

PACIFIC ELECTRIC RIGHT-OF-WAY/WEST SANTA ANA BRANCH CORRIDOR ALTERNATIVES ANALYSIS

Task 3.0 – Purpose and Need Report

Draft– October 21, 2010



WEST SANTA ANA BRANCH



SOUTHERN CALIFORNIA



ASSOCIATION of GOVERNMENTS

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1.0 PURPOSE AND NEED

The Southern California Association of Governments (SCAG), in coordination with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and the Orange County Transportation Authority (OCTA), has initiated an Alternatives Analysis (AA) for the Pacific Electric Right-of-Way/West Santa Ana Branch (PEROW/WSAB) right-of-way (ROW). As shown in Figure 1.1, the Corridor Study Area includes the former railroad right-of-way that extends approximately 20 miles at a diagonal between the City of Paramount in Los Angeles County and the City of Santa Ana in Orange County. While the AA effort focuses on the former ROW now owned by LACMTA and OCTA, the study evaluates possible connections north to Union Station in Downtown Los Angeles, and south to the Santa Ana Regional Transportation Center (SARTC). A full range of transportation alternatives will be identified and assessed, and a preferred transportation alternative, or phasing of alternatives, that addresses Corridor mobility needs in the year 2035 and beyond will be recommended.

The purpose of the Mobility Problem and Purpose and Need Statement is to describe the current and projected future year (2035) mobility problems in the Corridor Study Area, and define the overall project purpose and need for a transportation investment strategy by:

1. Providing a description of the Corridor Study Area, its characteristics, and context;
2. Identifying mobility problems and concerns within the Corridor; and
3. Relating the Corridor mobility problems and concerns to applicable transportation, land use, economic development, environmental, and other goals and objectives to identify an overall purpose and need for transportation improvements.

1.1 Background

The PEROW/WSAB Corridor was formerly part of the Pacific Electric (PE) Railway, or Red Car, system that provided transit service to Southern California from 1901 to 1961. At its peak, the PE Railway system connected cities throughout Los Angeles, Orange, Riverside, and San Bernardino counties. The PE service that used this right-of-way operated south from Downtown Los Angeles, following the alignment currently used by the Metro Blue Line to the Watts Station where passenger service then headed southeast along the Corridor to the City of Santa Ana. Along this line, service was provided to 14 cities, including stations at Lynwood, Bellflower, Artesia, Cypress, Stanton, Garden Grove, West Santa Ana, and Santa Ana. Passenger service to Santa Ana ceased in 1950 and to Bellflower in 1955. Over time, the western portion of the former PE corridor between the Watts Station and the City of Paramount has been developed with the I-710 Freeway, the I-105 Freeway and Metro Green Line, the Los Angeles River, city streets, and residential and commercial development. Now owned by LACMTA and OCTA, a majority of the Corridor east of the I-710 Freeway has been primarily unused since 1961.

1.2 Planning Efforts

Starting in 1996, numerous studies have evaluated the feasibility of utilizing all or portions of the Corridor for transportation purposes again. This valuable resource runs through highly-populated communities of Los Angeles and Orange counties, and offers the opportunity for a high-capacity transportation system that would provide improved transportation access to both serve and better connect these communities to and from the rest of the region. Past efforts have studied options for

reusing this corridor for a new transportation system. Currently, freeway and arterial facilities are operating at- and beyond-capacity, limited transit service is offered, and significant population and employment growth is forecast, with a corresponding increase in daily travel. Reuse of the former Pacific Electric ROW for transit service could provide additional travel capacity, and would create needed connections for residents to a wide range of destinations, while supporting implemented and needed economic development and revitalization. The most recent studies evaluating reuse of the PEROW/WSAB ROW include the following:

- **Orange and Los Angeles Intercounty Transportation Study (2008)** – This joint study was conducted by the OCTA and LACMTA, and evaluated alternatives for improving transportation infrastructure and services across the border between Orange and Los Angeles counties. The effort evaluated reuse of the PEROW with five potential transit alternatives: grade-separated Bus Rapid Transit (BRT), elevated BRT, elevated Light Rail Transit (LRT), hybrid LRT/BRT, and elevated high speed transit. The study demonstrated the need for and feasibility of transportation system improvements in the ROW, and recommended further evaluation of grade-separated BRT and LRT service.
- **OrangeLine High Speed Maglev Project (2005-2006)** – The OrangeLine Development Authority (OLDA) prepared a series of ten milestone reports documenting Phase 1 Preliminary Engineering efforts for a proposed high speed magnetic levitation (maglev) project. The proposed 110-mile system was designed to operate from the City of Palmdale in northern Los Angeles County through the cities of Santa Clarita, Burbank, and Glendale to Union Station in Downtown Los Angeles, and then south along the PEROW/WSAB ROW into Orange County. OLDA is continuing their planning efforts for a project now proposed to run from the City of Santa Clarita south through Downtown Los Angeles, and then along the PEROW/WSAB ROW to the City of Cerritos.
- **West Orange County Project Definition Study (2003)** – This study was conducted by OCTA as a continuation of the *West Orange County Rail Feasibility and Alignment Study* that was initiated to study potential rail systems in Central Orange County. The study's final recommendation was the proposed utilization of the PEROW/WSAB ROW with an 11-mile LRT system served by a network of BRT lines offering connections from the ROW to cities throughout the West Orange County study area.

Currently, a study is underway that may affect any future use of the Orange County segment of the Corridor:

- **Santa Ana-Garden Grove Fixed Guideway Corridor Study** – The City of Santa Ana is currently conducting a study to evaluate the feasibility of transit service between the Santa Ana Regional Transportation Center (SARTC), the Lacy Neighborhood, Downtown Santa Ana, and the Civic Center area. Potential future expansion of the system would utilize the PE ROW to connect a proposed fixed guideway system to Bristol Boulevard as a Phase I terminus, and to a Phase II terminus at Harbor Boulevard in the City of Garden Grove. OCTA is supporting this planning effort with Go Local funds from the Renewed M Transportation Plan.

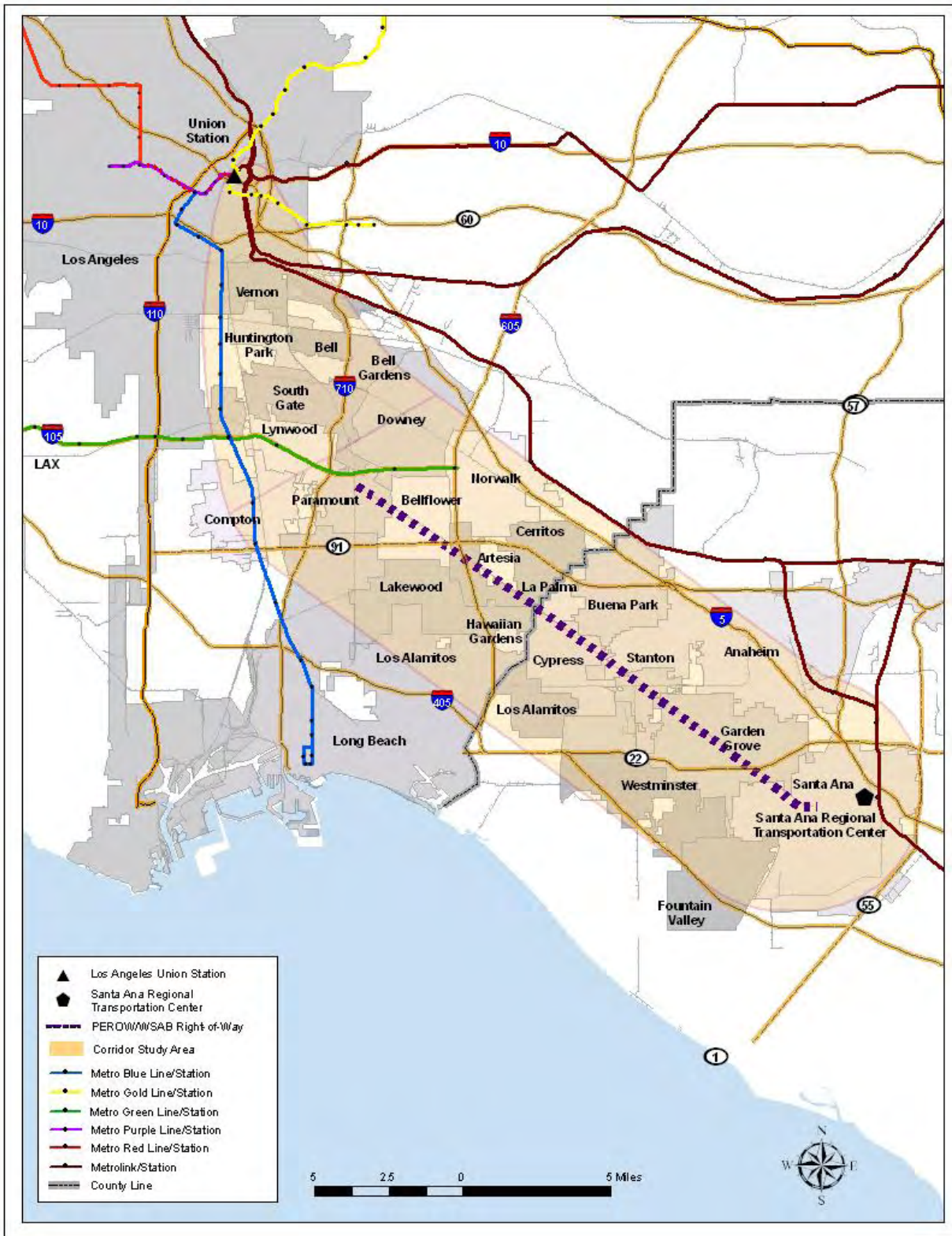
Other studies and plans with potential impacts to the Corridor Study Area are presented in the discussion of the Regional Transportation System in Section 4.0 of this report.

1.3 Current Study Effort

Support for the current AA study effort was provided by several funding and policy efforts. In Los Angeles County, future funding for a transportation project to be located on the West Santa Ana Branch (WSAB) ROW was provided with the approval of the Measure R transportation sales tax program by voters in November 2008. The future WSAB Project was included in the Recommended Plan providing the basis for LACMTA's *2009 Long Range Transportation Plan* (LRTP). Major capital projects that are identified in the LRTP have priority for future funding and construction, but require further LACMTA Board approval at various stages of their development process. The 2009 LRTP was adopted by the LACMTA Board on October 22, 2009, and then forwarded to SCAG for inclusion in the *2008 Regional Transportation Plan* (RTP) and *Regional Transportation Improvement Program* (RTIP).

SCAG is leading the AA effort for the PEROW/WSAB ROW that spans two counties with regional transportation benefits and implications. The AA study process will identify and assess a full range of transportation options that address Corridor mobility needs in the year 2035 and beyond. Working closely with LACMTA and OCTA staff, and with guidance from the AA study's elected official advisory committee, SCAG staff will recommend a preferred transportation alternative, or phasing of alternatives, to the SCAG Regional Council. The recommendation may then be included by SCAG action in the 2012 RTP, and by LACMTA and OCTA Board action in their respective 2012 LRTPs. As the owners of the PEROW/WSAB ROW, LACMTA and OCTA will have the option to move the project forward towards implementation by continuing into the next engineering design and environmental review phase.

Figure 1.1 Corridor Study Area



2.0 CORRIDOR DESCRIPTION

The PEROW/WSAB ROW is a former PE Railway ROW that runs in a southeast direction through portions of 12 cities in Los Angeles and Orange counties: Paramount, Bellflower, Cerritos, Artesia, Lakewood, La Palma, Cypress, Buena Park, Anaheim, Stanton, Garden Grove, and Santa Ana. In addition, the AA will evaluate connections north to Union Station in Downtown Los Angeles, and south to the SARTC in Downtown Santa Ana. The Northern Connection study area includes portions of nine cities: Los Angeles, Vernon, Maywood, Huntington Park, Bell, Cudahy, Lynwood, and Downey, and South Gate. The Southern Connection study area is totally within the City of Santa Ana.

As illustrated in Figure 2.1, the approximate boundaries of the Corridor Study Area are:

- North – Union Station in Downtown Los Angeles, the east bank of the Los Angeles River, and the I-5/Santa Ana Freeway;
- East – the SARTC in Downtown Santa Ana;
- South – the I-405/San Diego Freeway; and
- West – the Metro Blue Line north to Downtown Los Angeles.

2.1 Corridor Description

The Corridor Study Area is divided into three sections for analytical purposes and to reflect different coordination requirements, and possible phasing decisions:

- **PEROW/WSAB Area** – a four mile wide study area centered on the former PE Railway right-of-way (ROW) now owned by LACMTA and OCTA;
- **Northern Connections Area** – consists of an area north of the existing PE ROW to Union Station in Downtown Los Angeles where possible connections will be explored from the Metro Blue Line on the west, and several active and inactive railroad ROWs on the east; and
- **Southern Connections Area** – consists of the portions of the City of Santa Ana east from where the ROW ends along city streets to the Santa Ana Regional Transportation Center located in the eastern portion of the city and accommodating OCTA bus, Metrolink, and Amtrak services. Due to the width of the analytical buffer zone used in this AA, information related to the Southern Connections Area is included in the PEROW/WSAB Area.

The PEROW/WSAB ROW is approximately 20 miles long, with 12 miles or 60 percent of the alignment located in Orange County, and the remaining 8 miles within Los Angeles County. The existing ROW varies in width from 75 to 195 feet, and typically is between 90 to 100 feet wide along a majority of the ROW. In Los Angeles County, a majority of the ROW is now vacant as the former PE railway tracks have been removed. The only remaining tracks exist in the City of Paramount between the north-south-running Union Pacific Railroad (UPRR) ROW and east of Downey Avenue. The remaining tracks are currently being utilized for freight trains traveling to/from the Paramount Petroleum Oil Facility, as well as for rail car storage related to the facility. In Orange County, the ROW is predominately vacant with portions being used for vehicle and miscellaneous storage, paved pedestrian walkways, small playgrounds, OCTA bus storage, and commercial development parking lots in the City of Garden Grove.

The following two connections north to Downtown Los Angeles from the PEROW/WSAB ROW will be evaluated as part of the AA study effort (as shown in Figure 2.1):

1. **Connection via the Metro Green Line** – Under this option, the proposed transportation alignment for the rail alternatives would turn north from the PEROW/WSAB ROW to operate within the median of Lakewood Boulevard located in the City of Bellflower. It would connect with the Metro Green Line at the Lakewood Boulevard Station located in the median of the I-105 Freeway. Passengers would then transfer to the Metro Blue Line to reach Downtown Los Angeles. The Bus Rapid Transit (BRT) alternative would operate: 1) on city streets with priority signal treatment north to Union Station; or 2) enter the I-105/Century Freeway at Lakewood Boulevard and travel in High Occupancy Vehicle (HOV) lanes along the I-105 Freeway to the I-110/Harbor Freeway, and exit in Downtown Los Angeles. BRT passengers also could transfer to Metro Green Line at the Lakewood Boulevard Station and continue their trip via Metro Green and Blue service into Downtown Los Angeles.
2. **Connection via Railroad Rights-of-Way** – In this option, the proposed transportation alignment would turn north from the ROW between Garfield Avenue and Paramount Boulevard in the City of Paramount to operate along or adjacent to a former UPRR ROW (San Pedro Subdivision) now owned by the Ports of Long Beach and Los Angeles. A new Metro Green Line station would provide riders with the option of transferring to the Metro rail system. Service along this alignment would then operate north along various existing and former railroad rights-of-way, and connect into Union Station from along the east side of the Los Angeles River. A second option would be to use the San Pedro Subdivision north from the PEROW/WSAB ROW and operate along or adjacent to this former RR ROW, and then use a vacant or infrequently utilized east-west RR ROW to travel west to access Downtown Los Angeles via city street operations to connect with the future Regional Connector station to be located at First/Alameda streets.

Under either of these options, the BRT alternative would be required to have street- or freeway-running operations north from the PEROW/WSAB ROW due to Federal Railroad Administration (FRA) requirements precluding buses from sharing freight railroad rights-of-way. The rail alternatives would be required to operate: in FRA-approved crash compliant vehicles, with temporal separation (a different timeframe than the freight service), or within separate tracks than any freight service.

For the PEROW/WSAB ROW, ownership by the two implementing agencies makes it relatively easy to make decisions and construct a future transportation project. Decisions within the Northern Connections Area will require the cooperation and approval of many agencies and entities who own or have jurisdiction over the various rail and highway ROWs, including the Ports of Long Beach and Los Angeles, the UPRR, the Burlington Northern-Southern Pacific Railroad (BNSF), Metrolink, Caltrans, and the cities of Los Angeles, Vernon, Bell, Maywood, Huntington Park, South Gate, Downey, Paramount, and Bellflower. The key approving agencies would be the FRA and the California Public Utilities Commission (CPUC).

In the Southern Connection area, future service east from the termination of the PEROW/WSAB ROW in the City of Santa Ana would either interface with the Santa Ana-Garden Grove Fixed Guideway Project, or operate on city streets similar to those identified for the fixed guideway project.

2.2 Existing Transportation Facilities

The following major transportation facilities are located within the Corridor Study Area as shown in Figure 2.1 and discussed further in Sections 3 and 4:

- Seven freeways – two running north-south through the study area, the I-710/Long Beach Freeway and I-605/ San Gabriel Freeway; three running east-west, the I-105/Century Freeway, SR-91/Artesia Freeway, and the SR-22/Garden Grove Freeway; and two running at a diagonal approximately parallel with the PEROW/WSAB ROW, the I-5/Santa Ana Freeway to the north and the I-405/San Diego Freeway to the south;
- Three inter- and intra-regional rail systems – Metrolink and Amtrak service is accessible from Union Station at the northern terminus of the Corridor Study Area, and at the SARTC at the southern terminus; and the Los Angeles County Metro Rail system is accessible from Union Station and the east-west running Metro Green Line is located in the northern portion of the Corridor Study Area.

The following transportation facilities are located immediately adjacent to the Corridor Study Area:

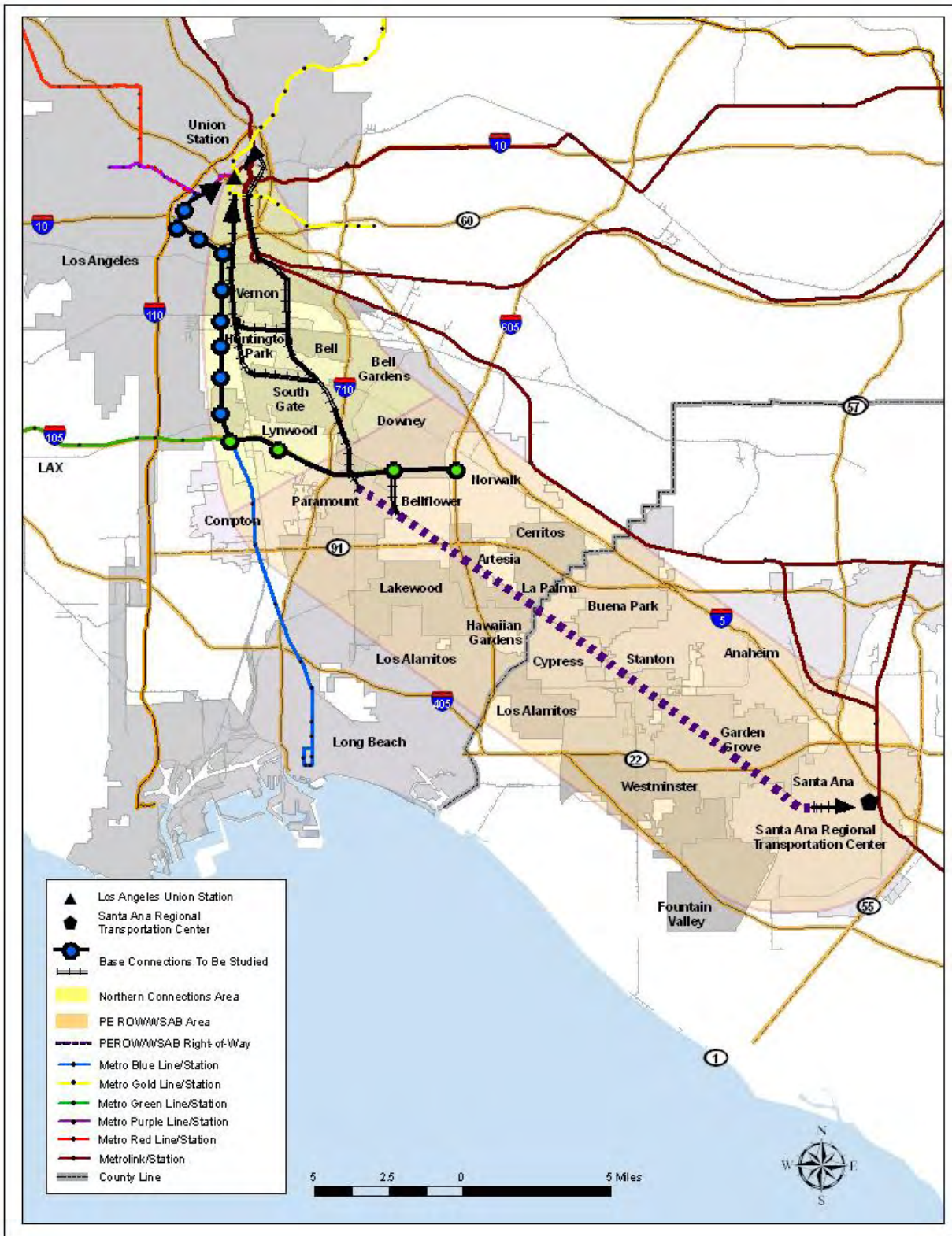
- Two airports – the Long Beach Municipal and John Wayne airports;
- Three north-south running freeways – the I-110/Harbor Freeway to the west in Los Angeles County, and the SR-55/Costa Mesa Freeway, and SR-57/Orange Freeway in Orange County; and
- Inter-regional rail service – Amtrak and Metrolink (Orange County and 91 lines) service operates on an alignment approximately paralleling the Corridor Study Area to the north.

2.3 Activity Centers and Destinations

The Corridor Study Area contains a wide variety of civic, cultural, entertainment, retail, educational, and recreational destinations as presented in Table 2.1 and Figure 2.2 on the following pages. The types of activity centers located in the study area, within two miles of the Corridor and the proposed northern connections, the destinations include:

- Public facilities, including civic centers, community centers, and convention centers;
- Educational institutions, including public and private schools and five colleges, Compton Community College, Long Beach City College, Cerritos College, Cypress College, and Rancho Santiago College;
- Commercial areas, including main street retail districts and regional shopping centers;
- Cultural and entertainment venues, including the Music Center and Staples Center in Downtown Los Angeles, the Cerritos Center for the Performing Arts, Knott's Berry Farm, Disneyland, and the Orange County Performing Arts Center;
- Ethnic cultural centers, including Chinatown, Little Tokyo, and Olvera Street in Downtown Los Angeles, Little India in Artesia, and Little Saigon in Westminster;
- Hospitals and medical facilities, including the Bellflower Medical Center, Paramount Suburban Medical Center, Coast Plaza Doctors Hospital, St. Francis Medical Center, Huntington Park's two

Figure 2.1 Study Area Boundaries and Connections



Hospitals – Community Hospital and Community & Mission Hospital, and the California Hospital and Medical Center in Downtown Los Angeles;

- Recreational facilities, including El Dorado Regional Park, Pueblo de Los Angeles State Park, Watts Tower State Historic Park, Cerritos Regional Park, and Centennial Regional Park;
- Major office space development located in Downtown Los Angeles at the northern end of the Study Area, and in the cities of Anaheim, Santa Ana, Orange, and Costa Mesa to the south; and
- Major industrial, manufacturing, and wholesale facilities located in Southeast Los Angeles County in the cities of Los Angeles, Vernon, Bell, Bell Gardens, Cudahy, Downey, Huntington Park, Lynwood, and South Gate.

Many of the destinations located in the Corridor Study Area attract trips from wide areas of the Los Angeles and Orange County region and beyond including: Disneyland, Knott's Berry Farm, the Crystal Cathedral, Downtown Los Angeles, the performing arts centers in Los Angeles, Cerritos, and Costa Mesa; the Anaheim and Los Angeles convention centers; the area's major shopping centers including Lakewood Center Mall, Los Cerritos Center, the City Center, and South Coast Plaza; and the major medical facilities such as the UC Irvine Medical Center.

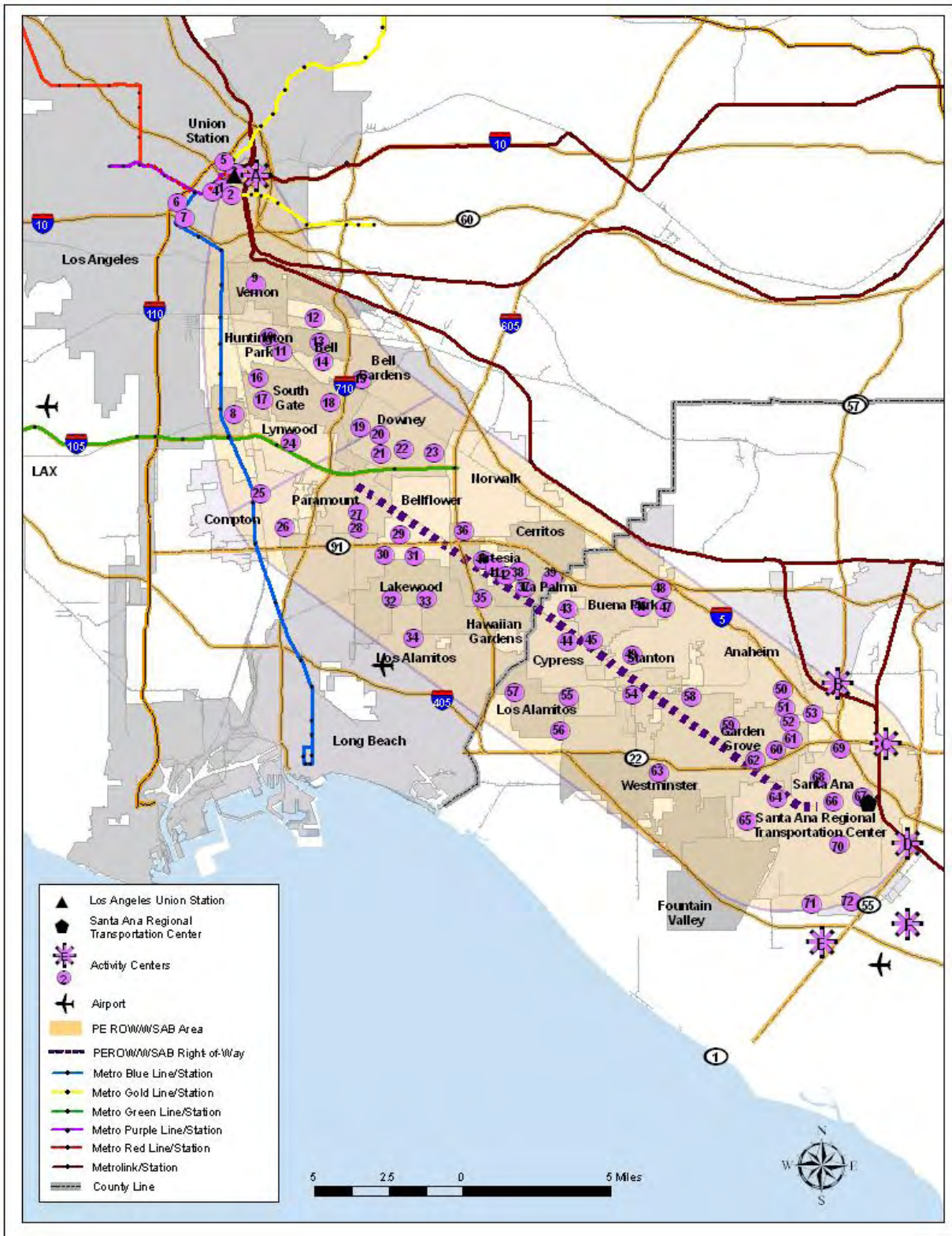
TABLE 2.1 – CORRIDOR STUDY AREA ACTIVITY CENTERS AND DESTINATIONS

City	Number	Activity Center/Destination
Los Angeles	1	Civic Center
	2	Little Tokyo
	3	Olvera Street and Pueblo de Los Angeles State Park
	4	Music Center and Disney Hall
	5	Chinatown
	6	Staples Center and Los Angeles Convention Center
	7	California Hospital and Medical Center
	8	Watts Tower State Historic Park
Vernon	9	Civic Center
Huntington Park	10	Civic Center
	11	Community Hospital
Maywood	12	Civic Center
Bell	13	Civic Center
Cudahy	14	Civic Center
Bell Gardens	15	Civic Center
South Gate	16	South Gate Plaza
	17	Civic Center
	18	South Gate Park
Downey	19	Los Amigos County Golf Course
	20	Rancho Los Amigos Medical Center
	21	Civic Center
	22	Stonewood Shopping Center
	23	Downey Medical Center
Lynwood	24	Civic Center
Compton	25	Civic Center
	26	Compton Community College
Paramount	27	Civic Center
	28	Suburban Medical Center
Bellflower	29	Civic Center
	30	Bellflower Medical Center
	31	Bellwood General Hospital
Lakewood	32	Lakewood Center Mall
	33	Civic Center
Long Beach	34	Long Beach City College
Cerritos	35	Los Cerritos Center and Best Plaza
	36	Cerritos College
	37	Civic Center
	38	Cerritos Town Center
	39	Cerritos Center for Performing Arts

TABLE 2.1 – CORRIDOR STUDY AREA ACTIVITY CENTERS AND DESTINATIONS

City	Number	Activity Center/Destination
Artesia	40	Civic Center
	41	Little India
	42	Pioneer Hospital
La Palma	43	Civic Center
Cypress	44	Civic Center
	45	Cypress College
Buena Park	46	Knott’s Berry Farm
	47	Buena Park Mall
	48	Civic Center
Anaheim	49	Anaheim General Hospital
	50	Anaheim Convention Center
	51	Disneyland
	52	The City Center
	53	UC Irvine Medical Center
Stanton	54	Civic Center
Los Alamitos	55	Los Alamitos Racetrack
	56	Los Alamitos Armed Forces Reserve Center
	57	Civic Center
Garden Grove	58	Garden Grove Promenade and Pavilion Plaza
	59	Civic Center
	60	Harbor Plaza and Garden Grove Center
	61	Crystal Cathedral
	62	Garden Grove Hospital
Westminster	63	Little Saigon
Santa Ana	64	Willowbrook Municipal Golf Course
	65	Centennial Regional Park
	66	Civic Center
	67	Downtown Santa Ana
	68	Rancho Santiago College
	69	Bristol Market Place
	70	Coastal Communities Hospital
Costa Mesa	71	South Coast Plaza
	72	Orange County Performing Arts Center
Los Angeles	*A	Major office development
Anaheim	*B	Major office development, Angel Stadium
Santa Ana/Orange	*C	Major office development, hospitals, shopping centers
Santa Ana	*D	Major office development
Costa Mesa	*E	Major office development
Irvine	*F	Major office development

Figure 2.2 Activity Centers and Destinations



2.4 Corridor Land Uses

The mix of land uses within the Corridor Study Area will play an important role in determining the potential benefits, as well as the possible impacts, related to implementing a transportation system improvement. The Corridor Study Area has a diverse set of land uses as illustrated in Figure 2.3 and discussed below. As summarized in Table 2.1, the land use distribution within the PEROW/WSAB Area, which is located in Los Angeles and Orange counties, can be described as follows:

- Residential uses are the highest land use with more than one-half of this area’s land devoted to single-family homes and multi-family apartments and townhouses;
- More than one-quarter of this area’s land is occupied with commercial and industrial uses with the percentage of commercial land uses slightly higher in Orange County, and amount of industrial space larger in Los Angeles County; and
- The remaining approximately one-quarter of land is devoted to a mix of uses including: public facilities such as civic centers, hospitals, and educational facilities; parks and recreational uses; space used by freeways, streets, flood channels, electric power lines, and other utilities; and other uses including military facility, agricultural, and vacant land. A higher percentage of Los Angeles County land is devoted to transportation and utilities due to the rail and related intermodal facilities located in the cities of Paramount, South Gate, and Downey, as well as several major flood control systems. The “other” land use category is higher in Orange County due to the Los Alamitos Armed Forces Reserve Center.

TABLE 2.2 – LAND USE WITHIN PEROW/WSAB AREA

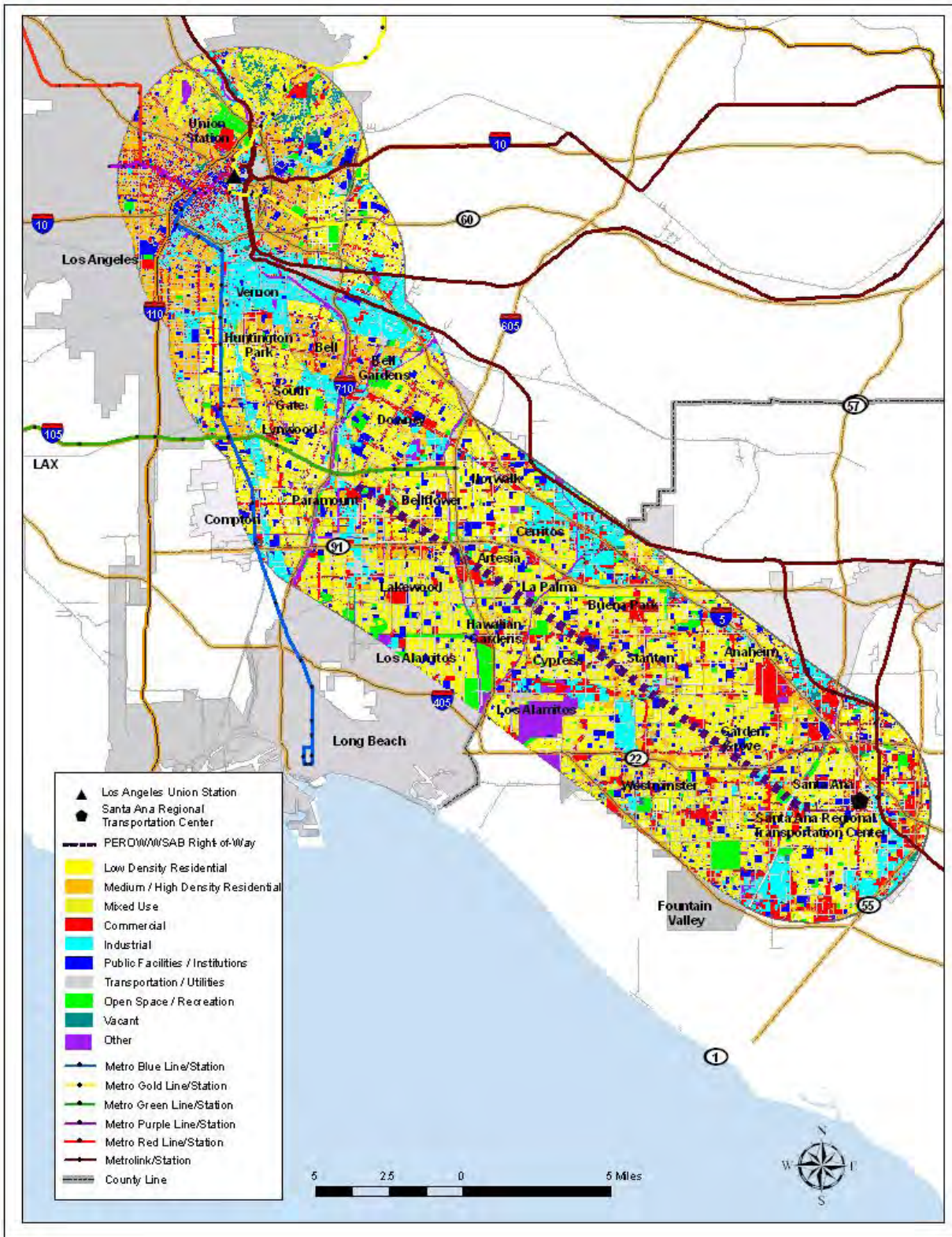
Land Uses	Los Angeles County	Orange County	Corridor Study Area
Low-Density Residential	30 %	33 %	32 %
High-Density Residential	22 %	18 %	20 %
Commercial	12 %	17 %	15 %
Industrial	12 %	10 %	11 %
Public Facilities and Institutions	9 %	9 %	9 %
Open Space and Recreation	6 %	5 %	5 %
Transportation and Utilities	6 %	3 %	4 %
Other	3 %	5 %	4 %

Source: SCAG, 2008

Similar land use patterns are located within the Northern Connections Area as shown below in Table 2.3, but the distribution varies slightly with approximately four percent less residential land use, and four percent more commercial and industrial development in this area:

- Residential development is the highest land use with slightly less than one-half of the Northern Connections Area devoted to single-family homes and multi-family apartments and townhouses;
- Approximately 30 percent of the land in this area is occupied with commercial and industrial uses; this is higher than in the PEROW/WSAB ROW Area due to the large amount of industrial, manufacturing, and warehousing space located in the cities of southeast Los Angeles, Vernon, Bell, Bell Gardens, Cudahy, Downey, Huntington Park, Lynwood, and South Gate; and

Figure 2.3 Corridor Study Area Land Uses



- The remaining land is devoted to a mix of uses including: civic centers, hospitals, and educational facilities; parks and recreational uses; educational facilities and civic centers; space occupied by freeways, streets, flood channels, and utilities; and other uses such as agricultural and vacant land. A high percentage of land is devoted to transportation and utility land uses in this area due to the large number of railroad and related intermodal facilities.

The resulting information is provided for the two study area sections identified previously, and is then combined to present a total study area perspective. Within the Corridor Study Area, residential is the highest land use with more than half of the study area’s dedicated to residential uses. The other half is divided between commercial and industrial uses (28 percent), public facilities including schools and colleges (nine percent), and other land uses including parks, freeways, streets, flood channels, military facilities, and vacant land.

TABLE 2.3 – LAND USES WITHIN NORTHERN CONNECTIONS AREA

Land Uses	PEROW/WSAB Area	Northern Connections Area	Corridor Study Area
Low-Density Residential	32 %	29 %	30 %
High-Density Residential	20 %	19 %	20 %
Commercial	15 %	13 %	14 %
Industrial	11 %	16 %	14 %
Public Facilities and Institutions	9 %	9 %	9 %
Open Space and Recreation	5 %	4 %	5 %
Transportation and Utilities	4 %	7 %	5 %
Other	4 %	3 %	3 %

Source: SCAG, 2008

2.5 Demographic Information

This section provides an overview of the demographic characteristics within the Corridor Study Area including existing and forecast population and employment, low-income and transit-dependent households, and ethnicity. The resulting information is provided for the two study area sections identified previously, and is then combined to present a total Corridor Study Area perspective. For the purposes of the demographic analysis, the information is presented based on a four-mile buffer of the PEROW/WSAB Area and the possible alignments north to Downtown Los Angeles in the Northern Connections Area. The resulting comparative analysis is based on an aggregate of each section’s subregions as shown in Figure 2.4. The subregions and cities included in each study area section are presented below.

1. **PEROW/WSAB Area** includes the following subregions, cities, and applicable TAZs (for LACMTA data) or census tracts (for U.S. Census information):
 - **Gateway Cities North** – including cities of Bell Gardens, Cudahy, South Gate, Lynwood, Downey, Norwalk, and small portions of Pico Rivera and Santa Fe Springs;
 - **Gateway Cities South** – cities of Paramount, Bellflower, Lakewood, Artesia, Cerritos, Hawaiian Gardens, and a small portion of Long Beach;

- **Interior South Bay** – cities of Compton, Lynwood and a small portion of Long Beach;
 - **Northwest Orange County** – cities of Anaheim, Cypress, La Palma, Buena Park, Stanton, and Los Alamitos;
 - **Northeast Orange County** – city of Anaheim;
 - **East Orange County** – cities of Santa Ana, and small portions of Orange, Tustin, and Irvine;
 - **West Orange County** – cities of Cypress, Anaheim, Stanton, Westminster, Garden Grove, Santa Ana, Orange, Los Alamitos, and Rossmore;
 - **Central Orange County** – cities of Santa Ana, Costa Mesa, Fountain Valley, and Westminster.
2. **Northern Connections Area** includes the following subregions, cities, and applicable TAZs or census tracts:
- **Gateway Cities North** – cities of Bell, Bell Gardens, Cudahy, Lynwood, South Gate, Downey, Commerce, and a small portion of Norwalk;
 - **Gateway Cities South** – cities of Paramount, Bellflower, Lakewood, Artesia, and a small portion of Long Beach;
 - **Interior South Bay** – city of Compton and the Watts, Willowbrook, and Walnut Park sections of Los Angeles;
 - **Central Los Angeles West** – Westlake, Echo Park, Silverlake, and Exposition Park sections of Los Angeles;
 - **Central Los Angeles East** – the East Los Angeles, the northern half of Chinatown, Echo Park, Glassell Park, Cypress Park, Highland Park, and Mt. Washington sections of Los Angeles;
 - **San Gabriel Valley** – cities of Alhambra and Monterey Park, and a portion of East Los Angeles;
 - **LAX/Inglewood/South Los Angeles** – city of Los Angeles including the Crenshaw and Hyde Park sections;
 - **Downtown Los Angeles** – cities of Vernon, Huntington Park, and the southern half of Chinatown, Downtown, Boyle Heights, Walnut Park, and Florence sections of Los Angeles.

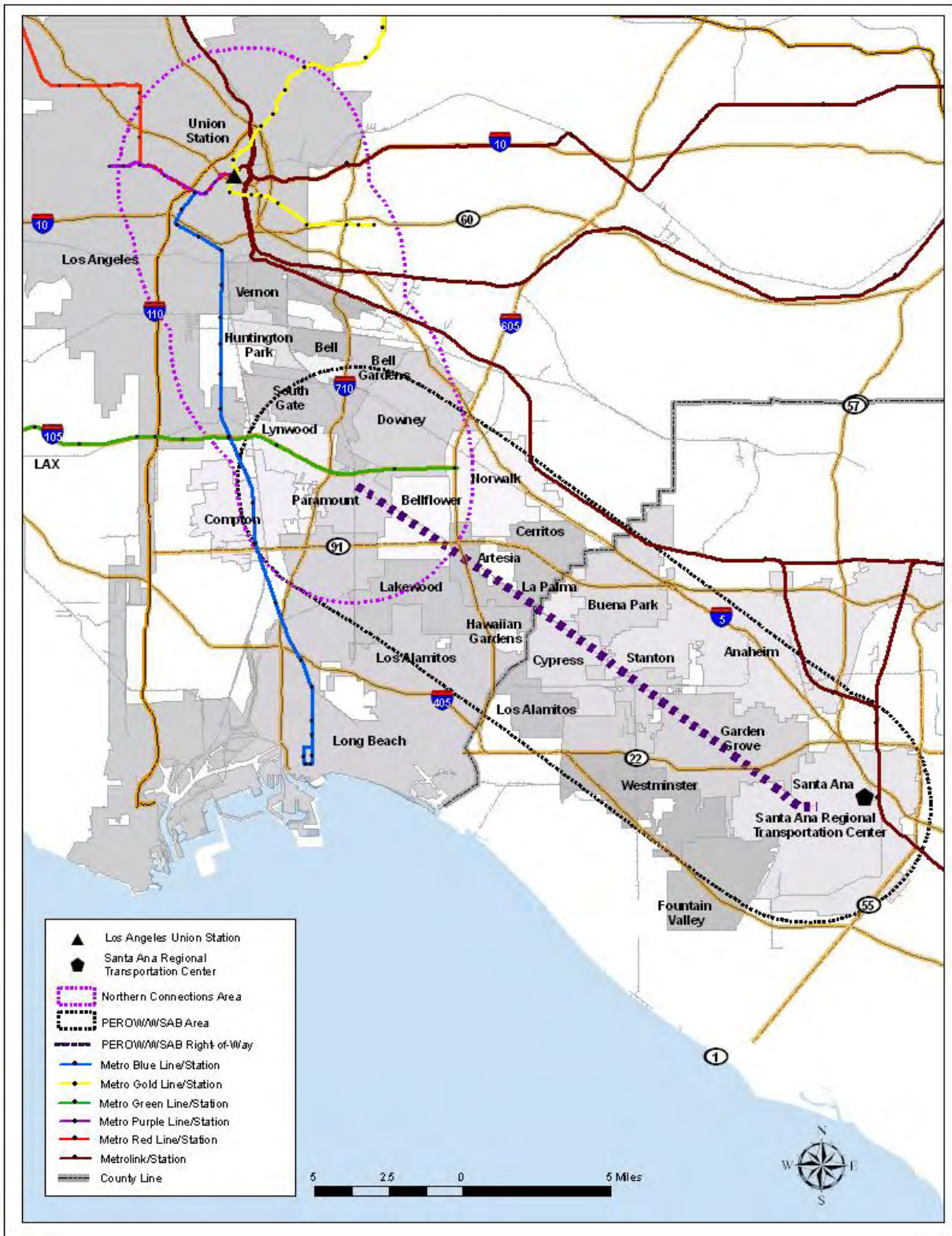
2.5.1 Population

Currently, the Corridor Study Area is home to more than 4.5 million residents. Approximately 3.3 million residents live in the Los Angeles County portion of the Corridor, or 33 percent of the county's total population, and more than 1.2 million residents live in the Orange County portion, or 42 percent of the county's total population. By 2035, the total Corridor Study Area's population is expected to grow with a forecast increase of 12 percent, or by more than 500,000 residents. The population growth is projected to be slightly larger in Orange County with 1.4 million new residents, or 40 percent of the future Orange County population. Within Los Angeles County, population is forecast to increase by there will be approximately 1.1 million total residents, or 28 percent of the future total Los Angeles County population.

PEROW/WSAB Area

In 2006, a majority (55 percent) of the PEROW/WSAB Area population lived in Orange County, and 45 percent of the population resided within Los Angeles County as shown in Figure 2.5. This population distribution is fairly similar to the percentage of the PE ROW length in each county, with 60 percent in

Figure 2.4 Analytical Boundaries



Orange County, and 40 percent in Los Angeles County. In addition, based on this area's total area size (square miles), more of the corridor area is located in Orange County (58 percent) than Los Angeles County (42 percent). In 2035, the population of the PEROW/WSAB Area will increase by 13 percent or by more than 300,000, and more of the area population will continue to live Orange County (54 percent).

As presented below in Table 2.4, the PEROW/WSAB Area subregions with the highest population in 2006 were located in the northern portion of the area in the West Orange County, Gateway Cities South, and Gateway Cities North subregions. The 2006 PEROW/WSAB Area subregional population ranged from a high of 668,845 residents in the West Orange County subregion to a low of 9,350 people in the Northeast Orange County area. The areas with the lowest population, and located at the largest distance from the PE ROW, were the Northeast Orange County, East Orange County, and Interior South Bay subregions. As shown in Figure 2.6, these population patterns are forecast to continue in 2035 with the residential population in the northern portion of this area continuing to be higher than in the southern portion. But in the future, shown in Graph 2.1, the areas with the highest forecast increase in population are located in Orange County: Northeast Orange County (152 percent), East Orange County (30 percent), and North Orange County (20 percent).

TABLE 2.4 – POPULATION WITHIN PEROW/WSAB AREA

Subregions	2006	2035	Change	
			Residents	Percentage
Gateway Cities North	449,030	495,240	46,210	10 %
Gateway Cities South	461,350	527,670	66,320	14 %
Interior South Bay	107,765	108,570	805	1 %
Northwest Orange County	292,575	350,450	57,875	20 %
Northeast Orange County	9,350	23,540	14,190	152 %
East Orange County	99,585	129,065	29,480	30 %
West Orange County	668,845	737,180	68,335	10 %
Central Orange County	175,030	196,115	21,085	12 %
PEROWWSAB Corridor	2,263,530	2,567,830	304,300	13 %
Los Angeles County	1,018,145	1,131,480	113,335	11 %
Orange County	1,245,385	1,436,350	190,965	15 %

Source: LACMTA

As shown in Figure 2.5, all of the Orange County subregions are two to four times denser than the Orange County average density of 3,720 residents per square mile, with the exception of Northeast Orange County subregion, which is approximately half of the county average. All of the subregions located in the Los Angeles County portion of this study area are three to four times the Los Angeles County average of 2,520 residents per square mile. Even when comparing this area's population density with the urbanized Los Angeles County average of 7,100 people per square mile, the three densest Los Angeles County subregions have a higher population density by 20 to 40 percent. Within this study area section, the North Orange County and the Gateway Cities North subregions are the densest with 10,330 residents per square mile, followed by the Interior South Bay (9,680), and West Orange County (9,000).

Figure 2.5 Corridor Study Area 2006 Population and Employment Density

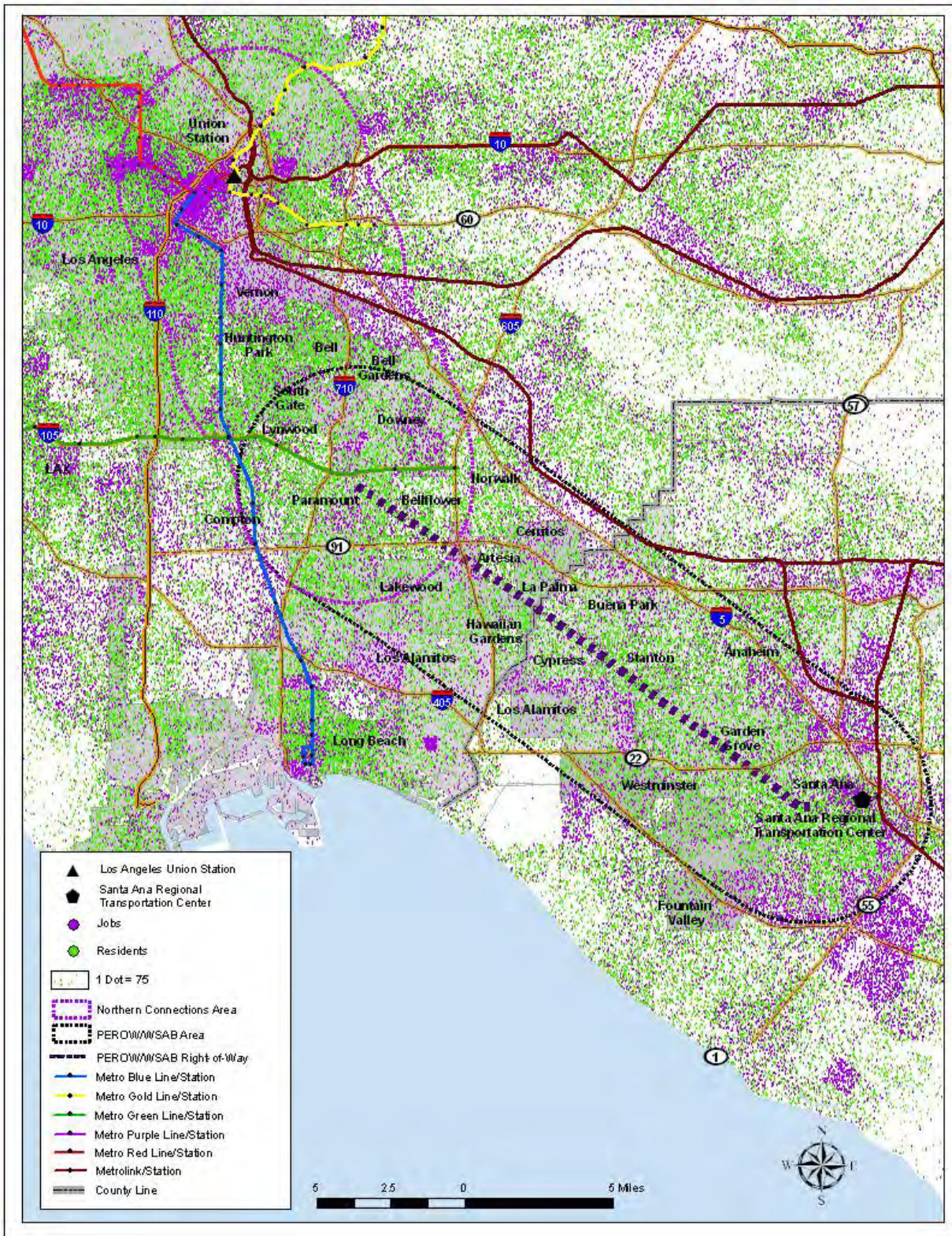
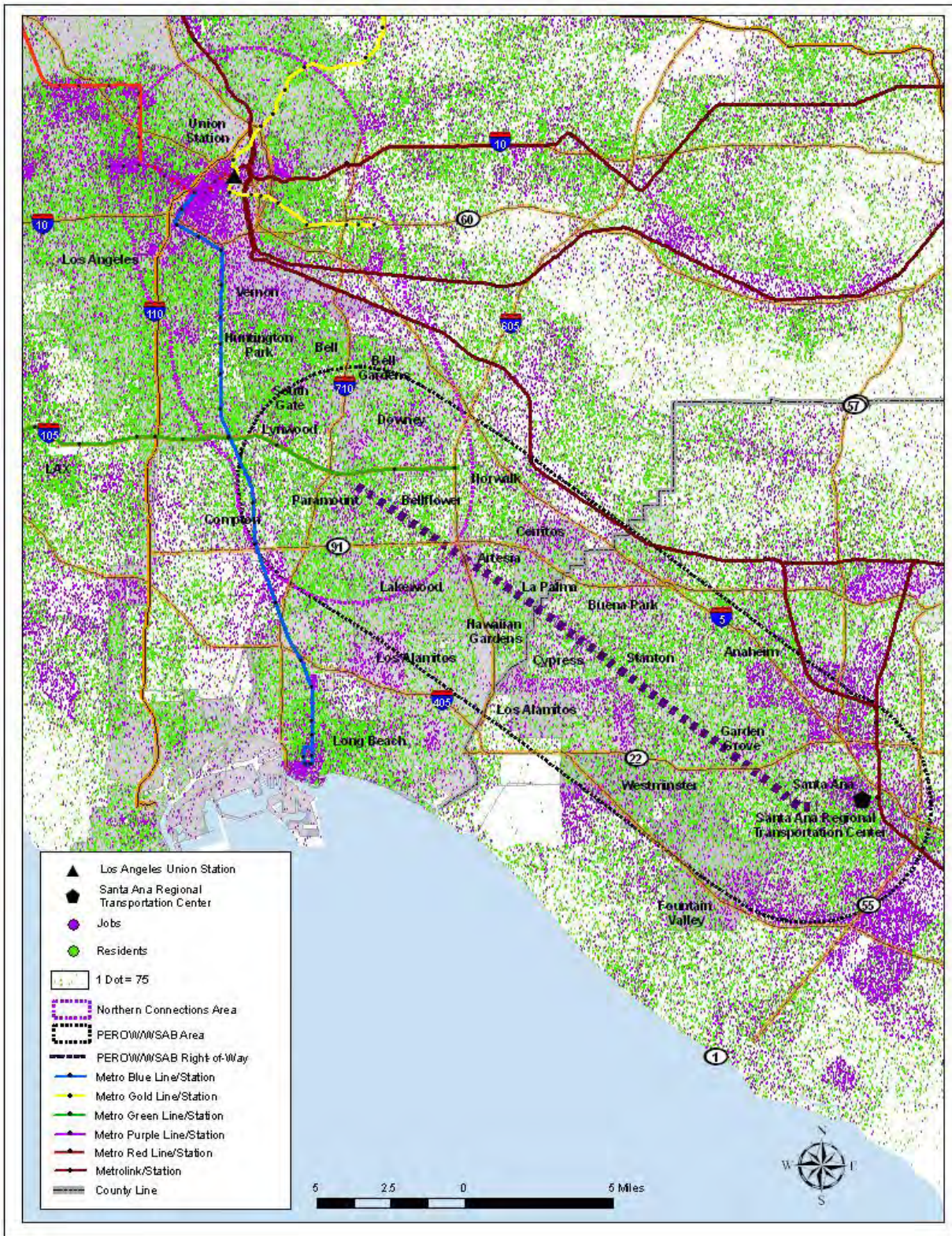
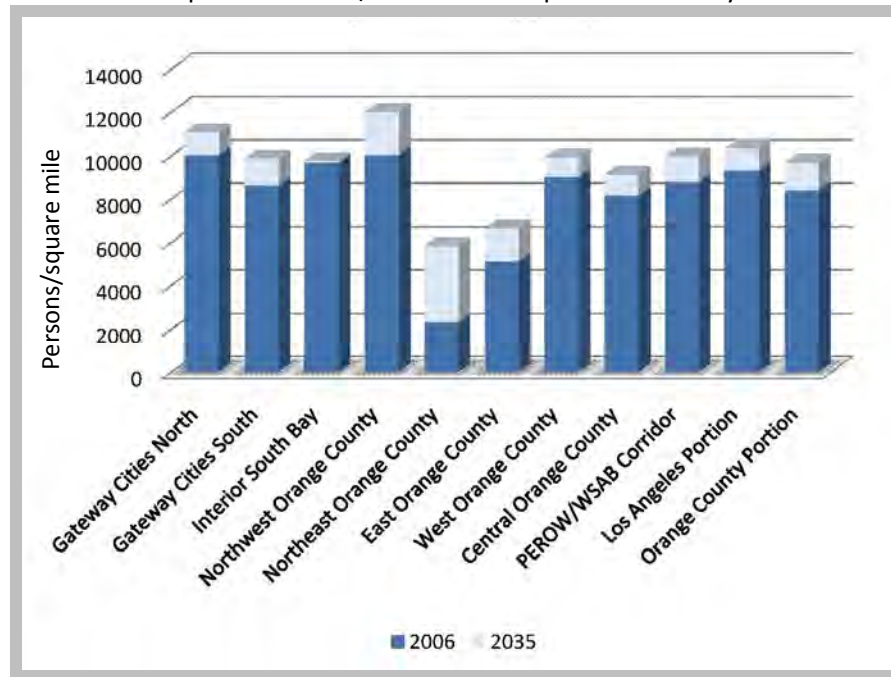


Figure 2.6 Corridor Study Area 2035 Population and Employment Density



Graph 2.1 PEROW/WSAB Area Population Density



Source: LACMTA, 2006

In 2035, as shown in Graph 2.1, the subregions located along the PEROW/WSAB Area are forecast to have higher population densities than the Orange County and Los Angeles County averages. The Orange County subregions will be 30 to 267 percent higher than the projected 2035 density of 4,505 people per square mile, and the Los Angeles county subregions will continue to be 20 to 35 percent higher than the projected urbanized county average of 8,210 people per square mile. The North Orange County and Gateway Cites North subregions are forecast to be the highest in population density, 12,015 and 11,065 people per square mile, respectively.

In summary, the PEROW/WSAB Area population is forecast to increase by 13 percent with more than 300,000 new residents by 2035. The projected population growth will be fairly balanced between the Los Angeles and Orange County portions of the study area, with the Orange County portion experiencing a higher percentage of growth (15 percent) than the Los Angeles County section (11 percent). Based on the forecast population, the subregions with the highest population in 2006 will continue to have the highest populations in 2035: West Orange County, Gateway Cities South, and Gateway Cities North. The highest percentage of population growth will occur in northeast, eastern, and northern Orange County.

As shown in Figure 2.6, the PEROW/WSAB Area is forecast to have a 13 percent increase in population density. In the Orange County portion, the 2006 average of 8,385 people per square mile, already approximately 240 percent higher than the county’s average population density, will grow to 9,675 people per square mile or 220 percent higher than the future average county population. In the Los Angeles County portion, the 2006 average population density was 9,310 residents per square mile, more than three times the county’s average population density (2,515), or approximately 30 percent higher than the urbanized county average of 7,100 people per square mile. In 2035, the average population density is forecast to increase by 11 percent to 10,345 residents per square mile, 340 percent higher

than the Los Angeles County average of 3,045 or 30 percent higher than the urbanized average of 8,210 people per square mile.

Primarily the areas with the highest population density in 2006 will continue to have the highest density in 2035: North Orange County, Gateway Cities North, and West Orange County. There are two exceptions – Gateway Cities South will experience a 14 percent increase in density surpassing the Interior South Bay area in population density. A majority of the subregions are forecast to experience a 10 to 15 percent increase in density, with three exceptions: the Northeast Orange County subregion is projected to have the largest increase in density (152 percent) followed by the East Orange County area (30 percent), while the Interior South Bay area is forecast to have the lowest increase in density (one percent).

Northern Connections Area

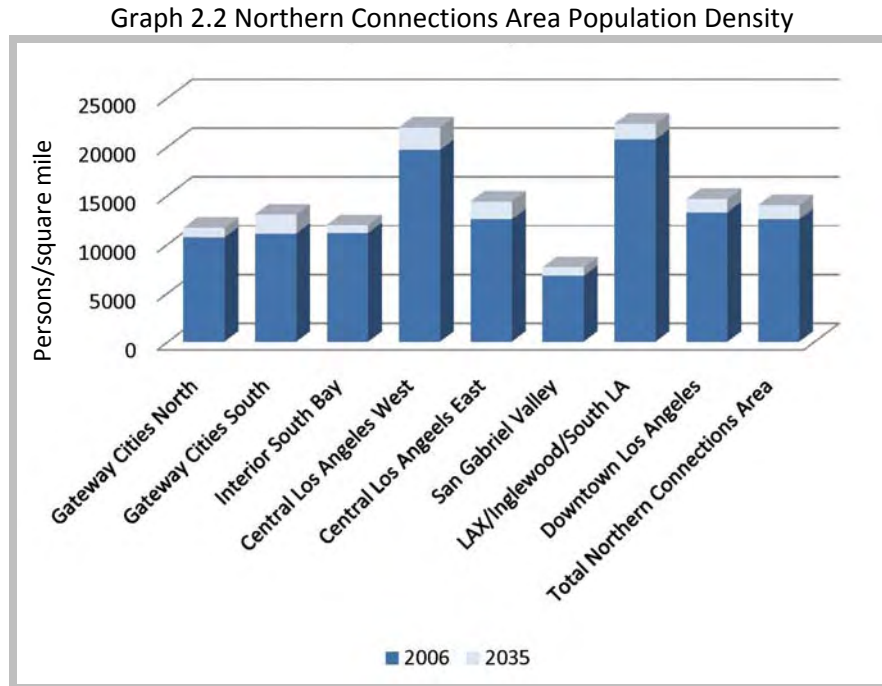
As shown in Table 2.5, the population in the Northern Connections Area, located entirely in Los Angeles County, is projected to increase by 11 percent by 2035 with more than 250,000 new residents. All of the area’s subregions are forecast to grow in population, and the areas with the highest population in 2006 will continue to have the highest population in 2035. The largest forecast population growth, as shown in Graph 2.1, will occur in the Gateway Cities South (18 percent), Central Los Angeles East (15 percent), and Central Los Angeles West (12 percent) areas. The subregions with the lowest projected population increases are San Gabriel Valley (six percent) and Interior South Bay (seven percent).

TABLE 2.5 – POPULATION WITHIN NORTHERN CONNECTIONS AREA

Subregions	2006	2035	Change	
			Residents	Percentage
Gateway Cities North	518,030	561,460	43,430	8 %
Gateway Cities South	274,030	322,235	48,205	18 %
Interior South Bay	197,705	211,950	14,245	7 %
Central Los Angeles West	395,770	441,675	45,905	12 %
Central Los Angeles East	358,370	410,705	52,335	15 %
San Gabriel Valley	41,350	43,870	2,520	6 %
LAX/Inglewood/South Los Angeles	39,485	42,550	3,065	8 %
Downtown Los Angeles	446,915	491,325	44,410	10 %
Northern Connections Area	2,271,655	2,525,770	254,115	11 %

Source: LACMTA, 2006

As shown in Figure 2.5, the Northern Connections Area currently has an average population density of 12,560 residents per square mile. This is five times the density of the Los Angeles County average (2,515) and 77 percent higher than the urbanized county average (7,100). In 2035, the area’s population density is forecast to have a 12 percent increase to 14,010 people per square mile. This is 460 percent higher than the Los Angeles County average (3,045), and 70 percent higher than the urbanized county average (8,210).



Source: LACMTA, 2006

Now and in the future, the LAX/Inglewood/South Los Angeles subregion will have the highest population density (22,360) of just under three times the urbanized county average (8,210). As shown in Graph 2.2, the next highest areas include the Central Los Angeles West area (21,970), which will continue to have an average population density of 275 percent higher than the urbanized county average, and Downtown Los Angeles (14,620) density of 180 percent higher than the average. The rest of the area’s subregions, with the exception of the portion of the San Gabriel Valley subregion included in the study area, will have an average population density of 50 to 90 percent higher than the county’s urbanized average. These patterns will continue in 2035 with the population density of Downtown Los Angeles and Central Los Angeles forecast to be 270 percent higher than the urbanized county average. All of the other subregions will increase in density, and are projected to be 40 to 80 higher than the urbanized county average.

Corridor Study Area

Currently, the Corridor Study Area is home to more than 4.5 million residents. By 2035, the Corridor’s population is expected to grow by more than 500,000 residents, or a forecast 12 percent increase in population. Both the PEROW/WSAB and Northern Connections study areas are forecast to experience a large growth in population, with the PEROW/WSAB Area growing by 13 percent and the Northern Connections Area by 11 percent. As shown in Table 2.6, the northern portion of the Corridor Study Area, or the Northern Connections Area, has slightly more residents, but with the forecast growth the southern portion of the study area in the PEROW/WSAB Area, the southern section of the Corridor Study Area will have a higher population in 2035. The subregions with the densest populations will be LAX/Inglewood/South Central Los Angeles, Central Los Angeles West, Central Los Angeles East, Gateway Cities North, and North Orange County.

TABLE 2.6 – SUMMARY OF CORRIDOR STUDY AREA POPULATION

Subregions	2006	2035	Change	
			Residents	Percentage
PEROW/WSAB Area	2,263,530	2,567,830	304,300	13 %
Northern Connections Area	2,271,655	2,525,770	254,115	11 %
Corridor Study Area	4,535,185	5,093,600	558,415	12 %

Source: LACMTA, 2006

2.5.2 Employment

Currently, the Corridor Study Area has approximately 2.2 million jobs. Approximately 1.5 million jobs are located within the Los Angeles County portion of the Corridor, or 32 percent of the county’s total jobs. More than 700,000 jobs are located in the Orange County portion, or 46 percent of the county’s total employment. In 2035, employment in the Corridor Study Area is forecast to grow by only four percent or approximately 86,000 jobs. Employment growth is projected to be strong in the Orange County portion of the Corridor with a 19 percent increase, while the Los Angeles County portion will lose four percent of its current employment.

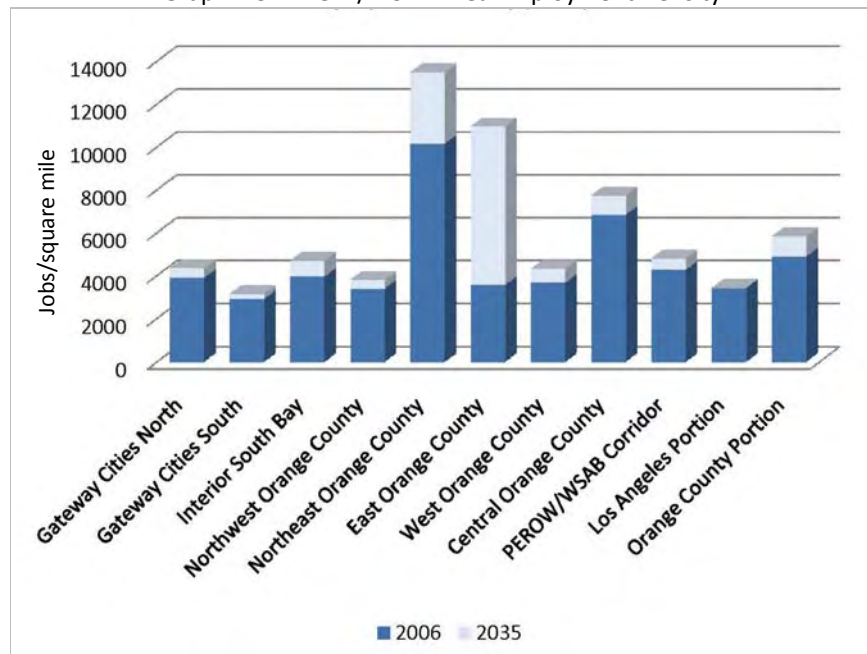
PEROW/WSAB Area

As shown in Table 2.7, the PEROW/WSAB Area currently has approximately 1.1 million jobs which are projected to increase by 13 percent with the addition of approximately 140,000 jobs in the future. Total employment will increase by only 600 jobs, or two percent in the Los Angeles County subregions, while employment within the Orange County portion will grow by 19 percent with a projected gain of 140,000 new jobs. In 2006, a majority (66 percent) of the PEROW/WSAB Area jobs was located in the Orange County portion, with 34 percent of the area’s employment located within the subregions of Los Angeles County. In 2035, the difference between the two counties is forecast to grow, with 70 percent of the jobs projected to be located in the Orange County subregions.

TABLE 2.7 – EMPLOYMENT WITHIN PEROW/WSAB AREA

Subregions	2006	2035	Change	
			Jobs	Percentage
Gateway Cities North	175,265	155,255	(20,010)	(11 %)
Gateway Cities South	157,245	169,665	12,420	8 %
Interior South Bay	44,375	52,565	8,190	18 %
Northwest Orange County	100,075	111,325	11,250	11 %
Northeast Orange County	41,170	54,610	13,440	33 %
East Orange County	167,305	214,000	46,695	28 %
West Orange County	273,780	322,490	48,710	18 %
Central Orange County	147,275	166,815	19,540	13 %
PEROW/WSAB Area	1,106,490	1,246,720	140,235	13 %
Los Angeles County	376,885	377,485	600	2 %
Orange County	729,605	869,235	139,630	19 %

Graph 2.3 PEROW/WSAB Area Employment Density



Source: LACMTA, 2006

Currently, the subregions with the highest number of jobs are West Orange County, Gateway Cities North, East Orange County, and Gateway Cities South, with Northeast Orange County having the least. In 2035, the forecast increase in employment will follow the current patterns with two major exceptions: West Orange County, East Orange County, and Gateway Cities South will continue to add jobs, but Gateway Cities North is forecast to lose more than 20,000 jobs or 11 percent of its current employment. The highest forecast increases in employment will be in Northeast Orange County (33 percent) and East Orange County (28 percent).

As shown in Figure 2.5, the PEROW/WSAB Area currently has an average employment density of 4,290 jobs per square mile. The average density of the Orange County subregions is 4,915 jobs per square mile which is 250 percent higher than the county average of 1,980. The Los Angeles County portion has an average of 3,445 jobs per square mile which is three times the county average (1,170) and 70 percent higher than the urbanized county average (3,215). In 2035, the area’s average employment density is forecast to increase by 13 percent to 4,830 jobs per square mile. Within the Orange County portion, the employment density will increase to 5,855, or approximately 250 percent of the county average of 2,480. Within Los Angeles County, the population density will increase by only 0.1 percent corresponding to the forecast minor increase in employment. In 2035, the Los Angeles County employment will be 3,450 jobs per square mile, which remains 270 percent higher than the county average (1,270) and two percent higher than the urbanized county average (3,380).

The Northeast Orange County and Central Orange County subregions currently have the highest employment density in the PEROW/WSAB Area, 500 and 350 percent higher than the county average. The other Orange County subregions have lower job densities that still range between 70 and 345 percent above the county average. The Los Angeles County subregions range from nine percent below to 25 percent above the urbanized county average (3,215). In 2035, as shown in Graph 2.3, these

employment patterns are forecast to remain fairly similar with the Northeast Orange County subregion experiencing a 18 percent increase in jobs resulting in this area’s highest employment density (13,510), or 550 percent higher than the county average (2,480). The East Orange County area is forecast to become the second densest subregion with a 206 percent increase in employment density and a corresponding 33 percent increase in total number of jobs. Within Los Angeles County, the Gateway Cities North area will lose jobs resulting in an 11 percent reduction in employment density, while the Interior South Bay area’s density will increase by 18 percent or 40 percent higher than the urbanized Los Angeles County average of 3,380 jobs per square mile.

Northern Connections Area

Located entirely in Los Angeles County, the Northern Connections Area currently has approximately 1.1 million jobs, with Downtown Los Angeles containing the highest number of jobs of any of the Corridor Study Area’s subregions. As presented in Table 2.8, the subregions with the second highest employment numbers are Gateway Cities North and Central Los Angeles West. By 2035, the Northern Connections is forecast to lose five percent of the area’s existing jobs, or approximately 55,000 jobs. While still projected to support a large number of jobs, the largest employment losses are forecast to occur in the Gateway Cities North (16 percent) and the Central Los Angeles West (13 percent) subregions. Downtown Los Angeles and the Interior South Bay areas will continue to grow at a slow rate, while the LAX/Inglewood/South Los Angeles subregion is forecast to have the area’s highest rate of job growth (11 percent).

TABLE 2.8 – EMPLOYMENT WITHIN NORTHERN CONNECTIONS AREA

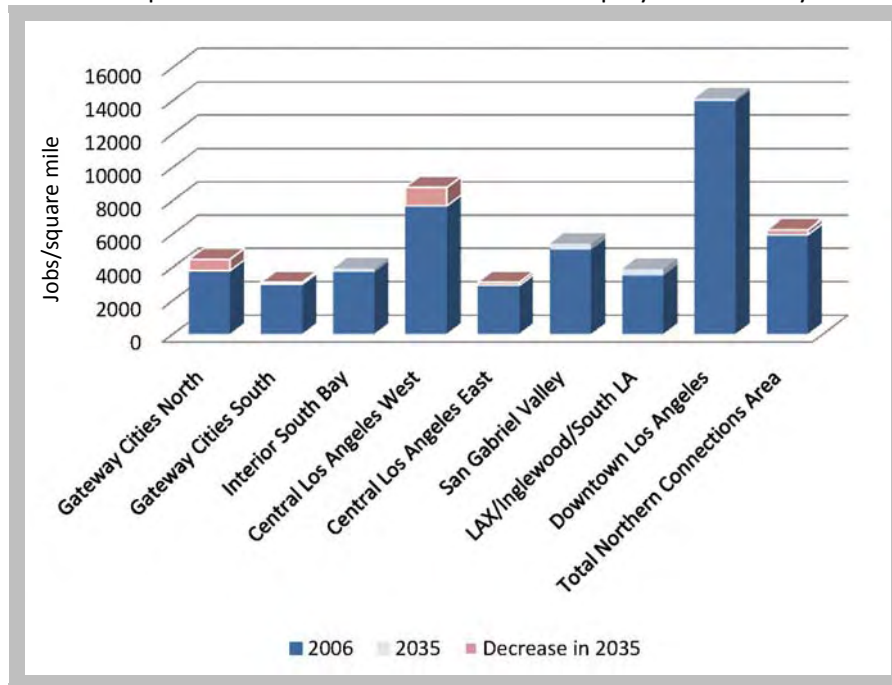
Subregions	2006	2035	Change	
	Jobs	Jobs	Jobs	Percentage
Gateway Cities North	216,530	182,635	(33,895)	(16 %)
Gateway Cities South	76,000	73,505	(2,495)	(3 %)
Interior South Bay	65,745	69,220	3,475	5 %
Central Los Angeles West	176,630	154,410	(22,220)	(13 %)
Central Los Angeles East	88,025	82,905	(5,120)	(6 %)
San Gabriel Valley	30,980	31,095	115	1 %
LAX/Inglewood/South Los Angeles	6,660	7,400	740	11 %
Downtown Los Angeles	469,780	474,720	4,940	1 %
Northern Connections Area	1,130,350	1,075,890	(54,460)	(5 %)

Source: LACMTA, 2006

As shown in Figure 2.5, the Northern Connections Area currently has an average employment density of 4,290 jobs per square mile, which is approximately double the average of the urbanized Los Angeles County average (3,215) and almost four times the county average (1,170). As may be expected, Downtown Los Angeles has the highest employment density of any of the subregions in the Corridor Study Area, with approximately 14,000 jobs per square mile. This is more than four times the urbanized county average and almost 12 times the county average. Currently, the second highest employment densities are located in the Central Los Angeles West area (8,875) and the San Gabriel Valley portion located within the Corridor Study Area (5,075), or approximately three times and more than 60 percent of the urbanized county average, respectively. In 2035, as shown in Graph 2.4, the Northern

Connections Area is forecast to experience a decrease in employment density, but will remain 77 percent higher than the urbanized county average (3,380). Downtown Los Angeles and the Central Los Angeles West areas are projected to remain the densest subregions. Half of the subregions located in the Northern Connections are forecast to lose employment density, including the Gateway Cities North (15 percent) and the Central Los Angeles West (13 percent) subregions.

Graph 2.4 Northern Connections Area Employment Density



Source: LACMTA, 2006

Corridor Study Area

Now and in the future, the Corridor Study Area will have some of the highest and densest employment areas of both Los Angeles and Orange counties, including major office development in Downtown Los Angeles, Anaheim, and Santa Ana. Currently, the Corridor Study Area has approximately 2.2 million jobs, which is forecast to grow to 2.3 million jobs in 2035 – a small growth that covers some major changes in employment growth and distribution within the study area. As summarized in Table 2.9, employment is forecast to grow at very different rates within the Study Area.

Today and in 2035, the PEROW/WSAB section of the Corridor Study Area will have almost two times the number of jobs as the Northern Connections Area, and it is forecast to experience an employment increase of 13 percent, while total employment in the Northern Connections Area will decrease by five percent. Within the PEROW/WSAB Area, employment growth is projected to be strong in the Orange County portion of the Corridor with a forecast 19 percent increase, while the Los Angeles County portion will lose four percent of its current employment. The Northern Connections Area is projected to lose approximately 55,000 jobs or five percent of its current workforce. But even with the forecast job loss, the Northern Connections Area will retain a significant number of jobs from a regional perspective.

The PEROW/WSAB Area’s average employment density is forecast to increase, and within Orange County, employment density will increase to 5,855, or approximately 250 percent of the county average of 2,480. In the Los Angeles County section of this study area, employment density will be 3,450 jobs per square mile, which remains 270 percent higher than the county average (1,270), and two percent higher than the urbanized county average (3,380). The Northern Connections Area is forecast to experience a decrease in employment density, but will remain 77 percent higher than the urbanized county average (3,380). Within the Corridor Study Area, Downtown Los Angeles (14,130) and Northeast Orange County (13,510) are projected to be the densest subregions, and in most of the region.

TABLE 2.9 – SUMMARY OF CORRIDOR STUDY AREA EMPLOYMENT

Subregions	2006	2035	Change	
			Jobs	Percentage
PEROW/WSAB Area	1,106,940	1,246,720	140,235	13 %
Northern Connections Area	1,130,350	1,075,890	(54,460)	(5 %)
Corridor Study Area	2,236,840	2,322,610	85,775	4 %

Source: LACMTA, 2006

2.5.3 Low Income Households

The Corridor Study Area is currently home to a significant number of low income households with more than 450,000 households, or 36 percent of the Corridor’s households, have an annual income of \$25,000 or less. This is a higher percentage than the Orange County average of 18 percent, and the Los Angeles County average of 30 percent.

PEROW/WSAB Area

As presented in Table 2.10, currently within the PEROW/WSAB Area, 168,000 households or 27 percent of the area’s total households were identified as low income. Of the identified low income households, a higher percentage of Los Angeles households (30 percent) were identified as low income when compared to Orange County (25 percent). The percentage of low income households within the Orange County portion is 40 percent higher than the county average of 18 percent, while the identified percentage of low income households in the Los Angeles County section corresponds with the county average of 30 percent.

As illustrated in Figure 2.7, the subregions with the highest number of low income households were located within the northern portion of the PEROW/WSAB Area, and the areas with the lowest number of low income households were identified in east and northeast Orange County. The West Orange County subregion has the highest number of households with incomes falling below \$25,000, followed by Gateway Cities South and Gateway Cities North. From a percentage perspective, the Interior South Bay subregion has the highest percentage of low-income households (42 percent), but has the fewest number of low income households. Other subregions with a high percentage of low income households include the Gateway Cities North (31 percent) and Northeast Orange County (30 percent) areas.

Figure 2.7 Corridor Study Area Low Income Households (2006)

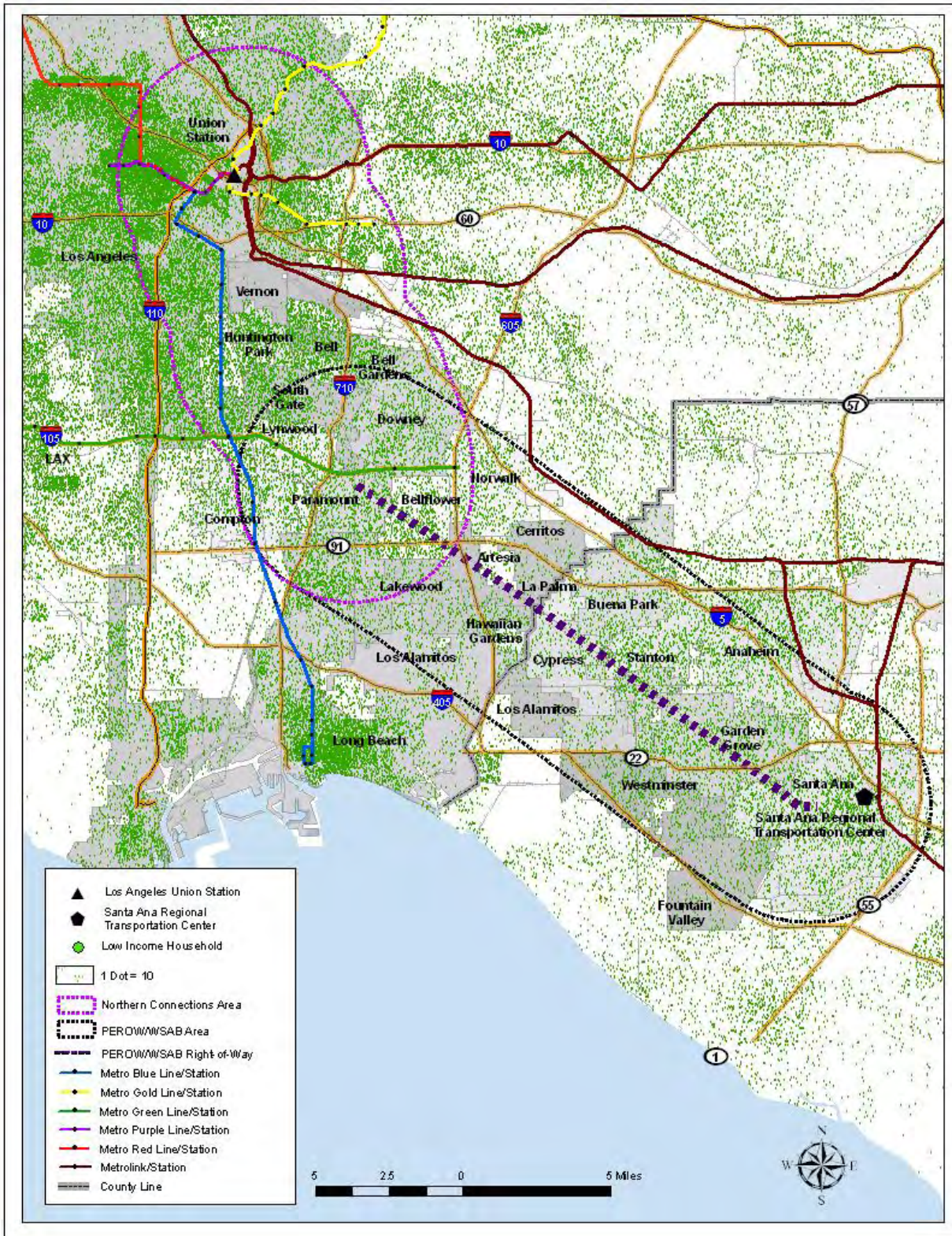


TABLE 2.10 – LOW INCOME HOUSEHOLDS WITHIN PEROW/WSAB AREA (2006)

Subregions	Total Households	Low Income Households (Number)	Low Income Households (Percentage)
Gateway Cities North	114,535	35,760	31 %
Gateway Cities South	142,145	37,010	26 %
Interior South Bay	24,705	10,320	42 %
Northwest Orange County	85,475	22,320	26 %
Northeast Orange County	2,660	790	30 %
East Orange County	33,485	7,535	22 %
West Orange County	170,920	43,295	25 %
Central Orange County	47,515	10,660	22 %
PEROW/WSAB Area	621,440	167,690	27 %
Los Angeles County	281,385	83,090	30 %
Orange County	340,055	84,600	25 %

Source: LACMTA

Northern Connections Area

As presented in Table 2.11, the Northern Connections Area, located entirely in Los Angeles County, has a much higher percentage of low income households than the PEROW/WSAB Area – 45 percent as compared to 27 percent. All of the subregions in this area, with the exception of the San Gabriel Valley, and have a higher percentage of low income households than the Los Angeles County average of 30 percent. The LAX/Inglewood/South Los Angeles subregion has the highest percentage of low income households, with 62 percent of the total households being identified as low income. Following closely are Downtown Los Angeles and Central Los Angeles West, with 55 percent of each subregion’s households identified as low income.

TABLE 2.11 – LOW INCOME HOUSEHOLDS WITHIN NORTHERN CONNECTIONS AREA (2006)

Subregions	Total Households	Low Income Households (Number)	Low Income Households (Percentage)
Gateway Cities North	128,180	45,845	36 %
Gateway Cities South	81,490	25,460	31 %
Interior South Bay	46,680	22,260	48 %
Central Los Angeles West	135,665	74,940	55 %
Central Los Angeles East	97,690	40,275	41 %
San Gabriel Valley	12,345	3,305	27 %
LAX/Inglewood/South Los Angeles	10,995	6,840	62 %
Downtown Los Angeles	111,040	60,580	55 %
Northern Connections Area	624,025	279,505	45 %

Source: LACMTA

All of the Northern Connections Area subregions were identified as having a percentage of low income households above the county average of 30 percent, except for the San Gabriel Valley area. Corresponding with the percentage comparison, the two subregions with the highest number of low income households are Central Los Angeles West with approximately 75,000 households and Downtown Los Angeles with 60,000 households. The second highest groups, with between 40,000 and 46,000 low income households, are the Central Los Angeles East (41 percent) and Gateway Cities North (36 percent) subregions.

Corridor Study Area

As summarized below in Table 2.12, the Corridor Study Area has a high percentage (36 percent) of low income households, when compared to the Los Angeles and Orange county averages of 30 and 18 respectively. The number and percentage of low income households within the Northern Connections Area is significantly higher than the PEROW/WSAB Area. Subregions within this area range from 36 to 48 percent low income households, or 20 to 60 percent higher than the Los Angeles County average. In the areas with the highest number of low income households the percentage ranges from 180 to 200 percent higher than the county’s average. With the forecast loss of jobs in the Northern Connections Study Area, the high number and percentage of low income households in the Los Angeles County portion of the study area is anticipated to continue and perhaps possibly increase.

All of the Northern Connections Area subregions were identified as having a percentage of low income households above the county average of 30 percent, except for the San Gabriel Valley area.

TABLE 2.12 – LOW INCOME HOUSEHOLDS WITHIN CORRIDOR STUDY AREA (2006)

Study Areas	Total Households	Low Income Households (Number)	Low Income Households (Percentage)
PEROW/WSAB Area	621,440	167,690	27 %
Northern Connections Area	624,025	279,505	45 %
Corridor Study Area	1,245,465	447,195	36 %

Source: LACMTA

2.5.4 Transit Dependent Households

Transit-dependent households are defined as households without access to an automobile. Transit-dependency is highly correlated with household income, with the rate of automobile ownership increasing with household income. The Corridor Study Area has a significant number of transit dependent households. Approximately 200,000 households, or 16 percent of the Corridor Study Area’s households, have been identified as transit dependent. This is approximately three times higher than the Orange County average of six percent, and more than 20 percent higher the Los Angeles County average of 13 percent.

PEROW/WSAB Area

Within the PEROW/WSAB Area, nine percent of the total number of households is identified as currently being transit dependent. This percentage is fairly similar between the Los Angeles and Orange county portions of the study area, as shown in Table 2.13. The Los Angeles County percentage of transit

dependency is three percent lower than the county average of 13 percent, while the percentage of transit dependency in the Orange County is two percent lower.

TABLE 2.13 – TRANSIT-DEPENDENT HOUSEHOLDS WITHIN PEROW/WSAB AREA (2006)

Subregions	Total Households	Transit-Dependent Households (Number)	Transit-Dependent Households (Percentage)
Gateway Cities North	114,535	11,455	10 %
Gateway Cities South	142,145	11,940	8 %
Interior South Bay	24,705	3,955	16 %
Northwest Orange County	85,475	7,010	8 %
Northeast Orange County	2,660	190	7 %
East Orange County	33,485	2,450	7 %
West Orange County	170,920	15,385	9 %
Central Orange County	47,515	2,890	6 %
PEROW/WSAB Area	621,440	55,930	9 %
Los Angeles County	281,385	27,350	10 %
Orange County	340,055	28,580	8 %

Source: LACMTA, 2006; U.S. Census, 2000

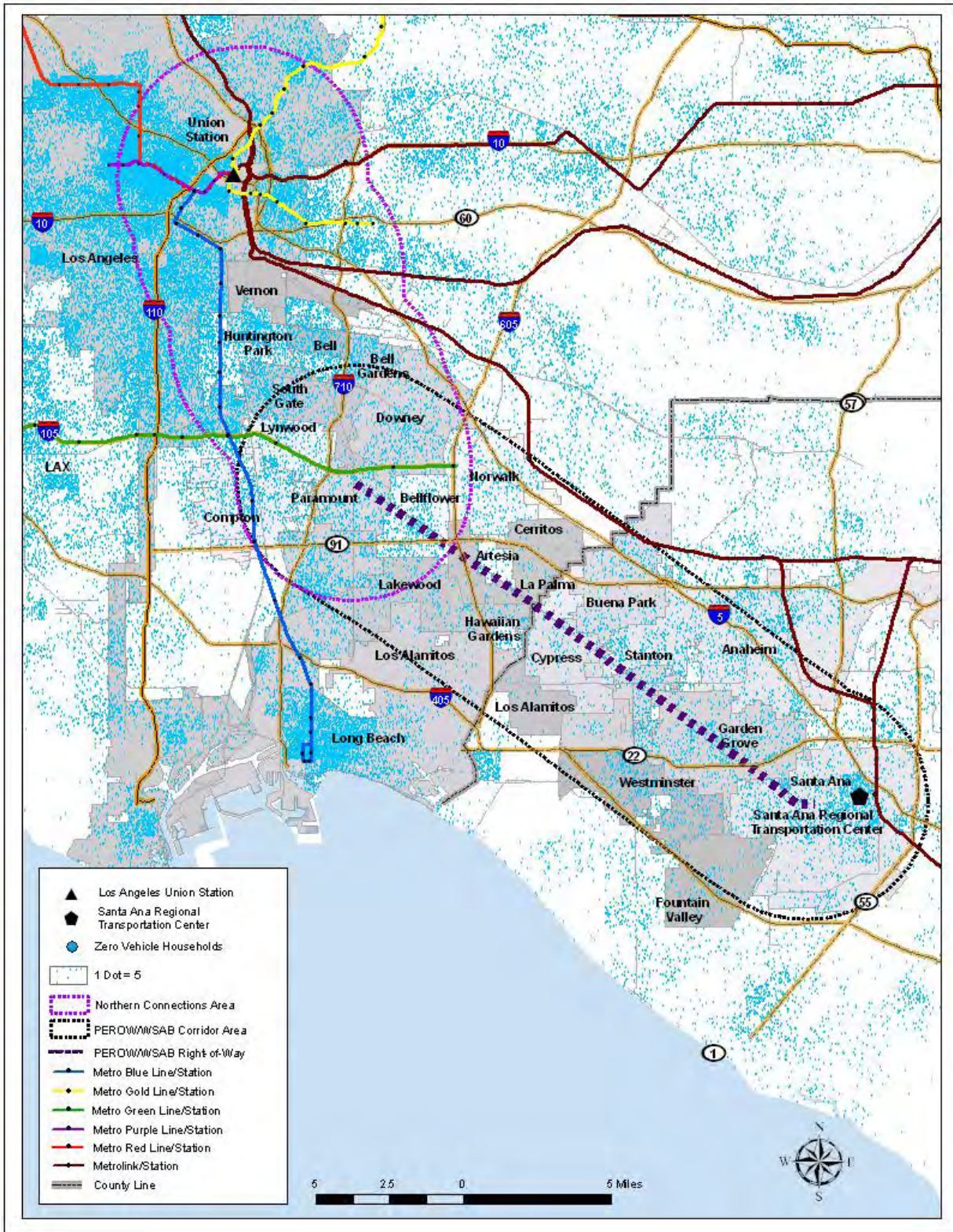
As illustrated in Figure 2.9, the subregions with the highest number of transit dependent households are West Orange County, Gateway Cities South, and Gateway Cities North. The subregions with the highest percentage of transit dependent households are the subregions with lowest household income – the Interior South Bay (16 percent) and Gateway Cities North (10 percent) – with the West Orange County area having the highest number of total low income households.

Northern Connections Area

Located entirely within Los Angeles County, the Northern Connections Area, with an average of 23 percent of transit dependency, is almost twice the county average. The areas with the highest percentage of transit dependent households are Central Los Angeles West (35 percent), Downtown Los Angeles (34 percent), and LAX/Inglewood/South Los Angeles (32 percent). This represents a range of 250 to 270 percent more than the county average.

Figure 2.8 and Table 2.14 below presents the distribution of transit dependent households within the Northern Connections Area. Within this area, 23 percent of the total number of households, or more than 135,000 households, is currently identified as transit dependent. In this area, the three subregions with the lowest household incomes – Central Los Angeles West, Downtown Los Angeles, and LAX/Inglewood/South Los Angeles – have the highest percentages of transit dependency.

Figure 2.8 Corridor Study Area Transit Dependent Households (2006)



**TABLE 2.14 – TRANSIT-DEPENDENT HOUSEHOLDS WITHIN
 NORTHERN CONNECTIONS STUDY AREA (2006)**

Subregions	Total Households	Transit-Dependent Households (Number)	Transit-Dependent Households (Percentage)
Gateway Cities North	128,180	15,250	12 %
Gateway Cities South	81,490	9,450	12 %
Interior South Bay	46,680	9,800	21 %
Central Los Angeles West	135,665	47,480	35 %
Central Los Angeles East	97,690	19,540	20 %
San Gabriel Valley	12,345	1,235	10 %
LAX/Inglewood/South Los Angeles	10,995	3,520	32 %
Downtown Los Angeles	111,040	37,755	34 %
Northern Connections Study Area	624,025	144,030	23 %

Source: LACMTA, 2006; U.S. Census, 2000

Corridor Study Area

As presented below in Table 2.15, the Corridor Study Area has a high percentage (16 percent) of transit dependent households, when compared to the Los Angeles and Orange county averages of 13 and six percent respectively. The subregions with the highest percentage of transit dependent households are all located in the Northern Connections Area – Central Los Angeles West, Downtown Los Angeles, and LAX/Inglewood/South Los Angeles. The areas with the highest number of transit dependent households are Central Los Angeles West (44,315) and Downtown Los Angeles (35,000).

TABLE 2.15 –TRANSIT-DEPENDENT HOUSEHOLDS WITHIN CORRIDOR STUDY AREA (2006)

Study Areas	Total Households	Transit-Dependent Households (Number)	Transit-Dependent Households (Percentage)
PEROW/WSAB Area	621,440	55,930	9 %
Northern Connections Area	624,025	144,030	23 %
Corridor Study Area	1,245,465	199,960	16 %

Source: LACMTA, 2006; U.S. Census, 2000

Table 2.16 below presents a comparison of the low income and transit dependent households within the Corridor Study Area. Typically there is a direct correlation between low income and transit dependency, but in this Corridor Study Area the number of transit dependent households compared to the number of low income households shows:

- **PEROW/WSAB Area** – the transit dependent, or zero car households is currently one-third the number of the identified low income households;
- **Northern Connections Area** – the number of transit dependent households is half the number of the low income households; and
- **Corridor Study Area** – the total of transit dependent households is half the number of identified low income households.

This analysis appears to show that a significant number of Corridor Study Area low income households, with a total annual income of \$25,000 or less, manage to secure automobile access or use another transportation mode (carpool, bicycle or walking), rather than utilize the transit service that is currently available. This may demonstrate that the Corridor Study Area experiences a poor level of transit service and/or is under-served by transit.

**TABLE 2.16 – COMPARISON OF LOW INCOME AND TRANSIT-DEPENDENT HOUSEHOLDS
 WITHIN CORRIDOR STUDY AREA**

Study Areas	Low Income Households (Percentage)	Transit-Dependent Households (Percentage)
PEROW/WSAB Area	27 %	9 %
Northern Connections Area	45 %	23 %
Corridor Study Area	36 %	16 %

Source: LACMTA, 2006; U.S. Census, 2000

2.5.5 Ethnicity

Reflective of Southern California, the Corridor Study Area has a diverse population. The three largest ethnic groups are those identified as Hispanic (61 percent), White (19 percent), and Asian/Pacific Islander (10 percent).

PEROW/WSAB Area

Figure 2.9 and Table 2.17 below presents the current ethnic distribution within the PEROW/WSAB Area.

TABLE 2.17 – ETHNICITY WITHIN PEROW/WSAB AREA (2000)

Subregions	White	African-American	Hispanic	Asian/Pacific Islander	Multi-Race
Gateway Cities North	16 %	4 %	73 %	6 %	1 %
Gateway Cities South	33 %	12 %	36 %	16 %	3 %
Interior South Bay	2 %	31 %	65 %	1 %	1 %
Northwest Orange County	36 %	3 %	40 %	18 %	3 %
Northeast Orange County	34 %	1 %	53 %	10 %	2 %
East Orange County	46 %	3 %	42 %	7 %	2 %
West Orange County	28 %	1 %	49 %	20 %	2 %
Central Orange County	27 %	1 %	55 %	15 %	2 %
PEROW/WSAB Area	28 %	7 %	51 %	12 %	2 %
Los Angeles County Section	17 %	16 %	58 %	7 %	2 %
Los Angeles County Average	31 %	9 %	45 %	12 %	3 %
Orange County Section	34 %	2 %	48 %	14 %	2 %
Orange County Average	51 %	1 %	31 %	14 %	2 %

Source: U.S. Census, 2000

Within the PEROW/WSAB Area, the largest ethnic group is Hispanics (51 percent), followed by White (28 percent) and Asian/Pacific Islander (2 percent). Within the Orange County section of the area, there is a higher percentage of White residents, and lower percentage of African-American residents. The area has a lower percentage of White and Hispanic residents than the county average. In the Los Angeles County portion of the area, there is a higher percentage of Hispanic residents and a lower percentage of White and African-American residents. The area has a higher percentage of Hispanic and African-American residents, and a lower percentage of White and Asian/Pacific Islander residents.

Northern Connections Area

Figure 2.10 and Table 2.18 below presents the ethnic distribution within the Northern Connections Area, which is located entirely within Los Angeles County. In this section of the Corridor Study Area, a majority (71 percent) of the residents are Hispanic – 60 percent higher than the county average. While this area’s population reflects lower percentages of White and Asian/Pacific Islander residents than the county average.

TABLE 2.18 – ETHNICITY WITHIN NORTHERN CONNECTIONS AREA (2000)

Subregions	White	African-American	Hispanic	Asian/Pacific Islander	Multi-Race
Gateway Cities North	12 %	4 %	80 %	3 %	1 %
Gateway Cities South	24 %	16%	46 %	11 %	3 %
Interior South Bay	1 %	35 %	62 %	1 %	1 %
Central Los Angeles West	11 %	5 %	64 %	18 %	2 %
Central Los Angeles East	7 %	1 %	79 %	11 %	1 %
San Gabriel Valley	14 %	2 %	42 %	40 %	2 %
LAX/Inglewood/South Los Angeles	1 %	32 %	65 %	1 %	1 %
Downtown Los Angeles	3 %	10 %	2 %	4 %	1 %
Northern Connections Area	10 %	10 %	71 %	8 %	1 %
Los Angeles County Average	31 %	9 %	45 %	12 %	3 %

Source: U.S. Census, 2000

Corridor Study Area

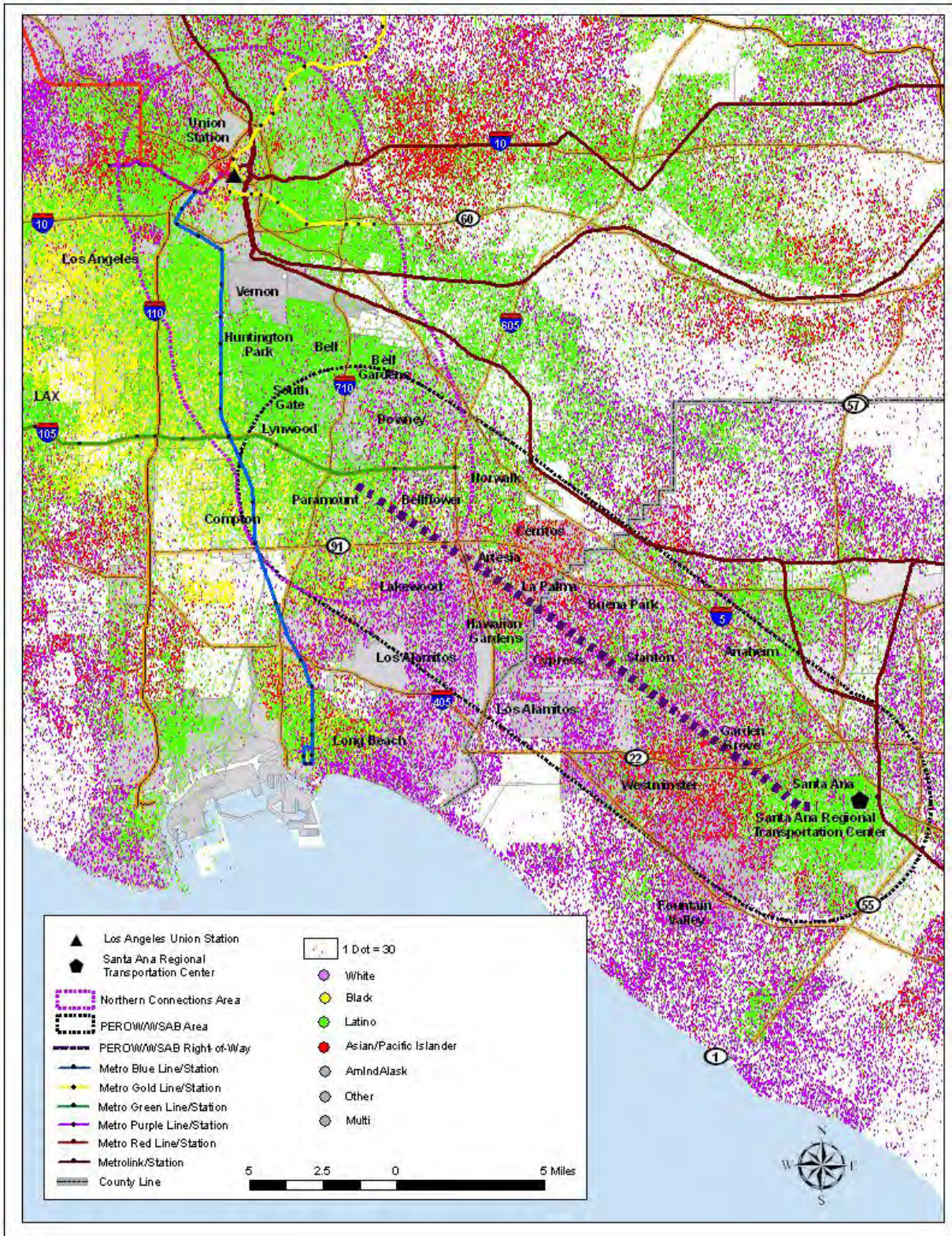
When combined to present a Corridor Study Area perspective, as shown in Table 2.19, a majority of the residents are Hispanic, followed by White and Asian/Pacific Islander ethnicities.

TABLE 2.19 – SUMMARY OF ETHNICITY WITHIN CORRIDOR STUDY AREA

Subregions	White	African-American	Hispanic	Asian/Pacific Islander	Multi-Race
PEROW/WSAB Area	28 %	7 %	51 %	12 %	2 %
Northern Connections Area	10 %	10 %	71 %	8 %	1 %
Corridor Study Area	19 %	8.5 %	61 %	10 %	1.5 %

Source: U.S. Census, 2000

Figure 2.9 Corridor Study Area Ethnicity



3.0 TRAVEL DEMAND

An analysis of Corridor Study Area travel demand contributes to the transportation decision-making process by identifying and evaluating a number of factors that frame the need for transportation system improvements, and assess the feasibility of possible solutions. Factors contributing to both the identification of mobility challenges and the assessment of possible solutions include the following factors:

- Current and future population, including density, and distribution;
- Current and future employment, including density and distribution;
- Future population and employment growth;
- Low income and transit dependent households; and
- Activity centers and destinations, including number, type, and range.

The resulting data is evaluated along with the following Corridor Study Area information:

- Current and future transportation system performance;
- Current and future travel markets;
- Travel characteristics;
- Travel demand generated by the demographic and community factors listed above; and
- Travel patterns.

3.1 Travel Markets and Characteristics

As previously presented, the Corridor Study Area is a densely developed area covering the most active hearts of Los Angeles and Orange counties. This study area includes the most densely populated areas of both counties, including the Downtown Los Angeles, South Los Angeles, the Gateway Cities subregion, and West Orange County (Santa Ana, Garden Grove, Stanton, and Cypress) area. Current population density is two and five times the Orange and urbanized Los Angeles county averages, and is projected to increase by 12 percent in 2035. Now and in the future, the Corridor Study Area will contain some of the region's densest employment centers ranging from major office development centers to concentrations of industrial, manufacturing, and intermodal facilities. In 2035, the Corridor Study Area will contain 44 percent of Orange County's total employment, and 29 percent of Los Angeles County's total jobs.

The Corridor Study Area contains a wide variety of employment, civic, cultural, entertainment, retail, educational, and recreational destinations. Many of the destinations attract trips from throughout Los Angeles and Orange counties, and beyond. Given the high number of employment and activity centers in the Corridor Study Area, the primary markets can be defined as:

- Commuters accessing major office employment areas located within the cities of Los Angeles, Anaheim, Santa Ana, Orange, and Costa Mesa.
- Commuters accessing industrial, manufacturing, and intermodal facilities in the cities of Los Angeles, Vernon, Bell, Cudahy, Downey, Huntington Park, Lynwood, and South Gate.
- Students, teachers, and employees traveling to public and private educational institutions, including five community colleges.

- Visitors, including residents and tourists, accessing entertainment centers and special event generators such as Staples Center, Disneyland, Knott’s Berry Farm, and the Crystal Cathedral.
- Residents and visitors traveling to the performing arts centers in the cities of Los Angeles, Cerritos, and Costa Mesa.
- Shoppers traveling to the Corridor’s main street retail districts, such as Downtown Santa Ana, and regional shopping centers, including Lakewood Center Mall, Los Cerritos Center, the City Center, and South Coast Plaza.
- Residents and visitors traveling to shop, visit, or attend special events in one of the Corridor’s many ethnic cultural centers, including Olvera Street, Chinatown, Little Tokyo, Little India, and Little Saigon;
- Patients, visitors, and employees traveling to the Corridor’s many hospitals and medical facilities, including UC Irvine Medical Center in Orange and the California Hospital and Medical Center in Downtown Los Angeles.
- Out-of-town visitors traveling to the Anaheim and Los Angeles convention centers, and adjacent hotels, food, shopping, and entertainment activities.
- Residents and visitors traveling to recreational facilities including state, regional, and local parks.
- Transit dependent residents, including senior, student, disabled, and low income residents desiring to make transit connections to the regional bus and rail system.

Travel Characteristics

The highest level of study area travel activity, and the most frequent travel type, is represented by weekday travel to work trips. This trip type occurs within a limited window of time (morning and evening peak periods) and results in significant congestion on a majority of the Corridor Study Area’s highway system. Reflecting the predominant current transportation investment in the highway system, the Corridor’s travel to work is characterized by a high level of automobile utilization. Information on the travel characteristics for the Corridor Study Area, along with the two study area sections, is presented below.

TABLE 3.1 – PEROW/WSAB AREA – MODE SPLIT TO WORK (2000)

Subregions	SOV	Carpool	Transit	Other
Gateway Cities North	71 %	20 %	5 %	4 %
Gateway Cities South	78 %	16 %	3 %	3 %
Interior South Bay	62 %	25 %	8 %	5 %
Northwest Orange County	75 %	17 %	4 %	4 %
Northeast Orange County	67 %	22 %	4 %	7 %
East Orange County	78 %	15 %	3 %	4 %
West Orange County	70 %	20 %	6 %	4 %
Central Orange County	74 %	18 %	5 %	3 %
PEROW/WSAB Area	73 %	18 %	5 %	4 %

Source: U.S. Census

Table 3.1 above presents the mode of travel to work for households within the PEROW/WSAB Corridor Area. Approximately 91 percent of area’s residents travel to work in an automobile, either as a single occupant or in a carpool. An average of five percent of the area residents commutes by transit, and the remaining four percent bike, walk, or use another way of getting to work. The Gateway Cities South area has the highest level of work access by auto (94 percent), followed closely by East Orange County (93 percent). Overall, the Interior South Bay subregion has the lowest work access by auto and the highest transit mode split.

As shown below in Table 3.2, a lower percentage of commuters in the Northern Connections Area travel to work by car, and a higher percentage use transit than in the PEROW/WSAB Area. Approximately 67 percent of all workers drive alone on their journey to work, and 19 percent carpool resulting in a total average of 86 percent of commuters traveling to work via automobile. Correspondingly, an average of 15 percent of study area workers travels by transit to their jobs, while five percent use other modes. In the Northern Connections Area, the transit mode split varies widely from a low of four percent in the Gateway Cities South subregion to a high of 29 percent in Central Los Angeles West, reflecting a high level of bus service and subway system access.

TABLE 3.2 – NORTHERN CONNECTIONS AREA – MODE SPLIT TO WORK (2000)

Subregions	SOV	Carpool	Transit	Other
Gateway Cities North	68 %	21 %	7 %	4 %
Gateway Cities South	75 %	18 %	4 %	3 %
Interior South Bay	61 %	25 %	10 %	4 %
Central Los Angeles West	48 %	15 %	29 %	8 %
Central Los Angeles East	61 %	20 %	13 %	6 %
San Gabriel Valley	79 %	14 %	4 %	3 %
LAX/Inglewood/South Los Angeles	52 %	22 %	22 %	4 %
Downtown Los Angeles	46 %	22 %	21 %	9 %
Northern Connections Area	60 %	20 %	15 %	5 %

Source: U.S. Census

The Gateway Cities South and the San Gabriel Valley have the highest travel to work by auto (93 percent), and the lowest transit access (four percent). The Central Los Angeles West area has the lowest access by auto, and the highest transit mode split (29 percent), followed by LAX/Inglewood/South Los Angeles (22 percent) and Downtown Los Angeles (21 percent).

A summary of the mode of work access for the Corridor Study Area is provided below in Table 3.3. The PEROW/WSAB Area has a much higher work access by automobile (91 percent) than the Northern Connections Area (80 percent). Conversely, the Northern Connections Area’s transit mode split is three times that of the PEROW/WSAB Area, perhaps reflecting the higher percentage of low income (45 percent compared to 27 percent) and transit dependent (23 percent compared to nine percent) households in this area, and the higher level of transit available in this portion of the study area.

TABLE 3.3 – CORRIDOR STUDY AREA – MODE SPLIT TO WORK (2000)

Subregions	SOV	Carpool	Transit	Other
PEROW/WSAB Area	73 %	18 %	5 %	4 %
Northern Connections Area	60 %	20 %	15 %	5 %
Corridor Study Area	67 %	19 %	10 %	4 %

Source: U.S. Census

3.2 Travel Demand

Current and future travel activity in the Corridor Study Area can be identified based on both the total number and the concentration of trip productions and attractions. For the purposes of this analysis, productions refer to the origin of a trip, such as a residence, and attractions refer to the destination of a trip, such as work or school.

Overall, the number of total daily trips within the PEROW/WSAB Area is projected to increase by approximately 18 percent or by 2.7 million daily trips traveling on the area’s constrained highway system. A comparison of the total productions and attractions within the PEROW/WSAB Area in 2006 and forecast for 2035 is presented in Table 3.4. In 2006, this area’s productions and attractions were approximately equal, but in 2035 this portion of the study area will attract more trips than it generates. The forecast growth in trip attractions is strongly related to the projected 13 percent growth in employment. This jobs-rich area of the region will become even more of an employment destination, particularly as most of the subregions in the Northern Connections Area are forecast to experience a loss in jobs, resulting in more job-related trips to the PEROW/WSAB Area.

TABLE 3.4 – PEROW/WSAB AREA – TOTAL PRODUCTIONS AND ATTRactions

	Productions	Attractions	Total
2006 Total Productions and Attractions	7,442,700	7,678,400	15,121,100
2035 Total Productions and Attractions	8,634,700	9,177,700	17,812,400
Difference	1,192,000	1,499,300	2,691,000
Total Percentage Increase	16 %	20 %	18 %

Source: LACMTA

By 2035, as shown in Table 3.5, the Northern Connections Area will experience a 19 percent increase in total daily trips, with a projected increase of 2.6 million more trips on the area’s highway system. Currently, the Northern Connections Area attracts 10 percent more trips than it generates, reflecting the significant number of jobs, 1.1 million or 24 percent of the total employment in Los Angeles County, that are located here. In 2035, with a forecast four percent loss of jobs, the Northern Connections Area will experience a decrease in attracting job-related trips, only four percent more trips than it generates.

TABLE 3.5 – NORTHERN CONNECTIONS AREA – TOTAL PRODUCTIONS AND ATTRACTIONS

	Productions	Attractions	Total
2006 Total Productions and Attractions	6,585,000	7,240,000	13,825,500
2035 Total Productions and Attractions	8,050,800	8,366,300	16,417,100
Difference	1,465,800	1,125,800	2,591,600
Total Percentage Increase	22 %	16 %	19 %

Source: LACMTA

In 2035, total daily travel within the Corridor Study Area will increase by 19 percent to 5.3 million daily trips traveling on the Corridor’s already constrained and congested highway system. The total trip origins and destinations are forecast to be approximately equal, with the PEROW/WSAB Corridor Area attracting more trips and the Northern Connections Area generating more trips.

TABLE 3.6 – CORRIDOR STUDY AREA – GROWTH IN TOTAL PRODUCTIONS AND ATTRACTIONS (2035)

	Productions	Attractions	Total
PEROW/WSAB Area	1,192,000	1,499,300	2,691,000
Northern Connections	1,465,800	1,125,800	2,591,600
Total Difference	2,657,800	2,625,100	5,282,600
Total Percentage Increase	19 %	18 %	19 %

Source: LACMTA

For another look at the Corridor Study Area travel growth, the current and future ranking of the various subregions within each of the study area sections was identified to assess any major shifts in travel patterns. As shown below in Table 3.7, within the PEROW/WSAB Area, the Gateway Cities North subregion currently ranks the highest in both producing and attracting trips, with Gateway Cities South and West Orange County ranking as second and third in producing trips. In 2006, Northwest Orange County and Gateway Cities South were identified as ranking as second and third in attracting trips or being the destination for area trips. The Northwest Orange County subregion includes the cities of Anaheim, Buena Park, Stanton, Cypress, and La Palma.

TABLE 3.7 – PEROW/WSAB AREA – RANKING OF PRODUCTIONS AND ATTRACTIONS

Subregions	2006		2035		Difference	
	Productions	Attractions	Productions	Attractions	Productions	Attractions
Gateway Cities North	1	1	1	1	2	2
Gateway Cities South	2	3	2	3	4	4
Interior South Bay	7	7	7	6	5	6
Northwest Orange County	4	2	4	4	3	5
Northeast Orange County	8	8	8	7	7	7
East Orange County	6	6	6	5	6	3
West Orange County	3	4	3	2	1	1
Central Orange County	5	5	5	8	8	8

Source: LACMTA

In 2035, the PEROW/WSAB Area subregions with the highest levels of generating trips will be Gateway Cities North, Gateway Cities South, and West Orange County, in that order. The same three areas also will rank the highest for attracting trips, with West Orange County stepping up to the second highest trip destination. This subregion is forecast to experience an 18 percent increase in jobs. From a destination perspective, West Orange County, Gateway Cities North, and East Orange County will experience the highest levels of change.

Currently, in the Northern Connections Area, the densely-populated LAX/Inglewood/South Los Angeles, Interior South Bay, and Gateway Cities subregions rank the highest for trip generation, as well as for trip attraction. In 2035, as seen in Table 3.8, the same three subregions will rank the highest in both categories as well, with Gateway Cities North, reflecting its forecast job loss, now ranking number two in attracting trips, and Interior South Bay becoming first.

TABLE 3.8 – NORTHERN CONNECTIONS AREA – RANKING OF PRODUCTIONS AND ATTRACTIONS

Subregions	2006		2035		Difference	
	Productions	Attractions	Productions	Attractions	Productions	Attractions
Gateway Cities North	3	1	1	2	1	4
Gateway Cities South	8	8	8	8	7	7
Interior South Bay	2	2	2	1	2	1
Central Los Angeles West	7	7	7	7	8	8
Central Los Angeles East	5	4	5	4	6	6
San Gabriel Valley	6	6	6	6	5	5
LAX/Inglewood/South Los Angeles	1	3	3	3	3	2
Downtown Los Angeles	4	5	4	5	4	3

Source: LACMTA

When looking at the differences between 2006 and 2035, travel changes to the Gateway Cities North area will occur based on the area’s forecast job loss and population increase. In 2035, the Interior South Bay and the LAX/Inglewood/South Los Angeles areas will remain strong as trip attractors because they are forecast to be the only two subregions to have employment increases (five and eleven percent respectively) in this portion of the Corridor Study Area. The other exception is Downtown Los Angeles, which also will gain in trip activity based on a minor increase in employment (one percent), and a 10 percent increase in population.

3.3 Travel Patterns

This section summarizes the subregional travel patterns within the Corridor Study Area based on information obtained from the LACMTA Travel Demand Model. Information presented includes: an analysis by subregion of the percentage of internal trips, those that remain within the subregion, and the percentage of those traveling to another destination within the Corridor Study Area; and a summary of travel between the study area’s subregions. The travel patterns between the subregions located in the PEROW/WSAB Area are presented in Figure 3.1 and the Northern Connections area is presented in Figure 3.2.

Figure 3.1 PEROW/WSAB Travel Patterns

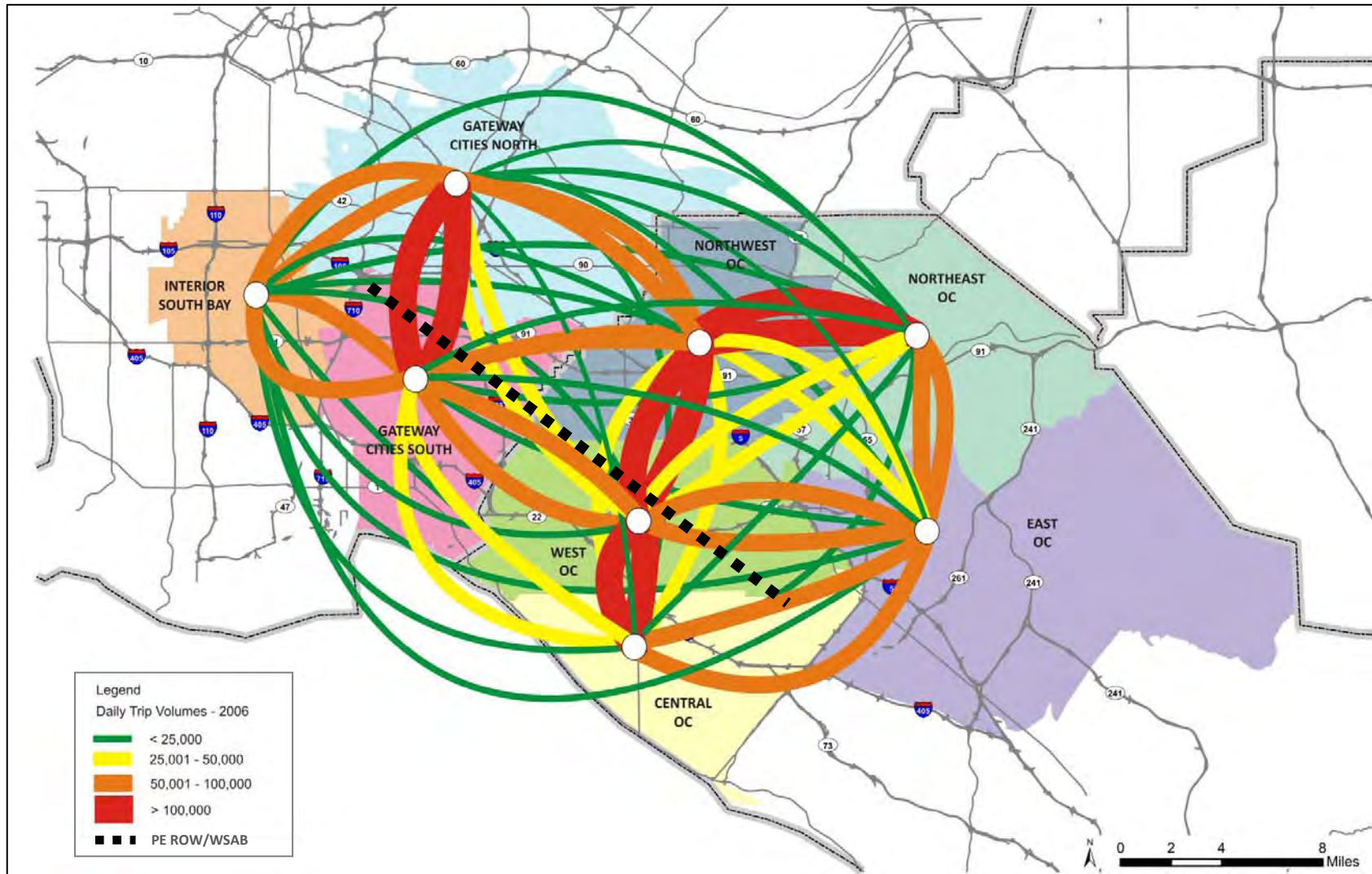


Figure 3.2 Northern Connections Study Area Travel Patterns

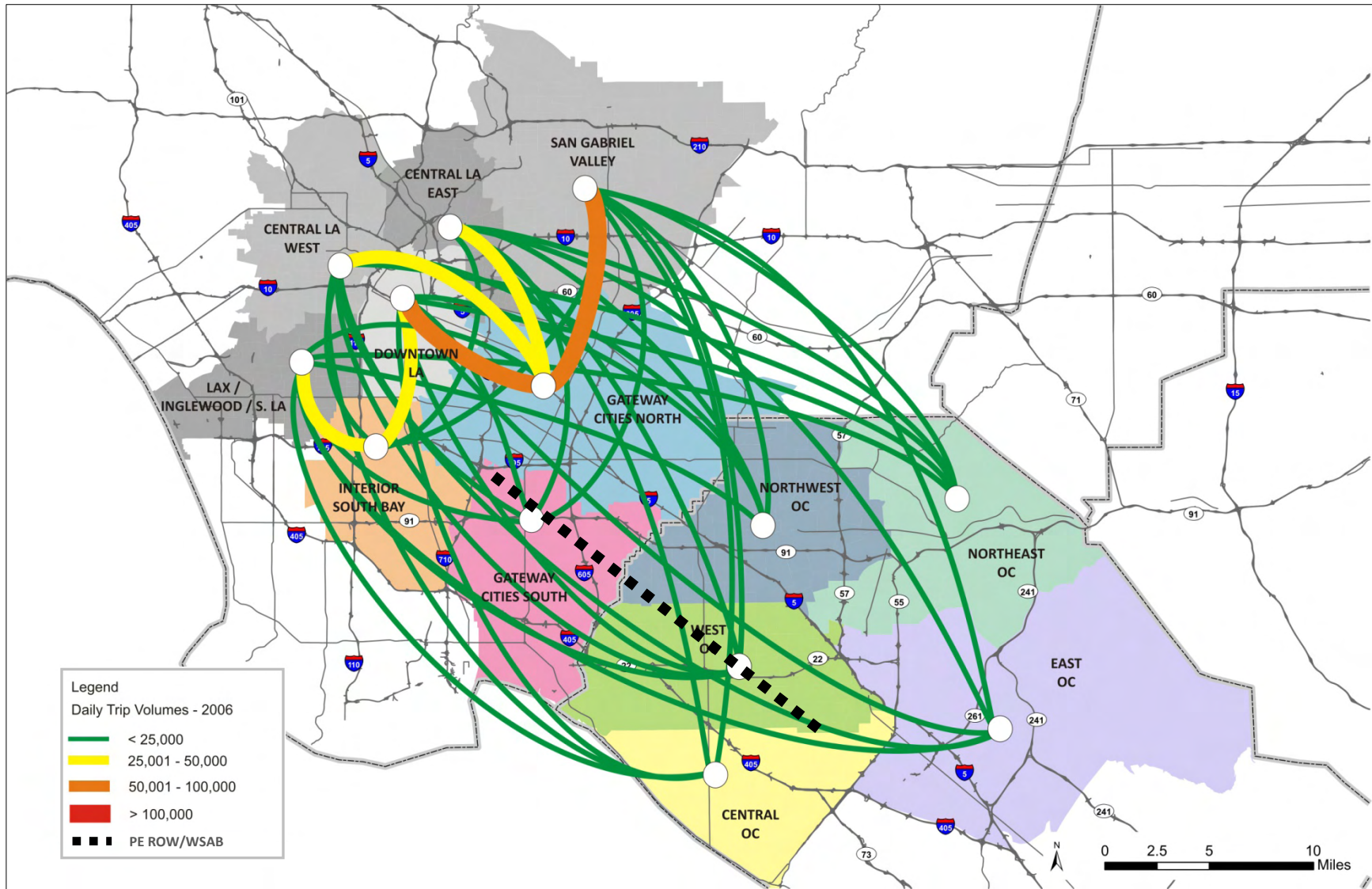


TABLE 3.9 – CORRIDOR STUDY AREA – SUMMARY OF SUBREGIONAL TRIPS (2006)

Subregions	Internal Trips		Within Corridor	
	Number	Percentage	Number	Percentage
Gateway Cities North	869,450	58 %	642,010	42 %
Gateway Cities South	641,890	59 %	447,680	41 %
Interior South Bay	298,150	51 %	288,090	49 %
Northwest Orange County	662,230	57 %	492,030	43 %
Northeast Orange County	231,900	47 %	265,710	53 %
East Orange County	434,210	56 %	336,300	44 %
West Orange County	569,850	51 %	549,630	49 %
Central Orange County	587,680	62 %	364,770	38 %
Central Los Angeles West	679,700	65 %	357,140	35 %
Central Los Angeles East	170,000	37 %	286,510	63 %
San Gabriel Valley	982,040	74 %	351,830	26 %
LAX/Inglewood/South Los Angeles	294,340	57 %	219,800	43 %
Downtown Los Angeles	363,160	43 %	485,240	57 %

Source: LACMTA

As shown in Table 3.9, the distribution between trips starting and ending within a subregion and those starting in one subregion and ending in another subregion within the Corridor Study Area is fairly evenly divided. The significant number of trips traveling to other destinations within the study area demonstrates the need for connecting transportation improvements. The San Gabriel Valley (74 percent), Central Los Angeles West (65 percent), and Central Orange County (62 percent) have the highest percentage of trips that remain internal to the subregions. Central Los Angeles East (63 percent) and Downtown Los Angeles (57 percent) have the highest percentage of travel to other destinations within the study area.

The following analysis identifies the percentage of trips made between subregions within the Corridor Study Area to determine possible travel patterns potentially supporting and/or requiring a transportation system investment. It should be noted that the PE ROW runs primarily through the Gateway Cities South, West Orange County, and Northwest Orange County subregions. The proposed alignment would then turn north to operate on railroad ROWs located in the Gateway Cities North and Central Los Angeles subregions. Bus alternatives would operate in High Occupancy Vehicle (HOV) lanes on area freeways and/or city streets with signal priority improvements.

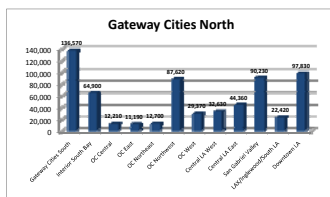
As shown below in Table 3.10 and Graphs 3.1-3.13, within the PEROW/WSAB Area, travel within the Orange County subregions primarily remains within the Orange County area, with minor connections north to Central Los Angeles. There is a strong travel connection between the Northwest Orange County and Gateway Cities South areas, which would be served by a transportation improvement along the PE ROW. The Gateway Cities subregions have a strong level of internal travel between the Gateway Cities North and Gateway Cities South areas, as well as south to Orange County, and north to Central Los Angeles. All of these trip patterns would be strengthened with a transportation system improvement.

TABLE 3.10 – PEROW/WSAB AREA – SUBREGIONAL TRIP ANALYSIS (2006)

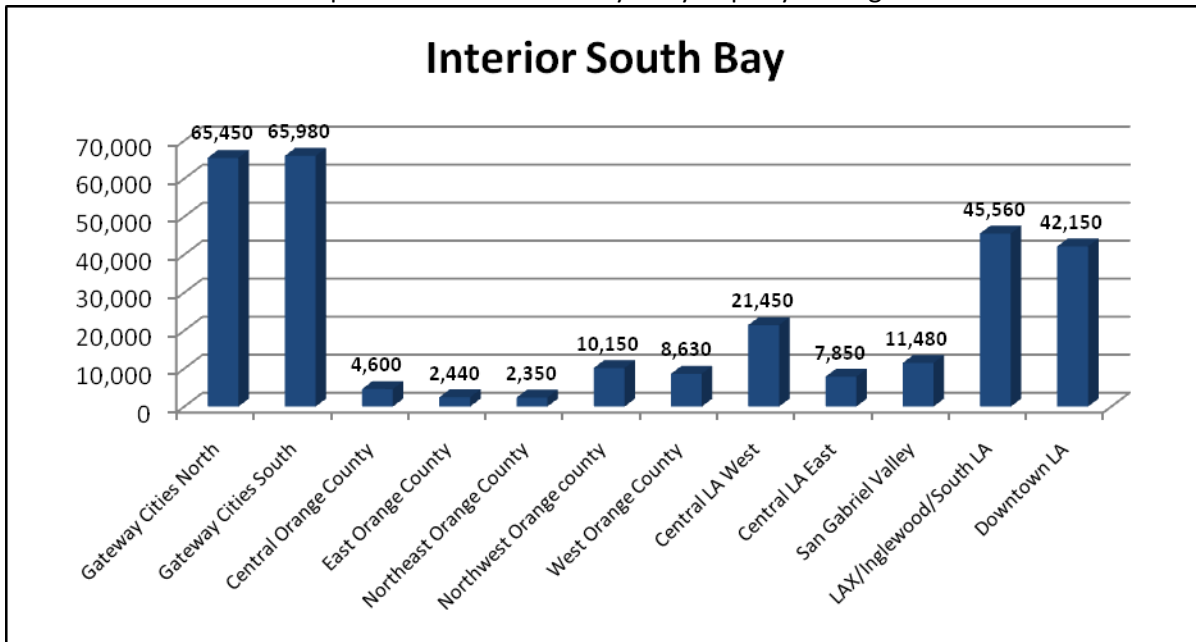
Subregions	Orange County	Gateway Cities Area	South Bay	Central Los Angeles	San Gabriel Valley
Gateway Cities North	25 %	21 %	13 %	27 %	14 %
Gateway Cities South	39 %	31 %	18 %	8 %	4 %
Interior South Bay	11 %	46 %	16 %	25 %	4 %
Northwest Orange County	63 %	30 %	2 %	3 %	2 %
Northeast Orange County	89 %	8 %	1 %	1 %	1 %
East Orange County	91 %	7 %	1 %	-	1 %
West Orange County	78 %	18 %	2 %	1 %	1 %
Central Orange County	86 %	10 %	1 %	2 %	1 %

As shown below in Table 3.11, within the Northern Connections Area, travel patterns are distributed widely to and from all of the subregions, with the exception of Orange County. The analysis shows that there is a limited need for travel connections south to Orange County from the Central Los Angeles areas, which may be better served by an intra-regional service such as Metrolink. There are diverse and well-distributed travel connections to the Gateway Cities areas from the Central Los Angeles areas, and to and from other Central Los Angeles subregions. Many of the Central Los Angeles connections are already served with high-capacity rail connections, including Central Los Angeles West (Metro Red and Purple lines), Central Los Angeles East (Metro Gold Line), San Gabriel Valley (Metro Gold Line), and the South Bay (Metro Green Line). Connections to the LAX/Inglewood/South Los Angeles are under study as part of the Crenshaw Corridor Project. Strengthening the connection south from Central Los Angeles to and from the Gateway Cities is the remaining linkage to be provided, which could be accomplished with a future Corridor Study Area transportation investment.

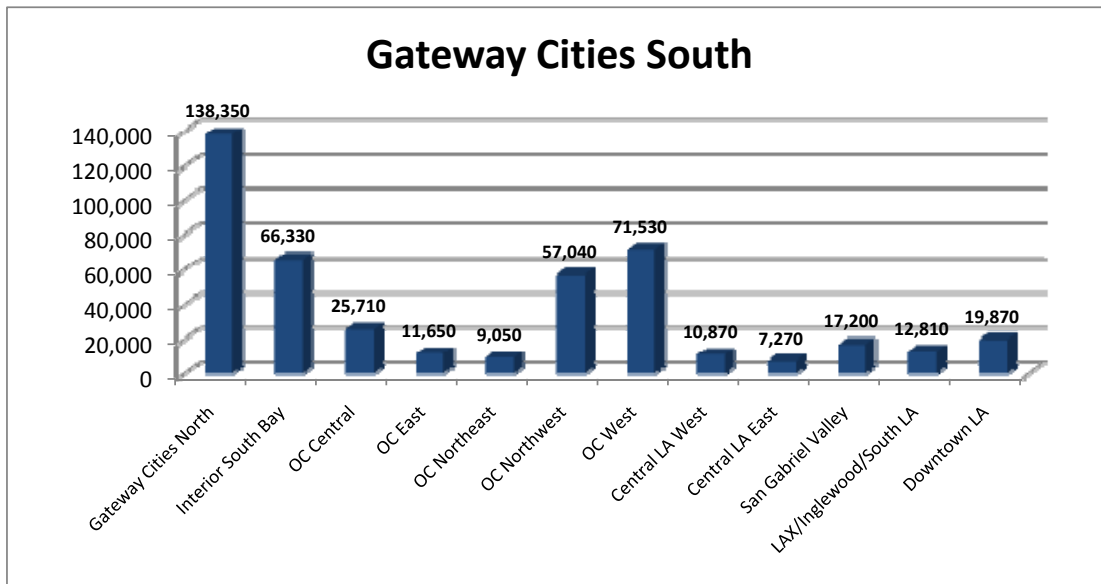
Graph 3.1 Gateway Cities North Daily Trips by Subregion



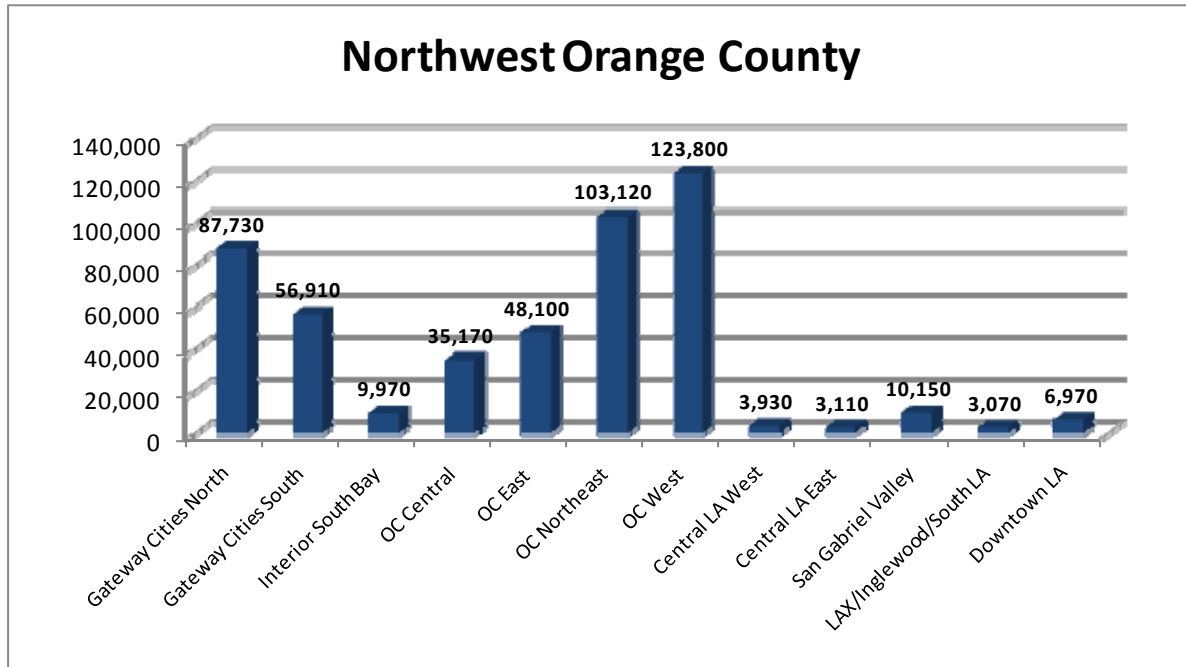
Graph 3.2 Interior South Bay Daily Trips by Subregion



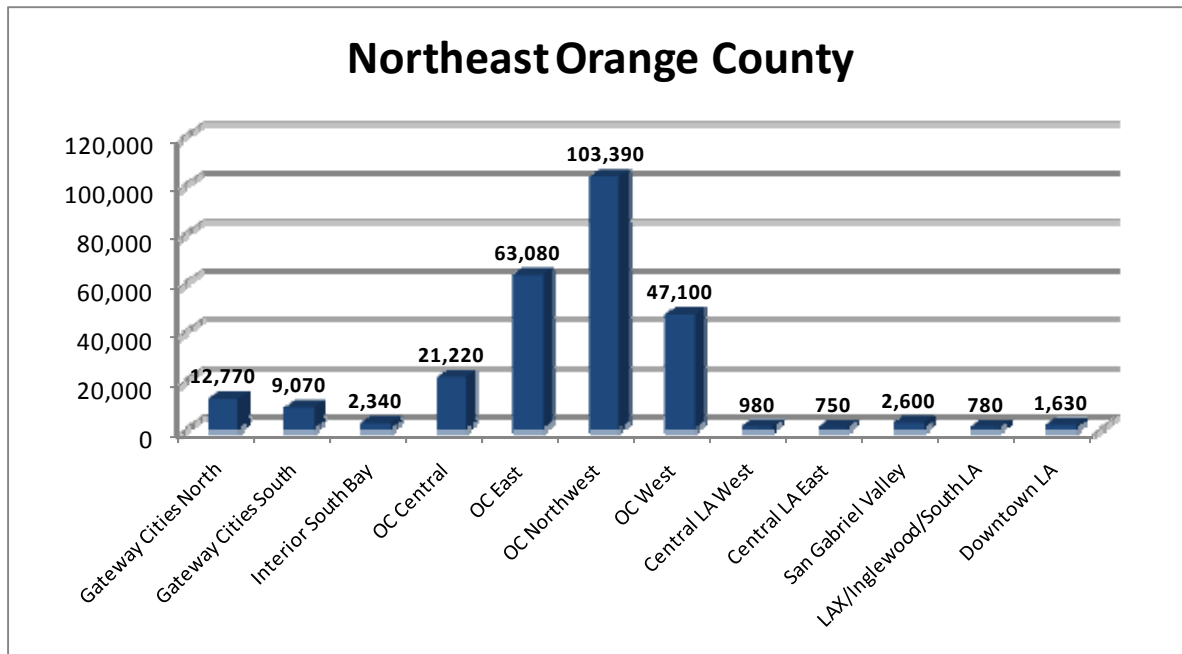
Graph 3.3 Gateway Cities South Daily Trips by Subregion



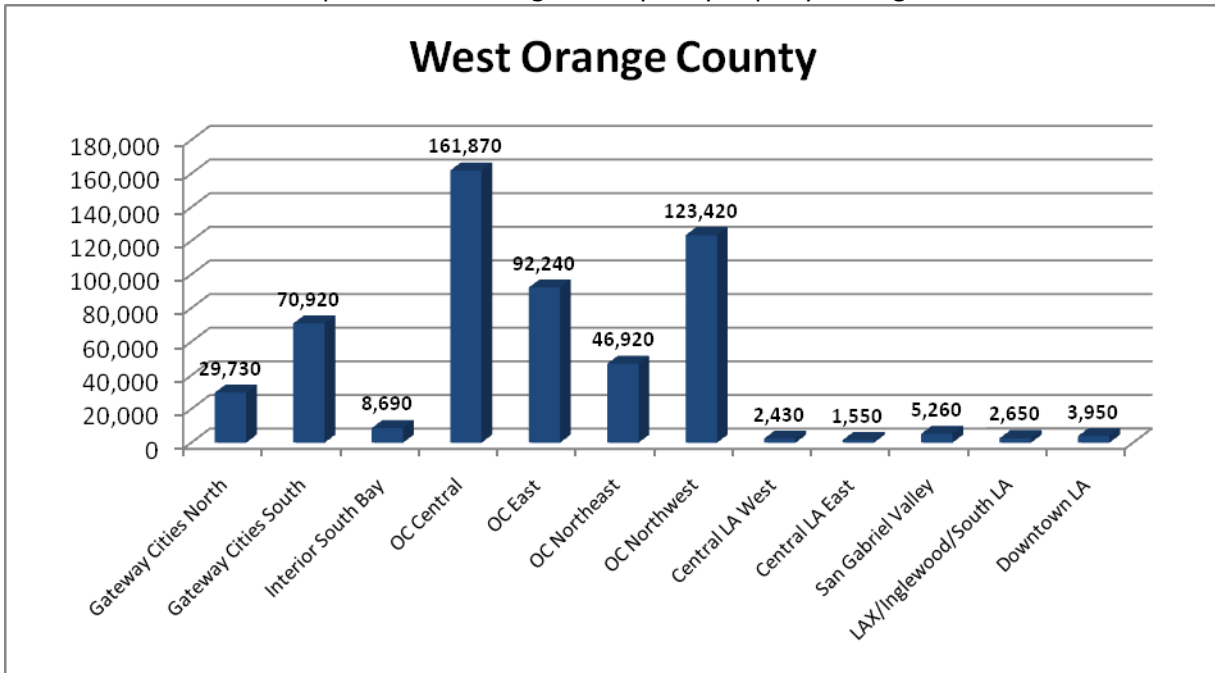
Graph 3.4 Northwest Orange County Daily Trips by Subregion



Graph 3.5 Northeast Orange County Daily Trips by Subregion



Graph 3.6 West Orange County Daily Trips by Subregion



Graph 3.7 East Orange County Daily Trips by Subregion

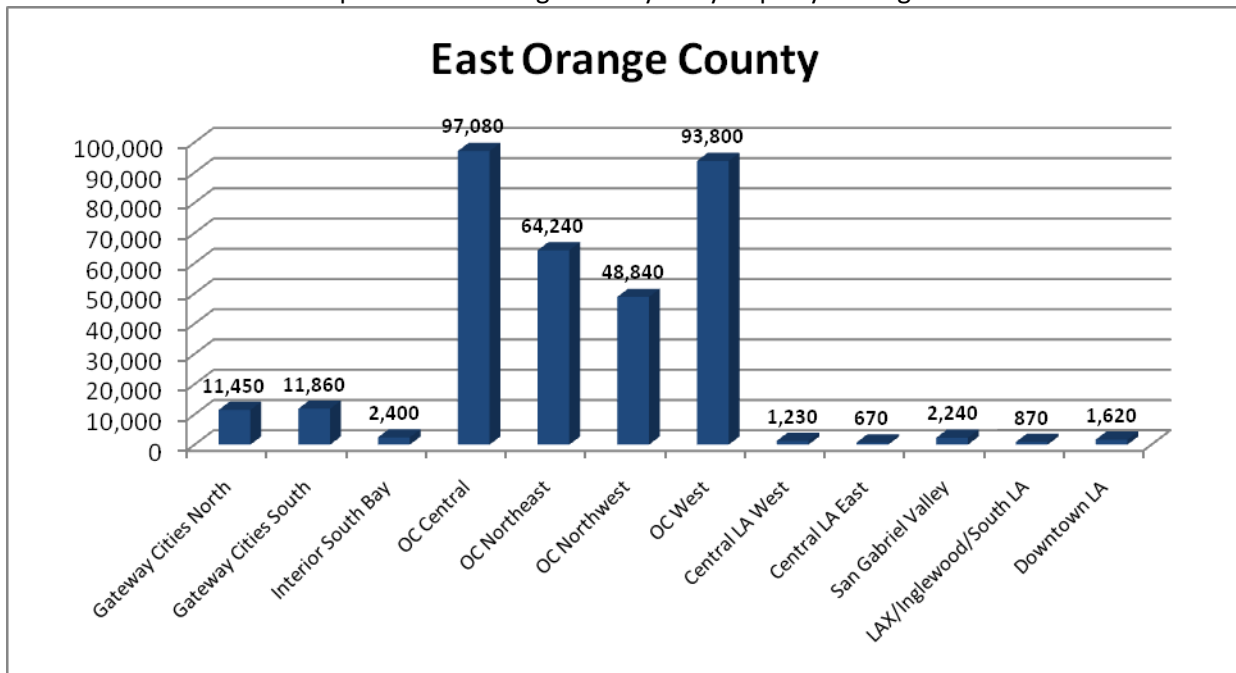


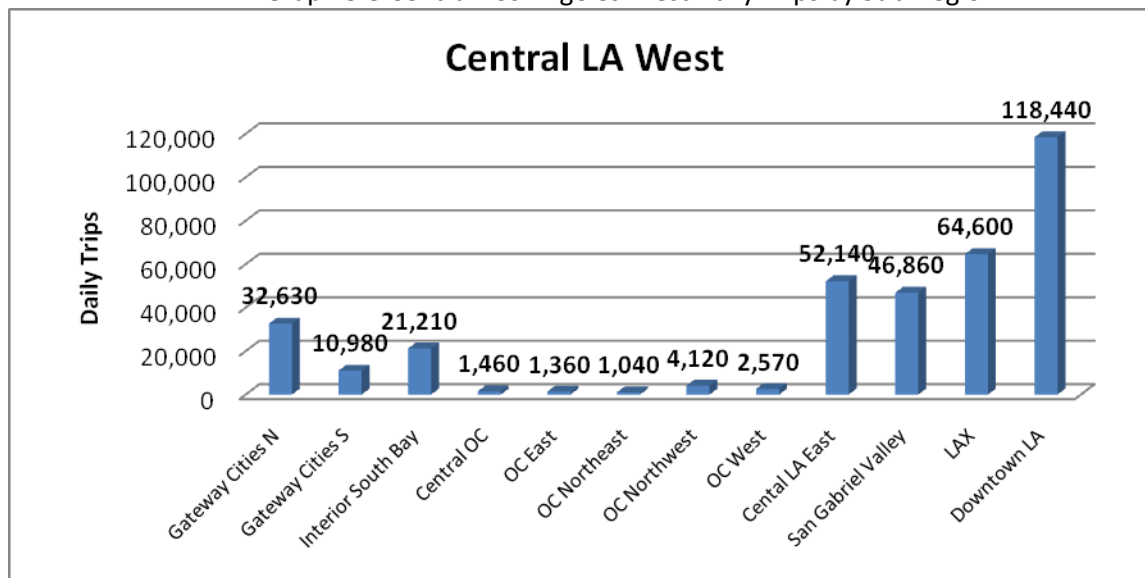
TABLE 3.11 – NORTHERN CONNECTIONS AREA – SUBREGIONAL TRIP ANALYSIS (2006)

Subregions	Orange County	Gateway Cities Area	South Bay/LAX	Central Los Angeles	San Gabriel Valley
Gateway Cities North	25 %	21 %	13 %	27 %	14 %
Gateway Cities South	39 %	31 %	18 %	8 %	4 %
Interior South Bay	11 %	46 %	16 %	25 %	4 %
Central Los Angeles West	3 %	12 %	6 %	66 %	13 %
Central Los Angeles East	1 %	19 %	6 %	45 %	29 %
San Gabriel Valley	7 %	31 %	6 %	56 %	-
LAX/Inglewood/South Los Angeles	2 %	16 %	21 %	56 %	5 %
Downtown Los Angeles	3 %	24 %	19 %	40 %	14 %

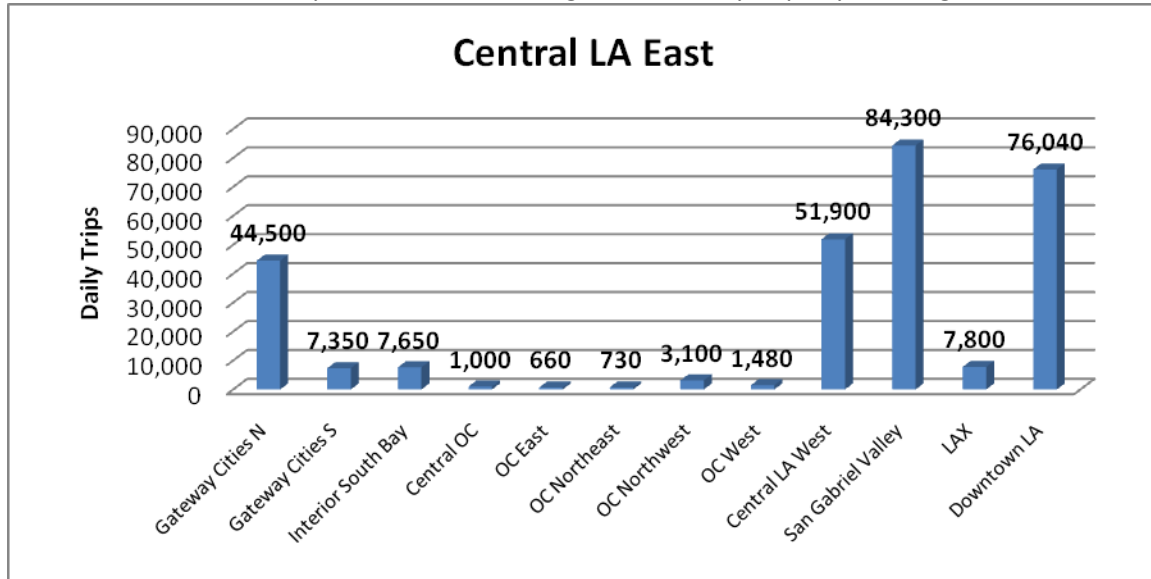
Source: LACMTA

In summary, the analysis identifies that the largest trip interactions between sub-regions exist between and within Orange County subregions (intra-county trips) and between the Gateway Cities North and Gateway Cities South subregions. In those areas, there are approximately 100,000 or more directional daily trips between the subregions (over 200,000 total trips), depending on the areas. Within and adjacent to the PEROW/WSAB Area, which is primarily defined as the West Orange County and Gateway South subregions, the trip interaction is smaller, but still significant, with approximately 70,000 directional daily trips (over 140,000 daily trips). Between the West Orange County and Gateway Cities North subregions there are approximately 30,000 directional and 60,000 daily trips. Travel forecasts between the PEROW/WSAB Area and the Northern Connections Area subregions show that over 90,000 directional daily trips (over 180,000 daily trips) occur between the Gateway Cities North and San Gabriel Valley subregions, and over 97,000 directional daily trips (over 194,000 daily trips) occur between the Gateway Cities North and Downtown Los Angeles areas.

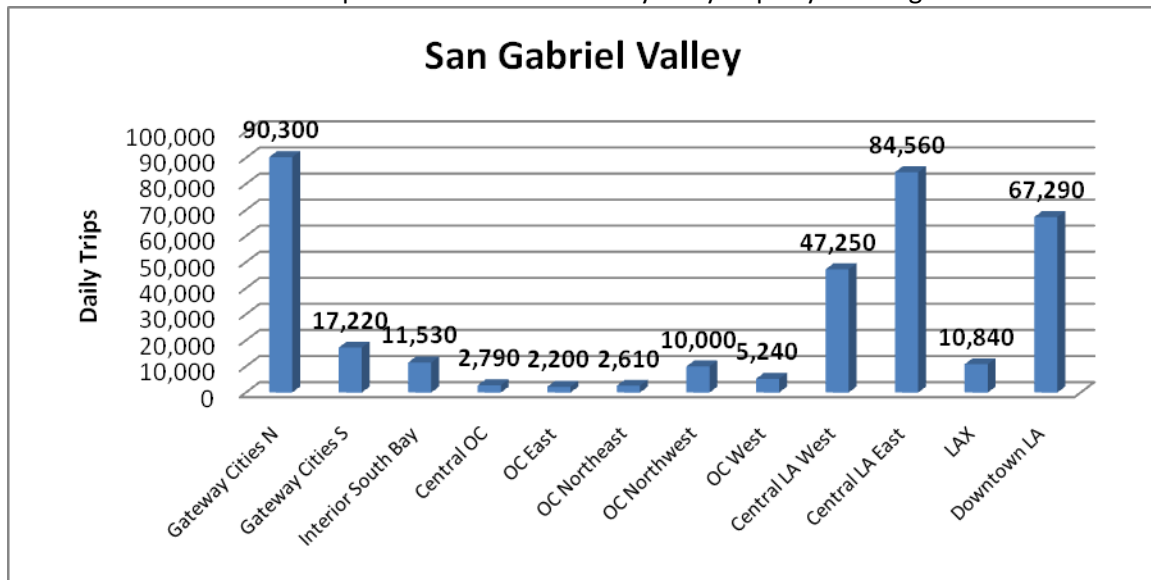
Graph 3.8 Central Los Angeles West Daily Trips by Sub-Region



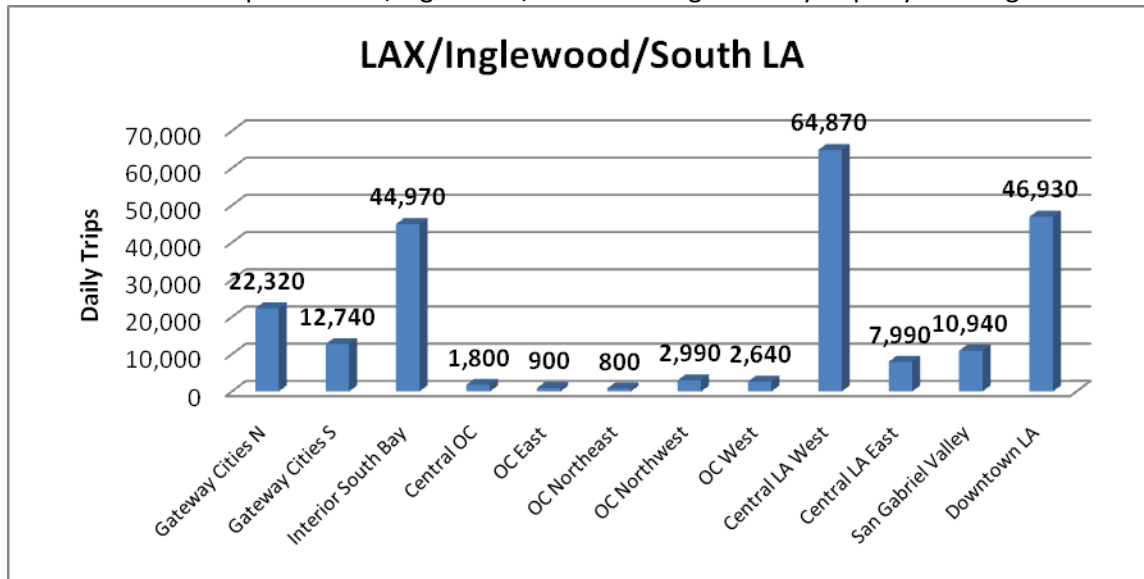
Graph 3.9 Central Los Angeles East Daily Trips by Sub-Region



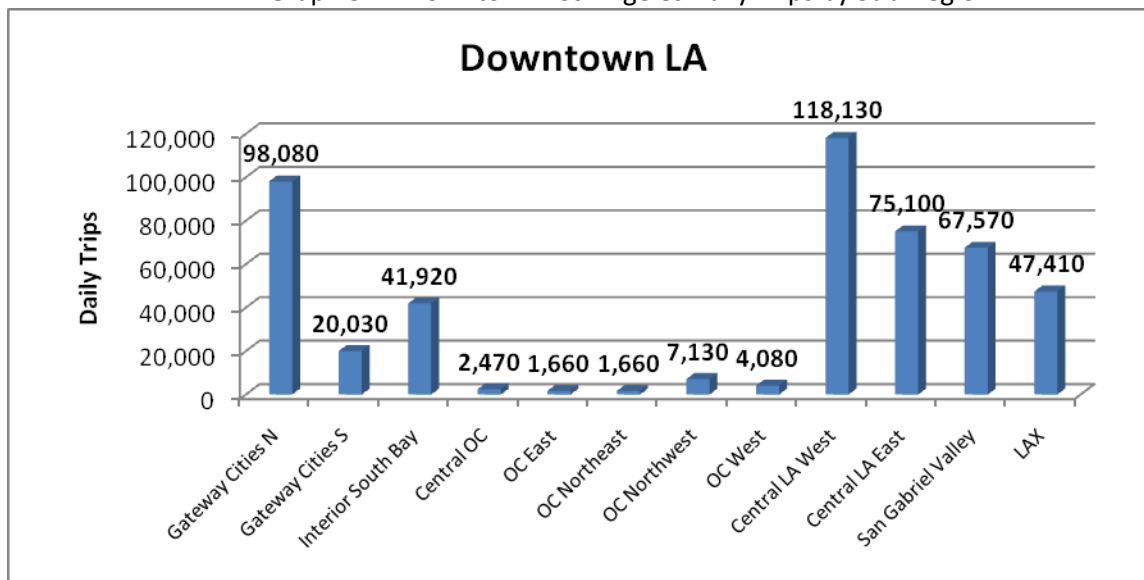
Graph 3.10 San Gabriel Valley Daily Trips by Sub-Region



Graph 3.11 LAX/Inglewood/South Los Angeles Daily Trips by Sub-Region



Graph 3.12 Downtown Los Angeles Daily Trips by Sub-Region



Transit Markets

Current Corridor Study Area transit service includes some bus and rail service. OCTA operates bus service providing service between Orange County and Downtown Los Angeles. Metrolink operates three lines providing inter- and intra-county connections between various Orange County alignments and Union Station in Downtown Los Angeles serving, more than 14,900 daily boardings. In Los Angeles County, the Metro Blue Line approximates a portion of the proposed corridor connection, as does the Metro Green Line. In August 2010, the Metro Blue Line had 81,125 daily boardings and the Metro Green Line carried 41,170 daily boardings.

3.4 Summary of Travel Demand

In summary, there is strong travel demand in the Corridor Study Area that would support implementation of a high-capacity transportation system investment as demonstrated by the following:

1. **Current population and employment numbers and density support investment in a high capacity transportation improvement.** Today, the Corridor Study Area population densities are two to five times higher than the Los Angeles and Orange county averages. By 2035, study area population densities are forecast to increase by an average of 12 percent, and will remain higher than the county averages by 220 to 460 percent, resulting in an average range of 9,500 to 20,000 residents per square mile. In 2035, the average employment density in the Corridor will be 5,400 jobs per square mile, more than double the Orange County average, and 60 percent higher than the urbanized Orange County average.
2. **The Corridor Study Area has a diverse set of activity centers and destinations that result in a diverse set of trip types.** Study area destinations attract local and regional travel needs, including residents and local and regional visitors. While study area travel has a high percentage of work-related trips, the diverse Corridor's destinations results in a significant number of non-work trips, including entertainment, cultural, and recreational travel. As demonstrated by other cities, such as San Diego and Portland, a diverse set of trip types would widen and strengthen the viability and utilization of a transportation system investment.
3. **There is a high level of automobile travel.** With only two current travel options currently available, automobile or bus transit, 80 to 91 percent of all work trips are made by automobile. The high percentage of Corridor car trips has an adverse impact on current and future highway capacity and operations, as well as air quality and greenhouse gas emissions.
4. **There is a significant forecast increase in travel activity.** By 2035, total daily travel within the Corridor Study Area will increase by 19 percent with an additional 5.3 million daily trips. Even with implementation of the planned and funded highway improvements, the Corridor's freeway and arterial system will be overwhelmed, and will experience worsening operations.
5. **Currently, there is a high level of daily travel between the Corridor subregions that would support a high-capacity transportation investment.** An analysis of travel patterns shows the following possible markets:
 - ***There is a strong potential transit market between the Gateway Cities and Northwest and West Orange County.***
 - Over 87,000 directional daily trips between Gateway Cities North and Northwest Orange

- County.
- › Over 70,000 directional daily trips between Gateway Cities South and West Orange County.
- ***A large number of directional daily trips occur between Orange County subregions.***
 - › More than 160,000 directional daily trips between Central Orange County and West Orange County.
 - › More than 95,000 directional daily trips between Central Orange County and East Orange County.
 - › More than 92,000 directional daily trips between East Orange County and West Orange County.
 - › More than 100,000 directional daily trips between Northeast and Northwest Orange County.
 - › More than 120,000 directional daily trips between Northwest and West Orange County.
- ***There is a potential transit market between Gateway Cities North and Downtown Los Angeles, and San Gabriel Valley.***
 - › More than 97,000 directional daily trips between Gateway Cities North and Downtown Los Angeles.
 - › More than 90,000 directional daily trips between Gateway Cities North and San Gabriel Valley.

4.0 REGIONAL TRANSPORTATION SYSTEM

This section describes the current transportation system in the Corridor Study Area, and provides an overview of the existing freeways and arterials, and transit service, along with future highway and transit programs and projects. Currently, travel within the study area can be characterized as heavily automobile-oriented with some transit usage. The study area is served by an extensive freeway and arterial system, with transit access provided primarily by bus and shuttle service and some rail service.

4.1 Regional and Local Highway System

As presented in Figure 4.1, there are seven freeways within or framing the boundaries of the Corridor Study Area:

- ***I-5/Santa Ana Freeway*** – This freeway runs at a northeast diagonal parallel and to the north of the PEROW/WSAB ROW and forms a majority of the eastern study area boundary. The I-5 Freeway is a heavily-traveled interstate highway that connects Los Angeles and Orange counties north to the Central Valley and Sacramento within California, and south to San Diego. Within the study area, the I-5 Freeway connects Downtown Los Angeles and the cities of Buena Park, Anaheim and Santa Ana in the center of Orange County.
- ***I-405/San Diego Freeway*** – This freeway operates at a northeast-running diagonal parallel to and south of the PEROW/WSAB ROW, and it forms a large portion of the southern study area boundary. The I-405 Freeway is a heavily-traveled highway that serves Los Angeles and Orange counties, and joins the I-5 Freeway north in the San Fernando Valley in Los Angeles County, and south in the City of Irvine in Orange County. It is located primarily adjacent to the study area, and connects the Los Angeles County cities of West Los Angeles and Santa Monica with Orange County cities, including Westminster, Huntington Beach, Costa Mesa, and Irvine.
- ***I-710/Long Beach Freeway*** – This north-south running freeway runs through the western portion of the study area. The I-710 Freeway is a heavily-traveled Los Angeles County highway that connects the City of Long Beach and the Ports of Long Beach and Los Angeles north to its current terminus in the City of Alhambra in the San Gabriel Valley. It passes through the study area cities of Paramount, Lynwood, South Gate, Cudahy, Bell Gardens, Bell, Maywood, Vernon, and Los Angeles.
- ***I-605/San Gabriel Freeway*** – This north-south running freeway passes through the heart of the study area. The I-605 is a primarily Los Angeles County freeway that connects north to the I-210 Freeway in the San Gabriel Valley, and south to the I-405 Freeway at the boundary between Los Angeles and Orange counties. Within the study area, it runs through the cities of Downey, Norwalk, Bellflower, Cerritos, and Lakewood.
- ***I-105/Century Freeway*** – This east-west running Los Angeles County freeway connects the I-605 Freeway in the City of Norwalk west to the I-405 Freeway in the LAX area. The Metro Green Line operates in the median of the freeway from Norwalk to its terminus in the LAX area. Within the study area, the I-105 runs through the cities of Norwalk, Downey, Paramount, South Gate, Lynwood, and Los Angeles.
- ***SR-22/Garden Grove Freeway*** – This east-west running and primarily Orange County freeway operates through the southern portion of the study area between the SR-1/Pacific Coast

Highway in the City of Long Beach and the SR-55 Freeway located between the cities of Santa Ana and Tustin. Within the study area, this freeway runs through the cities of Westminster, Garden Grove and Santa Ana.

- **SR-91/Artesia Freeway** – This east-west running freeway operates through the heart of the study area, and connects Los Angeles, Orange, Riverside, and San Bernardino counties from the I-110/Harbor Freeway in the South Bay Cities portion of Los Angeles County to Downtown San Bernardino. Within the study area, the SR-91 passes through the cities of Bellflower, Cerritos, Artesia, La Palma, Buena Park, and Anaheim.

Within the northernmost portion of the Corridor Study Area, Downtown Los Angeles is served by a several freeways, including the I-5/Santa Ana Freeway, the I-10/Santa Monica, I-110/Harbor Freeway, SR-60/Pomona Freeway, and US-101 Freeway. In addition, there are three freeways, all running in a north-south direction immediately adjacent to the Corridor Study Area: the I-110/Harbor Freeway to the west in Los Angeles County, and the SR-55/Costa Mesa and SR-57/Orange freeways in Orange County.

The Corridor Study Area is well-served by a major and secondary arterial street system that is laid out in a regular grid pattern throughout Los Angeles and Orange counties. Located in a flat portion of the region, the study area’s arterial grid pattern is interrupted only by rivers and flood channels. Key north-south and east-west major arterials that serve longer trips are listed below in Table 4.1.

TABLE 4.1 – MAJOR ARTERIALS IN CORRIDOR STUDY AREA

North-South		East-West	
Street	County	Street	County
Avalon Boulevard/San Pedro Street	Los Angeles	Sixth Street/Whittier Boulevard	Los Angeles
Alameda Street	Los Angeles	Olympic Boulevard	Los Angeles
Long Beach Boulevard	Los Angeles	Washington Boulevard	Los Angeles
Atlantic Avenue	Los Angeles	Slauson Avenue	Los Angeles
Lakewood Boulevard	Los Angeles	Manchester Boulevard/Firestone Boulevard	Los Angeles
Los Alamitos Boulevard	Orange	Imperial Highway	Los Angeles
Valley View Street	Orange	Rosecrans Avenue	Los Angeles
Beach Boulevard	Orange	Artesia Boulevard/Orangethorpe Avenue	Los Angeles/Orange
Brookhurst Street	Orange	Carson Street/Lincoln Avenue	Los Angeles/Orange
Harbor Boulevard	Orange	Willow Street/Katella Avenue	Los Angeles/Orange
Bristol Street	Orange	17 th Street	Orange
		Bolsa Avenue/1 st Street	Orange
		Warner Avenue	Orange

Figure 4.1 Regional Highway System



4.2 Regional and Local Transit Systems

Currently, transit service within the Corridor Study Area is primarily provided by bus and shuttle service, with minor local rail access. Intra-and inter-regional Metrolink and Amtrak rail service is accessible only from Union Station at the northern terminus of the study area, and at the SARTC at the southern terminus. Both services operate along an alignment located to the north of the Corridor Study Area boundaries as shown in Figure 4.2. Local rail service is provided by LACMTA on two lines:

- **Metro Green Line** – This light rail transit (LRT) line operates predominately in an east-west direction in the median of the I-105 Freeway through the central portion of the study area. This line runs between the cities of Redondo Beach and Norwalk, and provides connections to the Metro Blue Line and the I-110 Bus Transitway. Within the study area, LRT stations are located at the Norwalk Transit Center, Lakewood Boulevard in the City of Downey, and Long Beach Boulevard in the City of Lynwood.
- **Metro Blue Line** – This north-south running LRT line forms the western study area boundary, and operates between Downtown Long Beach and 7th Street/Metro Center in Downtown Los Angeles. Within the study area, there are nine Metro Blue Line stations: two are located in the City of Compton, and the other seven are within the City of Los Angeles. One of the stations provides a transfer to the Metro Green Line.

Within the Corridor Study Area, bus transit service is provided by LACMTA, OCTA (as shown in Figures 4.3 and 4.4), and various Los Angeles County municipal operators including Long Beach Transit, Norwalk Transit, and Montebello Transit. City-based bus and shuttle service is provided by Bellflower Bus, Bell Gardens Transit, Cerritos Transit (Cerritos on Wheels), Downey LINK, Lynwood Trolley, and Paramount Easy Rider.

Bicycle Connections

Bicycling is becoming an increasingly popular commuting and recreational mode of travel throughout Southern California. Regional, county, and local policy and planning documents seek to increase the number of bicyclists who ride for commuting and other daily purposes helping to reduce traffic congestion and improve air quality. Currently, bicyclists are encouraged on OCTA's bus system and LACMTA's bus and rail system. Both Los Angeles and Orange counties have adopted bike plans, and the current bikeways within the Corridor Study Area are presented in Table 4.2 and Figure 4.5. Each bikeway is categorized by the following classes:

- **Class I Bike Paths** – This class of bicycle routes represents exclusive two-way paths for bicycles, and is most often located along flood control channels, riverbanks, active or inactive rail rights-of-way, and utility rights-of-way.
- **Class II On-Street Bike Lanes** – This category of bicycles is striped one-way lanes on streets or highways with posted signage.
- **Class III Bike Routes** – This class of bike routes operates in space shared with vehicles, and is typically designated by signage only.

Figure 4.2 Regional Transit Service

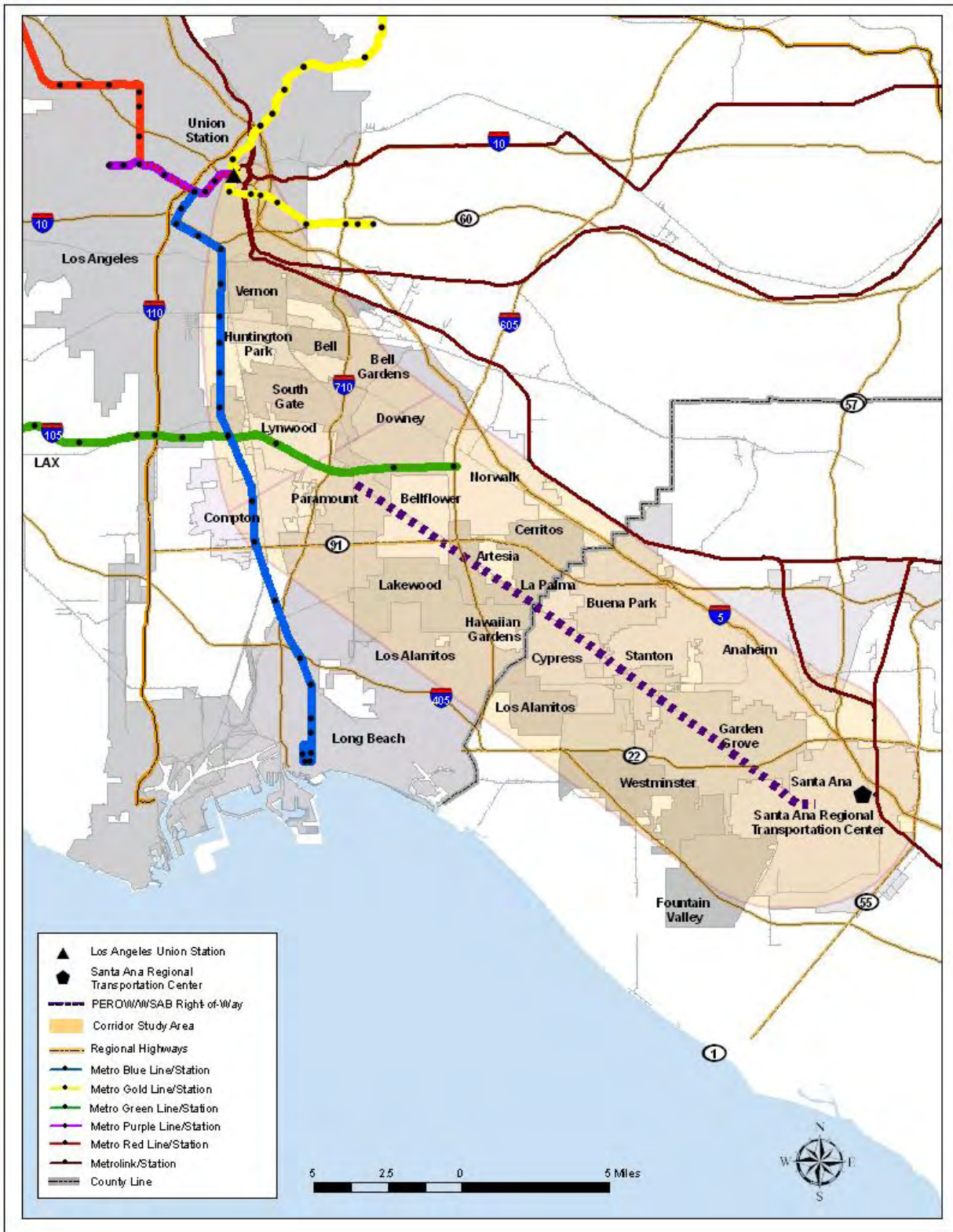


Figure 4.3 Los Angeles County Transit Service

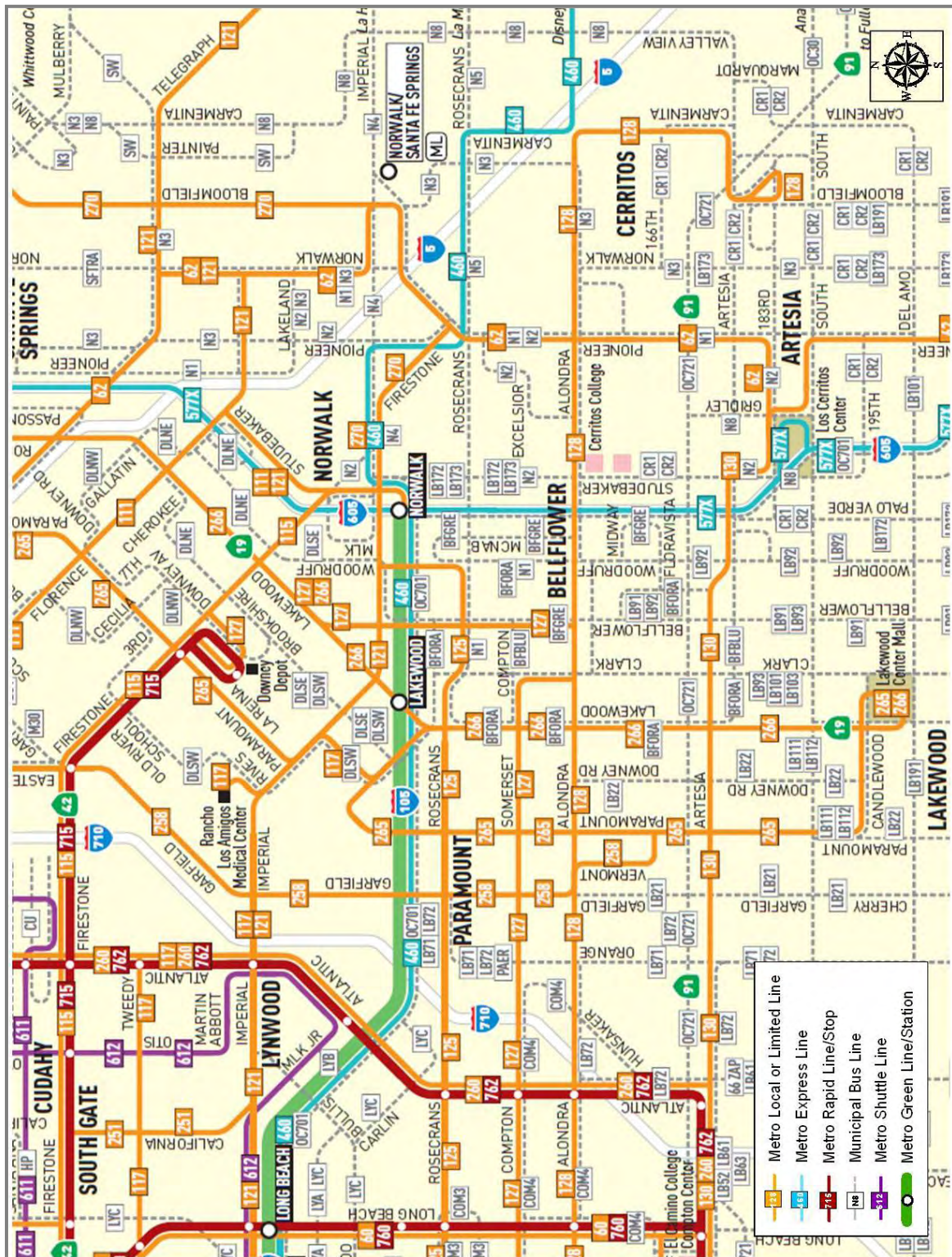


Figure 4.4 Orange County Transit Service

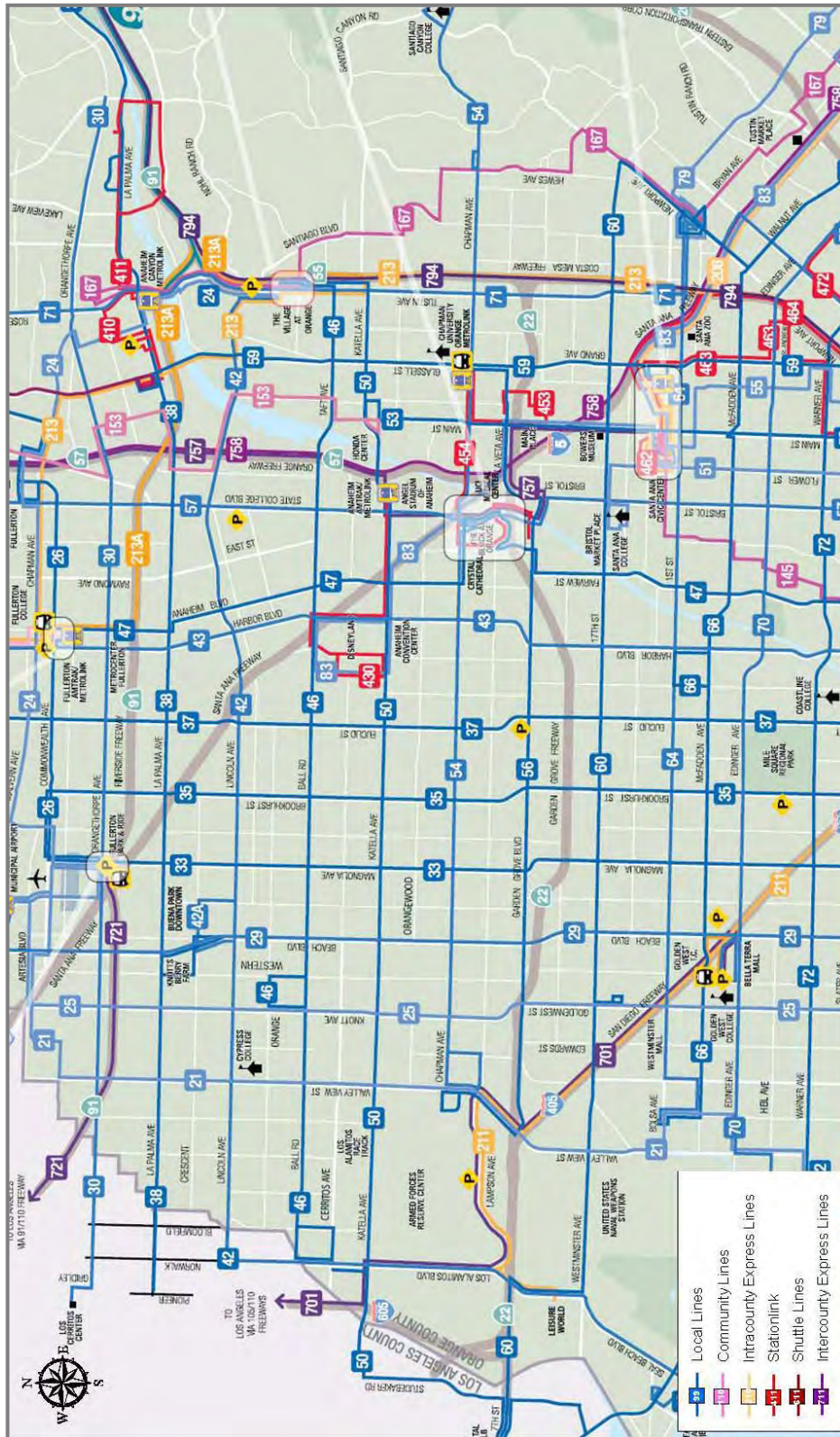


Figure 4.5 Bikeways

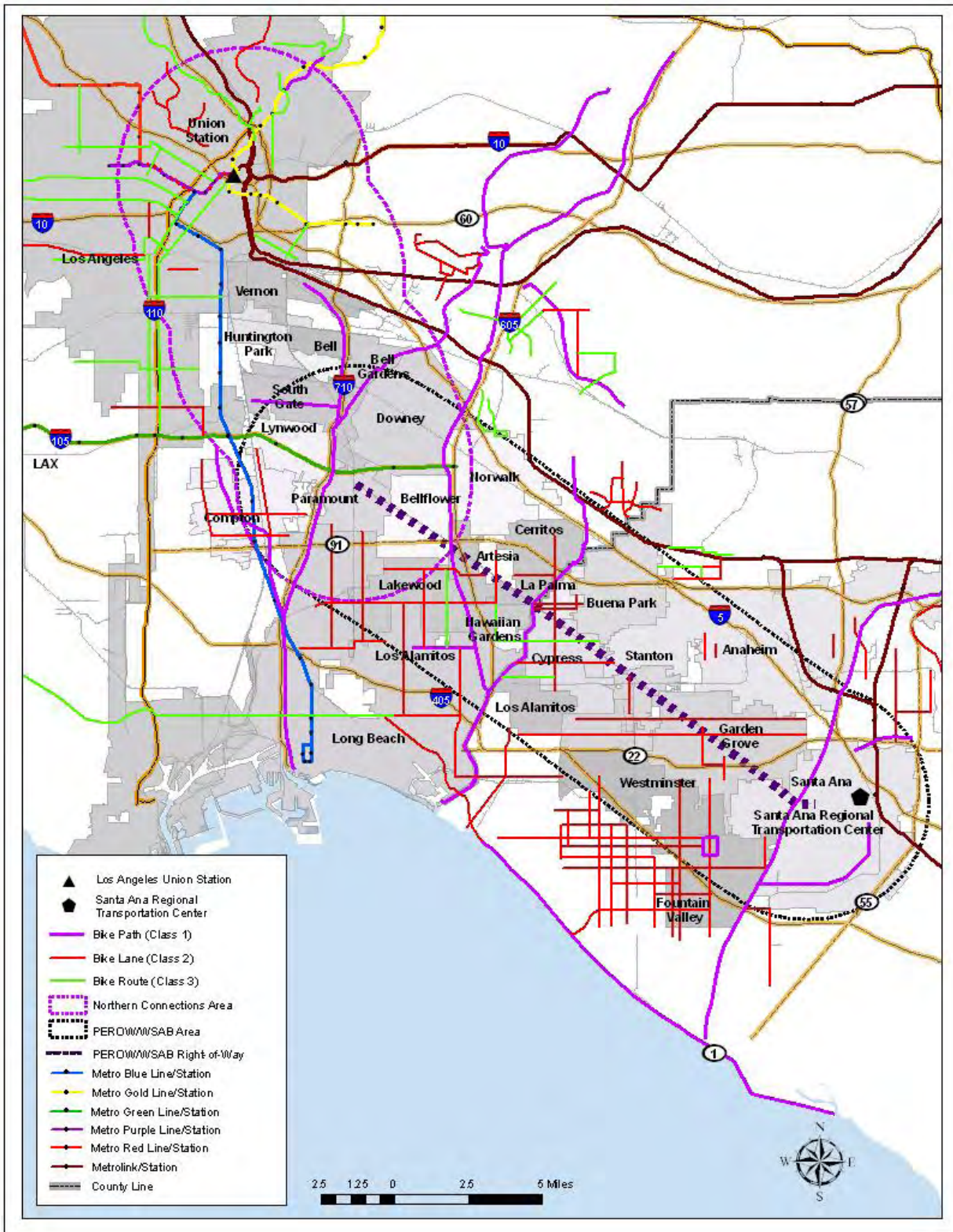


TABLE 4.2 – SUMMARY OF BIKEWAYS WITHIN CORRIDOR STUDY AREA

Bikeway	City	County
Class I Bike Paths		
Los Angeles River	Maywood/Bell/South Gate/Cudahy/Paramount	Los Angeles
San Gabriel River	Los Alamitos/Bellflower/Lakewood/Downey/Norwalk	Los Angeles
Coyote Creek	Cerritos/La Palma/Cypress/Los Alamitos	Los Angeles
Rio Hondo	Downey/Bell Gardens	Los Angeles
Southern Avenue	South Gate	Los Angeles
Carson Street	Los Alamitos	Los Angeles
Class II Bike Paths		
Del Amo Blvd.	Lakewood	Los Angeles
Woodruff Avenue	Lakewood	Los Angeles
Clark Avenue	Lakewood	Los Angeles
South St. /Carmenita Rd.	Cerritos	Los Angeles
Paramount Blvd.	Lakewood/Long Beach	Los Angeles
Orange Avenue	Paramount/Long Beach	Los Angeles
Studebaker Road	Long Beach	Los Angeles
Bellflower Blvd.	Long Beach	Los Angeles
Santa Fe Avenue	Lynwood/Compton	Los Angeles
Alondra Blvd.	Compton	Los Angeles
Martin Luther King Blvd.	Los Angeles	Los Angeles
La Palma Avenue	Cerritos/La Palma/Lakewood	Orange
Crescent Avenue	La Palma/Cypress	Orange
Moody Street	Cypress/La Palma	Orange
Holder Street	Cypress/Buena Park	Orange
Orangewood Avenue	Garden Grove	Orange
Magnolia Street	Garden Grove	Orange
Brookhurst Street	Garden Grove	Orange
Lampson Avenue	Garden Grove	Orange
Trask Avenue	Garden Grove	Orange
Newhope Street	Garden Grove	Orange
Class III Bike Routes		
Centralia Street	Artesia	Los Angeles
Pioneer Blvd.	Artesia	Los Angeles
Palo Verde Avenue	Lakewood	Los Angeles
Rose Street	Bellflower	Los Angeles
Clark Avenue	Long Beach	Los Angeles
Conant Street	Long Beach	Los Angeles
79 th Street	Los Angeles	Los Angeles
76 th Street	Los Angeles	Los Angeles
51 st Street	Los Angeles (Florence Area)	Los Angeles
Orange Avenue	Cypress	Orange

4.3 Future Plans

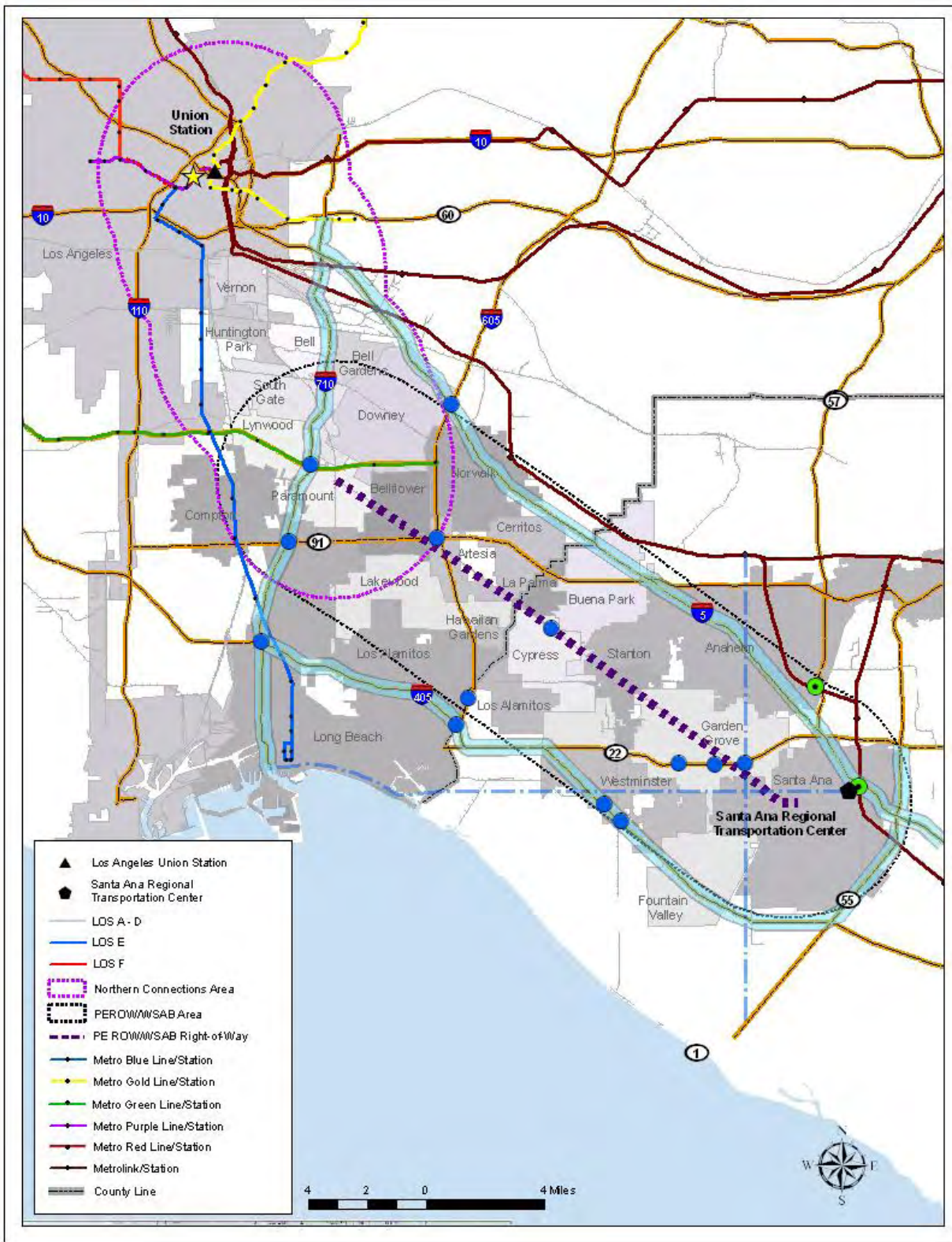
Within the Corridor Study Area, county-level transportation project planning and implementation decisions are developed by the LACMTA and OCTA based on adopted Long Range Transportation Plans (LRTPs), which are then incorporated into the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) prepared by SCAG. The following discussion, and as illustrated in Figure 4.6, provides an overview of the highway and transit planning efforts that may affect Corridor Study Area conditions, plans, and decisions.

4.3.1 Regional Highway System Plans

Currently, there are three major highway studies and projects within or adjacent to the Corridor Study Area that may impact freeway and arterial operations:

- **Interstate 710 South EIR/EIS** – This Los Angeles County freeway runs in a north-south direction through the western portion of the study area connecting the City of Long Beach and the Ports of Long Beach and Los Angeles north to its current terminus in the City of Alhambra in the San Gabriel Valley. This freeway is heavily-utilized serving both vehicular and heavy port-related truck traffic. The I-710 South EIR/EIS is evaluating how to better serve this vital travel route, while reducing congestion and related environmental impacts on the cities along the freeway. The alternatives being considered include the addition of four truck lanes and ten general travel lanes from the ports north to the SR-60 Freeway in the San Gabriel Valley.
- **Interstate 405 Studies and Plans** – This heavily-traveled interstate freeway operates at a north-east-running diagonal parallel to and south of the PEROW/WSAB ROW, and serves Los Angeles and Orange counties. Widening the I-405 between the SR-73 and I-605 has been the subject of several studies undertaken by OCTA and Caltrans. OCTA led a Major Investment Study (MIS) to identify and evaluate proposed improvements to increase capacity, improve interchange operations, and enhance road safety to meet state and federal requirements. In 2005, two alternatives were adopted by the OCTA Board for further study: the No Build option and a Build Alternative of adding two general purpose lanes in each direction. Following completion of the MIS, OCTA and Caltrans prepared a Progress Study Report in 2008, which recommended the two alternatives be carried forward into the environmental phase. Caltrans, in cooperation with OCTA, initiated preparation of an EIR/EIS for this project in 2008. The draft environmental document is planned for completion in late 2011, with the final EIR/EIS slated for delivery in mid-2012, and the Record of Decision/Notice of Determination will be made in late 2012.
- **Interstate 5 Studies and Plans** – This heavily-traveled interstate freeway connects Downtown Los Angeles and the center of Orange County in the study area. Since the passage of Measure M in 1990, Orange County has been widening and improving this freeway from where it is joined by the I-405 Freeway in the southern part of the county north to the Orange/Los Angeles County border. There are currently two construction efforts and one planning study underway:
 1. **Santa Ana Freeway (I-5) Gateway Project** – This project is completing the widening of the remaining two miles of the I-5 Freeway in Orange County between the SR-91 Freeway and the Los Angeles County line. Completion in the fall of 2010, the project included construction of new travel and carpool lanes, construction or reconstruction of overpasses/underpasses at selected locations, and other related improvements.

Figure 4.6 Funded Transportation Improvement



2. ***I-5 Widening and HOV Project*** – This fully funded project is an extension of the Santa Ana Freeway Gateway Project north into Los Angeles County between the Orange/Los Angeles County line and the I-605 Freeway in Los Angeles County. Planned improvements along the 6.7-mile segment include the provision of new travel and carpool lanes, and construction or reconstruction of overpasses/underpasses and interchanges at selected locations. This project is approximately 50 percent designed, and construction is slated to begin in June 2011. Completion of all five segments, including the Carmenita interchange, is targeted for December 2016.
3. ***I-5 Improvements between the I-605 and I-710 Freeways*** – This project is identifying and evaluating alternatives for widening of the I-5 Freeway to provide HOV and mixed-flow lanes. Currently, the study effort is in the environmental clearance phase, and project design and construction costs, and an implementation schedule have not been identified.

4.3.2 Regional and Local Transit System Plans

The AA study process will evaluate possible connections from the PEROW/WSAB ROW north to Union Station in Downtown Los Angeles, and south to the SARTC in Downtown Santa Ana, as shown in Figure 4.7. Connections north may occur along portions of existing railroad tracks that are currently under study for future utilization by the California High-Speed Rail System (CAHST). The CAHST would be an 800-mile system that would travel from Anaheim and Downtown Los Angeles north through the Central Valley to the Bay Area. Subsequent phases of the high speed rail system are planned for a southern extension from Anaheim to San Diego via the Inland Empire. In 2004, the High speed Rail Authority, together with the Federal Railroad Administration, prepared and issued a Draft Program-Level EIR/EIS, which was certified in 2005. Project-level environmental reviews for individual system sections are currently underway. A Preliminary Project EIR/EIS for the Palmdale to Los Angeles sections was released in July 2010. Proposed stations along the Downtown Los Angeles to Anaheim segment include Downtown Los Angeles, Norwalk, Fullerton, and Anaheim.

Currently, both Union Station and the SARTC provide connections to inter- and intra-regional rail service provided by Metrolink and Amtrak. A portion of the project resulting from this AA study may utilize a portion of the railroad tracks currently utilized by Metrolink and Amtrak service. Service improvement studies for these rail services include:

- **California Passenger Rail System 20-Year Improvement Plan** (2001), which provides a comprehensive blueprint for improving service on the system's existing rail corridors, including the Pacific Surfliner Amtrak service that operates along the rail corridor, shared with Metrolink, to the north of the study area.
- **LOSSAN Strategic Plans** developed for the Los Angeles-San Diego-San Louis Obispo (LOSSAN) rail corridor include a ***South Strategic Business Plan*** (2003), and a ***North Strategic Business Plan*** (2007). These plans establish a program of projects for long-term improvements to the rail corridor used by Amtrak, Metrolink, and freight and goods movement.

Orange County efforts are currently evaluating transportation improvements in two studies:

- **Santa Ana-Garden Grove Fixed Guideway Corridor Study** – The City of Santa Ana is developing an AA/EIR/EIS to evaluate the feasibility of expanded transit service between the SARTC, the Lacy Neighborhood, Downtown Santa Ana, and the Civic Center area. Potential future expansion of the resulting system would utilize the Orange County portion of the PEROW/WSAB ROW to provide a proposed fixed guideway system north to Harbor Boulevard in the City of Garden Grove.
- **Central County Corridor Major Investment Study** – OCTA has completed an assessment of transportation improvements to address travel demand and identify transportation improvements in central Orange County. The study area is bounded by Ball Road on the north, Pacific Coast Highway on the south, Beach Boulevard on the west, and the SR-55/Costa Mesa Freeway on the east. Completed in 2010, the resulting recommendations will guide transit, arterial, and freeway improvements in Central Orange County. Projects identified for further study that utilize the PE ROW included the provision of streetcar or BRT service, and the addition of a new arterial connection from the SR-22 near Fairview Street to the Santa Ana Civic Center area.

4.4 Funded Projects

Currently funded projects in the Corridor Study Area have been identified from transportation tax measure programs approved by Los Angeles and Orange county voters, adopted Long Range Transportation Plans (LRTPs) developed by LACMTA and OCTA, and the RTP and RTIP prepared by SCAG. Funded projects within the Corridor Study Area are illustrated in Figure 4.6.

SCAG is the metropolitan planning organization for the six-county area which includes Los Angeles and Orange counties. As required under state and federal law, SCAG prepares a long-range (20-year) RTP and the associated RTIP, which is the regional short-term capital listing of all transportation projects in the region proposed over the six-year period that implements the RTP. The adopted 2008 RTP presents a transportation vision for the region through the year 2035, and incorporates approved transportation programs and projects with committed, available, or reasonably available revenue resources. Table 4.3 presents the major RTIP highway and transit projects located within the Corridor Study Area.

Figure 4.7 Corridor Study Area in 2035

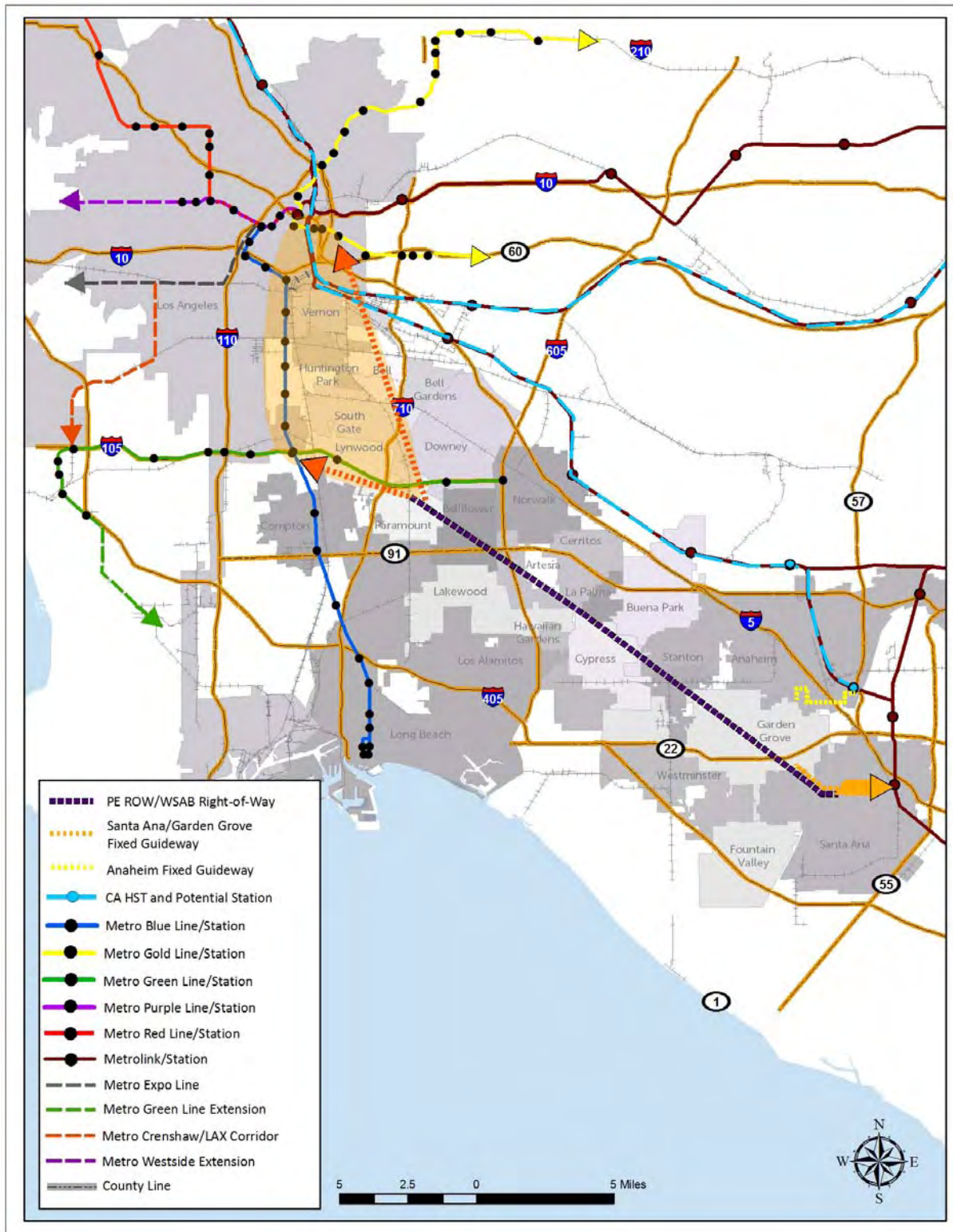


TABLE 4.3 – RTP TRANSPORTATION IMPROVEMENTS WITHIN CORRIDOR STUDY AREA

Project Name	Project Description/Limits
Highway Improvements	
I-5	Orange County Line to I-605 – construct HOV and mixed-flow lanes
	Carmenita Interchange – improve interchange
	I-605 to I-710 – Study widening of freeway to provide HOV and mixed-flow lanes
	Route 19 (Beach Blvd) to I-710 – add one lane in each direction
	SR-55 to SR-57 – add one HOV lane and one mixed flow lane in each direction
	SR-55 – reconfigure interchange
I-405	Beach Boulevard – provide Interchange improvements
	SR-73 to Los Angeles County Line – construct one all-purpose lane in each direction and provide other improvements
	Provide HOV connectors – to/from I-405/I-605, to/from I-405/SR-22, and on I-405 between I-605 and SR-22
	Bolsa Avenue – widen bridge from four to six lanes
I-605	Katella On Ramp – improve interchange
I-710	As part of I-710 Corridor Program (widening to provide 4 truck lanes and 10 general lanes) – provide interchange improvements at I-405, SR-91, and I-105
	Magnolia – replace interchanges, construct HOV lanes, and lengthen bridges
SR-55	I-405 to SR-22 – add one mixed flow lane in each direction and fix chokepoints
SR-91	SR-57 to I-5 – tie existing auxiliary lanes together to form a fourth mixed flow lane
Arterial Improvements	
Los Angeles County	\$1.5 billion
Orange County	\$2.0 billion
Transit Projects	
Regional Connector	Downtown Los Angeles LRT connection between Union Station and 7 th /Metro Center
Long Beach Transit	Increase service frequency on bus routes connecting Long Beach and Orange County
TDM	
WSAB Right-of-way	Construct Class 1 Bikeway

As the state-designated transportation planning and programming agency for Los Angeles County, the LACMTA develops a long-range vision for the county’s transportation system that reflects both regional needs and local concerns. Adopted by the LACMTA Board in October 2009, the 2009 LRTP serves as the primary transportation planning tool to guide future transportation investments through 2040. The 2009 LRTP incorporates projects included in the Measure R transportation sales tax program approved by voters in November 2008. The resulting LRTP is a financially constrained plan that incorporates projects that can be implemented based on the financial forecast of future revenue assumptions, as presented below in Table 4.4.

TABLE 4.4 – LACMTA LRTP PROJECTS WITHIN CORRIDOR STUDY AREA

Project Name	Project Description/Limits
Highway Improvements	
I-5	I-605 to Orange County Line – construct one carpool and one mixed-flow lane in each direction
	Carmenita Road Interchange – construct new ten lane bridge with six through lanes and two left turn pockets in each direction
	I-605 to SR-60 – Add 1 HOV lane in each direction
	I-5/I-605 – add partial HOV connector
I-605	“Hot Spot” Interchanges – improve interchanges, such as at the SR-60, I-5, SR-91, and I-405 Interchanges
	I-605/SR-91 – provide HOV connector
	I-605/I-105 – provide HOV connector
I-710	Ports of Long Beach and Los Angeles/SR-60 – provide 10 general purpose lanes and four truck lanes
	Atlantic/Bandini – provide interchange improvements
I-710 South and/or Early Action Projects	Upgrade freeway and improve truck and traffic flows between Ports of Long Beach and Los Angeles and SR-60 Freeway, improve arterials
Burlington Northern Santa Fe Grade Separations	Gateway Cities – construct rail and roadway grade separations at five locations
SR-91	Reconfigure Lakewood Boulevard Interchange
Transit Projects	
Regional Connector	LRT project linking Union Station and 7 th /Metro Center Station
West Santa Ana Branch Corridor	Phase I grade-separated transit project from Los Angeles County Line toward Downtown Los Angeles

The OCTA is the state-designated transportation planning and programming agency for Orange County. During development of the 2006 LRTP, alternative plans were developed reflecting varying levels of transportation investment. A set of investment alternatives were developed and evaluated in the LRTP process, including a Constrained Alternative based on the Measure M half-cent transportation sales tax not being renewed past its 2011 sunset; and a Balanced Plan reflecting voter-approval of a 30-year extension of Measure M. In November 2006, Orange County voters approved the 30-year extension of

Measure M, which will provide \$11.6 billion for future transportation programs. Table 4.5 presents the projects included in the Measure M2 Program and the Balanced Plan of the 2006 LRTP.

TABLE 4.5 – OCTA LRTP AND MEASURE M2 PROJECTS WITHIN CORRIDOR STUDY AREA

Project Name	Project Description/Limits
Highway Improvements	
I-5	SR-55 to SR-57 – improvements
	Local interchange improvements
	Rte 19 (Beach Blvd) to I-710 – add one lane in each direction
	SR-55 to SR-57 – add one HOV lane and one mixed flow lane in each direction
	I-5/SR-55 – reconfigure interchange
I-405	I-605 to SR-73 – construct one all-purpose travel lane in each direction plus additional improvements
	Provide HOV connectors – to/from I-405/I-605, to/from I-405/SR-22, and on I-405 between I-605 and SR-22
	Beach Boulevard – provide Interchange improvements
	Bolsa Avenue – widen bridge from four to six lanes
I-605	Los Alamitos – provide freeway access improvements
	I-605/Katella – improve interchange
SR-22	Magnolia Street – replace interchanges, construct HOV lanes, and lengthen bridges
	Interchange improvements at Brookhurst St, Euclid Street, Harbor Boulevard
SR-55	I-405 to SR-22 – add one mixed flow lane in each direction
	SR-22 to I-405 – construct additional travel lanes
SR-57	I-5 to SR-57 – provide additional travel lanes and on/off ramp improvements
Transit	
Metrolink	Improve service including increased frequency, upgraded stations, and new parking facilities
Metrolink Community Service	Provide improved connections to Metrolink stations from the surrounding communities
Metrolink Stations	Convert key Metrolink stations, including SARTC into Regional Gateways, to better connect with the future high speed rail system
Bus Service	Provide improved passenger service and amenities

5.0 TRANSPORTATION SYSTEM PERFORMANCE

The ability to move quickly and efficiently in the Corridor Study Area can be expressed in terms of freeway and arterial congestion, along with transportation system accessibility and choice. At first glance, the Corridor Study Area appears to be well-served from a transportation perspective with seven freeways within or adjacent to the study area, an extensive arterial street system throughout the study area, bus transit service provided by five operators, and city-based shuttle services operated by six cities. But this densely populated Corridor faces significant transportation challenges. Currently, a majority of the study area's freeway and arterial system experiences significant congestion and operates near or at-capacity during both peak periods. Even with the planned major highway system improvements, by 2035 study area travelers are forecast to experience continuing and worsening freeway and arterial congestion.

Now and in the future, Corridor Study Area residents will have limited travel options – automobile or bus transit – both using the same congested highway system. Minor investments are planned for the area's bus transit service, which may improve mobility, but only in limited portions of the study area. One connection to the Los Angeles County rail system exists through the east-west running Metro Green Line. This LRT line operates in the northern portion of the study area, but does not serve the Corridor's primarily north-south travel patterns. Inter- and intra-regional Metrolink and Amtrak rail service is available only at the northernmost and southernmost points of the study area. With the forecast population and employment growth, the lack of investment in the area's transit infrastructure limits mobility and transportation choices, and will adversely impact future Corridor travel and economic vitality.

5.1 Highway System Performance

The Los Angeles-Santa Ana metropolitan area contains the most congested roadways in the country according to the Texas Transportation Institute's *2009 Urban Mobility Report*. Freeways and arterials within the Corridor Study Area are no exception to the region's prevailing congested conditions, and often top the list of the region's most congested facilities. For example, the I-5 and I-405 freeways experience high traffic volumes not only during peak commute periods, but throughout the day, as they provide access to many local and regional destinations for residents, employees, and visitors.

Today, the freeways within the Corridor Study Area experience constrained operating conditions during both peak periods. In 2035, these congested conditions are forecast to continue and increase in severity. Six of the study area's seven freeways are projected to operate at level of service (LOS) E or F along 80 to 100 percent of study area's lane-miles during the evening peak period, and five of the seven freeways will have constrained operations during the morning peak period. Currently, major arterials throughout the Corridor Study Area experience high peak traffic volumes resulting in significant congestion during both peak periods. With the forecast increase in population and employment, arterial congestion is projected to increase to 90 to 100 percent of capacity on key routes, and many arterials are projected to drop to LOS F operating conditions by 2035.

Freeways

The ability of the Corridor Study Area's freeway system to serve current and future travel demand is significantly limited by congestion. Currently, a majority of the study area's freeways have large

segments that operate at- or beyond capacity, and freeway operations are forecast to significantly worsen in the future. Two measures of freeway system performance have been utilized to identify current and future freeway operations within the Corridor Study Area. The first analytical measure used was the LACMTA Travel Demand Model to assess current and future freeway levels of service, and the second utilized Freeway Performance Measurement Systems (PeMS) data developed by the California Department of Transportation (Caltrans).

Level of Service (LOS) estimates are used to assess the performance of the study area’s freeway and roadway system, where LOS is defined as the roadway’s volume compared with its carrying capacity as shown in Table 5.1. Roadways at LOS E are nearing or are at-capacity, while LOS F indicates a facility operating beyond-capacity.

TABLE 5.1 – LEVEL OF SERVICE DEFINITION

Level of Service (LOS)	Volume/Capacity	Description of Traffic Flow
A	0.000 – 0.600	Free flow travel
B	0.601 – 0.700	Free flow travel with periodic slowing
C	0.701 – 0.800	Start of congestion
D	0.801 – 0.900	Traffic volumes approaching capacity
E	0.901 – 1.000	System near- or at-capacity resulting in unstable flow
F	> 1.000	System beyond capacity with stop-and-go traffic congestion and significant delay

Table 5.2 below presents an overview of the Corridor Study Area freeways operating at a LOS of E and/or F based on 2006 and 2035 information obtained from the LACMTA model as illustrated in Figures 5.1 and 5.2. Study area freeways operating totally at LOS F are indicated in bold. The percentage shown represents the length of each freeway within the study area operating near, at- or beyond-capacity.

In 2006, all of the Corridor Study Area freeways were identified as experiencing LOS E and/or F service along a portion of their alignments during the morning peak period (7:00-9:00 AM) and evening peak period (4:00-6:00 PM), except for the I-710 Freeway. During the morning peak period, the highest levels of congestion were experienced in both directions on the I-405 Freeway, and westbound on the I-105 and SR-91 freeways. In the evening, the I-405 Freeway operated with significant congestion in both directions, as did the I-605 and SR-91 freeways. The eastbound I-105 had significant delay in the evening peak period as LAX/El Segundo area employees returned home.

In 2035, all of the study area’s freeways are forecast to experience a significant increase in congestion, along with related growth in delays and travel times. During the morning peak period, all of the freeways are projected to operate at LOS E and/or F along 75 percent or more of their study area length, except for the eastbound I-105 and the I-710 (with 14 planned travel lanes). Evening congestion is forecast to be significantly more severe, with all of the study area freeways operating at LOS E and/or F along 80 percent or more of their routes, again except for the I-710.

Figure 5.1 Freeways LOS in 2006



Figure 5.2 Freeways LOS in 2035

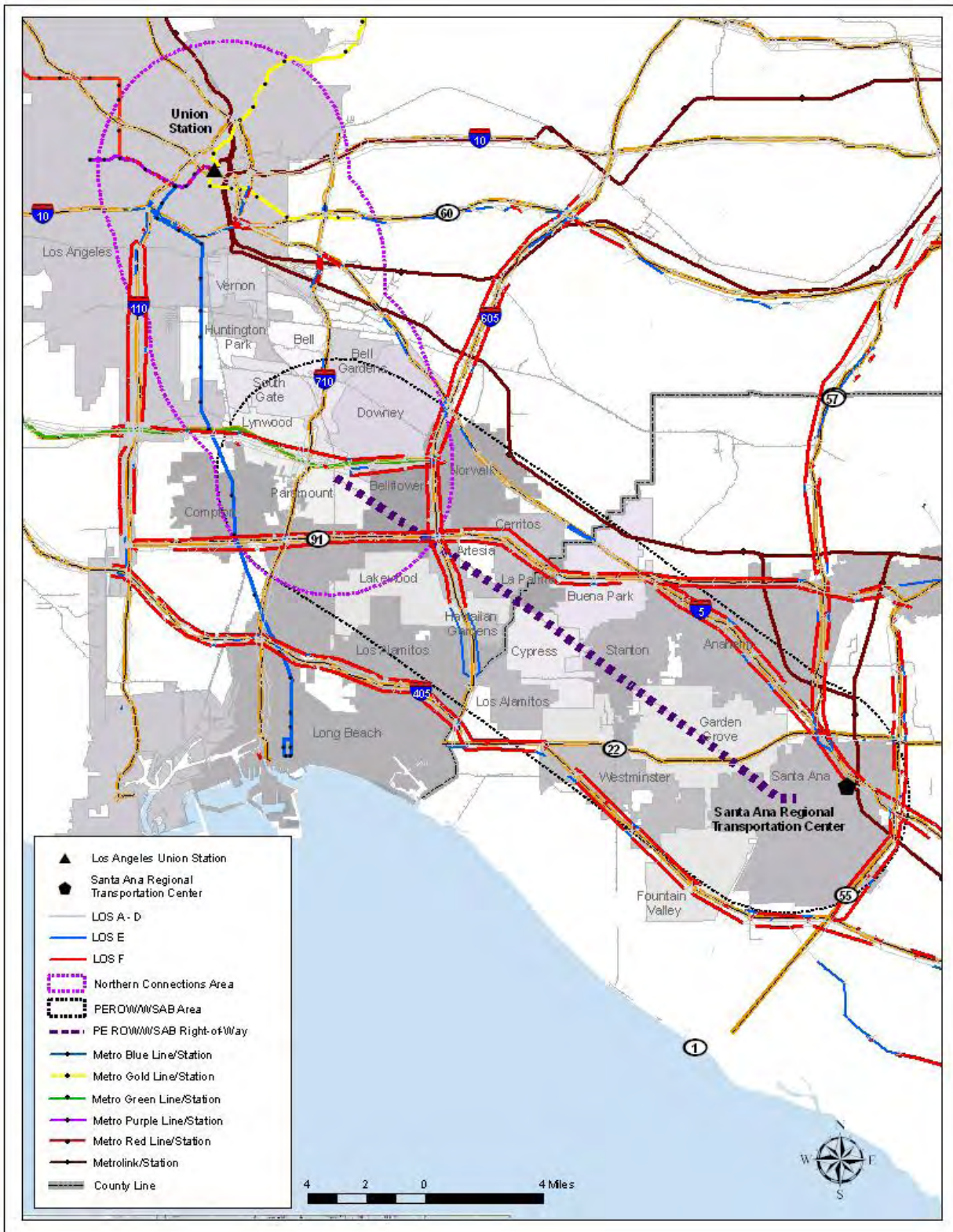


TABLE 5.2 – CORRIDOR STUDY AREA FREEWAYS WITH LEVEL OF SERVICE E AND/OR F

Freeways		AM Peak Period		PM Peak Period	
		2006	2035	2006	2035
I-5	NB	45-50 %	95-100 %	45-50 %	95-100 %
	SB	40-45 %	90-95 %	40-45 %	95-100 %
I-405	NB	90 %	90-95 %	90 %	90-95 %
	SB	90 %	95-100 %	90 %	95-100 %
I-710	NB	5 %	5-10 %	--	5-10 %
	SB	--	10-15 %	5 %	10-15 %
I-605	NB	75 %	80-85 %	80-85 %	80-85 %
	SB	50-55 %	80-85 %	80-85 %	80-85 %
I-105	EB	40-45 %	65-70 %	90-95 %	95-100 %
	WB	90 %	95-100 %	50-55 %	95-100 %
SR-22	EB	15-20 %	75-80 %	15-20 %	85-90 %
	WB	15-20 %	75-80 %	15-20 %	85-90 %
SR-91	EB	50-55 %	85-90 %	90 %	85-90 %
	WB	90 %	90-95 %	80-85 %	90-95 %

Source: LACMTA, 2006. **Bold** numbers indicates LOS F only.

The following provides a Corridor Study Area freeway-specific discussion of current and forecast operations:

- **I-5 Freeway** – In 2006, the I-5 freeway experienced LOS E or F operations along 40 to 50 percent of its length during both the AM and PM peak periods. In 2035, freeway segments with congestion will double, with 90 to 100 percent of the I-5 within the study area experiencing LOS E and/or F operations. In the morning, northbound travelers into Downtown Los Angeles will drive in LOS F conditions along 95 to 100 percent of the study area freeway route, and again as they return home.
- **I-405 Freeway** – Currently, during both the AM and PM peak periods, the I-405 experiences LOS F service in both the northbound and southbound directions along 90 percent of its study area length. In 2035, with the completion of planned capacity improvements, auto travel is forecast to improve to LOS E and/or F in both directions during both peak time periods.
- **I-710 Freeway** – During both the AM and PM peak periods, the LACMTA model shows that the I-710 currently operates at LOS D or better, with the exception of one segment between Firestone Boulevard and Florence Avenue. This is contrary to field observations and the Caltrans information presented below that identifies that 15 to 20 percent of northbound vehicles experience LOS E or F during the morning peak period, and 45 percent of the southbound vehicles experience the same constrained level of service in the evening peak. In 2035, even with the planned capacity improvements providing a total of 14 lanes, travelers are forecast to experience LOS E and/or F service along 5 to 15 percent of the I-710.
- **I-605 Freeway** – During the 2006 AM peak period, this freeway experienced a combination of LOS E and F operations along 75 percent of its northbound alignment, while 50-55 percent of the southbound travel experienced a significant delay with LOS F conditions. Operations will significantly worsen in 2035, with 80 to 85 percent of the freeway’s route within the study area experiencing LOS E and/or F operations in the northbound direction in the morning, and LOS F

operations along 80 to 85 percent of its study area length in the morning southbound direction, and LOS F operations in both directions during evening travel.

- **I-105 Freeway** – In 2006, travel on the I-105 Freeway was primarily constrained in the westbound direction in the morning, and in the eastbound direction in the evening. By 2035, congestion will have increased with this freeway forecast to experience LOS E and/or F operations along 95 to 100 percent of the study area alignment in both directions in the evening peak period, and in the westbound direction in the morning peak period.
- **SR-22 Freeway** – In 2006, the SR-22 operated at LOS F along 15 to 20 percent of its study area length in the morning peak period, and experienced LOS E and/or F conditions along the same 15 to 20 percent of the alignment during the evening. In 2035, congestion will increase significantly with 75 to 90 percent of the study area freeway alignment operating at LOS E and/or F during both peak periods.
- **SR-91 Freeway** – In 2006, the SR-91 experienced a significant level of congestion and delay. During the morning peak period, it had LOS E and/or F operations along 90 percent of its length in the westbound direction. In the evening, the SR-91 operated at LOS F along 90 percent of the eastbound alignment, and LOS E and/or F along 80 to 85 percent of its westbound length. In 2035, this freeway is forecast to operate at LOS F for 85 to 95 percent of its study area length in both peak periods and in both directions.

The 2010 LOS operational information identified from the Caltrans PeMS data is presented below in Table 5.3. This analysis provides an updated look at Corridor Study Area freeway operations compared to the 2006 information presented above. It should be noted that the Caltrans analysis is based on vehicles experiencing LOS E or F service, compared to the LACMTA information which presents the physical percentage of the freeway route experiencing congestion.

TABLE 5.3 – CORRIDOR STUDY AREA FREEWAYS WITH LOS E AND/OR F (2010)

Freeways		AM Peak Period	PM Peak Period
I-5	NB	40-45 %	35-45 %
	SB	35-40 %	45-50 %
I-405	NB	20-25 %	45-55 %
	SB	25-30 %	20-30 %
I-710	NB	15-20 %	5 %
	SB	5 %	45 %
I-605	NB	20-25 %	15-20 %
	SB	5 %	10-15 %
I-105	EB	10 %	40 %
	WB	60-70 %	25 %
SR-22	EB	15-20 %	10-20 %
	WB	5-10 %	20-30 %
SR-91	EB	10 %	50-60 %
	WB	50-55 %	20 %

Source: Caltrans

Based on the Caltrans information, all of the Corridor Study Area's freeways are shown to operate with improved conditions over the 2006 conditions. This may be primarily reflective of the economic downturn and its corresponding impact on employment and peak period travel. It should be noted that the resulting information is representative of operating conditions during peak hours on incident-free days. An incident-free day is defined as one on which operating conditions are not influenced by incidents such as accidents, disabled vehicles, or lane closures. Caltrans estimates that incident-free days occur approximately 50 percent of the time, and as such represent a best-case scenario.

The following changes may be noted when comparing the 2010 data to the 2006 information:

- **I-5 Freeway** – there is a minor (approximately five percent) decrease in congestion, and the elimination of LOS F operations.
- **I-405 Freeway** – the Caltrans information shows a more than 50 percent reduction in vehicles experiencing congestion.
- **I-710 Freeway** – there is a 5 to 40 percent increase in congestion when compared to the 2006 information.
- **I-605 Freeway** – the 2010 information shows a 25 to 50 percent reduction in congestion.
- **I-105 Freeway** – there is a 25 to 50 percent reduction in congestion.
- **SR-22 Freeway** – shows a similar percentage of congestion as the 2006 information, but indicates operations are now at a combination of LOS E and F, with no LOS F-only operations.
- **SR-91 Freeway** – the 2010 information identifies a 20 to 50 percent reduction in congestion, and indicates all operations are currently a combination of LOS E and F, with no LOS F-only operations.

Arterial Street System

Local streets and roads account for over 80 percent of the total road network in the study area, and carry a high percentage of total traffic. In many cases, arterials serve as freeway access routes and conversely as alternative parallel routes to congested freeway corridors. The Corridor Study Area's arterial street system covers portions of 21 cities, all with their own standards and plans, but with similar current and future challenges.

The LACMTA model was used to assess the existing and projected operating conditions on the arterial system in the Corridor Study Area. As shown in Figure 5.3, in most locations, the arterials immediately adjacent to the area's freeways, and offering access to and from the freeways, are the most congested. The initial analysis shows that a number of arterial routes providing freeway access are currently operating at LOS E or F, and that the resulting congestion extends from the freeways for several blocks in the morning, and one to two miles in the evening. Within the Corridor Study Area, the freeways creating a majority of the arterial impacts are the I-5, SR-22, I-710, and I-605. In addition, much of the significant arterial congestion is focused in the high-density office areas of Downtown Los Angeles, and the cities of Anaheim, Santa Ana, and Orange in Central Orange County.

In 2035, total miles traveled on the study area's arterial roadway network are expected to increase significantly, and arterial performance will be severely impacted throughout the Corridor Study Area. As shown in Figure 5.4, there will be a corresponding increase in the number of arterial segments operating

Figure 5.3 Roadways LOS in 2006

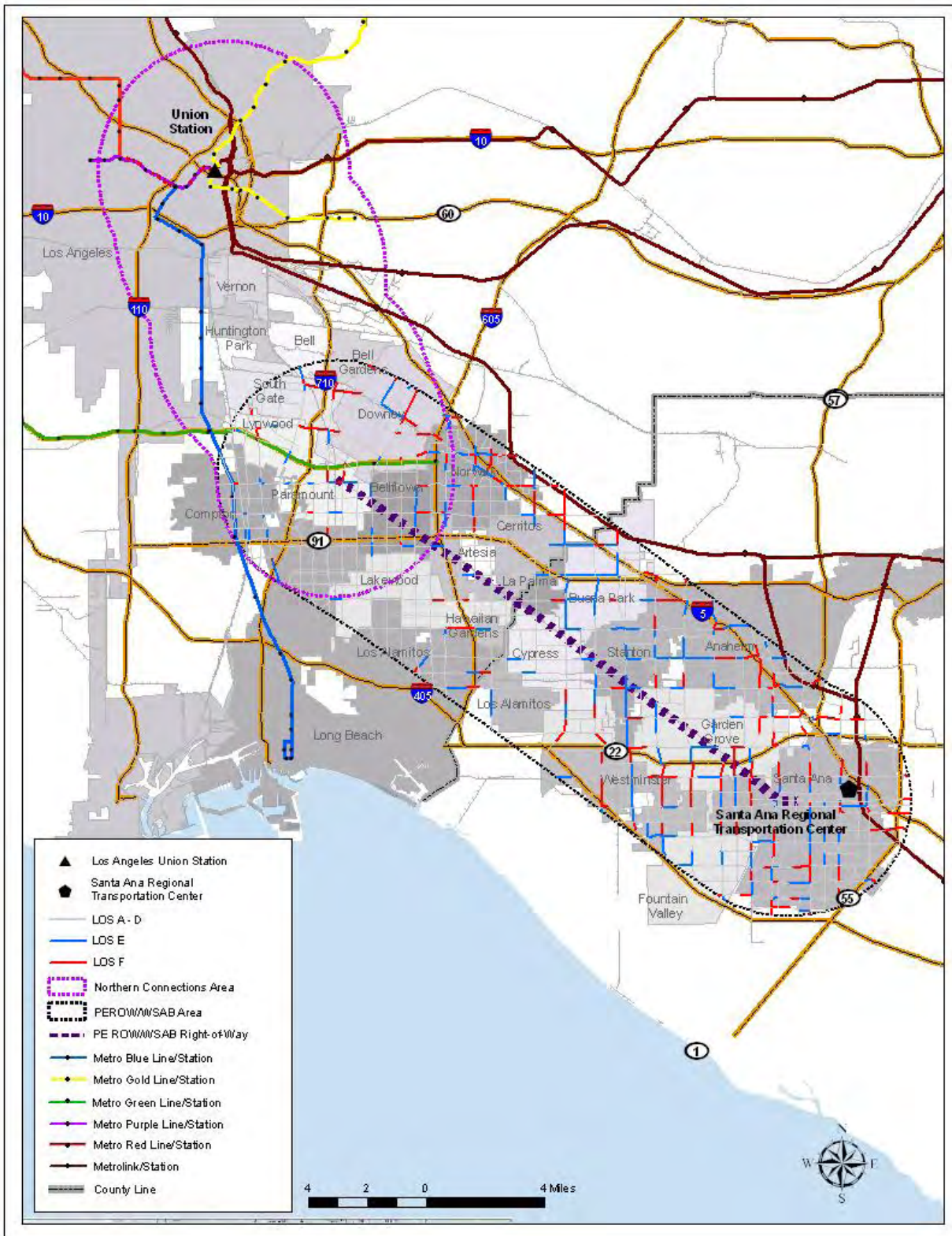
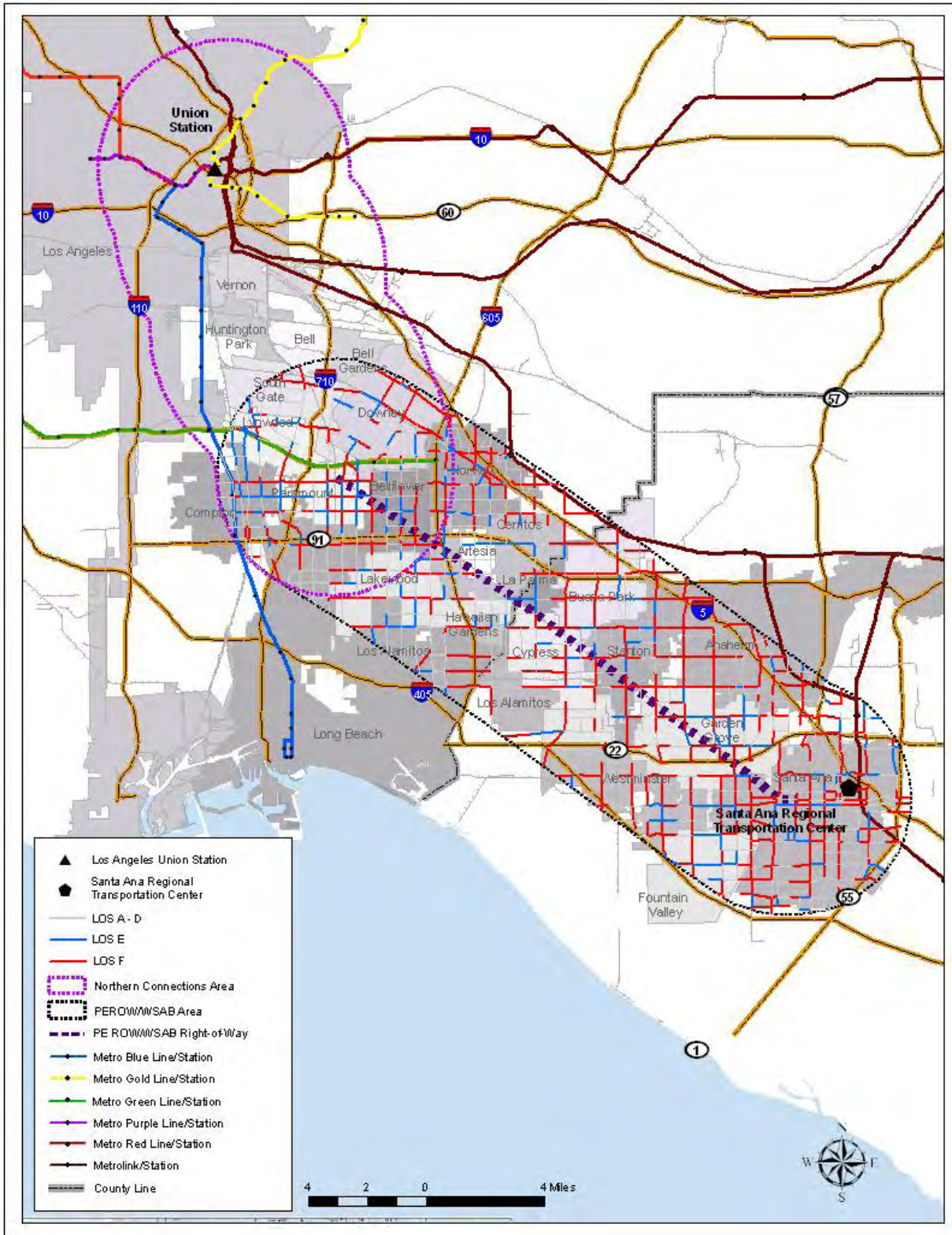


Figure 5.4 Roadways LOS in 2035



at LOS E and F during both the morning and evening peak periods. As in 2006, more arterial segments will operate at LOS E or F during the evening peak period than the morning peak period.

During the morning peak period, arterial congestion will remain highest on streets providing access to and from the area's freeways, but the congestion will expand in length and severity. In some cases, arterial congestion from one freeway will start to impact the arterial street congestion resulting from another freeway. For example, congestion on the north-south streets between the SR-22 and I-405 freeways is projected to be almost continuous, and will begin to impact cross-streets. During the morning peak period, approximately 25 percent of the area's streets are forecast to operate at LOS E or F. Evening peak period projections show that more than 60 percent of the study area's arterial network operating at LOS E and F. A majority of the area's arterials will be operating at LOS F, or beyond capacity with stop-and-go traffic and significant travel delay.

The current levels of congestion and the forecast significant increase indicate the need for additional capacity either through highway improvements, or the provision of alternative travel options. In mature urban areas, there is often little right-of-way available for capacity enhancements, and operational and technological improvements are used to maximize system performance. Arterial improvement strategies include: physical solutions such as spot widening and restriping to add dedicated queuing space; and efficiency tools to improve traffic flow, such as signal timing adjustments, signal synchronization, and Intelligent Transportation Systems (ITS) that allow traffic engineers to monitor traffic flow and adjust signals in real time to resolve increasing congestion resulting from heavy traffic, special events, and/or accidents. While there are many arterial improvement projects in Los Angeles and Orange counties currently in the planning, design and construction phases, these projects are forecast to not create long-lasting mobility benefits, and will not substantially address the Corridor Study Area's transportation needs on their own. The forecast increase in freeway and arterial system congestion, with most systems operating beyond-capacity, clearly demonstrate the increasing need for an alternative travel modal option.

5.2 Regional and Local Transit System

Today, the Los Angeles-Santa Ana metropolitan area is ranked number one in the nation for the travel delay experienced on our streets and highways by the Texas Transportation Institute (TTI). In 2007, 86 percent of the metropolitan area's peak period travel was on the congested highway system, and 143 new freeway lane-miles were identified as being required in the future to maintain that poor level of service. As identified by TTI, the resulting annual travel time delay translates into 70 hours per person, or an annual metropolitan area cost of more than \$10.6 billion, clearly demonstrating the need to provide other modal options to improve mobility.

Within the Corridor Study Area, bus transit service is provided by five operators and city-based shuttle service is offered by six cities. The Metro Green Line is located in the Los Angeles County portion of the study area, but its east-west operations do not serve Corridor travel patterns, destinations, and activity centers. There are no transit infrastructure improvements planned in the Corridor beyond minor bus service increases, which may improve mobility, but only in limited portions of the study area, and will not address the Corridor's growing and unmet travel needs. With the forecast growth in population, employment, and related increase in daily trips, and the demonstrated high level of low income and transit dependent households, and without future transportation system improvements, Corridor Study

Area residents will be negatively impacted in the following ways:

- Limited modal choices;
- Constrained bus service;
- Lack of cross-county line transit service coordination;
- Lack of connections to the regional transportation system; and
- Continued poor linkages to and from Corridor destinations and activity centers.

Development of an effective multi-modal transportation network within the Corridor Study Area is essential to meet the future mobility needs of residents and businesses by providing vital intra- and inter-corridor linkages and services.

Limited Modal Choices

The ability to move quickly and efficiently within the Corridor Study Area can be expressed in terms of transportation system choice. Currently, Corridor travelers have a limited choice in travel options – automobile or bus transit – both of which operate on the increasingly congested street and freeway system. Future Corridor transportation improvements will need to reflect a multi-modal strategy providing travelers with a more complete set of transportation alternatives. Implementing a new high-capacity transit system would provide all residents, not just the transit dependent, with viable options when making travel decisions.

Constrained Bus Service

The study area's only currently available transit service – bus transit – is constrained in effectiveness and patron convenience by traffic congestion and other factors. Today, there is a good level of bus transit service coverage with almost every major, and many secondary, arterials serviced by at least one route. Five bus operators offer a combination of local, limited-stop, rapid, and freeway-express bus operations. Even with this level of service coverage, the provision of bus transit service cannot meet all of the Corridor's transit needs. Current bus transit service has the following constraints:

- Service is not commensurate with the study area's travel needs;
- Operational challenges exist due to the utilization of the congested arterial and freeway system; and
- Demonstrated inability to attract and retain the choice rider.

Existing operational issues make bus usage by transit dependent riders frequently difficult, and make utilization daunting to non-transit dependent residents or choice riders. The level of service provided, as well as the lack of coordination of service parameters among the transit operators, such as different service hours and fare structure, lack of schedule coordination, and the inability to easily transfer between service providers, is not always commensurate with the area's transit dependent residents' needs, nor welcoming to the choice rider.

In addition, bus and shuttle transit operates along the same congested arterial and freeway network as automobiles resulting in slowing service and travel time delays for riders, penalizing transit dependent

riders and discouraging choice riders. From an operator's perspective, providing service in congested conditions has negative impacts on schedule adherence and the coordination of scheduled transfer points to allow for riders to easily make their connections. Bus service in congested conditions also results in higher operational costs due to the need for additional buses and drivers in an attempt to maintain the service schedule. The ability to attract and retain choice riders on transit depends on a variety of factors including improved travel time and reliability, perception of safety and cleanliness, and seamless interfaces with other transportation services.

Lack of Cross-County Line Transit Service Coordination

The Corridor Study Area covers two counties with multiple bus and shuttle service providers. Currently, bus transit service planning and operations are not seamlessly planned and coordinated, but rather tend to be planned and operated in a manner oriented to each county. Cross-county service is limited with the LACMTA providing one line connecting Downtown Los Angeles to the Disneyland/Anaheim area, and OCTA operating two lines connecting Orange County commuters to Downtown Los Angeles, one line serving the VA Hospital in the Long Beach area, and one line connecting to the Los Cerritos Center in Cerritos. Long Beach Transit provides service between Orange County and Long Beach destinations including Long Beach City College and the VA Hospital. The resulting service is often fragmented and does not provide cross-county travelers with connecting service, resulting in gaps in the study area's transit network. And while cross-county line bus service is provided, each agency's primary focus is within its own boundaries. These factors often result in poor connections between the counties and underserved "dead" spots along both sides of the county line, reflecting a lack of recognition and support for cross-county line travel. In addition, the bus routes that currently serve these cross-county markets are slowed by the same congestion as auto traffic, and do not adequately serve these longer-distance travel markets. Introduction of a high-frequency, high-capacity transit service connecting the Corridor Study Area's counties and cities would supersede many of these problems.

Lack of Connections to the Regional Transportation System

The Corridor Study Area currently has one connection to the Los Angeles County rail system via the east-west running Metro Green Line. Residents must travel a long distance to either end of the 32-mile long study area to access the inter- and intra-regional Metrolink and Amtrak, longer than the distance they must travel to find an airport. This lack of direct, high-capacity transportation connections to the regional system limits mobility and travel choices, and will become more detrimental to future Corridor travel and economic vitality as the study area's population and employment continue to grow. The Corridor Study Area offers a unique opportunity to implement service along a dedicated former PE Railway ROW owned by LACMTA and OCTA for more than 60 percent of the proposed project length.

Continued Poor Linkages to and from Corridor Destinations and Activity Centers

The Corridor Study Area contains a wide variety of civic, cultural, entertainment, retail, educational, and recreational destinations. Many of the destinations attract trips from throughout Los Angeles and Orange counties, and beyond including: Disneyland and Knott's Berry Farm; the performing arts centers in Downtown Los Angeles, Cerritos, and Costa Mesa; the Anaheim and Los Angeles convention centers; many ethnic cultural centers; the region's major shopping centers; nationally-known medical facilities; and major employment centers in downtown Los Angeles, Anaheim, Santa Ana, Orange, and Costa Mesa. Future reuse of the PEROW/WSAB Corridor offers the unique opportunity to introduce high-capacity service providing direct local and regional connections to the Corridor's many destinations.

6.0 PURPOSE AND NEED FOR THE PROJECT

The Corridor Study Area is a north-south oriented diagonal extending approximately 32 miles in length, and incorporating portions of two counties and 21 cities. It is generally defined as extending south from Union Station in Downtown Los Angeles to the Santa Ana Regional Transportation Center in Downtown Santa Ana. The study area is comprised of two sections to reflect different coordination requirements, and possible phasing directions: the PEROW/WSAB Area, centered on the unused former PE ROW now owned by LACMTA and OCTA; and the Northern Connections Area, extending north from the PE ROW to Downtown Los Angeles along active and inactive railroad ROWs.

Over the past 15 years, the need for improved travel connections between Los Angeles and Orange counties, possibly through the reuse of all or portions of the PE ROW, has been established through a series of transportation plans and studies undertaken by OCTA, LACMTA, and SCAG. They concluded that transportation between the two counties, and within and from the Corridor were constrained, congested, lacking in coordination, and strongly in need of transportation system improvements.

There is demonstrated need for increased transportation system capacity as the Corridor Study Area currently has, and is forecast to continue to capture, a large share of the region's population and employment growth. Today, the Corridor Study Area is home to more than 4.5 million people. Approximately 3.3 million study area residents live within the Los Angeles County portion of the Corridor, or 33 percent of the county's total population, and 1.2 million residents live in the Orange County portion, or 42 percent of the county's population. From an employment perspective, the Corridor Study Area currently has a total of 2.2 million jobs. Approximately 1.5 million jobs are located within the within the Los Angeles County portion of the study area, or 32 percent of the county's total jobs. More than 700,000 jobs are located in the Orange County portion, or 46 percent of the county's total employment.

The Corridor Study Area was recommended for study based on its high population and employment and corresponding densities, and high number of low income and transit dependent households as illustrated by the following:

- **High population growth** – With a forecast growth in population, the study area population is projected to grow by 12 percent, with more than 500,000 new residents by 2035. Within the study area, the PEROW/WSAB Area is forecast to grow by 13 percent with 300,000 new residents, and the Northern Connections Area will grow by 11 percent with 250,000 residents. The highest population increases are forecast to occur in Central Los Angeles, the Gateway Cities, and the West Orange County areas.
- **High population density** – Existing Corridor Study Area population densities are two to five times higher than the Los Angeles and Orange county averages. By 2035, study area population densities are forecast to increase by 12 percent to an average of 11,990 people per square mile. The PEROW/WSAB Area population densities will grow by 13 percent to 9,960 people per square mile, and in the Northern Connections Area will increase by 12 percent to 14,010 people per square mile. In the future, study area population densities will remain higher than Los Angeles and Orange county averages by 220 to 460 percent.

- **High level of employment** – By 2035, employment within the Corridor Study Area is forecast to grow by four percent. Currently there are more jobs in the Orange County portion of the study area, and that trend is forecast to continue in the future with 70 percent of the study area’s jobs located there. Job growth in the PEROW/WSAB Area will be strong with a 13 percent increase, while the Northern Connections Area is forecast to lose five percent of the area’s current jobs. Even with the projected job loss, this area will retain a significant portion of Los Angeles County’s employment with a total of 1.1 million jobs, or 21 percent of the county’s jobs.
- **Increasing employment density** – Today, the Corridor Study Area’s average employment density is 5,270 jobs per square mile. Within the PEROW/WSAB Area, the current job density is 250 percent higher than the Orange County average, and three times higher than the Los Angeles County average. Within the Northern Connections Area the employment density is four times the county average and two times the urbanized county average. These trends will continue in 2035, with employment densities ranging from 177 to 270 percent higher than each county’s average.
- **High number of low income households** – More than 36 percent of all Corridor Study Area households are designated as low income, two times the Orange County average and 20 percent higher than the Los Angeles County average. The Northern Connections Area has an even higher percentage, with 45 percent of the area’s households designated as low income. This area’s higher percentage may increase in the future with the projected loss of jobs in this portion of the study area. Low income households are distributed throughout the study area with the highest number located in the LAX/Inglewood/South Los Angeles, Downtown Los Angeles, Central Los Angeles West, Gateway Cities, and West Orange County areas.
- **High number of transit dependent households** – A Corridor-wide average of 16 percent of all households is identified as without access to an automobile. This is three times the Orange County average, and 20 percent higher than the Los Angeles County average. Within the Northern Connections Area, 23 percent of all households were identified as transit dependent, approximately two times the county average. The number of transit dependent residents may be expected to increase in the future with the forecast growth in population over 65 years old.

6.1 Mobility Problem

The Corridor’s demographic factors contribute to the strong need for transportation services, especially when combined with the significant level of congestion that currently exists and is forecast to continue and increase in severity in the future. The Los Angeles-Santa Ana metropolitan area contains the most congested roadways in the country according to the Texas Transportation Institute’s *2009 Urban Mobility Report*. Freeways and arterials within the Corridor Study Area are no exception to the region’s congested highway conditions, and often top the list of the region’s most congested facilities.

The ability to move quickly and efficiently in the Corridor Study Area can be expressed in terms of freeway and arterial congestion, along with transportation system accessibility and choice. The Corridor’s congested freeway and arterial street system, as well as limited bus and rail service, offers insufficient capacity to accommodate the forecast increase in daily trips. Development of an effective multi-modal transportation network is essential to meet the future mobility needs of Corridor residents and businesses by providing vital intra- and inter-corridor linkages and services.

By 2035, the magnitude and nature of the Corridor's population, employment, and transit dependency growth are projected to result in continuing transportation challenges as evidenced by the following:

- **Increasing travel** – With a forecast 18 percent increase in daily trips, more than 5.3 million additional daily trips will occur in the Corridor Study Area. The increase in the number of trips within, to and from the study area will significantly strain the available transportation network.
- **Growing transit-dependent population** – With 16 to 35 percent of the study area's households identified as not having access to an automobile, along with high number of low income households, forecast loss of jobs, and an aging population, a high percentage of the Corridor's population will be reliant on the area's transit system in the future.
- **Continuing freeway congestion** – Currently, a majority of the study area's freeways have large segments that operate at- or beyond capacity. Even with the planned highway system improvements, future travelers are forecast to experience continuing and worsening freeway and arterial congestion. In 2035, six of the study area's seven freeways are projected to operate at LOS E or F along 80 to 100 percent of the study area's lane-miles during the evening peak period, and five of the seven freeways will have constrained operations during the morning peak period.
- **Increasing arterial congestion** – Today, portions of major arterials throughout the Corridor Study Area experience high peak traffic volumes resulting in LOS E and/or F travel conditions during both peak periods. With the forecast increase in population, employment, and daily trips, arterial congestion is projected to increase to 90 to 100 percent of capacity on key routes, and many arterials will drop to LOS F operating conditions.
- **Limited travel options** – Currently, Corridor travelers have a limited choice in travel options – automobile or bus transit – both of which operate on an increasingly congested street and freeway system. In the future, Corridor bus transit has minor planned service improvements, with no plans to upgrade cross-county line travel. Even with substantial future investments in the Corridor's congested freeway system, it will still be unable to fully accommodate the forecast increase in daily trips.
- **Constrained Bus Service** – The study area's only currently available transit service – bus transit – is constrained in effectiveness and patron convenience by traffic congestion and other factors. Existing operational issues, such as the lack of coordination between the multiple service providers on schedules, service hours, and fares, as well as the level of service provided, make bus usage by transit dependent riders frequently difficult, and make utilization daunting to non-transit dependent residents.
- **Lack of Connections to the Regional Transportation System** – The Corridor Study Area currently has one connection to the Los Angeles County rail system, and limited access to inter- and intra-regional Metrolink and Amtrak service. This lack of direct, high-capacity transportation connections to the regional system limits mobility and travel choices.
- **Lack of Cross-County Line Transit Service Coordination** – The Corridor Study Area covers two counties with multiple bus and shuttle service providers. Current service planning and operations are not coordinated, but are planned and operated in a manner oriented to each county. The resulting service often does not provide cross-county travelers with connecting service, resulting in gaps in the study area's transit network. Bus routes currently serving cross-

county markets are slowed by highway congestion, and as a result, do not adequately serve these longer-distance travel markets.

- **Continued Poor Linkages to and from Corridor Destinations and Activity Centers** – The Corridor Study Area contains a wide variety of civic, cultural, entertainment, retail, educational, and recreational destinations. Many of the destinations attract trips from throughout Los Angeles and Orange counties, and beyond. Currently, access to these locations is constrained and congested, and is forecast to worsen in the future.
- **Continuing air quality and greenhouse emission concerns** – There is a demonstrated need to increase Corridor transportation capacity to serve the forecast growth in travel need, without increasing mobile source emissions in this federally-identified nonattainment area, or greenhouse gas emissions as mandated by state law.
- **Economic development and community revitalization needs** – Many development and revitalization projects have been completed and others planned by Corridor Study Area cities to strengthen their local economies, revitalize their urban cores, attract and retain employment opportunities, and accommodate future population growth. A public transportation investment providing improved access would support and strengthen these efforts.

6.2 Project Goals and Objectives

In defining the purpose and need for the PEROW/WSAB Corridor AA, project goals and objectives against which potential transportation improvements would be evaluated were identified in consultation with the public, stakeholder, and elected officials. The resulting goals and objectives provide the public and decision-makers with a perspective on the magnitude of the impacts and benefits of the alternatives, as well as differences between the options. Project goals and objectives, along with the related evaluation criteria and performance measures are presented in the *PEROW/WSAB Corridor Evaluation Methodology Report*, and are based on the community goals presented below, the Purpose and Need Statement discussed in this report, along with federal, state, regional, county, and local requirements. Reflecting recent FTA guidance, the project goals and objectives are organized into five major categories:

1. Public and Stakeholder Support

2. Mobility Improvements

- Provide another travel option.
- Connect to the regional transportation system.
- Serve both community and regional trips.
- Increase access to and from Corridor destinations and activity centers.
- Provide a fast travel speed.
- Provide related pedestrian and bicycle facilities.

3. Cost

- Provide a cost-effective solution.

4. Land Use/Economic Plans

- Station location and spacing supports local economic development and revitalization plans and goals.

5. Environmental and Community Impacts

- Results in no or minimal impacts to adjacent communities.

6.3 Purpose and Need/Summary of Transportation Needs

Now and in the future, Corridor travelers have limited choices – automobile or bus transit. Planned and funded transportation improvements for the Corridor Study Area are primarily highway-based, and analysis of future conditions shows that the planned major highway system improvements will provide little lasting benefit for the Corridor’s mobility challenges. Only minor investments are planned for the area’s bus transit service, and those will result in improved mobility in limited portions of the study area.

Implementation of an effective faster, high-capacity transportation linkage within the study area is vital to alleviate current and future connectivity and mobility challenges affecting Corridor residents and businesses by providing essential intra- and inter-corridor linkages to commercial, cultural, employment, educational, and retail centers and destinations. The underlying needs supporting the provision of transportation improvements in the Corridor Study Area include the following:

- **The Study Area is Forecast to Continue to Capture a Large Share of Regional Population and Employment.**

Today, the Corridor Study Area is home to more than 4.5 million people: 3.3 million residents live in the Los Angeles County portion, or 33 percent of the county’s total population; and 1.2 million residents live in the Orange County portion, or 42 percent of the county’s population. The study area will continue to capture this large share of regional population in 2035, with a forecast 12 percent increase in population. Population in the study area will grow to 5.1 million people, with 3.7 million living in Los Angeles County portion, or 30 percent of the county’s total population; and 1.4 million will reside in the Orange County section representing 40 percent of the county population.

From an employment perspective, the Corridor Study Area currently contains a significant portion of Los Angeles and Orange County’s total employment, and will continue to retain a major percentage in the future. Today, of the study area’s 2.2 million jobs, more than 1.5 million are located within the Los Angeles County portion of the study area, representing 32 percent of the county’s total employment, and 730,000 jobs are located in the Orange County portion, representing 46 percent of the county’s total employment. In 2035, study area employment will increase by four percent to a total of 2.3 million jobs. Employment growth will be stronger in the PEROW/WSAB Area, with a projected 13 percent increase in jobs. In the future, there will be a total of 1.5 million jobs located in the Los Angeles County portion, representing 29 percent of the county’s total employment, and more than 800,000 will be located in Orange County section, representing 44 percent of the county’s total jobs. The Northern Connections Area is projected to lose jobs, but even with the projected loss, this area will retain 1.1 million jobs or 21 percent of Los Angeles County’s total employment.

- **Existing and Future Study Area Population and Employment Densities Support Transit.**

Existing and future study area population and employment, along with the forecast increase in daily travel, would provide a strong basis for implementing transit service. Currently, Corridor Study Area population densities are two to five times higher than the Los Angeles and Orange county averages. By 2035, study area population densities are forecast to increase by 13 percent in the PEROW/WSAB Area, and by 12 percent in the Northern Connections Area. Corridor population densities will remain higher than county averages by 220 to 460 percent, with the densest areas such as Central Downtown Los Angeles and LAX/Inglewood/South Los Angeles having 22,000 residents per square mile compared to the urbanized Los Angeles County average of 8,200 residents per square mile, and the North Orange County subregion having 12,000 residents per square mile compared to the Orange County average of 4,500. The average population density in the Corridor will be approximately 12,000 residents per square mile, which is supportive of high-capacity transit service.

Currently, employment density within the PEROW/WSAB Area is 250 percent higher than the Orange County average and three times higher than the Los Angeles County average. Within the Northern Connections Area, the employment density is four times the county average and two times the urbanized county average. These trends will continue in 2035, with employment densities ranging from 177 to 270 percent higher than each county's average. The average employment density in the Corridor will be 5,400 jobs per square mile, more than double the Orange County average of 2,500 and more than 60 percent higher than the urbanized Los Angeles County average of 3,400 jobs per square mile.

- **The Current and Future Corridor Highway System Operates At-Capacity and Beyond.**

The freeway and arterial system serving the Corridor is highly congested resulting in travel delays for a significant portion of each day. Today, a majority of the study area's freeways have large segments that operate at- or beyond capacity, and many portions of major arterials experience high peak traffic volumes resulting in LOS E and/or F travel conditions during both peak periods. Even with the planned highway system improvements, increasing population, employment, and daily trips will adversely impact highway capacity, and the level of service on the already congested freeways will continue to decline. In 2035, six of the study area's seven freeways are projected to operate at level of service (LOS) E or F along 80 to 100 percent of study area's lane-miles during the evening peak period, and five of the seven freeways will have constrained operations during the morning peak period. Arterial congestion is projected to increase to 90 to 100 percent of capacity on key routes, and many arterials will drop to LOS F operating conditions.

- **Corridor Residents Lack Connections to the Regional Transit System and Have Few Travel Options.**

Residents and stakeholders view the Corridor Study Area as disconnected and isolated from the region's transit system. Currently, the Corridor has only one connection to the Los Angeles County rail system, and two points of access to inter- and intra-regional Metrolink and Amtrak service located at the northernmost and southernmost points of the study area. This lack of direct, high-capacity transportation connections to the regional system limits mobility and travel choices.

The ability to move quickly and efficiently within the Corridor Study Area can be expressed in terms of transportation system choice. Now and in the future, Corridor travelers have limited travel choices – automobile or bus transit – both of which operate on the increasingly congested highway system. Currently a high percentage of Corridor trips are made by automobile, either as single

occupancy vehicle (SOV) or carpool trips, particularly in the southern portion of the PEROW/WSAB Area. Within this portion of the study area, 91 percent of work trips are made by auto compared to five percent by transit. Corridor-wide average mode split numbers show 86 percent of work trips are by car, and nine percent are by transit. Without a new travel option, these percentages are forecast to continue with an increasing high level of auto-based travel. Even with the planned and funded highway system improvements, analysis of future conditions shows that the planned major highway system improvements will provide little lasting benefit for the Corridor's mobility challenges.

- **There is a Significant Transit Dependent Population in the Study Area.**

Today, a Corridor-wide average of 16 percent of all households is identified as without access to an automobile. This is three times the Orange County average, and 20 percent higher than the Los Angeles County average. Within the Northern Connections Area, 23 percent of all households were identified as transit dependent, approximately two times the Los Angeles County average. Transit dependent households are spread throughout the study area with some portions of central and southern Los Angeles identified as having 32 to 35 percent transit-dependent households. The number of transit dependent residents may be expected to increase in the future with the forecast growth in population, along with a projected increase in the study area's population over 65 years old who will need other travel options. The OCTA 2006 L RTP identified that the number of Orange County residents 65 years and older will nearly double between 2000 and 2030.

The Corridor mobility needs presented above clearly demonstrate the strong need for a transportation system improvement in the Corridor Study Area. Investment in a high-capacity transportation improvement would accomplish the following:

- **Provide a New, More Effective Travel Option.**

Now and in the future, Corridor travel will be constrained due to persistent freeway and arterial congestion. Bus transit is constrained by slow travel speeds and time-consuming transfers between systems and modes. Future Corridor transportation improvements will need to reflect a multi-modal strategy providing travelers with a more complete set of transportation alternatives. Implementation of a high-capacity transit system would provide all residents with a viable option when making travel decisions. To be successful in attracting people from their cars, the resulting transit solution should be faster than current car and bus travel in order to allow travelers to quickly reach local and regional destinations. Community members and stakeholders identified provision of public transit as necessary to address future travel needs, including the ability to be expandable in order to meet evolving needs.

- **Provide Connections to the Regional Transportation System.**

Currently, the densely-populated Corridor Study Area, spanning two counties, has limited connections to the regional transportation system. One connection is to the Los Angeles County Metro Rail system through the east-west running Metro Green Line that does not serve the Corridor's primarily north-south travel patterns. Inter- and intra-regional Metrolink commuter rail service is available only at Union Station and the Santa Ana Regional Transportation Center – the northernmost and southernmost points of the study area. This lack of direct, high-capacity transportation connections to the regional system limits mobility and travel choices. It is essential for any Corridor transit solution to provide direct access to the Metro Rail and Metrolink systems, as well as seamlessly connect with local bus and shuttle services.

- **Improve Access to Corridor Activity Centers, Including Civic, Cultural, Entertainment, Retail, Educational, and Recreational Destinations.**

The Corridor Study Area contains a wide variety of civic, cultural, entertainment, retail, educational, and recreational destinations. Many of these destinations attract trips from throughout Los Angeles and Orange County counties and beyond including: nationally-known entertainment locations, performing arts and ethnic cultural centers, community colleges, specialized medical centers, and major employment centers. Currently, travel access and connections to these Corridor destinations is constrained, making them less desirable to Corridor and regional residents and visitors. There is a strong need to provide faster, more direct access to the Corridor destinations and activity centers, to make them more easily accessed and desirable to people traveling both within and from outside of the Corridor, while also strengthening their economic viability.

- **Support Local Plans for Economic Development and Community Revitalization.**

Many development and revitalization projects have been completed and others planned by Corridor Study Area cities to strengthen their local economies, revitalize their community cores, attract and retain employment, better serve residents, and accommodate future population growth. A transportation investment would not only improve study area mobility and accessibility, but also would serve as a catalyst for public and private investment as demonstrated elsewhere in the region.

- **Improve Air Quality and Reduce Greenhouse Gas Emissions.**

There is a demonstrated need to increase Corridor Study Area transportation capacity to serve the forecast growth in travel needs, without increasing mobile source emissions in this federally-identified nonattainment area, or greenhouse gas emissions as mandated by state law. Current levels of nitrogen dioxide, carbon monoxide, and particulate matter continue to exceed the National Ambient Air Quality Standards throughout the Los Angeles South Coast Air Basin. One of the major mobile sources of these pollutants is tailpipe emissions. Transit plays a large role in the region's overall efforts to lower vehicle miles traveled and tailpipe emissions, especially during congested hours of the day. Implementing an electrically-powered, high capacity transit improvement would provide an excellent opportunity to reduce SOV automobile trips.

- **Provide Cross-County Line Transit Service.**

The Corridor Study Area covers two counties with multiple bus and shuttle service providers. Current service planning and operations are not coordinated, but are planned and operated in a manner oriented to each county. The existing service often does not provide cross-county travelers with connecting service, resulting in gaps in the study area's transit network. Bus routes currently serving cross-county markets are slowed by highway congestion, and as a result, do not adequately serve these longer-distance travel markets. And there is a strong market for cross-county service. In 2003, cross-county line volume information showed 246,000 daily transit trips traveling from Los Angeles County to destinations in Orange County, and 156,000 transit trips from Orange County to Los Angeles County activity centers.

In summary, an effective, multi-modal transportation network within the Corridor Study Area, as shown in Figure 6.1, is necessary to meet the future mobility needs of residents and businesses by providing vital intra- and inter-corridor linkages and services. Investment in a high-capacity transportation system would provide improved access to and from the Corridor's many activity centers and destinations. This transportation investment would not only improve study area mobility and accessibility, but also would serve as a catalyst for public and private investment as demonstrated elsewhere in the region.

Figure 6.1 – Potential Corridor System

