Chapter 20
Transportation

This chapter describes the environmental setting and study area for transportation; analyzes impacts that could result from construction, operation, and maintenance of the project; and provides mitigation measures to reduce the effects of potentially significant impacts. The project study area evaluated for potential transportation impacts extend beyond the Sacramento–San Joaquin Delta (Delta) area. The project study area (the area in which impacts may occur) for transportation consists of the facility construction areas, as well as the State Highway System and local roadway segments that could be affected by construction-related and operations and maintenance employee traffic activities associated with the project.

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that fundamentally changed transportation impact analysis as part of California Environmental Quality Act (CEQA) compliance. In the amended CEQA Guidelines, the Governor's Office of Planning and Research (OPR) and the California Natural Resources Agency selected vehicle miles traveled (VMT) as the preferred transportation impact metric, and the latter entity, through a rulemaking process, applied its discretion under SB 743 to require its use statewide (Pub. Resources Code § 21099(b)(2); 14 California Code of Regulations [Cal. Code Regs.] § 15064.3(a); *Citizens for Positive Growth & Preservation v. City of Sacramento* (2019) 43 Cal.App.5th 609, 625–626). The process for VMT analyses is described in Section 20.3.1.1, *Process and Methods of Vehicle Miles Traveled Analysis*.

This chapter also analyzes the impacts associated with conflicts with transportation plans and polices, transportation safety hazards, and effects on emergency access and marine transportation from implementation of project alternatives. Each impact discussion also includes an analysis of potential impacts that could result from implementation of compensatory mitigation required for the project alternatives and any additional mitigation necessary to reduce those impacts and analyzes the impacts that could result from other mitigation measures associated with other resource chapters in this Draft Environmental Impact Report (Draft EIR).

20.0 Summary Comparison of Alternatives

Table 20-0 provides a summary comparison of important impacts on transportation by alternative. The table presents the CEQA findings after all mitigation is applied. If applicable, the table also presents quantitative results after all mitigation is applied. All of the project alternatives would have the same impact conclusions because all of the project alternatives would have similar impact mechanisms and potential effects would have similar magnitudes. For VMT analyses and effects from traffic congestion, Alternatives 2b and 4b would have the greatest increases in construction-related VMT compared to existing conditions and Alternatives 2c, 3, and 4c would have the smallest increases in VMT compared to existing conditions. VMT analyses were used to determine that all of the project alternatives would significantly increase VMT in the study area during project construction. All of the project alternatives would have similar impacts related to effects on transit, roadways, bicycle and pedestrian facilities, rail transportation, marine transportation, and navigation.

For Impact TRANS-1: *Increased Average VMT Per Construction Employee versus Regional Average*, construction of the project alternatives would result in additional VMT to the regional transportation system and increase the total amount of driving and distances traveled for home-based work trips. Even with Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan,* Impact TRANS-1 would result in a significant and unavoidable impact.

For Impact TRANS-2: *Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System*, potential temporary impacts on transit, bicycle/pedestrian facilities, rail service (freight and commuter), and marine traffic and conflicts with the programs, policies, and ordinances that guide these portions of the transportation circulation system would be less than significant because only minor conflicts would occur. Being a State of California agency, the Department of Water Resources (DWR) is not subject to local programs, policies, and ordinances.

For Impact TRANS-3: *Substantially Increase Hazards from Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)*, constructing the project alternatives would not substantially increase traffic hazards related to sharp curves, dangerous intersections, or other roadway design features because roadway improvements that contractors would be required to implement prior to the construction of the project would not introduce new circulation system features that would increase geometric design feature hazards. All of the project alternatives would increase the amount of construction vehicle traffic at multiple construction sites, road improvement locations and bridges in the study area. If not mitigated this increase in employee construction traffic and increased traffic from other construction materials delivery vehicles could create the potential for traffic safety hazards related to increasing the number of trucks and construction equipment operating with commuters, farming operations, and recreational users in areas adjacent to construction sites. Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* would reduce this impact to a less-than-significant level.

For Impact TRANS-4: *Result in Inadequate Emergency Access*, all of the project alternatives would increase the amount of traffic generated by construction employees using the road system in the study area. This increase in traffic from construction workers and other construction materials delivery traffic could create the potential for effects on emergency access and response conditions at some of the project work sites and related to project construction road improvements. Even with the proposed circulation system improvements and project site emergency response plan actions, the amount of additional construction-related traffic on Delta roadways and the duration of construction activities at conveyance facility sites would increase the potential for emergency access and response time impacts and is considered significant. Because of the TDMs and TMPs proposed for project alternatives, the reduction in potential for conflicts between construction and emergency vehicles, and implementation of Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan*, this impact would be less than significant with mitigation.

For Impact TRANS-5: *Potential Effects on Marine Navigation Caused from Construction, Operation, and Maintenance of Intakes*, vessel passage would not be impeded and changes in river flows would not be of the magnitude to restrict access; therefore, the impact of constructing and operating the project alternatives on maritime navigation would be less than significant.

Table ES-2 in the Executive Summary provides a summary of all impacts disclosed in this chapter.

Table 20-0. Comparison of Impacts on Transportation by Alternative

	Alternative								
Chapter 20 – Transportation	1	2a	2b	2c	3	4a	4b	4c	5
Impact TRANS-1: Increased Average VMT Per Construction Employee versus Regional Average (percentage change)	+14.1% SU	+14.8% SU	+20.1% SU	+10.7% SU	+8.4% SU	+17.0% SU	+22.5% SU	+11.4% SU	+14.5% SU
Impact TRANS-2: Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact TRANS-3: Substantially Increase Hazards from a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact TRANS-4: Result in Inadequate Emergency Access	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact TRANS-5: Potential Effects on Marine Navigation Caused from Construction, Operation, and Maintenance of Intakes	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

LTS = less than significant; SU = significant and unavoidable; VMT = vehicle miles traveled.

20.1 Environmental Setting

This section describes the environmental setting for transportation in the study area. The transportation study area includes (1) the project area, (2) the State Highway System, and (3) local roadways that provide access to the project facilities. Based on the construction schedule and operations and maintenance information for each of the nine project alternatives, employee traffic activities were used to determine that the project study area would include parts of Sacramento, San Joaquin, Yolo, Contra Costa, Solano, and Alameda Counties.

20.1.1 Study Area

The area evaluated for potential impacts on transportation extend beyond the project area. The study area (the area in which impacts may occur) for transportation consists of the facility construction areas, as well as the State Highway System and local roadway segments that could be affected by construction-related and operations and maintenance employee traffic activities associated with the project, as shown in Figure 20-1. The potential effects of the proposed construction, operation, and maintenance, and implementation of compensatory mitigation for the project alternatives on these transportation facilities are evaluated consistent with the approach described in Chapter 4, *Framework for the Environmental Analysis*.

CEQA Guidelines Section 15064.3, enacted pursuant to SB 743, took full effect on July 1, 2020. Since that date, all draft EIRs released for public review must include CEQA transportation impact analyses that rely on VMT (with exceptions not relevant here). California Public Resources Code Section 21099(b)(2) states that upon certification of the 2018 CEQA Guidelines, decline in level of service (LOS) as a measure of auto delay shall not be considered a significant impact on the environment. Nothing in either Section 21099 or Section 15064.3, however, affects the extent to which, or how, lead agencies should evaluate the potential effects of proposed projects on marine facilities, rail facilities, air transportation facilities, and multimodal transit/bicycle/pedestrian facilities.

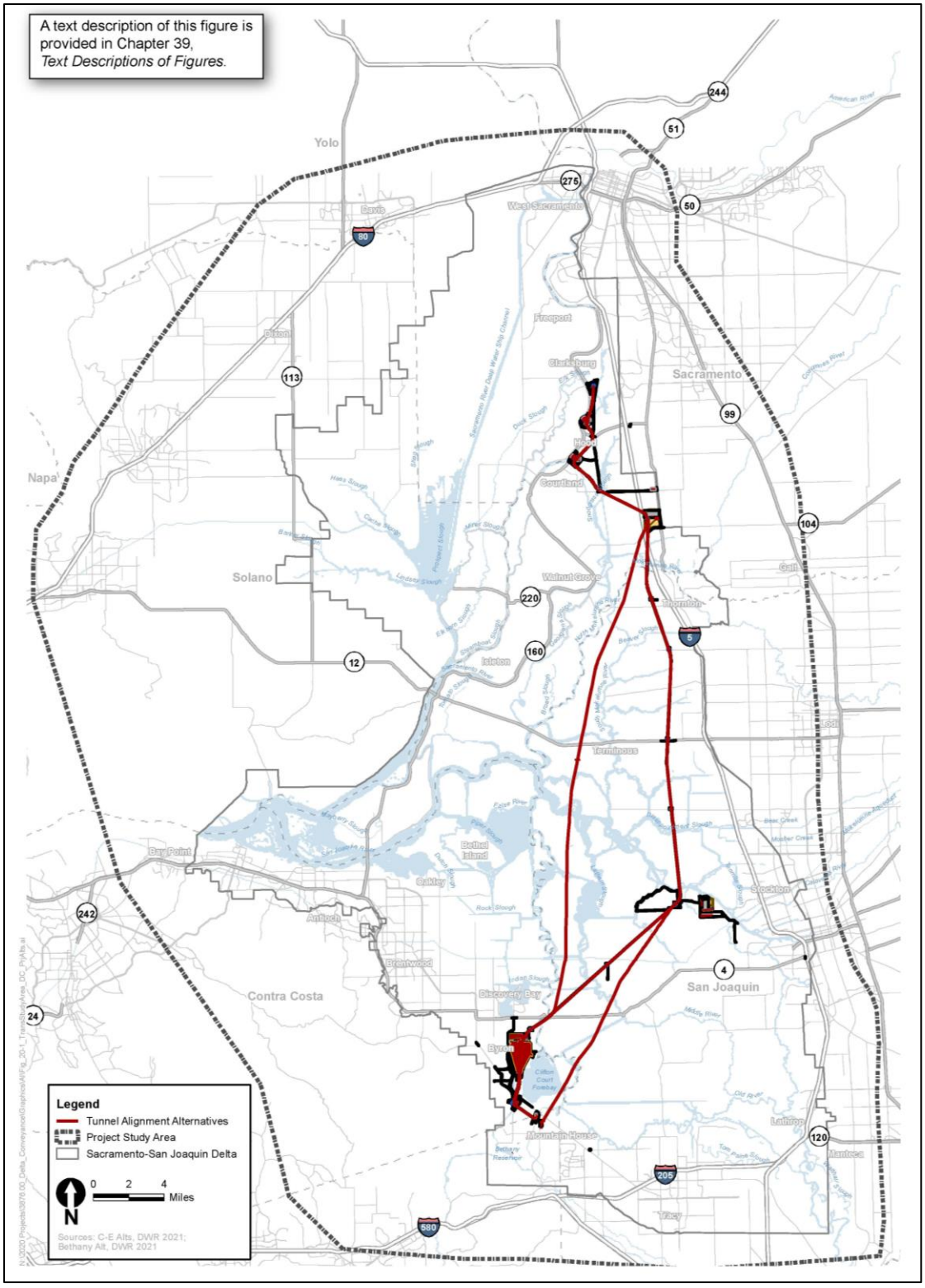

Figure 20-1. Transportation Study Area for the Delta Conveyance Project Alternatives

20.1.2 Existing Transportation Facilities in the Study Area

The following sections describe the various transportation facilities in the study area. As described in Section 20.1.1, *Study Area*, VMT is used as the metric for determining the significance of most transportation impacts. Therefore, this chapter analyzes the project's effects on VMT; summaries of transportation facilities' LOS and impacts on LOS are not provided in this chapter.

Many of the local agencies, however, continue to use LOS as a secondary metric, often as reflected in their general plans, to identify improvements to roadways and intersections and meet adopted LOS-based transportation policies. Therefore, the LOS analysis is included in Appendix 20A, *Delta Conveyance 2020 Traffic Analysis,* and Appendix 20C, *Delta Conveyance 2040 Traffic Analysis*.

20.1.2.1 Roadways

Based on the regional and local travel routes of construction workers and truck traffic delivering project materials and a threshold of 50 or more vehicles during peak hours during construction, operation, maintenance, and implementation of compensatory mitigation, the following key roadways were identified and included in the project study area.

- Interstate (I-) 5 (California Department of Transportation [Caltrans] facility)—between Florin Road to the north and State Route (SR) 4 to the south—provides regional access between Sacramento County and San Joaquin County with three to four travel lanes in each direction.
- SR 160 (Caltrans facility)—between Cosumnes River Boulevard to the north and SR 4 to the south—provides local access between the Delta areas of Sacramento County and San Joaquin County with one travel lane in each direction.
- SR 84 (Caltrans facility)—between West Sacramento to the north and SR 12 to the south—provides local access between the Delta area of Yolo County and San Joaquin County with one travel lane in each direction.
- SR 12 (Caltrans facility)—between Suisun City and I-80 to the west and I-5 to the east—provides regional access between Solano County and San Joaquin County with two to three travel lanes in each direction.
- SR 4 (Caltrans facility)—between Byron Highway to the west and I-5 to the east—provides regional access between Contra Costa County and San Joaquin County with one to two travel lanes in each direction.
- I-205 (Caltrans facility)—between the Altamont Pass to the west and Tracy Boulevard to the east—provides regional access between Alameda County and San Joaquin County with three to four travel lanes in each direction.
- Byron Highway (Contra Costa County and San Joaquin County)—from SR 4 to the west and I-205 to the east—provides regional access between Contra Costa County and San Joaquin County with one to two travel lanes in each direction.
- Hood-Franklin Road (Sacramento County)—from SR 160 to the west and I-5 and Franklin Road to the east—provides local access between the Delta area of Hood and Sacramento County with one travel lane in each direction.

- Twin Cities Road (Sacramento County)—from River Road to the west and I-5, SR 99, and the foothills to the east—provides local access between the Delta area of Locke and Sacramento County with one travel lane in each direction.
- River Road (Sacramento County)—from the Paintersville Bridge to the north and Walnut Grove to the south—provides local access between the Delta areas of Paintersville and Walnut Grove with one travel lane in each direction.
- Lambert Road (Sacramento County)—from SR 160 to the west and Bruceville Road to the east—provides local access between the Delta area of Courtland and central Sacramento County with one travel lane in each direction.
- Mountain House Parkway (San Joaquin County)—from I-205 to the south and Byron Road to the north—provides local access between the southern Delta area of the Clifton Court Forebay and western San Joaquin County with one to two travel lanes in each direction.

The complete list of the 120 roadway segments is presented in Appendix 20A, Table 20A-1.

20.1.2.2 Intersections

Based on the regional and local travel routes of construction workers and truck traffic delivering project materials during the construction, operation and maintenance, and implementation of compensatory mitigation, the following key intersections were identified and included in the project study area.

- Freeway On-Ramp and Off-Ramp Intersections—These intersections provide access to and from I-5 and I-205 at either signalized or unsignalized intersections at Hood-Franklin Road, Twin Cities Road, Mountain House Parkway, and Grant Line Road.
- Sacramento County Intersections—These intersections provide access to and from adjacent land uses at primarily unsignalized intersections on SR 160 (River Road/Freeport Boulevard), Hood-Franklin Road, Lambert Road, Dierssen Road, and Franklin Boulevard.
- San Joaquin County Intersections—These intersections provide access to and from adjacent land uses at either signalized or unsignalized intersections on Byron Road, SR 4, SR 12, Mountain House Parkway, and Great Valley Parkway.
- Contra Costa County Intersections—These intersections provide access to and from adjacent land uses at signalized intersections on Byron Road and Discovery Bay Boulevard.
- Yolo County Intersections—These intersections provide access to and from adjacent land uses at unsignalized intersections on Clarksburg Road, Courtland Road, and River Road.

A complete list of the 44 study area intersections is presented in Appendix 20A, Table 20A-2.

20.1.2.3 Transit Facilities

Greyhound Bus Lines and Amtrak operate regularly scheduled intercity bus service in the vicinity of the Delta between the San Francisco Bay Area (Bay Area), Sacramento, Stockton, and points beyond using I-80, I-580/I-205, I-5, and SR 99 (Greyhound Bus Lines 2021). Between five and eight bus trips are scheduled daily between these major cities. Some of these are express trips that do not stop in intervening cities served by Greyhound. For example, of the seven trips daily between Oakland and Sacramento, two buses stop in Vallejo and Suisun City. In the case of the five daily trips between

Oakland and Stockton, five buses stop in Sacramento. For the trips between Stockton and Sacramento, one of the three daily buses stop in Lodi (Greyhound Bus Lines 2021).

Within the cities of the Delta, a variety of intra-city and intra-county transit services are provided. Some of these transit operators also provide short-distance intercity service. Transit agencies serving the transportation study area with bus service include Sacramento Regional Transit, San Joaquin Regional Transit District, Tri Delta Transit, South County Transit (SCT), and Rio Vista Transit. Transit routes in the transportation study area are illustrated in Figure 20-2.

20.1.2.4 Bicycle Facilities

Bicycle routes traverse the local transportation system for both recreational and commuter bicyclists. Bicycle routes may be separated non-motorized paths (Class I); marked bike lanes on a street or highway (Class II); or designated signed routes without a marked lane operating in mixed flow with motorized traffic (Class III). Bicycles may also operate legally on any roadway, regardless of whether a bike route class designation exists.

Existing designated bicycle routes are located along SR 4, SR 12, and SR 160 and River Road through the Delta (Figure 20-2), consisting primarily of Class II and Class III facilities. Some bicycle traffic may be found on both primary and secondary roadways and at Bethany Reservoir within the transportation study area.

20.1.2.5 Pedestrian Facilities

Pedestrian facilities comprise sidewalks along roadways and crosswalks at intersections in more populated areas of the Delta. In most of the study area, there are no pedestrian facilities; pedestrians use the shoulder and may cross at unmarked intersection crosswalks. At these locations, drivers should act in accordance with California Vehicle Code Section 21950: “The driver of a vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at an intersection. The driver of a vehicle approaching a pedestrian within any marked or unmarked crosswalk shall exercise all due care and shall reduce the speed of the vehicle or take any other action relating to the operation of the vehicle as necessary to safeguard the safety of the pedestrian.”

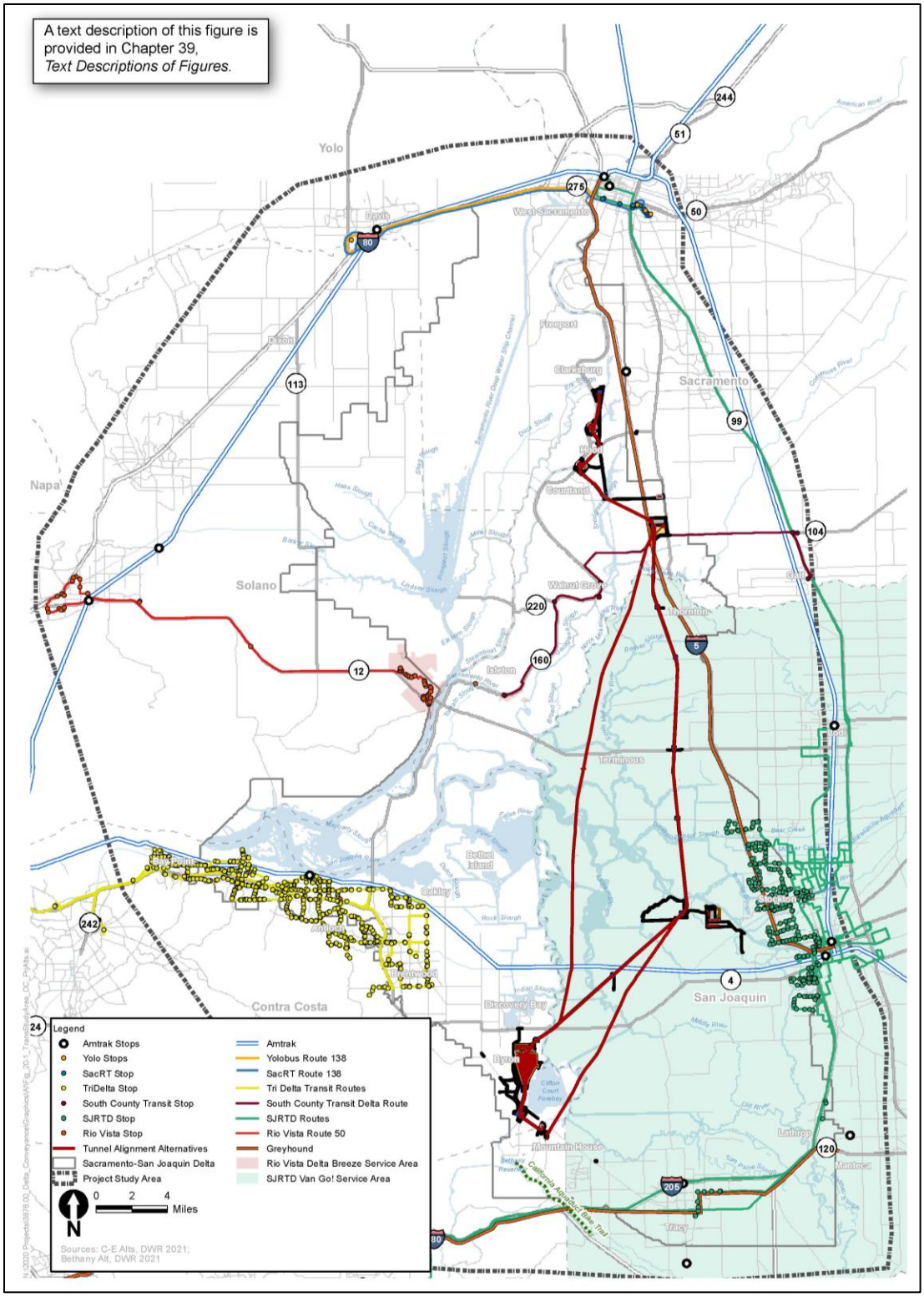

Figure 20-2. Transit and Bicycle Facilities in the Transportation Study Area

20.1.3 Marine Facilities

20.1.3.1 M-5/M-580 Marine Highway Corridor

Marine facilities represent substantial transportation capacity within the transportation study area. Navigable coastal waters parallel the entire I-5 corridor, including numerous deep rivers, bays, and ports that serve as extensions of the surface transportation system for freight, goods movement, and recreational marine traffic. Figure 20-3 illustrates the location of the commercial marine facilities within the transportation study area. These include facilities that are part of the Marine Highway Program overseen by the U.S. Department of Transportation Maritime Division.[1]

The designated Marine Highway (M-) corridor that is within the study area vicinity, is the M-580 corridor. It connects to the M-84 corridor at Astoria, Oregon, and includes the San Joaquin River and Sacramento River. The corridor connects commercial navigation channels, ports, and harbors in Central California from Sacramento to Oakland.

Most commercial barge traffic within the transportation study area travels along the Sacramento River Deep Water Ship Channel, which begins in Sacramento and heads southwest toward Suisun Bay, where the canal ends. Once outside of the channel, ships use the Sacramento River for service to Sacramento or the San Joaquin River for access to the Port of Stockton. Just north of the SR 12 (Rio Vista Bridge), the Sacramento River provides a marine waterway connecting Isleton (Isleton Bridge), Walnut Grove (Walnut Grove Bridge), Locke, Courtland (Paintersville Bridge), Hood, Clarksburg, Freeport (Freeport Bridge), and the Port of West Sacramento.

20.1.3.2 Port of Stockton

The Port of Stockton is located on the Stockton Deep Water Ship Channel, 75 nautical miles due east of the Golden Gate Bridge. The port is a major transportation center with berthing space for 17 vessels, 1.1 million square feet of dockside transit sheds and shipside rail trackage, and 7.7 million square feet of warehousing served by rail. The Port of Stockton has three traveling, multipurpose bridge cranes to handle cargo from vessels direct to truck and rail (Port of Stockton 2021).

River access to the port is through the Suisun Bay, San Joaquin River, and the Stockton Deep Water Ship Channel. The channel connects the Disappointment Slough with the Port of Stockton marine terminal facilities (State Water Resources Control Board 2019), a distance of approximately 14 miles. The Stockton Deep Water Ship Channel has an average depth of 35 feet, and an average depth at high tide of 40 feet (Port of Stockton 2021).

The port is located approximately 1 mile from I-5 and is easily accessible by other major interstates in the region. It is served by two Class I rail companies: Union Pacific Railroad (UPRR) and BNSF Railway. Rail service is also provided to each warehouse within the port facility by the port's railroad, operated by the Central California Traction Company (CCT).

[1] The Marine Highway Program was fully implemented in April 2010 through publication of a 2010 Final Rule in the *Federal Register* (FR) (75 FR 18095–18107). The Secretary's designations were made pursuant to the Final Rule, as required by the Energy Independence and Security Act of 2007.

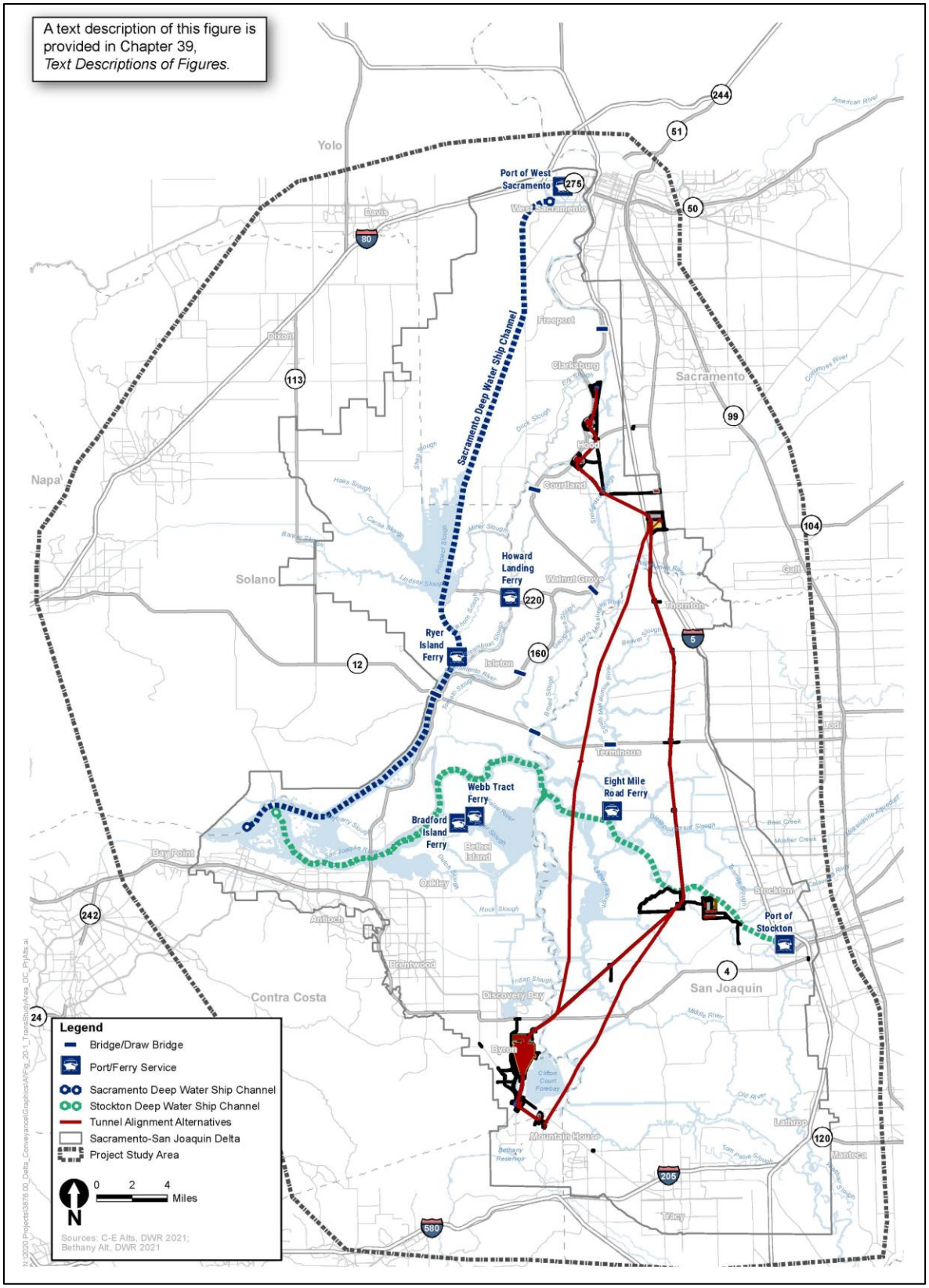

Figure 20-3. Commercial Marine and Public Access Ferry Facilities in the Transportation Study Area

20.1.3.3 Port of West Sacramento

The Port of West Sacramento is located in West Sacramento 79 nautical miles northeast of San Francisco via rivers and shipping channels. The port has a mobile harbor crane for handling container cargo.

River access is available by entering the Sacramento River Deep Water Ship Channel from Suisun Bay. The Sacramento River Deep Water Ship Channel connects the marine terminal facilities of the Port of Sacramento along the navigable portion of the Sacramento River to the Contra Costa County boundary, a distance of 46.5 miles (U.S. Army Corps of Engineers 2020). The current channel provides for a navigable depth of 30 feet; the U.S. Army Corps of Engineers (USACE) has proposed to deepen the channel to a navigable depth of 35 feet. Three rail companies serve the port with a 200-railcar terminal: BNSF, UPRR, and Sierra Northern Railway. The port is adjacent to I-80 and less than 2 miles from I-5. SR 84 is also located within one mile of the port (Port of West Sacramento 2021).

20.1.3.4 Ferry Services

Five public access ferry services operate within the transportation study area (Figure 20-3). Two of the ferries function as a part of the California highway system and are operated by Caltrans. One of these ferries, the Howard Landing Ferry, is located on SR 220 and crosses Steamboat Slough. The other ferry connects SR 84 in Solano County. The Ryer Island Ferry crosses the Cache Slough. The remaining three ferries transport passengers to private islands. One crosses the Little Connection Slough, another crosses the Middle River to Woodward Island, and the other travels from Jersey Island to both Webb Tract and Bradford Island (California Delta Chambers and Visitors Bureau 2021).

20.1.3.5 Draw Bridges

Table 20-1 shows that five Caltrans draw bridges provide vehicular access over the Sacramento River between the Sacramento River Deep Water Ship Channel/Port of Sacramento to the north and the Suisun Bay/San Francisco Bay to the southwest. The Mokelumne River Bridge on SR 12 (a swing bridge) provides vehicular access over the Mokelumne River, connecting Terminous to the east with I-5 and the San Joaquin River/Port of Stockton to the south and I-80 and the Suisun Bay/San Francisco Bay to the west. The Little Potato Slough Bridge on SR 12 (a swing bridge) is directly south of the South Mokelumne River and directly west of Terminous (a census-designated place in San Joaquin County). The Little Potato Slough Bridge connects San Joaquin County to the east and Sacramento and Solano Counties to the west.

Table 20-1. Caltrans Draw Bridges in the Study Area

Bridge ID	Bridge Name	Route	Span (feet)	Year Built	Bridge Type
CA 24C-1	Freeport Bridge	SR 160	655	Built 1929; Rehabilitated 1955	Movable Bascule center section
CA 24-53	Paintersville Bridge	SR 160	588	Built 1923; Rehabilitated 1952	Movable Bascule center section
CA 24C-5	Walnut Grove Bridge	SR 160	302	Built 1950	Movable Bascule center section
CA 24-51	Isleton Bridge	SR 160	624	Built 1923; Rehabilitated 1953	Movable Bascule center section
CA 23-24	Rio Vista Bridge	SR 12	2,890	Built 1944; Rehabilitated 1960	Vertical lift Warren through truss
CA 29-43	Mokelumne River Bridge	SR 12	1,436	Built 1942; Rehabilitated 1978	Swing
CA 29-101	Little Potato Slough Bridge	SR 12	2,980	Built 1991	Swing

SR = State Route.

20.1.4 Rail Facilities

Northern California has a rail network that provides freight and passenger services to various points within the region and connections with the continental United States. California is served by two private, transcontinental railroad companies: UPRR and BNSF. These two railroads own the right-of-way and operate freight services over their own systems of main lines, branch lines, rail yards, and terminals. While the two railroads compete for freight business, they also share routes and utilize each other's tracks under operating agreements.

In addition to providing freight services—with more than 50 trains per day prior to the coronavirus disease 2019 (COVID-19) pandemic and a reduction to approximately 40 trains per day in 2020 traveling on their respective routes—both railroads host extensive intercity and long-haul passenger services that operate on their lines under agreement. The Capitol Corridor passenger service between San Jose and Sacramento and the Amtrak long-distance interstate service are among these passenger operators (Section 20.1.4.2, *Passenger Service*). Railroad facilities in the transportation study area are shown in Figure 20-4.

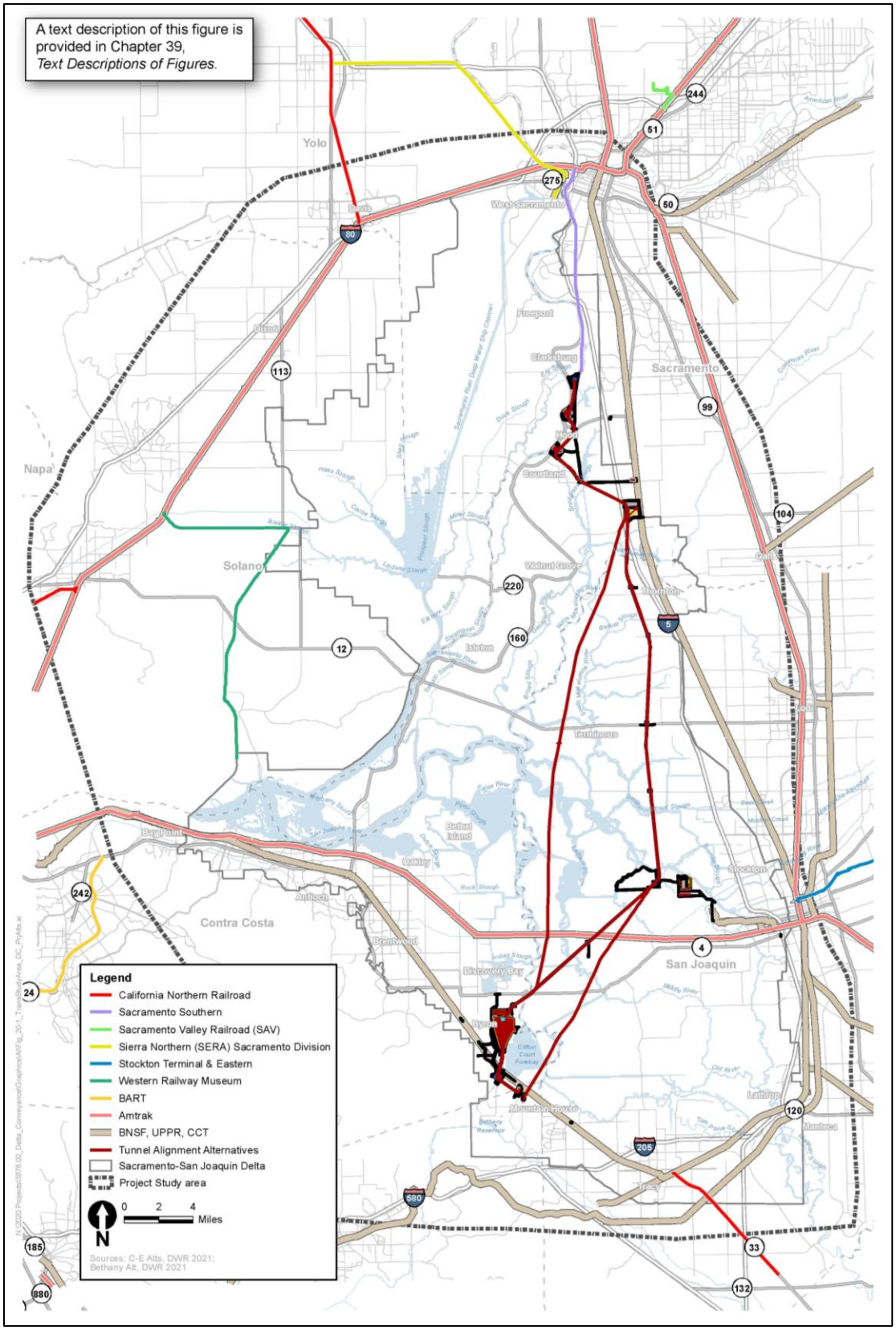

Figure 20-4. Railroads in the Transportation Study Area

20.1.4.1 Freight Service

Union Pacific Railroad

UPRR's Martinez Subdivision runs between Oakland and Roseville. The double-track route travels along the eastern shore of San Francisco Bay through Berkeley, Richmond, Hercules, and Martinez. At Martinez, the route crosses the Carquinez Strait and continues through the wetlands along Suisun Bay to Fairfield. From Fairfield, the route generally runs parallel to I-80 to Sacramento and then to Roseville. The main line tracks cross over the Yolo Bypass Wildlife Area and the Sacramento and American Rivers on the way to Roseville, a major West Coast railroad center located in south Placer County.

The UPRR Tracy Subdivision runs between Martinez, and Tracy, near the Southern Forebay. It generally runs inland of and parallel to the shoreline along Suisun Bay through Pittsburg, where the line turns southeast through Brentwood, Byron, and on to Tracy. Initial plans for a diesel multiple-unit light rail branch line for the Bay Area Rapid Transit (BART) system, the East Contra Costa County BART extension (eBART) had trains running on the UPRR right-of-way that runs parallel to SR 4 in eastern Contra Costa County. After Union Pacific declined to grant trackage rights or allow laying of new tracks, the line was merged with a construction project already in the process of widening the adjacent freeway, by laying tracks in the SR 4 median.

The UPRR I-5/Highway 99 Corridor through California runs between Sacramento through Stockton, Lathrop, Modesto, Merced, Fresno, and Bakersfield. It generally runs parallel to the east side of I-5, near the Twin Cities Complex. Union Pacific freight operations through the Central Valley of California handle an array of important commodities, including import-export automobiles and premium intermodal cargo at the Intermodal Container Transfer Facility (Union Pacific Railroad 2021:1–2).

Near Tracy, UPRR operates an intermodal yard in Lathrop. The UPRR facilities in the Central Valley and the Delta support the key gateways in the origin and receipt of international trade, including the Los Angeles, San Francisco, Central Valley, and California / Mexico International Border regions. (California Department of Transportation 2006:A-27–A-32). In the California Transportation Plan 2050 (California Department of Transportation 2021a), an infrastructure objective of investing in rail to avoid increases in highway truck travel and avoid having to maintain more roadways, create displacement, and mitigate higher greenhouse gas (GHG) emissions was identified.

BNSF Railway

The BNSF main line follows an inland route between Richmond and Port Chicago. At Port Chicago, the BNSF main line and UPRR Tracy Subdivision cross, and the BNSF route continues along the shoreline of Suisun Bay and the western edge of the Delta to Oakley. There, the BNSF main line turns southeast toward Stockton, crossing over numerous Delta tracts and islands, near the Lower Roberts Island facilities. At Stockton, the BNSF main line route runs down the Central Valley to Barstow and then east (BNSF Railway 2021).

BNSF operates a large intermodal facility in Stockton called the Mariposa Intermodal facility. It is located east of SR 99 along Mariposa and Arch Road within the Stockton city limits. This site is capable of being expanded and providing opportunities for rail-related industrial development. BNSF also has a smaller classification yard south of SR 4 near downtown Stockton. That facility is called the Mormon Yard for its location near the Mormon Slough (BNSF Railway 2021).

BNSF facilities in the Central Valley and the Delta have been designated in the 2025 Statewide Transportation Plan as a "Major International Trade Route" (California Department of Transportation 2006:A-27–A-32). As discussed above, the California Transportation Plan 2050 identified the infrastructure objective of investing in rail (California Department of Transportation 2021a).

The Central California Traction Company

CCT is a short-line railroad which operates in the Stockton area with connections to both UPRR and BNSF (Central California Traction Company 2021). CCT operates the Port of Stockton rail connecting the port to the BNSF main line.

20.1.4.2 Passenger Service

Passenger rail service within the Delta and adjacent areas is provided by Amtrak, BART, and the Altamont Corridor Express (ACE).

Amtrak

Amtrak provides passenger rail service between Stockton, Sacramento, and Oakland over tracks owned by UPRR and BNSF. Amtrak also connects these cities in the Delta area to points north, east, and south. Amtrak's service is provided by the following routes.

- San Joaquin
- California Zephyr
- Capitol Corridor
- Coast Starlight

Each route has a different frequency of service and serves different markets. The California Zephyr and Coast Starlight routes are part of Amtrak's national service that spans the country, while the San Joaquins route is a Northern California regional service. The Capitol Corridor route functions as a commuter train (Capitol Corridor 2021). The San Joaquins connects either Oakland or Sacramento with Bakersfield and passes through Stockton. There are four trains daily that start or end in Oakland and two trains daily that start or end in Sacramento (Capitol Corridor 2021).

The San Joaquins route in the California Central Valley has major stops in Oakland, Sacramento, Stockton, and Bakersfield. As of January 2021, one southbound train and one northbound train provide direct service between Sacramento and Stockton. Additional service is provided via a transfer to an Amtrak bus (Amtrak 2021a).

The California Zephyr starts at the Emeryville station and passes through Davis and Sacramento on its multiday trip to Chicago, Illinois. As part of the Amtrak national system, this route provides one trip in each direction daily. On the trip from the east to Emeryville, Amtrak does not pick up passengers in Sacramento or Davis (Amtrak 2021b).

The Coast Starlight is the north–south equivalent of the California Zephyr. The Coast Starlight connects Los Angeles with Seattle, Washington, through Oakland and Sacramento. Like the California Zephyr, the Coast Starlight operates as one northbound and one southbound train daily (Amtrak 2021c).

The Capitol Corridor train service is primarily a commuter service connecting San Jose with Sacramento via Oakland. This service provides several trips per day with shorter headways (the time between trips on the same transit route) during the morning and evening peak travel demand periods (when compared with midday service). On the Capitol Corridor trains, reservations are not required, and tickets can be purchased either at select stations or on the train. On weekdays, 11 trains operate in each direction between Oakland and Sacramento (Capitol Corridor 2021). On weekends, nine trains operate in each direction between Oakland and Sacramento (Capitol Corridor 2021).

Altamont Corridor Express

ACE operates rail commuter service between Stockton and San Jose through Tracy at the southern end of the Delta. The trains operate in the westbound direction in the morning and in the eastbound direction in the afternoon (Altamont Corridor Express 2021).

San Francisco Bay Area Rapid Transit District

The San Francisco BART currently operates a rapid transit rail line to its Pittsburg/Bay Point terminus station. BART completed a planned extension to Antioch and began service in May 2018. The eBART is a diesel, multiple-unit light rail branch line that provides service from the Pittsburg/Bay Point BART station to the eBART Antioch station. The eBART tracks and trains are not compatible with those of the main BART system, requiring passengers to transfer between passenger rail services at the transfer platform directly east of the Pittsburg/Bay Point BART station.

While not fully planned or funded as of 2018, expansions of the diesel, multiple-unit system could connect eBART service to Oakley, Byron, or the Brentwood Transit Center in Brentwood. In 2017, the San Joaquin Regional Rail Commission indicated that eBART could be extended to Tracy, where it would connect with the ACE and the proposed Valley Link Passenger Rail Service line (Bay Area Rapid Transit 2021).

20.1.5 Air Transportation Facilities

Several air transportation facilities are located within or adjacent to the study area (Figure 20-5) with flight patterns over the transportation study area. Many of these are small air strips associated with ranching or farming operations and charter flight and recreational enterprises. A number of public airports are located within or in the vicinity of the study area but are not expected to be affected by Delta Conveyance Project construction or operation because they are located sizable distances from construction areas. These airports include the Sacramento Executive Airport, Sacramento International Airport, Stockton Metropolitan Airport, Tracy Municipal Airport, Lodi Airport, and Travis Air Force Base. The following airports are in closer proximity to the project area but would not be directly affected by Delta Conveyance Project facilities. They are evaluated to consider the potential for project effects on airport operations.

- Lost Isle Seaplane Base (Acker Island)
- Kingdon Airpark (Lodi)
- Byron Airport
- Franklin Field

- Rio Vista Municipal Airport
- Kaiser Permanente South Sacramento Heliport
- Borges-Clarksburg Airport
- Lodi Memorial Hospital Heliport
- Flying B Ranch Airport
- Heritage Field
- Funny Farm Airport
- Las Serpientes Airport

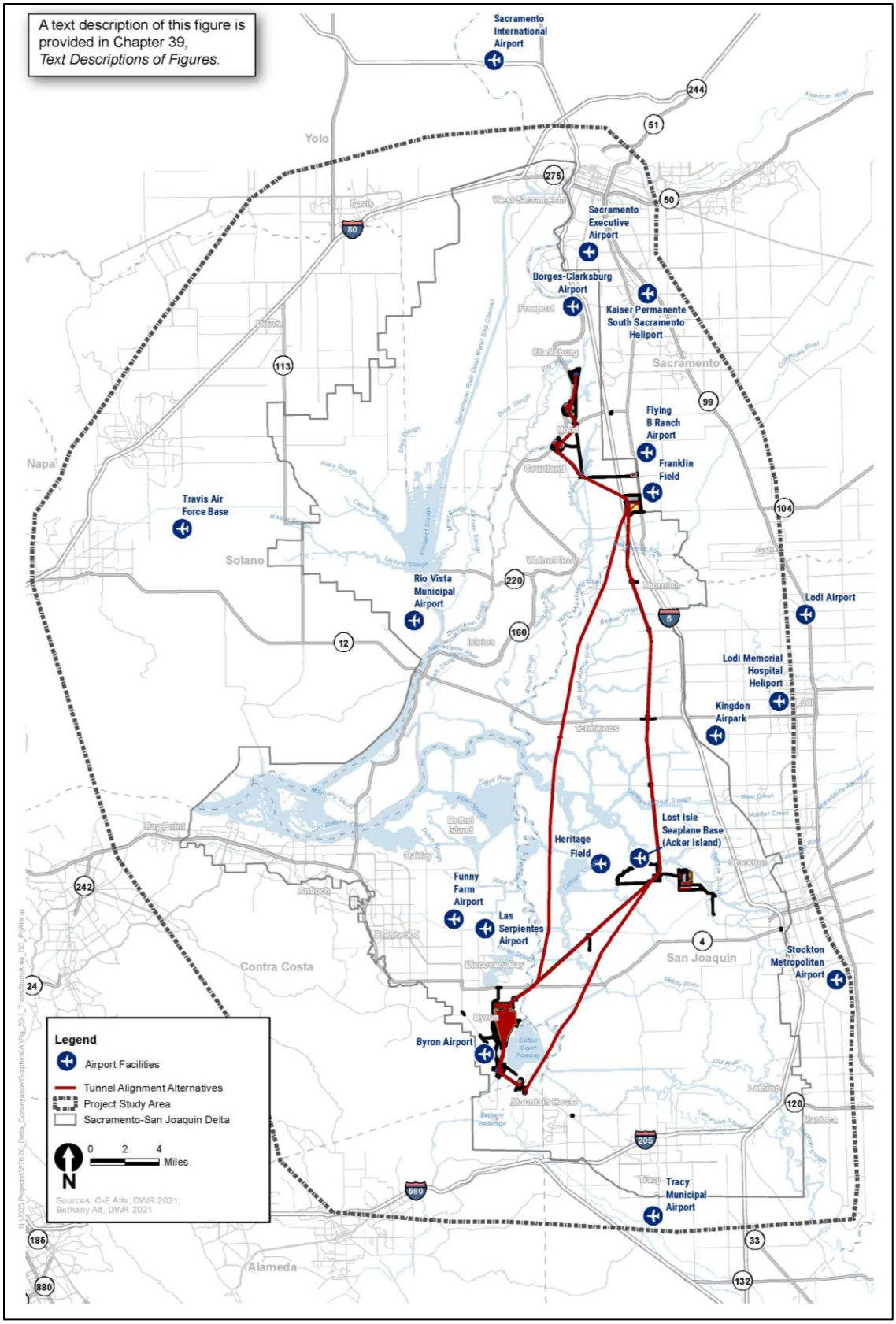

Figure 20-5. Air Facilities in the Transportation Study Area

20.1.5.1 Lost Isle Seaplane Base

This airport is approximately 8 miles northwest of Stockton and is owned by the California State Lands Commission. The Lost Isle Seaplane Base has one runway and averages approximately 12 operating aircraft per year, based on a 12-month period ending October 10, 2018 (AirNav, LLC 2021a). There is no control tower.

20.1.5.2 Kingdon Airpark

This public use airport is approximately 3 miles west of Lodi. The airport has two lighted asphalt runways averaging 11 aircraft operations per day. There is no control tower (AirNav, LLC 2021b).

20.1.5.3 Franklin Field

Franklin Field is a public use airport owned and operated by the County of Sacramento (Federal Aviation Administration [FAA] identifier F72). The airfield is located 4 miles southeast of Franklin, California. The facility has no air traffic control tower or personnel, and it serves the general aviation community exclusively. It has two runways of similar length: Runway 18/36 is 3,123 feet long and Runway 9/27 is 3,031 feet long. For 12 months ending in December 2017, the airport had an average of 89 aircraft operations per day. These operations were primarily visiting general aviation (94%) and aircraft based at the airport (6%). No scheduled commercial flights depart from this airport (AirNav, LLC 2021c).

20.1.5.4 Byron Airport

The Byron Airport (FAA identifier C83) is owned and operated by Contra Costa County. The airport is located between Byron and Tracy just south of Discovery Bay and west of Clifton Court Forebay. The airport has a 4,500-foot main runway and a 3,000-foot crosswind runway. For the 12 months ending December 2017, Byron Airport recorded an average of 227 aircraft operations per day, with most (78%) of those being general aviation aircraft based at Byron, 22% being general aviation aircraft based elsewhere, and less than 1% military. No scheduled commercial flights depart from this airport (AirNav, LLC 2021d).

20.1.5.5 Rio Vista Municipal Airport

The Rio Vista Municipal Airport (FAA identifier O88) is owned and operated by the City of Rio Vista. This general aviation airport is located north and west of Rio Vista on SR 12. The main runway is 4,200 feet long, and there is a 2,200-foot crosswind runway and a 180-foot by 180-foot helipad. For the 12 months ending December 2018, there were 96 aircraft operations on average per day. Those operations were split evenly between general aviation aircraft based at Rio Vista and those based elsewhere. No scheduled commercial flights depart from this airport (AirNav, LLC 2021e).

20.1.5.6 Kaiser Permanente South Sacramento Heliport

The Kaiser Permanente South Sacramento Hospital heliport is located at 6600 Bruceville Road, Sacramento. The heliport used for hospital business and patient care is a private 40-foot by 40-foot helipad (AirNav, LLC 2021f).

20.1.5.7 Borges-Clarksburg Airport

This airport is approximately 2 miles northeast of Clarksburg and has one turf runway. There is no control tower, and permission is required to land. The Borges-Clarksburg Airport averages approximately 57 operating aircraft per week, based on a 12-month period ending December 31, 2001 (AirNav, LLC 2020a).

20.1.5.8 Lodi Memorial Hospital Heliport

The Lodi Memorial Hospital heliport is a private, medical-use heliport located at 975 South Fairmont Avenue, Lodi (AirNav, LLC 2021g).

20.1.5.9 Flying B Ranch Airport

This airport is approximately 2.3 miles south of Elk Grove and has two dirt runways. The airport serves single-engine aircraft and has no control tower (AirNav, LLC 2021h).

20.1.5.10 Heritage Field

This airport is on McDonald Island approximately 7 miles northwest of Stockton and has two asphalt runways. There is no control tower, and permission is required to land (AirNav, LLC 2020b).

20.1.5.11 Funny Farm Airport

This airport is in Brentwood and has two asphalt runways. There is no control tower, and permission is required to land (AirNav, LLC 2021i).

20.1.5.12 Las Serpientes Airport

This airport is approximately 2 miles southeast of Knightsen and has two dirt runways. There is no control tower, and permission is required to land (AirNav, LLC 2021j).

20.2 Applicable Laws, Regulations, and Programs

The applicable laws, regulations, and programs considered in the assessment of project impacts on transportation are indicated in this section, in Section 20.3.1, *Methods for Analysis*, or the impact analysis, as appropriate. Applicable laws, regulations, and programs associated with state and federal agencies that have a review or potential approval responsibility have also been considered in the development of CEQA impact thresholds or are otherwise considered in the assessment of environmental impacts. A listing of some of the agencies and their respective potential review and approval responsibilities, in addition to those under CEQA, is provided in Chapter 1, *Introduction*, Table 1-1. A listing of some of the federal agencies and their respective potential review, approval, and other responsibilities, in addition to those under NEPA, is provided in Chapter 1, Table 1-2.

20.3 Environmental Impacts

This section describes the direct and cumulative environmental impacts associated with transportation that would result from the construction, operation, and maintenance of conveyance

facilities, and implementation of compensatory mitigation and other mitigation measures. This section describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided. Indirect impacts of transportation changes are discussed in Chapter 31, *Growth Inducement*.

20.3.1 Methods for Analysis

This section describes the quantitative and qualitative methods used to evaluate transportation-related effects of the project alternatives on the regional and local transportation system. The primary transportation measure used in this EIR is VMT, which is consistent with SB 743 and CEQA Guidelines Section 15064.3. The process for VMT analyses is described in Section 20.3.1.1, *Process and Methods of Vehicle Miles Traveled Analysis*. Qualitative analyses are also provided for effects on transit, roadway, bicycle, and pedestrian facilities, and for effects associated with marine transportation (barges) and railroad facilities. These qualitative analyses consider the potential for project construction, operations, maintenance, and implementation of mitigation measures to affect the local Delta circulation system and the potential to conflict with programs, plans, ordinances, and policies for transportation systems. Analyses are also provided for potential hazards from construction and operation of conveyance facilities that could affect transportation design features, conflict with incompatible uses, such as farm equipment, and alter emergency access.

A supplemental analysis of LOS (not required by CEQA) is provided for informational purposes in Appendix 20A, *Delta Conveyance 2020 Traffic Analysis,* to address the potential need to develop local and regional transportation improvements to reduce project-related traffic volumes. The LOS analysis is used to aid local jurisdictions to identify roadway and intersection improvements that may be needed because of implementation of the project. As directed in CEQA Guideline Section 15064.3, a "project's effect on automobile delay shall not constitute a significant environmental impact" but this analysis is included in the appendices to this Draft EIR chapter on a voluntary basis as a secondary measure of traffic impacts from constructing and operating the project alternatives and can be used to inform analyses in the USACE Delta Conveyance Project NEPA Environmental Impact Statement.

20.3.1.1 Process and Methods of Vehicle Miles Traveled Analysis

The transportation analysis is based on the project's construction, operations, and maintenance, and compensatory mitigation data for construction employee traffic provided in Appendix 23B, *Air Quality and GHG Analysis Activity Data*. VMT is estimated quantitatively using the following results provided in Appendix 23B.

- Duration of construction activities
- Total VMT during construction activities
- Average VMT per employee
- Comparison of average VMT per construction employee to regional average

As discussed at the beginning of this chapter, LOS can no longer be used for evaluating project traffic impacts under CEQA with the passage of SB 743 and adoption of the amended CEQA Guidelines implementing SB 743 (CEQA Guidelines § 15064.3). Per CEQA Guidelines Section 15064.3,

subdivision (c), VMT is the primary metric for analyzing traffic impacts on all CEQA projects after July 1, 2020.

VMT is defined as the amount of travel that occurs in automobiles, and in terms of a project like the Delta Conveyance Project, VMT is defined as the number of miles workers drive in automobiles (i.e., automobiles and light trucks) to and from the work site during the project's construction, operations, and maintenance. The goal of quantifying SB 743 home-based work VMT is to determine whether the project alternatives would affect the environment by increasing the amount of commute miles that construction workers would drive in their automobiles (personal car or truck) to and from the project work sites daily when compared to the regional average of home-based work VMT per employee. Home-based work VMT includes all automobile trips between home and work. The goal of SB 743 is to quantify home-based work VMT and develop potential mitigation measures to reduce the amount of VMT generated by construction employees. Therefore, SB 743 VMT does not include commercial vehicle trips and the delivery of materials that will be used for construction in its definition of VMT. These truck trips for construction of the project alternatives are included in the roadway segment and intersection analysis contained in Appendices 20A and 20C. CEQA Guidelines Section 15064.3(a) states that VMT refers to the amount and distance of *automobile* travel attributable to a project. In its December 2018 publication entitled, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR explains that the term *automobile* as used in Section 15064.3(a) "refers to on-road passenger vehicles, specifically cars and light trucks"; heavy vehicles are not included in the definition (California Governor's Office of Planning and Research 2018:4). Therefore, truck trips for construction of the project alternatives are not included in the VMT calculations. Instead, for informational purposes, they are included in the roadway segment and intersection analysis provided in Appendices 20A and 20C.

For each of the project alternatives, the duration of construction activities was analyzed based on daily employee schedule data developed by the Delta Conveyance Design and Construction Authority for each of the nine project alternatives (1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5), including start date of construction at each project feature, number of employees during each day of construction, and end date of construction at each project feature. For employee VMT, the relative location of either a park-and-ride facility serving a project feature, or a designated project feature and the location of the construction worker's home were used to determine the miles per day that employees would drive from home to and from the work site or corresponding park-and-ride facility.

The estimates of construction worker origin were developed separately for project facilities located in the north Delta (southern Sacramento County and northern San Joaquin County) and the south Delta (southern and western San Joaquin County). The north Delta and south Delta construction worker origin data was based on labor market information provided by each county to the State of California Employment Development Department (EDD) and incorporated into the *2018 Regional Transportation Plan/Sustainable Communities Strategy* for San Joaquin County (San Joaquin Council of Governments 2018), the *Metropolitan Transportation Plan/Sustainable Communities Strategy* for Sacramento and Yolo Counties (Sacramento Area Council of Governments 2019), and *Plan Bay Area 2040* for Solano County (Metropolitan Transportation Commission and Association of Bay Area Governments 2017). According to the 2019 EDD Demographics Profiles by county, the labor market information shows that over 26,000 of San Joaquin County's employed residents are in the construction industry (California Employment Development Department 2019a:4). In Sacramento County over 46,000 of employed residents are in the construction industry (California Employment Development Department 2019b:4). Yolo and Solano Counties combined have over 22,800

employed residents working in the construction industry (California Employment Development Department 2019c:4, 2019d:4). With over 94,000 residents working in the construction industry, the Delta Conveyance Project would provide an opportunity for these workers to live and work within the Sacramento–San Joaquin Valley. Most of the project facilities for the eastern and central alignments (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c) and Bethany Reservoir alignment (Alternative 5) are located in rural Sacramento and San Joaquin Counties. The Southern Complex and Bethany Complex are the only project facilities located in Contra Costa or Alameda Counties, respectively.

The 2019 EDD Demographics Profiles by county labor market information shows that 40,000 of Contra Costa County's employed residents are in the construction industry (California Employment Development Department 2019e:4). The 2019 EDD Demographics Profiles by county labor market information shows that 46,000 of Alameda County's employed residents are in the construction industry (California Employment Development Department 2019f:4).

Information from the U.S. Bureau of Labor Statistics was used to determine the total number of construction jobs in the San Francisco/San Jose Metro Area. In November 2020, there were a total of 173,000 construction jobs in the San Francisco/San Jose Metro Area. With more construction jobs available in the San Francisco/San Jose Metro Area (173,000) than residents working in the construction industry (i.e., 143,774 construction workers living in Contra Costa, Alameda, Marin, San Francisco, San Mateo, Santa Clara, and San Benito Counties), there is a need for over 29,000 construction workers to travel from surrounding counties (including San Joaquin, Sacramento, Yolo, and Solano Counties) to fill the San Francisco/San Jose Metro Area need for construction workers (U.S. Bureau of Labor Statistics 2020).

Construction of the project alternatives would allow construction, mining (related to tunneling), and utility workers to live within the Sacramento, San Joaquin, Yolo, Solano, Alameda, and Contra Costa Counties and drive to and from the work site or corresponding park-and-ride facilities (two along I-5, one on SR 12, one on Byron Highway, and one on Mountain House Parkway) or to and from project sites along the I-205 corridor. On a regional home-based work VMT commuter scale, it is assumed that the project alternatives would reduce the total number of construction workers traveling between their homes in Sacramento and San Joaquin Counties to and from work sites in the Bay Area.

In order to determine the amount of travel that construction workers would make, the regional travel demand model was used to determine the location and availability of residential homes where workers would reside and commute to the designated project construction park-and-ride lot or construction site (if necessary). Over the course of the next decade, the populations of the six counties are projected to increase and a corresponding increase of employed residents in the construction industry would occur. Also, with the opportunity for well-paying construction jobs that the Delta Conveyance Project would bring to the Sacramento–San Joaquin Valley, it is assumed that a small percentage of construction workers would temporarily relocate to the six counties surrounding the transportation study area. Based on EDD data reported for the Delta region, as described above, more than enough construction workers reside in the vicinity of the transportation study area to accommodate Delta Conveyance Project construction needs. The VMT analysis assumes that the construction workers would live within the Delta region and drive from a residence to park-and-ride lots provided for Delta Conveyance Project construction. Some workers, including those with special skills, could be needed from outside the region and are assumed to relocate into the region during the construction period. This assumption is appropriate for a major

construction project like the Delta Conveyance Project because of the specialized contractors and construction workers that would be needed for extended construction periods to build many of the project alternative features.

Based on a combination of the local county labor market information and travel demand model calculations, the following construction worker percentages were used in the VMT analysis:

- For project facilities located in the north Delta, 50% of construction workers are assumed to live in Sacramento County, 10% in Yolo and Solano Counties, and 40% in San Joaquin County.
- For project facilities located in the south Delta, 55% of the construction workers are assumed to live in San Joaquin County, 30% in Sacramento County, and 15% are assumed to live in the eastern Bay Area (10% in Contra Costa County and 5% in Alameda County).

The VMT analysis determined that the project alternatives would provide construction jobs for local residents living in the Sacramento and San Joaquin Valleys and reduce their need to travel long distances to the Bay Area for employment, thereby reducing interregional VMT and GHG emissions.

Operation and maintenance of the project alternatives would include inspections, testing, and general maintenance that would occur with schedules ranging from daily to annual, with some activities only occurring once every few years. For employee VMT, a combination of the location of the project equipment and workers was used to determine the miles per day that employees would travel to and from home and the work site.

Implementation of compensatory mitigation requires construction and other activities that would draw employee and truck traffic at the I-5 ponds, Bouldin Island, and channel margin and tidal wetland restoration work sites. Employee VMT was determined by the known locations of the compensatory mitigation sites and construction workers' modeled places of residence. This estimates the miles per day that employees would travel to and from home and the park-and-ride lots.

20.3.2 Thresholds of Significance

This chapter analyzes the impacts on the transportation network from project construction, operations, maintenance, and implementation of the compensatory mitigation and other mitigation measures. An impact was considered to be significant if it would result in any of the following conditions.

- Result in the construction or operations and maintenance employee average VMT exceeding the regional employee average home-based work VMT of 22.5 miles per day.
- Substantially conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, and bicycle and pedestrian facilities.
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use.
- Result in inadequate emergency access by providing only one access point or constrained geometrics for emergency vehicles.

Note that in its technical report on VMT, OPR recommends that a per capita or per employee VMT that is 15% below that of existing development may be a reasonable threshold of significance for residential and office projects. OPR does not have a recommendation for a threshold for

construction of large infrastructure projects like the Delta Conveyance Project. CEQA allows a lead agency to establish thresholds of significance that it finds applicable to the type of project at hand.

The analysis in this chapter is based on an increase from existing regional VMT conditions (i.e., 22.5 miles per day) as described in Section 20.3.3.1, *Existing (2020) Daily Worker VMT Conditions*, and Table 20-2 for project construction, operations, maintenance, and implementation of the compensatory mitigation. DWR has chosen not to use the 15% below existing development threshold because that varies from the standard CEQA approach of defining existing conditions as the baseline for analysis (CEQA Guidelines § 15382) and is not directly applicable to construction of water supply infrastructure facilities. Further, OPR's recommended standard is based on GHG reduction, not transportation concerns and this project adequately covers GHG reduction concerns and mitigation measures in Chapter 23, *Air Quality and Greenhouse Gases*.

The following CEQA Appendix G checklist item(s) are addressed in other chapters:

- Effects on regional air basins as a result of construction- and operation-related traffic is addressed in Chapter 23.
- Effects on local noise as a result of construction- and operation-related traffic is addressed in Chapter 24, *Noise and Vibration*.

20.3.2.1 Evaluation of Mitigation Impacts

CEQA also requires an evaluation of potential impacts caused by the implementation of mitigation measures. Following the CEQA conclusion for each impact, the chapter analyzes potential impacts associated with implementing both the Compensatory Mitigation Plan (CMP) and the other mitigation measures required to address potential impacts caused by the project. Mitigation impacts are considered in combination with project impacts in determining the overall significance of the project impacts. Additional information regarding the analysis of mitigation measure impacts is provided in Chapter 4, *Framework for the Environmental Analysis*.

20.3.3 Impacts and Mitigation Approaches

20.3.3.1 Existing (2020) Daily Worker VMT Conditions

As discussed in Section 20.1.1, *Study Area*, SB 743 has fundamentally changed transportation impact analysis as part of CEQA compliance. These changes include elimination of auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA. In the amended CEQA Guidelines, OPR and the California Natural Resources Agency selected VMT as the preferred transportation impact metric, and the latter entity, through a rulemaking process, applied its discretion under SB 743 to mandate its use statewide (Pub. Resources Code § 21099(b)(2); 14 Cal. Code Regs. § 15064.3(a); *Citizens for Positive Growth & Preservation v. City of Sacramento* (2019) 43 Cal.App.5th 609, 625-626). In settling on VMT, these two agencies were acting pursuant to a legislative directive that their ultimate significance criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Pub. Resources Code § 21099. subd. (b)(1)).

The transportation study area (the area in which VMT impacts may occur) consists of the project footprint, the regional Caltrans freeway and highway facilities, and local roadways that provide access to the project as shown in Figure 20-1. The study area includes major parts of Sacramento,

San Joaquin, Yolo, Solano, Contra Costa, and Alameda Counties, where construction employees for the project would use the regional and local transportation system to drive themselves in automobiles to and from the work sites or park-and-ride lots to construct, operate, and maintain the project.

Employment trips from the Sacramento Area Council of Governments (SACOG), San Joaquin Council of Governments (SJCOG), Alameda County Transportation Commission (ACTC), and Contra Costa Transportation Authority (CCTA) regional travel demand models include local, regional, and long-distance employee trips on a daily basis. Table 20-2 presents the regional average for daily VMT per employee for existing 2020 conditions. Average regional daily VMT is equal to 22.5 miles per employee. The average regional daily VMT was determined by taking the sum of all home-based work VMT for all four regional travel demand models and dividing by the total number of employees in all four regional travel demand models (Table 20-2).

Table 20-2. Regional Average for Daily Vehicle Miles Traveled per Employee (Existing 2020 Conditions)

Baseline Scenario	Vehicle Miles Traveled Regional Average for Daily VMT
Existing conditions 2020	22.5 per employee

Source: Sacramento Area Council of Governments 2019; San Joaquin Council of Governments 2018; Alameda County Transportation Commission 2019:82–86, 89, 108–111; Contra Costa Transportation Authority 2017:ES-1–ES-13, 4-1–4-16.
VMT = vehicle miles traveled.

The project alternatives were analyzed to determine the average VMT per employee during the construction phase, and the operations and maintenance phase, beginning in year 2040. Daily VMT projections associated with each of the nine project alternatives were developed based on construction schedules and locations of park-and-ride facilities and construction sites. The regional travel demand model was used to determine the total distance for employees driving to and from home and the work site on a daily basis. The project alternatives include five park-and-ride lots that would not only reduce construction traffic on Delta roadways but would also reduce employee VMT to and from home and the work site on a daily basis. The results of the project alternatives VMT analysis were compared to existing 2020 conditions to determine impacts of the project alternatives on transportation.

20.3.3.2 No Project Alternative

As described in Chapter 3, *Description of the Proposed Project and Alternatives,* CEQA Guidelines Section 15126.6 directs that an EIR evaluate a specific alternative of "no project" along with its impact. The No Project Alternative in this Draft EIR represents the circumstances under which the project (or project alternative) does not proceed and considers predictable actions, such as projects, plans, and programs, that would be predicted to occur in the foreseeable future if the Delta Conveyance Project is not constructed and operated. This description of the environmental conditions under the No Project Alternative first considers how transportation could change over time and then discusses how other predictable actions could affect transportation.

Future Transportation Conditions

For transportation, future VMT conditions are projected to improve because of implementation of regional transportation plans (jobs and housing balance) targeting a 15% reduction in home-based work VMT and general restrictions on land uses that could increase VMT in the Delta Primary Zone. Growth in future years could increase traffic volumes related to growth outside the Delta and recreation and tourism increases for portions of the Delta.

Impacts associated with conflicts with transportation plans, programs and policies, geometric design hazards, traffic safety, emergency access, and marine navigation would not be likely to occur in the Delta under the No Project Alternative because of the limited development allowed in the Delta Primary Zone, regional and local transportation plan requirements, and the requirement to be consistent with the Delta Plan administered by the Delta Stewardship Council.

Predictable Actions by Others

A list and description of actions included as part of the No Project Alternative are provided in Appendix 3C, *Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions*. As described in Chapter 4, the No Project Alternative analyses focuses on identifying the additional water supply–related actions public water agencies may opt to follow if the Delta Conveyance Project does not occur.

Public water agencies participating in the Delta Conveyance Project have been grouped into four geographic regions. The water agencies within each geographic region would likely pursue a similar suite of water supply projects under the No Project Alternative (Appendix 3C). Desalination plants, water recycling facilities, groundwater management facilities, and water efficiency projects would be constructed to supply water to the coastal and inland regions that otherwise would have received water through the Delta Conveyance Project. Multiple facilities would be built and would require use of heavy equipment for construction of elements such as pipelines, structures, access roads, and other related infrastructure. The construction of each facility would result in a temporary increase in VMT to construction sites and possibly haul roads as facilities are built and could result in the increase in regional average VMT compared to existing conditions.

The increase in VMT on local roadways in the vicinity of these water supply projects could have temporary effects on the local circulation system including roadways, transit, emergency access routes, and pedestrian facilities. The magnitude of a change in VMTs would depend on the size and location of the water-supply facility being constructed. Most likely, facilities such as desalination plants or large-scale water recycling/treatment facilities would have the greatest effect on VMTs because of their size and time required to complete construction compared to other water supply–related actions such as groundwater recharge or conservation. Effects could be reduced or avoided by developing transportation demand management (TDM) plans and traffic management plans (TMPs) to reduce the reliance on single occupancy vehicles and increase employee carpooling and alternative travel modes (i.e., transit, bicycling, and walking). Operation and maintenance of these new water supply facilities would not create substantial changes in VMT or roadway conditions because of the limited personnel normally required to operate water facility infrastructure. Potential impacts related to conflicts with transportation plans, circulation system hazard and geometric design features and emergency access associated with water facility construction could result in circulation system effects that would be required to be reduced with transportation and demand management measures.

20.3.3.3 Impacts of the Project Alternatives on Transportation

This section describes the direct and indirect environmental impacts on transportation that would result from constructing, operating, and maintaining the project alternatives. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts are provided. The Delta Conveyance Engineering Project Reports (EPRs) (Delta Conveyance Design and Construction Authority 2022a, 2022b) include the following proposed construction management and design requirements to reduce effects on the community from construction-related traffic on Delta roadways. These limitations are intended to enhance public safety and reduce traffic congestion during construction. Although they are not related to VMT, the VMT analysis considers their effect on traffic patterns.

- No construction traffic would be allowed within Solano County except for on I-80 and SR 12 in Solano County (between I-80 and the Sacramento River), or for individuals or vehicles traveling from homes or businesses in Solano County.
- No construction traffic would be allowed in Yolo County except for on I-80, or for individuals or vehicles traveling from homes or businesses in Yolo County.
- No construction traffic would be allowed on SR 160 between SR 12 and Cosumnes River Boulevard except for realignment of this highway at the intake locations, installation of SCADA cables, or for individuals or vehicles traveling from homes or businesses along the affected routes.
- No construction traffic, except the employee shuttle buses or vans, and small pickup and utility trucks, would be allowed on Hood-Franklin Road. This excludes construction vehicles crossing Hood-Franklin Road at the improved intersection with the new intake haul road between Intakes A, B, and C.
- No trucks with three or more axles would be allowed on SR 4 across Victoria Island.
- No construction barge traffic would be allowed on weekends.
- Construction of the new South Holt Road Overpass over BNSF railroad tracks and East Bay Municipal Utility District (EBMUD) Mokelumne Aqueducts would be coordinated with BNSF Railway to avoid traffic issues. There would be a minimum of 23 feet 4 inches of clearance between the top of the BNSF tracks and the bottom of the bridge deck, in accordance with BNSF requirements. Approximately 20 feet of clearance would be provided from the top of the Mokelumne Aqueducts to the bottom of the bridge deck. This height would be subject to design development and coordination with EBMUD.
- DWR will require the contractor to prepare a Project Emergency Response Plan with detailed information regarding emergency services, access to construction sites, and emergency response times to Delta communities. The contractor will also be required to provide emergency response services at construction sites and to work with local agencies to determine the most appropriate method to coordinate between project contractor-provided emergency response services at the construction sites and integration with local agencies.

The following major road improvements were included in the conceptual design of the project alternatives.

- Intake haul road (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5)
    - Widen 3.2 miles of Lambert Road between I-5 and the new intake haul road.

- New 3.8-mile paved intake haul road at ground level along the west side toe of the abandoned railroad embankment to the east of the intakes to avoid use of SR 160 and access Intakes A, B, and C; would include widening of approximately 180 feet of the existing bridge at Hood-Franklin Road over Snodgrass Slough at the new intake haul road intersection to create a turn pocket.

- Twin Cities Complex (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c)
  - Widen 1.0 mile of Dierssen Road, re-align 1 mile of Franklin Boulevard to accommodate the new rail sidings, and widen 1.0 mile of Twin Cities Road east of I-5.
- Twin Cities Complex (Alternative 5)
  - Widen 1.0 mile of Dierssen Road between Franklin Boulevard and I-5.
  - Widen 0.48 mile of Franklin Boulevard between a location 0.22 mile north of Dierssen Road to a location 0.25 mile south of Dierssen Road.
  - Widen 1.0 mile of Twin Cities Road between a location 0.83 miles west of Franklin Boulevard to a location 0.17 mile east of Franklin Boulevard.
- New Hope Tract (Alternatives 1, 2a, 2b, and 2c)
  - Widen 0.8 mile of West Lauffer Road.
- Bouldin Island (Alternatives 1, 2a, 2b, and 2c)
  - Widen 8 miles of SR 12 between I-5 and new Bouldin Island interchange, including widening of bridge over Farm Road and Little Potato Slough.
  - New interchange and bridge over SR 12 to access Bouldin Island and new 2.1 miles of access roads on Bouldin Island.
- Bacon and Mandeville Islands (Alternatives 1, 2a, 2b, and 2c)
  - New bridge at community of Holt over EBMUD Mokelumne Aqueducts and BNSF railroad.
  - For access to tunnel shafts on both Bacon and Mandeville islands, upgraded roads and new roads for 15.5 miles along West Lower Jones Road, Bacon Island Road, and farm roads on Bacon and Mandeville Islands, including a new bridge over Connection Slough.
- New Hope Tract (Alternatives 3, 4a, 4b, 4c, and 5)
  - New 0.3-mile access road to the shaft site from Blossom Road.
- Terminous Tract (Alternatives 3, 4a, 4b, 4c, and 5)
  - New uncontrolled interchange with longer acceleration and deceleration lanes along SR 12 and improved 2.3 miles of SR 12 from I-5 to the tunnel shaft site.
- Lower Roberts Island (Alternatives 3, 4a, 4b, 4c, and 5)
  - New 1.2-mile access road from West Fyffe Street to new bridge.
  - New road and railroad bridges over Burns Cut from Port of Stockton.
  - New 3.2-mile access road and rail lines along West House Road from new bridge.
  - New 1.6-mile access road on Lower Roberts Island.
- Southern Complex on Byron Tract (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c)

- New 0.8-mile road to provide access from SR 4 (extension of Discovery Bay Boulevard).
- Relocate 0.8 mile of Western Farms Ranch Road.

- Southern Complex West of Byron Highway (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c)
  - Extend Clifton Court Road by 0.1 mile; and widen 0.6 mile.
  - Widen 0.7 mile of North Bruns Way.
  - Two new bridges over realigned Byron Highway.
  - Relocate Byron Highway with a new roundabout to the east of existing Byron Highway.
- Bethany Reservoir Pumping Plant and Surge Basin (Alternative 5)
  - New interchange at Lindemann Road with Byron Highway realignment and widening and extension of 0.5-mile paved road on Lindemann Road.
  - New bridges over UPRR tracks and Byron Highway.
  - Widen 0.5 mile of Byron Highway to four lanes from the new Lindemann Road interchange to Great Valley Parkway.
  - New 1.2-mile paved frontage road along Byron Highway between Lindemann Road and Mountain House Road.
  - New 2.1-mile paved road to access Surge Basin between new Byron Highway frontage road and Mountain House Road.
  - Widen 1.34 miles of Mountain House Road between Byron Highway and Connector Road.
  - New 0.2-mile paved road to Kelso Access Road from a location 0.2 mile south of Kelso Road to Kelso Road.
  - Widen merge lane on West Grant Line Road from a location 0.14 mile west of Mountain House Road to Mountain House Road.
  - New 0.6-mile paved road extension of Mountain House Road between existing West Grant Line and Mountain House roads, including a new roundabout at Grant Line Road and a new bridge over a swale.
  - Widen 2.2 miles of Mountain House Road between the new extension of Mountain House Road (described in previous bullet) to a location 0.18 mile north of Surge Basin access road.
- Bethany Reservoir Aqueduct (Alternative 5)
  - Widen 1.23 miles paved road of Kelso Road between a location 0.14 mile east of Mountain House Road to the New Access Road to the Pipeline/Aqueduct construction staging area.
  - New 0.27-mile paved road extension of Connector Road from Mountain House Road to the Surge Basin access road.
- Bethany Reservoir Discharge Structure (Alternative 5)
  - Widen 0.6 mile of existing paved road (California Aqueduct Bikeway) along Bethany Reservoir from new access road to Bethany Reservoir Discharge Structure.
  - New 1.2 miles of paved access road from Mountain House Road to the existing Bethany Reservoir.

In addition to a limited number of vehicles required to be on a construction site, the vast majority of construction employee parking would be provided at one existing and five new park-and-ride lots near the major commute corridors on I-5, SR 12, and Byron Highway. These park-and-ride facilities would be designed to provide adequate parking to consolidate worker vehicles and allow for conveying workers to some of the construction work sites on clean fuel buses or vans or in carpools. Trucks could also use these areas for waiting if the trucks arrive at night. The park-and-ride lots would include asphalt paved parking areas with striped parking spaces. The park-and-ride lots would include lights and electric vehicle charging stations.

Five new park-and-ride facilities were identified to support construction of the project:

- Hood-Franklin Park-and-Ride Lot: Along the south side of Hood-Franklin Road immediately east of I-5 to provide parking for construction employees for the intakes (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5).
- Charter Way Park-and-Ride Lot: Along the south side of Charter Way at the southwest corner of the I-5 overpass to provide parking for construction employees for tunnel shafts on New Hope Tract, Staten Island, Bouldin Island, Mandeville Island, and Bacon Island (Alternatives 1, 2a, 2b, and 2c) or New Hope Tract, Canal Ranch Tract, Terminous Tract, and King Island (Alternatives 3, 4a, 4b, 4c, and 5).
- Rio Vista Park-and-Ride Lot: Along the south side of SR 12 immediately east of SR 160 to provide parking for construction employees for the Bouldin Island Tunnel Shaft (Alternatives 1, 2a, 2b, and 2c).
- Byron Park-and-Ride Lot: Near the northwest corner of Camino Diablo Road and Byron Highway to provide parking for construction employees at the Southern Complex (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c).
- Bethany Park-and-Ride Lot: Near the intersection of Bethany Road and Henderson Road, adjacent to Byron Highway to provide parking for construction employees at the Southern Complex (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c).

Use of the existing park-and-ride lot at Flag City near the intersection of I-5 and SR 12 would also be supported by project construction employee vans.

The following figures (Figures 20-6 through 20-14) present the results of the daily total employee trips and daily total employee VMT analyses for all the regional freeways and local roadways used by construction employees traveling to and from home and the work site. Average VMT per working day for each project alternative is as follows.

- Alternative 1 (Figure 20-6).
- Alternative 2a (Figure 20-7).
- Alternative 2b (Figure 20-8).
- Alternative 2c (Figure 20-9).
- Alternative 3 (Figure 20-10).
- Alternative 4a (Figure 20-11).
- Alternative 4b (Figure 20-12).
- Alternative 4c (Figure 20-13).
- Alternative 5 (Figure 20-14).

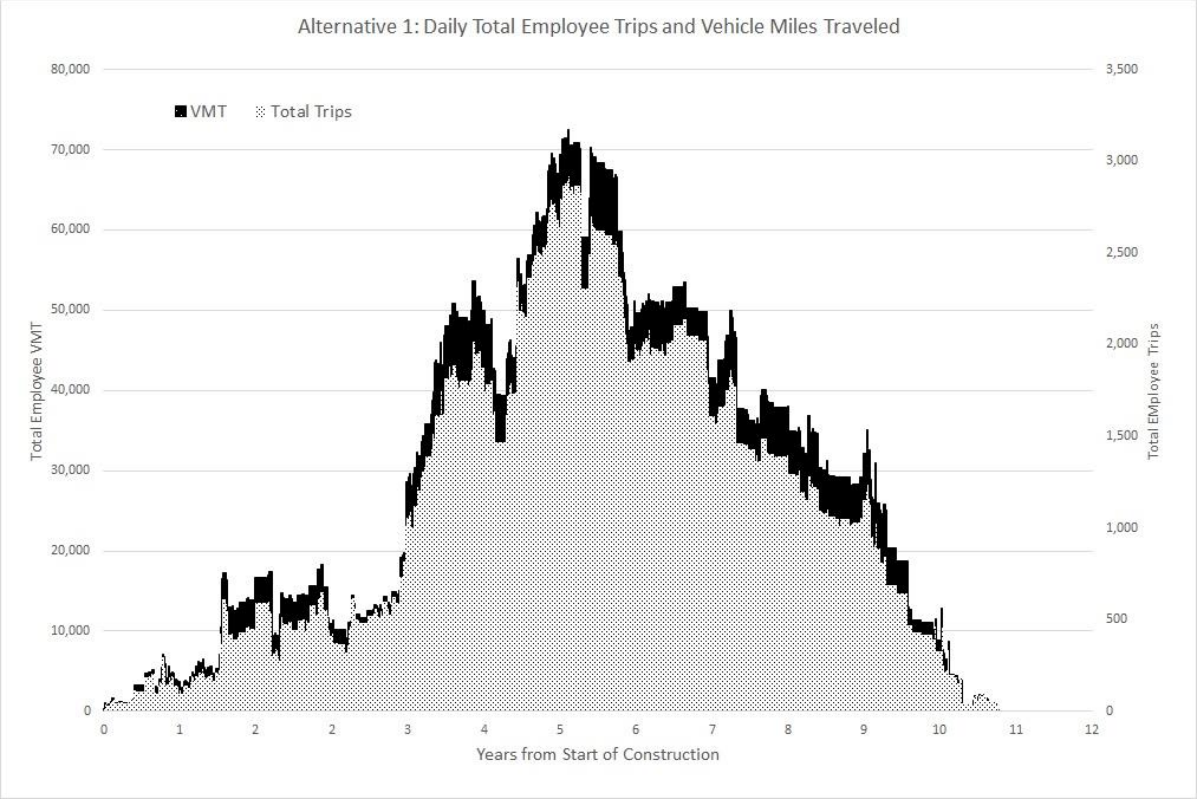

Figure 20-6. Employee Trips and VMT for Alternative 1

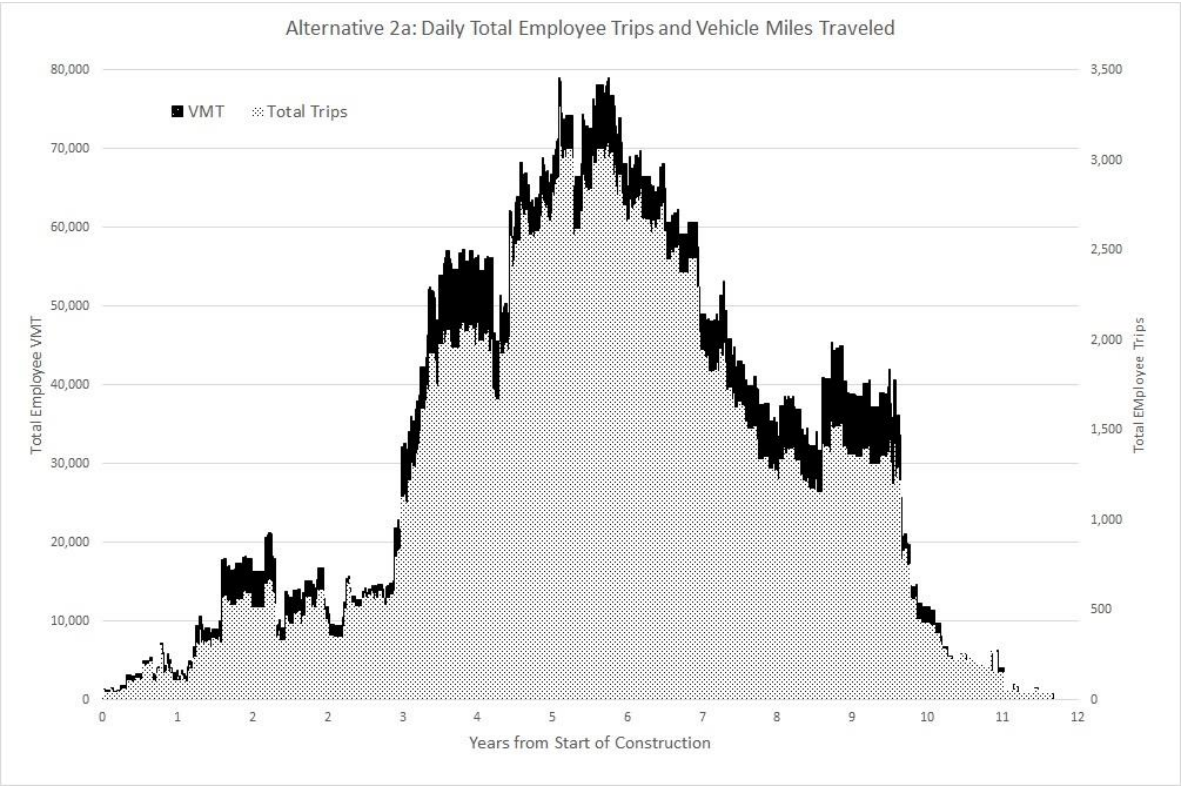

Figure 20-7. Employee Trips and VMT for Alternative 2a

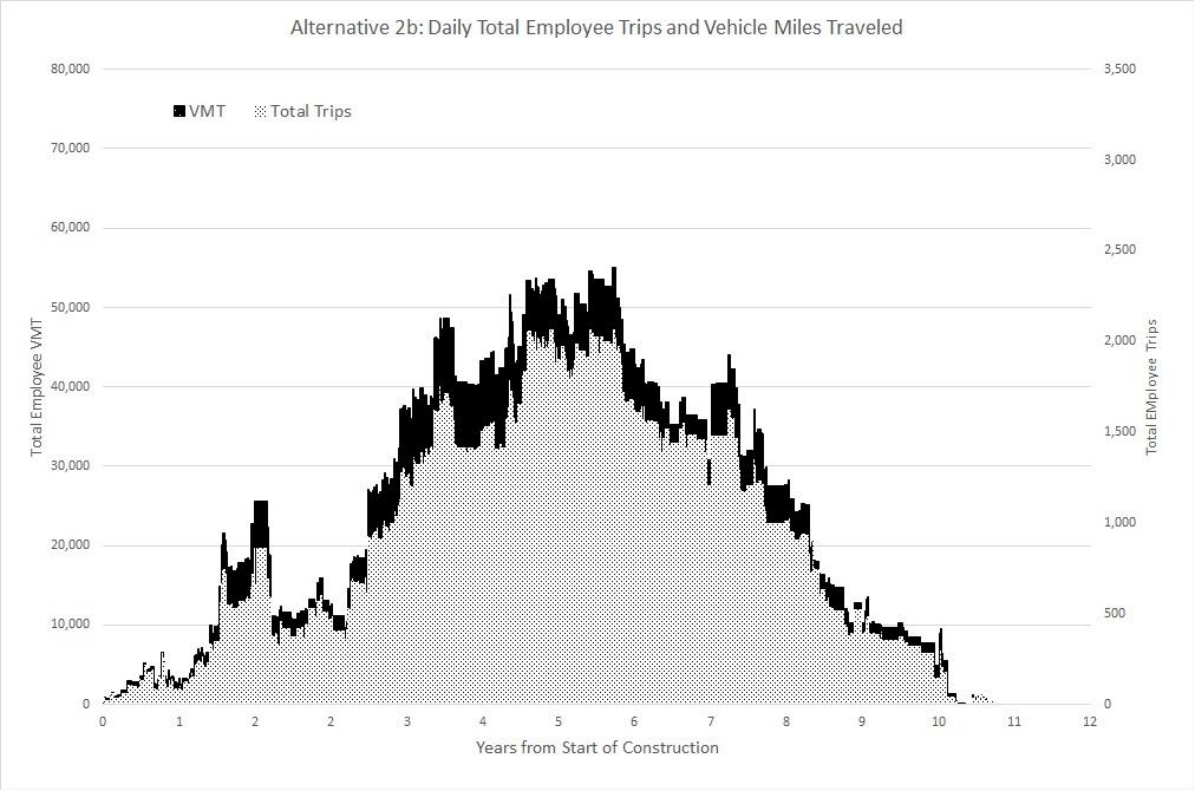

Figure 20-8. Employee Trips and VMT for Alternative 2b

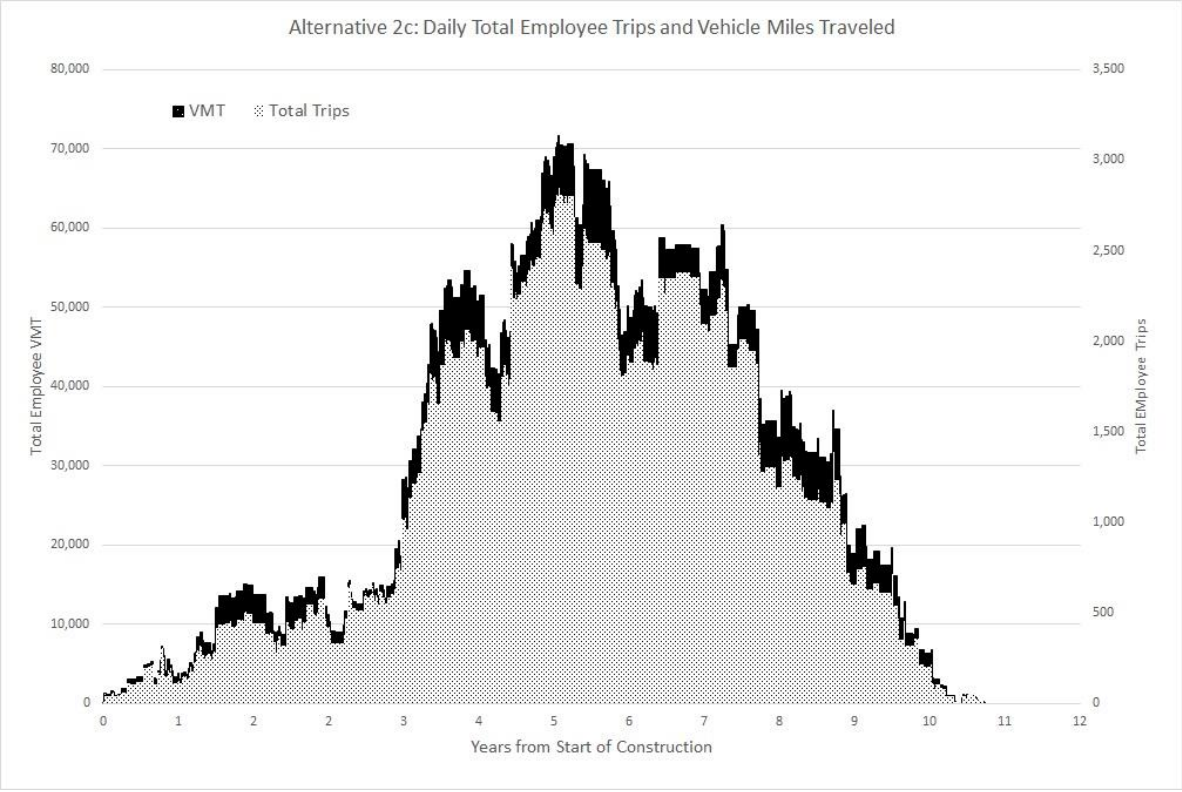

Figure 20-9. Employee Trips and VMT for Alternative 2c

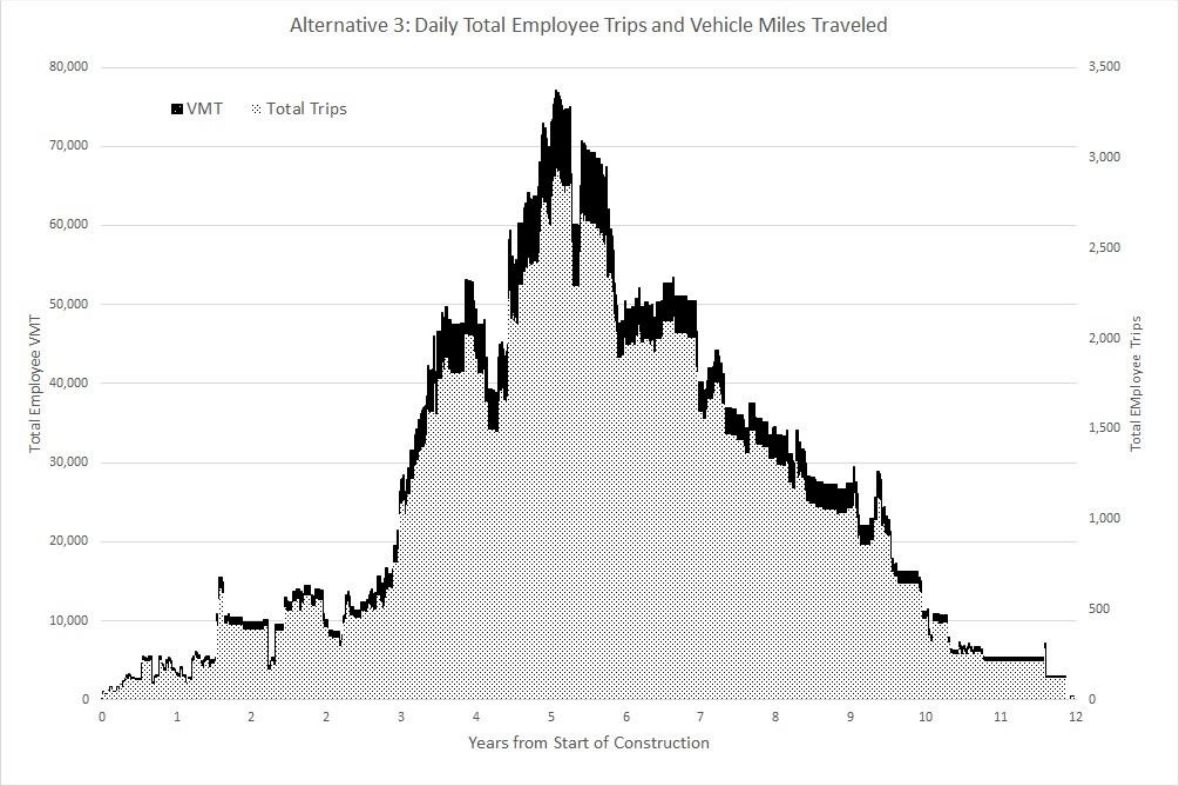

Figure 20-10. Employee Trips and VMT for Alternative 3

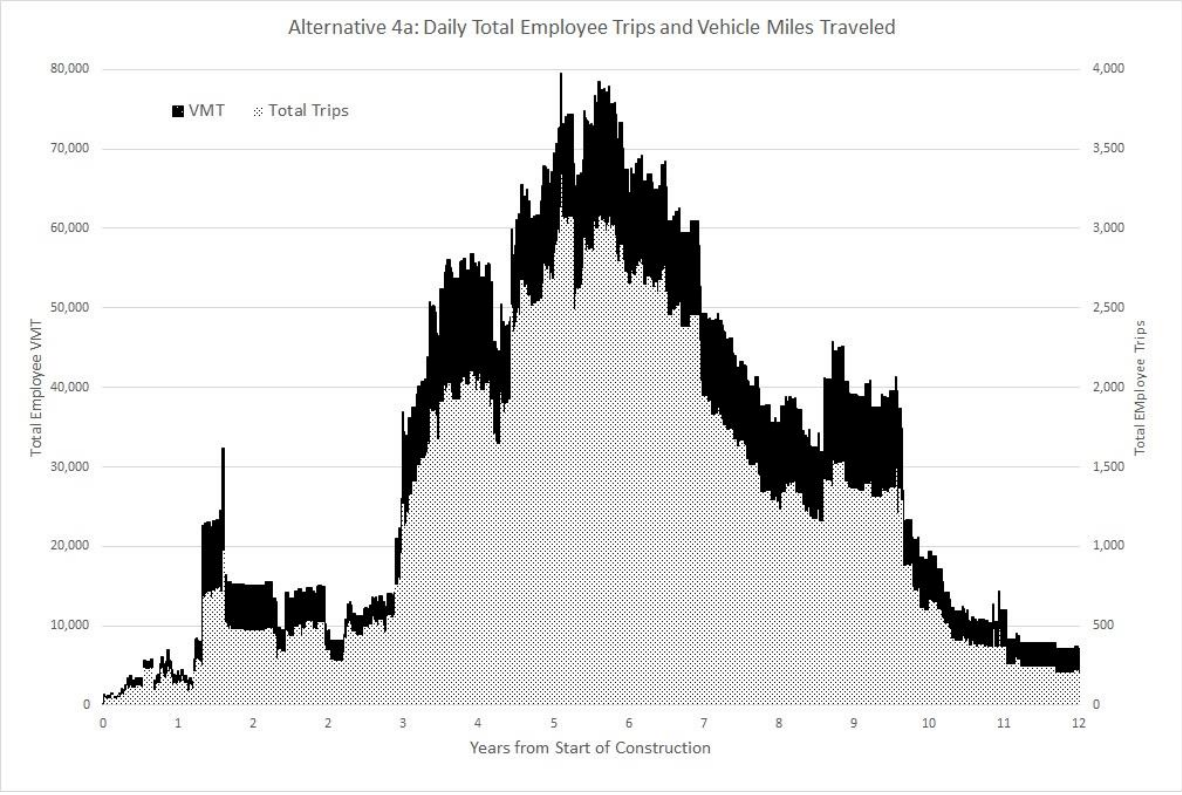

Figure 20-11. Employee Trips and VMT for Alternative 4a

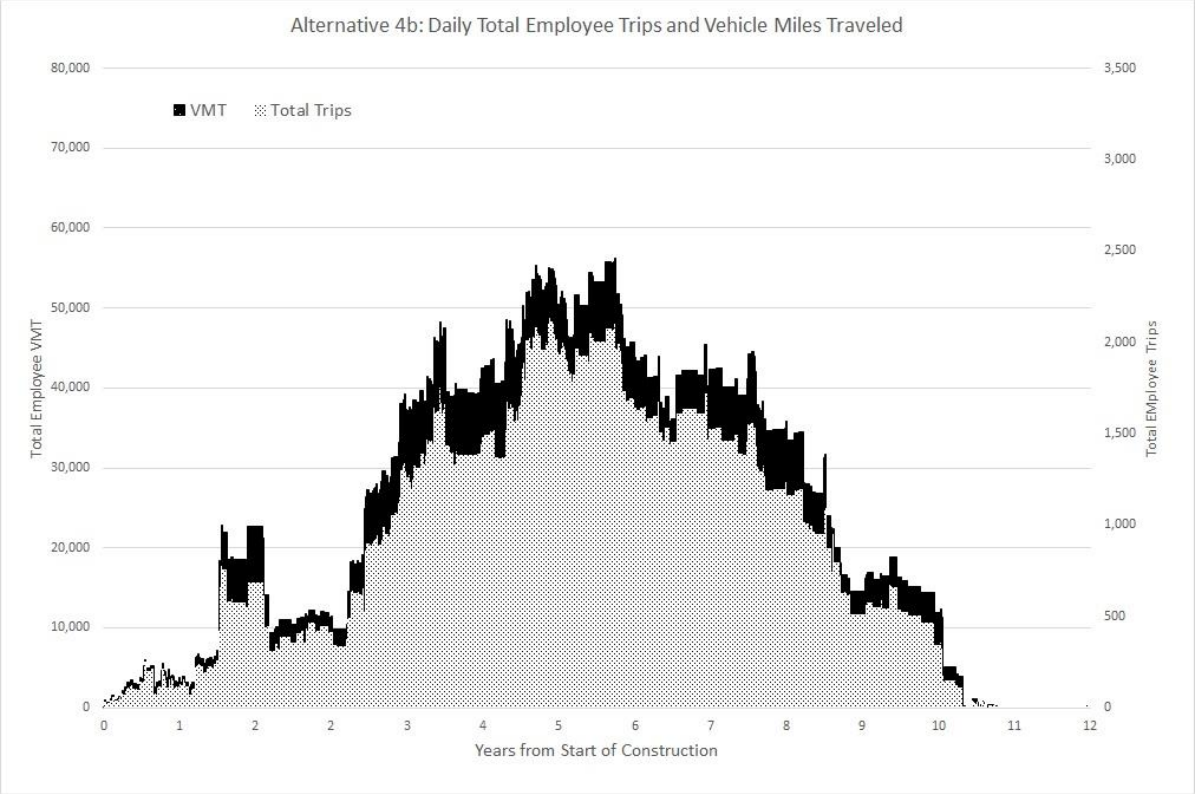

Figure 20-12. Employee Trips and VMT for Alternative 4b

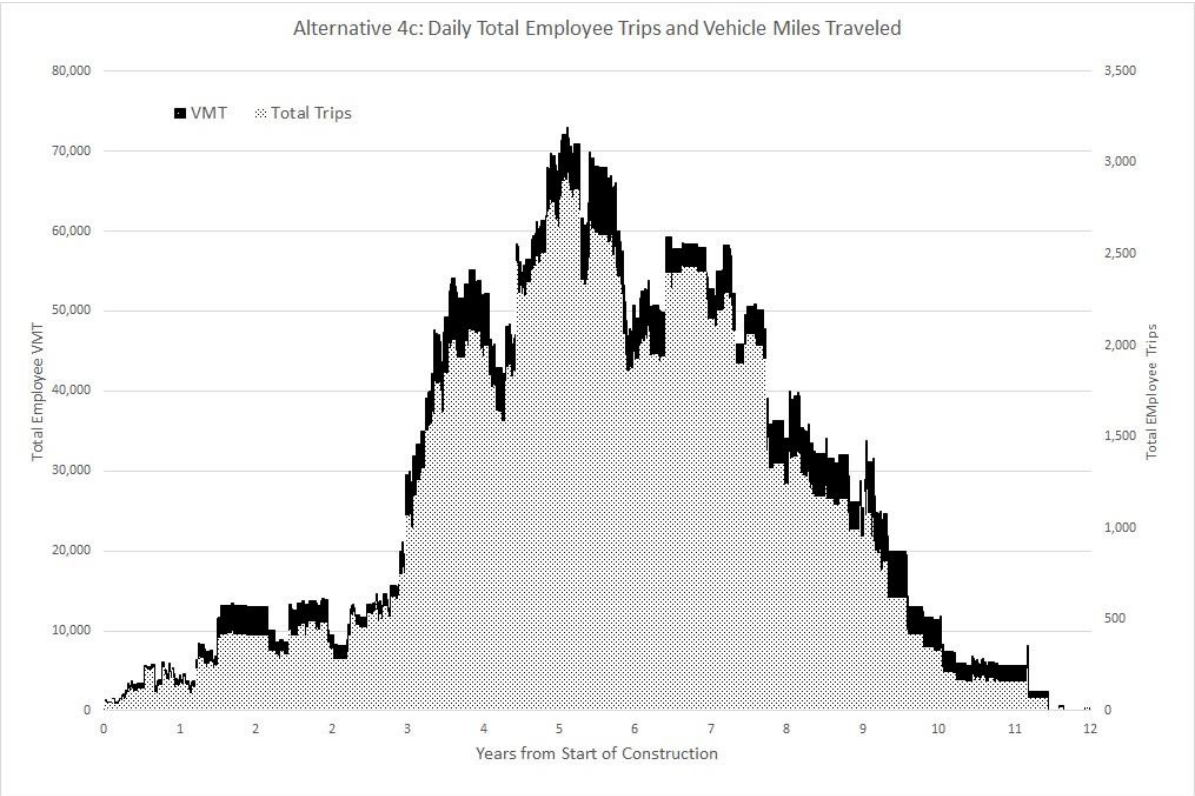

Figure 20-13. Employee Trips and VMT for Alternative 4c

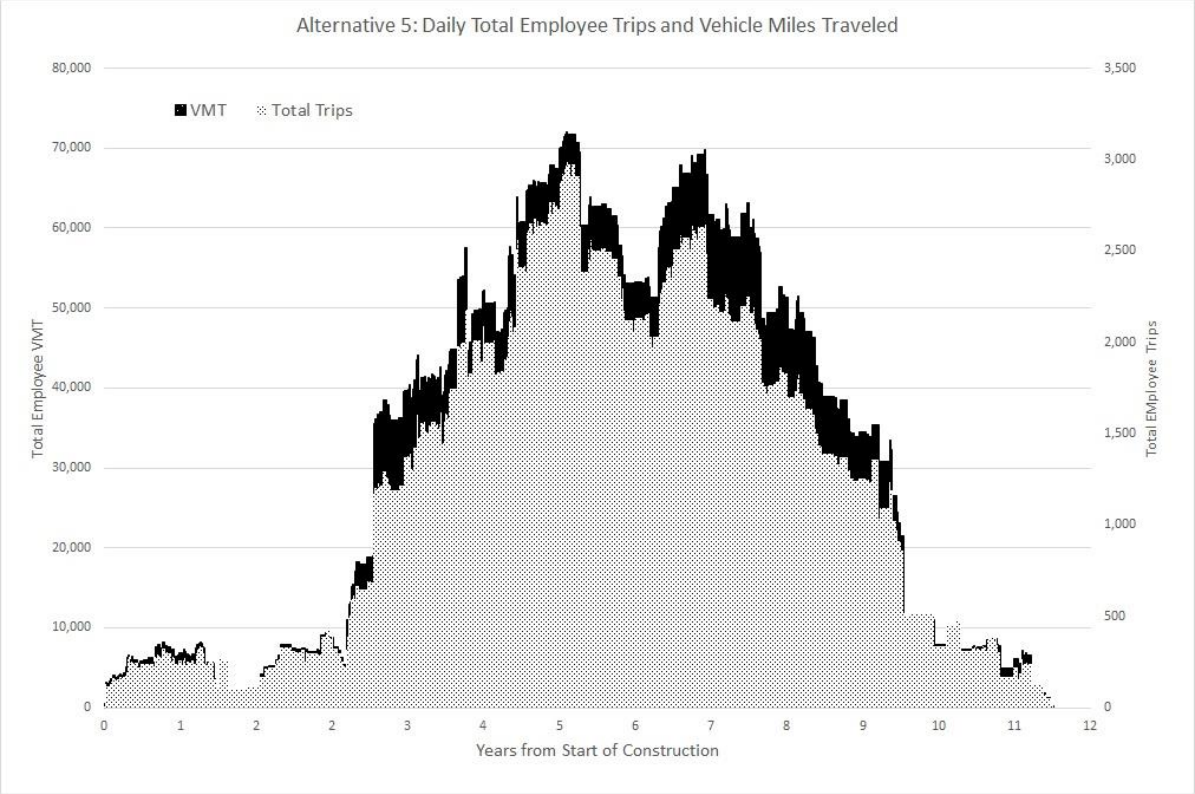

Figure 20-14. Employee Trips and VMT for Alternative 5

This section analyzes the project alternatives' effects on VMT and identifies mitigation measures to reduce the project's impact on regional home-based work travel as required by CEQA Guidelines Section 15064.3. LOS for roadway segments and intersections are provided in Appendix 20A, *Delta Conveyance 2020 Traffic Analysis*, and Appendix 20C, *Delta Conveyance 2040 Traffic Analysis*, to provide additional information for local transportation agencies. Tables 20-5, 20-6, and 20-7 present the results of the VMT analysis for each of the nine project alternatives compared to existing year 2020 conditions.

For comparison, the Sacramento region, which comprises Sacramento, Yolo, Placer, El Dorado, Butte, and Yuba Counties with a population of over 2.4 million residents, generates 5,448,753 personal vehicles trips each weekday, resulting in 51,666,933 VMT on a weekday daily basis (Sacramento Area Council of Governments 2019). Therefore, the total construction employee VMT over 12+ years for the project alternatives would be equal to 1.5 days (Alternative 2b of 77,149,716) and 2.2 days (Alternative 4a of 113,836,244) of the total VMT for a single weekday for the Sacramento region.

Table 20-3. Regional VMT Analysis by Alternative—Total Construction and Average Construction Employee VMT

	Vehicle Miles Traveled		
Alternative	Total Construction Employee VMT	Total Construction Employee Trips	Average VMT per Construction Employee
Alternative 1	91,194,066	3,551,163	25.68
Alternative 2a	107,268,666	4,154,530	25.82

Alternative	Vehicle Miles Traveled		
	Total Construction Employee VMT	Total Construction Employee Trips	Average VMT per Construction Employee
Alternative 2b	77,149,716	2,855,379	27.02
Alternative 2c	90,225,139	3,621,754	24.91
Alternative 3	88,620,022	3,634,764	24.38
Alternative 4a	113,836,244	4,323,780	26.33
Alternative 4b	80,426,419	2,917,499	27.57
Alternative 4c	95,659,067	3,817,013	25.06
Alternative 5	101,945,619	3,956,138	25.77

Source: Combination of regional travel demand and vehicle miles traveled models for project study area.
VMT = vehicle miles traveled.

Table 20-4 presents the results of the construction VMT analysis for each of the nine project alternatives compared to existing year 2020 conditions.

Table 20-4. Regional VMT Analysis by Alternative—Construction VMT vs. Regional Average VMT

Alternative	Vehicle Miles Traveled			
	Average VMT per Construction Employee	Does the Project Alternative Exceed the Regional Average of 22.50 Miles per Employee	Change (miles)	Percentage Change
Alternative 1	25.68	Yes	+3.18	+14.1%
Alternative 2a	25.82	Yes	+3.32	+14.8%
Alternative 2b	27.02	Yes	+4.52	+20.1%
Alternative 2c	24.91	Yes	+2.41	+10.7%
Alternative 3	24.38	Yes	+1.88	+8.4%
Alternative 4a	26.33	Yes	+3.83	+17.0%
Alternative 4b	27.57	Yes	+5.07	+22.5%
Alternative 4c	25.06	Yes	+2.56	+11.4%
Alternative 5	25.77	Yes	+3.27	+14.5%

Source: Combination of regional travel demand and vehicle miles traveled models for project study area.
VMT = vehicle miles traveled.

Table 20-5 presents the results of the operations and maintenance VMT analysis for each of the nine project alternatives compared to existing 2020 conditions.

Table 20-5. Regional VMT Analysis by Alternative—Operations & Maintenance VMT vs. Regional Average VMT

Alternative	Vehicle Miles Traveled	
	Average VMT per Operations & Maintenance Employee	Does the Project Alternative Exceed the Regional Average of 22.5 Miles per Employee
Alternative 1	19.1	No
Alternative 2a	19.1	No
Alternative 2b	19.1	No

Alternative	Vehicle Miles Traveled	
	Average VMT per Operations & Maintenance Employee	Does the Project Alternative Exceed the Regional Average of 22.5 Miles per Employee
Alternative 2c	19.1	No
Alternative 3	19.1	No
Alternative 4a	19.1	No
Alternative 4b	19.1	No
Alternative 4c	19.1	No
Alternative 5	19.1	No

Source: Combination of regional travel demand and vehicle miles traveled models for project study area.
VMT = vehicle miles traveled.

Impact TRANS-1: Increased Average VMT Per Construction Employee versus Regional Average

All Project Alternatives

All nine project alternatives (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5) described in Chapter 3, *Description of the Proposed Project and Alternatives*, would have similar effects on construction VMT and are discussed together.

Project Construction

All of the project alternatives would temporarily increase VMT per employee during construction of the Delta Conveyance Project facilities. Increases in construction employee home-based work VMT would be associated with employee trips to and from park-and-ride lots or construction sites. Increases in VMT during construction are substantial because all of the project alternatives would generate a higher average employee VMT compared to the regional average employee VMT of 22.5 miles on a daily basis, as indicated in Table 20-3. Alternatives 2b and 4b are expected to have the highest average employee VMT during the construction period and Alternatives 2c and 3 would have the lowest average employee VMT during construction of the Delta Conveyance Project facilities.

The project alternatives' increased average employee VMT has the potential to affect study area roadways and intersections that could result in temporary increases in the total amount of driving near conveyance facility construction sites.

Appendix 20A presents analysis of the increases in vehicular traffic expected on Delta roadway segments and at intersections. Field investigations such as geotechnical drilling, fault line investigations, and construction site investigation and monitoring could also result in additional construction VMT and are included in the VMT estimates above.

Operations and Maintenance

Operations and maintenance would occur at locations of permanent facilities, which are within the study area analyzed above. Operations and maintenance of the project alternatives would require a small percentage of employees compared to project construction. Under all project alternatives, operations and maintenance of the project would not result in the average VMT per operation and

maintenance employee to exceed the regional average of 22.5 miles on a daily basis, as indicated in Table 20-5.

CEQA Conclusion—All Project Alternatives

Construction of the project alternatives would result in additional VMT to the regional transportation system and increase the total amount of driving and distances traveled for home-based work trips when compared to the regional average of 22.5 miles per day. As shown in Table 20-4, construction of the project alternatives would increase the average employee VMT in the study area by a minimum of 8.4% (Alternative 3) to a maximum of 22.5% (Alternative 4b). This increase would be a temporary but long-term and a substantial VMT impact because conveyance facility construction employee VMT would exceed the regional VMT average over the course of the construction time period for Delta Conveyance Project facilities.

Construction and operation of the park-and-ride lots for all alternatives would reduce employee VMT on Delta roadways and reduce the severity of the project alternatives' increase in the average employee VMT but would not fully offset construction VMT. This increase is considered a significant impact because the average regional VMT would be exceeded. Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* would reduce the severity of this impact by implementing transportation measures that would decrease the total amount of construction employee travel on Delta roadways, incentivize carpooling and vanpooling, and establish state, regional, or local agency coordination to construct the park-and-ride lots and roadway improvements that are designed to minimize VMT-related transportation issues. However, the effectiveness of Mitigation Measure TRANS-1 to fully reduce VMT impacts of the project alternatives is uncertain because the effectiveness of carpooling, vanpooling, and transit programs for construction projects varies depending on specific construction sites and employment conditions. To offset the project alternatives' projected increase in VMT above 22.5 miles per employee during the construction period, it was determined that 25% of the construction workforce would need to carpool to and from the park-and-ride lots. By doing so, the total VMT would decrease such that the average VMT per construction employee would be equal to or less than 22.5 miles per employee.

For example, under Alternative 5, if one out of four construction employees were to carpool with a coworker, the total construction employee VMT would decrease from 101,945,619 (Table 20-3) miles to approximately 88,000,000 miles over the multi-year construction time period. With the total construction employee trips remaining a consistent 3,956,138 (Table 20-3), the average VMT per construction employee would decrease from 25.77 to 22.24, which would be less than the regional average of 22.5 miles on a daily basis, as indicated in Tables 20-6.

This level of carpool participation is a goal that may not be achieved because construction workers will be drawn from the region in a manner that may not be conducive to large-scale carpooling or vanpooling. Because of the logistics of requiring construction workers to carpool/vanpool near their place of residence to project construction sites, and the uncertainty that this goal would be achieved, Impact TRANS-1 is considered significant and unavoidable with mitigation.

Mitigation Measure TRANS-1: Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan

1. Prior to construction, DWR will require that provisions be included in construction contracts stating that contractors' crews and schedules are to be coordinated to reduce total

construction employee VMT during construction periods through the use of park-and-ride lots and carpooling/vanpooling, and that the plans and specifications that are developed as part of the project alternatives design are being followed. The project will also require development of site-specific TDMs and TMPs that address the specific steps to be taken before, during, and after construction to minimize VMT as a result of construction employees driving alone in their single occupancy vehicles to and from park-and-ride lots and construction sites. Construction contractors will be responsible for developing the TDMs and TMPs in consultation with the following applicable transportation entities.

- Caltrans for state and federal roadway facilities
- Local agencies for local roadway and intersection facilities (vehicles, pedestrians, and bicyclists)
- Transit providers
- Commuter and Freight Rail operators
- U.S. Coast Guard
- Federal, California, city, and county parks departments

2. DWR will be responsible for verifying that the TDMs and TMPs are implemented prior to beginning construction at each project feature. If necessary, to minimize unexpected operational and safety related impacts or delays during construction, DWR will also be responsible for modifying the TDMs and/or the TMPs to reduce potential effects identified by the applicable transportation entities identified above throughout the duration of the contract. The following shall be prepared by the contractor(s) and approved by DWR prior to beginning construction at each project feature:

    a. Develop of a TDM plan that will reduce the reliance of construction employees on single occupancy vehicles. The TDM plan shall include the following performance standards:

        - Incentivize carpooling and vanpooling to and from park-and-ride facilities to achieve the goal of a 25% reduction in single occupancy vehicles.
        - Require 100% compliance by construction workers to use park-and-ride facilities and transfer to project transit vehicles to travel to and from feature construction sites.
        - Incentives can include a combination of monetary (i.e., carpool/vanpool gas cards) and non-monetary (i.e., preferential parking spaces and express transit boarding to and from park-and-ride facilities and construction site for employees who carpool/vanpool).
        - Quarterly and yearly TDM reports will be prepared to quantify the performance toward meeting the goal of 25% reduction in the use of single-occupancy vehicles at each of the park-and-ride facilities based on number of passengers compared to vehicles parked.

    b. Incorporate TDM measure to incentivize the use of alternative travel modes such as transit and bicycling to park-and-ride facilities.

- Incentives can include a combination of monetary (i.e., transit passes) and non-monetary (i.e., preferential transit boarding to and from park-and-ride facilities and construction site for employees who use transit).
- Quarterly and yearly TDM reports will be prepared to quantify the performance of transit and bicycling to park-and-ride facilities based on surveys on how construction workers arrived at the park-and-ride facilities (drove alone, carpool/vanpool, transit, or bicycling).

3. Each TMP will address the following, as needed.

   a. Coordination with the affected agency during the construction and operation of the five park-and-ride facilities to be served by alternative fuel vehicles to and from construction sites.

      - Hood-Franklin Park-and-Ride Lot (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5)
      - Charter Way Park-and-Ride Lot (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5)
      - Rio Vista Park-and-Ride Lot (Alternatives 1, 2a, 2b, and 2c)
      - Byron Park-and-Ride Lot (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c)
      - Bethany Park-and-Ride Lot (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c)

   b. Coordination with the affected agency during the construction of the following major road improvements described in Section 20.3.3.3.

      - Intake haul road (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5)
      - Twin Cities Complex (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5)
      - New Hope Tract (Alternatives 1, 2a, 2b, and 2c)
      - Bouldin Island (Alternatives 1, 2a, 2b, 2c, 3)
      - Bacon and Mandeville Islands (Alternatives 1, 2a, 2b, and 2c)
      - New Hope Tract (Alternatives 3, 4a, 4b, 4c, and 5)
      - Terminous Tract (Alternatives 3, 4a, 4b, 4c, and 5)
      - Lower Roberts Island (Alternatives 3, 4a, 4b, 4c, and 5)
      - Southern Complex on Byron Tract (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c)
      - Southern Complex West of Byron Highway (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c)
      - Bethany Reservoir Pumping Plant and Surge Basin (Alternative 5)
      - Bethany Reservoir Aqueduct (Alternative 5)
      - Bethany Reservoir Discharge Structure (Alternative 5)

   c. Coordination with the affected agency during the construction of the following shaft site improvements:

      - New Hope Tract, Staten Island, and Mandeville Island (central alignment alternatives)

- New Hope Tract, Canal Ranch Tract, King Island, and Upper Jones Tract (eastern alignment alternatives); and
- New Hope Tract, Canal Ranch Tract, King Island, Upper Jones Tract, and Union Island (Bethany Reservoir alignment).

d. Notifications in the multiple languages spoken in the Delta for the public, emergency providers, cycling organizations, bike shops, and schools, the U.S. Coast Guard, boating organizations, marinas, city and county parks departments, and California Department of Parks and Recreation, where applicable, describing construction activities that could affect transportation and water navigation.

e. Alternate access routes via detours, including Americans with Disabilities Act-compliant facilities where required to maintain continual circulation for local travelers in and around construction zones and site access driveways, including bicycle riders, pedestrians, and boaters, where applicable.

f. Scheduling for oversized material deliveries to the work site and haul routes during off-peak times.

g. Provisions that direct haulers are required to pull over to the side of the road if an emergency vehicle is approaching in either direction. If an emergency vehicle is approaching on a narrow two-way roadway, specify measures to require that construction vehicles use appropriate maneuvers to allow continual access for emergency vehicles at the time of an emergency.

h. To eliminate potential hazards from a geometric design, DWR will require that geometric design plans that meet geometric standards be prepared and approved by the applicable transportation entity (i.e., Caltrans, county, or city public works department) for the major road improvements included in the conceptual design of the project alternatives.

i. Scheduling closures for road and bridge improvements to night-time hours and limit closure periods to reduce traffic effects associated with detours.

j. Designing park-and-ride lot entrances and exits to avoid construction employee queuing on higher volume roadways, providing adequate turn lanes and signage or signals (if needed) for lot entrances and exits and scheduling park and ride lot arrivals and departures to reduce employee traffic volumes during peak morning and evening commute periods.

k. To reduce potential conflicts with existing land uses, DWR will require that staged construction plans, roadway closure reports, and detour plans be prepared for major road improvements and approved by the applicable transportation entity (i.e., Caltrans, county, or city public works department).

l. A project information website in the multiple languages spoken in the Delta will be developed to inform residents, business owners, and farmers of provisions that have been implemented to reduce VMT in the project study area and forthcoming construction in coordination with events and harvest activities in the Delta.

m. The contractor will coordinate with emergency responders to identify routes traditionally used by voluntary responders to access fire stations, and emergency responders to access the communities from the police and fire stations.

n. During construction, each week, the contractor will coordinate with emergency responders, including ambulance dispatchers, to identify road construction and high-volume construction traffic events (e.g., during hours of material deliveries).

o. During road construction, the contractor will have designated staff monitor emergency response calls with immediate communications with construction crews at every site to facilitate movement of emergency responders.

p. The contractor will post on a weekly basis information on the project information website in the multiple languages spoken in the Delta to inform residents, business owners, and farmers of daily road construction and high-volume construction traffic events (e.g., during hours of material deliveries).

q. The contractor will either maintain at least one shoulder along existing access roads to be free of debris or provide detours during short-term, overnight closures (maximum of 2 nights per week) to allow access of fire engines, ambulances, and police cars that need to travel at high speeds.

r. During road construction, the contractor will have several steel plates and equipment available at all times to cover trench sites when there is no construction activity (i.e., after hours or weekends) to provide access for emergency responders over temporary excavations.

Mitigation Impacts

Compensatory Mitigation

The CMP described in Appendix 3F, *Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources*, does not function as mitigation for transportation-related impacts from project construction or operations. However, construction and other activities related to its implementation could result in transportation-related impacts by generating vehicle trips and VMT.

Compensatory mitigation would occur on Bouldin Island, three ponds along I-5, and channel margin and tidal restoration sites within the North Delta Arc, as described in Appendix 3F. Similar to all project alternatives, the location of the compensatory mitigation sites relative to where the construction workforce is projected to live would also result in the average VMT per construction employee to exceed the regional average of 22.5 miles on a daily basis. Project level analysis on Bouldin Island and three ponds along I-5 considers effects of construction in years 1 through 3. Average VMT per construction employee for CMP construction would be approximately 29.4 with a total estimated VMT of 792,600 and 29,540 construction employee trips. Although trips associated with operation and maintenance of compensatory mitigation would be infrequent, average VMT may exceed the regional average of 22.5 miles on a daily basis depending on the origin of the trip. Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* would reduce the severity of this impact by implementing transportation measures that would decrease the total amount of construction employee travel on Delta roadways, incentivize carpooling and vanpooling, and establish state, regional, or local agencies coordination to construct the park-and-ride lots and roadway improvements that are designed to minimize VMT-related transportation issues. However, the Mitigation Measure TRANS-1 would not fully reduce VMT impacts of the compensatory mitigation construction. The combination of VMT impacts from implementing the compensatory mitigation

with the VMT impacts of the project alternatives would be significant and unavoidable with mitigation.

Other Mitigation Measures

Some mitigation measures would involve construction activities that would require construction employees to commute to work sites. This construction activity would have the potential to increase average VMT per construction employee versus regional averages. The mitigation measures with potential to result in increased average VMT per construction employee are Mitigation Measures BIO-2c: *Electrical Power Line Support Placement* and AG-3: *Replacement or Relocation of Affected Infrastructure Supporting Agricultural Properties*. These measures would potentially add VMT in the study area that may not occur at the proposed facility construction sites or park-and-ride facilities, thereby potentially increasing VMT when combined with the project alternatives. Temporary increased average VMT per construction employee versus regional averages resulting from implementation of mitigation measures would be similar to construction effects of the project alternatives in certain construction areas and would contribute to increased average VMT impacts of the project alternatives but would have only a minor effect on average VMT because measures would be incorporated into the construction process and would occur in construction footprints. This increase would be a temporary but long-term and would exceed the regional VMT average over the course of the construction period and implementation of mitigation measures for Delta Conveyance Project facilities. Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* would reduce the severity of this impact by implementing transportation measures that would decrease the total amount of construction employee travel on Delta roadways, incentivize carpooling and vanpooling, and establish state, regional, or local agency coordination to construct the park-and-ride lots and roadway improvements that are designed to minimize VMT-related transportation issues. Therefore, implementation of other mitigation measures is unlikely to result in increased average VMT versus regional averages and the impact of increased average VMT would not be substantial.

Overall, the impact from increased average VMT per construction employee versus regional averages from construction of compensatory mitigation and implementation of other mitigation measures, combined with the project alternatives, would not change the impact conclusion for Impact TRANS-1 of significant and unavoidable with mitigation.

Impact TRANS-2: Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System

All Project Alternatives

As discussed in Section 20.1.1, LOS is no longer used for evaluating project traffic impacts under CEQA with the passage of SB 743 and adoption of the amended CEQA Guidelines implementing SB 743 (CEQA Guidelines § 15064.3). CEQA Guidelines Section 15064.3, subdivision(c) requires VMT as the primary metric for analyzing the significance of transportation impacts for draft environmental impact reports issued after July 1, 2020.

As a state agency, DWR is not subject to local policies regarding LOS. Therefore, analysis contained in Appendix 20A (existing conditions 2020) and Appendix 20C (future conditions 2040) are for informational purposes only.

Construction of all project alternatives would not conflict with current applicable transportation system programs, plans, or ordinances as they pertain to land use (population and employment), multimodal transportation (transit, bicycle, and pedestrian), and goods movement (trucks, rail, and marine), from the following regional councils of government: SACOG, SJCOG, or Metropolitan Transportation Commission (MTC). The relevant transportation system plans are the following.

- *2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS)* (Sacramento Area Council of Governments 2019).
- *2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)* (San Joaquin Council of Governments 2018).
- *Plan Bay Area 2040—Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017–2040* (Metropolitan Transportation Commission and Association of Bay Area Governments 2017).

The project alternatives' construction improvements identified for the transportation system would be coordinated with the applicable transportation agencies in the study area to address local transportation policies (i.e., LOS and safety) to facilitate construction activities, logistically integrate activities to minimize disruption to other land uses and traffic and provide for the efficient flow of construction materials to each site. Based on results in Appendix 20A, the project alternatives would be substantially consistent with local transportation polices because transit, rail, and marine services would not be affected. The project alternatives would only affect a relatively small number of roadway segments with temporary higher traffic volumes during construction periods.

Because the construction period would extend over multiple years and involve a large area, the potential direct and indirect impacts of project construction and operation on the circulation system are addressed in the following subsections. Potential effects from field investigations are considered for construction impacts but would generally have negligible effects on the circulation systems because of the limited nature of these activities.

The project alternatives would not affect air travel because none of the project facilities or construction activities would result in changes to air traffic or take-off or landing conditions. The Twin Cities Complex located between I-5, Twin Cities Road, Dierssen Road, and Franklin Boulevard would not affect Franklin Field operations because it is not close enough to affect runway or air traffic operations. Other public and private airports shown on Figure 20-5 would also not be affected for the same reasons. Therefore, the potential for effects on air traffic is not addressed further.

Construction

Transit Service

Transit agencies serving the transportation study area with bus services include Sacramento Regional Transit, San Joaquin Regional Transit District, Tri Delta Transit, South County Transit (SCT), and Rio Vista Transit. Some of these transit operators also provide short-distance intercity service. Because the existing transit lines serving the Delta have sufficient capacity to serve the small number of construction employee-related work trips and construction-related activities would not directly conflict with any transit, polices, ordinances or programs, the potential transit effect would be minor.

A small number of construction employees are expected to use existing intra-city and intra-county transit services that are provided in the Delta during the construction period because transit

services do not serve the transportation system near the park-and-ride lots identified for the central and eastern alignments (five locations for Alternatives 1, 2a, 2b, and 2c, and four locations for Alternatives 3, 4a, 4b, and 4c) or the Bethany Reservoir alignment (two locations for Alternative 5). These park-and-ride facilities are designed to capture all construction site vehicles because the construction sites themselves will be designed to not provide adequate on-site parking for the workforce. The park-and-ride facilities would be designed to provide adequate parking for employee vehicle traffic near the regional freeway system. Alternative fuel vehicles will be used to transport employees to and from certain work sites from the park-and-ride facilities. These park-and-ride facilities would reduce the number of vehicle trips traveling to and from work sites and therefore the overall distance of daily VMT and the expected limited use of transit services.

As shown in Appendices 20A and 20C, construction activities in the study area would increase traffic volumes on some of the roadway segments and intersections. Accordingly, construction of project alternatives could have a minor effect on study area transit routes including Sacramento Regional Transit, San Joaquin Regional Transit, Tri Delta Transit, and South County Transit/Link. The potential effect on transit ridership service would be less than 1% because of the limited availability of existing transit to the rural project work sites and park-and-ride facilities. Construction employees would drive to project park-and-ride lots and take alternative fuel vehicles or in limited cases drive directly to project construction sites, depending on the construction site. Overall, there would be no conflict with transit programs that establish the number of transit routes and headways of transit service, and these facilities and routes would not be affected by construction activities and would continue to serve residents and businesses in the project area.

Table 20-6 summarizes the transit service routes potentially affected by project alternatives.

Table 20-6. Bus Routes Potentially Affected by Project Alternative Construction

Affected Transit Service	Roadway Operated on and Location	Estimated Trips per Day	Construction Impacts on Bus Routes
Sacramento Regional Transit	Blue Line to Cosumnes River College, Local Bus Lines 114, 56, and 11	Up to 30 trips per weekday (15 in each direction)	Marginal, if any for construction employees traveling to and from construction sites west of I-5 in Sacramento County and SacRT.
San Joaquin Regional Transit District	Hopper Routes 90, 96 and 97 and Express Routes 43 and 47	Up to 40 trips per weekday (20 in each direction)	Marginal, if any for construction employees traveling to and from construction sites west of I-5, on Highway 4 and north of I-205 in San Joaquin County and SJRTD.
Tri Delta Transit	Bus Routes 391. 393 and 285	Up to 10 trips per weekday (5 in each direction)	Marginal, if any for construction employees traveling to and from construction sites southeast of Eastern Contra Costa County on Byron Highway and Tri Delta Transit.
South County Transit	SCT/Link Delta Route	Up to 4 trips per weekday (2 in each direction)	Marginal, if any—deep bore tunnel construction below the roadway. A shaft location is identified adjacent to SR 12 and South County Transit.

I- = Interstate; SacRT= Sacramento Regional Transit District; SCT = South County Transit; SJRTD = San Joaquin Regional Transit District; SR = State Route.

Bicycle and Pedestrian Active Transportation Plans

Construction of the project alternatives would add additional vehicles to the project area and has the potential to affect existing bicycle routes and pedestrian sidewalks and crosswalks along routes to and from park-and-ride facilities and construction work sites identified in local bicycle and pedestrian circulation plans. The following plans were reviewed to determine the existing and proposed bicycle and pedestrian facilities in the study area.

- County of Sacramento *Active Transportation Plan Update* (County of Sacramento 2021:1–3, 74–124)
- *San Joaquin Council of Governments Regional Bicycle, Pedestrian and Safe Routes to School Master Plan* (San Joaquin Council of Governments 2012)
- City of Stockton *Greater Downtown Active Transportation Plan* (City of Stockton 2017:1–2, 36–39)
- *Contra Costa County Active Transportation Plan* (County of Contra Costa 2021:92–113, 154–161)
- *Great California Delta Trail Master Plan* (Delta Protection Commission 2022)

Construction of project alternatives would not directly or permanently affect any of the current bicycle or pedestrian facilities in the study area because existing facilities are largely avoided, and proposed trail sites would be avoided by facility siting and construction activities. Relatively minor temporary effects from construction at Bethany Reservoir (Alternative 5) on the California Aqueduct Trail would occur and potentially the proposed Isleton-Stone Lake Trail in the vicinity of Hood could be temporarily affected by construction activities. These effects are expected to be temporary and relatively minor because of the location of project alternative facilities, common construction management features that would be in place at construction sites, and because none of the project alternative construction activities would conflict with implementation of pedestrian or trail programs, plans, policies or ordinances. Implementing construction management and transportation management elements to minimize disruption to bicycle and pedestrian facilities would ensure that the construction of the project alternatives does not conflict with locally adopted and active transportation plans in Sacramento County, San Joaquin County, and eastern Contra Costa County contained in the Sustainable Communities Strategy.

Rail Traffic

The project alternatives propose to use rail to transport material between the Twin Cities Complex, the Lower Roberts Island Launch Shaft (eastern alignment), and the Southern Complex (central and eastern alignments) to reduce the amount of truck traffic on local and regional roadways. Construction sites would use existing UPRR facilities near the Twin Cities Complex and Southern Complex (central and eastern alignments) or either BNSF or UPRR facilities near Lower Roberts Island (eastern alignment). The project alternatives would also construct rail spurs to deliver rail cars to the construction sites.

The use of rail transport for project alternatives could potentially affect commuter traffic, recreational vehicles, and seasonal farming operations at rail crossings because of increased use of these rail facilities. In addition, the use of rail transport on UPRR rail lines, BNSF rail lines, or new railroad spur lines could potentially affect existing passenger and goods movement rail operations and would need to be coordinated with existing rail operations.

However, the proposed use of rail transport would offset or reduce a large number of truck hauling trips on local roadways to the Southern Complex that would also reduce the total amount of construction traffic effects and GHG emissions in this area. Therefore, the overall construction impact on local traffic patterns from use of rail to transport materials is expected to be relatively minor and would reduce construction traffic impacts on Delta roadways compared to the increase in traffic that would be needed to haul materials with trucks.

To eliminate potential rail conflicts caused by project alternatives, all UPRR and BNSF rail crossings that are used by project-related traffic (cars and trucks) would be reviewed during the design phase of the Delta Conveyance Project to ensure that gate crossing arms and warning equipment are provided where a substantial number of project vehicles would use the facility. Rail transport operations would also be coordinated with and approved by UPRR and BNSF to ensure that the transportation of materials does not result in increased delays for existing passenger and goods movement rail operations.

In addition to transporting materials by rail, the project alternatives would require use of construction delivery trucks on study area roadways with rail crossings used by passengers (Amtrak, ACE, and SacRT) and freight (UPRR and BNSF). These designated haul routes would be reviewed as part of the final design to minimize potential impacts to rail traffic by construction-generated truck traffic at these study area railroad crossings.

- Franklin Road north of Hood-Franklin Road
- Point Pleasant Road east of Franklin Road
- Lambert Road east of Franklin Road
- Twin Cities Road east of Franklin Road
- Inland Drive north of SR 4
- Lower Jones Road north of SR 4
- Byron Road north of Sunset Road
- Delta Road east of Knighten Avenue
- Knighten Avenue north of Delta Road
- Sellers Avenue south of Wildhorse Road
- Cypress Road east of Main Street
- Rose Avenue north of Main Street
- Big Break Road north of Main Street
- Sand Creek Road west of O'Hara Avenue
- Central Blvd west of O'Hara Avenue
- Oak Street west of O'Hara Avenue
- Balfour Road west of Brentwood Boulevard
- Sellars Avenue south of Brentwood Boulevard
- Marsh Creek Road east of Sellars Avenue

- Hoffman Lane west of Byron Highway
- Holway Drive west of Byron Highway
- Camino Diablo west of Byron Highway
- Byron Hot Springs Road south of Byron Highway
- Herdlyn Road east of Byron Highway
- Lindeman Road north of Byron Highway
- Henderson Road north of Byron Highway
- Wicklund Road north of Byron Highway
- Reeve Road north of Byron Highway
- Grant Line Road east of Byron Highway
- Corral Hallow Road north of Eleventh Street

These potential rail conflicts would be minor because coordination with existing rail operations would occur, rail gate crossings would be evaluated for safety, use of rail to haul project alternative materials would reduce the potential for rail conflicts with construction traffic, and park-and-ride lots would reduce the potential for construction employee traffic on Delta roadways/rail crossings. Therefore, the potential for conflicts with current railroad plans and programs would be minor.

Marine Traffic

Under the project alternatives, tugboats and barges would be used to a limited extent during the latter part of intake construction on the Sacramento River. The overall use of tugboats, barges, and other construction vessels would be minimal during the construction phase. In general, not including a few days of mobilization and demobilization, tugboats, barges, and other construction vessels would be used for up to 12 days at Intake A, up to 30 days at Intake B, and between 16 days (1,500 cubic feet per second [cfs] capacity) and 21 days (3,000 cfs capacity) at Intake C at the end of the construction period to excavate the river bottom and place riprap along the levee (Appendix 23B, *Air Quality and GHG Analysis Activity Data*). Conflicts with marine transportation programs for the Delta would not occur because of the limited use of barges and tugboats for construction. It is anticipated that barges would be used for a short period of time at the intakes to deliver riprap rock for placement and to remove dredged spoils following removal of the cofferdam at the end of the construction period. No barge landings would be required. The barges with a crane and the riprap rock would be anchored at the intake sites for several days while the rock would be placed in a manner similar to flood management repairs of existing levees. Limited barging would also be used to perform the pile installation method test program and barges, ships, or boats may be used to conduct overwater borings and testing.

Because of the relatively minor use of tugboats and other marine vessels for project alternative construction, the potential for effects on Sacramento River draw bridge operation would be minor at the seven bridges identified in Table 20-1. Therefore, the overall impact on marine traffic and commercial barge use and programs, plans, or policies would not be substantial because most of the commercial barge activity in the Delta travels from the San Francisco Bay to the Sacramento area via the Sacramento River Deep Water Ship Channel (Delta Protection Commission 2012). Accordingly, the marine transport and support needed for the project alternatives would avoid direct effects on

this commercial barge traffic and the programs that support marine transportation because project facilities would not be located along the Sacramento River Deep Water Ship Channel and no Delta waterways would be closed to boat traffic at any time due to construction of this project. For example, the partial closure of Italian Slough, near the Clifton Court Forebay, would occur near the southwestern end of the slough and would not affect boat traffic to and from marina facilities near Clifton Court Road.

Operations and Maintenance

Operations and maintenance of project alternative facilities is not expected to conflict with programs, plans, ordinances, or policies related to study area circulation and would not directly or indirectly affect transit services, roadway traffic volumes, bicycle or pedestrian facilities, or rail or marine services or facilities because operating and maintaining the conveyance facilities would require only minor daily vehicle trips (between 20 and 40 per day) once facility construction is completed (Appendix 23B).

CEQA Conclusion—All Project Alternatives

The project alternatives would add construction traffic (vehicles, trucks, rail, and a limited number of tugboats and barges) to the project area but would not substantially conflict with applicable transportation system programs, plans, or ordinances for the project area because transit, bicycle and pedestrian, rail, and marine facilities and services would not be substantially affected. The project alternatives would only affect a relatively small number of roadway segments with temporary higher traffic volumes during construction periods.

Potential temporary impacts on transit, bicycle/pedestrian facilities, rail service (freight and commuter), and marine traffic and conflicts with the programs, policies, and ordinances that guide these portions of the transportation circulation system would be less than significant because only minor conflicts would occur and DWR is not subject to local programs, policies, and ordinances.

Mitigation Impacts

Compensatory Mitigation

The CMP described in Appendix 3F does not function as mitigation for transportation-related impacts from project construction or operations. However, construction and other activities related to its implementation could result in transportation-related impacts by generating vehicle trips.

Compensatory mitigation would be on Bouldin Island, three ponds along I-5, and channel margin and tidal restoration sites within the North Delta Arc, as described in Appendix 3F. Constructing and operating the compensatory mitigation sites would contribute some additional VMT and roadway traffic during construction, but the additional trips associated with these restoration sites would be minor because of the relatively small size of these features, the nature and the amount of construction equipment needed for habitat restoration, and the locations of habitat restoration. Construction of the compensatory mitigation combined with the project alternatives would not conflict with applicable transportation system programs, plans, or ordinances. Therefore, implementation of the CMP would not change the overall project impact conclusion of less than significant.

Other Mitigation Measures

Other mitigation measures would not conflict with a program, plan, ordinance, or policy addressing the circulation system because existing transit lines serving the Delta have sufficient capacity to serve the small number of construction employee-related work trips. There would be no conflict with circulation system programs that establish the number of transit routes and headways of transit service and these facilities and routes would not be affected by implementation of other mitigation measures and would continue to serve residents and businesses in the project area. Similarly, there is low potential for mitigation measures to substantially affect bicycle and pedestrian facilities and services, rail service and marine traffic plans, programs, policies, and ordinances because most mitigation measures would occur at existing construction sites, would involve minor construction traffic, and would not directly conflict with transportation plans, programs, or policies.

Overall, the impact of conflicting with a program, plan, ordinance, or policy addressing the circulation system from construction of compensatory mitigation and implementation of other mitigation measures, combined with the project alternatives, would not change the impact conclusion of less than significant.

Impact TRANS-3: Substantially Increase Hazards from a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)

All Project Alternatives

Project Construction

Constructing the project alternatives would not substantially increase traffic hazards related to sharp curves, dangerous intersections, or other roadway design features because the major roadway improvements listed at the beginning of this section (Section 20.3.3.3, *Impacts of the Project Alternatives on Transportation*) would be incorporated into the conceptual design of the project alternatives and would be designed in a manner that would not introduce new circulation system features that would increase geometric design feature hazards. New roadway improvements would be designed to meet state and local requirements and include transportation management features to address the potential need for temporary or full roadway and traffic detour plans and other safety measures during roadway improvement construction.

The major road improvements included in the project alternatives would be designed to meet *2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 6,* effective March 2021 (California Department of Transportation 2021b) and *California Highway Design Manual* (California Department of Transportation 2021c) uniform standards and specifications for the local and regional transportation systems. Prior to construction, Geometric Approval Drawings (GADs) would be developed by DWR for review, comment, refinement, and approval in consultation with the applicable transportation entities, including Caltrans for state and federal roadway and intersection (vehicles, pedestrians, and bicyclists) facilities, and local agencies for local roadway and intersection (vehicles, pedestrians, and bicyclists) facilities.

The project alternatives would require a large volume of materials to be hauled to the project construction sites from Sacramento County, San Joaquin County, Contra Costa County, or Alameda County, increasing the number of trucks and construction equipment using the regional and local transportation system in the study area. Project-related heavy construction traffic on local roadways

during the construction period would increase the potential for safety hazards such as conflicts with commuter traffic, recreational vehicles, and seasonal farming operations. These effects would primarily occur on regional Caltrans freeways, Caltrans interchanges, local roadways, and local intersections serving the study area. Although the project alternatives incorporate considerable roadway, access road, bridge, intersection improvements, and park-and-ride lots to reduce the potential for construction traffic safety hazards on haul routes and project feature site access roads, the volume of construction traffic at some study area locations has the potential to create traffic safety issues with resident and commuter traffic, recreational vehicles, and seasonal farming operations.

Some of the project area locations where traffic conflicts and safety conditions may occur include access driveways for tunnel maintenance shaft construction sites on New Hope Tract (all alternatives); Staten Island and Mandeville Island (central alignment alternatives); Canal Ranch Tract, King Island, Upper Jones Tract, and Terminous Tract (eastern alignment and Bethany Reservoir alternatives); and Union Island (Bethany Reservoir alternative). Traffic safety hazards from ingress and egress of construction trucks, equipment, and deliveries could occur at these construction sites; commuters, farming operations, and recreational drivers would experience new construction traffic activity and turning movements on roadways that have not historically experienced this type of construction traffic.

Similarly, traffic safety hazards could occur on the primary haul routes and where new or improved construction access roads intersect with existing roadways at the following locations.

- Twin Cities Road/I-5 ramps and Hood-Franklin Road/I-5 ramps (all alternatives) where a range of between 35 and 90 construction trucks would access the unsignalized interchanges on I-5 during the morning and evening peak hours to travel to and from Twin Cities Complex located east of the freeway.
- Lambert Road/Stone Lake National Wildlife Refuge (all alternatives) at the Stone Lakes National Wildlife Refuge hunting access road near Snodgrass Slough that would intersect with a construction haul route where a range of between 40 and 80 construction trucks would use Lambert Road during the morning and evening peak hours to travel to and from the intake haul road.
- Lambert Road/Intake haul road/Hood-Franklin Road (all alternatives) at a new haul route intersection where a range of between 40 and 80 construction trucks would cross Hood-Franklin Road and 4 to 8 transit vehicles from the Hood-Franklin park-and-ride facility would use the intake haul road during the morning and evening peak hours.
- Lambert Road/Franklin Road and Dierssen Road/Franklin Boulevard (all alternatives) at intersections where a range between 35 and 90 construction trucks during the morning and evening peak hours would travel between the concrete batch plant and tunnel shaft construction sites.
- SR 12 at Bouldin Island (Alternatives 1, 2a, 2b, and 2c) or Terminous Tract (Alternatives 3, 4a, 4b, 4c, and 5) where a new access road would intersect with a heavily traveled regional facility where a range of between 100 and 220 construction trucks and vehicles would use SR 12 during the morning and evening peak hours.
- Mountain House Parkway/Byron Highway and Mountain House Parkway/West Grant Line Road (Alternative 5), where a range of between 110 and 150 construction trucks and vehicles would use Mountain House Parkway during the morning and evening peak hours.

Potential safety hazards on these haul routes and at new intersections with existing roadways could occur because traffic conditions would involve automobiles and trucks mixing with large construction equipment and trucks. These conditions could increase the potential for traffic accidents and travel delays at these locations. The potential also exists for delays or safety hazards for recreationists and for farm equipment and trucks associated with agricultural operations at some locations.

Project construction along construction haul routes would also necessitate widening or replacing bridges and an interchange at several locations to accommodate construction traffic, including the following.

- Hood-Franklin Road/Snodgrass Slough Bridge (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5) construction phasing for bridge widening to accommodate a range between 40 and 80 construction trucks per day during peak morning and evening hours on the intake haul road.
- New SR 12 interchange on Bouldin Island to access launch shaft site (Alternatives 1,2a, 2b and 2c) to accommodate between 80 and 150 construction trucks per day during peak morning and evening hours
- SR 12/Farm Road Bridge and Little Potato Slough Bridge (Alternatives 1, 2a, 2b, and 2c) construction phasing of bridge improvements on a heavily traveled regional facility to accommodate a range of between 100 and 220 construction trucks during peak morning and evening hours.
- New bridge crossing Burns Cut for construction access road at Lower Roberts Island/Port of Stockton (Alternatives 3, 4a, 4b, 4c and 5) to accommodate between 75 and 125 construction trucks per day during peak morning and evening hours.
- Byron Highway bridges for realigned roadway and UPRR tracks bridge (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c and 5) construction phasing of bridge improvements on a heavily traveled facility to accommodate a range between 100 and 200 construction trucks during peak morning and evening hours.
- New Bridge on Mountain House Road bypass off of Grant Line Road cross a small stream (Alternative 5) to accommodate between 100 and 150 construction trucks per day during peak morning and evening hours.

These bridge and intersection improvements and a number of other bridge improvements that would not affect public roadways are summarized in Table 20-7, which describes the bridge improvement and construction phasing or bridge closures required at each location. These bridge facility improvements could create traffic safety issues related to the presence of construction vehicles at bridge locations and the potential need for reduced lane widths and short-term overnight lane closures or detours at some locations. Traffic hazards could include traffic accidents involving private vehicles and construction vehicles and employees where local traffic is required to mix with construction traffic or where private vehicles are required to use road shoulders or short-term detours. In addition, vehicle queuing at construction sites may result in increased traffic on other roadways related to avoidance of bridge construction sites that may result in the potential for more traffic on local roadways.

Table 20-7. Bridge and Interchange Construction Effects on Local Traffic Conditions

No	Alternatives	Location	General Scope of Work	Construction Sequencing and Bridge Closures
1	1, 2a, 2b, 2c, 3, 4a, 4b, and 4c	Intake Haul Road between Intake C-E-2 & C-E-3 over small drainage channel	New 32-ft wide concrete bridge plus concrete shoulder barriers.	New bridge on dedicated haul road crossing small drainage channel would have no public impacts at location on private project roadway.
2	All Alternatives	Hood Franklin Road over Snodgrass Slough	Widening existing 32-ft wide concrete bridge crossing Snodgrass Slough to 54-ft wide concrete structure plus concrete shoulder barriers.	Most of the roadway work will occur outside of the current roadway. Connections to the widened bridge and the Intake Haul Road could occur over two to three 8-hour periods. This could occur at night from 9 pm to 5 am to avoid disruption to community traffic; or during the daytime with detours through Walnut Grove or Freeport to avoid nighttime noise to the Hood community.
3	1,2a,2b and 2c	Bouldin Island Interchange	New interchange to provide access to Bouldin Island from SR 12. Improvements will include new 40-ft wide concrete bridge structure plus concrete shoulder barriers over SR 12 plus four 24-ft wide paved ramps off SR 12 to access overpass.	Most of the roadway work will occur outside of the current roadway. Connections to construct the bridge segments over SR 12 could occur over two to four 8-hour periods. This could occur at night from 9 pm to 5 am to avoid disruption to traffic on SR 12 with detours to SR 4 or Twin Cities Road.
4	1,2a,2b and 2c	SR 12 over Potato Slough	Widening existing 40-ft wide concrete/steel bridge to 76-ft wide with two 12 ft lanes and two 8 ft shoulders for a crossing Little Potato Slough	The new bridge structure would be constructed parallel to the existing bridge and would be a higher bridge to clear the vessel passage requirements on Little Potato Slough. The new bridge would have four 12 ft lanes and two 8 ft shoulders. Most of the roadway work will occur outside of the current roadway. Connections to the new alignment would occur over four to six 8-hour periods.

No	Alternatives	Location	General Scope of Work	Construction Sequencing and Bridge Closures
5	1,2a,2b, and 2c	SR 12 over farm road east of Bouldin Island access road	Widening existing 44-ft wide concrete bridge to 64-ft wide bridge plus concrete should barriers crossing farm road Widening to occur along both sides of existing bridge.	Most of the roadway work will occur outside of the current roadway. Connections to the widened bridge over the farm road could occur over one to two 8-hour periods. This could occur at night from 9 pm to 5 am to avoid disruption to traffic on SR 12 with detours to SR 4 or Twin Cities Road. Construction would require traffic closures on the farm road that would be coordinated with the land owners. If this bridge is not constructed until the new Bouldin Island interchange, access to the lands could be provided through the new interchange.
6	1, 2a, 2b and 2c	Mandeville-Bacon Island Connection crossing Connection Slough	New 32-ft wide concreate/steel bridge plus concrete shoulder barriers as a moveable bridge.	The new bridge would be constructed on a private road and parallel to existing bridge. Only impacts will be tying connection road to existing roads on the two islands. Coordination will occur with local farming operations.No public impacts.
7	1, 2a, 2b and 2c	Bridge over the BSNF Rail Road and Mokelumne Aqueduct near Holt	New 24-ft wide concrete/steel bridge plus concrete shoulder barriers.	The roadway and bridge construction will not affect public roads except for two connections to South Holt Road which could be completed over two to three 8-hour periods. This could occur at night to avoid disruption to local traffic, including farming activities and recreationists. The bridge over BNSF railroad could disrupt rail traffic patterns and would need to be coordinated with BNSF.
9	3, 4a, 4b, 4c and 5	Port of Stockton-Lower Roberts Island connection crossing Burns Cut	New 67.5-ft wide concrete bridge plus concrete shoulder barriers serving both access road and new rail extension into Lower Roberts Island.	The roadway and bridge construction will not affect public roads except for connection to access roads used by Port of Stockton and crossing of Burns Cutoff Road which could be completed over three to four 8-hour periods. This could occur at night to avoid disruption to local traffic, including Port of Stockton activities and farming activities, recreationists, and residents of Windmill Cove. On Lower Roberts Island, a detour could be provided on West Jacobs and North Holt Road for farming activities, recreationists, and residents of Windmill Cove.

No	Alternatives	Location	General Scope of Work	Construction Sequencing and Bridge Closures
10	3, 4a, 4b, 4c and 5	Lower Roberts Island Launch Shaft-Lower Roberts Island Material Depot Haul Road over small drainage channel	New 24-ft wide concrete bridge plus concrete shoulder barriers.	On new dedicated haul road crossing of a small drainage channel - no public road impacts as this is a private project roadway.
11	1. 2a. 2b, 2c, 3, 4a, 4b and 4c	Byron Highway Truck Bypass	New ~900 ft long x 40-ft wide concreate flyover bridge plus concrete shoulder barriers connecting Byron Tract to North Bruns Way over Byron Highway and the UPRR.	Construction of the widened Byron Highway could occur outside of the existing roadway except for connections to the existing road over three to four 8-hour periods. Construction of the bridge flyover over Byron Highway would require closure of the road for four to six 8-hour periods. Construction of the bridge flyover over UPRR would require closure of the railroad for two to four 8-hour periods. Construction over UPRR would need to be coordinated with rail traffic patterns.
11A	1, 2a, 2b, 2c, 3, 4a, 4b and 4c	Byron Highway Truck Bypass	New 32-ft wide concreate bridge plus concrete shoulder barriers connecting Byron Tract to North Bruns Way over re-aligned Byron Highway.	Depending on sequence of work between the bridge and the re-aligned highway, construction of the bridge over the re-aligned Byron Highway would require closure of the Byron Highway for three to four 8-hour periods. Construction occurs outside of the existing roadway except for connections to the existing road over three to four 8-hour periods.
12	1, 2a, 2b, 2c, 3, 4a, 4b and 4c	Byron Highway Realignment at UPRR Crossing	New 40-ft wide concrete/steel bridge plus concrete shoulder barriers over UPRR.	Construction of the bridge overpass over Byron Highway and UPRR would require closure of the road and/or railroad for three to four 8-hour periods.
13	5	Byron Hwy - Lindemann Road Intersection	New 40-ft wide bridge plus concrete shoulder barriers over UPRR and Byron Highway.	Construction of the bridge overpass over Byron Highway would require closure of the road for two to four 8-hour periods. Construction of the bridge overpass over UPRR would require closure of the railroad for two to four 8-hour periods.

No	Alternatives	Location	General Scope of Work	Construction Sequencing and Bridge Closures
14	5	Mountain House Road Bypass off West Grant Line Road	New 40-ft wide concrete bridge with shoulder barriers over small stream.	The bridge would be constructed along with a bypass road so no disruption to existing traffic would occur. Minor disruption to Mountain House Road would occur when bypass is tied into exiting Mountain House Road and at West Grant Line Road when bypass traffic circle is constructed at the new intersection.
15	5	Mountain House Shaft Access Road South of Bethany Complex Batch Plants crossing BBID channel	New 40-ft wide concrete bridge with concrete shoulder barriers over BBID channel.	Bridge constructed along with new private dedicated access road serving Bethany Complex so no disruption to existing public traffic would occur. No public impacts.
16	5	Aqueduct Construction Road at Jones Penstocks	New temporary construction bridge crossing Jones Penstocks.	New temporary construction bridge crossing Jones Penstocks. No public road disruption as this is a private construction road. No public impacts.
17	5	Aqueduct Construction Road at Gas Line Crossing	New temporary construction bridge crossing Jones Penstocks.	New temporary construction bridge crossing gas line. No public disruption as this is a private construction road. No public impacts.

Project alternatives have also incorporated park-and-ride lots to transport construction employees to and from construction sites to reduce employee traffic on Delta roadways. These new park-and-ride lots could increase the potential for traffic safety hazards associated with construction employee vehicles and alternative fuel transit vehicles entering and exiting the following park-and-ride locations during morning and evening commute periods.

- Hood-Franklin Road/I-5 interchange ramps/park-and-ride driveways (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5) where a range between 150 and 400 construction employees would use this facility.
- Charter Way/Interstate 5 interchange ramps/park-and-ride driveways (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5) where a range between 75 and 275 construction employees would use this facility.
- SR 12/Rio Vista park-and-ride driveway (Alternatives 1, 2a, 2b, and 2c) where a range between 100 and 250 construction employees would use this facility.
- Camino Diablo/Byron Highway/park-and-ride driveways (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c) where a range between 80 and 225 construction employees would use this facility.

- Bethany Road/Henderson Road intersection/Park-and-Ride driveways (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c) where a range between 125 and 375 construction employees would use this facility.

Congestion analyses presented in Appendix 20A indicate that these park-and-ride facilities would substantially reduce the traffic volumes on Delta roadways, thereby reducing the potential for traffic safety hazards associated with construction traffic. However, despite the overall reductions in traffic volumes on Delta roadways, the potential exists for traffic safety hazards in the vicinity of park-and-ride lot entrances and exits because relatively large volumes of construction employee traffic will be concentrated at park-and-ride lots during the morning and evening commute periods. Based on the estimated employee trips shown in Figures 20-6 through 20-14, above, approximately 2,000 -2,500 daily employee trips would occur for all alternatives in multiple years during the construction period. The majority of those trips are expected to be to and from park-and-ride lots provided for construction employees arriving to and leaving work during morning commute periods. Because of the volume of trips that could occur at these locations, the potential for traffic safety hazards related to employees queuing at or tuning into lots would increase compared to existing conditions.

Overall, the construction activities associated with project alternatives could have localized effects on traffic safety conditions compared to existing conditions at multiple study area locations because of the expected increased construction traffic, the potential for conflicts at locations with new ingress and egress for construction vehicles, and the duration of construction activities at multiple conveyance facility sites during the construction period.

Operations and Maintenance

Operations and maintenance traffic for the project alternatives, once construction is completed, would be minor and would not create traffic safety hazards or conflicts with incompatible uses such as agricultural operations, farm equipment, recreational vehicles, or commuter traffic. Please refer to Appendix 23B for the traffic levels expected during operations and maintenance.

CEQA Conclusion—All Project Alternatives

Construction of the project alternatives would increase the amount of traffic generated by construction employees using the road system in the study area. This increase in traffic from construction workers and other construction materials delivery traffic could create the potential for traffic safety hazards related to increasing the number of trucks and construction equipment operating with commuters, farming operations, and recreational users in areas adjacent to construction sites. Even with the circulation system improvements and park-and-ride lots described above, the amount of additional construction-related traffic on Delta roadways and the duration of construction activities at conveyance facility sites would increase the potential for traffic safety hazards as a result of conflicts between construction and vehicle traffic. This impact is considered significant because of the potential for construction traffic hazards at multiple construction sites, road improvement locations and bridges. The following TMP actions in Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* combined with the circulation system improvements provided as part of the project alternatives would reduce this impact to a less-than-significant level by providing specific actions and coordination with local agencies to reduce potential safety conditions at the locations identified above.

- Alternate access routes would reduce the potential for conflict with construction vehicles by providing protected routes for those vehicles. A major example is the intake haul road that would be constructed to connect the Twin Cities Complex with Intakes A, B, and C (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5).
- Scheduling for oversized material deliveries to the work site and haul routes during off-peak times would reduce the potential for conflicts with commuters, farming operations, and recreational users in areas adjacent to construction sites.
- Scheduling closures for road and bridge improvements to night-time hours and limit closure periods to reduce traffic effects associated with detours.
- Designing park-and-ride lot entrances and exits to avoid construction employee queuing on higher volume roadways, providing adequate turn lanes and signage or signals (if needed) for lot entrances and exits and scheduling park and ride lot arrivals and departures to reduce employee traffic volumes during peak morning and evening commute periods.
- Eliminating potential hazards from a geometric design by requiring geometric design plans be prepared and approved by the applicable transportation entity (i.e., Caltrans, county, or city public works department) that meet geometric standards on the major road improvements included in the conceptual design of the project alternatives. Examples of geometric standards include thermoplastic intersection striping, MUTCD stop signs, advanced warning signs, intersection illumination, and the potential need for temporary traffic control signals.
- Reducing potential conflicts with existing land uses would require DWR to prepare stage construction plans, roadway closure reports, and detour plans for major road improvements that would be approved by the applicable transportation entity (i.e., Caltrans, county, or city public works department) for widening or replacing bridges, construction of new interchanges, or improvements at existing intersections near construction sites. A project information website in the multiple languages spoken in the Delta would be developed to inform residents, business owners, and farmers of provisions that have been implemented to reduce traffic in the project study area and forthcoming construction in coordination with events and harvest activities in the Delta. This would minimize scheduling conflicts that could lead to safety conflicts.

Mitigation Measure TRANS-1: Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan

See description of Mitigation Measure TRANS-1 under Impact TRANS-1.

Mitigation Impacts

Compensatory Mitigation

Although the CMP described in Appendix 3F does not function as mitigation for transportation-related impacts from project construction or operations, its implementation could result in transportation-related impacts. Compensatory mitigation would be on Bouldin Island, three ponds along I-5, and at channel margin, and tidal wetland restoration sites within the North Delta Arc. Because of the isolated locations and limited geographical extent, construction, operations, and maintenance of mitigation areas would not substantially contribute to traffic safety hazards or conflict with agricultural or other incompatible uses. Therefore, implementation of the CMP would not change the overall impact conclusion of less than significant with mitigation.

Other Mitigation Measures

Some mitigation measures would involve the use of heavy equipment such as graders, excavators, dozers, and haul trucks that would have the potential to increase construction traffic safety hazards. The mitigation measures with potential to result in increased hazards are Mitigation Measure BIO-2c: *Electrical Power Line Support Placement*. This measure could increase the potential for traffic safety hazards in areas where it would be implemented because of the additional construction equipment and construction employee traffic the mitigation measure would create in localized portions of the study area. Temporary increased potential for transportation safety hazards resulting from implementation of mitigation measures would be similar to construction effects of the project alternatives in certain construction areas and would contribute to overall potential for transportation safety conditions associated with the project alternatives. An increase in construction worker and materials delivery traffic could create the potential for traffic hazards related to increasing the number of trucks and construction equipment operating on roadways with commuters, farming operations, and recreational users in areas adjacent to construction sites. Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* would reduce the potential for roadway hazards. Therefore, mitigation measures would contribute to but would be unlikely to result in a substantial increase in traffic safety hazards and would not create geometric design hazards.

Overall, the impact of increasing potential for geometric design and safety hazards from construction of compensatory mitigation and implementation of other mitigation measures, combined with project alternatives, would not change the impact conclusion of less than significant with mitigation.

Impact TRANS-4: Result in Inadequate Emergency Access

All Project Alternatives

Project Construction

Access to and egress from the project alternatives' construction sites would be designed to meet local and regional emergency access requirements. This includes procedures for construction area evacuation in the case of an emergency declared by county or other local authorities. The Project Emergency Response Plan that would be implemented for each project alternative requires on-site emergency response facilities and services at primary work sites during construction (Delta Conveyance Design and Construction Authority 2022a).

Based on the unique nature of much of the construction activities under the project alternatives, the construction contractor would provide the primary emergency response services. Therefore, temporary emergency response facilities, equipment, and trained personnel have been included in the plans for the main project construction sites (the intakes, tunnel launch shaft sites, and the Southern Complex or Bethany Complex), including helipads to evacuate injured persons at the tunnel launch shaft sites and intake sites. In addition to the primary response services provided by the contractor, it is planned that nearby local emergency response agencies would provide secondary backup emergency response services on an as-needed basis. Emergency Vehicle Access GADs would be developed by DWR for review, comment, refinement, and approval in consultation with the applicable city or county fire department.

The following are project area locations where local emergency vehicle access may be needed for secondary backup response services.

- Access driveways for tunnel maintenance shaft construction sites on New Hope Tract (all alternatives); Staten Island and Mandeville Island (central alignment alternatives).
- Canal Ranch Tract, Upper Jones Tract, and Terminous Tract (eastern alignment and Bethany Reservoir alignment alternatives).
- King Island Maintenance Shaft/Eight Mile Road (eastern alignment and Bethany Reservoir alignment alternatives).
- Union Island (Bethany Reservoir alternative).

Construction workers would not be allowed to use most Delta roadways because construction traffic would be limited to designated routes with adequate existing capacity and park-and-ride facilities would be used to transport workers to job sites. However, ingress and egress of construction trucks, equipment, and deliveries at construction sites may intermittently affect emergency response vehicles during periods when construction materials are delivered to construction sites or when haul trucks are required to access local Delta roadways. When this is required, emergency access and response times could be temporarily affected by increased traffic volumes on public roads near construction sites and the presence of large, slower-moving construction vehicles on emergency access routes. These construction traffic conditions could primarily occur on roadways in the vicinity of intake sites, the Twin Cities Complex, launch shaft sites, and the Southern Complex or Bethany Complex.

During construction of new or improved construction access roads, which may include bridge improvements, temporary lane closures or short-term overnight detours may affect emergency response vehicles at the following locations.

- Lambert Road/intake haul road/Hood-Franklin Road (all alternatives) at a new haul route intersection.
- Twin Cities Complex and Lambert Road Concrete Batch Plant on Twin Cities Road east of I-5.
- SR 12 at Bouldin Island (Alternatives 1, 2a, 2b, and 2c) or Terminous Tract (Alternatives 3, 4a, 4b, 4c, and 5).
- Mountain House Parkway/Byron Highway and Mountain House Parkway/West Grant Line Road (Alternative 5).

The construction of new park-and-ride lots could also result in temporary lane closures or short-term overnight detours that may affect emergency access at the following locations.

- Hood-Franklin Road/I-5 park-and-ride driveways (all alternatives).
- Charter Way/I-5 park-and-ride driveways (all alternatives).
- SR 12/Rio Vista park-and-ride driveway (Alternatives 1, 2a, 2b, and 2c).
- Camino Diablo/Byron Highway/park-and-ride driveways (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c).
- Bethany Road/Henderson Road intersection/park-and-ride driveways (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c).

The project alternatives incorporate substantial construction transportation improvements and emergency response provisions in the vicinity of project alternative construction sites that would reduce the potential effects on emergency vehicle access and emergency response times. For example, the Delta Conveyance EPRs (Delta Conveyance Design and Construction Authority 2022a, 2022b) include proposed design requirements to reduce effects on the community from construction-related traffic on Delta roadways (refer to Section 20.3.3.3 for a list of roadway improvements construction traffic limitations). These design requirements are intended to enhance public safety and maintain adequate emergency access.

Roadway and intersection improvements for the project alternatives would improve roadway conditions, include new access roads designed for safe construction vehicle ingress and egress, and use park-and-ride lots that would reduce employee trips on Delta roadways used to access construction sites. However, even with these access improvements, the number of locations where construction conflicts could occur, the amount of additional construction-related traffic on Delta roadways, and the duration of construction activities at these locations would increase the potential for emergency vehicle conflicts on roadways near the construction sites during the construction period.

Operations and Maintenance

No emergency access impacts are expected at project facilities once construction has been completed because of the relatively small number of daily employee trips required to operate and maintain facilities.

CEQA Conclusion—All Project Alternatives

Construction of the project alternatives would increase the potential for emergency access conflicts in the vicinity of construction sites at multiple locations and would increase the potential for emergency vehicle delays on roadways used to access construction sites or in the vicinity of proposed roadway improvements. Even with the roadway and access road improvements incorporated into the project alternatives, this potential is considered to be a significant impact because (1) a substantial increase in the volume of additional construction-related vehicle trips would occur on the regional transportation system and on Delta roadways during the construction period, and (2) up to 20 locations have the potential to experience emergency vehicle access delay due to ingress and egress of construction vehicles and roadway and bridge construction, depending on the project alternative. The following TMP actions in Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* would reduce this impact to a less-than-significant level by providing specific actions and coordination with emergency responders at construction sites to maintain adequate emergency access in the vicinity of construction sites.

- The contractor will coordinate with emergency responders to identify routes traditionally used by voluntary responders to access fire stations, and emergency responders to access the communities from the police and fire stations.
- During construction, each week, the contractor will coordinate with emergency responders, including ambulance dispatchers, to identify road construction and high-volume construction traffic events (e.g., during hours of material deliveries).

- During road construction, the contractor will have designated staff monitor emergency response calls with immediate communications with construction crews at every site to facilitate movement of emergency responders.
- The contractor will post on a weekly basis information on the project information website (described in Mitigation Measure TRANS-1) in the multiple languages spoken in the Delta to inform residents, business owners, and farmers of daily road construction and high-volume construction traffic events (e.g., during hours of material deliveries).
- The contractor will either maintain at least one shoulder along existing access roads to be free of debris or provide detours during short-term, overnight closures (maximum of 2 nights per week) to allow access of fire engines, ambulances, and police cars that need to travel at high speeds.
- During road construction, the contractor will have several steel plates and equipment available at all times to cover trench sites when there is no construction activity (i.e., after hours or on weekends) to provide access for emergency responders over temporary excavations.

Mitigation Measure TRANS-1: Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan

See description of Mitigation Measure TRANS-1 under Impact TRANS-1.

Mitigation Impacts

Compensatory Mitigation

Although the CMP described in Appendix 3F does not function as mitigation for transportation-related impacts from project construction or operations, its implementation could result in transportation-related impacts.

Compensatory mitigation on Bouldin Island, three ponds along I-5, and at channel margin and tidal wetland restoration sites within the North Delta Arc is not anticipated to impact emergency access. Because of the isolated locations and limited geographical extent, construction, operations, and maintenance of compensatory mitigation areas would not substantially contribute to effects on study area emergency access. Combined with the impacts of the project alternatives with primary emergency response services to be required by DWR and provided by the construction contractors at the project alternative sites, the compensatory mitigation impacts on emergency access would not be substantial. Therefore, implementation of the CMP would not change the overall impact conclusion of less than significant.

Other Mitigation Measures

Other mitigation measures proposed would not have impacts resulting in inadequate emergency access because access to and egress from the project alternatives' construction sites would be designed to meet local and regional emergency access requirements. Provisions for providing a secondary access point for emergency response vehicles through agreements prior to construction would be included in the site-specific construction TMP required under Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan*. Therefore, implementation of mitigation measures is unlikely to result in inadequate emergency access, and there would be no impact.

Overall, the impact of inadequate emergency access from construction of compensatory mitigation and implementation of other mitigation measures, combined with project alternatives, would not change the impact conclusion of less than significant.

Impact TRANS-5: Potential Effects on Marine Navigation Caused from Construction, Operation, and Maintenance of Intakes

All Project Alternatives

Project Construction

Although some in-water work would be necessary for construction of the intakes (encroachment during construction ranges from 89.5 feet at Intake A to 122.5 feet at Intake C from the shoulder of SR 160), the Sacramento River would always remain open to boat traffic during construction. Prior to construction of the intakes, in-water work areas would be indicated by buoys, signage, or other effective means to warn boaters of their presence and access restrictions. Warning devices and signage (e.g., "boats keep out" or "no wake zone" labeled buoys) would comply with the U.S. Coast Guard Private Aid to Navigation requirements (U.S. Coast Guard 2012) and would be effective at all times, including non-daylight hours and periods of dense fog. The width of the river near the intakes (approximately 430 feet at Intake A and 620 feet at Intake C) would allow passage of the types of boats typically observed on the Sacramento River (refer to Chapter 17, *Socioeconomics*, for additional discussion of the effects of intake construction on boating).

Construction of the alternatives would not require modification to existing deep water channels, interfere with Port of Stockton navigation, or substantially increase the volume of barge movement within the study area, such that existing marine traffic would be disrupted because project barges would be used only a small number of days (12 to 30 days depending on the project alternative) and would not conflict with port navigation (Delta Conveyance Design and Construction Authority 2022a, 2022b, 2022c). For all project alternatives tugboats and barges would be used only to a limited extent during the latter part of intake construction on the Sacramento River to excavate the river bottom, remove dredged spoils following removal of cofferdams and place riprap along the levee. A limited number of barges would also be used to perform the pile installation method test program and barges, ships, or boats may be used to conduct overwater borings and testing. Because of this limited use of barges and other vessels for construction and the limited extent of construction into the Sacramento River the impact on marine navigation would be minor.

Operations and Maintenance

Water surface elevation changes and potential impacts associated with project operation would be minimal. The largest change in water surface elevation would occur immediately downstream of the intakes. (A detailed discussion of these changes in river surface elevations is provided in Chapter 5, *Surface Water*.) As described in Chapter 5, these changes are not expected to adversely affect maritime navigation or vessels passing by the intakes. The maximum changes in surface water flows anticipated under the project alternatives would not likely expose any currently unexposed natural or man-made features that would affect or impede navigation. There would be no new snags or obstructions caused by the project alternatives that would impede navigation. Moreover, even when operating at maximum capacity, the intakes would not alter flows in a way that would affect commercial vessels or recreational watercraft. The intakes are designed to ensure pumping velocities will have minimal impacts to aquatic species. Changes in flow velocity would not be

perceptible to operators of marine vessels or recreational watercraft and would have no effect on navigation. Water depth and surface elevations would not be substantially affected (either localized or downstream of the intake structures) and, therefore, navigation would not be impeded.

CEQA Conclusion—All Project Alternatives

Constructing the project alternatives would minimally restrict access to portions of the Sacramento River immediately adjacent to the intakes. This restricted access would occur during the period that fish screens and intakes are being constructed and primarily affect portions of the river channel not normally used for boating. Barge activity for construction of cofferdams in the Sacramento River would occur in one summer window (a period of 2 to 3 months). During the remaining 5 to 7 years when the land-side construction of the intakes is underway, no barge activity would occur.

Construction activities, including the installation and removal of sheet piles, levee work, and the occasional use of barges, would not impede passage of vessels by the intake sites because of the width of the Sacramento River at the intake locations and work would only occur immediately adjacent to the riverbank. Operation of the project alternatives would not change river flows or water surface elevation to the degree that navigation would become restricted in the vicinity of the intakes. Maintenance would occur at and immediately adjacent to the intakes and, like construction, would not impede passage of vessels past the intakes. Because vessel passage would not be impeded and changes in river flows would not be of the magnitude to restrict access, the impact of constructing and operating the project alternatives on maritime navigation would be less than significant.

Mitigation Impacts

Compensatory Mitigation

Although the CMP described in Appendix 3F does not function as mitigation for transportation-related impacts on navigation from project construction or operations, its implementation has the potential to result in transportation-related impacts on navigation.

Construction and maintenance of compensatory mitigation would occur on Bouldin Island, three ponds along I-5, and channel margin and tidal wetland restoration sites within the North Delta Arc, as described in Appendix 3F. Construction of the compensatory mitigation actions on Bouldin Island and at the I-5 ponds is not expected to conflict with recreation navigation occurring on the Mokelumne River or Little Potato Slough as construction of the planned compensatory mitigation would be primarily on the landside of the existing levees, apart from creating edge habitat to compensate for the loss of aquatic habitat. Once established, the compensatory mitigation sites would require monitoring and maintenance that would not conflict with navigation on adjacent waterways.

Channel margin and tidal wetland habitat restoration considered in the CMP would occur adjacent to waterways but is not expected to impede passage of vessels as the channels near potential restoration areas are generally wide enough to accommodate vessels and all restoration work would be required to be accomplished in a manner that does not impede or create navigation safety hazards for recreational and commercial vessels. The compensatory mitigation would not have a measurable effect on flow or stage of adjacent waterways and would have no effect on marine navigation. Therefore, implementation of the CMP would not change the overall impact conclusion of less than significant.

Other Mitigation Measures

Some mitigation measures would involve in-water work that would have the potential to effect marine navigation. The mitigation measures with potential to result in effects on maritime navigation include Mitigation Measures AQUA-1b: *Develop and Implement a Barge Operations Plan* and AQUA-1c: *Develop and Implement a Fish Rescue and Salvage Plan*. Temporary effects on marine navigation resulting from implementation of these other mitigation measures would have minimal effect on marine barge traffic because implementing a barge operations plan would not affect the number or frequency of barge use for construction and the fish rescue and salvage plan would involve activities within cofferdam sites. In general, tugboats, barges, and other construction vessels would be used minimally during the construction phase. Conflicts with marine transportation programs would not occur because of the limited use of barges and tugboats for implementing these mitigation measures. Therefore, implementation of these mitigation measures is unlikely to affect marine navigation and the impact would not be substantial.

Overall, the impact on marine navigation from construction of compensatory mitigation and implementation of other mitigation measures, combined with project alternatives, would not change the impact conclusion of less than significant.

20.3.4 Cumulative Analysis

The geographic scope of this cumulative impact analysis includes portions of the Delta counties' circulation system that could be affected by the project alternatives or are in the vicinity of project features. This cumulative impact geographic scope captures past, present, and probable future programs in combination with the project alternatives that could collectively affect VMT on portions of the circulation system that are affected by project alternatives and that occur within the same timeframe as the project alternatives. The study area includes major parts of Sacramento, San Joaquin, Yolo, Solano, Contra Costa, and Alameda Counties, where construction employees would use the regional (Caltrans freeway and highway facilities) and local transportation system to deliver the workforce needed to construct a project.

The cumulative impact analysis is based on the plan approach described under CEQA Guidelines Section 15130(b)(1)(B). The plans used as the basis for this analysis are those of the pertinent metropolitan planning organizations: SJCOG (*Regional Transportation Plan/Sustainable Communities Strategy*); SACOG (*Regional Transportation Plan/Sustainable Communities Strategy*); and MTC (*Plan Bay Area 2040*). Cumulative VMT is calculated considering the effects of project alternatives in combination with the plans in Table 20-8 under 2040 transportation conditions to capture the effects that would occur under these regional transportation plans.

Table 20-8 identifies past, present, and probable future projects, as reflected in the respective regional transportation plans, relating to cumulative transportation impacts that are outside of DWR's control. For a description of each jurisdiction's general plan, see Appendix 3C.

Table 20-8. Cumulative Impacts on Transportation from Plans, Policies, and Programs

Program/ Project	Agency	Status	Description of Program/Project	Impacts on Transportation
San Joaquin Council of Governments Regional Transportation Plan/Sustainable Communities Strategy	San Joaquin Council of Governments	Ongoing	Mainline Highway Improvement Projects Interchange Improvement Projects Regional Roadway improvement Projects Railroad Crossing Safety Improvement Projects Bus Transit Improvement Projects Rail Corridor Projects Public Airport- Aviation Projects Active Transportation and Community Enhancement Projects	Regional multimodal improvements to reduce congestion, improve travel time reliability, and reduce greenhouse gas emissions.
Sacramento Area Council of Governments Regional Transportation Plan/Sustainable Communities Strategy	Sacramento Area Council of Governments	Ongoing	Active Transportation Initiatives Smart Mobility Climate Adaptation Planning Regional Technology Plan Public Transportation Plan Airport Plan Sacramento Regional Blueprint	Implementation of a wide array of projects and programs to improve regional air quality, transportation, and land use planning.
Plan Bay Area 2040	Metropolitan Transportation Commission	Ongoing	Street, Roads and Arterials Program Freeway Improvement Program Transit Hubs Program Forward Commute Initiatives Traveler Services Active Transportation Program	A regional multimodal program that would support a growing economy, provide more transportation choices, and reduce pollution caused by transportation.

20.3.4.1 Cumulative Impacts of the No Project Alternative

Average VMT Per Construction Employee versus Regional Average

The ongoing projects and programs in the Delta under the No Project Alternative would require construction resulting in VMT associated with project construction and operations. Activities associated with long-term maintenance of the existing State Water Project and Central Valley Project systems (e.g., inspection trips) would continue, but there would be no changes attributable to the No Project Alternative that would affect long-term transportation conditions. Because of the limited construction and land development that is allowed in the Delta Primary Zone and the lack of project options that could be implemented in the absence of the project, No Project Alternative cumulative transportation impacts would be minor.

The No Project Alternative also accounts for projects, plans, and programs that are identified in the regional transportation plan/sustainable communities strategies adopted by the SACOG, SJCOG, ACTC, and CCTA regional planning agencies. With the passage of SB 375, metropolitan planning organizations were mandated to develop a sustainable communities strategy. The sustainable communities strategies are required to demonstrate an ambitious, yet achievable approach of how

land use development and a multimodal transportation network can work together to reduce average vehicle miles traveled to meet GHG emission reduction targets. These targets, set by the California Air Resources Board, call for each regional planning organization to reduce per capita emissions by improving jobs-housing balance, providing more options to the single occupancy vehicle; thereby reducing vehicle miles traveled for employees.

Employment trips from the SACOG, SJCOG, ACTC, and CCTA regional travel demand models include local, regional, and long-distance employee trips on a daily basis. Table 20-9 presents the regional average for daily VMT per employee for cumulative 2040 No Project conditions based on implementation of regional sustainable community strategies to provide improved jobs and housing balance and reduce the need for long-distance commute trips to and from jobs. Therefore, even with the projected increase in population and employment, and corresponding increase in the total number of trips, the average regional daily VMT is projected to decrease from 22.5 to 19.2 miles per employee over the next 20 years (Table 20-9).

Table 20-9. Regional Vehicle Miles Traveled (Existing 2020 and Cumulative No Project 2040 Conditions)

Scenario	Vehicle Miles Traveled Regional Average for Employee Daily VMT
Existing 2020 conditions	22.5 miles per employee
Cumulative No Project 2040 (15% reduction)	19.2 miles per employee

Sources: Sacramento Area Council of Governments 2019; San Joaquin Council of Governments 2018; Alameda County Transportation Commission 2019:82–86, 89, 108–111; Contra Costa Transportation Authority 2017:ES-1–ES-13, 4-1–4-16.
VMT = vehicle miles traveled.

Conflicts with Circulation System Programs, Plans, Ordinances, or Policies

The No Project Alternative would not take any action that would cause a conflict with a program, plan, ordinance, or policy relating to circulation. As a result, it would not contribute to a cumulative impact.

Hazards from Geometric Design Features or Incompatible Uses

The No Project Alternative would not make changes to roads, or geometric design features, or introduce incompatible uses to the study area. As a result, it would not contribute to a cumulative impact.

Effects on Emergency Access

The No Project Alternative would not change existing conditions with regard to the availability of emergency access. As a result, it would not contribute to a cumulative impact.

Effects on Marine Navigation

The No Project Alternative would not change conditions along the Sacramento River and its tributaries from existing conditions or the foreseeable future conditions without the project. As a result, it would not contribute to a cumulative impact.

20.3.4.2 Cumulative Impacts of the Project Alternatives

Average VMT Per Construction Employee versus Regional Average

Each of the project alternatives is evaluated separately in combination with other cumulative projects, as described in Table 20-8, to identify the total cumulative VMT effect and the relative contributions of the project alternatives compared to each other. All nine project alternatives (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5) have similar impact levels.

Table 20-10 presents the results of the construction VMT analysis for each of the nine project alternatives combined with the projected cumulative 2040 transportation conditions.

Table 20-10. 2040 Regional VMT Analysis by Alternative—Construction VMT vs. Cumulative Regional Average VMT

	Vehicle Miles Traveled			
Alternative	Average VMT per Construction Employee	Does the Project Alternative Exceed the Regional Average of 19.2 Miles per Employee?	Change	Percentage Change
Alternative 1	25.68	Yes	+ 6.48	+33.8%
Alternative 2a	25.82	Yes	+ 6.62	+34.5%
Alternative 2b	27.02	Yes	+7.82	+40.7%
Alternative 2c	24.91	Yes	+5.71	+29.7%
Alternative 3	24.38	Yes	+5.18	+27.0%
Alternative 4a	26.33	Yes	+7.13	+37.1%
Alternative 4b	27.57	Yes	+8.37	+43.6%
Alternative 4c	25.06	Yes	+5.86	+30.5%
Alternative 5	25.77	Yes	+6.57	+34.2%

Sources: Sacramento Area Council of Governments 2019; San Joaquin Council of Governments 2018; Alameda County Transportation Commission 2019:82–86, 89, 108–111; Contra Costa Transportation Authority 2017:ES-1–ES-13, 4-1–4-16.
VMT = vehicle miles traveled.

As shown in Table 20-10, the cumulative VMT impact assuming projected VMT conditions in 2040 during construction would be significant because the cumulative home-based work VMT would exceed the future regional average VMT per employee of 19.2 in 2040. Therefore, the project alternatives contribution would be cumulatively considerable during the project construction period. Mitigation Measure TRANS-1: *Implement Site-Specific Construction Transportation Demand Management Plan and Transportation Management Plan* would partially reduce this impact but not to a less-than-significant level for the same reasons described for the project alternatives in Impact TRANS-1 in Section 20.3.3, *Impacts and Mitigation Approaches*. Therefore, this cumulative impact on VMT during project construction would be considered significant and unavoidable.

Table 20-11 presents the results of the operations and maintenance VMT analysis for each of the nine project alternatives compared to cumulative 2040 conditions. Therefore, the cumulative VMT impact assuming projected VMT conditions in 2040 when construction is complete and project alternatives are operated and maintained would be less than significant because the cumulative home-based work VMT would not exceed the future regional average VMT per employee of 19.2 in

2040. The project alternatives contribution would not be cumulatively considerable during project operations and maintenance in 2040.

Table 20-11. Regional VMT Analysis by Alternative—Operations and Maintenance versus Cumulative Regional Average VMT

	Vehicle Miles Traveled	
Project Alternative	Average VMT per Operations & Maintenance Employee	Does the Project Alternative Exceed the Regional Average of 19.2 Miles per Employee?
Alternative 1	19.1	No
Alternative 2a	19.1	No
Alternative 2b	19.1	No
Alternative 2c	19.1	No
Alternative 3	19.1	No
Alternative 4a	19.1	No
Alternative 4b	19.1	No
Alternative 4c	19.1	No
Alternative 5	19.1	No

Sources: Sacramento Area Council of Governments 2019; San Joaquin Council of Governments 2018; Alameda County Transportation Commission 2019:82–86, 89, 108–111; Contra Costa Transportation Authority 2017:ES-1–ES-13, 4-1–4-16.
VMT = vehicle miles traveled.

Conflicts with Circulation System Programs, Plans, Ordinances, or Policies

There is no identified cumulative impact on existing programs, plans, ordinances, or policies addressing the circulation system in the study area. New development at the local level is required to comply with programs, plans, ordinances, and policies. The project alternatives would not conflict with these documents. In any case, the impact of an alternative would be an individual impact, not a contributor to a cumulative impact.

Hazards from Geometric Design Features or Incompatible Uses

There is no identified cumulative impact resulting in traffic hazards. Road projects, including those undertaken by local agencies, are subject to the uniform standards and specifications of the *California Highway Design Manual* (California Department of Transportation 2021c) for the local and regional transportation systems. Temporary impacts from construction activities are limited by standard local compliance with the *2014 California MUTCD, Revision 6,* effective March 2021 (California Department of Transportation 2021b). These industry standard regulations avoid cumulative impacts that would result in traffic hazards. The impact of any of the project alternatives would be an individual impact, not a contributor to a cumulative impact.

Effects on Emergency Access

There is no identified cumulative impact on emergency access. Standard local compliance with the *2014 California MUTCD, Revision 6,* effective March 2021 (California Department of Transportation 2021b) ensures that emergency access is provided during construction activities. These industry

standard regulations avoid a cumulative impact that would result in traffic hazards. The impact of any of the alternatives would be an individual impact, not a contributor to a cumulative impact.

Effects on Marine Navigation

There is no identified cumulative impact on marine navigation. The Central Valley Flood Protection Board regulates development on levees within the Delta, including activities that would encroach into navigable waters. The Central Valley Flood Protection Board strictly limits such development by maintaining and protecting the banks of the Sacramento and San Joaquin Rivers, their tributaries, bypasses, overflow channels, and basins (23 Cal. Code Regs. § 3). The Board's oversight ensures that future construction will not have effects on navigation in the Delta study area.

USACE, under the Rivers and Harbors Act of 1899, and the U.S. Coast Guard, under 33 Code of Federal Regulations Part 162, regulate construction and navigation along the Sacramento River. Their permitting programs limit the potential for activities and projects along the Sacramento River and other navigable waters in the study area to interfere with marine navigation. The impact of any of the project alternatives would be an individual impact, not a contributor to a cumulative impact.