visual impacts are anticipated to be unavoidable. | Prior to the approval of the final project design plans, the project applicant shall submit a Final Lighting Plan for review and approval by the City Planning Commission. The Final Lighting Plan shall be in compliance with the General Plan, the WDMP, and all other applicable City codes, as required by City Planning authorities. The Final Lighting Plan shall specify reasonable measures to minimize light spillover and glare from the completed facility, such as screened / hooding lighting, automatic dimmers, or strategically placed landscaping. |
| 4.7 | Air Quality AIR-1 | Construction of the proposed project would create emissions of fugitive dust from excavation and grading, and emissions of criteria pollutants from construction equipment exhaust. | During construction, construction contractors will be required to implement fugitive dust control measures and reduce emissions. |
| 4.8 | Noise and Vibration NOI-3 | Noise-generating construction activities are anticipated to exceed noise level standards and be at least 5 dBA above the ambient noise environment at adjacent noise-sensitive land uses. | The proposed project shall implement best-available construction noise control measures. |
| 4.9 | Biological Resources BIO-1 | Construction of the proposed project could potentially result in "take" through harm or harassment of individual California red-legged frogs (CRLF) | Preconstruction surveys for CRLF would be conducted in the project site approximately two weeks prior to the initiation of construction activities to ensure that CRLF is not actively using the project site as a dispersal corridor. Surveys will not commence until approval is received by USFWS. Relocation and exclusion of CRLF will be implemented as indicated in the USFWS Biological Opinion (BO). Construction personnel would participate in a USFWS-approved worker environmental awareness program. A biological monitor would be present during all construction activities within Refugio Creek. FTA has consulted with the USFWS and determined that the project is not likely to jeopardize the continued existence of CRLF |
| 4.9 | Biological Resources BIO-2 | Construction of the proposed project is not likely to adversely affect vernal pool fairy shrimp (VPFS). | Marginal habitat is present in the freshwater wetlands on-site. Two complete sets of wet season presence/absence surveys have been completed and no vernal pool fairy shrimp were found. FTA has consulted with the USFWS and determined that the project is not likely to adversely affect or result in take of vernal pool fairy shrimp. |
| 4.9 | Biological Resources BIO-3 | Construction of the proposed project is not likely to adversely affect California clapper rail. | If construction begins during the breeding season (January 15 to April 15), a USFWS approved biologist will conduct a preconstruction survey of California cordgrass tidal marsh habitat for California clapper rail prior to any construction activities occurring within 500 feet of those habitats. No construction work will occur within 700 feet of any active nests. On-site biological monitors will stop work if any rail species is detected in the work area. FTA has consulted with the USFWS and determined that the project may affect, but is not likely to adversely affect the California clapper rail |

| FEIS Section | Environmental Area/Impact | Impact | Mitigation |
|--------------|--------------------------------------|--|--|
| 4.9 | Biological Resources <i>BIO-4</i> | Construction of the proposed project is not likely to adversely affect salt marsh harvest mouse. | <p>A USFWS approved biologist will conduct a preconstruction survey of the northern coastal salt marsh habitat in the project site prior to any construction activities occurring within 500 feet of those habitats.</p> <p>A USFWS approved biological monitor will be present during construction activities within and immediately adjacent to the northern coastal salt marsh habitat.</p> <p>Construction personnel would participate in a USFWS-approved worker environmental awareness program.</p> <p>Nonmechanized hand tools to remove pickleweed or vegetation would be used within 50 feet of pickleweed habitat.</p> <p>Fencing would be installed between areas of salt marsh harvest mouse habitat and work sites</p> <p>FTA has consulted with the USFWS and determined that the project may affect, but is not likely to adversely affect the salt marsh harvest mouse.</p> |
| 4.9 | Biological Resources <i>BIO-5</i> | Construction of the proposed project could potentially result in "take" through harm or harassment of California black rail. | If construction begins during the breeding season (February 1 to August 31), a CDFG approved biologist will conduct a preconstruction survey of pickleweed tidal marsh habitat for California black rail prior to any construction activities occurring within 500 feet of those habitats. |
| 4.9 | Biological Resources <i>BIO-6</i> | Construction of the proposed project could potentially result in disturbance of sensitive bat species, including pallid bat and hoary bat. | Preconstruction bat surveys shall be conducted to inspect inside culverts under the railroad tracks and trees within the willow riparian habitat. |
| 4.9 | Biological Resources <i>BIO-7</i> | Construction of the proposed project could potentially impact San Pablo vole and/or salt marsh wandering shrew. | Preconstruction surveys for San Pablo vole and salt marsh wandering shrew will be conducted simultaneously with salt marsh harvest mouse surveys. If these species are detected, CDFG will be contacted regarding appropriate measures to relocate them out of the work area or protect occupied habitat in conjunction with salt marsh harvest mouse avoidance measures. Exclusionary fencing installed for salt marsh harvest mouse would also prevent these species from entering the project site. |
| 4.9 | Biological Resources <i>BIO-8</i> | Construction of the proposed project could potentially result in disturbance to other sensitive bird species (Cooper's hawk, tricolored blackbird, northern harrier, white-tailed kite, saltmarsh common yellowthroat, San Pablo song sparrow, burrowing owl) and migratory birds during the nesting season. | If feasible, ground disturbing activities (e.g., clearing and grubbing) in and within 500 feet of suitable nesting habitat for these species should commence outside of the breeding season (September 1 to January 14). If birds began nesting in and within 500 feet of the project site after construction commenced, it could be assumed that they were not disturbed by construction activities. |
| 4.9 | Biological Resources <i>BIO-9</i> | Construction of the proposed project would result in impacts to northern coastal salt marsh habitat, coastal brackish marsh habitat and brackish stream habitat. | Prior to commencement of construction activities that have the potential to impact the Northern Coastal Salt Marsh and Coastal Brackish Marsh, a permit will be obtained from the USACE and the BCDC for fill and/or disturbance of this habitat. All permit conditions will be followed. Suitable compensatory mitigation for impacts to Northern Coastal Salt Marsh and Coastal Brackish Marsh will be determined in conjunction with the USACE and BCDC and implemented to ensure no net loss of Northern Coastal Salt Marsh occurs. |

Chapter 5

| FEIS Section | Environmental Area/Impact | Impact | Mitigation |
|--------------|---------------------------------------|---|---|
| 4.9 | Biological Resources <i>BIO-10</i> | Construction of the proposed project could potentially result in loss of eelgrass and/or wideongrass beds. | A valid preconstruction eelgrass survey will be completed during the period of active growth of eelgrass (typically March through October). The preconstruction survey will be completed prior to the beginning of construction and shall be valid until the next period of active growth. If any eelgrass is identified in the project area, post-construction eelgrass surveys will be conducted to determine if any eelgrass was adversely impacted. The survey will be prepared in consultation with CDFG and/or NMFS. |
| 4.9 | Biological Resources <i>BIO-11</i> | Construction of the proposed project could potentially result in loss of intertidal mudflats. | A permit will be obtained from the USACE and the BCDC prior to impacting the intertidal mudflats. All permit conditions will be followed. Suitable compensatory mitigation will be determined in conjunction with the USACE and BCDC and implemented in order to replace and/or enhance the functions and values lost due to impacting special aquatic sites during implementation of the proposed project. |
| 4.9 | Biological Resources <i>BIO-12</i> | Construction of the proposed project could potentially result in the spread of invasive species. | The contractor will ensure that construction equipment is clean of potential noxious or invasive species prior to utilization of equipment on the site. |
| 4.9 | Biological Resources <i>BIO-13</i> | Dredging activities could impact marine mammals. | Implementation of Mitigation Measure WR-1 and the following measures will be followed during dredging in San Pablo Bay to reduce turbidity. <ul style="list-style-type: none"> In-water construction and dredging activities will occur during the window of June through November, to minimize effects on listed species and their habitat. Sampling and testing for contaminants will be conducted in potential dredging locations in San Pablo Bay prior to the onset of dredging activities (per USEPA and USACE requirements). If sediments to be dredged are contaminated such that their resuspension may adversely affect listed species or their habitat, NMFS and CDFG will be consulted. Bankward slopes of the dredged area will be slanted to acceptable side slopes (e.g., 3:1) to prevent sloughing. |
| 4.9 | Biological Resources <i>BIO-14</i> | Construction and dredging activities could result in the modification or disturbance of special aquatic sites including eelgrass beds, mudflats, and tidal marshes that provide fish habitat. | Any tidal marsh habitat that is degraded or lost due to the movement of relocating the mouth of Refugio Creek will be mitigated for by planting tidal marsh vegetation (i.e., cordgrass) in San Pablo Bay, in the vicinity of where Refugio Creek currently flows out into San Pablo Bay. Tidal marsh habitat will be monitored over time to ensure no net loss in tidal marsh habitat. Wetland restoration will be coordinated with the responsible agencies as part of the wetland permitting required under Section 404 of the CWA. Although eelgrass surveys within the ESL and vicinity were completed in 2007, and no eelgrass was found (WWR 2007b), valid preconstruction eelgrass surveys will be completed (see Mitigation Measure #BIO-10). |
| 4.9 | Biological Resources <i>BIO-15</i> | Construction and dredging activities may temporarily increase sedimentation and turbidity in Refugio Creek and San Pablo Bay. | Implementation of Mitigation Measures BIO-13, WR-1, and WR-2 will reduce potential impacts to fish and other aquatic species to less than significant. No additional measures will be required. |
| 4.9 | Biological Resources <i>BIO-16</i> | Construction activities may potentially result in a chemical spill in Refugio Creek or San Pablo Bay. | Implementation of a Spill Prevention and Response Plan designed to minimize the potential for chemical spills and seepage, would reduce the potential impact to a less than significant level. |

| FEIS Section | Environmental Area/Impact | Impact | Mitigation |
|--------------|---------------------------------------|---|---|
| 4.9 | Biological Resources <i>BIO-17</i> | Dredging activities could result in the entrainment of special-status fish and aquatic species. | Dredging activities in San Pablo Bay will be conducted during the work window of June through November to minimize potentially significant impacts to anadromous salmonids and longfin smelt. This work window also will minimize potential impacts to other fish and aquatic species by minimizing the timing of dredging to June through November. |
| 4.9 | Biological Resources <i>BIO-18</i> | Vibration and pressure waves resulting from pile driving could impact special-status fish and aquatic species and marine mammals. | Pile driving will be conducted "in the dry," (within a cofferdam or during low tide) minimizing any potential impacts to fishes and marine mammals to less than significant levels. |
| 4.9 | Biological Resources <i>BIO-19</i> | Dredging activities could result in re-suspension of contaminants. | Sampling and testing for contaminants will be conducted in potential construction/dredging locations in San Pablo Bay prior to the onset of dredging activities. Dredging activities in San Pablo Bay will be conducted during the work window of June through November to minimize potentially significant impacts to anadromous salmonids and longfin smelt. This work window also will minimize potential impacts to other fish and aquatic species by minimizing the time period of dredging to June through November. |
| 4.9 | Biological Resources <i>BIO-20</i> | Construction and dredging activities could result in increased predation risk of special-status fish and aquatic species. | In-water construction activities in San Pablo Bay and dredging activities in San Pablo Bay will be conducted during the work window of June through November to minimize potentially significant impacts to anadromous salmonids and longfin smelt. |
| 4.9 | Biological Resources <i>BIO-23</i> | Dredging activities could impact phytoplankton production. | Temporary impacts to phytoplankton production due to increases in turbidity would be avoided/minimized through the use of construction BMPs to reduce the potential for increases in turbidity (e.g., use of silt curtains or methods to protect from disturbance). |
| 4.9 | Biological Resources <i>BIO-24</i> | Dredging activities could impact Pacific herring spawning. | Dredging activities will only occur during the window of June through November, minimizing potential impacts on herring spawning activities. |
| 4.9 | Biological Resources <i>BIO-25</i> | Construction of the proposed project would result in impacts to wetlands and other waters of the U.S. | Prior to commencement of construction activities that have the potential to impact the wetlands or other waters of the U.S., a permit will be obtained from the USACE and BCDC for fill and/or disturbance of this habitat. All permit conditions will be followed. Suitable compensatory mitigation for impacts to wetlands and other waters of the U.S. will be determined in conjunction with the USACE and implemented to ensure no net loss of wetlands occurs. |

| FEIS Section | Environmental Area/Impact | Impact | Mitigation |
|--------------|----------------------------|---|--|
| 4.10 | Water Resources WR-1 | Dredging of Refugio Creek and San Pablo Bay could potentially adversely impact water quality through mobilization of contaminated sediment. | <p>If contaminated sediment is encountered, further sediment characterization and a sediment removal plan (including upland disposal or beneficial reuse) will be required to protect water quality.</p> <p>If impacted sediments are to be dredged in Refugio Creek and/or San Pablo Bay, impacts to water quality could be minimized through the use of the following BMPs:</p> <ul style="list-style-type: none"> • Use of silt curtains, which prevent suspended sediment from migrating out of the immediate project area; • Dredging only on low or incoming tide; • Hydraulic or closed clamshell dredging to reduce the generation of suspended sediments; • Shunting, which involves pumping of the free water in a sediment holding barge to the bottom of the water body, which reduces turbidity; • Employment of an independent, certified, on-board dredging inspector to ensure compliance with permit conditions; and • Monitoring will be conducted during dredging to allow for: measurement of the efficiency of contaminated sediment removal; determination dredged volumes; measurement of sediment re-suspension at the dredge site; and checking performance of barriers and other controls. |
| 4.10 | Water Resources WR-2 | Construction of project could degrade water. | Erosion will be controlled in accordance with an approved Erosion Control Plan. In addition, all construction activities will be performed in accordance with the California NPDES General Permit for Storm Water Discharges Associated with Construction Activities, 2009-009-DWQ, requiring the implementation of BMPs to control sediment and other pollutants mobilized from construction activities |
| 4.10 | Water Resources WR-3 | The project could alter the existing drainage pattern of the site or area, which would result in substantial erosion or siltation on or off-site. | Erosion will be controlled in accordance with an approved Erosion Control Plan. In addition, all construction activities will be performed in accordance with the California NPDES General Permit for Storm Water Discharges Associated with Construction Activities, 2009-009-DWQ, requiring the implementation of BMPs to control sediment and other pollutants mobilized from construction activities |
| 4.10 | Water Resources WR-4 | The project could potentially adversely impact the existing drainage pattern of the site or area, which could result in flooding on or offsite. | Erosion will be controlled in accordance with an approved Erosion Control Plan. In addition, all construction activities will be performed in accordance with the California NPDES General Permit for Storm Water Discharges Associated with Construction Activities, 2009-009-DWQ, requiring the implementation of BMPs to control sediment and other pollutants mobilized from construction activities |
| 4.10 | Water Resources WR-5 | Operations in a floodplain could constitute hazards and may adversely impact human safety and property. | New facilities will be designed to minimize flooding through the use of retaining wall, levees, and/or construction on fill. Flood hazard warnings will be posted and flood evacuation plans will be developed. Construction and design will account for the maximum flood level so that facilities are built above the mark. |
| 4.10 | Water Resources WR-6 | Stormwater runoff from the Hercules ITC site and parking may adversely impact water quality. | Operation of the Hercules ITC will be in conformance with the California NPDES General Permit for Storm Water Discharges Associated with Industrial Activities. |
| 4.11 | Geology and Soils GEO-1 | Seismic activity could damage facilities and/or injure people. | A site-specific geotechnical investigation shall be required for this project. The project will conform to provisions of current building codes and to the recommendations of the required geotechnical investigations. |

| FEIS Section | Environmental Area/Impact | Impact | Mitigation |
|--------------|---|---|--|
| 4.11 | Geology and Soils <i>GEO-2</i> | The proposed project could result in soil erosion of topsoil. | Prior to construction, the City will develop an erosion control plan and stormwater pollution prevention plan. Best management practices will be incorporated into the project to avoid and minimize potential erosion. The project will be constructed in conformance with the NPDES Construction Stormwater Permit. |
| 4.11 | Geology and Soils <i>GEO-3</i> | Liquefaction, landslides, or lateral spreading could damage facilities and/or injure people and structures. | Design-level analyses of the liquefaction hazard shall be required for the project. Specifically, a program of site-specific exploratory borings and accompanying laboratory testing will be required to delineate any potentially liquefiable materials underneath proposed facilities. These geotechnical investigations will also be required for consideration prior to foundation design. |
| 4.11 | Geology and Soils <i>GEO-4</i> | Subsidence could damage facilities. | Project design will incorporate mitigation measures to avoid or minimize the potential for subsidence including driving piles to support structures, surcharging, and grading design considerations. |
| 4.12 | Hazards and Hazardous Materials <i>HAZ-1</i> | The proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through the accidental upset or release of hazardous materials. | <p>The construction contractor shall develop a project-specific Health and Safety Plan that includes a project-specific contingency plan for hazardous materials and waste operations.</p> <p>If affected or potentially affected soil and/or sediments are encountered during construction activities (grading and excavation), these materials would be excavated, stockpiled, and characterized to evaluate appropriate reuse or disposal alternatives.</p> <p>The construction contractor shall develop a Spill Prevention and Response Plan and provide copies to all contractors working on the proposed project.</p> <p>Construction contractors and employees shall immediately control the source of any leak and contain any spill using appropriate spill containment and countermeasures. In addition, all precautions required by the RWQCB for the project's NPDES General Permit for Stormwater Discharges Associated with Construction Activity would be taken to ensure that no hazardous materials enter the nearby waterways.</p> |
| 4.14 | Public Services <i>PUB SVC-1</i> | Construction traffic and other activities have the potential to adversely disrupt police and fire department emergency response times in the project area. | Prior to the start of construction activities, the City shall consult with the emergency service providers who have jurisdiction in the immediate vicinity of the Hercules ITC site to develop a Construction Emergency Response Access Plan that would identify appropriate routes and access points that would be available to police and fire services to use during the construction phase. |

This page intentionally left blank.