Chapter 1 PURPOSE AND NEED

This chapter describes the purpose and need for transportation investments in the Regional Connector Transit Corridor project area.

This chapter has been updated since publication of the Draft EIS/EIR to address comments received on the Draft EIS/EIR, as indicated in the Responses to Comments, Volumes F-2 and F-3, of this Final EIS/EIR. A vertical line in the margin is used to show where revisions have occurred to this chapter since publication of the Draft EIS/EIR, excluding minor edits for consistency and correction of formatting and minor typographical errors. There have been no major changes to this chapter since publication of the Draft EIS/EIR.

1.1 Summary of Purpose and Need

The purpose of the proposed build alternatives, including the Locally Preferred Alternative (LPA), is to improve transit travel time and provide more reliable transit service. The entire two-mile corridor is a major population and employment center for the Los Angeles region, served by extremely congested road networks that will further deteriorate with the projected population growth of 31 percent and employment growth of seven percent in the project area by 2035. The anticipated growth and increase in transit routes to the area will create more crowding, more delays, and longer travel times for riders, thus degrading service. The proposed build alternatives, including the LPA, are needed in the future because bus services will travel more slowly in the project area, trains will be more crowded and less reliable, and the improved capacity and reduction in transfers provided by the light rail transit (LRT) connector provides the best solution to improve travel times and reliability for the 287,000 number of anticipated daily rail linked trips system-wide in year 2035. The project would improve the region's public transit service and mobility by connecting the light rail service of the Metro Gold Line to the Metro Blue Line and the Metro Expo Line (currently under construction).

In evaluating the mobility and travel conditions within the project area, several issues emerge that reveal a need to provide improved transit connections and service across downtown Los Angeles. These needs include:

- Growth in population and employment will continue to draw both local and regional residents to the project area creating demand for transit services.
- Transit system expansions to the radial network centered on downtown Los Angeles will continue to funnel riders into the unconnected core creating concerns related to Metro Red and Purple Line capacity for connecting riders, overcrowded station platforms, and regional system schedule reliability.
- Transit dependent populations within the project area and along the existing light rail lines include low-income households, significant populations of elderly persons, and a high percentage of zero car households.

- Travel demand data highlights the congested nature of the downtown core, the high percentage of commuters that come from outside of the project area, and the built up nature of the project area that prevents expansion of the road network.

- Transit usage requires multiple transfers for cross-town trips for both local and regional riders increasing travel times.

- Local land use plans and policies, including the adopted City of Los Angeles General Plan Framework Element, Central City Community Plan, and Downtown Design Guidelines and Modified Street Standards, support increased transit alternatives, linking the regional system through downtown, and transit and pedestrian-friendly design in downtown communities.

The Regional Connector light rail alternatives, including the LPA, would close the gap in the regional rail system by connecting existing rail lines, eliminating transfers, and allowing for fast and efficient transit service throughout the region. The Regional Connector LRT alternatives, including the LPA, would enhance and leverage the existing regional rail system investment by making travel easier and attracting ridership system-wide, and by indirectly enhancing development potential at all system stations including the new downtown Regional Connector stations. The LRT alternatives, including the LPA, would also correct the lack of rail system access to important business, cultural, and residential destinations in downtown Los Angeles, enhancing access to and from these destinations and community resources.

1.2 Purpose and Goals

1.2.1 Purpose of the Project

The purpose of this project is to improve the region's public transit service and mobility by connecting the light rail service of the Metro Gold Line to the Metro Blue Line and the Metro Expo Line (currently under construction). This link would serve communities across the region, allowing greater accessibility while serving population and employment growth in downtown Los Angeles.

The Regional Connector is a transit project planned by the Los Angeles County Metropolitan Transportation Authority (Metro) with the goal of improving travel times, reducing transfers, reducing traffic congestion, improving air quality, and creating a sustainable light rail transit system that serves people throughout the region as well as in downtown Los Angeles. The vision is to connect the spokes of the regional system and provide a "one-seat ride" (a trip with no transfers) from Long Beach to Montclair and from East Los Angeles and the San Gabriel Valley to Santa Monica.

Two transfers are currently needed for Metro Blue Line light rail passengers from Long Beach traveling to the Metro Gold Line to Pasadena or East Los Angeles. These passengers must transfer to the Metro Red or Purple Lines for travel between 7th Street/Metro Center Station and Union Station. At Union Station, passengers must transfer again, moving to platforms on different levels, to reach the Metro Gold Line. When the Metro Expo Line from Culver City to the 7th Street/Metro Center Station opens in 2011, its riders will also need to transfer at 7th Street/Metro Center Station to reach the Metro Gold Line.

The Regional Connector would extend the shared Metro Blue/future Expo Line tracks from their present terminus at 7th Street/Metro Center Station to a junction with the Metro Gold Line near the Little Tokyo/Arts District Station with continuing service to Union Station, Pasadena, East Los Angeles, and beyond. This would provide a one-seat ride for Metro Blue Line passengers traveling from Long Beach to Pasadena. Metro Expo Line passengers would also be able to ride from Washington/National Station in Culver City to East Los Angeles without transferring. Metro Expo Line passengers traveling from Culver City to Pasadena and Metro Blue Line passengers traveling from Long Beach to East Los Angeles would be able to complete their trips with one transfer instead of two.

The Regional Connector would also provide increased transit coverage of the downtown area with new stations serving the Civic Center, Bunker Hill, Historic Core, Little Tokyo, and Arts District along its route from 7th Street/Metro Center Station to the Metro Gold Line. This would also provide one-seat rides for Metro Blue Line (and future Expo Line) patrons who currently transfer to the Metro Red and Purple Lines at 7th Street/Metro Center Station to reach destinations within the downtown area that are not close to 7th Street/Metro Center Station. Metro Gold Line passengers would also gain a one-seat ride to downtown destinations that are not within walking distance of Union Station and Little Tokyo/Arts District Station.

The area from which Regional Connector ridership is expected to be drawn includes several freeways and major intersections that have significant traffic congestion and long delays. The improved convenience of transit improvements in the Regional Connector Transit Corridor would encourage use of a public transit alternative that would reduce daily vehicle trips, miles traveled, and congestion on the region's roadways.

Transit improvements within the Regional Connector Transit Corridor would also augment public transportation service originating in areas with high population densities and households dependent on public transit. This would increase potential ridership, thereby increasing the project benefits and making it more cost-effective. In addition, the Regional Connector's service area covers the County's most highly-concentrated employment area and a major cultural, entertainment, and tourist destination.

See Figure 1-1 for a map of the project area and Figure 1-2 for an overview map of the Metro Rail system, including projects currently under construction.

1.2.2 Goals and Objectives

Metro applied the following goals and objectives in evaluating potential alternatives for the Regional Connector Transit Corridor project. These goals and objectives reflect Metro's mission to meet public transportation and mobility needs for transit infrastructure while also being a responsible steward of the environment and being considerate of affected agencies and community members when planning a fiscally responsible project.

Transportation goal:

- Improve regional system functionality by maximizing ridership and increasing transit accessibility and connectivity
- Reduce the number of transfers occurring system-wide, particularly at 7th Street/Metro Center Station and Union Station
- Minimize the trip time between the Metro Gold, Blue and future Expo Lines between 7th Street/Metro Center Station and Union Station
- Expand transit coverage of downtown Los Angeles with new high capacity stations
- Improve mobility and accessibility both locally and regionally – Develop an efficient and sustainable level of mobility within Los Angeles County to accommodate planned growth and a livable environment
- Leverage investments previously made in the regional rail system to improve system reliability

Environmental goal:

- Support efforts to improve environmental quality – Develop a project that minimizes adverse environmental impacts while providing environmental benefits, including providing air quality benefits and help the region meet greenhouse gas reduction goals

Land use goal:

- Support community planning efforts – Support the progression of the downtown Los Angeles area as an integrated destination and a dynamic livable area accommodating projected growth in a sustainable manner
- Support adopted land use and transportation plans
- Increase livability through the integration of transit into communities

Implementation goal:

- Provide a safe and secure alternative transportation system – Develop a project that is safe for riders, pedestrians, and drivers while meeting the region's need for security
- Support public involvement and community preservation – Incorporate the public in the planning process and balance the benefits and impacts while preserving communities in the area, such as Little Tokyo, the Arts District, Bunker Hill, Civic Center, and the Historic Core
- Recognize and value the unique and diverse communities in the project area

Financial goal:

- Create jobs and support a sustainable economy
- Provide a cost-effective transportation system – Develop a project that provides sufficient regional benefits to justify the investment
- Achieve a financially feasible project – Develop a project that maximizes opportunity for funding and financing that is financially sustainable

1.3 Background

1.3.1 Location

The project area is located in downtown Los Angeles. It is bounded on the west by State Route (SR) 110 (Harbor Freeway); on the north by US 101 (Hollywood Freeway); on the south by 7th and 9th Streets; and on the east by Alameda Street between 7th and 4th Streets and the Los Angeles River between 4th Street and US 101.

The project area is the largest regional employment center in Los Angeles County, and is densely developed with multi-family residences, industrial and public lands, commercial and retail establishments, government office buildings, and high-rise office towers. The corridor crosses several distinct community areas including the dense urban core of the Financial District; the residential high rises and regional entertainment centers of Bunker Hill; the Civic Center with a concentration of federal, state, and local government offices; residential and retail uses located in the historic structures of the Historic Core; and the culturally unique, mixed-uses of Little Tokyo and the Arts District.

Given the density of employment within the project area, downtown Los Angeles has the highest concentration of transit service of any area in the County. Regional bus and commuter rail operators have routes that service the project area during peak hours from Los Angeles, Orange, San Bernardino, and Ventura Counties. Both Metro and the Los Angeles Department of Transportation (LADOT) operate local bus service throughout the day.

The southwest portion of the project area around the 7th Street/Metro Center Station is served by the Metro Blue Line to Long Beach and the Metro Expo Line to Culver City (currently under construction). The eastern edge of the project area (Union Station and the Little Tokyo/Arts District Station) is served by the Metro Gold Line which currently connects Pasadena to East Los Angeles. These regional lines are connected by a variety of bus lines and the east-west Metro Red and Purple Lines but multiple transfers are required for longer north-south or east-west trips through the project area.

Due to its central location at the heart of the regional transit system, investments in the Regional Connector Transit Corridor project area have the potential to affect schedule reliability of the entire system. When the Metro Expo Line is completed, this lack of regional connectivity will become even more apparent.

Figure 1-1. Project Area

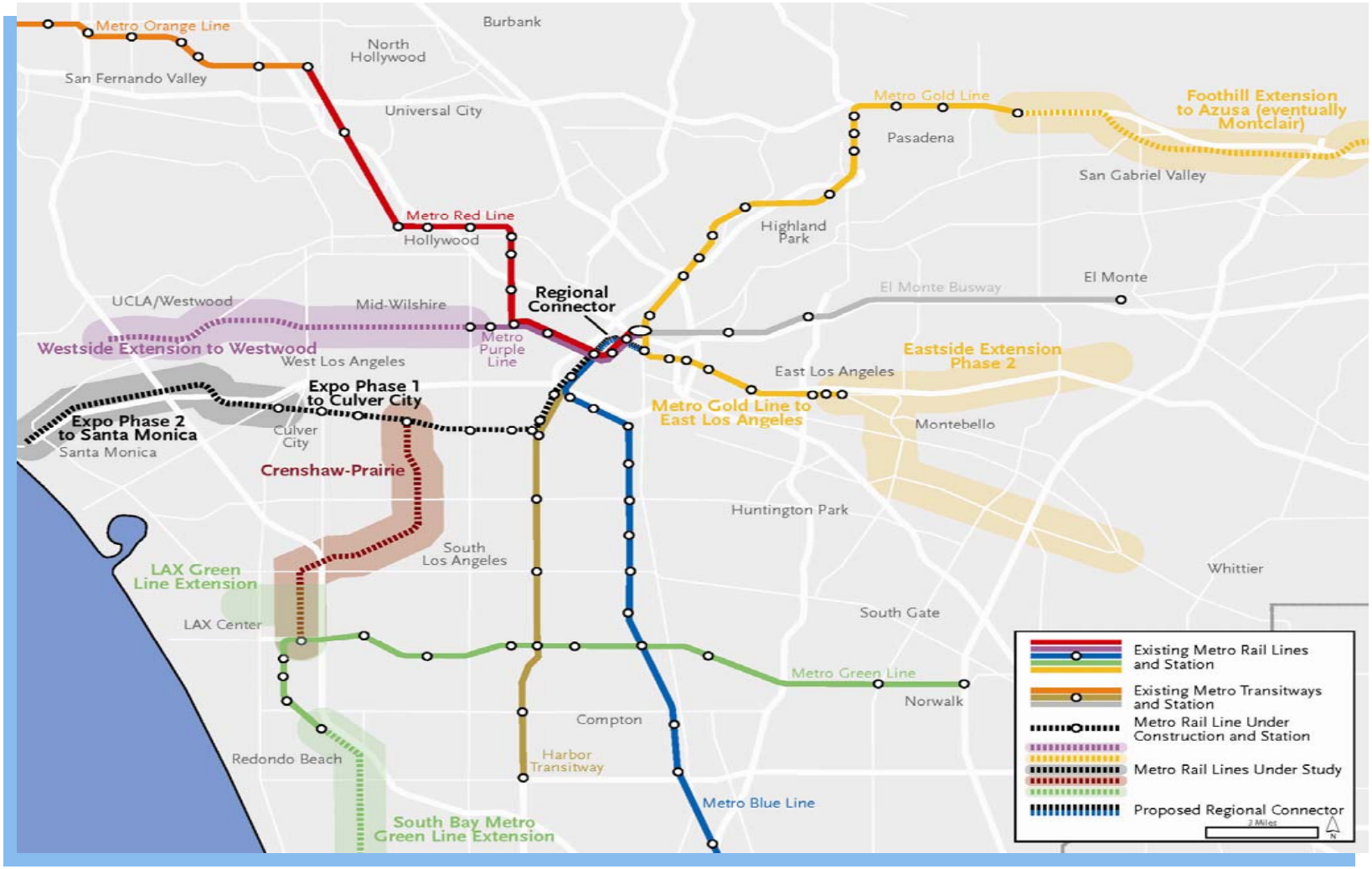


Figure 1-2. Existing and Proposed Metro Rail Lines in 2035

1.3.2 Local and Regional Plans and Past Studies

Early studies from 1988 to 1993 focused on extending a light rail line from Long Beach through downtown Los Angeles to downtown to Pasadena. The Long Beach to downtown Los Angeles section is now known as the Metro Blue Line, and the Los Angeles to Pasadena section is now known as the Metro Gold Line, but these two lines do not connect. A light rail line from downtown west to Santa Monica (Metro Expo Line) was not yet planned at the time and the light rail Metro Gold Line Eastside Extension was first fully approved as an extension of the Metro Red Line (a portion of which was later renamed the Metro Purple Line), a heavy rail subway system that was re-scoped to the currently operating Metro Gold Line Eastside Extension light rail system. Therefore, these earlier studies did not account for the benefits of a cross-county east-west light rail service, and instead focused on the north-south route from Long Beach to Pasadena. The Regional Connector, however, would provide the benefits of both routes. Later studies from 2004 onward, including the recent Alternatives Analysis (AA) (Appendix H), focus on both the north-south and east-west routes, as described in the following subsections.

1.3.2.1 Pasadena – Los Angeles Light Rail Transit Project Environmental Impact Report (EIR)

In 1993, Metro completed an environmental impact evaluation, titled the Pasadena – Los Angeles Light Rail Transit Project EIR. At the time, Metro envisioned the project as an extension of the existing Metro Blue Line from its 7th Street/Metro Center Station terminus to Pasadena. However, the Board of Directors subsequently decided to delay the pursuit of the segment between 7th Street/Metro Center Station and Union Station due to funding constraints. The Pasadena-Los Angeles Light Rail Transit Project, now the Metro Gold Line, was constructed and began operations in 2003. As an interim solution to the lack of a direct light rail connection between the Long Beach and Pasadena lines, passengers must transfer to the Metro Red or Purple Lines to travel from Union Station to 7th Street/Metro Center Station. The Metro Gold Line initially ran from the Sierra Madre Villa Station in Pasadena to Union Station. An extension to East Los Angeles opened in 2009, allowing for continuous operations between Pasadena, Union Station and East Los Angeles.

The study specifically identified that a direct light rail connection would be possible between Union Station and 7th Street/Metro Center Station to reduce the number of required transfers between the Metro Red, Purple, Gold and Blue Lines.

1.3.2.2 Blue Line Connection Preliminary Planning Study

In 1993, Metro completed a preliminary planning study to analyze alternatives for connecting the Long Beach Blue Line, already in operation, to the Pasadena Blue Line (now the Metro Gold Line), which was not yet under construction at that time. Although the Metro Gold Line provides a viable service as stand-alone transit from downtown Los Angeles to Pasadena, a potential capacity problem for the Metro Red Line (a portion of which was later renamed the Metro Purple Line) was identified, as it was the sole rail connection between Union Station and the 7th Street/Metro Center Station. Metro officials recognized that building a connection between the Long Beach and Pasadena light rail lines would alleviate the capacity issues, and increase the overall usefulness of the system.

1.3.2.3 Los Angeles Eastside Corridor Final Supplemental EIR/EIS

At the time of the Blue Line Connection Preliminary Planning Study, an extension of the Metro Red Line (a portion of which was later renamed the Metro Purple Line) to Boyle Heights was also being considered. The preferred alternative was a 3.1-mile long heavy rail transit (HRT) subway with four stations. After funding concerns in the mid-late 90s, all planned corridor projects were halted and re-evaluated in 1998.

In February 2002, Metro approved the Metro Gold Line Eastside Extension, using LRT in lieu of the previously identified HRT Metro Red Line Eastside Extension. The extension opened for revenue service in November 2009 with twice as many stations and twice as long as the original planned project. Running from Union Station to Atlantic Station in East Los Angeles, this six-mile, eight-station, extension traverses Alameda Street, 1st Street, Indiana Street, and 3rd Street. A new bridge connects Union Station to the eastern edge of downtown in Little Tokyo by crossing south over the US 101 freeway to the intersection of Alameda and Temple Streets. The route runs at-grade on the eastern side of Alameda Street from Temple Street to 1st Street. An at-grade station at 1st and Alameda Streets (Little Tokyo/Arts District Station) is located at the northeast corner of the intersection.

This project reaches the eastern edge of the project area, but does not complete the gap across downtown Los Angeles to the transit lines that extend south and west.

1.3.2.4 Mid-City/Exposition Transit Corridor EIS/EIR

The Metro Expo Line was identified as a new light rail transit system providing service from Santa Monica to a shared terminus with the Metro Blue Line at 7th Street/Metro Center Station in downtown Los Angeles. The project was approved in 2005. A first phase from downtown Los Angeles to Culver City is currently under construction. A second phase extending to Santa Monica was approved in early 2010 and is expected to be in operation by 2015. This project reaches the southern edge of the project area and will bring additional transit riders to downtown, but it does not complete the gap across the project area to Union Station.

1.3.2.5 Regional Light Rail Connector Study

Based on new alignment opportunities created by the approval and construction of the Metro Gold Line Eastside Extension and the under construction Metro Expo Line, Metro completed an engineering feasibility study in 2004 to identify potential alignment, station, and configuration alternatives for a new LRT connection between the Metro Blue, Expo and Gold Lines. The alternatives envisioned a connection to the Metro Gold Line in the vicinity of the Little Tokyo/Arts District Station at 1st and Alameda Streets to the 7th Street/Metro Center Station.

Forty-one initial alternatives were developed in this 2004 study and initial screening reduced the number of alternatives to 16. The subsequent AA Report described in Section 1.3.2.6 drew on some of these previously studied alternatives. The screening was based on alignment characteristics, service area, cost, complexity of engineering, and other similar criteria. No public input process was performed, and no preferred alternative was identified in this study.

1.3.2.6 Regional Connector Transit Corridor Alternatives Analysis Report

Building on the findings of the Regional Light Rail Connector Study, the AA Report, initiated in June 2007 and completed in January 2009 identified 36 conceptual alternatives for study. Initial environmental analysis, engineering, and public outreach activities including an FTA Early Scoping notice, were performed to assist this preliminary study of the alternatives. The screening processes during the AA study produced two final recommended build alternatives, along with a No Build Alternative and TSM Alternative, which were subsequently carried into the EIS/EIR scoping process. The full Final AA Report is incorporated into this Final EIS/EIR as Appendix H.

1.3.2.7 Adoption of the Regional Connector Transit Corridor Project

The Regional Connector Transit Corridor project was authorized by the Metro Board of Directors to proceed into the Draft EIS/EIR phase in February 2009, and the Final EIS/EIR phase in October 2010. Regional plans and funding measures that identify the Regional Connector include the Southern California Association of Governments (SCAG) Regional Transportation Plan, the Metro Long Range Transportation Plan, and Measure R.

1.3.2.7.1 SCAG Regional Transportation Plan

SCAG's *2008 Regional Transportation Plan* includes the Regional Connector as a strategic transit system expansion project with implementation expected prior to 2035. As the designated Metropolitan Planning Organization (MPO) for Los Angeles, Riverside, San Bernardino, Ventura, Orange, and Imperial Counties, SCAG provides coordination between transit projects across the Southern California region.

1.3.2.7.2 Metro Long Range Transportation Plan

Metro's *2009 Long Range Transportation Plan* includes the Regional Connector among the projects planned for implementation by 2035 (possible opening date of 2019). The other projects outlined in the plan are also included in the year 2035 conditions assumed for the regional transportation analysis presented in this Final EIS/EIR.

1.3.2.7.3 Measure R

In November 2008, Los Angeles County voters approved a half-cent sales tax (Measure R) that will be used to fund approximately $40 billion worth of transportation projects in Los Angeles County over the next 30 years. Due to the uncertainty of the passage of Measure R during the development of the Regional Connector AA, projects identified in Measure R were not included in the AA Report, as they had not yet been identified as funded in the *Long Range Transportation Plan*. Now that Measure R has passed, these projects have been incorporated into the constrained portion of the *Long Range Transportation Plan*. Identified funded projects to be completed and operational by 2035 are incorporated in this analysis conducted for this Final EIS/EIR, as part of the No Build Alternative.

1.4 Project Area Demographics

1.4.1 Population and Employment

The Regional Connector project area covers 2 square miles, or 0.04 percent of the 4,752 square miles of Los Angeles County. The total residential population of the project area is 19,396, or 0.19 percent of the total County population. The average population density within the project area is 9,968 per square mile, 3.76 times that of the County.

Despite its small size and residential population, the Regional Connector project area offers 3.82 percent (171,750) of the County's total employment of 4,498,598 jobs. Employment density in the project area is 85,875 employees per square mile which is approximately 77 times the County-wide employment density of 1,108 employees per square mile.

Table 1-1 summarizes the project area and County population and employment information for 2008. Population and employment growth are discussed further with respect to transit dependency in Sections 1.4.3 and 1.6.

1.4.2 Project Area Ethnicity

According to the most recent Census data, the project area has higher proportions of Asian and African-American residents than the County. African-American residents compose 28.5 percent of the population of the project area, compared with 9.6 percent of the County; they reside in the project area primarily east of Hill Street and south of 1st Street.

Table 1-1. Population and Employment

Demographics	Project Area	L.A. County	Percent of County
Population	19,396	10,449,838	0.19%
Population Density (people/sq. mi.)	9,698	2,573	NA
Total Employment	171,750	4,498,598	3.82%
Employment Density (jobs/sq. mi.)	85,875	1,108	NA

Source: SCAG, 2008

Asian residents, who live primarily between 1st Street and 5th Street, compose 23.8 percent of the project area, compared with 11.9 percent of the County.

According to the most recent census data, the project area has significantly lower compositions of White and Hispanic populations when compared to the County.

Table 1-2 shows the racial and ethnic breakdown of the project area.

1.4.3 Transit Dependency

Transit dependent populations are those groups that rely on public transit to meet their mobility and access needs to a greater degree than the general population. Within the project area and

along the existing light rail lines, transit dependent populations include low-income households, seniors, and zero car households.

Residents in the project area are categorized within the US Census Data as either below or above the poverty level. In 2000, there were 3,575 households in the project area below the poverty level. Income projections to 2035 for the project area are currently unavailable. Based on the 2000 data, 37 percent of the households in the project area are below the poverty level (Table 1-3).

According to data presented in Table 1-4, only 6.1 percent of the population in the project area is age 18 or younger, compared to 29.4 percent of the population of the County. The project area also has a higher percentage of elderly residents (19.6 percent) compared to the County (9.7 percent).

The young and the elderly have a higher propensity for using public transportation, since these groups are less likely to have driver's licenses or access to private automobiles.

Project area residents use transit more than people in other areas of the County. Eleven percent of the households (or 1,121 households) with people age 16 and older who both live and work in the project area commute via public transportation, compared to seven percent of the entire County.

Table 1-2. Racial and Ethnic Composition

Demographics	Project Area		Total LA County	
	Number	Percent (%)	Number	Percent (%)
Race				
Total Population	19,396	100%	9,519,338	100%
White	5,564	28.7%	4,622,759	48.6%
Black/African American	5,534	28.5%	916,907	9.6%
American Indian	206	1.1%	68,471	0.7%
Asian	4,612	23.8%	1,134,263	11.9%
Pacific Islander/Hawaiian	40	0.2%	27,221	0.3%
Some other race	2,433	12.5%	2,262,925	23.8%
Two or more races	1,007	5.2%	486,792	5.1%

Table 1-2. Racial and Ethnic Composition (continued)

Demographics	Project Area		Total LA County	
	Number	Percent (%)	Number	Percent (%)
Ethnicity				
Total Population of Project Area	19,396	100%	9,519,338	100%
Hispanic or Latino (regardless of race)	4,700	24.2%	4,242,213	44.6%

Source: U.S. Census Bureau, Summary File 3, 2000; SCAG, 2008; Note: Population data in this table is slightly different from Table 1-1 due to the use of a different source. The use of census data for this table is required to analyze project area race/ethnicity.

Table 1-3. Project Area Income Status

Demographics	Project Area	Percent (%)
Total Households	9,648	100%
Households Below Poverty Level	3,575	37.0%

Source: U.S. Census Bureau, Table P. 92, 2000

Table 1-4. Population Age

Age	Project Area	Percent (%)	L.A. County	Percent (%)
18 and under	1,188	6.1%	2,798,604	29.4%
65 and over	3,795	19.6%	926,670	9.7%

Source: U.S. Census Bureau, Summary File 3, 2000; SCAG, 2008

Public transportation users within the project area tend to live in areas where there are high percentages of zero-vehicle households. A much higher proportion of households in the project area lack vehicle access (67 percent) than in the County as a whole (12 percent).

Low-income households were defined by the US Census Bureau in 2005 as those below the poverty threshold with an annual average salary of $12,755 for a two-person household. Low-income households represented about 38 percent of the total households in the project area. This high proportion of low-income households underscores the need for public transit.

Senior residents within the project area are more likely to depend on public transit because of an inability to drive or lack of private vehicle accessibility. Almost 20 percent of the project area population is seniors. Young people, under 18 years of age, may also be considered transit

dependent for similar reasons. Approximately 6 percent of the population in the project area is under the age of 18.

Over two thirds of the households in the project area have no car. Eleven percent of employed residents age 16 and over rely on public transit for their commuting needs. When comparing vehicle accessibility and public ridership patterns in the project area, the trends suggest that even households with one or more cars have a higher propensity to use public transportation than similar households elsewhere in the County.

Some of the project area's transit-dependent population lives within convenient walking distance (one-quarter to one-half mile) of the Regional Connector termini, while many other transit-dependent households will be able to easily access the Regional Connector via stops along existing and future rail transit corridors feeding into it.

The project area can be characterized as more transit-dependent than the County as a whole because of its dense population, proportionately low-income levels, number of households with zero vehicles, and public transportation users.

Transit dependent populations are particularly impacted by deficiencies in the transit system. The gap in the light rail system between the 7th Street/Metro Center Station and Union Station that creates travel delays affects these populations disproportionately.

Figure 1-3 shows the distribution of low-income households in 2005. Census tracts within the project area that have greater than 1,000 low-income households were:

- The area bounded by SR 110, Hill Street, 1st Street, and 3rd Street; and
- The area bounded by Hill Street, Alameda Street, 5th Street, and 7th Street.

Figure 1-4 shows the distribution of residents age 65 and over in the project area. The senior population is highest west of Hill Street and south of 1st Street. Figure 1-5 shows the distribution of residents age 18 and under in the project area. The youth population is found primarily in the southern part of the project area, south of 5th Street.

1.5 Public Transportation Facilities and Services

Downtown has the highest concentration of transit service of any area in the County. At present, ten transit operators provide service along 110 bus routes within the project area, as illustrated in Figure 1-6. Additionally, Metro operates four rail transit (Metro Rail) lines within the project area: the Metro Red, Purple, Blue, and Gold Lines. There is also heavy pedestrian activity throughout the project area. The bus and rail lines branch out in all directions from the project area to many destinations in Los Angeles County. Freeway express service also allows riders to reach destinations in Orange, San Bernardino, and Ventura Counties during peak commute hours.

Bus service currently runs in a grid pattern through the downtown area, with most lines terminating at the periphery after having passed through. Nearly all streets within the project

area have bus service during peak hours. On several routes, headways are less than five minutes during rush hour, and some stops are served by over a dozen lines. Some key characteristics of bus service in the downtown area are:

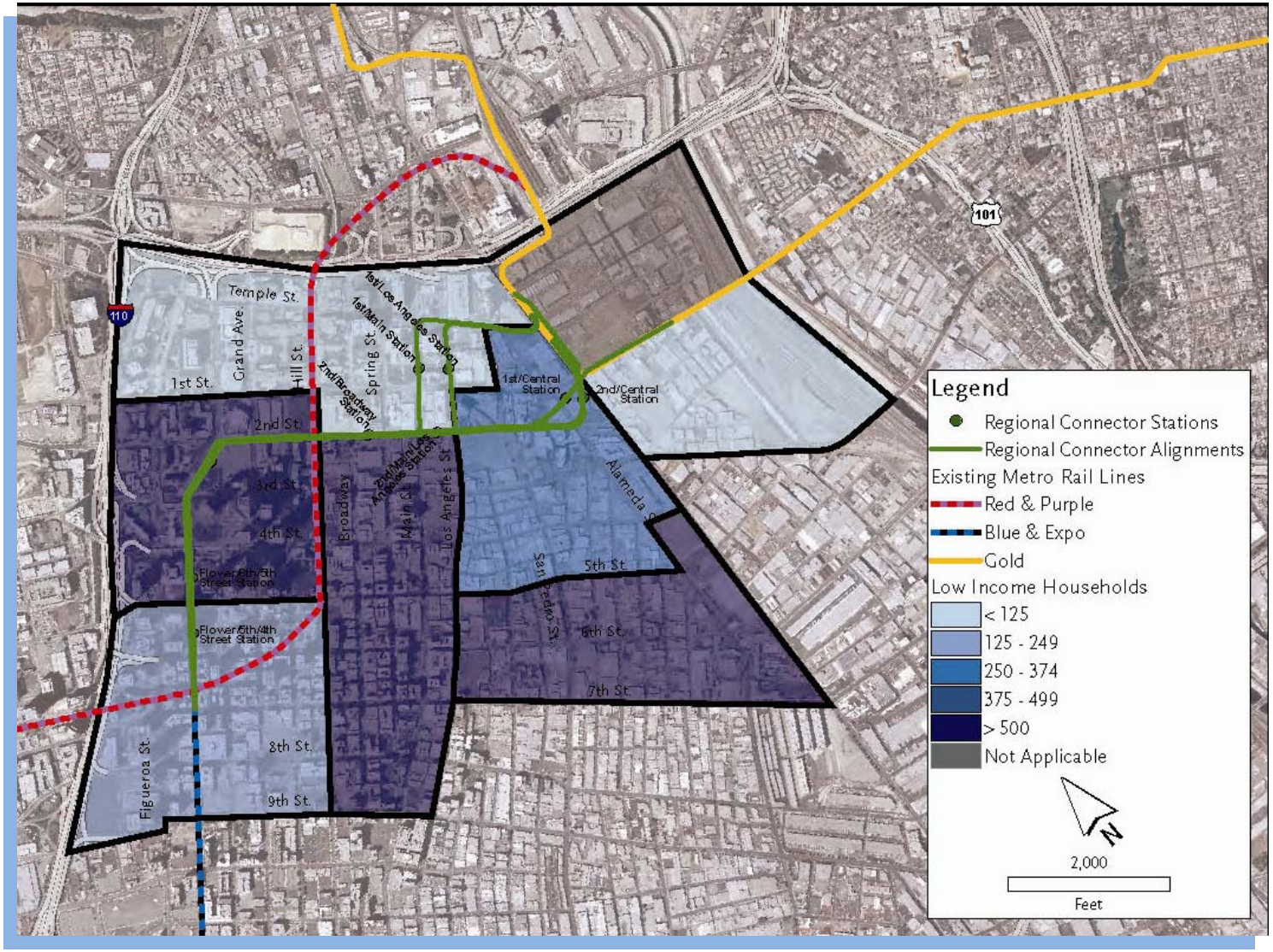
- Frequent buses on 1st Street, the 4th Street/5th Street couplet, Hill Street, Broadway, the Main Street/Spring Street couplet, and the Grand Avenue/Olive Street couplet
- Highest bus ridership on Broadway, Hill Street, Spring Street, Main Street, Flower Street, and Grand Avenue
- Over 100 bus lines in the project area, and Metro operates approximately 50 bus lines 125 bus stops
- Over 174,000 daily Metro bus boardings and alightings in the project area
- Busiest bus stops are located along Hill Street and Broadway between 5th and 7th Streets (3,400 to 6,300 daily boardings at each stop)
- Rail stations at 1st and Hill Streets (Civic Center Station), 5th and Hill Streets (Pershing Square Station), and 7th and Flower Streets (7th Street/Metro Center Station)

1.6 Need for Regional Connector Transit Corridor Project

Southern California is faced with multiple mobility challenges that hinder the region's ability to effectively meet additional travel demand. One of the most pressing issues is population growth. The County alone is expected to increase by 2.3 million people, nearly twice the population of the City of San Diego, to a total of 12.3 million people by 2035. This expected population growth will lead to increased travel demand throughout the region.

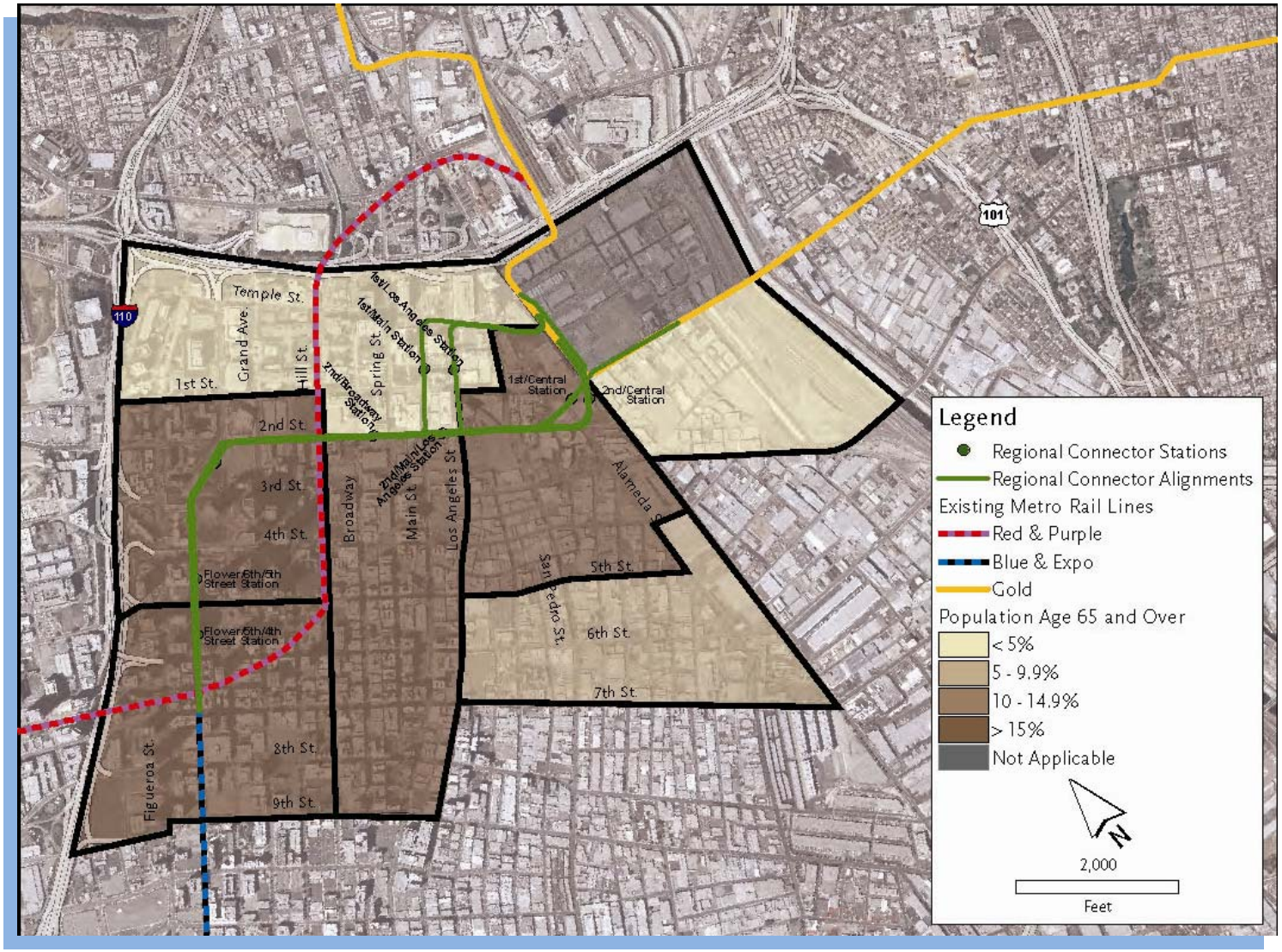
The transportation network includes 9,000 lane-miles of freeway, more than 42,000 lane-miles of arterials, and several large public transit service providers (SCAG 2008). Yet growth of the transportation system has not kept pace with population growth and increases in transportation demand. As the population in the region doubled from 1960 to 2000, highway miles increased by less than 30 percent (SCAG 2008).

The congestion caused by insufficient transportation lanes affects both personal travel and goods movement. The majority of the congestion is from travel on highways and the local arterial network regardless of transportation mode. If the current trend persists, travel delays are expected to rise to 5.7 million person hours by 2035, more than double currently experienced delays, which will deeply affect highway productivity (SCAG 2008).



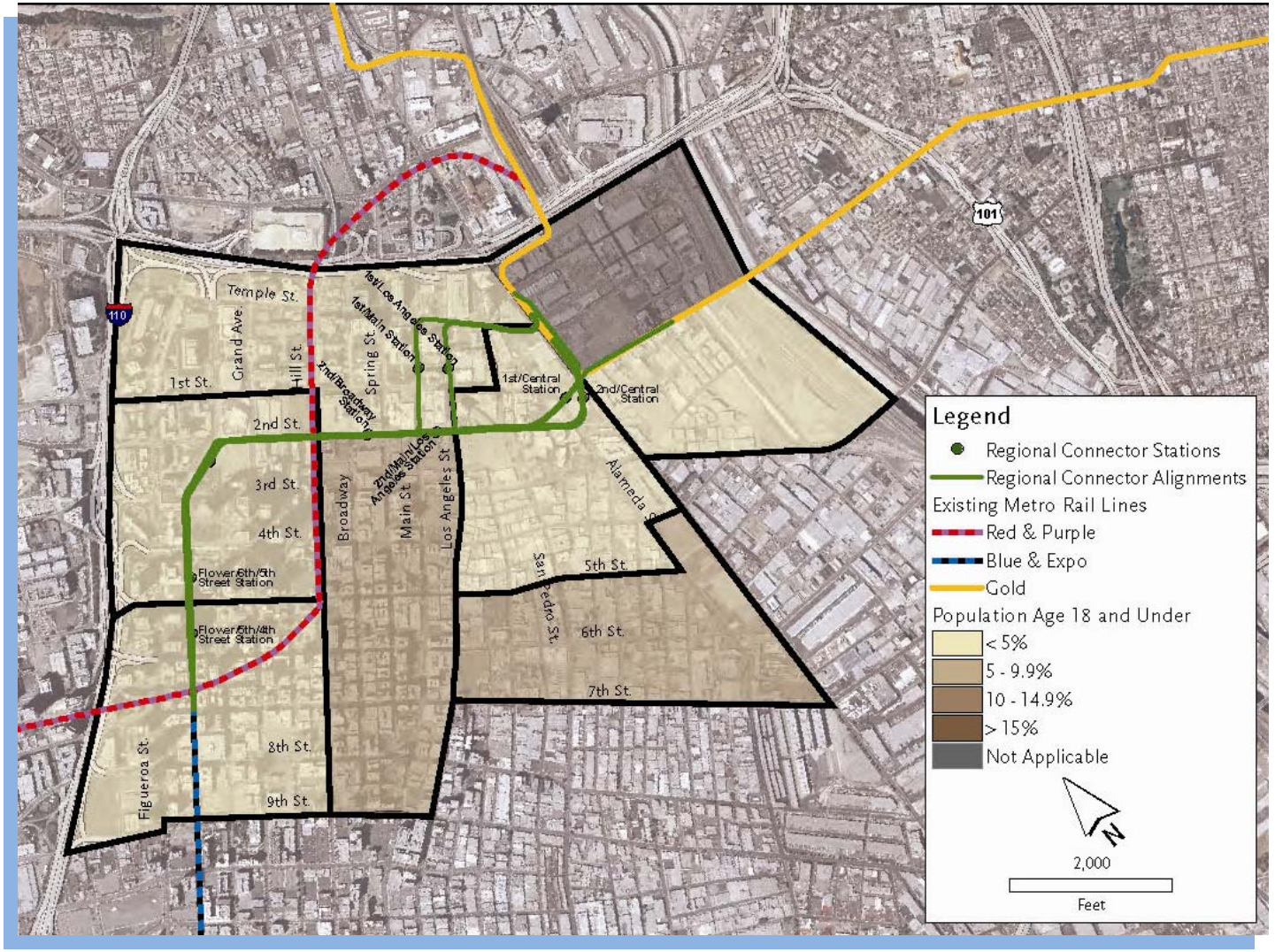
Source: SCAG, 2008

Figure 1-3. Distribution of Low-Income Households in Project Area (2005)



Source: Census Bureau, 2000, Summary File 3

Figure 1-4. Distribution of Population Age 65 and Over in Project Area (2000)



Source: Census Bureau, 2000, Summary File 3

Figure 1-5. Distribution of Population Age 18 and Under in Project Area (2000)

Figure 1-6. Metro Service Map for Downtown Los Angeles

If inadequately addressed, these challenges could hamper future population growth, economic development, commuter safety, existing infrastructure, goods movement, air quality, and other environmental conditions. If no action is taken to improve transportation mobility, SCAG estimates that daily person hours of delay would increase from 2.2 million hours under the 2000 base year to 5.7 million hours under 2035 conditions.

In evaluating the mobility and travel conditions within the project area, several issues emerge that reveal a need to provide improved transit connections and service across downtown Los Angeles. These needs include:

- Growth in population and employment will continue to draw both local and regional residents to the project area creating demand for transit services.
- Transit system expansions to the radial network centered on downtown Los Angeles will continue to funnel riders into the unconnected core creating concerns related to insufficient Metro Red and Purple Line capacity for connecting riders, crowded station platforms, and regional system schedule reliability.
- Transit dependent populations within the project area and along the existing light rail lines include low-income households, significant populations of elderly persons, and a high percentage of zero car households.
- Travel demand data highlights the congested nature of the downtown core, the high percentage of commuters that come from outside of the project area, and the built up nature of the project area that prevents expansion of the road network.
- Transit usage requires multiple transfers for cross-town trips for both local and regional riders increasing travel times.
- Local land use plans and policies, including the adopted City of Los Angeles General Plan Framework Element, Central City Community Plan, and Downtown Design Guidelines and Modified Street Standards, support increased transit alternatives, linking the regional system through downtown, and transit and pedestrian-friendly design in downtown communities.

1.6.1 Growth and Increased Demand for Transit Services

One of the most pressing issues affecting the region's ability to effectively meet travel demands is population growth. Los Angeles County's population alone is expected to increase 18 percent to a total of 12.3 million people by 2035. Within the project area, population growth is expected to reach 31 percent. Along with increased population, employment within the project area is also expected to increase 7 percent by 2035. This expected growth will lead to increased travel demand throughout the region (Table 1-5).

Demand for transit service in the project area is high. There are approximately 50 bus lines operated by Metro, and over 174,000 Metro daily passenger boardings and alightings within the project area. On several routes, during rush hour the time between buses on some lines is less than five minutes, and some stops are served by over a dozen lines.

Employment in the project area is higher than the population which indicates that most of the people who work in the project area do not also live there and must come into the area from the surrounding region. As shown in Figures 1-7 and 1-8, the areas of highest population density are not in the same locations as the areas of highest employment density. This geographical difference between where people live and where they work creates a transportation need. Improvements to transit services in downtown Los Angeles will be needed to bring workers from areas of high population and low employment density to the project area where the highest concentration of employment opportunities is located. Figures 1-7 and 1-8 show that this condition is not expected to change in the projection year 2035.

In addition to regional commuters, the increase in population within the project area will continue to create a need to provide a variety of transit options within downtown Los Angeles. Transit improvements that increase mobility within the project area will benefit this increased population as well.

Census tracts with the largest populations (greater than 2,000 people) are found within the project area east of Main Street between 1st Street and 7th Street and east of San Pedro Street between Temple Street and 1st Street. According to SCAG projections, in 2035, slightly less growth is expected in the project area compared to the whole County. The population in the project area is expected to grow by 31 percent from about 19,396 in 2008 to 25,417 people in 2035.

Projected population is based on fairly conservative estimates made by SCAG in 2008. Figure 1-9 shows the expected year 2035 population density within the project area.

Table 1-5. Population, Household, and Employment Growth

Area of Growth	2008	2035 Forecast	Percent Change 2008-2035 (%)
Population			
Project Area	19,396	25,417	31.0%
LA County	10,449,838	12,338,620	18.1%
Households			
Project Area	9,648	13,054	35.3%
LA County	3,298,886	4,003,501	21.4%
Employment			
Project Area	171,750	184,567	7.4%
LA County	4,498,598	5,041,172	12.1%

Source: SCAG, 2008 data and 2035 projections

The total number of households is also projected to increase 35 percent from about 9,600 in 2008 to 13,000 in 2035, which is higher than the 21 percent projected for the County.

The employment base is projected to increase by about 7 percent from over 171,700 individuals in 2008 to over 184,500 in 2035. Current and projected employment within the project area are both between three and four percent of total County employment.

At that time, total employment in a majority of the census tracts within the project area was over 5,000, with areas of highest concentration (greater than 12,500 jobs) in three locations:

- The area bounded by SR 110, Flower Street, 7th Street, and 9th Street;
- The area bounded by SR 110, Hill Street, US 101, and 1st Street; and
- Part of the area bounded by Hill Street, Alameda Street, US 101, and 2nd Street.

A large employment base indicates that a significant number of workers commute within, into, and out of the project area. Figure 1-10 shows the projected employment density in 2035.

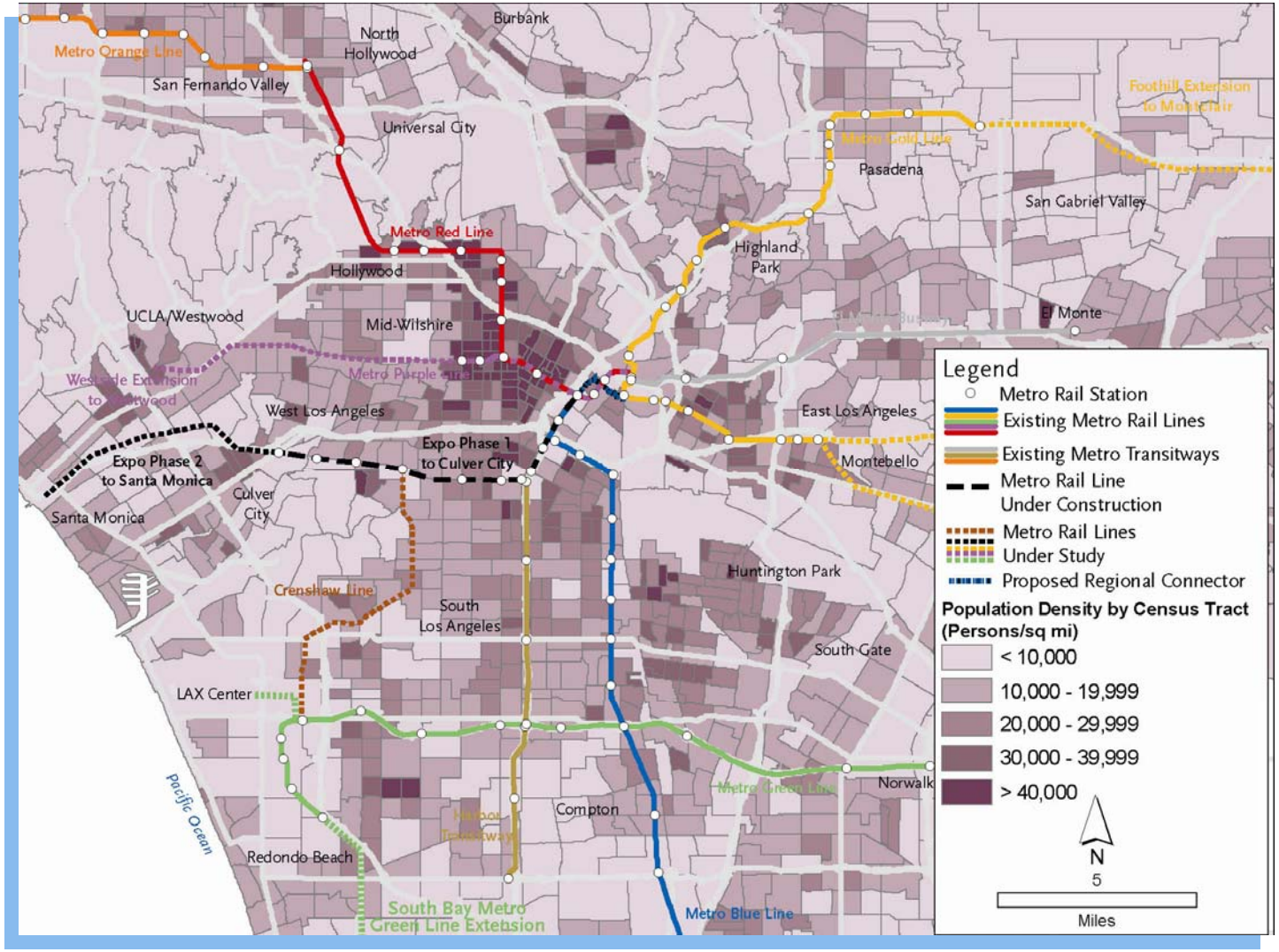
Providing public transportation to densely-populated areas can increase ridership by making transit more accessible to a larger population. The areas of highest population density are found in two locations within the project area:

- The area bounded by 1st Street, 3rd Street, SR 110, and Hill Street; and
- The area south of 5th Street and east of Hill Street.

The highest employment density exists in the project area in the area bounded by US 101, 3rd Street, SR 110, and Hill Street. Average population density is projected to grow to roughly 12,700 persons per square mile, and average employment density is expected to be over 92,000 employees per square mile.

1.6.2 Regional Transit System Expansion

By 2035, the Metro rail system is proposed to be expanded to the north and east with extensions to the Metro Gold Line and to the west with extensions to the Metro Purple and Expo Lines and the addition of the Crenshaw Line. This radial network centered on downtown Los Angeles will continue to funnel riders into the central city core.

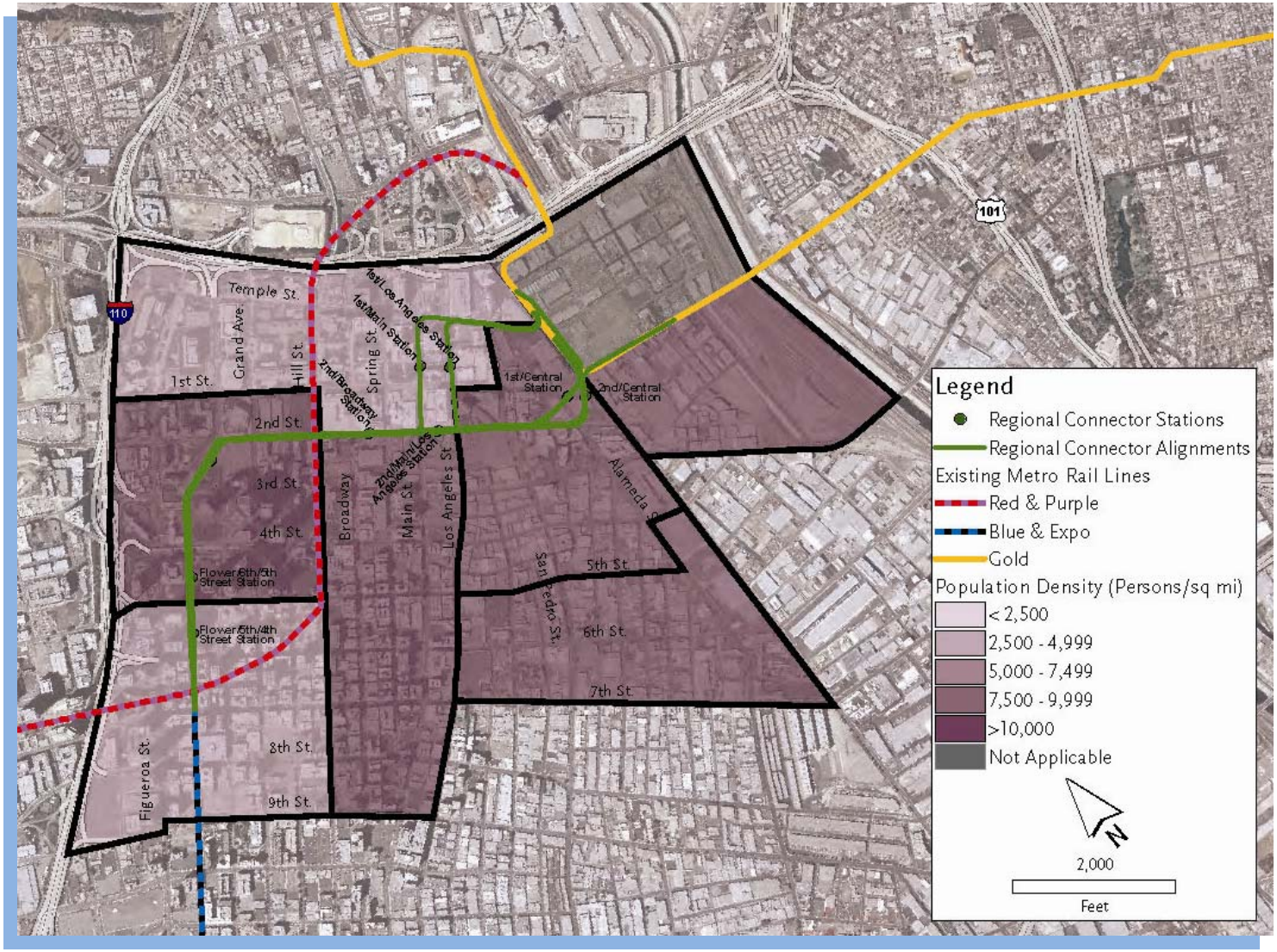


Source: SCAG, 2008

Figure 1-7. Projected Regional Population Density (2035)

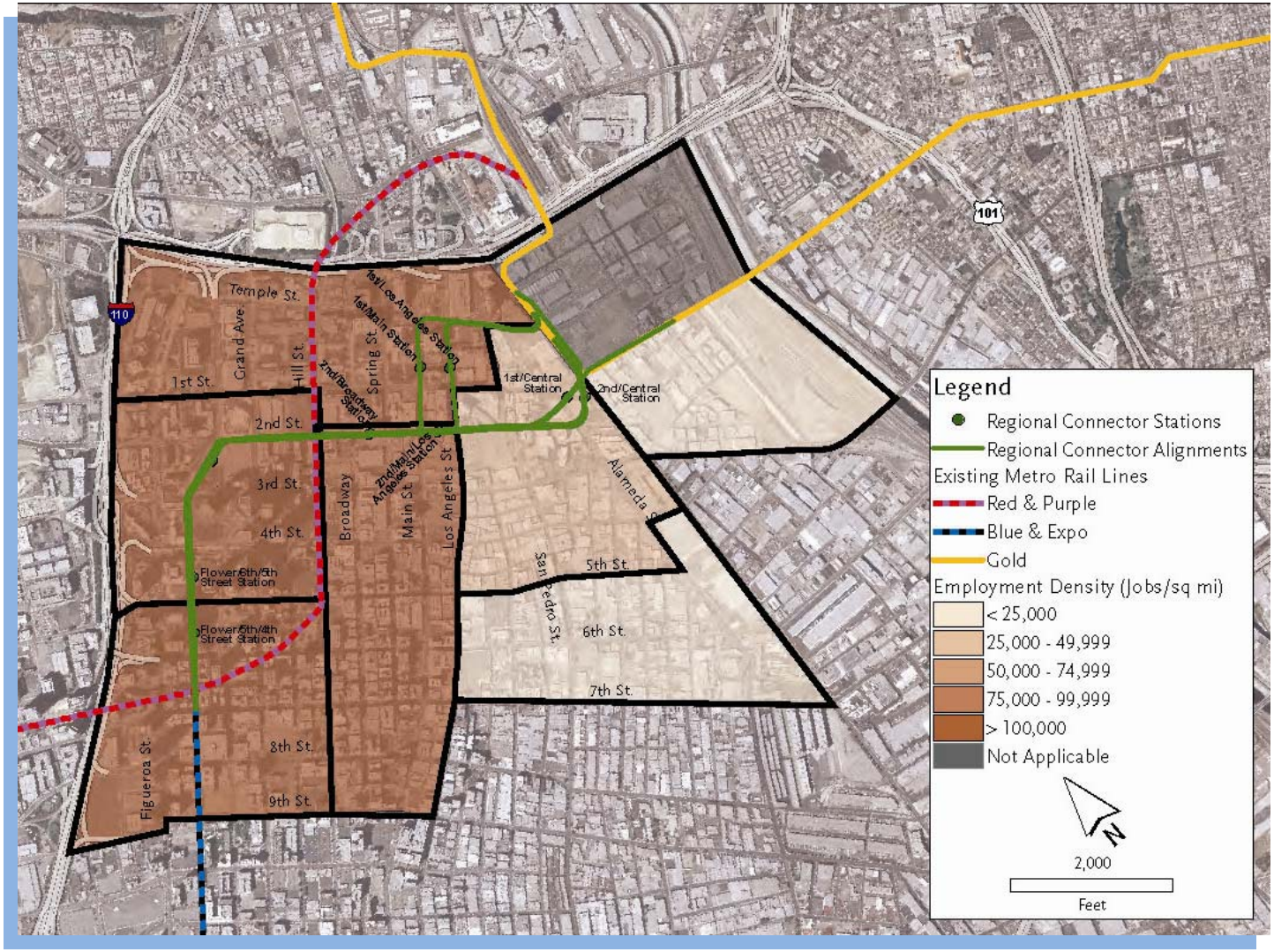
Source: SCAG, 2008

Figure 1-8. Projected Regional Employment Density (2035)



Source: SCAG, 2008

Figure 1-9. Projected Population Density in Project Area (2035)



Source: SCAG, 2008

Figure 1-10. Projected Employment Density in Project Area (2035)

Central downtown Los Angeles is a top destination for trips originating outside of the project area from both the east and west. For example, over 50,000 daily trips (approximately 25 percent of external trip destinations) are made for work from the greater eastside to central Los Angeles. Downtown Los Angeles has long been considered a major destination for employment, education, and services; it is now experiencing a resurgence as a center for entertainment and the arts, and increasingly, residential living. However, travel to and from activity centers both in the project area and in the surrounding region often require more than one transfer. Examples of key activity centers include the University of Southern California, downtown Long Beach and Culver City, Old Town Pasadena, Chinatown, Los Angeles Coliseum, and the Los Angeles County Museum of Natural History.

The project area is located in the crossroads of the region's transportation system. Transit riders that arrive at either the 7th Street/Metro Center Station or Union Station generally continue on to other destinations. For example, passengers must transfer once to travel from downtown Pasadena to the downtown Los Angeles Financial District, or to travel from East Los Angeles to the downtown Los Angeles Financial District. In Metro's 2004 Metro Rail Onboard Survey, 42 percent of Metro Gold Line riders indicated that they needed to ride two trains (one transfer) on their one-way trips, and seven percent rode three trains (two transfers). The results of this survey of Metro Gold Line riders are shown in Table 1-6. In order to gauge the number of passengers inconvenienced by the system's forced transfers, each passenger was asked how many trains and buses they needed to take to complete their one-way trip.

Since Union Station is the only rail-to-rail transfer point on the Metro Gold Line, these results suggest that nearly half of all Metro Gold Line riders are transferring to the Metro Red or Purple Lines to complete their trips. The transfer between the Metro Red or Purple Lines and the Metro Gold Line at Union Station can take up to 20 minutes, and the platforms are approximately a four-minute walk apart. The transfer between the Metro Red or Purple Lines and the Metro Blue Line at 7th Street/Metro Center Station can also take up to 20 minutes. These forced transfers amount to a disincentive for passengers making trips through the downtown area on the rail system.

Additional service to downtown will increase the number of riders needing to transfer to the Metro Red and Purple Lines to continue to their ultimate destinations. This includes passengers transferring at Union Station from the Metrolink commuter rail lines, which serve Orange, Los Angeles, Riverside, San Bernardino, San Diego, and Ventura Counties. These additional riders will contribute to crowding on the platforms at the stations that serve as main transfer points to other destinations. At the 7th Street/Metro Center Station, Metro Red and Purple Line passengers wishing to use the Flower Street escalators must share the crowded passageways leading to the Metro Blue Line platform. Metro Expo Line passengers would add to the crowds on the existing Metro Blue Line platform. As riders from these lines transfer to the Metro Red and Purple Lines on the lower platform, overcrowding will be a concern there as well.

Table 1-6. Metro Gold Line Riders Train/Bus Use per Trip

Number of Vehicles Needed to Complete a One-Way Trip	Percentage of Riders
1 Train	53%
2 Trains	38%
3 Trains	7%
4 Trains	2%
1 Bus/Train	22%
2 Bus/Train	34%
3 Bus/Train	25%
4+ Bus/Train	19%

Source: 2004 Metro Rail Onboard Survey

Metro's 2004 Metro Rail Onboard Survey indicates that relatively few Metro Gold Line riders currently continue beyond 7th Street/Metro Center Station toward Long Beach on the Metro Blue Line. The current bus ridership indicates that this is likely due to too many transfers being needed. With the opening of the Metro Expo Line and Metro Gold Line to East Los Angeles it is likely that double transfers will increase due to the east-west travel demands.

Additional transit opportunities created by the Regional Connector for commuters on the Metro Blue and Gold Lines are expected to increase the number of trips along the corridors of both. The Regional Connector will alleviate congestion on the already heavily-used Metro Red and Purple Lines by eliminating the need for Metro Blue and Gold Line commuters to transfer through them.

The ridership benefits of increasing trip speeds have been demonstrated in Los Angeles by the Metro Rapid program, a bus improvement program involving frequent limited-stop buses with traffic signal priority. The 2002 Metro Rapid Demonstration Program Final Report noted that the implementation of the rapid bus service led to 23-29 percent improvement in trip speeds, an increase from 9MPH to 12MPH. While this difference may seem small, ridership on the Wilshire/Whittier corridor increased by 42 percent as a result.

1.6.3 Travel Demand

The majority of the congestion within the project area and the region is from travel on the highways and local arterial network regardless of transportation mode. If the current trend persists, travel delays are expected to rise to 5.7 million person hours by 2035, more than double currently experienced delays, which will deeply affect highway productivity (SCAG 2008).

Performance of intersections is measured by "level of service" (LOS). LOS is a measure of how congested an intersection or roadway segment is, which helps to identify areas that need transportation improvements. LOS ranges from A (free flow) to F (breakdown/lengthy delays), and LOS D is considered generally acceptable for urban conditions. All of the key intersections in the project area currently operate at LOS D or better during both the AM and PM peak hours. Only the Figueroa Street and Wilshire Boulevard intersection is operating at LOS F in the PM peak hour (Figure 1-11). By 2035, up to 28 intersections in the project area will be at LOS E or F in the PM peak hour without transit improvements in the project area (Figure 1-12).

Freeways within the project area already operate at LOS F during peak hours and, if not addressed, this trend is expected to worsen through the year 2035. Nearly all areas of the County experience freeway congestion during peak hours. However, the congestion on freeways within the project area is among the worst and occurs during both the morning and evening rush hour periods, as illustrated in Figure 1-13.

For a complete description of the traffic operating conditions analysis, see Appendix L, Transportation Technical Memorandum.

1.6.4 Local and Regional Plans and Policies

Local and regional land use plans and policies, including the adopted City of Los Angeles General Plan Framework Element, Central City Community Plan, and Downtown Design Guidelines and Modified Street Standards, support increased transit alternatives, linking the regional system through downtown, and transit and pedestrian-friendly design in downtown communities. These are discussed earlier in this chapter and detailed in Appendix E, Purpose and Need Report.

SCAG has established regional goals for alleviating the identified mobility problem in the region. The Regional Connector Transit Corridor project would help do this by:

- Extending the reach and connectivity of all but one of Metro's operational and under-construction LRTs;
- Broadening the range of downtown destinations reachable with one transfer from the Metro Red and Metro Purple Lines;
- Alleviating congestion on the downtown bus network; and
- Increasing the availability of direct service to multiple destinations in Los Angeles County for passengers arriving on intercity services at Union Station.

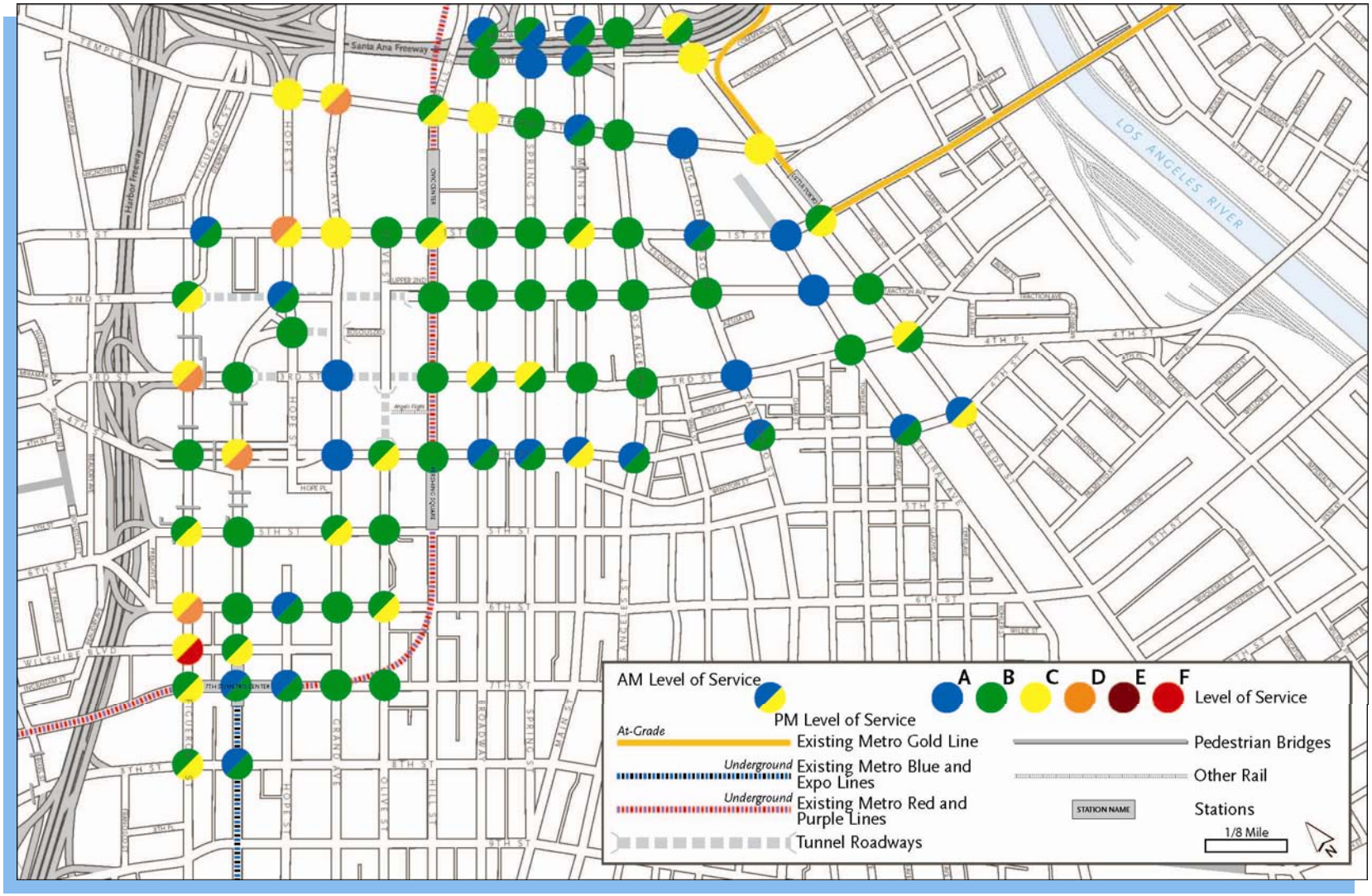


Figure 1-11. Existing Level of Service in Project Area

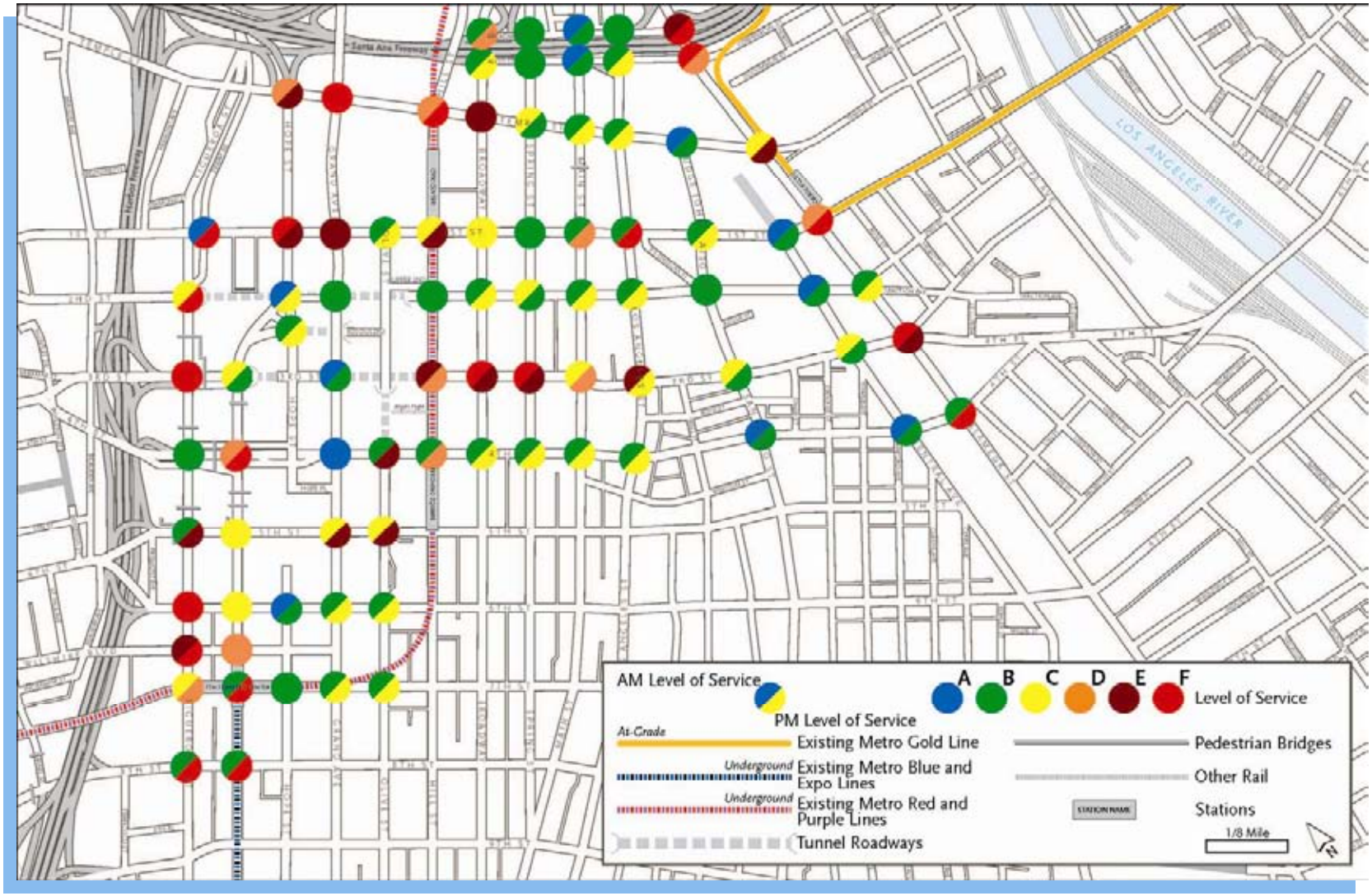
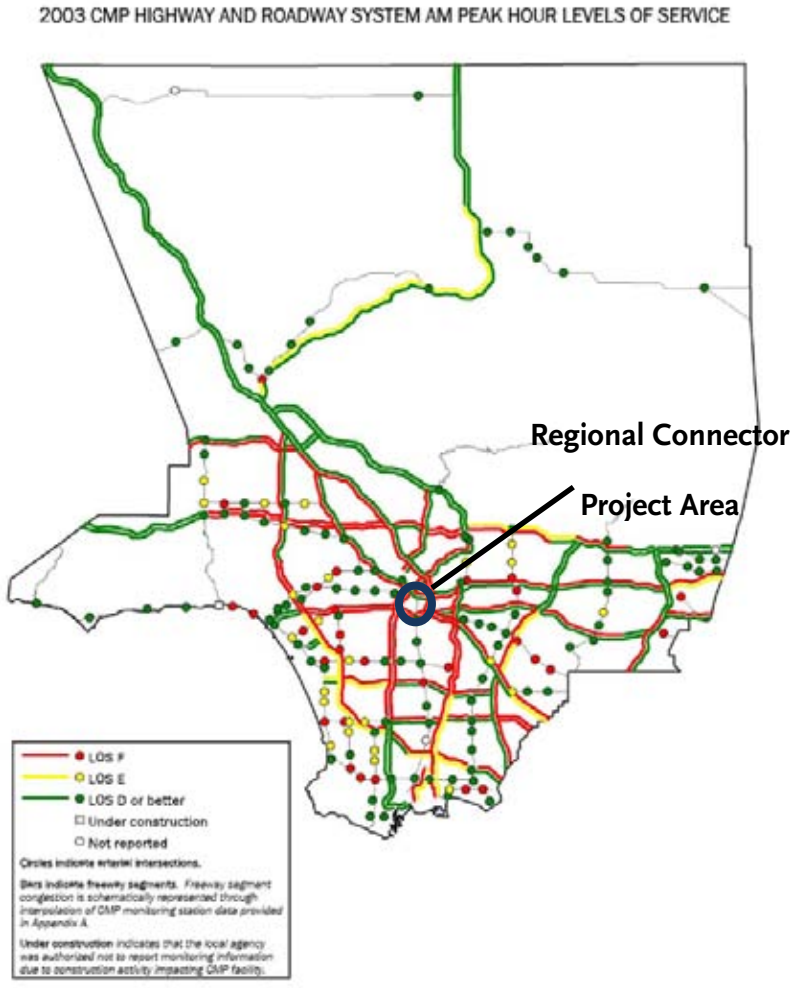


Figure 1-12. Predicted Level of Service in Project Area Without Transit Improvements (2035)



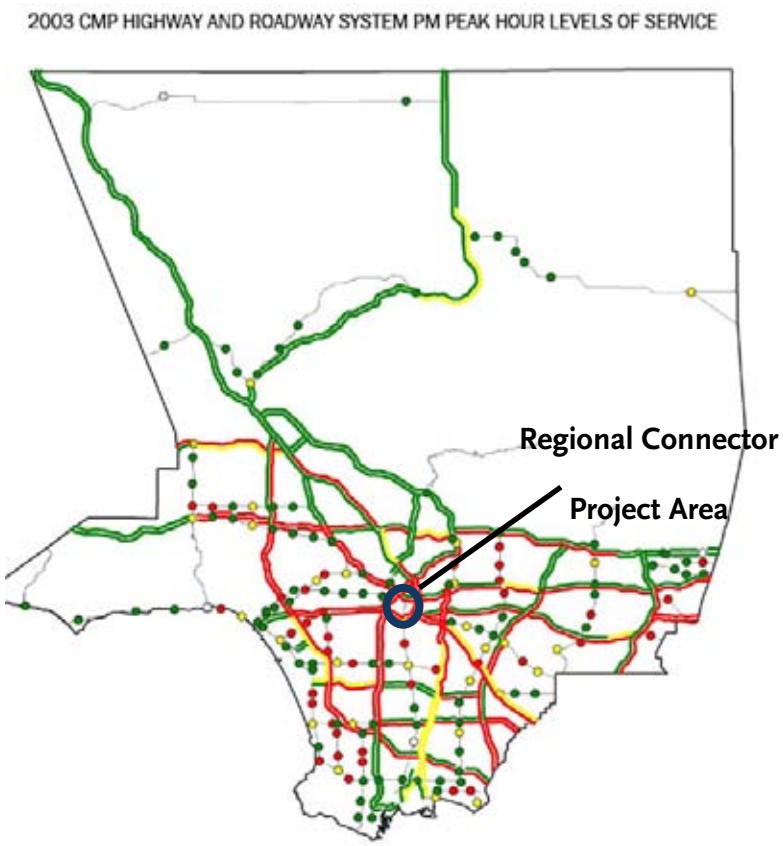


Figure 1-13. Freeway Levels of Service

1.6.5 Air Quality and Environmental Sustainability

The City is one of the most congested metropolitan areas in the nation and has been designated as a federal non-attainment area for air quality. The growing concern over global climate change and poor air quality is a predominant concern for Southern California. The use of fossil fuels for transportation generates large amounts of carbon dioxide (a greenhouse gas) emissions, which continue to disrupt progress toward improved air quality. Vehicle-related emissions account for over one-third of all air pollutants in the County (SCAG 2006).

During the 1990s, the County saw a significant increase in transit use. In 2002, SCAG reported that the City ranked seventh in the nation in public transit usage (SCAG 2002). These changes are due in large part to investments in the regional public transportation system.

Investments in public transportation can contribute to alleviating the air quality challenges faced by the region and mitigating the negative effects suffered by Southern California residents. The Regional Connector will contribute to improved mobility by increasing the speed and convenience of the rail system, thereby providing a more viable alternative to the automobile. As a result, projected degradation of air quality will be reduced or possibly reversed through contributions to reduced automobile-related greenhouse gas emissions in the region.

1.7 Potential Transit Markets

This EIS/EIR provides projections of ridership generated by people moving within the project area and through the project area to get to and from homes, jobs, services, and entertainment.

Key advantages for the Regional Connector presented by the project area are the easy bus connections provided by the dense transit network, convenient regional and intercity rail interface, and the location of activities and services within walking and biking distance of each other. Given that the Regional Connector would be located in downtown Los Angeles, key potential markets include commuters, trips passing through the downtown area, and people traveling to the area for special events or leisure.

1.7.1 Local Development, Redevelopment Plans, and Transit Improvements

Many of the communities in the project area are focusing on redevelopment projects to meet increasing residential and commercial demands. Several large commercial centers or mixed-use developments have been identified within and around the project area, such as office towers on Bunker Hill, the LA Live entertainment and sports complex, the Civic Center, retail centers along 7th Street, and the Broadway and Spring Street commercial areas. These centers are typically ideal locations for public transit services due to the large number of patrons and opportunity to alleviate inbound and outbound traffic congestion. The Regional Connector would improve transit access to these activity centers, and provide additional mobility between them. The Regional Connector would also strengthen connections to other major destinations along the Metro Blue, Gold, and Expo Lines by reducing transfers and improving trip times. Employment centers outside the central downtown area, such as Pasadena, Culver City, Long Beach, and the University of Southern California (USC), would be served by the Regional Connector through strengthened transit connections to the downtown area and other parts of Los Angeles County.

1.7.2 Travel Demand and Patterns

Historic growth patterns have resulted in a multi-centered region with multiple transportation corridors converging in the project area. The transportation network includes 9,000 lane-miles of freeway, more than 42,000 lane-miles of arterials, and several large public transit service providers (SCAG RTP 2004). Yet growth of the transportation system has not kept pace with population growth and increases in transportation demand. As the population in the region doubled from 1960 to 2000, highway miles increased by less than 30 percent (SCAG RTP 2004). The congestion caused by insufficient transportation lanes affects both personal travel and goods movement. The majority of the congestion is from travel on the highways and local arterial network regardless of transportation mode. If the current trend persists, travel delays are expected to rise to 5.4 million person hours by 2035, more than double currently experienced delays, which will deeply affect highway productivity (SCAG PEIR 2004). Expanding the public transportation system will provide more choices for commuters and potentially reduce travel demand and patterns on major highway and arterial systems.

The project area is at the central core of activity for the County. The project area is ranked very high as a destination zone for people coming from outside of the project area. For instance, over 50,000 daily trips (approximately 25 percent of external trip destinations) are made for work from the greater Eastside, to Central Los Angeles. The Central Business District (CBD) is also one of the top attractors of trips from the Westside. In 2006, of the more than 53,000 daily person trips from the project area to other parts of Central Los Angeles, 11,000 were on public transit.

1.7.3 Summary of Public Transit Markets

As described in Section 1.6.1, the total population in the project area is projected to increase by approximately 30 percent by 2035, increasing the population density. High population densities can increase potential ridership on public transit. Increasing economic development and employment opportunities in the project area also increases the size of the public transit market. Employment is expected to increase by about seven percent by 2035. This will increase demands for public transit from commuters wishing to avoid travel in private vehicles during peak traffic hours on roads and freeways.

Improving public transit connectivity in the project area offers opportunities to increase ridership through access to regional transit markets. Balanced local land use and transportation policies can reduce auto travel and support more pedestrian-friendly, mixed-use and transit-oriented developments throughout the region. Public transit provides an alternative means of personal mobility, supports increases in demands to alternatives to private transportation, and contributes to improving the quality of life in metropolitan communities.

Transit facilities, services and centers are best when they are customer-friendly, community-oriented and well-designed. A network of transit-based centers and corridors, supported by in-fill development, maximizes the use of existing infrastructure, supports transit ridership, reduces automobile air pollution and preserves natural areas. These improvements will help improve the region's economic vitality, quality of life, and environment.