III. ANALYSIS OF FUTURE CONDITIONS

Maintaining consistency with the methodology used throughout this study, the development of travel demand forecasts concentrated on the use of currently available resources and data rather than developing new techniques or conducting extensive studies or investigations. This chapter presents a summary of the methodology and assumptions used to develop future traffic demand forecasts for the short-term (2005) and long-term horizon years (2015) as part of the Coastal Corridor Transportation Study Phase II.

REVIEW AND ASSESSMENT OF ALTERNATIVE SOURCES

At the outset of this study, it was envisioned that detailed traffic forecasts might be available from the Los Angeles International Airport Expansion Master Plan, the second phase of the Playa Vista project, the MTA's Long Range Transportation Plan (LRTP), SCAG's Regional Transportation Plan (RTP), and the Port of Long Beach Master Plan. The first of these, the LAX Master Plan model, is not available in sufficient detail for use in this study, and the project that had been proposed there has been placed on hold. The analysis of the second phase of the Playa Vista project was not released at the time of this study and was also unavailable for use. The Port of Long Beach model is primarily focused on the vicinity of the Port itself, although it also includes a representation of the surrounding region. The LRTP and the RTP models both forecast 2025 conditions, beyond the horizon of this study. In addition, the travel demand forecasting model being used by the City of Los Angeles for the Westchester Community Plan Update has become available during the course of this study. In summary the alternatives that were considered for use on this project include:

- MTA Long-Range Transportation Plan model
- SCAG 2001 Regional Transportation Plan model
- Playa Vista Phase II Traffic Study model (unavailable)
- Westchester Community Plan Update model
- Los Angeles International Airport Expansion Master Plan model (unavailable)
- Port of Long Beach Master Plan model

A detailed review of the advantages and disadvantages of each of the available sources for a travel demand forecasting model was conducted. Each was viewed and evaluated within the context of the needs of this particular study. Since the needs of this study are limited relative to the travel demand forecasting requirements, this was an important element of the evaluation. The key criteria used in the evaluation were the following:

- The model should be link-based, not intersection based
- The model must be regionally based, not sub-regional or local
- The model must include the entire Coastal Corridor Study area in its primary focus area

The results of the evaluation of traffic forecasting methodologies indicate that separate methodologies would be most appropriate for use for the two timeframes, i.e., 2005 short-range and 2015 longer-range, in this study. The two travel demand forecasting resources that include the full Coastal Corridor study area and that are available in sufficient detail for application in this study are the regional travel demand model prepared by the Southern California Association of Governments (SCAG) and the travel demand model that is being used by the City of Los Angeles to analyze the Westchester Community Plan update. The recommended approach for the modeling of future conditions in the Coastal Corridor study area for the two timeframes selected is as follows:

- Use the Westchester Community Plan Update model for the short-term forecasts to Year 2005
- Use the SCAG 2001 Regional Transportation Plan model for the long-term forecasts to Year 2015
- Identify 15 screenlines within the study area that would be used to develop the growth factors

The current SCAG forecasting model considers 1997 as existing conditions and analyzes future conditions in the year 2025; the Westchester model considers 1995 as existing conditions and analyzes future conditions in the year 2010. After consultation with the Coastal Corridor Transportation Study Technical Advisory Committee, it was decided that these two forecasts would be used to estimate traffic growth in the study area for the two future timeframes. The Year 2010 forecasts from the Westchester model would be extrapolated to provide Year 2005 forecasts representing the short-

range timeframe for the study. The Year 2025 forecasts from the SCAG model would be extrapolated to provide Year 2015 forecasts representing the longer-range timeframe.

The following issues are the primary reasons for the selection of the Westchester CPU model for the short-term forecasts:

- Provides link-level analysis
- Includes major and minor arterial facilities and some collectors
- Includes the entire study area
- Based on City of Los Angeles General Plan Framework model
- Forecasts for 2010 are ready to use
- Some data has already been extracted

The following issues are the primary reasons for the selection of the SCAG RTP model for the long-range forecasts:

- Provides link-level analysis
- Includes major arterial facilities and minor arterial and collectors which function as regional facilities
- Includes the entire study area
- Based on updated model structure
- Some data has already been extracted

FUTURE TRAFFIC FORECASTS

Separate screenlines were drawn through the study area, eight in the east-west direction and seven in the north-south direction, and are shown in Figure 7. The volume of total traffic across each of these screenlines was identified by direction from the respective sources described above. These screenline volumes were then used to develop area growth factors for traffic in the study area, from 1995 to 2010 using the Westchester CPU model and from 1997 to 2025 using the SCAG regional model. This data is presented in Tables 1 and 2, respectively. These two long-term trends, the growth from current conditions (2001) to 2005 and to 2015 was then estimated for use in this study by extrapolating the proportional differences, i.e., between 2001 and 2005 using the

DONTPRINT Table 1 1

DONTPRINT Table 2 1

DONTPRINT Figure 7 1

growth from 1995 to 2010 from the Westchester model and between 2001 and 2015 using the growth from 1997 to 2025 from the SCAG model. The data was reviewed to determine whether the forecasted growth differed by sub-area within the Coastal Corridor study area. Growth within the study area could be divided into four quadrants, divided generally north of and south of Imperial Highway in the east-west direction and east of and west of La Cienega Boulevard/Aviation Boulevard/Prospect Avenue in the north-south direction. The various growth factors by study area used in this study are presented in Table 3.

The directional traffic growth factors were applied to existing traffic volume data obtained from the cities, the county and Caltrans to provide forecasts for 2005 and 2015. At CMP intersections, the average of the directional growth factors in each quadrant were applied to the existing volume-to-capacity ratios to forecast future conditions. Existing roadway capacity was adjusted as appropriate to reflect currently programmed improvements. Figure 8 summarizes the projected overall growth for the study area indicating the short-range Year 2005 and longer-range 2015 growth rates used to project traffic volumes for the key facilities in the study area. Separate growth rates were used for each of the four quadrants in the study area.

ANALYSIS OF FUTURE CONDITIONS

Analyses were conducted for each of the major facilities in the study area for Year 2005 and Year 2015 to identify potential system deficiencies. In order to provide a more realistic forecast of future conditions, it was necessary to first identify future transportation improvements in the area that can be expected to be implemented within each of the future timeframes. These projected improvements, the future baseline transportation improvements, along with the existing system, form the future baseline transportation network, or the given transportation system used to identify future deficiencies.

DONTPRINT Table 3 1

DONTPRINT Figure 8 1

Future Baseline Improvements

A variety of sources were used to identify the future baseline improvements for the study area. Conversations were held with each of the staffs of the member agencies of the Coastal Corridor study task force. The timing and baseline status of the various projects were verified by reviewing the Regional Transportation Plan (RTP) for the SCAG area, the Regional Transportation Improvement Plan (RTIP), the Long-Range Plan (LRP) from the MTA, and the mitigation measures from various environmental impact reports of approved projects including Phase I of Playa Vista. The Westchester CPU falls into this category. Figure 9 schematically illustrates the future baseline transportation improvements identified for the study area for Years 2005 and 2015.

Identification of Potential Deficiencies

The traffic forecasts for the study area include link-by-link volumes of Year 2005 and Year 2015 traffic volumes. These forecasts were made on a network that included the existing system as well as the addition of the various baseline improvements identified above. The future traffic volumes were compared to the estimated capacity of each of the facilities in the future baseline network to conduct the volume/capacity (v/c) analysis for the study area. The results of this analysis were used to assess and identify the deficiencies for the Coastal Corridor study area for Year 2005 and Year 2015. The results of the capacity analysis and system deficiencies identified are summarized in Figures 10-11 for Year 2005 and in Figures 12-13 for Year 2015. The figures illustrate the v/c ratios and level of service for each of the links in the system and CMP intersections for each timeframe. Those links and intersections that are expected to operate at LOS E or F were viewed as deficient.

Table 4 summarizes the results of the analysis of link and intersection v/c ratios and levels of service for existing conditions, Year 2005 and Year 2015. The table identifies the number of links in the system operating at LOS A to F under existing and future conditions as growth and development occurs in the study area. The table indicates a total of 1,182 roadway links that were analyzed in the study. Of these, about half currently operate at LOS A (38%) or B (12%) and an additional 24% operate at LOS C (13%) or D (11%).

DONTPRINT Table 4 1

DONTPRINT Figure 9 1

DONTPRINT Figure 10 1

DONTPRINT Figure 11 1

DONTPRINT Figure 12 1

DONTPRINT Figure 13 1

26% of the system is currently deficient, operating at LOS E (7%) or F (19%). The percentage of links that operate at LOS E or F, i.e., that become deficient, increases to 29% in Year 2005 and to 32% in Year 2015. As shown in Table 4, 83% of the 30 CMP intersections within the Coastal Corridor Transportation Corridor are currently operating at LOS E or F. Deficient operating conditions are forecast at 90% of the CMP intersections in 2005 and at virtually all (97%) of them in 2015.

Appendix B provides the actual volume/capacity ratios for each of the links and CMP intersections. These v/c ratios were used to determine the LOS that was used to identify the deficiencies.