

# CHAPTER 1

## PURPOSE & NEED

### 1.1 INTRODUCTION

The preparation and purpose of this document are pursuant to and in conformance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), which require a determination as to whether an Environmental Impact Report (EIR) under the California Environmental Quality Act (CEQA) and an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) are necessary for the proposed project. Interstate 8 (I-8) is an interstate highway in California, and is therefore subject to the requirements of both CEQA and NEPA. An Initial Study (IS) for CEQA and an Environmental Assessment (EA) for NEPA were prepared concurrently for the proposed I-8/Imperial Avenue Interchange reconstruction project. Public comments were received during public scoping and have been carefully considered in preparation of this IS/EA. A Mitigated Negative Declaration is proposed under CEQA. If, subsequent to public review of this document, the final IS/EA concludes that the project will have a significant effect on the environment, an EIR/EIS will be prepared. Otherwise, a Mitigated Negative Declaration (ND) under CEQA and a Finding of No Significant Impact (FONSI) under NEPA will be prepared.

#### *Project Vicinity and Location*

Interstate 8 (I-8) is an east–west interstate highway facility serving San Diego and Imperial Counties. I-8 begins in Ocean Beach and extends 277 kilometers (km)/172 miles (mi) to its eastern terminus at the California-Arizona State line near Yuma, Arizona (figure 1.1-1, *Project Location Map*). Within Imperial County, I-8 is included as a part of the following highway systems: Interregional Road System (IRRS), the National Highway System (NHS), the International Border Trade Corridors (IBTC), and the International Corridors of Economic Significance (ICES). I-8 is also a designated route in the national network for trucks as per the Surface Transportation Assistance Act (STAA).

The existing I-8/Imperial Avenue trumpet-type interchange is located in the southern portion of the City of El Centro in Imperial County and is the southern terminus of Imperial Avenue at its intersection with I-8 (figure 1.1-2, *Project Vicinity Map*). The proposed project area extends between the La Brucherie Road and Eighth Street overcrossings of I-8 (figure 1.2-1, *Project Alternatives and Study Area*). In the vicinity of Imperial Avenue, I-8 is a four-lane freeway with 3.0 meter (m)/ 9.8 feet (ft) shoulders and 3.7 m (12 ft) lanes separated by an 18.3 m (60 ft) median. The existing Imperial Avenue overcrossing has two 3.7 m (12 ft) lanes and two 1.2 m (4 ft) shoulders on a 183 m (600 ft) radius. The eastbound to northbound loop exit ramp is on a 46 m (151 ft) radius curve. The overcrossing is used to access northbound Imperial Avenue from eastbound I-8 and to access eastbound I-8 from southbound Imperial Avenue. The existing facility is limited in that it does not provide access from the south side of I-8 to the freeway or to Imperial Avenue and El Centro to the north.

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(Figure 1.1-1, *Project Location Map*)

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(Figure 1.1-2, *Project Vicinity Map*)

## 1.2 PROJECT DESCRIPTION

The I-8/Imperial Avenue Interchange Reconstruction project proposes to reconstruct the existing interchange at Interstate 8 (I-8) and Imperial Avenue in the city of El Centro. The project would realign the westbound exit and entrance ramps to I-8, and reconstruct the eastbound exit and entrance ramps. This project would also replace and upgrade the Imperial Avenue overcrossing from two lanes to four lanes and would provide access to I-8 and Imperial Avenue from areas south of I-8.

Other improvements include drainage improvements within the interchange area. This project is one of the highest priority transportation projects for Imperial County.

All alternatives for reconstruction of the interchange would require the complete demolition and removal of the existing bridge structure over I-8 and the eastbound exit ramp to Imperial Avenue. Removal of most of the existing westbound entrance and exit ramps and as much as 100 percent of the eastbound entrance ramp would also be required (figure 1.2-1), *Project Alternatives and Study Area*). Portions of Imperial Avenue south of I-8 by others is expected to be constructed by mid-2005 (appendix A, exhibit 26, *El Centro Engineering Division Letter*). The proposed interchange reconstruction project would provide direct southerly access to Imperial Avenue for existing and planned development south of I-8 and northerly access to the city center and Route 86. Current estimates indicate that construction on the interchange would be expected to begin in early 2006 and would be complete by mid-2007.

Prior to the environmental study phase, six alternatives were initially considered for reconstructing the I-8/Imperial Avenue interchange. Of these, traffic studies have identified three alternative designs and a No Action (or “No-Build”) Alternative as most appropriate for final consideration. With the exception of the No-Build Alternative, each alternative proposed for the project includes the reconstruction of the two-lane overcrossing to a four lane overcrossing. Each proposed “build” alternative is designed in consideration of the planned extension by others of Imperial Avenue to McCabe Road. Each proposed “build” alternative would upgrade the I-8 interchange and improve local and regional circulation by providing southerly access, improving safety and levels of service (LOS), lessening traffic congestion at the I-8/Fourth Street (Route 86) interchange, and reducing out-of-direction traffic circulation on local streets. For all “build” alternatives, the proposed interchange reconstruction would improve bicyclist and pedestrian access and safety and would include drainage modifications at the interchange. The No-Build Alternative would perpetuate existing freeway conditions and would not improve predicted future traffic conditions at the intersection or on local streets. Please see chapter 2 for detailed descriptions of the alternatives.

## 1.3 PURPOSE AND NEED

The purpose of the project is to: 1) accommodate existing and planned growth and circulation system improvements within the city of El Centro and local unincorporated Imperial County area south of the Interstate 8/Imperial Avenue interchange, 2) improve safety and lower accident rates at the interchange, and 3) improve drainage at the interchange.

The proposed interchange reconstruction is needed to remove constraints to future improvements of the local and regional arterial system. The proposed project complements the goals of both the 1990 *City of El Centro Amended General Plan* and the *City of El Centro Redevelopment Plan*,

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(Figure 1.2-1, *Project Alternatives and Study Area*)

which provide for orderly, planned commercial growth and residential development south of I-8 (appendix A, exhibit 1, *El Centro Development Tier Map*). Reconstruction of the interchange facilitates Objective 2.1 of the *County of Imperial General Plan Open Space & Circulation Element*, which states, “Develop a balanced circulation system which will provide for the economical, efficient, and safe movement of people and goods within and through the County.” The proposed interchange reconstruction also would promote bicycling as an alternate mode of transportation in El Centro by completing a route in the City Master Bicycle Plan. Construction of Imperial Avenue on the south side of the interchange is a joint project of the city of El Centro and Imperial County. Portions of Imperial Avenue near the Farmer’s Estates and Buena Vista Subdivisions are expected to be constructed by mid-2005 (appendix A, exhibit 26, *El Centro Engineering Division Letter*).

Improved access to areas south of the I-8/Imperial Avenue interchange will complement the *City of El Centro General Plan* “Circulation Element”, which designates the extension of Imperial Avenue as a proposed major arterial to serve future population growth (appendix A, exhibit 3, *El Centro Circulation Map*). The proposed extension of Imperial Avenue to the interchange would reduce out of direction travel to and from the city center of El Centro north of I-8, and to the cities of Imperial and Brawley further north on Route 86. The project also helps to facilitate goals of the *City of El Centro General Plan* by reducing the frequency and length of local vehicle trips and the promotion of bicycling as an alternate mode of transportation in the City. The proposed project also provides consistency with other area projects and State, Regional, and local planning documents, including the Imperial Valley Association of Governments’ 20-year Regional Transportation Plan and the latest Interstate 8 Transportation Concept Report (TCR). This project is in the 2002 Imperial County Transportation Plan Update Highway Element, June 2002 and is listed as a Near-Term project commitment (2002-2012).

The proposed reconstruction of the interchange will be consistent with improvements to the local and regional arterial system by others. All proposed alternative designs are intended to provide modifications to the interchange that will be compatible with future City and County improvements to the local and regional arterial system south of I-8. Objective 5.3 of the *County of Imperial General Plan Open Space & Circulation Element* states, “The County shall cooperate with the adjacent communities and agencies such as the Federal Government, State Department of Transportation (Caltrans District 11), El Centro, Brawley, Calexico, Holtville, Imperial, Westmorland, and Calipatria to provide the maximum compatibility of adopted circulation elements and regional facility plans.” The City and County have set aside funds for a Plan Project Management study of the extension of Imperial Avenue and plan to request approval of funds for Year 2005 from the Imperial County Board of Supervisors as part of the Local Transportation Authority for Imperial Avenue. Local planning agencies will perform an independent environmental analysis for the extension of Imperial Avenue. It is an independent local improvement to local circulation. Purpose, location, alignment, and timing of improvements to the local and regional arterial system will be determinations made at the discretion of City and County planning agencies.

The proposed interchange would be reconstructed at the site of the existing interchange and would not constrain future improvements to the local and regional arterial system. The project would accommodate planned and approved development south of I-8 by providing direct access. None of the planned development south of I-8 is dependent on reconstruction of the I-8/Imperial Avenue Interchange.

The proposed project alternatives also include changes and improvements that will satisfy the needs at the interchange for current and future traffic capacity increases, improved safety and

drainage improvements that will eliminate the potential for flooding in the vicinity of the interchange during periods of heavy rain. The need for the project is to diminish not just the impacts and costs associated with current deficiencies in access, safety, and drainage, but to also reduce future traffic impacts associated with predicted growth within El Centro and Imperial County. The existing interchange does not provide access to southern El Centro from eastbound or westbound I-8 or from the north on Imperial Avenue. Existing development south of I-8 generates traffic that must use adjacent overcrossings and interchanges in a circuitous and inefficient fashion. The existing I-8/Imperial Avenue interchange experiences congestion in the morning and during the afternoon hours, producing costs associated with the delay of commuter and truck traffic. In addition, congestion occurs during the day at the nearby I-8/4th Street interchange, caused in part by the limited options available for north-south travel in the area. Additional planned development south of I-8 is expected to exacerbate existing traffic conditions at adjacent interchanges. Additional traffic details associated with this project are discussed below in Section 1.4.

## 1.4 PROJECT BACKGROUND

The existing I-8/Imperial Avenue interchange and overcrossing were constructed in 1967 as a trumpet-type or modified L-12 design with the purpose of providing access to developed areas north of I-8 in El Centro (appendix A, exhibit 2, *Interchange Types*). Land usage south of I-8 was agricultural, and no development was planned in this area for the 20-year design period of the interchange. Southerly access was determined at that time to be adequate for agricultural purposes and is still utilized at both the La Brucherie Road overcrossing, located about .8 km (.5 mi) west of Imperial Avenue, and the Eighth Street overcrossing, located about .8 km (.5 mi) to the east. Access to areas south of I-8 is also provided at the diamond interchange at Fourth Street (Route 86), approximately 1.6 km (1 mi) east of the proposed project (appendix A, exhibit 3, *El Centro Circulation Map*).

Since the early 1970s, efforts have been ongoing to redesign and reconstruct the interchange in order to correct existing and predicted deficiencies. A general lack of funding and support has prevented the completion of design plans and reconstruction of the interchange. The first effort to reconstruct the interchange was marked by the approval of a Project Report (PR) on April 10, 1971, which identified the need to extend the interchange to accommodate proposed development south of I-8. The City of El Centro requested of Department District 11 (through resolution No. 71-34, approved October 27, 1971) that the interchange be modified to provide access to planned development south of I-8 and to accommodate the associated future traffic increases. A Negative Declaration (ND) was prepared and signed by the Department in 1973 for an interchange reconstruction project that would have provided an increase in capacity and access to areas south of I-8 designated for development within the *City of El Centro General Plan*.

An Initial Study/Environmental Assessment (IS/EA) was prepared by the Department in 1982. A final environmental document (FED), however, was not approved. A subsequent Negative Declaration/Finding of No Significant Impact (ND/FONSI) was produced by the Department and signed on August 28, 1989. This document also identified the need for increased capacity at the interchange and improved access to the South El Centro Redevelopment Project south of I-8. However, the project was not approved at that time. In 1992, a consultant hired by the City of El Centro prepared a Transportation Concept Plan, Circulation Plan and a Conceptual Study of the interchange at Imperial Avenue and I-8. The alternatives proposed by the consultant were reviewed by the Department and were determined to lack sufficient environmental, traffic, and engineering analysis for preparation of a Project Study Report (PSR).

In June 1999, the Imperial Valley Association of Governments (IVAG) requested that the Department assume the role of lead agency in processing a Project Study Report (PSR) for a new interchange project. The alternatives described in the previous consultant study provided a basis for the development of alternatives recommended in the Department's PSR, approved on June 6, 2000. In preparation of this PSR, a Department traffic study of freeway operations revealed the benefits of improving safety at the existing I-8/Imperial Avenue eastbound on and off ramps.

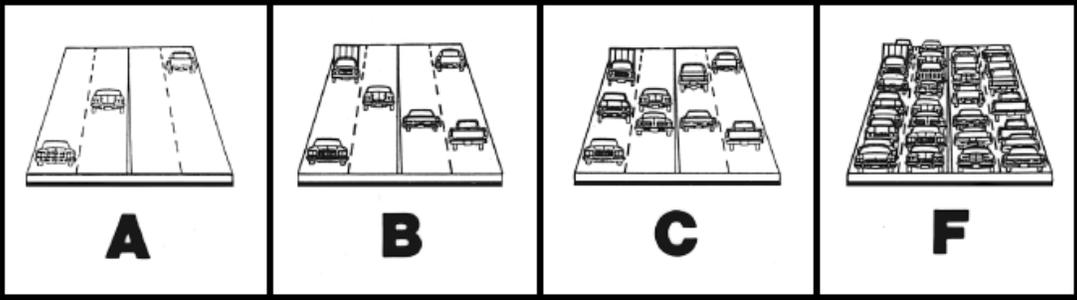
Regional population forecasts anticipate a 95 percent increase in population in Imperial County from the 2000 base year to 2020 (see chapter 3, Section 3.3.3). This increase in population will create demand for additional housing, employment, and public facilities and will result in increased traffic in the region. The *City of El Centro General Plan* and *City of El Centro Redevelopment Plan* provide for the extension of Imperial Avenue to areas south of I-8 that are planned for development. The projected 2025 traffic volumes on Imperial Avenue indicate that reconstruction of the I-8/Imperial Avenue interchange would relieve capacity and operational problems in the area. Single-family subdivision development has already occurred south of the I-8/Imperial Avenue interchange in both the southeast and southwest quadrants. A water treatment plant and Imperial County offices as well as a County Jail Facility have also been constructed in areas south of the project area. Development south of I-8 is expected to increase recreational demand in the area, including demand for bicyclist and pedestrian facilities.

## **Traffic**

### Circulation and Forecast Volumes

Traffic in the proposed project area is primarily interregional east-west traffic on Interstate 8 and traffic to and from Imperial Avenue north of I-8. Please see Table 1.4-1 below for level of service (LOS) definitions and appendix A, exhibits 4–8, for current and predicted LOS and average daily traffic (ADT) volumes for all proposed alternatives of the interchange. The westbound off-ramp to northbound Imperial Avenue currently experiences LOS B in the morning. In 2000, the existing combined average daily traffic volume for both directions on I-8 west of Imperial Avenue was 15,800 ADT (see Figure 1.4-1A, *Existing 2000 LOS and ADT*). In the same location, directionally combined traffic volumes are expected to increase to 30,800 ADT by the year 2025, as noted in Figure 1.4-1B, *Vicinity LOS and ADT*. With both directions combined, the ADT east of Imperial Avenue was 27,600 in 2000 and is expected to increase to 56,500 ADT by 2025. Reconstruction of the interchange would complement and accommodate planned improvements in circulation within the area.

The extension of Imperial Avenue southward to McCabe Road by others will address regional traffic increases and circulation independently of the interchange reconstruction project. Traffic on Imperial Avenue north of the I-8 interchange is anticipated to increase 90 percent by the year 2025. Currently, north/south traffic must cross I-8 on other arterials to the east of Imperial Avenue, such as Eighth Street and Fourth Street, or to the west on La Brucherie Road. Current congestion levels at the nearby I-8/Fourth Street interchange result from traffic associated with development approved by the City of El Centro. The extension of Imperial Avenue by others is expected to produce the beneficial effect of reducing predicted traffic congestion levels at the I-8/Fourth Street interchange by providing an alternative north-south route across I-8 on Imperial Avenue to and from the vicinity of the McCabe Road/Fourth Street intersection (please see Figures 1.4-1A, B, & C *Vicinity LOS and ADT*). Locations of the I-8/4th Street interchange and the 4th Street/McCabe Road intersection are also depicted in appendix A, exhibit 3, *El Centro Circulation Map*.

TABLE 1.4-1 LEVELS OF SERVICE	
	
LOS	DESCRIPTION
A	Highest quality of service. Free traffic flow, low volumes and densities. Little or no restrictions on maneuverability or speed. 55+ mph. No delay.
B	Stable traffic flow, speed becoming slightly restricted. Low restriction on maneuverability. 50 mph. No delay.
C	Stable traffic flow, but less freedom to select speed, change lanes, or pass. Density increasing. 45 mph. Minimal delay.
D	Speeds tolerable but subject to sudden and considerable variation. 40 mph. Minimal delay.
E	Unstable traffic flow with rapidly fluctuating speeds and flow rates. Short headways, low maneuverability, and low driver comfort. 35 mph. Significant delay.
F	Forced traffic flow. Speed and flow may drop to zero with high densities. Less than 25 mph. Considerable delay.
F <sub>0</sub>	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go. Considerable delay, 0-1 hour at LOS F.
F <sub>1</sub>	Very heavy congestion, very long queues. Severe delays, 1-2 hours at LOS F.
F <sub>2</sub>	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop. Very severe delays, 2-3 hours at LOS F.
F <sub>3</sub>	Gridlock. Extremely severe delays, 3+ hours at LOS F.

The Department has prepared a Modified Access Report (MAR) and an acceptability determination has been made by FHWA on December 19, 2003. Final approval for acceptability of the MAR will be made by FHWA subsequent to the public review period and completion of the environmental process.

Accident Rates and Safety

The majority of the accidents that have occurred at the I-8/Imperial Avenue intersection are of the ramp-runoff type where motorists failed to successfully maneuver the existing loop turns for both the eastbound I-8 exit ramp to northbound Imperial Avenue and the southbound Imperial Avenue entrance ramp to eastbound I-8. The proposed interchange project would upgrade the

overcrossing and entrance and exit ramps and would better compensate for factors of driver inattention and confusion. Accident rates are shown in table 1.4-2 below.

TABLE 1.4-2 5-YEAR ACCIDENT RATES FOR I-8 AT IMPERIAL AVENUE				
From	To	Actual Accident Rates		
		F*	F+I**	Total***
Combined Rates for Eastbound I-8 Ramps at Imperial Avenue (OFF-KP R59.4/PM R37, ON KP R60/PM R37.3)				
1/1/1997	12/31/2001	0.053	0.21	0.74
Combined Rates for Westbound I-8 Ramps at Imperial Avenue (OFF- KP R59.9/PM R37.2, ON- KP R59.2/PM R36.8)				
1/1/1997	12/31/2001	0	0.27	0.48
Statewide Average				
1/1/1997	12/31/2001	0.007	0.22	0.61

\* Fatality rate is based on per million vehicle miles  
 \*\* Fatality plus injury rate is based on per million vehicle miles  
 \*\*\* Total accident rate includes fatalities, injuries, property damage, and no damage/physical injury accidents

Long Term Transportation Planning

This project is one of the highest priority interchange improvement projects for Imperial County. In order to accommodate a predicted 93 percent Imperial County population increase by the year 2020, the City of El Centro has designated the area south of the Imperial Avenue/I-8 overcrossing for development. Future long-term plans are to extend Imperial Avenue south of I-8 to connect to McCabe Road (appendix A, exhibit 3, *El Centro Circulation Map*). Provision of southerly access from the Imperial Avenue/I-8 interchange area and the relief of traffic congestion at the Fourth Street/I-8 Interchange are objectives of the *City of El Centro General Plan* "Circulation" and "Conservation Elements." The proposed project is listed in Southern California Association of Governments' (SCAG) 2000/2001-2005/2006 *Draft Regional Transportation Improvement Program* (2001 RTIP) and SCAG's 2001-2025 *Regional Transportation Plan* (2001 RTP) as HE11 (New Connections/Cross Traffic Improvements).

Click to view >>>> Figure 1.4-1A

[Click to view >>>> Figure 1.4-1B](#)

[Click to view >>>> Figure 1.4-1C](#)