

**ALTERNATIVES ANALYSIS SUMMARY
FOR FOOTHILL TRANSPORTATION CORRIDOR –
SOUTH (FTC-S)**

TRANSPORTATION CORRIDOR AGENCIES (TCA)

February 2007

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Appendix A *Interstate Route 5 Widening Alternative Development Methodology*

Appendix B *June 21, 2006 Letter From Caltrans, "Response to Submitted Documents Addressing SOCTIIP."*

I. OVERVIEW

This Alternatives Analysis summarizes the process by which Alternatives to the current alignment of the Foothill Transportation Corridor – South (FTC-S) project were developed, assessed, and analyzed in light of project need, environmental impacts, and military security goals and objectives.

Section I provides an overview of the project need, the development of project alternatives throughout the history of the project, and a general understanding of how alternatives were assessed. *Section II* describes those project alternatives assessed and eliminated during Phase I of the SOCTIIP Collaborative. *Section III* describes those alternatives assessed and eliminated during Phase II of the SOCTIIP Collaborative. *Section IV* identifies alternatives assessed in the SEIR, the criteria by which they were analyzed, and the process by which the Preferred Alternative was chosen. *Section V* describes the Preferred Alternative as well as the modifications made to the Preferred Alternative following and in response to comments received on the Draft SEIR.

A. Project Need

The continued development of residential, commercial and industrial uses in south Orange County and throughout the rest of the County has resulted in continuing traffic congestion in the peak periods such that major travel routes, specifically I-5 as it travels through south County, experience very poor levels of service during these periods. Based on the adopted General Plans and adopted regional forecasts, south Orange County is anticipated to continue to experience growth in both residents and jobs. The total number of residents in south Orange County in 2000 was 481,900; this is forecast to increase to 627,568 residents in 2025. The total number of employees in south Orange County is forecast to increase from 207,193 employees in 2000 to 304,938 employees in 2025. The local jurisdictions' General Plans and the adopted regional demographic forecasts reflect this anticipated growth. The County's *Master Plan of Arterial Highways (MPAH)* identifies needed transportation infrastructure to support this development. Committed, funded transportation improvements in south Orange County would address some of the current and projected traffic demand in south Orange County. However, additional transportation improvements, consistent with the MPAH, are needed to serve this demand to ensure continued mobility for travelers and goods movement over the long-term planning horizon to 2025 and beyond. Without implementation of transportation improvements consistent with the MPAH, there would be inadequate circulation infrastructure to provide mobility on existing facilities, including I-5 and major arterials in south Orange County (SEIR, Section ES4.1, p. ES-21).

Therefore, the purpose of the FTC-S is to provide improvements to the transportation infrastructure system that would help alleviate future traffic congestion and accommodate the need for mobility, access, goods movement, and future traffic demands on I-5 and the arterial network in the action area. The FTC-S project is to improve the projected future level of service (LOS) and reduce the amount of congestion and delay on the freeway system and, as a secondary objective, the arterial network, in southern Orange County. The overall goal is to improve project levels of congestion and delay as much as is feasible and cost-effective. This may include strategies that lead to a reduction in the length of time LOS F will occur, even

if the facility will still operate at LOS F for a short period of time, if the strategy will result in benefits to the traveling public and more efficient movement of goods by reducing total delay (SEIR, Section ES2.3.3, p. ES-9).

B. Project History & Development of Alternatives

To meet the above described project need, the proposed southern extension of existing State Route 241 (SR-241), also referred to as the Foothill Transportation Corridor-South (FTC-S), has been subject to planning efforts for approximately 20 years.

Prior studies completed for the FTC-S include EIR No.123 certified by the County of Orange in 1981. That EIR resulted in a conceptual alignment for a transportation corridor facility being placed on the MPAH. Between 1989 and 1991, the TCA prepared TCA EIR No. 3, which addressed the C (later known as the CP alternative) and BX (later known as the CC alternative) road alignments; selected as part of the Alternatives Analysis phase of the project, as the primary build Alternatives. This effort concluded with the certification of the EIR and the selection of the locally Preferred Alternative by Foothill/Eastern Transportation Corridor Agency Board of Directors.

In December 1993, the TCA initiated the preparation of a Subsequent EIR (SEIR) to evaluate the CP Alignment, the BX Alignment and the No Build Alternative. The CP Alignment is a refinement of the C Alternative and is similar to the FEC-M Alternative described in the Draft EIS/SEIR. The BX Alignment is identical to the CC Alternative described in the Draft EIS/SEIR. Subsequent to this effort, the project was mandated to participate in the NEPA/Section 404 MOU process. Between August 1999 and November 2000, the NEPA/Section 404 MOU signatory agencies and the TCA developed the project Alternatives to be evaluated in the Draft EIS/SEIR. The NEPA/404 MOU agencies (U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Federal Highway Administration, Caltrans, as well as the U.S. Marine Corps) and the TCA are collectively referred to as the "SOCTIIP Collaborative." (See **Table 1: Alternatives History**)

During the course of Phase I of the SOCTIIP Collaborative process (August 1999-November 2000), the Collaborative developed a list of alternatives for evaluation in the SOCTIIP NEPA and Section 404 process. The Phase I Collaborative identified several Alternatives for evaluation. It was during this time that the Central Corridor-Complete (CC-Alternative, previously referred to as the BX Alternative) and the Far East Alternative (CP Alternative) were evaluated to determine optimal alignments. The TCA/FHWA defined the Alignment 7 Corridor Alternative (A7C Alternative) as an Alternative to the CC Alternative to avoid and/or reduce impacts to the significant biological resources in the upper and middle Chiquita areas. The A7C-Alternative represents a shift to the east to move the alignment out of Cañada Chiquita including its primary drainage course and to avoid the wetlands area at the confluence of Cañada Chiquita and San Juan Creek, and at the Segunda Deshecha wetlands complex. Additionally, this shift minimized impacts to sensitive habitat including coastal sage scrub. Similarly, other Alternatives to the CC Alternative were created (i.e., Alignment 7 Corridor Swing Variation (A7C-7SV) Alternative, the Alignment 7 Corridor-Far East Crossover Variation (A7C-FECV) Alternative and the Alignment 7

Corridor Ortega Highway Variation (A7C-OHV) Alternative). The A7C Alternatives and its variations were created as Alternatives to the CC Alternative.

**Table 1
Alternatives History**

PHASE I of the SOCTIIP COLLABORATIVE				PHASE II of the SOCTIIP COLLABORATIVE				FINAL SEIR Preferred Alternative	
EIR No. 123 1981	EIR No. 3 1989-1991		SEIR Prep 1993-1999		NEPA/404 MOU 1999-2000		Draft EIR/EIS 2000-2006		
	Alternative	Analysis	Alternative	Analysis	Alternative	Analysis	Alternative	Analysis	
Conceptual alignment placed on the MPAH	C Alignment Chosen in 1986 to be analyzed in EIR. The southern segment is conceptual and described as anywhere through Cristianitos/San Mateo Valley	Refined and Renamed - due to landform, aesthetic, and noise impacts, different variations (C, CW, CX, CY, and CZ) were identified and analyzed. Of these, CW was identified as the least environmentally damaging, and is named the "Modified C Alignment" and later the "CP Alignment."	CP Alignment Based on the CW alignment analyzed previously.	Refined and Renamed – due to PPM, sage scrub, and Sulphur Canyon impacts, the alignment is shifted to the west and renamed the "Far East Corridor Alternative" or FEC. Several variations of the FEC analyzed in the NEPA/404 process.	FEC	Eliminated – has the most extensive biological impacts of all alternatives			
					FEC-TV	Eliminated – severe impacts to jurisdictional waters			
					FEC-CV	Eliminated – military security reasons			
					FEC-AFV	Eliminated – military security reasons			
					FEC-OHV	Eliminated – poor traffic performance, does not meet project need			
					FEC-APV	Eliminated – biological/riparian impacts			
					FEC-W	Identified for EIR analysis	FEC-W	Eliminated – open space impacts	
					FEC-M	Identified for EIR analysis	FEC-M	Eliminated – greatest impact on open space, Cristianitos Creek	
	BX Alignment Northern segment aligned to the west side of Canada Chiquita, connecting with the I-5 within the City of San Clemente	Renamed – analyzed in detail within EIR No. 3 and carried forward as the Central Corridor, or "CC" alignment			Refined and Renamed – CC Alignment and several variations on the CC Alignment continue to the NEPA/404 scoping process	CC	Identified for EIR analysis	CC	Eliminated – requires removal of several hundred homes and businesses
						CC-ALPV	Identified for EIR analysis	CC-ALPV	Eliminated – 'Short alternative' not connecting to I-5, does not improve traffic conditions
						CC-OHV	Eliminated – poor traffic performance, does not meet project need		
						A7C	Eliminated – severe impacts to riparian ecosystems		
						A7C-7SV	Eliminated – displaces 602 residences and has infeasible project costs		
						A7C-FECV	Eliminated – severe impacts to riparian ecosystems		
D Alignment Parallel to and 2.1 km east of the C Alignment, connects to the I-5 near the San Onofre Nuclear Generating Station	Eliminated – alignment compromises the military security and mission of the MCB Camp Pendleton				A7C-OHV	Eliminated – poor traffic performance, does not meet project need			
					A7C-ALPV	Identified for analysis in EIR	A7C-ALPV	Eliminated – 'Short alternative' not connecting to I-5, does not improve traffic conditions	
E Alignment Parallel to Avenida La Pata, connects to I-5 near the San Onofre Nuclear Generating Station	Eliminated – alignment compromises the military security and mission of the MCB Camp Pendleton				A7C-FECV-C	Eliminated – military security reasons			
					A7C-FECV-AF	Eliminated – military security reasons			
Alternative Route to SR-78 Alternative to the southern terminus connection, crosses MCB Camp Pendleton	Eliminated – alignment compromises the military security and mission of the MCB Camp Pendleton				AIP	Eliminated – highest socioeconomic impacts, displaces 898 residences			
Transit Alternative			All Transit Assumes light rail in lieu of general/ HOV lanes	Eliminated - Density and land use patterns, both existing and future, make a light rail system infeasible					
Non-Toll Road Alternative					I-5 Widening	Identified for EIR analysis	I-5 Widening	Eliminated – requires removal of several hundred homes and businesses	
					AIO	Identified for EIR analysis	AIO	Eliminated – does not meet project need, serious community disruption	
No Action Alternative					No Action Alternative OCP-2000		No Action Alternative OCP-2000	Eliminated – does not meet project purpose and need	
					No Action Alternative - RMV		No Action Alternative - RMV	Eliminated – does not meet project purpose and need	

A7C-FEC-M

In November 2000, the SOCTIIP Collaborative concurred on the Alternatives to be evaluated in the technical studies supporting the Draft EIS/SEIR. The Collaborative agreed to 24 Alternatives for evaluation in the technical analysis. These include 20 toll road Alternatives, 2 non-toll road Alternatives and 2 no action Alternatives.

During Phase II of the SOCTIIP Collaborative (January 2001-Present), the TCA sought to further refine the Alternatives to minimize impacts to sensitive environmental resources. During that time the FHWA/TCA realized that the socioeconomic impacts of the Alternatives that connected to the I-5 at Pico Avenue could not be appreciably avoided by specifically refining those Alternatives. Development in the City of San Clemente had increased substantially, especially in the undeveloped areas where the Foothill-South Corridor Alignments were proposed. The C Alignment (CP Alignment), which was selected as the Preferred Alternative in 1991 had much greater environmental impacts than either the FEC-M or the Preferred Alternative (See **Table 2: Comparison of Environmental Impacts CP, FEC-M, Preferred Alternatives**).

The continued refinement of the alternatives has resulted in an alternative that is significantly superior to the originally preferred CP alternative. Most notably, impacts to wetlands have been minimized to 0.82 acres from the previously delineated 17.0 acres. Occupied Pacific pocket mouse habitat was avoided through refinement efforts. The total disturbance limits for the Preferred Alternative have been reduced approximately 30 percent resulting in significantly less impact to the natural environment (SEIR, Section ES2.3.1, p. ES-5).

**Table 2
Comparison of Environmental Impacts: CP, FEC-M, and Preferred Alternative**

	SEIR PREP CP Alignment 1993-1999	PHASE 1 & 2 FEC-M Alignment 2000-2006	FINAL SEIR Preferred Alternative 2006
Total Area of Disturbance	1,734 acres	1,274 acres	1,194 acres
Plant Communities			
Venturan-Diegan Coastal Sage Scrub	537.5 acres	443.9 acres	385.3 acres
Thread-leaved brodiaea			
Population	13	6	3
Counts	384	94	16
Wetlands			
Riparian Ecosystems	160.1 acres	53.4 acres	42.9 acres
ACOE Wetlands	17 acres	1.99 acres	0.82 acres
ACOE Non-wetland water	20.28 acres	4.01 acres	5.45 acres
Wildlife			
Arroyo Toad	6	2	2
Coastal California Gnatcatcher	23	13	9
Least Bell's vireo	2	0	0
Pacific Pocket Mouse	<i>Occupied Habitat Affected</i>	<i>No Occupied Habitat Affected</i>	<i>No Occupied Habitat Affected</i>
Consistency with NCCP Reserve Design	Low	Low	High

SOURCE: Final SEIR, Executive Summary, Section ES2.3.1, p. ES-6; TCA, 2005

C. Alternative Assessment Criteria

Alternatives were measured against the criteria described in the Section 404(b)(1) Guidelines, guidance documents, and applicable case law. The NEPA/404 guidance paper list seven criteria for evaluating the practicability of alternatives, six of which are relevant to FTC-S (one is transit-related). According the guidance paper, an Alternative is not considered practicable if:

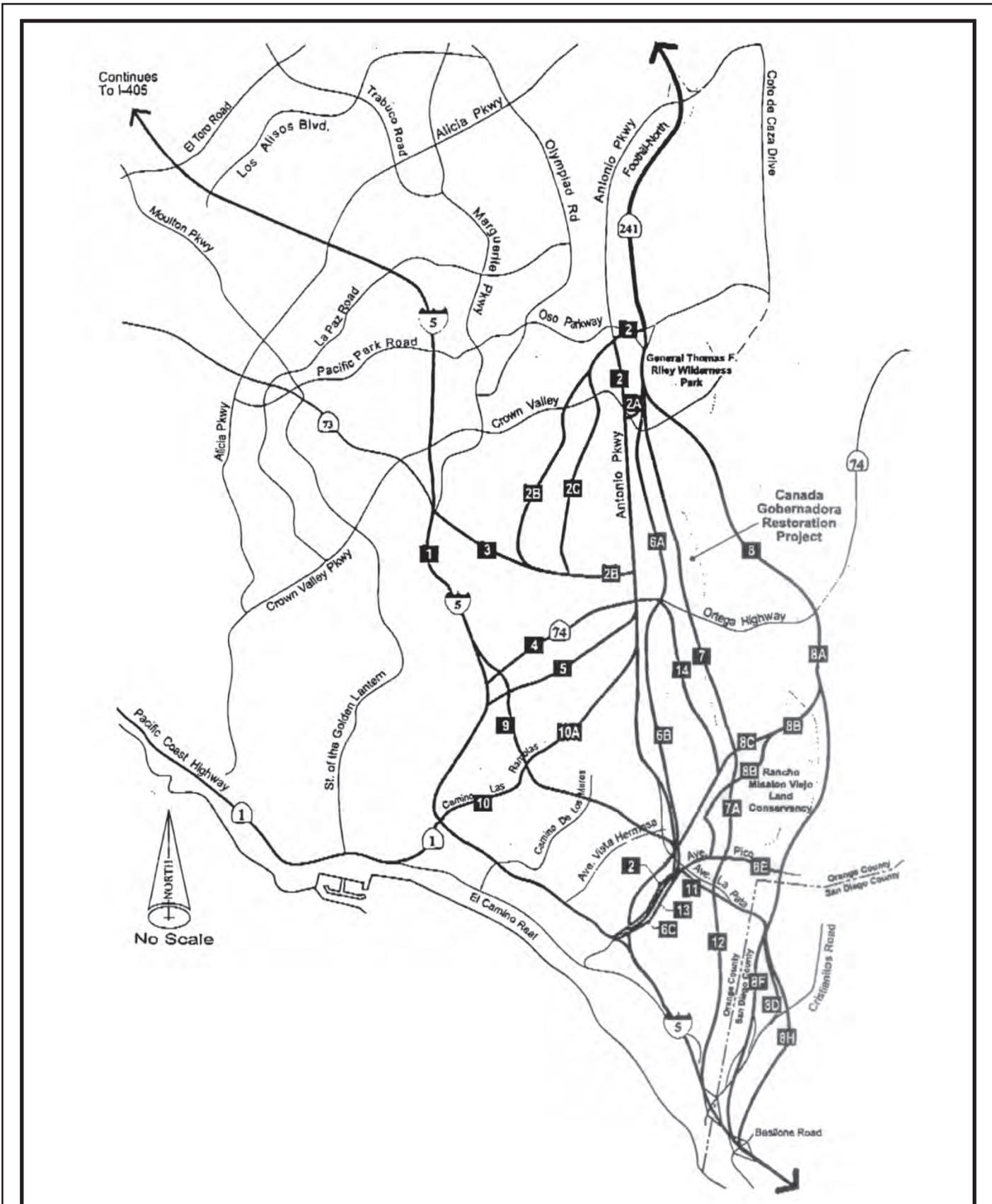
- 1) It does not meet the project purpose and need;
- 2) Cost of construction (including mitigation) is excessive;
- 3) There are severe operational or safety problems;
- 4) There are unacceptable adverse, social, economic, or environmental impacts;
- 5) There would be serious community disruption;
- 6) There are unsuitable demographics (for transit Alternatives); and
- 7) There are logistical or technical constraints.

II. ALTERNATIVES REMOVED IN PHASE I OF THE SOCTIIP COLLABORATIVE

A number of alternatives were evaluated during the Phase I planning process for the FTC-S and were subsequently eliminated from further detailed study prior to the drafting of the Final EIS/SEIR. These include a wide range of corridor alignment Alternatives, a transit Alternative, corridor Alternatives that do not terminate at I-5 and a Transportation Systems Management (TSM) Alternative.

The alignments of the build Alternatives considered by the Phase I Collaborative are shown on **Figure 1: Alignments Considered by the Phase I Collaborative**. The Collaborative specifically considered whether these alternatives would meet the project purpose and need, other available local planning and land use information, and the 2020 traffic projections in their determination of the reasonableness of these Alternatives.

The following descriptions of these Alternatives and explanations for why they are not considered in detail in the Final EIS/SEIR are based on the TCA's Final EIR No. 3 and on the range of Alternatives considered by the SOCTIIP Collaborative in Phases I and II of the Collaborative process. As appropriate, the conclusions of previous studies on these eliminated alternatives were reviewed based on current information, and no change in conclusion was found (SEIR, Section 2.6, p. 2-58).



Source: SOCTIIP Phase I Collaborative (2000).

Alignments Considered by the Phase I Collaborative

A. PHASE 1: VARIATIONS TO THE FAR EAST CROSSOVER ALTERNATIVES

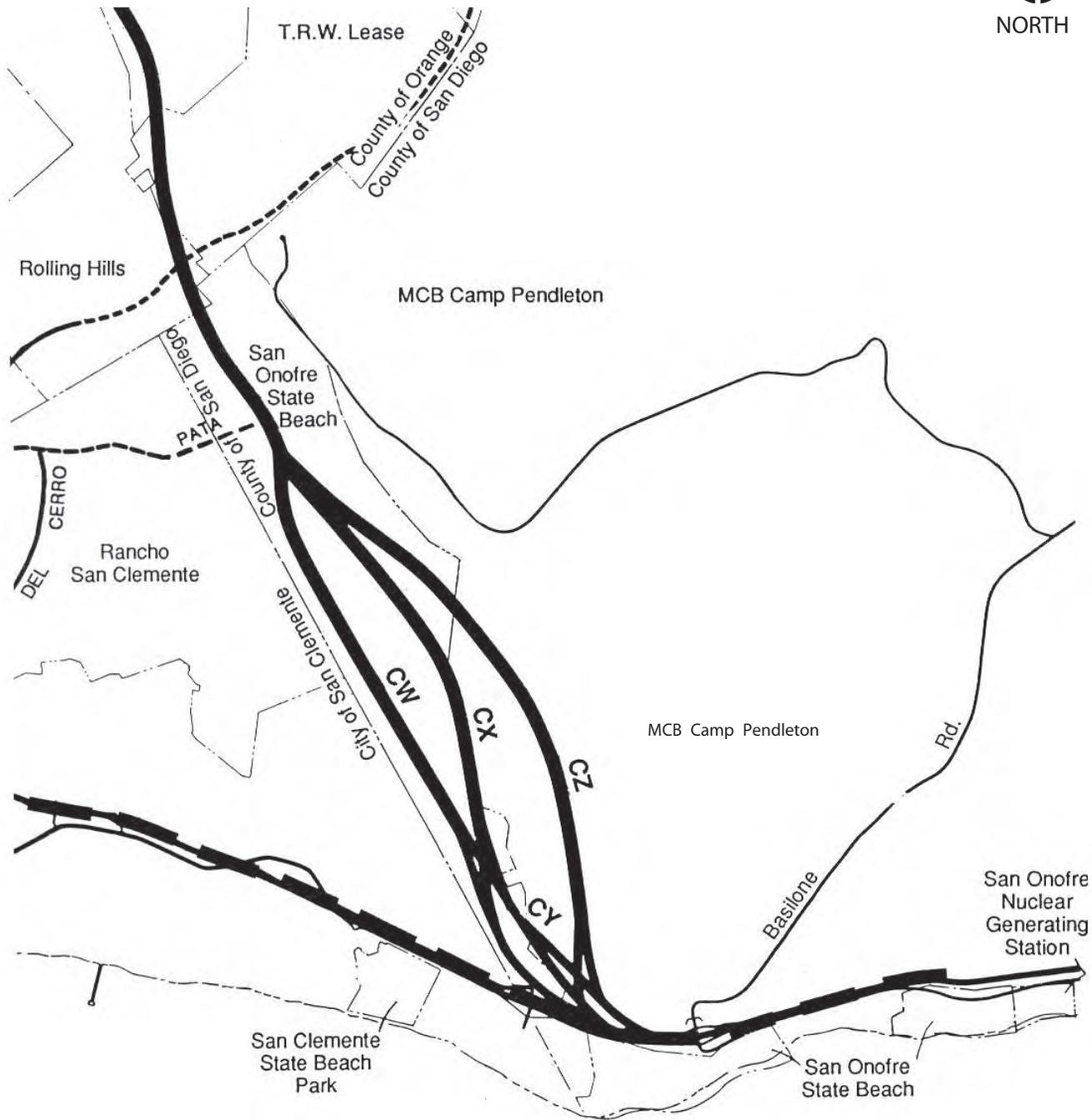
In November 1986 when the Orange County Board of Supervisors and the TCA Board of Directors selected the C Alignment to be analyzed in an EIR, direction was given that the southern segment of the C Alignment would be considered to be anywhere in the Cristianitos/San Mateo Valley. This was due to the wide range of possible alternatives and the preliminary nature of the engineering and environmental analysis, as well as ongoing coordination efforts with MCB Camp Pendleton.

Following public review of TCA Draft EIR No. 3, in response to concerns raised by agencies and residents of the City of San Clemente (specifically those residing near the City boundary with the State Beach), the TCA developed alternatives which had a split profile from the I-5 connectors to the proposed interchange with Avenida Pico, basically through San Onofre State Beach (SEIR, Section 2.6.2, p. 2-59).

In addition to not having a split profile, the C alignment was not depressed below Cristianitos Road and was approximately 152 m (500 ft) west of the Modified C alignment just north of San Mateo Campground. The split profile and shift of the alignment in this area were believed to reduce impacts to existing land uses and landforms. Specifically, the C alignment would have impacted substantial landforms associated with the ridgeline which parallels the City of San Clemente/County of San Diego boundary, and would have required the removal of the pinnacle of a major knoll in this area. The C alignment would also have resulted in substantial aesthetic impacts on residences adjacent to the City boundary. The shift of the alignment also reduced potential noise impacts on residential areas in San Clemente.

As described in TCA Final EIR No. 3, from August 1987 to May 1989, the TCA developed and prepared engineering and environmental analysis on the CW, CX, CY and CZ variations for the C Alignment. These variations were termed the “Far East Crossover Alternatives”. Each variation provided a different route and connection to I-5 as shown on **Figure 2: Variations (C, CX, CY, and CZ) Considered for the Southern Terminus of the Far East Alignment**. The CY variation was found to have a number of substantial engineering and environmental constraints including geotechnical, hydrological, biological and cultural resources impacts. Because the CY variation was clearly not the environmentally superior Alternative of the C alignment variations, it was not carried for further evaluation at that time.

The other three variations appeared to be feasible and received further evaluation in TCA EIR No. 3 to determine which was environmentally superior and would be carried forward as the C alignment. Based on the evaluation in EIR No. 3, the CX and CZ alignments were determined not to be environmentally superior to the CW variation based on greater impacts related to biological resources, wetlands, isolation of greater amounts of land on Camp Pendleton and inconsistencies with the Camp Pendleton Master Plan. Therefore, the CW variation (later referred to as the Modified C alignment) was identified as the environmentally superior of the C variations and was presented as the preferred C Alignment in TCA EIR No. 3. No further evaluation of these earlier variations (CY, CX, and CZ) for the C alignment is included in the Final EIS/SEIR. (See **Table 3, Eliminated Far East Crossover Variations.**)



Source: TCA Final EIR No.3 (Exhibit 2-10).

Variations (CW, CX, CY and CZ) Considered for the Southern Terminus of the Far East Alignment

**Table 3
Eliminated C and Far East Crossover Variations**

Alignment	Far East Crossover Variations of the C Alignment	Description	Reasons Eliminated	Preferred Variation
C Alignment	C	<i>Not depressed below Cristianitos Road, and approximately 152 m west of the Modified C Alignment</i>	<i>Splitting the alignment profile reduces impacts to existing ridgelines, noise and aesthetic impacts to residents.</i>	
	CW	<i>Southern segment closely follows County line.</i>	<i>Not Eliminated</i>	<i>Environmentally Superior Variation of C Alignment – became the “Modified C Alignment” as explained in Section B, below.</i>
	CX	<i>Southern segment located halfway between CZ and CW alignments</i>	<i>Greater impacts than CW on biological resources, wetlands, and inconsistencies with Camp Pendleton Master Plan</i>	
	CY	<i>Southern segment located halfway between CZ and CW alignments</i>	<i>Substantial engineering and environmental constraints, including geotechnical, hydrological, biological and cultural resources impacts</i>	
	CZ	<i>Southern segment bows out to the east through MCB Camp Pendleton</i>	<i>Greater impacts than CW on biological resources, wetlands, and inconsistencies with Camp Pendleton Master Plan</i>	

SOURCE: Information from Final SEIR; Table compiled by RBF

B. MODIFIED C ALIGNMENT

The Modified C Alignment was selected by the TCA as the locally Preferred Alternative with certification of TCA EIR No. 3 and TCA Supplemental EIR No. 3 in October 1991. However, the Modified C Alignment did not avoid sensitive biological resources in and near Sulphur Canyon and did not avoid the population of the federally endangered Pacific pocket mouse (PPM), in San Onofre State Beach west of the San Mateo Campground.

In the north part of the study area, the Modified C alignment was east of the CP (Far East) alignment. In 1995, during development of the Southern Natural Community Conservation Plan (NCCP) program, the alignment was shifted to the west at the request of the USFWS. This shift was proposed to avoid high quality scrub communities along this segment of the alignment and to protect sensitive species and wildlife movement in Sulphur Canyon.

In approximately this same time frame, when the shift was made to move the alignment out of the Sulphur Canyon area, PPM was found at the southernmost part of the alignment in San Onofre State Beach. As a result, the TCA redesigned the Modified C Alignment to avoid the area identified as occupied by PPM according to data collected in extensive surveys in 1995.

The resulting Modified C alignment was renamed the CP alignment following the incorporation of these design changes. The CP alignment, now referred to as the Far East alignment is evaluated in detail in the Final EIS/SEIR. Because the original Modified C Alignment was changed to avoid these specific environmental impacts and the resulting CP (Far East) alignment is evaluated in the Final EIS/SEIR, no further analysis of the Modified C alignment is provided in the Final EIS/SEIR. See (**Table 4, Elimination of the Modified C Alignment**).

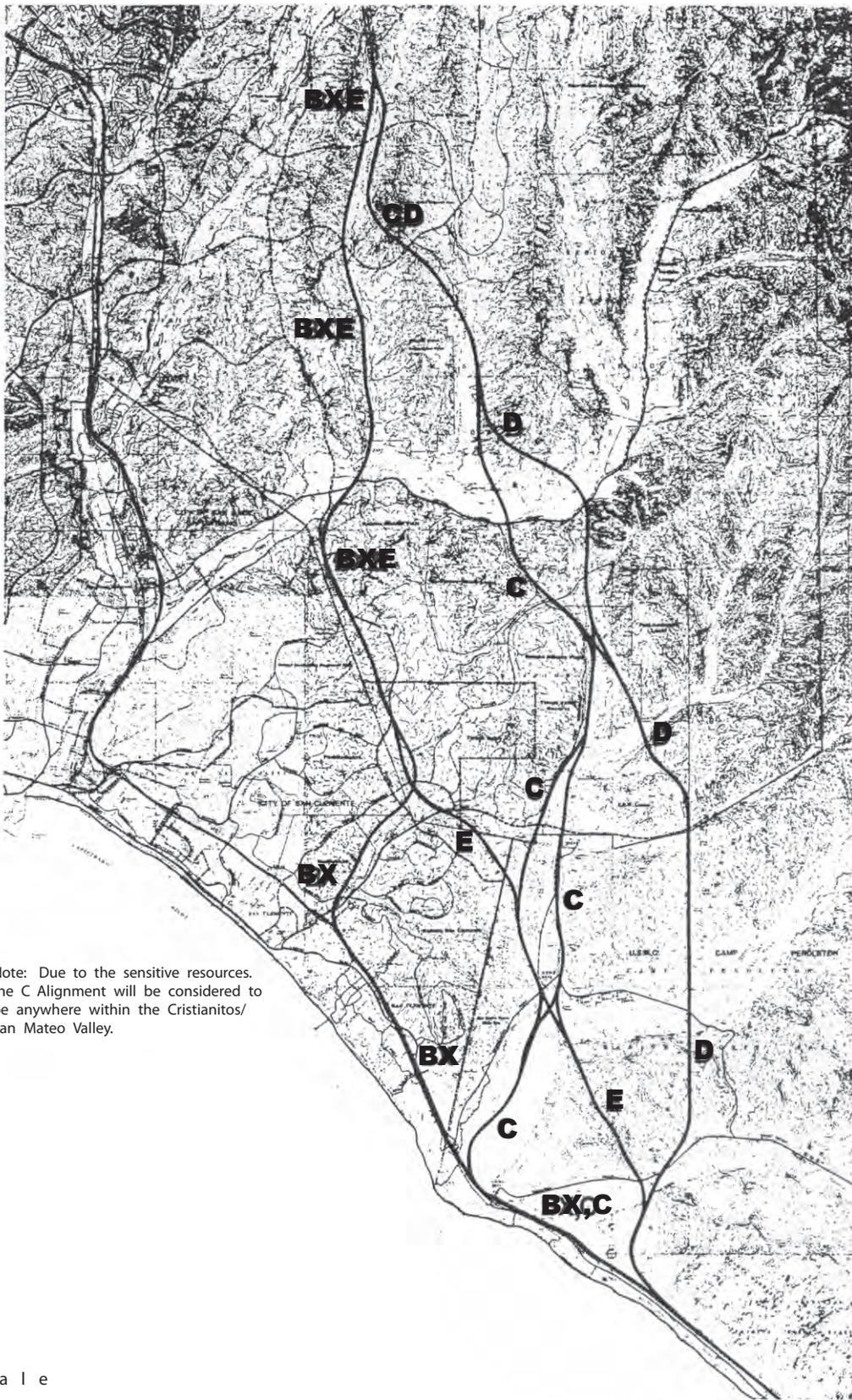
**Table 4
Elimination of the Modified C Alignment**

Alternative	Description	Reasons for Elimination	Refinements to Alignment
Modified C Alignment	CW Alignment described above, closely follows the County line.	Impacts to biological resources in and near Sulphur Canyon, and impacts to Pacific Pocket Mouse	Alignment is shifted to the west, avoiding Pacific Pocket Mouse, sage scrub resources, and Sulphur Canyon. Becomes the CP Alignment , later referred to as the Far East Alignment .

SOURCE: Information from Final SEIR; Table compiled by RBF

C. OTHER CORRIDOR ALTERNATIVES PREVIOUSLY CONSIDERED IN TCA FINAL EIR NO. 3

The purpose of Final EIR #423 Foothill Transportation Corridor Orange County General Plan Transportation Element Amendment Specific Route Location (County of Orange, May 25, 1983) conducted by the County of Orange for the FTC-S was to identify the most feasible Alternatives for further consideration for that corridor. Based on the results of the Foothill Transportation Corridor Cristianitos Segment Alternative Alignment Analysis (County of Orange, September 1986) and on public testimony, in November 1986 the Orange County Board of Supervisors and the TCA selected four primary Alternatives for further study (County Resolution No. 86-147, November 19, 1986). As described in TCA Final EIR No. 3, these were the BX, C, D and E alignments shown on **Figure 3: Primary Alternatives Selected During the 1986 Scoping Process**.



Note: Due to the sensitive resources, the C Alignment will be considered to be anywhere within the Cristianitos/San Mateo Valley.

No Scale

Source: Robert Bein, William Frost & Associates (1986).

Primary Alternatives Selected During the 1986 Scoping Process

SOURCE: SOCTIIP EIS/SEIR (Figure 2.6-3)

FIGURE 3

The BX and C Alignments were evaluated in detail in TCA EIR No. 3. The D and E alignments were not found to be environmentally superior in EIR No. 3 because both would severely affect MCB Camp Pendleton, potentially compromising the Military Mission of the Base. The Marine Corps objected to these two alignments. These alternatives, described briefly below, were determined not to be reasonable or feasible and were eliminated from further study in Final EIR No. 3 (SEIR, Section 2.6.4, p. 2-60). A more detailed discussion of these alternatives is provided in the Foothill Transportation Corridor - South Major Investment Study (MIS, Michael Brandman Associates, April 1996). The MIS is on file at the TCA. (See **Table 5: Elimination of Other Corridor Alternatives in EIR No. 3.**)

**Table 5
Elimination of Other Corridor Alternatives in EIR No. 3**

Alternative	Description	Reason for Elimination
D Alignment	Follows the same route as the previously described C Alignment through Cañada Chiquita	Severe impacts to the mission of MCB Camp Pendleton
E Alignment	Similar to the BX Alignment , aligned on the west side of Cañada Chiquita	Severe impacts to the mission of MCB Camp Pendleton

SOURCE: Information from Final SEIR; Table compiled by RBF

i. D Alignment from the TCA EIR No. 3

The D Alignment generally followed the same route as the previously considered C Alignment through Cañada Chiquita into Canada Gobernadora. As it continued across Ortega Highway near Cristianitos Road, the alignment traveled along the west flank of Cristianitos Road, continuing southeast to the Orange/San Diego County line. From this point, it continued on an alignment parallel to and approximately 2.1 km (two mi) east of the C Alignment to join I-5 near the San Onofre Nuclear Generating Station (SONGS). This alignment would have required widening an approximately 2.4 km (1.5 mi) long segment of I-5. This alignment was rejected from further consideration in TCA Final EIR No. 3 because it would result in substantial adverse impacts on the Military Mission of MCB Camp Pendleton (SEIR, Section 2.6.4.1, p. 2-60).

ii. E Alignment from TCA EIR No. 3

The E Alignment, similar to the BX Alignment, was aligned on the west side of Cañada Chiquita and crossed Ortega Highway near the San Juan Creek bridge. It then paralleled Avenida La Pata to a point near Cristianitos Road in San Onofre State Beach. This alignment then turned south to connect with I-5 in the vicinity of SONGS. As with the D Alignment, widening of I-5 would have been required for this alignment. This alignment was rejected from further consideration in TCA Final EIR No. 3 because it would result in substantial adverse impacts on the Military Mission of MCB Camp Pendleton (SEIR, Section 2.6.4.2, p. 2-61).

D. ALL-TRANSIT ALTERNATIVE

An all-transit alternative has been considered several times for the FTC-S study area. Initially, an all-transit alternative was considered by the County and subsequently by the TCA in EIR No. 3. All-transit alternatives for the area have been addressed by the OCTA in regional rail planning studies and by the TCA during preparation of the MIS for the FTC-S. It has been consistently determined that an all-transit alternative for the FTC-S would not be reasonable or feasible in meeting the forecasted travel needs in south Orange County. This conclusion was supported by the SCAG MIS Peer Review Group with its approval of the FTC-S MIS on May 7, 1996 and by the OCTA's "Fast Forward – A Long-Range Transportation Plan" (July 27, 1998). Therefore, as described in the following paragraphs, an all-transit alternative for the FTC-S was determined not to be reasonable or feasible.

Although an all-transit alternative was previously eliminated from further consideration based on a number of evaluations concluding with the MIS, general discussion is provided here of the issues regarding the feasibility of a transit alternative and how those issues relate to the study area. A summary of studies conducted by the OCTA for the provision of transit in Orange County, including the study area, is provided. These studies addressed the potential for implementing transit throughout Orange County, including the FTC-S study area (SEIR, Section 2.6.5, p. 2-61). (See **Table 6: Elimination of LRT Alternative.**)

**Table 6
Elimination of LRT Alternative**

Alternative	Description	Reason for Elimination
All Transit Alternative	Light rail transit (LRT) system in lieu of general and HOV lanes	A current and projected multi-nucleated development pattern without a central business district, and low population densities make light rail infeasible

SOURCE: Information from Final SEIR; Table compiled by RBF

i. Density Requirements for LRT

The two most critical issues confronting fixed LRT feasibility in south Orange County, and in much of Orange County, are the lack of a central business district (CBD) and low population densities. Orange County currently has a number of moderately dense business activity centers such as central Santa Ana, the Anaheim commercial/recreation area, Irvine Business Complex, Irvine Spectrum and the South Coast Plaza area. Surrounding these activity nodes are a variety of residential densities, including urban, suburban and rural uses, with support commercial and business uses. This type of land use development pattern results in a series of interconnected, relatively self contained nodes of activity. Unlike urban areas organized in a concentric pattern, Orange County's multi-nucleated development does not currently provide the residential and employment densities and spatial structure in south Orange County to support a public transportation system based on a backbone LRT system. Based on recent land use projects approved and

proposed in south Orange County, these developments are suburban and would not provide densities to support LRT.

The role of land use patterns in determining the type of transportation used is critical (Pushkarev and Zupan 1977). Specifically, the location and density of residential uses in relation to large CBDs are common criteria for evaluating the feasibility of LRT. According to Cervero (1984), LRT development requires an average residential density of nine du/ac in a transit corridor of approximately 65 to 260 square km (25 to 100 square mi), based on a CBD (destination) of approximately 4.6 million square m (50 million square ft) of development. This residential density is necessary because of the need to locate large numbers of dwelling units in proximity to LRT stations.

Existing development patterns in the FTC-S area do not meet these general criteria for LRT feasibility. The largest single areas of employment and commercial uses in the FTC-S area are, from south to north, downtown San Clemente, Rancho Santa Margarita Business Park in Rancho Santa Margarita and the Irvine Spectrum at the intersection of I-5 and Interstate 405 (I-405). The former Marine Corps Air Station (MCAS) El Toro site, north of I-5 and I-405, is currently being planned for civilian reuse by both Orange County and the El Toro Reuse Planning Authority. Based on the passage of Measure W in the March 2002 election, potential future uses on the El Toro site are anticipated to include institutional, cultural, recreation, residential and open space uses. Downtown San Clemente and the Rancho Santa Margarita Business Park do not include sufficient business/commercial space to meet the minimum requirement of 4.6 million square m (50 million square ft) to support LRT. At build out, the Spectrum may meet this minimum requirement. In summary, there is no single major concentrated node of business and commercial uses south of the I-5/I-405 interchange that meets the minimum standard for supporting LRT in south Orange County.

The approximately 259 square km (100 square mi) area surrounding the FTC-S alternatives in south Orange County is largely developed in low to moderate density suburban residential uses with the RMV site the largest undeveloped parcel in the area. The Cities of Irvine, Laguna Hills, Laguna Niguel, Aliso Viejo, Mission Viejo, Rancho Santa Margarita, San Juan Capistrano and San Clemente and the communities of Coto de Caza and Las Flores are largely built out. The Talega and Ladera PCs are currently under construction with build out expected by 2010. It is anticipated that the remaining undeveloped areas in the FTC-S study area will remain as open space or will be developed with low and medium density residential uses similar to the existing residential developments throughout this part of south Orange County. A substantial part of the remaining undeveloped land is permanently committed to open space uses. In addition, there are few areas in south Orange County where higher density uses could occur and, based on General Plans and existing and approved development, substantially higher densities in undeveloped areas in south Orange County are not likely. Therefore, based on past development patterns, it is unlikely that the average

residential densities in south Orange County at build out will approach or exceed the desired density of nine dwelling units per acre for LRT feasibility (SEIR, Section 2.6.5.2, p. 2-61).

ii. LRT Planning in Orange County

The determination that LRT is not feasible or planned for the FTC-S area is consistent with several OCTA studies described below, which do not call for fixed rail transit in this part of Orange County or along either this segment of I-5 or the southern segment of the FTC.

OCTA Regional Rail Evaluation

In November 1990, Orange County voters approved Measure M, a half-cent local sales tax increase to fund transportation improvements. The improvements in the Measure M program are the rebuilding of the County's freeway system; development of a system of high speed arterials; improvements to the local street system; implementation of TSM and transportation demand management (TDM) measures to more efficiently use existing transportation resources; and development of a high capacity urban rail system in Orange County.

Since the passage of Measure M, the OCTA has conducted extensive studies to evaluate various LRT options for Orange County and to assess the environmental impacts associated with LRT. The OCTA completed the location system planning process as documented in the Countywide Rail Study Final Report: Long Range Transit System Plan – Development Strategy (OCTA, October 1991), which resulted in the development of a 47 mile “Initial Urban Rail Network” and the selection of a priority corridor for more detailed study. No LRT corridors were identified in south Orange County in this study, based on overall densities and the lack of concentrated, high density commercial/industrial centers (SEIR, Section 2.6.5.3, p. 2-63).

OCTA Centerline Project

In December 2000, the OCTA issued a Supplemental Draft EIS/EIR for the proposed CenterLine LRT project. Alternatives considered in that Draft EIS/EIR included a variety of LRT alignments in central and northern Orange County. The southernmost extension of the LRT alternatives was to the Irvine Transportation Center, southeast of the El Toro site and north of the Irvine Spectrum. No LRT alignments were considered in south Orange County, based on overall densities and the lack of concentrated, high density commercial/industrial centers. In spring 2001, based on substantial controversy in many of the cities along the proposed LRT alignments, the OCTA temporarily terminated planning and the environmental process for the CenterLine. In early 2002, the OCTA re-initiated study for the CenterLine project in the future, focusing on building consensus for a starter or initial phase project in cities in the central and northern parts of the County. There is no indication from the OCTA that LRT would be considered in the FTC-S area in south Orange County in the foreseeable future because LRT would not be cost effective

and existing and planned land uses are not supportive of LRT (SEIR, Section 2.6.5.3, p. 2-63).

OCTA Fast Forward a Long-Range Transportation Plan

The “Fast Forward Plan” (OCTA, July 27, 1998) provides a strategy for managing future transportation needs in Orange County and specifically identifies a program to:

- Increase commuter rail services and station locations. No new stations are proposed in the FTC-S area although increased service is anticipated to be provided on the existing commuter rail line which extends across the FTC-S area in south Orange County, from the City of San Clemente to the City of Irvine.
- Implement a 28-mile urban rail system in central Orange County. The southern most station on this system would be in the vicinity of the I-5/I-405 interchange. This program component is expected to be refined to focus on a starter or initial phase CenterLine project in the north and central parts of Orange County as described earlier. There are still serious doubts about the feasibility of such a system and, at this time, there are no guarantees that such as system will be built.
- Increase bus service countywide.

Other Rail Transit

In addition to the LRT studies described above, Amtrak, Caltrans and the California High Speed Rail Authority (CHSRA) are evaluating possible commuter or heavy rail improvements in south Orange County. These potential improvements include increased levels of commuter service on the existing Metrolink alignment in the Los Angeles to San Diego (LOSSAN) corridor; possible double tracking of the existing rail alignment in the southern Orange County part of the LOSSAN corridor; and high speed rail (HSR) from San Diego to San Francisco, with possible alignments along the coast or inland in south Orange County. However, all these services would be limited stop commuter/intercity services and would not effectively serve the same type of market as an LRT system (SEIR, Section 2.6.5.3, p. 2-63).

E. ALTERNATE ROUTES ON THE SOUTHERN TERMINUS

A number of comments on TCA Draft EIR No. 3 requested that the TCA consider an alternative under which the corridor would not terminate at I-5. As part of TCA Final EIR No. 3, alternatives which terminated at State Route 78 (SR 78) in San Diego County and Interstate 15 (I-15) in Riverside County were considered. These possible routes are shown conceptually on Figure 2.65-4. These alternate routes which would not terminate at I-5 were eliminated from further consideration in TCA Final EIR No. 3 primarily because they did not meet the project objectives and they would have extensive impacts on the Military Mission of MCB Camp Pendleton. These routes are shown on **Figure 4: Conceptual Alternative Routes on the Southern Terminus**.

A route connecting to either I-15 or SR 78 would be expected to result in substantial adverse environmental impacts, including impacts related to geology and soils; hydrology; biological resources; air quality; cultural and scientific resources; noise; land use; landform and aesthetics; parks, recreation and open space; public services and utilities; hazardous materials; military impacts and traffic. These Alternatives were eliminated from further consideration in the Final EIS/SEIR based on information provided in Final TCA EIR No. 3 (SEIR, Section 2.6.6, p. 2-64). (See **Table 7: Elimination of Alternative Routes on the Southern Terminus.**)

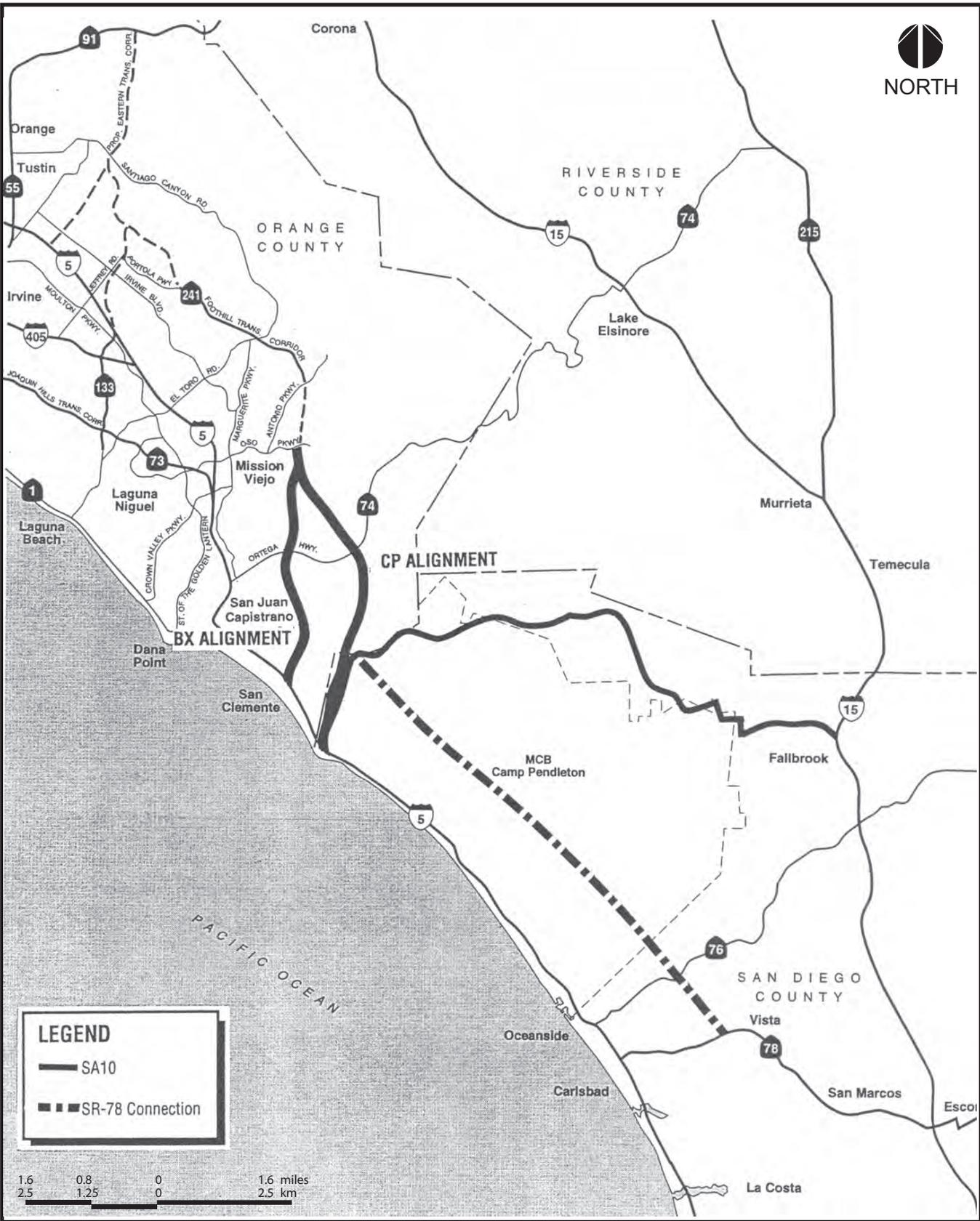
Table 7
Elimination of Alternative Routes on the Southern Terminus

Alternative	Description	Reason for Elimination
Alternative Route to SR 78	Alignment crosses MCB Camp Pendleton	Sever impacts to the Military Mission and operational viability of MCB Camp Pendleton
Alternative Route to I-15	Follows the east boundary of San Onofre State Beach in the north part of San Diego County and would extend north to the Orange/San Diego County line where it would then travel east	Substantial constraints including, but not limited to, topography, a designed wilderness area along the route, and impacts to MCB Camp Pendleton.

SOURCE: Information from Final SEIR; Table compiled by RBF

i. Alternative Route to SR 78

As described in Final EIR No. 3, the extension of the corridor south to SR 78 was deemed not reasonable, largely because of the extensive impacts to MCB Camp Pendleton. The Department of the Navy (DON) has consistently objected to the encroachment of non-military facilities onto the Base property. The TCA would not be able to acquire the Marine Corps property through eminent domain. The extension of the corridor south to SR 78 would severely impact the Military Mission and operational viability of MCB Camp Pendleton. The corridor would sever the five different beach fronts from the inland parts of the Base. The ability to continue maneuvers, including amphibious warfare activities and combat training, would be severely compromised and potentially completely prohibited because of the introduction of this type of land use across this part of the Base. Additionally, the alignment would traverse the Sierra Live Ordnance Impact Area. The construction of a road in that area would be problematic due to the potential presence of unexploded ordnance and soil contamination. The DON has indicated that this Alternative would place the continued operation of MCB Camp Pendleton in jeopardy. Therefore, the feasibility of a route that traverses the Base property in this area is questionable. For these reasons, this alternative was rejected in Final EIR No. 3 (Volume III, page 10) and is not considered further in the Final EIS/SEIR (SEIR, Section 2.6.6.1, p. 2-64).



Source: TCA Final EIR No.3.

Conceptual Alternative Routes on the Southern Terminus

ii. Alternative Route to I-15

The San Diego County General Plan Circulation Element includes an alignment for a “major road” which would serve the travel demand of a transportation facility extending from Orange County to I-5 in San Diego County. This road, identified as SA-10 on the Circulation Element, was included in the San Diego General Plan in 1964. SA-10 would follow an alignment generally along the east boundary of San Onofre State Beach in the north part of San Diego County and would extend north to the Orange/San Diego County line where it would then begin to travel east. As it travels east, SA-10 would traverse property in MCB Camp Pendleton, the Cleveland National Forest and San Diego County. As shown on the Circulation Element, SA-10 would connect with De Luz Road (identified as a light and a rural collector road) and would extend to Mission Road which would then have an interchange with I-15.

TCA Final EIR No. 3 indicated the County of San Diego had no plans at that time to construct this facility and it is unlikely that it will ever be built due to substantial constraints including, but not limited to, topography, a designated wilderness area along the route and MCB Camp Pendleton. Field reconnaissance was conducted by the County in the late 1980s for the segment of SA-10 from Fallbrook to De Luz Road to make a preliminary assessment of the feasibility of that route. It was determined that due to natural geographic constraints, among other things, it may not be feasible to construct this road. The road is not currently being pursued by the County (Denny, pers. comm., 1996). For these reasons, this alternative is not considered further in the Final EIS/SEIR (SEIR, Section 2.6.6.2, p. 65).

F. TRANSPORTATION SYSTEMS MANAGEMENT ALTERNATIVE

Consistent with FHWA policy, the feasibility of implementing a TSM alternative was evaluated. The concept of TSM is the implementation of a wide range of actions with low capital investment requirements that can improve transportation service. TSM recognizes the rising costs of highway improvements, intense competition for available resources and environmental concerns by emphasizing more efficient use of existing investments in the transportation infrastructure before additional investments are made in costly new facilities.

In 1977, FHWA and the Urban Mass Transportation Authority (later renamed the Federal Transit Authority) prepared a document compiling information on effective TSM measures. That report (Transportation Systems Management State of the Art, FHWA/UMTA, 1977) identified the following types of TSM actions:

- Actions to improve vehicular flow such as improved signalization, ramp metering, reversible lanes, removal of on street parking and use of one-way streets.
- Preferential treatment for HOVs.
- Reduced peak period travel through actions such as work rescheduling and peak period truck restrictions.

- Parking management through the use of parking regulations and park-and-ride facilities.
- Promotion of non-auto or high-occupancy auto use through ridesharing, human-powered travel modes and auto-restricted zones.
- Transit and paratransit service improvements including transit marketing, security measures, transit shelters and terminals.
- Transit management efficiency measures through route evaluation, maintenance policies and evaluation of system performance.

Not all these types of TSM improvements would be applicable to a TSM Alternative in the FTC-S area. For example, some TSM measures, such as auto restrictions, one way streets and parking management, are most effective when focusing on circulation issues associated with a CBD or a distinct commercial/entertainment area. In addition, many TSM improvements already have been or are being implemented across Orange County by a wide range of agencies including Caltrans, the OCTA, the County of Orange and local cities as part of local, subregional and regional efforts to improve the efficiency of the transportation system in the County. Measures that have already been implemented or are programmed for implementation include HOV lanes on most of the highway system in Orange County, ramp metering and HOV bypass ramps where feasible, park-and-ride facilities, real time traffic monitoring, real time traffic information for drivers, extensive traffic signalization and coordination programs, and removal of on street parking. Many of the communities in south Orange County, particularly in the more recently developed areas, prohibit on street parking on most streets in commercial and retail areas and in many residential areas. Traffic signals are coordinated within each local jurisdiction throughout much of south Orange County. Park-and-ride facilities are provided at a number of permanent park-and-rides and transportation centers throughout south Orange County and at the rail stations. Real time traffic monitoring and real time traffic information are available on much of the freeway system and through local radio traffic programs throughout the County.

This evaluation of the cumulative benefit of TSM strategies indicates that there would not be sufficient improvement in the transportation service to rely solely on TSM measures to provide the circulation relief needed in the future. Therefore, no TSM only alternatives are evaluated in the Final EIS/SEIR. However, TSM measures are expected to continue to be implemented County wide, by a range of agencies in the future, consistent with overall local, subregional and regional transportation goals and objectives (SEIR, Section 2.6.7, p. 2-65). (See **Table 8: Transportation Systems Management (TSM) Strategy Elimination.**)

**Table 8
Transportation Systems Management (TSM) Strategy Elimination**

TSM Strategy	Description	Reason for Elimination
Reversible Flow Lanes on Toll Road	Travel lanes used for northbound traffic in the AM and for southbound traffic in the Pm peak through temporary restriping.	Analysis shows that two general purposes lanes in both directions would be required to accommodate merging operations and traffic demand, therefore adding reversible lanes would not decrease significantly corridor width.
Reversible Flow Lanes on I-5	Implement reversible flow lanes within the existing ROW of I-5	Peak hour volumes on I-5 are too heavy to allow the removal of any existing lane to become a reversible flow lane.
Other TSM Improvements on I-5	Implementation of ramp metering, HOV ramp bypass lanes, etc.	Not eliminated – other TSM improvements are included as part of the I-5 Alternative.
TSM Improvements on Arterials	Expanding intersections, adding additional turn capacities, signal interconnects and climbing lanes in locations with steep grades along Antonio Parkway/Avenida La Pata	Not eliminated – these TSM improvements are included as part of the Arterial Improvements Only (AIO) Alternative included in the Final EIR/SEIR.
TSM Improvements for Commuter Rail	Increased commuter rail service	Because of the limited number of stations and because service is primarily limited to peak periods, increasing service will not meet project need.
TSM Improvements for Bus Transit	Increase bus transit use	Low ridership in south Orange County is not attributable to the unavailability of bus service, but instead of demographics, land use patterns, low densities, and dispersed employment centers.

SOURCE: Information from Final SEIR; Table compiled by RBF

i. Reversible Flow Lanes on Toll Road

Reversible flow lanes on the FTC-S were evaluated in TCA Final EIR No. 3 (Volume I, page 2-33) and the MIS to provide flexibility and responsiveness to travel demands, while minimizing the overall size of the facility. Under this measure, travel lanes would be used for northbound travel in the AM and for southbound traffic in the PM peak through temporary restriping of the total travel lanes on a facility. Transportation corridors with high directional flows and general purpose travel lanes that are expected to experience extended periods of congestion are candidates for the use of reversible lanes. The traffic projections for the corridor Alternatives in TCA EIR No. 3 show a distinct directional traffic flow. However, it would not be feasible to implement reverse flow lanes during the initial construction stage of the corridor alternatives because the first phase proposes construction of four lanes total, two in each direction. Analysis in Final EIR No. 3 showed it will be necessary to provide two general purpose lanes in both the northbound and southbound directions to accommodate merging operations and

predicted traffic demand. Therefore, although traffic analysis for the corridor in Final EIR No. 3 showed strong peak directional traffic flow, reversible flow lanes could not be implemented until subsequent phases of those corridor Alternatives. As a result, the use of reversible lanes on the FTC-S would not substantially reduce the number of lanes on the corridor and, therefore, would not substantially reduce the environmental effects associated with corridor alternatives. Should future demand exceed the planned capacity of the corridor, the feasibility of implementing reversible lanes or other TSM improvements could be considered as part of operational improvements or prior to implementing phases of the project. As shown in Section 3.0 (Traffic and Circulation), the current forecasts for the FTC-S still show strong peak directional flow and reversible flow lanes would not be a good candidate for this facility. Therefore, because the anticipated need for and potential benefits of reversible lanes for the corridor are not substantial, this TSM measure was not considered for further evaluation as an independent alternative in the Final EIS/SEIR (SEIR, Section 2.6.7, p. 2-66).

ii. Reversible Flow Lanes on I-5

Another TSM measure would be to implement reverse flow lanes on I-5. This would not be feasible because although there are distinct directional flows on I-5, the peak hour volumes are high enough in each direction that removal of travel lanes from one direction would limit the ability of I-5 to serve the overall existing demand in this corridor. Therefore, without the addition of new lanes on I-5, reversible lanes on I-5 in the FTC-S area were not considered feasible and are not considered for further evaluation in the Final EIS/SEIR (SEIR, Section 2.6.7, p. 2-67).

iii. Other TSM Improvements on I-5

I-5 is the only existing freeway in this area. Some TSM improvements, most notably ramp metering and HOV ramp bypass lanes, have been implemented in this corridor. HOV lanes could be implemented on the project segment of I-5, which is evaluated in detail in the Final EIS/SEIR as part of the I-5 Alternative. Therefore, no additional TSM alternative for I-5 is evaluated in detail in the Final EIS/SEIR (SEIR, Section 2.6.7, p. 2-67).

iv. TSM Improvements on Arterials

In the FTC-S area there are limited arterial facilities although the MPAH includes build out of the subregional arterial system in south Orange County. The MPAH depicts Antonio Parkway/Avenida La Pata as an arterial essentially parallel to I-5 in the FTC-S area which would provide a continuous route from the Orange/San Diego County line to Rancho Santa Margarita. Antonio Parkway currently exists from Rancho Santa Margarita south to Ortega Highway. La Pata Avenue exists from Ortega Highway south to the Prima Deshecha Landfill and Avenida La Pata exists from the County line to just north of Avenida Pico. Ultimately, this road will be a continuous facility with four to six through travel lanes. The

traffic analysis for TCA EIR No. 3 showed that the traffic volumes on Antonio Parkway/Avenida La Pata substantially increase without the corridor and when tolls are charged on the corridor. Therefore, it does serve part of the same travel demand. However, it is not expected that Antonio Parkway/Avenida La Pata would serve regional through trips that would use the corridor or I-5.

By implementing TSM improvements to Antonio Parkway, such as expanded intersections with additional turn capacities, signal interconnects and climbing lanes in the locations with steep grades, it would be possible to incrementally increase the capacity of that road at relatively low cost. Beach Boulevard, the first smart street to be constructed in Orange County, is an eight lane facility with a mid-block capacity of 45,000 to 60,000 average daily traffic (ADT). Given that Antonio Parkway is projected to be a six lane facility, the expected capacity would be at the lower end of this range. A capacity of 50,000 ADT would represent an approximately 10 percent capacity increase over what was assumed for Antonio Parkway in the traffic modeling for TCA EIR No. 3. If this entire 10 percent were diverted from the FTC-S, this would reduce the trips on the FTC-S by approximately 5,000 trips per day. When built out, Antonio Parkway/Avenida La Pata would be the only arterial highway parallel to I-5. The AIO Alternative, which is evaluated in detail in the Final EIS/SEIR, includes TSM improvements on Antonio Parkway/Avenida La Pata as well as other arterials in south Orange County. Therefore, no additional TSM alternative for arterials such as Antonio Parkway/Avenida La Pata is evaluated in detail in the Final EIS/SEIR (SEIR, Section 2.6.7, p. 2-67).

v. TSM Improvements for Commuter Rail

Besides I-5, the only other existing major circulation facility in the FTC-S area is the commuter rail line that runs roughly parallel to I-5 in south Orange County. OCTA currently operates a number of commuter trains on this alignment, with stations in Oceanside, San Clemente, San Juan Capistrano, Laguna Niguel/Mission Viejo (opened April 2002), Irvine and Tustin. OCTA intends to continue to increase this commuter service, consistent with demand and available funding, as part of the regional commuter rail programs in southern California. Increased commuter rail service is not anticipated to serve a majority of the travel demand in the FTC-S area for several reasons. First, there are a limited number of stations available and not all stations have bus service to extensive areas around the stations. Secondly, for many commuters, commuter rail service is not convenient to their trip origins and/or destinations. Third, commuter rail service is generally limited to the peak periods which may not effectively serve the travel times of many commuters. In addition, the service is predominately oriented toward destinations in central and north Orange County and Los Angeles County, with origins predominately in residential areas in Orange and San Diego Counties. Therefore, commuter rail may not effectively serve many trips whose origins and/or destinations are in south Orange County. For these reasons, increased

commuter rail as a TSM Alternative is not considered for detailed evaluation in the Final EIS/SEIR (SEIR, Section 2.6.7, p. 2-6).

vi. TSM Improvements for Bus Transit

The final TSM measure considered would be to provide relief to I-5 through increased bus transit use. OCTA currently operates a number of routes in south Orange County, along Pacific Coast Highway and through the developed parts of the Cities of Irvine, Mission Viejo, Laguna Hills, Laguna Niguel, Aliso Viejo, San Clemente, San Juan Capistrano and Dana Point. These include local and express, limited stop routes. There are several park-and-rides in south County including one in San Juan Capistrano and one at the Laguna Hills Transportation Center.

OCTA regularly assesses its bus system and considers system wide and local area changes to better serve Orange County's travel needs. In March 1994, the IBI Group conducted a major study for OCTA called the Bus System Improvement Project (BSIP). The BSIP was initiated to analyze transit system trends and needs; obtain public input; review the market climate and policy framework; establish new directions for the bus system; and define specific improvement plans and an implementation strategy. The result of the year long study included restructuring the system to expand ridership, increase convenience, improve efficiency and effectiveness, and to provide more service options without increasing net operating cost.

Based on the BSIP, the FTC-S area had some of the lowest percentages of transit use in the County. The BSIP found that transit use in south Orange County is low because most of the population growth in the area has and will continue to be young couples and families, a high proportion of which are young professionals who do not use transit. Low transit use in south Orange County was attributed to:

- Growing incomes and car ownership.
- Growth of gated communities that are difficult to serve with conventional bus services.
- Lower propensity of the population using transit.
- Inability of the transit system to provide services that can compete cost effectively with the automobile.
- Low density development.
- Circuitous road system and hilly terrain.

None of these characteristics in south County has changed measurably since the BSIP was completed. Some newer developments in south County such as the Talega and Ladera PCs may have net densities somewhat higher than densities in other communities such as Mission Viejo, Coto de Caza or San Clemente. However, overall gross and net densities in south County are still relatively low and would not be sufficient to support a substantial increase in bus transit. As a result, the rate of bus transit ridership in the FTC-S area would be expected to remain relatively low. In 2000, the OCTA substantially restructured the

entire route system. The intent of this restructuring was to provide more direct travel for bus patrons by minimizing routing off the major travel path. However, because the general characteristics of south County have not changed since the earlier study, it does not appear that a bus-only TSM alternative would substantially increase bus use or reduce traffic demand in south Orange County. Therefore, no bus-only TSM Alternative is considered in the Final EIS/SEIR.

G. OTHER CORRIDOR ALTERNATIVES FROM SOCTIIP PHASE I NOT CARRIED FORWARD

These build Alternatives, described briefly in this Section, were not carried forward for consideration in the Final EIS/SEIR as described below (SEIR, Section 2.6.8, p. 2-69).

The Collaborative used an iterative process to identify and screen possible alignments for corridor alternatives for the FTC-S. This process resulted in the review of thirty-two alignment segments for reasonableness as possible FTC-S corridor alternatives. The Collaborative identified specific criteria for evaluating Alternatives identified for possible consideration. Those criteria were:

- **Traffic:** These criteria were related to the ability of each potential alternative to meet the defined project purpose and need.
- **Wetlands:** These criteria were related to the effects of the alternatives on Waters of the United States and floodplains.
- **Natural Environment:** These criteria were related to potential effects of the alternatives on threatened and endangered species, habitat, the NCCP, wildlife and waterfowl refuges, the coastal zone and air quality.
- **Human Environment:** These criteria were related to potential effects of the alternatives related to residential and business communities, reasonableness of the expenditure of public funds, consistency with the Marine Corps Mission, community disruption, economic impacts on existing communities, National Register of Historic Places or California Register properties, Native American sacred or ceremonial sites and Tribal lands, and publicly owned parks and recreation areas.

Using these selection criteria developed by the Collaborative, twenty-two of these segments were determined to satisfy the FTC-S purpose and need and were considered reasonable Alternatives to be included in the NEPA/404 MOU Process. The remaining ten alignment segments, described in the following sections, were eliminated from further consideration in the Final EIS/SEIR due to environmental, land use, design and/or traffic considerations. These alignment segments were generally eliminated where major environmental constraints could be avoided and/or minimized by other reasonable alignments or if the Alternatives presented major engineering and geotechnical design constraints while only minimally improving traffic congestion on I-5 (SEIR, Section 2.6.8.1, p. 2-69). (See **Table 9: Elimination of Other Phase I Corridor Alternatives.**)

Table 9
Elimination of Other Phase I Corridor Alternatives

Other Phase I Corridor Alternatives	Alignment Description	Reason for Elimination
Alignment Segment 2A	Provides a westerly north-south link between a southern extension of existing SR 241 at Oso Parkway and Alignment Segment 2	Lacks a connection to the existing Orange County transportation system, and impacts Chiquita Ridge, CSS habitat, established wildlife movement corridors and habitat for the coastal California gnatcatcher
Alignment Segment 2B/2C	Provides a westerly north-south connector between SR 241 at Oso Parkway and Alignment Segment 3 (San Joaquin Extension). Alignment Segment 2B traversed open space between the Ladera PC and I-5, while Alignment Segment 2C circled the west edge of the Ladera PC and terminated at Ortega Highway.	Traffic analysis for these segments shows only limited improvements to I-5 and the arterial network
Alignment Segment 3	Extends southeast from the existing terminus of State Route 73 (SR 73) to Alignment Segment 2 (Antonio Parkway) north of Alignment Segment 4 (Ortega Highway)	Provides only limited traffic relief to I-5 and the arterial network; engineering constraints that would require a four-level interchange with I-5 with potential for significant right-of-way take that would displace residences, public property and businesses
Alignment Segment 7A	Provides a northern extension of Alignment Segment 7 north of the Talega PC	Provides traffic relief similar to Alignment Segment 7; excessive slide potential and high slopes; impacts to unnamed drainages, CSS habitat and habitat for the coastal California gnatcatcher
Alignment Segment 8B (Southern Portion)	Provides connector between Alignment Segment 8A (Far East Crossover - Complete) and Alignment Segment 8E (Avenida Pico), connecting to I-5 via Avenida Pico	Provides similar traffic relief as Alignment Segment 8C (Far East Crossover - Talega Variation) but impacted a larger area in The Conservancy
Alignment Segment 9	Runs southeast from I-5 just north of Alignment Segment 4 (Ortega Highway), traversing Alignment Segment 10A (Camino Los Ramblas) and Avenida Vista Hermosa, and intersecting Avenida La Pata	Provides only limited improvement to I-5 and the arterial network, lacks a clear connection to the existing Orange County transportation system
Alignment Segment 11	Provides connector from Alignment Segment 6B (Central Corridor - Complete) at Avenida	Excessive slide potential and high slopes

Other Phase I Corridor Alternatives	Alignment Description	Reason for Elimination
	La Pata to Alignment Segments 8F, 8D or 8H	
Alignment Segment 12	Provides connector from Alignment Segments 7 and 7A south of Avenida Pico to a direct connection at I-5 near the Orange County line	Excessive slide potential and high slopes
Alignment Segment 14	Runs parallel to and west of Alignment Segment 7; moves southeast from Alignment Segment 6A (Central Corridor) intersection at Alignment Segment 4 (Ortega Highway) and connects to and follows Alignment Segment 8C (Far East Crossover - Talega Variation)	Impacts to unnamed drainages, CSS habitat and habitat for the coastal California gnatcatcher

SOURCE: Information from Final SEIR; Table compiled by RBF

i. Alignment Segment 2A

Alignment Segment 2A was a westerly north-south link between a southern extension of existing SR 241 at Oso Parkway and Alignment Segment 2, and expanded Antonio Parkway, near Crown Valley Parkway. It was not selected for consideration because Alignment Segment 2 provided more traffic relief to I-5 and the arterial network than Alignment Segment 2A, it lacked a connection to the existing Orange County transportation system, and impacts to Chiquita Ridge, CSS habitat, established wildlife movement corridors and habitat for the coastal California gnatcatcher were avoided by dropping Alternative Segment 2A. Therefore, this Alternative segment is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-70).

ii. Alignment Segments 2B and 2C

Alignment Segments 2B and 2C were westerly north-south connectors between SR 241 at Oso Parkway and Alignment Segment 3 (San Joaquin Extension). Alignment Segment 2B traversed open space between the Ladera PC and I-5. Alignment Segment 2C circled the west edge of the Ladera PC and terminated at Ortega Highway. The Collaborative dropped Alignment Segments 2B and 2C from further consideration because traffic analysis for these segments showed only limited improvements to I-5 and the arterial network. Alignment Segments 2B and 2C would have impacted open space between Antonio Parkway and I-5 and the Ladera PC. The Collaborative selected the widening of Alignment Segment 2 (Antonio Parkway) over Alignment Segments 2B and 2C because it provided improved traffic relief and greater avoidance

of potential environmental and land use impacts. Impacts to Horno and Arroyo Trabuco Creeks, CSS habitat, established wildlife movement corridors, planned open space and habitat for coastal California gnatcatcher and least Bell's vireo were avoided by dropping Alternative Segments 2B and 2C from consideration. Therefore, these Alternative Segments are not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-70).

iii. Alignment Segment 3

Alignment Segment 3 (San Joaquin Extension) was proposed to extend southeast from the existing terminus of State Route 73 (SR 73) to Alignment Segment 2 (Antonio Parkway) north of Alignment Segment 4 (Ortega Highway). However, Alignment Segment 3 was not selected for consideration because it provided only limited traffic relief to I-5 and the arterial network and it presented engineering constraints that would have required a four-level interchange with I-5 with potential for significant right-of-way take that would have displaced residences, public property and businesses. Impacts to Horno and Arroyo Trabuco Creeks, and habitat for coastal California gnatcatcher and least Bell's vireo were avoided by dropping Alternative Segment 3 from further consideration. Therefore, this alignment segment is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-70).

iv. Alignment Segment 7A

Alignment Segment 7A was proposed as a northern extension of Alignment Segment 7 north of the Talega PC. It was considered as a connector from Alignment 7 to Alignment Segment 12 and would have extended Alignment Segment 7, via Alignment Segment 12, to a direct connector at I-5 just north of the Orange County line. Alignment Segment 7A was not selected because the optimum alignment connected Alignment Segment 7 to Alignment Segment 6C (the southern section of the Central Corridor alignment) northwest of The Conservancy. This modified alignment provided traffic relief similar to Alignment Segment 7A. Excessive slide potential and high slopes were technical constraints to this alignment segment. Impacts to unnamed drainages, CSS habitat and habitat for the coastal California gnatcatcher were avoided by dropping Alternative Segment 7A from further consideration. Therefore, this alignment segment is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-70).

v. The Southern Portion of Alignment Segment 8B (Southern Portion)

The southern portion of Alignment Segment 8B was proposed as a connector between Alignment Segment 8A (Far East Crossover - Complete) and Alignment Segment 8E (Avenida Pico), connecting to I-5 via Avenida Pico. This alignment segment was dropped from consideration because it provided similar traffic relief as Alignment Segment 8C (Far East Crossover - Talega Variation) but impacted a

larger area in The Conservancy. Therefore, this alignment segment is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-71).

vi. Alignment Segment 9

Alignment Segment 9 was proposed southeast from I-5 just north of Alignment Segment 4 (Ortega Highway), traversing Alignment Segment 10A (Camino Los Ramblas) and Avenida Vista Hermosa, and intersecting Avenida La Pata. It was not selected because the traffic analysis showed Alignment Segment 9 provided only limited improvement to I-5 and the arterial network and because it lacked a clear connection to the existing Orange County transportation system. Therefore, this alignment segment is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-71).

vii. Alignment Segment 11

Alignment Segment 11 was proposed as a connector from Alignment Segment 6B (Central Corridor - Complete) at Avenida La Pata to Alignment Segments 8F, 8D or 8H. Alignment Segment 11 was not selected for consideration due to excessive slide potential and high slopes and is not evaluated in the Final EIS/SEIR. An alignment segment similar to Alignment Segment 11 is the A7C-FECV Alternative north of Avenida La Pata, as described earlier in this Section, which is evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-71).

viii. Alignment Segment 12

Alignment Segment 12 was proposed as a connector from Alignment Segments 7 and 7A south of Avenida Pico to a direct connection at I-5 near the Orange County line. It was not selected for consideration because other alignments provided similar traffic relief to I-5 and the arterial network. Excessive slide potential and high slopes were constraints to this alignment segment. Therefore, this alignment segment is not evaluated in the Final EIS/SEIR. A connector from Alignment Segment 7 to Alignment Segment 6C is considered in the Central Corridor Complete Alternative, described earlier in this Section, which is evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-71).

ix. Alignment Segment 14

Alignment Segment 14 was proposed as a parallel alignment west of Alignment Segment 7. Alignment Segment 14 moved southeast from the Alignment Segment 6A (Central Corridor) intersection at Alignment Segment 4 (Ortega Highway) and connected to and followed Alignment Segment 8C (Far East Corridor East Crossover - Talega Variation) to a direct connection at I-5. Alignment Segment 14 was not selected for consideration because the optimum design and engineering alignment between this Segment and Segment 7 followed Alignment Segment 7. . Additionally, unnamed drainages, CSS habitat and habitat for the coastal California gnatcatcher were avoided by dropping Alternative Segment 14

from further consideration. Therefore, this alignment segment is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.1, p. 2-71).

H. I-5 Alternatives Considered and Eliminated by the Phase I Collaborative

I-5 alternatives were considered by the Phase I Collaborative and assessed for their ability to provide traffic relief on I-5 and the arterial network, potential improvement configurations and likely physical disturbance to the human and natural environments. The I-5 alternatives considered by the Collaborative but not carried forward for evaluation in the Final EIS/SEIR are described below (SEIR, Section 2.6.8.2, p. 72). (See **Table 10: Elimination of Other I-5 Alternatives.**)

**Table 10
Elimination of Other I-5 Alternatives**

Other I-5 Alternatives	Alignment Description	Reason for Elimination
Widening of I-5, including 2-3 reversible HOV lanes	Addition of reversible High Occupancy Travel (HOT) lanes to provide HOT travel in the peak direction on I-5 during peak traffic hours. These reversible lanes require barrier separation with restricted access points.	Design and safety constraints associated with the reversible HOT lanes concept on I-5, including shoulder and merge configurations, access/egress points and tolling facilities made Alternative infeasible
Double-decking of I-5	HOT, HOV or mixed flow lanes constructed above the existing footprint of I-5	Design and safety constraints, including third level elevation requirements, the need for reversible lanes in an elevated structure, limited access, more complex interchanges, additional width at ingress/egress locations and safety/traffic enforcement concerns made Alternative infeasible

SOURCE: Information from Final SEIR; Table compiled by RBF

i. Widening of I-5 Including Two to Three Reversible High Occupancy Travel Lanes

The reversible High Occupancy Travel (HOT) lanes improvement to I-5 proposed a two to three lane expansion of I-5 with these additional lanes configured to provide HOT travel in the peak direction on I-5 during peak traffic hours. These reversible lanes would have required barrier separation with restricted access points. The reversible HOT lanes concept was evaluated to assess minimizing the widening of I-5 while accommodating peak hour/peak direction traffic demand, encouraging carpooling with free access to HOT lanes, ensuring uncongested travel on a reversible facility through variable pricing for single occupant vehicles, and providing a revenue source to help pay for the widening. Due to design and safety constraints associated with the reversible HOT lanes concept on I-5, including shoulder and merge configurations, access/egress points and tolling facilities, this alternative was dropped by

the Collaborative. Therefore, this Alternative is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.2, p. 72).

Caltrans currently has no programmed funding for any capacity enhancement project for the I-5 South in Orange County, and does not anticipate any funding from the Transportation Equity Act: A Legacy for Users (TEA-LU) (Letter: *Response to Submitted Documents Addressing SOCTIIP*, June 21, 2006, from Caltrans – see Appendix A and B of this document).

ii. Double Decking of I-5

The double decking of I-5 Alternative included HOT, HOV or mixed flow lanes above the existing footprint of I-5, thus avoiding impacts to the human and natural environment by increasing the capacity of I-5 without increasing its footprint. Design analysis of this alternative indicated that a single column, cantilever design would have been required if no at grade widening of I-5 was to occur. Due to design and safety constraints, including third level elevation requirements, the need for reversible lanes in an elevated structure, limited access, more complex interchanges, additional width at ingress/egress locations and safety/traffic enforcement concerns, this alternative was dropped by the Collaborative. Therefore, this Alternative is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.2, p. 72).

I. Arterial Alternatives Considered by the Phase I Collaborative Not Carried Forward

Arterial Alternatives were considered by the Collaborative in terms of traffic relief on I-5 and the arterial network, potential arterial improvement configurations and likely physical disturbance to sensitive water resources, biological resources and land uses. The arterial improvements Alternatives considered by the Collaborative but not carried forward for evaluation in the Final EIS/SEIR are described below (SEIR, Section 2.6.8.3, p. 2-72). (See **Table 11: Elimination of Arterial Alternatives.**)

**Table 11
Elimination of Arterial Alternatives**

Other I-5 Alternatives	Alignment Description	Reason for Elimination
Minimum Improvement Arterial Alternative	"Smart street" intersection improvements to Antonio Parkway at Ortega Highway, Camino Las Ramblas, Avenida Vista Hermosa and Avenida Pico, and the extension of Crown Valley Parkway to Antonio Parkway	Provides only minimal traffic relief to I-5 and the arterial network, and the Crown Valley component of this Alternative impacts environmental resources near Oso Parkway
Moderate Improvement Arterial Alternative	Same smart street intersection improvements as the Minimum Improvement Alternative as well as widening of the Antonio Parkway to eight lanes between Alignment Segment 3 (San Joaquin Extension) and San Juan Creek Road, and a grade separated intersection at the Ortega Highway and Antonio Parkway intersection.	Impacted the human and natural environments between the existing terminus of SR 73 and Antonio Parkway, while providing only minimal traffic relief to I-5 and the arterial network

SOURCE: Information from Final SEIR; Table compiled by RBF

i. Minimum Improvement Arterial Alternative

The Minimum Improvement Alternative proposed critical intersection improvements to an arterial backbone that included improvements to Oso Parkway, Antonio Parkway/Avenida La Pata and Avenida Pico. This Alternative considered smart street intersection improvements to Antonio Parkway at Ortega Highway, Camino Las Ramblas, Avenida Vista Hermosa and Avenida Pico, and included extension of Crown Valley Parkway to Antonio Parkway. This Alternative provided only minimal traffic relief to I-5 and the arterial network. Additionally, the Crown Valley component of this Alternative impacted environmental resources near Oso Parkway, while providing only minimal traffic relief to I-5 and the arterial network. Therefore, this alternative is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.3, p. 2-72).

Caltrans asserts that although providing additional lanes on Antonio Parkway/Avenida La Pata would be a critical component of an improved arterial circulation system, their benefit to the I-5 is anticipated to be minimal and in some cases, detrimental. Arterial improvements along the I-5 corridor are critical in minimizing short trips but lack viability when it comes to providing a significant alternative to the toll road corridor (Letter: *Response to Submitted Documents Addressing SOCTIIP*, June 21, 2006, from Caltrans – see Appendix A and B of this document).

ii. Moderate Improvement Arterial Alternative

The Moderate Improvement Alternative proposed the same critical intersection improvements as the Minimum Improvement Alternative and also included Alignment Segment 3 (San Joaquin Extension), widening of

the Antonio Parkway to eight lanes between Alignment Segment 3 (San Joaquin Extension) and San Juan Creek Road, and a grade separated intersection at the Ortega Highway and Antonio Parkway intersection. Analysis of the Moderate Improvement Alternative also considered additional smart street intersection improvements at the intersections of Antonio Parkway and Camino Las Ramblas, Avenida Vista Hermosa and Avenida Pico. This Alternative provided only minimal traffic relief to I-5 and the arterial network. The Alignment Segment 3 (San Joaquin Extension) component of this Alternative impacted the human and natural environments between the existing terminus of SR 73 and Antonio Parkway, while providing only minimal traffic relief to I-5 and the arterial network. Therefore, this Alternative is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.3, p. 2-73).

Caltrans asserts that although providing additional lanes on Antonio Parkway/Avenida La Pata would be a critical component of an improved arterial circulation system, their benefit to the I-5 is anticipated to be minimal and in some cases, detrimental. Arterial improvements along the I-5 corridor are critical in minimizing short trips but lack viability when it comes to providing a significant alternative to the toll road corridor (Letter: *Response to Submitted Documents Addressing SOCTIIP*, June 21, 2006, from Caltrans – see Appendix A and B of this document).

J. Other Build Alternatives Considered by the Phase I Collaborative but not Carried Forward

Additional Build Alternatives considered by the Collaborative but not carried forward for evaluation in the Final EIS/SEIR are described below (SEIR, Section 2.6.8.4, p. 2-73). (See **Table 12: Elimination of Other Build Alternatives.**)

**Table 12
Elimination of Other Build Alternatives**

Alternatives	Description	Reason for Elimination
<p>Minimum Arterial Improvement Alternative Plus One I-5 HOV Lane</p>	<p>Adds one additional lane on I-5 in each direction for the length of the corridor; expands Antonio Parkway/Avenida La Pata to a six lane smart street from Avenida Pico to Oso Parkway; includes “smart street” intersection treatments at the intersections of Antonio La Pata and Ortega Highway, Camino Las Ramblas and Avenida Pico between I-5 and La Pata</p>	<p>Provides only limited traffic relief to I-5 and the arterial network; other similar alternatives provide improved traffic relief relative to this Alternative</p>
<p>Maximum Arterial Improvement Alternative Plus Extension of SR 73 to Antonio Parkway</p>	<p>Adds one additional lane on I-5 in each direction for the length of the corridor; expands Antonio Parkway/Avenida La Pata to an eight lane smart street from San Juan Creek Road and Avenida Pico; includes “smart street” intersection treatments at Antonio/La Pata and Ortega</p>	<p>Provides only limited traffic relief to I-5 and the arterial network; other similar alternatives provide improved traffic relief relative to this Alternative</p>

Alternatives	Description	Reason for Elimination
	Highway, Camino Las Ramblas and Avenida Pico between I-5 and Avenida La Pata; and extends SR 73 (Alignment 3 - San Joaquin Extension) to Antonio Parkway, north of Ortega Highway.	
Minimum Arterial Improvement Alternative Plus Mixed Flow on I-5	Adds one additional lane on I-5 in each direction for the length of the corridor; expands Antonio Parkway/Avenida La Pata to a six lane smart street from Avenida Pico to Oso Parkway; includes "smart street" intersection treatments at Antonio/La Pata and Ortega Highway, Camino Las Ramblas and Avenida Pico between I-5 and Avenida La Pata; and additional mixed flow lanes on I-5 from the Orange County/San Diego County line to I-405 (for a total of five continuous mixed flow lanes on I-5)	Provides only limited traffic relief to I-5 and the arterial network; other similar alternatives provide improved traffic relief relative to this Alternative

SOURCE: Information from Final SEIR; Table compiled by RBF

i. Minimum Arterial Improvement Alternative Plus One I-5 HOV Lane

The Minimum Arterial Improvement Alternative Plus One HOV Lane on I-5 included one additional lane on I-5 in each direction for the length of the corridor. Antonio Parkway/Avenida La Pata would be expanded to a six lane smart street from Avenida Pico to Oso Parkway. Smart street intersection treatments were proposed at the intersections of Antonio La Pata and Ortega Highway, Camino Las Ramblas and Avenida Pico between I-5 and La Pata. The Collaborative determined that this Alternative provided only limited traffic relief to I-5 and the arterial network in Orange County and that other alternatives which combined elements of other alternatives provided improved traffic relief relative to this Alternative. Therefore, this Alternative is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.4, p. 2-73).

Caltrans asserts that there is no data showing that a single HOV or HOT lane works to relieve traffic congestion on a segment by segment basis. Unlike auxiliary lanes that can be between between on and off ramps, it is not possible to take a similar approach when constructing HOV/HOT lanes. This is due to the difficulty of beginning and ending HOV/HOT facilities on a segment by segment basis. Additionally, this approach would not address the project need for gap closure (Letter: *Response to Submitted Documents Addressing SOCTIIP*, June 21, 2006, from Caltrans – see Appendix A and B of this document).

ii. Maximum Arterial Improvement Alternative Plus Extension of SR 73 to Antonio Parkway

The Maximum Arterial Improvement Alternative Plus Alignment Segment 3 (San Joaquin Extension) Alternative proposed one additional lane on I-5 in each direction for the length of the corridor. Antonio Parkway/Avenida La Pata would be an eight lane smart street from San Juan Creek Road and Avenida Pico. Smart street intersection treatments were proposed at the intersections of Antonio/La Pata and Ortega Highway, Camino Las Ramblas and Avenida Pico between I-5 and Avenida La Pata. SR 73 (Alignment 3 - San Joaquin Extension) would be extended to Antonio Parkway, north of Ortega Highway. The Collaborative determined that this Alternative provided only limited traffic relief to I-5 and the arterial network in Orange County and that other alternatives which combined elements of other alternatives provided improved traffic relief. Therefore, this Alternative is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.4, p. 2-73).

iii. Minimum Arterial Improvement Alternative Plus Mixed Flow on I-5

The Minimum Arterial Improvement Alternative Plus Mixed Flow on I-5 Alternative proposed one additional lane on I-5 in each direction for the length of the corridor. Antonio Parkway/Avenida La Pata would be a six lane smart street from Avenida Pico to Oso Parkway. Smart street intersection treatments were proposed at the intersections of Antonio/La Pata and Ortega Highway, Camino Las Ramblas and Avenida Pico between I-5 and Avenida La Pata. Additional mixed flow lanes were proposed on I-5 from the Orange County/San Diego County line to I-405, for a total of five continuous mixed flow lanes on this segment of I-5. The Collaborative determined that this Alternative provided only limited traffic relief to I-5 and the arterial network in Orange County and that other alternatives which combined elements of other alternatives provided improved traffic relief. Therefore, this Alternative is not evaluated in the Final EIS/SEIR (SEIR, Section 2.6.8.4, p. 2-73).

III. ALTERNATIVES REMOVED IN PHASE II OF THE SOCTIIP COLLABORATIVE PRIOR TO THE DRAFTING OF THE EIR/SEIR

During Phase II of the SOCTIIP Collaborative, those Alternatives deemed feasible and environmentally superior for Phase I were carried forward for further analysis. Through this additional analysis effort, these Alternatives were assessed for inclusion within the Draft EIR/EIS.

A. Tolled Arterial Alternative

As part of the SOCTIIP Collaborative process, it was suggested that the TCA evaluate an alternative which implemented tolls on arterials in the SOCTIIP area, essentially converting some arterial segments to tolled facilities. This Alternative became known as the “Arterial Improvements Only”, or AIO Alternative. The intent was to assess whether tolling arterials was feasible and, if feasible, whether tolling arterials would maximize the capacity of the arterial system and provide increased system capacity while using existing road facilities. In early 2001, the TCA conducted an analysis, summarized below, to consider how arterials could be converted to toll facilities and the potential implications of this type of change to the circulation system, as described in the following Sections (SEIR, Section 2.6.9, p. 2-74).

i. Access Requirements and Constraints

Arterials are classified as roads with uncontrolled access. This is defined as at-grade intersections with intersecting arterials and local roads, and access (driveways) provided to adjacent properties. Access is controlled only by local regulations with regard to site conditions, road geometrics, safety standards and traffic volumes. Arterials provide pedestrian access for crossing these facilities. Some arterials include on-road bicycle and equestrian trails. Arterials serve local traffic, allowing for short and multiple trips in localized areas.

Freeways are access controlled. Access controlled facilities limit and control how and when motorists can enter and exit the facility. Access is provided at on and off ramps and is not generally provided directly to adjacent properties. Intersection arterials are grade separated, below or above the access controlled freeway. The frequency of on and off ramps is determined by demand and the geometrics of the freeway and the intersecting roads. Access controlled facilities do not provide pedestrian or equestrian access and rarely provide bicycle access. These facilities give preference to through traffic and allow large volumes of traffic to travel without stopping. Freeways predominately serve regional traffic and some subregional traffic, specifically longer range through trips.

Toll facilities are access controlled facilities which include bridges and highways. For a successful toll facility, access must be controlled. Toll collection points are necessary at strategic locations through which all users must pass so tolls can be collected. Limited ingress and egress points on a toll facility ensure that tolls can be collected. If access is

unlimited, drivers can divert around toll collection facilities to avoid paying the toll. For example, if a mainline toll collection facility is placed between two commercial center driveways or two uncontrolled access arterials, a motorist could use driveways or arterials to divert around the toll collection point.

To operate a functional toll facility, in the absence of controlled access, it would be necessary to place toll collection facilities at every intersecting arterial and access point (driveways). Otherwise, users could easily circumvent toll collection points. Toll collection on arterials would degrade the operations of the arterial facilities, likely to unacceptable LOS, because numerous toll collection points would be required. Motorists would have to stop at each toll facility and pay a toll. The queue of motorists waiting to pay tolls would likely extend onto adjacent arterials which would adversely affect through movements on those intersecting arterials. In addition, a tolled arterial scenario would potentially result in a substantial number of drivers using alternative non-tolled arterials or local streets. This would result in increased use on those facilities, potentially beyond their capacities, resulting in increased congestion on those non-tolled facilities and potentially increasing safety hazards on those local streets (SEIR, Section 2.6.9, p. 2-74).

ii. Footprint Limits and Right-of-Way Requirements for a Tolled Arterial Facility

To accommodate toll collection facilities at all the necessary intersecting/access points, additional right-of-way beyond that necessary for the arterial road itself would be required. The toll collection method (cash and/or automatic collection system) will affect the footprint requirements for the toll collection facilities. The footprint requirements for toll collection facilities would result in increased right-of-way needs and increased environmental impacts, beyond the right-of-way and impacts anticipated for the arterial facilities themselves. Because of the increased footprint and increased right-of-way needs, the overall cost of design, construction, implementation and operation for tolled arterials would be substantially greater than for untolled arterials (SEIR, Section 2.6.9, p. 2-75).

Many arterials cross multiple jurisdictions, sometimes within very short distances. In some cases, jurisdictional boundaries are within or immediately adjacent to the right-of-way for an arterial. As a result, right-of-way relationships for arterials can be very complicated. Tolling those arterials would further complicate the relationships regarding ownership and maintenance of those arterial roads.

iii. Ability to Convert Free Facilities to Toll Facilities

The implementation of toll transportation facilities would not be expected to be allowed to eliminate or compromise existing free alternative routes. As a result, it is very unlikely that existing arterial facilities open to the public could be reassigned for tolled use without the provision of free

equivalent travel options. To convert an existing arterial to a toll facility, it is likely that a toll free parallel route would have to be provided. Although legislation could be sought to provide for a tolled arterial without the provision of a free parallel route, the process for legislation is difficult and time consuming and there is no assurance that the desired legislation would be passed and that it would prevail in the case of a legal challenge.

Based on these likely constraints, there are limited options for tolling arterials in the SOCTIIP area because most the MPAH arterials are currently implemented although not all are built out to their ultimate cross sections at this time (SEIR, Section 2.6.9, p. 2-75).

iv. Feasibility of a Tolled Arterial Alternative

Research conducted by the TCA for this analysis in 2001 indicates that tolls had not been implemented on an uncontrolled access facility such as an arterial anywhere in the United States.

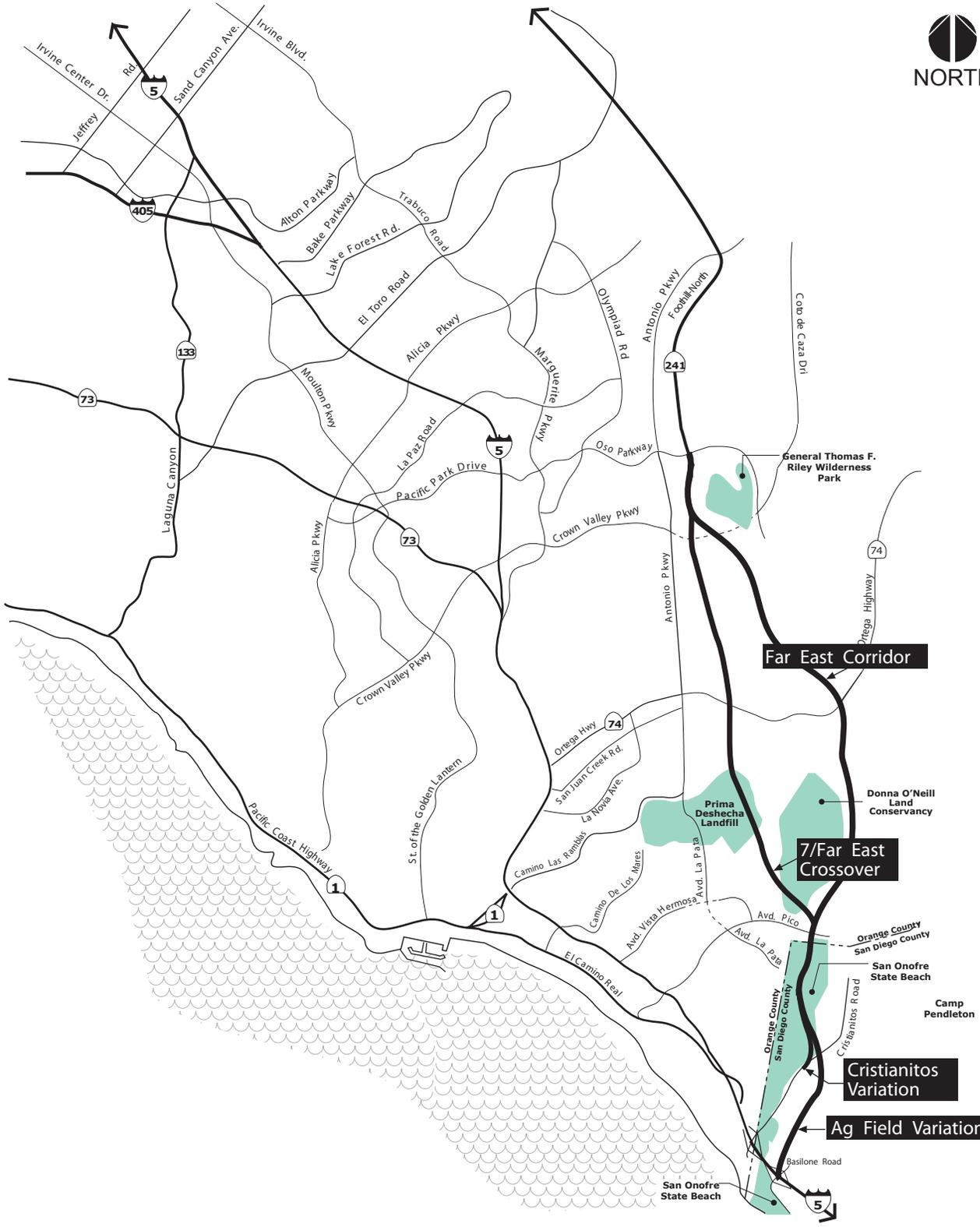
Based on the access, right-of-way and potential legal issues describe above, a tolled arterial alternative does not appear to be a feasible alternative for transportation improvements in the FTC-S area. Tolling arterials would be costly and would substantially compromise the LOS that could be achieved on those arterials if they were not tolled. The degradation of the LOS on the tolled arterials could result in traffic diverting to alternative routes and increased congestion on those routes. Further, tolling arterials would result in substantial adverse impacts on adjacent land uses dependent on the arterials for their access. Based on these reasons, a tolled arterial alternative was not considered for detailed analysis in the current EIS/SEIR (SEIR, Section 2.6.9, p. 2-76).

B. Corridor Variations Alternatives

Among the Alternatives identified by the Phase I Collaborative for consideration in Phase II were the following four Alternatives which included alignments on Camp Pendleton, further to the south and further into the Base, than the FEC alignments:

- Far East Crossover-Cristianitos Variation (FEC-CV) Alternative.
- Far East Crossover-Agricultural Fields Variation (FEC-AFV) Alternative.
- Alignment 7 Corridor-Far East Crossover (Cristianitos) Variation (A7C-FECV-C) Alternative.
- Alignment 7 Corridor-Far East Crossover (Agricultural Fields) Variation (A7C-FECV-AF) Alternative.

As shown on **Figure 5: Alignments of the Cristianitos and Agricultural Fields Variations**, these alignments share a common alignment with the FEC and A7C-FECV alignments from Oso Parkway to approximately the County boundary. At that point, the Agricultural Fields and Cristianitos Variations alignments shift further south and extend further into the Base.



Not to Scale

Source: P&D Consultants (2002).

Alignments of the Cristianitos and Agricultural Fields Variations

Camp Pendleton has an extensive history of involvement with the planned southern extension of the FTC. In 1988, the Marine Corps agreed, in consultation with the TCA, to the evaluation of one potential alignment of the southern extension of the FTC on the Base, subject to several conditions, including the stipulation that any toll road alignment on Camp Pendleton must not impact or interfere with the operational flexibility of the Marine Corps mission at that Base. In the March 4, 1992 "Statement of Intent," the TCA and Camp Pendleton mutually agreed on an alignment for the FTC toll road on the Base ("Statement of Intent Regarding Foothill Transportation Corridor Oso Parkway to I-5, Modified C Alignment" 03/04/92). That alignment, previously known as the Modified-C alignment, then later the CP alignment, and now referred to as the Far East CorridorEast Crossover (FEC)-Complete Alternative, represents the one and only alignment which meets the Marine Corps' conditions in the 1988 Commandant Letter and the 1992 "Statement of Intent" for constructing a corridor project on Camp Pendleton. Since 1988, the Marine Corps has consistently maintained that no alignment, other than the Modified-C alignment (now the FEC-Complete Alternative), would be permitted on Camp Pendleton. The FEC-Complete Alternative has been replaced by the FEC-M and the FEC-W Alternatives, both of which are refinements to the FEC, and which meet the conditions in the 1988 Commandant Letter and the 1992 "Statement of Intent" for constructing a corridor on Camp Pendleton.

As a non-signatory agency to the NEPA/Section 404 Integration Process, the Marine Corps (represented by Camp Pendleton) did not participate in Phase I of the SOCTIIP Collaborative process. However, Camp Pendleton was provided the opportunity during that process to address the Collaborative with respect to the Marine Corps position on this proposed toll road project. At that time, Camp Pendleton reiterated the Marine Corps' long-standing 1988 position that only one proposed alignment of this transportation corridor would be authorized for evaluation on the Base. Despite this Marine Corps position, the Phase I Collaborative agreed during the alternatives development process to include two additional Camp Pendleton alignment Alternatives on the list for consideration during the environmental analysis phase of the project, the Agricultural Fields Variation and the Cristianitos Variation. These two additional on-Base alternatives were included as project Alternatives without consultation with or participation by Camp Pendleton. The Marine Corps has consistently indicated its strong opposition to these two additional Camp Pendleton alignments.

Based on the longstanding Marine Corps position allowing consideration of only the FEC alignment on the Base, consistent with the 1988 Commandant Letter and the 1992 "Statement of Intent" with the TCA, the Marine Corps, as a cooperating agency on the Final EIS/SEIR has indicated that the Agricultural Fields and Cristianitos Variations are not feasible and could not be built on the Base. In 2002, FHWA concurred that corridor alternatives containing the Agricultural Fields and Cristianitos segments are infeasible and that they should not be evaluated in detail in the Final EIS/SEIR. In July 2003, the Collaborative concurred with the removal of these corridor alternatives from detailed consideration in the Final EIS/SEIR.

Therefore, the following Alternatives, which include these segments, are not evaluated in detail in the Final EIS/SEIR, but were evaluated in detail in the technical reports for the FTC-S

- FEC-CV Alternative.
- FEC-AFV Alternative.
- A7C-FECV-C Alternative.
- A7C-FECV-AF Alternative.

i. Overview of the Evaluation of the Alternatives

In June, July and August 2003, the Phase II Collaborative considered the wide range of Alternatives analyzed in the technical reports and specifically evaluated each Alternative for advancement into the Final EIS/SEIR or elimination from detailed evaluation in the Final EIS/SEIR. In order to compare the alternatives in a comparative form, parameters for evaluating each alternative were developed by the Collaborative members and the TCA. These parameters were:

- **Biological Resources:** Specifically, direct impacts to waters of the United States and riparian ecosystems, and direct impacts to Coastal Sage Scrub
- **Traffic:** Specifically, congestion relief on I-5 (2025), and systemwide travel time savings (2025)
- **Socioeconomics:** Specifically, the number of residential units displaced, and community disruption
- **Project Measures:** Specifically, total project costs, cost effectiveness

Each of these parameters is described in detail in the following Section. Then, the application of each parameter to each alternative, the ranking for each parameter and the decision for the advancement or elimination of each Alternative is provided.

There was also initial consideration of two other parameters that address indirect impacts to Waters of the United States and riparian ecosystems. After initial evaluation, it was determined that the impacts on these two parameters would not be a discriminating factor in distinguishing among the Alternatives. Therefore, those parameters are not addressed further in this Section.

ii. Rankings of the Evaluation Parameters

Table 13: Evaluation Parameters provides rankings only for the Ultimate configurations of the corridor Alternatives because the Ultimate configuration represents the largest footprint and, therefore, the worst case for each corridor alignment.

**Table 13
Evaluation Parameters**

Alternatives	FEC Alignment Alternatives						CC Alternatives			A7C Alignment Alternatives						Arterial Alternatives		I-5 Alt.	No Action Alt.
	FEC-I FEC-U	FEC-TV-I FEC-TV-U	FEC-OHV-I FEC-OHV-U	FEC-APV-I FEC-APV-U	FEC-W-I FEC-W-U	FEC-M-I FEC-M-U	CC-Initial CC-Ultimate	CC-ALPV-I CC-ALPV-U	CC-OHV-I CC-OHV-U	A7C-I A7C-U	A7C-7SV-I A7C-7SV-U	A7C-FECV-I <i>Preferred</i> A7C-FECV-U	A7C-OHV-I A7C-OHV-U	A7C-ALPV-I A7C-ALPV-U	A7C-FEC-M-I A7C-FEC-M-U	AIO	AIP	I-5	No Action-OCV- 2000 No Action-RMV
EVALUATION PARAMETERS AND RANKINGS RELATED TO BIOLOGICAL RESOURCES																			
Direct Impacts: Waters of the United States and Riparian Ecosystems																			
Acres Riparian Ecosystems Impacted ¹	I=107.2 U=160.1 ¹⁹	I=53.8 U=66.1 ¹⁷	I=22.6 U=33.7 ⁶	I=87.0 U=123.6 ¹⁸	I=38.7 U=40.3 ¹⁰	I=49.0 U=53.4 ¹³	I=53.7 U=60.2 ¹⁵	I=49.9 U=57.4 ¹⁴	I=35.8 U=42.7 ¹¹	I=25.5 U=34.5 ⁷	I=27.6 U=36.3 ⁹	I=59.5 U=65.2 ¹⁶	I=18.2 U=35.5 ⁸	I=23.1 U=32.0 ⁵	I=42.9 U=45.6 ¹²	9.2 ²	21.6 ⁴	13.7 ³	0 ¹
Normalized Rank Score for All Criteria ²	I=6.43 U=6.41 ¹⁹	I=5.78 U=5.42 ¹⁸	I=1.71 U=1.80 ⁹	I=4.66 U=4.82 ¹⁷	I=3.2 U=2.4 ¹¹	I=3.5 U=2.9 ¹³	I=5.51 U=4.70 ¹⁶	I=5.06 U=4.42 ¹⁵	I=2.58 U=2.25 ¹⁰	I=1.78 U=1.62 ⁷	I=1.89 U=1.71 ⁸	I=3.31 U=2.89 ¹²	I=0.9 U=1.09 ⁴	I=1.41 U=1.35 ⁶	I=3.4 U=2.9 ¹⁴	I=1.05 U=0.81 ³	I=1.60 U=1.21 ⁵	I=0.58 U=0.42 ²	0 ¹
Direct Impacts: Ecosystem/Habitat																			
Acres of CSS Impacted ³	I=387 U=520 ¹⁹	I=222 U=315 ¹⁴	I=118 U=198 ⁹	I=180 U=257 ¹³	I=371 U=388 ¹⁶	I=402 U=424 ¹⁷	I=169 U=185 ⁸	I=161 U=178 ⁷	I=112 U=140 ⁶	I=197 U=224 ¹¹	I=203 U=232 ¹²	I=402 U=499 ¹⁸	I=76 U=108 ⁵	I=190 U=217 ¹⁰	I=347 U=348 ¹⁵	42 ³	58 ⁴	19 ²	0 ¹
Gnatcatcher Use Areas Impacted ⁴	I=16 U=21 ¹⁷	I=16 U=21 ¹⁷	I=7 U=10 ¹⁰	I=9 U=13 ¹³	I=9 U=9 ⁸	I=10 U=10 ¹⁰	I=8 U=9 ⁸	I=6 U=7 ⁶	I=3 U=5 ⁵	I=13 U=15 ¹⁵	I=13 U=15 ¹⁵	I=15 U=22 ¹⁹	I=3 U=7 ⁶	I=11 U=13 ¹³	I=11 U=11 ¹²	3 ³	3 ³	0 ¹	0 ¹
EVALUATION PARAMETERS AND RANKINGS RELATED TO TRAFFIC																			
Percent of Daily I-5 Traffic Which is Congested in 2025 ⁵	4.4% ⁹	3.7% ⁶	15.9% ¹⁸	9.6% ¹⁴	4.4% ⁹	4.4% ⁹	3.4% ³	8.8% ¹²	15.3% ¹⁶	3.5% ⁴	3.5% ⁴	4.2% ⁷	15.3% ¹⁶	8.8% ¹²	4.2% ⁷	12.1% ¹⁵	2.7% ²	1% ¹	16.7% ¹⁹
Hours of Total Vehicle Travel Time Savings in 2025 (in thousands) ⁶	20.0 ³	17.0 ¹⁰	3.0 ¹⁶	9.0 ¹²	20.0 ³	20.0 ³	18.0 ⁷	8.0 ¹³	1.0 ¹⁷	18.0 ⁷	18.0 ⁷	21.0 ¹	1.0 ¹⁷	8.0 ¹³	21.0 ¹	5.0 ¹⁵	10.0 ¹¹	20.0 ³	0.0 ¹⁹
EVALUATION PARAMETERS AND RANKINGS RELATED TO SOCIOECONOMICS																			
Number of Impacted Residences ⁷	I=0 U=0 ¹	I=685 U=703 ¹⁶	I=0 U=0 ¹	I=0 U=0 ¹	I=0 U=0 ¹	I=0 U=0 ¹	I=593 U=602 ¹⁴	I=2 U=14 ¹⁰	I=0 U=0 ¹	I=701 U=704 ¹⁷	I=593 U=602 ¹⁴	I=32 U=56 ¹¹	I=0 U=0 ¹	I=82 U=92 ¹²	I=0 U=0 ¹	263 ¹³	898 ¹⁹	838 ¹⁸	0 ¹
Community Disruption ⁸	I=No U=No	I=Yes U=Yes	I=No U=No	I=Yes U=Yes	I=No U=No	I=No U=No	I=Yes U=Yes	I=No U=No	I=No U=No	I=Yes U=Yes	I=Yes U=Yes	I=No U=No	I=No U=No	I=Yes U=Yes	I=No U=No	Yes	Yes	Yes	No
EVALUATION PARAMETERS AND RANKINGS RELATED TO PROJECT COSTS																			
Total Costs (in millions) ⁹	I=\$870 U=\$1,162 ¹²	I=\$1,167 U=\$1,413 ¹⁴	I=\$215 U=\$330 ³	I=\$515 U=\$667 ⁷	I=\$711 U=\$884 ⁸	I=\$770 U=\$928 ¹⁰	I=\$1,122 U=\$1,379 ¹³	I=\$512 U=\$628 ⁶	I=\$233 U=\$290 ²	I=\$1,594 U=\$1,871 ¹⁵	I=\$1,791 U=\$2,139 ¹⁷	I=\$1,678 U=\$1,954 ¹⁶	I=\$341 U=\$410 ⁴	I=\$962 U=\$1,020 ¹¹	I=\$729 U=\$896 ⁹	\$522 ⁵	\$2,143 ¹⁸	\$2,401 ¹⁹	\$0 ¹
Cost Per Hour of Travel Time Savings (in thousands) ¹⁰	I=\$43.5 U=\$58.1 ⁵	I=\$68.6 U=\$83.1 ⁹	I=\$71.7 U=\$110 ¹²	I=\$57.2 U=\$74.1 ⁶	I=\$35.6 U=\$44.2 ³	I=\$38.5 U=\$46.4 ⁴	I=\$62.3 U=\$76.6 ⁷	I=\$64 U=78.5 ⁸	I=\$233 U=\$290 ¹⁸	I=\$88.6 U=\$104 ¹¹	I=\$99.5 U=\$119 ¹³	I=\$79.9 U=\$93.0 ¹⁰	I=\$341 U=\$410 ¹⁹	I=\$88.6 U=\$120 ¹⁵	I=\$34.7 U=\$42.7 ²	\$140 ¹⁶	\$214	\$120 ¹⁴	\$0 ¹¹

Source: TCA (2003).

¹ Direct impacts to Waters of the United States and Riparian Ecosystems, measured in acres of riparian ecosystems within the disturbance limits.

² The normalized rank scores were calculated for two groups of Alternatives: (1) All initial corridors, AIO, AIP and I-5 Action Alternatives and (2) all ultimate corridor alternatives, AIO, AIP and I-5 Alternatives.

Therefore, for the AIO, AIP and I-5 Alternatives, normalized rankings when compared to the initial (I) and the ultimate (U) corridor alternatives are provided.

³ Defined as the number of acres of coastal sage scrub within the disturbance limits of the Alternative. Rankings are shown in (). The lower the ranking number, the better the performance of the Alternative for this measure.

⁴ Defined as the number of areas within the disturbance limits of the alternatives documented as individual gnatcatchers use areas. Rankings are shown in (). The lower the ranking number, the better the performance of the Alternative for this measure.

⁵ Defined as the percent of each day that traffic on I-5 operates under congested conditions in 2025. Rankings are shown in (). The lower the ranking number, the better the performance of the alternative for this measure.

⁶ Defined as the total hours of vehicle travel time saved per day, expressed in thousands of hours. Rankings are shown in (). The lower the ranking number, the better the performance of the alternative for this measure.

⁷ Defined as the number of residential units within the disturbance limits that would be acquired and removed by the alternative. Rankings are shown in (). The lower the ranking number, the better the performance of the alternative for this measure.

⁸ Defined as the creation of new infrastructure across a community and acquisition of residential units in that community, resulting in disruption of an existing community and division of the community by new infrastructure.

⁹ Project costs include right-of-way, mobilization, clearing/erosion control, grading, roadway, structures, drainage, utilities and other development costs including final design and estimated mitigation costs based on past mitigation costs for other TCA corridor projects. Rankings are shown in (). The lower the ranking number, the better the performance of the alternative for this measure.

¹⁰ Total project costs divided by total hours of vehicle travel time savings. Rankings are shown in (). The lower the ranking number the better the performance of the alternative for this measure.

¹¹ There are no project costs and no travel time savings for the No Action Alternatives.

In some cases, two or more Alternatives may have the same value for a particular parameter considered in this analysis. In those cases, Alternatives with the same value were assigned the same rank number. The next numbers were skipped in the ranking to ensure that the rankings always ranged from 1 (best) to 19 (worst). For example, in Table 2.56-1, two Alternatives have a congestion relief value of 4.4 and are both ranked 9. The next ranking number (10) is skipped and the alternative with the next highest congestion value is ranked 11.

In the text in this Section, the Alternatives are described as performing “well,” “moderately well,” “moderately” or “poorly.” These qualitative descriptions relate to the numerical rankings in **Table 13** as follows:

Performs well: ranked 1, 2, 3 or 4.

Performs moderately well: ranked 5, 6, 7, 8 or 9.

Performs moderately: ranks 10, 11, 12, 13 or 14.

Performs poorly: ranks 15, 16, 17, 18 or 19.

iii. Description of the Evaluation Parameters

The parameters considered by the Collaborative specifically address concerns related to satisfaction of the requirements of Section 404 of the Clean Water Act related to minimizing impacts to waters of the United States and riparian resources. There are several reasons for eliminating Alternatives from consideration in the Final EIS/SEIR. Alternatives which have no likelihood of being selected as the LEDPA were not carried forward and evaluated in the Final EIS/SEIR. However, all the build Alternatives were evaluated and documented in the technical reports before they were eliminated from consideration in the Final EIS/SEIR. It should be noted that no discussion has been held regarding practicability under the Clean Water Act Section 404 for the Alternatives carried forward in the environmental document for public circulation. During the Phase I Alternatives process which determined which alternatives were to be included in the Draft EIS/SEIR, there was an initial indication that they were practicable and, therefore, were evaluated in detail in the technical reports. However, a final determination on practicability has not been made at the time of this Draft EIS/SEIR. The final determination of the practicability of these Alternatives will be made as part of the development of the Final EIS/SEIR. The outcome of that process will be the LEDPA.

While a major focus of the parameters was the 404 criteria relative to Waters of the United States, the parameters are also based on consideration of the Purpose and Need, public policy (cost of improvement relative to amount of benefit provided) and other socioeconomic and environmental impacts. The Clean Water Act 404(b)(1) Guidelines, the NEPA/404 MOU and FHWA regulations recognize there are many different types of resources that need to be considered, and focusing solely on one resource might result in significant adverse environmental consequences on other resources. Therefore, the

parameters were selected to provide evaluation of more than one key resource area.

Biological Resources: Direct Impacts to Waters of the United States and Riparian Ecosystems.

Waters of the United States are areas subject to regulation under Section 404 of the federal Clean Water Act (33 CFR Part 328.3). Wetlands are a subset of Waters of the United States. Two categories of Waters of the United States occur in association with southern California riparian ecosystems. The first category, non-wetland waters, are the areas along perennial, intermittent and ephemeral stream channels that exhibit a distinct bed and bank, but fail to meet one or more of the hydrologic, hydrophytic vegetation and hydric soils criteria (ACOE Wetland Delineation Manual). The second category of wetlands is the area that meet all the hydrologic, hydrophytic vegetation and hydric soils criteria. Riparian ecosystems are linear corridors of variable width that occur along perennial, intermittent and ephemeral drainages. They are distinguished by (1) the hydrologic interaction between the stream channel and adjacent areas and (2) the distinctive geomorphic features and vegetation that develop in response to this hydrologic interaction.

Two measures were identified for this parameter. The first measure is the total number of acres of riparian ecosystems directly impacted by the disturbance limits of a build Alternative. The acreages were calculated based on amount of mapped plant communities and habitats disturbed for the construction of each Alternative. Table 2.65-1 lists the direct impacts to waters of the United States and riparian ecosystems for the build and No Action Alternatives considered by the Phase II Collaborative. Table 2.65-1 shows the total acreage followed by a number in parenthesis. The number in parenthesis is the ranking of that alternative, when compared to the other Alternatives, in terms of the total acres of direct impacts. As shown in Table 2.65-1, there are 19 Alternatives (18 build Alternatives and the No Action Alternatives). The higher the ranking number, the more acres of direct impacts would be incurred under that alternative. For example, as shown in Table 2.65-1, the FEC-Ultimate Alternative, with the greatest number of acres of direct impacts to waters of the United States and riparian ecosystems, at over 160 acres, would be ranked 19 out of the 19 Alternatives for this parameter.

The second measure for this parameter is the normalized ranking. The rankings were identified in the "Potential Impacts of Alternative Transportation Corridors on Waters of the United States and Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project (ACOE Engineer Research and Development Center (ERDC), 2003). These rankings were based on all the criteria evaluated in that report. The normalized rank for each criterion was determined by dividing the impact units calculated for the individual alignments by the largest impact unit value of all the alignments considered for that criterion. For example, if the alternative with the largest impact affected 20 ac, each alternative would use 20 ac as the

denominator. That alternative would have a ranking of 1. An alternative that impacted 2 ac would have a normalized rank of 0.1.

The normalized rankings in **Table 13** represent the sum of the normalized scores from all the individual criteria evaluated in the ERDC report.

Biological Resources: Direct Impacts to Habitats and Wildlife

Direct impacts to ecosystems and habitats were defined for two measures. The first is the total number of acres of coastal sage scrub within the disturbance limits for each Alternative. The second is the total number of gnatcatcher use areas, which represent at most one pair of gnatcatchers per use area, within the disturbance limits for each alternative. Use areas are defined as areas documented to be used by gnatcatchers.

Traffic: Congestion Relief on I-5 (2025)

This measure was defined as the percent of daily traffic on I-5 which would operate under congested conditions in 2025 for each alternative. This measure provides a direct measurement of congestion and delay on the I-5. This is measured by determining the number and length of I-5 mainline segments that would have an unacceptable LOS under the No Action and build Alternatives. Based on the 2025 build out circulation system with the 14,000 du proposed RMV plan, the No Action Alternative will result in a 16.7 percent congested percentage of daily traffic on I-5, as shown in Table 2.65-1. Each of the build Alternatives would result in less congestion on I-5, compared to the No Action Alternatives, as shown in Table 2.65-1.

Traffic: Systemwide Travel Time Savings (2025)

This measure was defined as the total amount of travel time saved by travelers in the study area in 2025 under each alternative. A system wide travel time savings statistic is a general measure of the improvement in the mobility of traffic in south Orange County. The extent to which this occurs can be estimated by determining relative improvements in daily vehicle hours traveled (VHT) which is an output of the transportation model. Time savings are based on the 2025 build out circulation system with the 14,000 du proposed RMV plan. The travel time savings by alternative are shown in Table 2.65-1.

Socioeconomics: Number of Residential Displacements

This measure was defined as the number of individual residential units that would be displaced for each build Alternative. This is a total number of residential units within the disturbance limits for each alternative. The socioeconomics measures used by the Collaborative to evaluate the alternatives are listed in Table 2.65-1.

Costs: Total Project Costs

This measure is the estimated total cost to implement each alternative. These costs include right-of-way, mobilization, clearing/erosion control, grading, roadway, structures, drainage, utilities and other development costs including final design and estimated mitigation costs based on past

mitigation costs for other TCA corridor projects. The cost measures used by the Collaborative to evaluate the Alternatives are listed in **Table 13**.

Costs: Cost Effectiveness

This measure is the total project costs divided by total hours of vehicle travel time savings. This provides a comparative measure to consider the effectiveness of each Alternative in providing traffic relief relative to the implementation costs of each alternative. This measure was used to compare the congestion relief provided by a given Alternative with the cost of that Alternative.

Socioeconomics: Community Disruption

This measure was defined based on whether the creation of new infrastructure across a community and displacement of residential units in that community would result in disruption of an existing community and physical division of the community by new infrastructure. This parameter was requested to be added to the table but no specific discussion was conducted by the Collaborative.

iv. Evaluation of the Alternatives

Based on the parameters listed in **Table 13**, the Collaborative considered each Alternative and whether it should be advanced for detailed consideration in the Final EIS/SEIR or eliminated from consideration in the Final EIS/SEIR. The evaluation of the Alternatives was based on information in the technical reports, which assessed the impacts of all the Alternatives carried forward into Phase II. The exception to this is the cost information which was developed based on construction and design costs provided by the TCA and right-of-way costs from the Right-of-Way Costs Technical Report. The findings of that analysis, by Alternative, are summarized in the following sections.

v. Alternatives Eliminated

FEC Alternative. As shown in **Table 13**, the FEC-Initial and Ultimate perform the worst when evaluated for the biological resources measures. Specifically, the FEC Alternative ranks the worst for impacts to acres of waters of the United States and riparian ecosystems (160.1 ac impacted, rank: 19) and impacts to acres of CSS (520 ac impacted, rank: 19). The FEC Alternative also results in very high impacts to the California gnatcatcher (21 use areas, rank: 17).

As shown in **Table 13**, the FEC Alternative performs moderately well for congestion relief on I-5 (rank: 9) and well in total hours of total travel time savings (rank: 3). As shown in Table 2.65-1, the FEC Alternative does not require the displacement of any residences (rank: 1) and does not result in community disruption.

As shown in **Table 13**, the FEC Alternative ranks moderately related to total project costs (rank: 12) and moderately well on cost per hour of travel time saved (rank: 5).

Based on the poor performance of the FEC Alternative for the biological resources measures and the availability of similar Alternatives which perform well on the traffic, socioeconomics and costs measures and better on the biological resources measures, the Collaborative decided to delete the FEC Alternative from consideration in the Final EIS/SEIR.

FEC-TV Alternative. As shown in **Table 13**, the FEC-TV-Initial and Ultimate perform poorly for impacts to acres of waters of the United States (66.1 ac impacted; rank: 17) and rank moderately in impacts to acres of CSS (315 ac impacted, rank: 14). The FEC-TV Alternative also results in very high impacts to the California gnatcatcher (12 use areas, rank: 17) when compared to the other Alternatives.

The FEC-TV Alternative performs among the worst related to the socioeconomics measures as shown in **Table 13** with 703 residences displaced (rank: 16). The FEC-TV Alternative performs moderately well for congestion relief on I-5 (rank: 6) and moderately for hours of travel time saved (rank: 10) as shown in Table 2.65-1. This Alternative ranks moderately for the total project cost (rank 14) and moderately well for the cost per hour of travel time saved (rank: 9).

Based on the low performance of the FEC-TV Alternative for the biological resources measures and the availability of similar Alternatives which perform well on the traffic, socioeconomics and costs measures and better on the biological resources measures, the Collaborative decided to delete the FEC-TV Alternative from consideration in the Final EIS/SEIR.

FEC-OHV Alternative. As shown in **Table 13**, the FEC-OHV Alternative performs poorly for the traffic measures, ranking 18 for percent of traffic operating in congestion on I-5 in 2025 and 16 in hours of vehicle travel time saved because it stops at Ortega Highway and does not connect with I-5. This Alternative performs well on total project costs (rank: 3) and moderately for cost per hour of travel time saved (rank: 12). The FEC-OHV Alternative performs the best in socioeconomics, with no residential units impacted (rank: 1). The FEC-OHV Alternative performs moderately well for acres of riparian ecosystems impacted (33.7 ac, rank: 6) and on acres of CSS (198 ac, rank: 9) and moderately on impacts to the California gnatcatcher (10 use areas, rank: 10).

Based on the poor traffic performance and the high cost per hour of travel time saved under this Alternative and the only moderate performance related to the biological resources measures, the Collaborative decided to delete the FEC-OHV Alternative from consideration in the Final EIS/SEIR.

FEC-APV Alternative. As shown in **Table 13**, the FEC-APV Alternative performs poorly for the biological resources measures, ranking 18 for

acres of riparian ecosystems. This Alternative performs moderately on CSS (257 ac, rank: 13) and gnatcatchers (13 use areas, rank: 13).

As shown in **Table 13**, the FEC-APV Alternative performs moderately for traffic congestion relief on I-5 (rank: 14) and hours of travel time savings (rank: 12). The FEC-ALPV Alternative performs the best in socioeconomics, with no residential units impacted (rank: 1). The traffic benefits under this Alternative are better than the Alternatives that terminate at Ortega Highway, because this Alternative extends to Avenida Pico, but it still does not provide a connection to I-5.

Based on the poor performance of this Alternative related to the biological resources measures and the only moderate level of traffic benefits, the Collaborative decided to eliminate the FEC-APV Alternative from consideration in the Final EIS/SEIR.

CC-OHV Alternative. As shown in **Table 13**, the CC-OHV Alternative performs poorly for the traffic measures, ranking 16 for percent of traffic operating in congestion on I-5 in 2025 and 17 in hours of vehicle travel time saved, because this Alternative terminates at Ortega Highway and does not provide a connection to I-5.

As shown in **Table 13**, the CC-OHV Alternative perform well for total project costs (rank: 2) and poorly for cost per hour of travel time saved (rank: 18).

The CC-OHV Alternative performs the best in socioeconomics, with no residential units impacted (rank: 1).

Based on the poor traffic performance and the high cost per hour of travel time saved, the Collaborative decided to delete the CC-OHV Alternative from consideration in the Final EIS/SEIR.

A7C Alternative. As shown in **Table 13**, the A7C Alternative performs moderately well based on acres of riparian ecosystems impacted (rank: 7), moderately related to acres of CSS impacted (224 ac, rank: 11) and poorly related to gnatcatchers impacted (15 use areas, rank: 15).

As shown in **Table 13**, the A7C Alternative performs well related for congestion relief on I-5 (rank: 4) and moderately well for hours of vehicle travel time saved (rank: 7). However, the A7C Alternative performs poorly for number of impacted residences (704 residences impacted, rank: 17).

As shown in **Table 13**, the A7C Alternative performs poorly based on project costs (rank: 15) and moderately on cost per hour of travel time savings (rank: 11).

Based on the moderate performance of the A7C Alternative for the biological measures, the poor performance related to the socioeconomics measures, and the availability of other Alternatives which provide similar

performance on the traffic measures and better performance on the biological and socioeconomic measures, the Collaborative decided to delete the A7C Alternative from consideration in the Final EIS/SEIR.

A7C-7SV Alternative. As shown in **Table 13**, the A7C-7SV Alternative perform poorly based on project costs (rank: 17) and moderately on cost per hour of travel time savings (rank: 13). This Alternative also performs moderately on the socioeconomic measures, with the ultimate resulting in the displacement of 602 residences (rank: 14) and in community disruption.

As shown in **Table 13**, the A7C-7SV Alternative performs moderately well for acres of riparian ecosystems impacted (rank: 9) and moderately for acres of CSS impacted (rank: 12), but rank poorly for gnatcatchers impacted (15 use areas impacted, rank: 15).

Based on the poor and moderate performance of this Alternative related to project costs and socioeconomic, the Collaborative decided to eliminate the A7C-7SV Alternative from consideration in the Final EIS/SEIR.

A7C-FECV Alternative. As shown in **Table 13**, the A7C-FECV Alternative performs poorly for acres of riparian resources (65.2 ac, rank: 16), ranking highest for gnatcatchers (22 use areas, rank: 19) and very high for CSS (499 ac impacted, rank 18).

The A7C-FECV Alternative also performs poorly for project costs (rank: 16) and moderately for cost per hour of travel time saved (rank: 10).

Based on the poor performance of this Alternative for biological resources and project costs, the Collaborative decided to eliminate the A7C-FECV Alternative from consideration in the Final EIS/SEIR.

A7C-OHV Alternative. As shown in **Table 13**, the A7C-OHV Alternatives perform poorly for the traffic measures, ranking 16 for percent of traffic operating in congestion on I-5 in 2025 and 17 in hours of vehicle travel time saved. This Alternative performs the worst of all the build Alternatives for cost per hour of travel time saved (rank: 19). This is because this Alternative terminates at Ortega Highway and does not provide a connection to I-5.

As shown in **Table 13**, the A7C-OHV Alternative performs moderately well for acres of riparian ecosystems impacted (rank: 8), acres of CSS impacted (rank: 5) and gnatcatchers impacted (7 use areas impacted, rank: 6).

Based on the poor traffic performance and the high cost per hour of travel time saved, the Collaborative decided to delete the A7C-OHV Alternative from consideration in the Final EIS/SEIR.

AIP Alternative. Based on **Table 13**, the AIP Alternative performs poorly in project costs (rank: 18) and in cost per hour of travel time saved (rank: 17). As shown in Table 2.65-1, the AIP Alternative performs the worst of all alternatives related to displacement of residences, with 898 residences displaced (rank: 19).

As shown in **Table 13**, the AIP Alternative performs well for traffic operating in congestion on I-5 (rank: 2) and moderately for hours of travel times savings (rank: 11).

As shown in **Table 13**, the AIP Alternative performs well in the biological resources, ranked 4 for both acres of riparian ecosystems impacted and acres of CSS impacted, and ranked 3 for gnatcatchers impacted (3 use areas).

Based on the very poor performance of this Alternative related to project costs and socioeconomics, the Collaborative decided to eliminate the AIP Alternative from consideration in the Final EIS/SEIR.

vi. Alternatives Advanced for Detailed Consideration in the Final EIS/SEIR

CC Alternative. As shown in **Table 13**, the CC Alternative performs poorly for acres of riparian systems impacted (rank: 15) and moderately well for both acres of CSS impacted (185 ac, rank: 8) and gnatcatchers impacted (9 use areas, rank: 8).

As shown in **Table 13**, the CC Alternative performs well for congestion relief on I-5 (rank: 3) and moderately well for travel time savings (rank: 7), although the operational issues for the connection of the CC Alternative at I-5 would reduce the ranking for this Alternative when considering FHWA's access policy.

The CC Alternative ranks moderately for residences impacted (rank: 14). This Alternative does result in community disruption.

As shown in **Table 13**, the CC Alternative performs moderately for project costs (rank: 13) and moderately well for cost per hour of travel time savings (rank: 7).

Based on the performance of the CC Alternative for the traffic measures, the Collaborative decided to advance the CC Alternative for evaluation in the Final EIS/SEIR.

CC-ALPV Alternative. As shown in Table 2.65-1, the CC-ALPV Alternative performs moderately for acres of riparian ecosystems (rank 14), and moderately well for CSS (178 ac, rank 7) and gnatcatchers (7 use areas, rank: 6).

As shown in **Table 13**, the CC-ALPV Alternative performs moderately well for congestion relief on I-5 (rank: 12) and hours of total travel time

savings (rank: 13). The CC-ALPV-Ultimate ranks 10 for residences displaced (14 units) and does not result in community disruption, as shown in Table 2.65-1.

As shown in **Table 13**, the CC-ALPV Alternative performs moderately well for both project costs (rank: 6) and cost per hour of travel time savings (rank: 8).

Based on the good performance of this Alternative related to CSS and gnatcatchers and the traffic, socioeconomics and project costs measures, the Collaborative decided to advance the CC-ALPV Alternative for consideration in the Final EIS/SEIR.

A7C-ALPV Alternative. As shown in **Table 13**, the A7C-ALPV Alternative performs moderately well for acres of riparian ecosystems (rank: 5) and moderately for CSS (217 ac, rank: 10) and gnatcatchers (13 use areas, rank: 13).

As shown in **Table 13**, the A7C-ALPV Alternative performs moderately for congestion relief on I-5 (rank: 12) and hours of total travel time savings (rank: 13). The A7C-ALPV-Ultimate ranks 12 for residences displaced (92 units) and would result in community disruption, as shown in Table 2.65-1.

As shown in **Table 13**, the A7C-ALPV Alternative performs moderately on total project costs (rank: 11) and poorly in cost per hour of travel time saved (rank: 15).

Based on the good performance of this Alternative related to the biological measures and the moderate performance related to the traffic and socioeconomics measures, the Collaborative decided to advance the A7C-ALPV Alternative for consideration in the Final EIS/SEIR.

AIO Alternative. As shown in **Table 13**, the AIO Alternative performs well for all the biological resources measures with 9.2 ac of riparian ecosystem impacts (rank: 2), 42 ac of CSS impacts (rank: 3) and three gnatcatcher use areas impacted (rank: 3).

As shown in **Table 13**, the AIO Alternative performs poorly for congestion relief on I-5 (rank: 15) and in hours of travel time saved (rank: 15).

As shown in **Table 13**, the AIO Alternative requires the displacement of 263 residences (rank: 13) and does result in community disruption.

As shown in **Table 13**, the AIO Alternative performs moderately well in project costs (rank: 5), but poorly in cost per hour of travel time saved (rank: 16).

Based on the good performance of this Alternative related to biological resources, the Collaborative decided to advance the AIO Alternative for consideration in the Final EIS/SEIR.

I-5 Alternative. As shown in **Table 13**, the I-5 Alternative performs well for all the biological resources measures with 13.7 ac of riparian ecosystem impacts (rank: 3), 19 ac of CSS impacts (rank: 2) and no gnatcatcher use areas impacted (rank: 1).

As shown in **Table 13**, the I-5 Alternative performs the best of all the build Alternatives for congestion relief on I-5 (rank: 1) and very well in hours of travel time saved (rank: 3).

As shown in **Table 13**, the I-5 Alternative requires the displacement of 838 residences (rank: 18) and does not result in community disruption.

As shown in **Table 13**, the I-5 Alternative performs the worst of all the build Alternatives in project costs (rank: 19) and moderately in cost per hour of travel time saved (rank: 14).

Based on the good performance of this Alternative related to biological resources, the Collaborative decided to advance the I-5 Alternative for consideration in the Final EIS/SEIR. However, Caltrans currently has no programmed funding for any capacity enhancement project for the I-5 South in Orange County, and does not anticipate any funding from the Transportation Equity Act: A Legacy for Users (TEA-LU) (Letter: *Response to Submitted Documents Addressing SOCTIIP*, June 21, 2006, from Caltrans – see Appendix A and B of this document).

vii. Refinements

The following refined Alternatives were substituted for the original FEC and A7C Alternatives in the Draft EIS/SEIR because they perform better for biological resources measures and project cost and similarly for traffic and socioeconomic measures, as explained below.

Refinement: FEC-W Alternative. As shown in **Table 13**, the FEC-W Alternative results in better performance related to biological resources measures than the FEC Alternative, ranking 10 for acres of riparian ecosystems and 16 for CSS (388 ac). The FEC-W Alternative also performs substantially better for gnatcatchers (9 use areas, rank: 8).

As shown in **Table 13**, the FEC-W Alternative performs moderately well for percent daily congestion on I-5 (rank: 9) and well for hours of travel time saved (rank: 3). The FEC-W Alternative does not require the displacement of any residential units (rank: 1) and would not result in community disruption as shown in Table 2.65-1.

As shown in **Table 13**, the FEC-W Alternative performs moderately well on project costs (rank: 8) and well on cost per hour of travel time saved (rank: 3).

Based on the reduced biological resources impacts compared to the FEC Alternative and the moderate to good performance for the traffic,

socioeconomic and project cost measures, the Collaborative decided to advance the FEC-W Alternative for evaluation in the Final EIS/SEIR. The FEC-W and FEC-M Alternatives were substituted for the original FEC Alternatives because they perform better on the biological resources impacts compared to the original FEC alignment.

Refinement: FEC-M Alternative. As shown in **Table 13**, the FEC-M Alternative results in better performance related to biological resources measures than the FEC Alternative, ranking 13 for acres of riparian ecosystems and 17 for CSS (424 ac). The FEC-W Alternative performs substantially better for gnatcatchers (10 use areas, rank: 10).

As shown in **Table 13**, the FEC-M Alternative performs well for percent daily congestion on I-5 (rank: 9) and very well for hours of travel time saved (rank: 3). The FEC-M Alternative does not require the displacement of any residential units (rank: 1) and would not result in community disruption as shown in Table 2.65-1.

As shown in **Table 13**, the FEC-M Alternative performs moderately on project costs (rank: 10) and well on cost per hour of travel time saved (rank: 4).

Based on the reduced biological resources impacts compared to the FEC Alternative and the moderate to good performance for the traffic, socioeconomics and project cost measures, the Collaborative decided to advance the FEC-M Alternative for evaluation in the Final EIS/SEIR.

Refinement: A7C-FEC-M Alternative. As shown in **Table 13**, the A7C-FEC-M Alternative ranks 12 for acres of riparian ecosystems and 15 for acres of CSS (348 ac). The A7C-FEC-M Alternative performs moderately for gnatcatchers (11 use areas, rank: 12).

As shown in **Table 13**, the A7C-FEC-M Alternative performs moderately well for percent daily congestion on I-5 (rank: 7) and the best of all the Alternatives for hours of travel time saved (rank: 1). The A7C-FEC-M Alternative does not require the displacement of any residential units (rank: 1) and would not result in community disruption as shown in Table 2.65-1.

As shown in **Table 13**, the A7C-FEC-M Alternative performs moderately well on project costs (rank: 9) and well on cost per hour of travel time saved (rank: 2).

Based on the moderate biological resources impacts and the moderate to very good performance for the traffic, socioeconomics and project cost measures, the Collaborative decided to advance the A7C-FEC-M Alternative for evaluation in the Final EIS/SEIR. The A7C-FEC-M Alternative was substituted for the original A7C Alternative because it performs better related to the biological resources measures.

IV. EIR ALTERNATIVES ANALYSIS

A. Alternatives Analyzed in SEIR

A total of 10 FTC-S Alternatives were assessed within the EIR. The EIR assessed six corridor Alternatives to extend the existing FTC (SR-241 and also referred to as FTC-North) from Oso Parkway to I-5 near the Orange County/San Diego County boundary or at an intermediate point at an intersecting arterial road; one Alternative to improve existing and master planned arterial highways; one Alternative to widen I-5 from the County boundary north to the interchange with Interstate 405 (I-405); and two 'No Action' Alternatives. The Collaborative selected these alternatives for analysis in the SEIR because of their ability to address the purpose and need of the project and because the alternatives included a broad range of alternatives including corridor, non-corridor, and no action alternatives. The SEIR also included several land use development scenarios so that the impacts of the alternatives could be compared using different assumptions regarding future growth in the FTC-S area (SEIR, Section ES2.3.3, p. ES-8). (See **Figure 6: Alignments of the Build Alternative**).

i. 6 Corridor Alternatives

The six corridor alternatives evaluated in the Final EIS/SEIR are the Far East Corridor-West (FEC-W) Alternative (shown in lavender on Figure 6), Far East Corridor-Modified (FEC-M) Alternative (purple), Central Corridor-Complete (CC, formerly referred to as the BX Alignment) Alternative (yellow), Central Corridor-Avenida La Pata Variation (CC-ALPV) Alternative (light orange), Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M) Alternative (green) and Alignment 7 Corridor-Avenida La Pata Variation (A7C-ALPV) Alternative (dark orange).

These six Alternatives, also referred to as the FTC-S or the corridor Alternatives, would extend existing SR-241 south to I-5 or an intermediate point at an intersecting arterial road, with four to eight lanes, on alignments from 14 kilometers (km, 9 miles (mi) to 26 km (16 mi) long.

ii. 2 Non-Corridor Alternatives

Two non-corridor Alternatives were analyzed by the EIR. The Arterial Improvements Only (AIO) Alternative would improve Antonio Parkway/Avenida La Pata from Oso Parkway to Avenida Pico, to beyond its MPAH designation, providing one or two additional lanes in each direction. The I-5 Widening (I-5) Alternative would provide additional general purpose, auxiliary and high occupancy vehicle (HOV) lanes on I-5 from approximately I-405 south to the County boundary in south San Clemente.

iii. 2 No Action Alternatives

In addition to the eight build Alternatives identified above, two No Action Alternatives, which assume different background land use levels, were also analyzed and are documented in the Final EIS/SEIR.

INSERT FIGURE 6 ALIGNMENTS OF THE BUILD ALTERNATIVE

B. Process for Identification of the Preferred Alternative

Of the ten alternatives analyzed in the SEIR, selection of the Preferred Alternative represents a coordinated and balanced approach to minimizing harm to both the natural and built environments.

After the release of the Draft environmental document and review of the comments received on the Draft EIS/SEIR, the SOCTIIP Collaborative began a multi-dimensional evaluation of the alternatives in order to identify a Least Environmentally Damaging Practicable Alternative (LEDPA). The Collaborative prepared a comprehensive matrix to assist in evaluating the alternatives using several parameters including: traffic conditions, air quality, aquatic resources (including compliance with Section 404 of the Clean Water Act/CDFG Streambed Alteration Program()), water quality, endangered species impacts (including compliance with Section 7 of the ESA), socioeconomic impacts, land use impacts, military impacts on MCB Camp Pendleton, earth resources, cultural and historic resources, recreational resources, and project costs. The Collaborative used this multi-layer process to determine which alternatives were likely to qualify as the LEDPA.

The Collaborative thoroughly reviewed and discussed the evaluation matrix at several SOCTIIP Collaborative meetings. The Collaborative used the evaluation matrix to screen those Alternatives that might qualify as the least environmentally damaging practicable alternative. The Collaborative determined that the shorter alternatives (CC-ALPV and A7C-ALPV) do not provide a substantial improvement in traffic conditions but do result in less effects to the natural environment because these alignments were shorter and crossed areas that had recently been developed. The CC Alternative, while providing good traffic relief, entails very substantial adverse impacts on the human and built environment and on socioeconomics because it requires the removal of 763 homes and 106 businesses. The CC Alternative also has adverse impacts to endangered species, habitat loss and fragmentation, and has high wetland impacts. The full-length alternatives (FEC-M, FEC-W and A7C-FEC-M) perform well in traffic relief, minimize impacts on the built environment (because they do not require acquisition of homes or businesses) but have adverse impacts to endangered species, habitat loss and fragmentation, and wildlife connectivity.

Recognizing that the selection of the Preferred Alternative required assessment of its regional significance, the SOCTIIP Collaborative agreed that the selection of the Preferred Alternative required a balanced approach that evaluated the compatibility of the Preferred Alternative with the ongoing Orange County Southern Natural Community Conservation Plan (NCCP) and Special Area Management Plan (SAMP) processes. The Collaborative agreed to consider the alternatives in relation to the evaluation matrix and the NCCP and SAMP planning processes. These planning processes have implications for the FTC-S because they will determine the location and extent of development and open space uses in the FTC-S study area.

The Collaborative recognized that the impacts of a preferred alternative could be further reduced by insuring that the alternative is located as much as possible in an area contemplated for development in the NCCP and SAMP. Doing so has the further advantages of minimizing fragmentation of habitat and minimizing cumulative

and growth-inducing impacts (Final SEIR, Executive Summary Section ES.2.3.5, p. ES-14).

i. Practicability

The Collaborative considered the regulations and guidance documents prepared by the U.S. Army Corps of Engineers and the U.S. EPA concerning the NEPA/404 MOU and the Section 404(b)(1) Guidelines for the discussion of practicability. The 404(b)(1) Guidelines define the concept of a “practicable alternative” as one that is available² and capable of being done³ after taking into consideration: (1) cost⁴; (2) existing technology; and (3) logistics in light of the overall project purposes. The Collaborative measured each alternative against the criteria described in the Section 404(b)(1) Guidelines, guidance documents and applicable case law. The NEPA/404 guidance paper lists seven criteria for evaluating the practicability of alternatives, six of which are relevant to FTC-S (one is transit-related). According to the Guidance Paper, an Alternative is not considered practicable if:

- a. It does not meet the project purpose and need;
- b. Cost of construction (including mitigation) is excessive;
- c. There are severe operational or safety problems;
- d. There are unacceptable adverse, social, economic, or environmental impacts;
- e. There would be serious community disruption;
- f. There are unsuitable demographics (for transit Alternatives); and
- g. There are logistical or technical constraints.

The Collaborative applied the seven criteria listed to the eight FTC-S Alternatives. Based on that evaluation, the following FTC-S Alternatives were determined to be not practicable: Central Corridor (CC) (yellow); Central Corridor-Avenida La Pata (CC-ALPV) (light orange); Alignment 7 Corridor- Avenida La Pata (A7C-ALPV) (dark orange); Arterial Improvements Only (AIO) (blue); the I-5 Widening Alternative (I-5) (red); and the No Action Alternatives.

The reasons for the determinations are as follows:

Criterion 1: It does not meet the project purpose and need

- No Action Alternatives

Criterion 2: Cost of construction (including mitigation) is excessive

- CC Alternative
- I-5 Widening Alternative
- A7C-ALPV Alternative
- AIO Alternative

Criterion 3: There are severe operational or safety problems

- CC Alternative

Criterion 4: There are unacceptable adverse, social, economic, or environmental impacts

- CC Alternative (aquatic resources, built environment and social and economic impacts)
- CC-ALPV Alternative (aquatic resources, built environment and social and economic impacts)
- A7C-ALPV Alternative (built environment, social and economic impacts)
- AIO Alternative (built environment, social and economic impacts)
- I-5 Widening Alternative (built environment, social and economic impacts)

Criterion 5: There would be serious community disruption

- CC Alternative
- CC-ALPV Alternative
- A7C-ALPV Alternative
- AIO Alternative
- I-5 Widening Alternative

Criterion 6: There are unsuitable demographics

- None. (This criterion applies to mass transit Alternatives, not highway Alternatives)

Criterion 7: There are logistical and technical constraints

- AIO Alternative
- I-5 Widening Alternative

Using the above criteria, FHWA, Caltrans and TCA proposed that the Collaborative consider the Far East Crossover-Modified (FEC-M) (purple alignment); the Far East Crossover-West (FEC-W) (lavender alignment); and the Alignment 7 Corridor-Far East Crossover-Modified (A7C-FEC-M) (green alignment) to be practicable alternatives for further consideration by the Collaborative.

After review and discussion of the joint proposal, the Collaborative agreed that the AIO Alternative and the I-5 Widening Alternative were not practicable because of the absence of available funding. There is no established funding for the I-5 or AIO alternatives. No potential funding sources have been identified or reserved for these alternatives. There was also recognition of the severe community disruption that would occur with implementation of the CC Alternative, CC-ALPV Alternative, and the A7C-ALPV Alternative. The Collaborative then evaluated whether the above alignments could be further modified to avoid severe community disruption.

The Collaborative agreed that it would consider all factors related to the human and natural environment when identifying a practicable alternative that results in least environmental harm, i.e., the LEDPA.

ii. Comparison of A7C-FEC-M, FEC-W and FEC-M Alternatives

The Collaborative agreed that there were opportunities to adjust the A7C-FEC-M, FEC-W and FEC-M alternatives to accomplish further avoidance of impacts. Several members of the Collaborative agreed that the A7C-FEC-M alternative appeared to be less environmentally damaging than the FEC-W and FEC-M alternatives. To further evaluate the practicability of these three alternatives, the TCA, FHWA, and Caltrans reviewed and compared the individual impacts of each alternative. The comparison indicates that the A7C-FEC-M Alternative is environmentally preferable to the other two alternatives.

Advantages of the A7C-FEC-M that were considered in the selection process are presented briefly below:

Preservation of Large Blocks of Open Space and Retention of Wildlife Corridors

The FEC-W and FEC-M cross Cañada Gobernadora and bifurcate open space areas east of the A7C-FEC-M Alternative.

The FEC-M alternative has the greatest impact on existing open space and has an adverse impact on retention of large blocks of open space on the RMV property. The FEC-M alternative is in very close proximity to Cristianitos Creek and impacts a large number of thread leaved brodiaea plants.

The A7CFEC- M Alternative (the Preferred Alternative), with its more western location minimizes impacts on open space areas by being located in proximity to existing development and within the areas approved for development in the Ranch Plan. It allows for retention of large blocks of open space east of the alignment and retains major wildlife movement corridors and allows greater wildlife connectivity between the RMV property and the Cleveland National Forest.

The Preferred Alternative incorporates bridges and wildlife crossings into the design to minimize the effect of habitat fragmentation. The NCCP/HCP identifies several important linkages connecting these open space habitat block areas. Out of the 20 habitat linkages and wildlife movement areas identified from field surveys in the NCCP/HCP planning area, 15 are applicable to the wildlife corridor existing conditions in the FTC-S biological study area. Bridge, arch culverts, and box culverts that provide for wildlife undercrossings of the Preferred Alternative have been incorporated into the project design at locations that are consistent with the linkages identified pursuant to the NCCP/HCP guidelines.

Consistency with Approved Land Use Plans

The Rancho Mission Viejo Company (RMV) expressed opposition to the FEC-W alternative because of its proximity to the RMV heritage sites (cow camp and the family cemetery).

The Preferred Alternative generally transects the center portion of the Ranch Plan, including Planning Areas 2 and 5 designated for development as well as areas designated as open space (Planning Area

10) in the approved Settlement Agreement Plan. The Preferred Alternative avoids impacts to large areas dedicated to resource open space in the eastern portion of the Ranch Plan referred to as the "Eastern block." Overall, the alignment would impact approximately 257 acres designated open space and infrastructure in the Ranch Plan reflected in the Settlement Agreement. This represents 1.42 percent of the 16,945 acre open space in the Ranch Plan. This occurs where the Preferred Alternative traverses the northern portion of Planning Area 2 within the area from Planning Area 2 over San Juan Creek into Planning Area 5. A portion of this impact from the Preferred Alternative represents the alignment on bridge structure. Figure 2.2-1 illustrates the compatibility of the Preferred Alternative with the proposed Ranch Plan and future NCCP design, and demonstrates that the FTC-S Preferred Alternative is compatible with both these regional planning processes.

The agencies represented in the Collaborative rigorously evaluated the alternatives described in the technical reports and in the Draft EIS/SEIR.

The NEPA/Section 404 MOU establishes a process for the federal transportation and environmental agencies to identify the project Purpose and Need, select alternatives for evaluation in the Draft EIS/SEIR, and select the Preferred Alternative and Least Environmentally Damaging Practicable Alternative (LEDPA).

Section 404 of the Clean Water Act (CWA) requires that all appropriate and practicable steps must be undertaken by the applicant to first avoid and then minimize adverse impacts to the aquatic ecosystem prior to incorporating compensatory mitigation. The Refinement Process discussed in Section 4.10 of the Draft EIS/SEIR as well as the PDFs and BMPs discussed in Sections 4.8, 4.9, 4.10 and 4.11 provide the framework for avoidance and minimization of impacts to jurisdictional waters to the maximum extent practicable.

Specifically, direct impacts to both wetlands and non-wetland waters were avoided and/or minimized during the Refinement Process discussed in Section 4.10 in the Draft EIS/SEIR. Avoidance and minimization measures included refining the grading limits to reduce cut and fill by following natural contours, placement of bridge structures across major high order drainages, and shifting the alignment to avoid sensitive resources, including the Tesoro Wetlands area. Additionally, TCA sought to minimize impacts to jurisdictional waters by reducing the size and number of structural supports and by locating those required structural columns outside of high value jurisdictional resources. In order to reduce the number of structural columns, TCA maximized bridge span by increasing the structural strength of the bridge and increasing the bridge depth.

A more detailed description of aquatic resources and associated acreages is provided in Section 4 of the Wetlands Delineation Technical Report (Glenn Lukos Associates [GLA] 2004), which has been verified by the ACOE, and is included as Attachment 12 to the RTC document. The

Wetlands Delineation Technical Report was prepared for impacts associated with the FTC-S Alternatives, consistent with recommendations from the ACOE. The Alternatives evaluated in the delineation include the CC, CCALPV, A7C-ALPV, A7A-FEC-M, FEC-M and FEC-W Alternatives. Table 1.3-2 in the Wetlands Delineation Technical Report (GLA 2004) provides a quantitative summary of impacts to Waters of the United States (WoUS), including wetland and non-wetland waters, for each alternative.

ACOE will make the final decision on the LEDPA and a determination of compliance with the Section 404 (b)(1) Guidelines during the 30-day review period for the Final EIS.

Because it was the goal of the Collaborative to select a Preferred Alternative that would also be selected as the LEDPA, the evaluation and screening of the FTC-S Alternatives included evaluation of the Alternatives according to the NEPA/404 Evaluation criteria. The Collaborative applied the definition of “practicability” adopted by the Corps of Engineers and the U.S. EPA in the section 404(b)(1) Guidelines.

iii. Summary of Jurisdictional Delineation Evaluation

A Jurisdictional Determination and Wetlands Delineation Technical Assessment was prepared for six of the project Alternatives in August 2004 and revised in April 2005 by Glenn Lukos Associates, Inc. (GLA). The report is Attachment 12 of the Response to Comments document. The Wetlands Delineation Technical Report describes the location and extent of aquatic features located within the disturbance limits of six of the corridor alternatives considered in the Final EIS/SEIR. (See **Table 14: Summary of Permanent Impacts to Corps Jurisdiction.**)

**Table 14
Summary of Permanent Impacts to Corps Jurisdiction (Acres)**

Alternative	Corps		
	Total	Non-Wetland	Wetland
Preferred Alternative (A7C-FEC-M – Initial)	6.27	5.45	0.82
A7C-FEC-M Ultimate	6.90	5.97	0.93
CC – Initial	14.87	1.47	13.40
CC - Ultimate	15.08	1.51	13.57
CC-ALPV - Initial	12.38	0.97	11.41
CC-ALPV - Ultimate	13.39	1.01	12.38
A7C-ALPV - Initial	2.52	1.96	0.56
A7C-ALPV - Ultimate	3.34	1.98	1.36
FEC-W - Initial	6.69	4.07	2.62
FEC-W - Ultimate	6.96	4.32	2.64
FEC-M - Initial	5.44	3.73	1.71
FEC-M - Ultimate	6.02	4.04	1.99

Source: Glen Lukos 2004

In the planning level impact analysis conducted by the ERDC (Potential Impacts of Alternative Transportation Corridors on Waters of the U.S. and

Riparian Ecosystems for the Southern Orange County Transportation Infrastructure Improvement Project, 2003), provided in the Draft EIS/SEIR the analyses assume that all drainages within the disturbance limits are permanently filled. This initial functional assessment conducted by ERDC did not account for bridges or culverts, but assumed a complete fill; this resulted in higher than actual estimates for post-project reductions in aquatic function. More recently, at the ACOE request, an updated functional assessment has been prepared by R.D Smith of ERDC which clarifies the impact analyses addressing the avoidance of impacts by the construction of bridges and culverts.

Review of the results indicate that of the eight categories evaluated (Criteria 1, 2, 3a, 3b, 3c, 4a, 4b and 4c), the Preferred Alternative is ranked best in four categories (3a, 3b, 3c and 4a), second in two categories (2 and 4b), fourth in one category (1) and fifth in one category (4c). Being ranked at the top in four categories is the best for any of the alternatives evaluated. (See **Table 15: Normalized Rank Scores For All Criteria and Corridor Alternatives.**)

**Table 15
Normalized Rank Scores for all Criteria and Corridor Alternatives**

Corridor Alternatives (Initial)	C1: Miles of Stream Channel	C2: AC of Riparian	C3: Hydrology	C3: Water Quality	C3: Habitat	C4: Hydrology	C4: Water Quality	C4: Habitat	Normalized Rank Scores
A7C-ALPV	0.4	0.4	0.4	0.5	0.4	0.6	0.5	0.7	3.9
A7C-FEC-M (Preferred Alternative)	0.8	0.3	0.2	0.2	0.2	0.4	0.6	0.9	3.7
CC ALPV	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	7.0
CC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0
FEC-M	0.9	0.4	0.4	0.4	0.4	0.9	1.0	0.9	5.2
FEC-W	0.7	0.2	0.2	0.2	0.2	0.5	0.7	0.7	3.6

Source: R.D. Smith, ERDC, 2005

The Jurisdictional Determination and Wetlands Delineation Technical Assessment quantify impacts to wetlands and the Updated Functional Assessment quantifies loss of function. Together, these two technical analysis documents will provide the ACOE with the information required to ensure a complete understanding of the nature and degree of impact of the proposed discharge resulting from the FTC-S

iv. Summary of Biological Resources Evaluation

The proposed project will involve removal of vegetative resources that are known to provide or may have the potential to provide habitat for ten federally-listed threatened, endangered, or proposed wildlife and plant species. Threatened and endangered wildlife species and plant species that may or will be directly affected by implementation of the Preferred Alternative are the tidewater goby, southern steelhead trout, arroyo toad, coastal California gnatcatcher, and thread-leaved brodiaea. The thread-

leaved brodiaea is also state listed. Threatened and endangered plant species that would not be directly impacted, and for which potential habitat is available, are as follows: Braunton's milk-vetch, Nevin's barberry, spreading navarretia, Orcutt's grass, and Gambel's watercress.

The following threatened and endangered wildlife species would not be directly impacted, but potential habitat for them is available in the project area: vernal pool fairy shrimp, San Diego fairy shrimp, Riverside fairy shrimp, Quino checkerspot butterfly, California red-legged frog, least Bell's vireo, southwestern willow flycatcher, and Pacific pocket mouse.

The Preferred Alternative selected by the TCA and FHWA includes many conservation and avoidance methods to minimize impacts to the natural environment, including adverse impacts to sensitive species and other natural resources. Indirect impacts will be limited through project design features. For example, the drainage and water quality features will prevent water quality impacts to sensitive species.

The Preferred Alternative will limit lighting to areas around toll plazas and interchanges, and low-light design features will be incorporated to the maximum extent feasible while maintaining consistency with Caltrans design standards. (See Project Design Features described in Section 2.5.1.7). **Table 15** includes information regarding the conservation and avoidance features of the location refinement to the Preferred Alternative.

v. Summary of Community Impacts Evaluation

The proposed southern extension of existing SR-241 has been subject to planning efforts for over 20 years and has been on the County of Orange MPAH since 1981. Therefore, development in the study area has been able to anticipate and accommodate the future implementation of a transportation facility in this area. The potential direct and indirect effects of the Preferred Alternative on existing land uses are reduced by the siting of the proposed facility to minimize impacts to existing uses, combined with existing topography and committed open space areas that separate the Preferred Alternative from existing residential uses. The Preferred Alternative does not result in direct or indirect impacts to existing homes and businesses, Chiquita Water Reclamation Plant, or the Prima Deshecha Landfill. Although the Preferred Alternative is adjacent to Tesoro High School, it would not result in direct or indirect adverse impacts to this land use.

Because Tesoro High School was constructed with the knowledge of the proposed extension of the Foothill Corridor, the Final EIR for the high school included measures to mitigate potential indirect noise impacts associated with a transportation facility in the area of the FTC-S corridor Alternatives. There are no significant adverse indirect impacts to existing homes due to the distance from the proposed alignment, combined with existing topography and the existing buffer provided in the Talega residential development.

vi. Summary of MCB Camp Pendleton Impacts Evaluation

The Department of the Navy (DON) owns the property on which the Preferred Alternative traverses the Marine Corps Base in San Diego County. In 1988, the Marine Corps agreed that only one potential alignment of the proposed extension of the Foothill South project could be evaluated on Camp Pendleton as long as it met certain criteria, the most important of which was that any on-Base portion of this proposed toll road must be as closely located to the northern Base boundary as possible and it must be routed in such a manner that it does not impact the Marine Corps mission nor interfere with Camp Pendleton's operational flexibility. The Preferred Alternative (for that section of the toll road which crosses through Camp Pendleton) meets the Marine Corps criteria.

SOSB is located entirely on lands leased from the DON; the State does not own the land. SOSB is operated by the State, pursuant to a 1971 agreement of lease (the "lease") with the United States. The California Department of Parks & Recreation (CDPR) lease with the United States is specifically subject to the reserved right of the United States to grant additional easements and rights-of-way over the leased property. Thus, in implementing the authority to lease, CDPR agreed that the United States may grant a right-of-way to a third party. Congress has adopted legislation authorizing the Navy to grant to the TCA an easement within this portion of Camp Pendleton.

vii. Summary of San Onofre State Beach Impacts Evaluation

The Preferred Alternative extends south through Subunit 1 of San Onofre State Beach (SOSB), leased from MCB Camp Pendleton, impacting biological and habitat resources value, and the overall size of the SOSB Subunit1. No camping sites in the San Mateo Campground would be removed as a result of implementation of the Preferred Alternative, but the Preferred Alternative has visual and aesthetic impacts on the camping experience at the San Mateo Campground. No impacts to the SOSB Trestles Subunit (Subunit 2) are expected as a result of the elevated ramp connecting the Preferred Alternative to I-5. Continued access to Trestles Beach will be provided during and after construction of the Preferred Alternative and, as described in Section 4.25, there will be no effect on the quality of the surf and sediment supply will be virtually unchanged in the after-project condition.

Construction activities associated with implementation of the Preferred Alternative could impact Camp Pendleton San Onofre Recreation Beach. Impacts to recreation uses at San Onofre Recreation Beach would relate mostly to noise, access, and dust during construction. These short-term impacts would not change land uses at San Onofre Recreation Beach or military uses at Green Beach.

viii. Summary of Donna O'Neill Land Conservancy Impacts Evaluation

The SOCTIIP Collaborative agreed that the beneficial affects of the Preferred Alternative crossing into the western portion of The Conservancy outweighed the potential impacts. The benefits include: greater habitat connectivity into eastern Orange County; avoidance of high value aquatic resources including wetlands in the Blind Canyon/Gabino Canyon confluence; keeping in close proximity to neighboring development thereby minimizing habitat fragmentation; and minimization of viewshed impacts to residents in developed areas of San Clemente, including Talega. The Conservancy would be compensated for this impact. The TCA has initiated discussions with The Conservancy Board of Directors and the landowner to discuss right-of-way acquisition and potential mitigation strategies for impacts to The Conservancy. Mitigation strategies presented to The Conservancy included open space land for additional set-aside areas, either contiguous or non-contiguous to the existing Conservancy, or monetary compensation to The Conservancy.

ix. Summary of Section 4(f) Resources/Cultural Impacts Evaluation

There are 25 identified cultural resource sites within the Preferred Alternative. Of these, seven have been determined ineligible for the NRHP under any criteria. Fourteen of the identified cultural resource sites have been determined eligible for listing on the NRHP. Of the sites that are eligible for the NRHP, two are eligible under Criterion D only. Ten NRHP-eligible sites are elements of the San Mateo Archaeological District (SMAD) and are considered eligible under Criteria A and D. The SMAD is also considered a Traditional Cultural Property by local Native American Groups. Eight of the identified resources have not been formally evaluated, in consultation with the SHPO, for eligibility. The eight unevaluated resources are located within the RMV Lands, Conservancy Land, adjacent to the Talega Development, and along I-5 in San Diego. Mitigation Measures are provided that will minimize or mitigate impacts to these resources to the extent feasible. In addition, avoidance of these resources within the Preferred Alternative Study Area has also been investigated, and avoidance has been achieved for two resources considered the "core" of the SMAD (CA-ORA-22 and CA-SDI-8435). Where possible, ground disturbing impacts of the Preferred Alternative were placed on deflating landforms where there is little likelihood of buried components for impacted 4(f) resources.

x. Summary of Farmland Resources Impacts Evaluation

The Preferred Alternative would not result in the loss of rated farmland as defined by the Natural Resources Conservation Service on RMV. Due to alignment shifts, the Preferred Alternative would affect an additional 1 ha (2.57 ac) more than the A7C-FEC-M-Ultimate. The Preferred Alternative would result in the loss of approximately 63 ha (155 ac) less agricultural

preserve land than the A7C-FEC-M Initial and approximately 65 ha (162 ac) less than the A7C-FEC-M-Ultimate.

C. PREFERRED ALTERNATIVE AND LEDPA SELECTION

Of the three corridor alternatives remaining after the practicability analysis, the A7C-FEC-M-Initial corridor with design modification incorporated was selected by the Collaborative as the Preferred Alternative. In addition to meeting the seven criteria for evaluating the practicability of alternatives listed in the NEPA/404 MOU Guidance Paper and being better or comparable to the other two alternatives in terms of impacts to aquatic and biological resources, the Preferred Alternative allows the greatest wildlife connectivity and is more compatible with local existing land use plans. More specifically, the Preferred Alternative was selected over the FEC-M Alternative because it does not cross Cañada Gobernadora and it minimizes impacts on open space areas contemplated by the RMV Ranch Plan and does not impact RMV heritage sites.

Selection of the Preferred Alternative represents a coordinated balanced approach to minimizing harm to both the natural and built environments. The A7C-FEC-M and the Preferred Alternative culminates years of analysis and evaluation, engineering refinement, inter-agency consultation and coordinated consensus.

ACOE will make the final decision on the LEDPA and a determination of compliance with the Section 404 (b)(1) Guidelines during the 30-day review period for the Final EIS.

V. MODIFICATIONS TO THE PREFERRED ALTERNATIVE

The Preferred Alternative is the A7C-FECMInitial Alternative, but with the following primary modifications:

Reduction in Size of Project. The Preferred Alternative is reduced in size from eight lanes to a maximum of six general purpose lanes. This modification reduces the typical cross-section of the project from 156 feet to 128 feet. Initially, the project will be constructed as a four-lane facility (two lanes in each direction).

Consistency With Anticipated NCCP Reserve Design. The modifications conform to the anticipated reserve design for the Southern Orange County Natural Community Conservation Plan. In general, the RMV Ranch Plan (as reflected in the Settlement Agreement) concentrates the development on the RMV property in the western and northern portions of the RMV property. It is anticipated that the reserve design for the Orange County Southern Natural Community Conservation Plan will be consistent with the Ranch Plan.

Modifications Regarding RMV Ranch Plan to Maximize Open Space. The alignment of the Preferred Alternative is revised to conform as much as is feasible to the areas shown for development in the Ranch Mission Viejo (RMV) Ranch Plan approved by the County of Orange as modified by the Settlement Agreement among RMV, the County and the environmental organizations (the Endangered Habitats League, Natural Resources Defense Council, Sea and Sage Audubon Society, Laguna Greenbelt, Inc., and Sierra Club). The RMV Plan (as reflected in the

Settlement Agreement) contemplates the development of 14,000 units and 3,480,000 square feet of urban activity center uses, 500,000 square feet of neighborhood center uses and 1,220,000 square feet of business park uses in six development areas. By including as much of the Preferred Alternative within the development areas as is feasible, impacts on open space and habitat areas are minimized.

Minimization of Impacts on Wetlands and Other Natural Resources. The Preferred Alternative includes a number of adjustments that avoid or minimize impacts to wetlands and other natural resources. For example, the Preferred Alternative impacts only 0.82 acre of wetlands.

Adjustments to Minimize Utility Relocation Impacts. Utility relocation impacts are minimized to conform to Caltrans standards.

Inclusion of Additional Wildlife Crossings. Fifteen wildlife crossings are included to further facilitate wildlife movement. Wildlife crossings are included within the four large habitat blocks identified in the approved Ranch Plan open space reserves. These large open spaces areas are functionally interconnected through bridge and wildlife crossings incorporated into the design of the Preferred Alternative and through the project design features associated with the approved Ranch Plan.

Minimization of Access Road Impacts. The design of the connections between the Preferred Alternative and access roads is modified to further minimize grading and to insure continued access to existing utility and agricultural operations on the Ranch.

Minimization of Cultural Resources Impacts. The location and design of several Extended Detention Basins is modified to reduce impacts on cultural and biological resources.

The Preferred Alternative incorporates the refinements above in response to comments on the Draft EIS/SEIR and reflects detailed discussions among the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the U.S. Marine Corps, the Federal Highway Administration, Caltrans, the TCA, and the California Department of Fish and Game. These and other changes are discussed further in Table 2.2-1.

Additional analysis of the Preferred Alternative is provided in each topical section of the Final EIS/SEIR. The additional analysis includes an investigation of potential environmental effects expected from the Preferred Alternative that may be different from those identified in the Draft EIS/SEIR. The Preferred Alternative does not result in any new significant impacts and does not increase the severity of any impact of the A7C-FEC-M Alternative. The Preferred Alternative reduces the impacts of the A7C-FEC-M Alternative in several respects.