Los Angeles County
Metropolitan Transportation Authority

West Santa Ana Branch Transit Corridor

Draft EIS/EIR Chapter 1: Purpose and Need

Metro

WEST SANTA ANA BRANCH TRANSIT CORRIDOR PROJECT

Draft EIS/EIR Chapter 1: Purpose and Need

July 2021

Draft Environmental Impact Statement/ Environmental Impact Report

LEAD AGENCIES: Federal Transit Administration of the U.S. Department of Transportation; Los Angeles County Metropolitan Transportation Authority

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
HBW	home-based work
I-	Interstate
IVT	in-vehicle travel time
LA County	Los Angeles County
Metro	Los Angeles County Metropolitan Transportation Authority
OVT	out-of-vehicle travel time
SCAG	Southern California Association of Governments
WSAB	West Santa Ana Branch

1 PURPOSE AND NEED

1.1 Introduction

The Federal Transit Administration and the Los Angeles County Metropolitan Transportation Authority (Metro) are sponsoring a transit project along the historic West Santa Ana Branch (WSAB) corridor within Los Angeles County, known as the WSAB Transit Corridor Project (Project).

This chapter presents the Project's Purpose and Need, provides a brief project history, a description of the Study Area, performance of the regional transportation system, assessment of travel demand and travel markets, transit usage, congestion, and mobility. The Project has been developed to achieve the Purpose, Need, and related goals described in this section, which are discussed below.

1.2 Project Purpose and Need

1.2.1 Purpose of the Project

The Project's overall Purpose is to provide high-quality reliable transit service to meet the future mobility needs of residents, employees, and visitors who travel within and through the corridor. This new transit service will increase mobility and connectivity for historically underserved and transit-dependent communities, improve travel times on local and regional transportation networks, and accommodate substantial future employment and population growth.

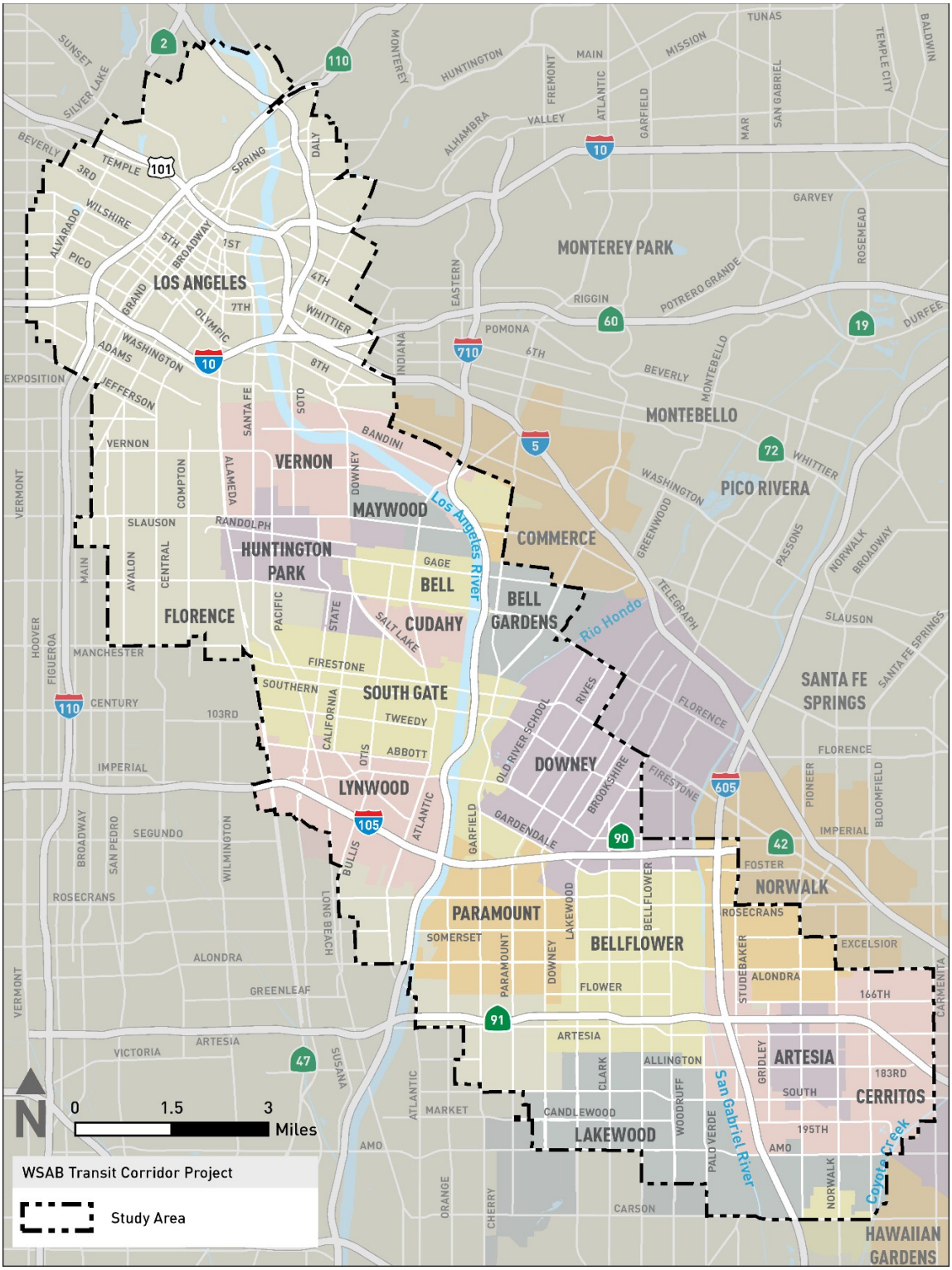
More specifically, the Project's Purpose is as follows:

- Establish a reliable transit service that will enhance the connectivity of the existing transit network and reduce transit travel times to local and regional destinations
- Accommodate future travel demand, including the high number of transit trips made by Study Area residents
- Improve access for the densely populated neighborhoods, major employment centers, and other key regional destinations where future growth is forecasted to occur within the Study Area
- Address mobility and access constraints faced by transit-dependent communities and environmental justice communities

1.2.2 Need for the Project

Located in southeastern Los Angeles County, the Study Area is approximately 98 square miles and incorporates 20 individual cities – the Cities of Los Angeles, Vernon, Maywood, Huntington Park, Commerce, Bell, Cudahy, Bell Gardens, South Gate, Lynwood, Compton, Downey, Paramount, Bellflower, Long Beach, Lakewood, Norwalk, Artesia, Cerritos, and Hawaiian Gardens – as well as portions of unincorporated Los Angeles (LA) County (Figure 1-1).

Figure 1-1. West Santa Ana Branch Transit Corridor Study Area



Source: Prepared for Metro in 2020

The following information is based on the *West Santa Ana Branch Transit Corridor Mobility Problem Definition Report & Purpose and Need Statement* (Metro 2019g).

Currently home to 1.4 million residents and 618,500 jobs, projections show the Study Area resident population increasing to 1.6 million and jobs increasing to 746,000 by 2042. Most of the Study Area is served by buses that operate primarily along a heavily congested freeway and arterial network. As the population and employment within the Study Area are predicted to grow substantially over the next 20 years, the congestion of the roadway network is expected to worsen, resulting in the further decreased reliability of transit service.

The major issues and constraints within the Study Area, which demonstrate the need for the Project, are as follows:

High Population and Employment Densities – In 2042, projected population densities within the Study Area will average 15,000 people per square mile, with portions of the Cities of Maywood and Huntington Park exceeding 25,000 residents per square mile. In 2042, the Study Area will also remain a major employment destination, with average densities of 6,800 jobs per square mile.

High Number of Transit-Dependent Populations – Characterized by zero-vehicle households, low-income households, minors, and seniors, in 2017, approximately 90,000 (around 18 percent) of the Study Area's households do not have access to their own car (zero-vehicle households), which represents around 29 percent of all zero-vehicle households in LA County (9 percent of all LA County households are considered zero-vehicle households). Furthermore, 32 percent of the Study Area residents are minors and 12 percent are seniors.

Environmental Justice Communities[1] – In 2017, minority residents comprise 65 percent of the total Study Area population, with Hispanic/Latino groups alone accounting for 51 percent of the total population. In addition, 44 percent of Study Area residents live below the poverty level, which is higher than the county average of 33 percent. These communities have been historically underserved by transit investments.

Goods Movement – Goods movement activities (freight rail and trucks) provide economic benefits within the Study Area. The WSAB Transit Corridor includes a network of intermodal rail yards, truck depots, warehouses, and distribution centers, in addition to the Alameda Corridor that links the ports of Long Beach and Los Angeles to the transcontinental rail network near downtown Los Angeles. Improvement of mobility options for Study Area residents and employees must also recognize the regional economic benefits that goods movement provides, and not hinder goods movement through increased roadway congestion or reduced freight capacity.

Increasing Travel Demand – By 2042, total daily travel within the Study Area is projected to increase by 14 percent, an increase of 870,000 daily person trips. There is significant transit demand given the high proportion of transit-dependent populations. Overall, around 14 percent of the home-based work trips are currently made by transit.

[1] Per the FTA Circular 4703.1 definition of Environmental Justice Communities.

Constrained Freeway and Arterial System – Even with planned highway and transit improvements, the projected increase in daily travel will impact the transportation system's capacity. By 2042, volumes will remain heavy on all Study Area freeways, with volumes increasing to over 100,000 vehicles per day on portions of the Interstate (I-) 105, I-605, and I-710 freeways. The worsening congestion will also impact reliability of bus service within the Study Area.

Limited Travel Options – Currently, residents within the Study Area have two primary travel options for regional trips: private automobile and public transit. Both modes operate on an increasingly congested highway and roadway system and constrained capacity passenger rail network. Effective transit options are primarily concentrated only at the northernmost portion of the Study Area (Metro A [Blue] Line, B [Red] Line, D [Purple] Line, E [Expo] Line, and L [Gold] Line).

Limited Connections to the Metro and Regional Rail System – While the urban rail system in LA County is expanding, the Study Area has limited direct connections to these new or extended lines. Currently, the rail connections are concentrated on the northwest corner of the Study Area with connections to the Metro A (Blue) Line, Metro B (Red), D (Purple), and L (Gold) Lines, and Metrolink commuter rail system; and connections to the Metro C (Green) Line in the south. There are also two points of access to the regional Metrolink commuter rail system (Norwalk and Commerce) on the eastern edge of the Study Area.

Limited Transit Investment – While a significant level of regional and local investments has been identified for the Study Area's freeway and arterial system, a high-capacity, reliable transit investment is also needed. Without this transit investment, mobility and travel choices within the WSAB Transit Corridor will be restricted, contributing to the Study Area's continued dependence on auto travel.

1.2.3 Goals of the Project

Building on extensive stakeholder and agency outreach, the goals and objectives of the WSAB Transit Corridor were established through the development of the *Pacific Electric Right-of-Way/WSAB Corridor Alternatives Analysis Report* in 2013 (Southern California Association of Governments [SCAG] 2013), through a 24-month period of public meetings and work sessions with elected officials, stakeholders, advisory committee members, and communities. These goals were further developed in the *WSAB Transit Corridor Technical Refinement Study* (Metro 2015a) through technical meetings with key stakeholders, including Eco-Rapid Transit, Study Area cities, and the California Department of Transportation; and were further discussed in 2017 as part of the WSAB Transit Corridor Scoping Meetings and in community update meetings in March 2018. Based on the planning and community involvement activities, the following five goals were established for the Project:

- Goal 1: Provide Mobility Improvements
- Goal 2: Support Local and Regional Land Use Plans and Policies
- Goal 3: Minimize Environmental Impacts
- Goal 4: Improve Cost Effectiveness and Financial Feasibility
- Goal 5: Promote Equity

1.3 Description of the West Santa Ana Branch Corridor Study Area

The 98-square mile WSAB Transit Corridor Study Area extends over 20 miles from downtown Los Angeles to the City of Artesia traversing densely populated, low-income, and heavily transit-dependent communities. Stretching from Elysian Park on the north to the Los Angeles/Orange County line on the south, the Study Area encompasses downtown Los Angeles, Southeast Los Angeles, and much of the Gateway Cities subregion.

The Study Area is served by a network of seven major freeways and a grid of north-south and east-west major arterials. Most transit service within the Study Area are local and limited/express buses operating on the congested network, including Metro Local, Metro Rapid, Los Angeles Department of Transportation, and Orange County Transportation Authority bus. Several fixed transit (rail and bus rapid transit) services also operate on the periphery of or through the Study Area, including Metro Bus Rapid Transit J (Silver) Line, six Metro Rail Lines (A [Blue] Line, B [Red] Line, C [Green] Line, D [Purple] Line, L [Gold] Line, and E [Expo] Line), and the Metrolink and Amtrak passenger rail systems.

Land uses in the Study Area generally include high-density commercial in the north (downtown Los Angeles), multi-family neighborhoods and communities surrounding industrial centers near the center of the Study Area, and a diversity of lower-density neighborhoods and communities in the south (within the Gateway cities).

1.3.1 Study Area Population and Employment

According to Metro's Travel Demand Model 2017-2042 (Metro 2018f), the Study Area serves a significant share of Los Angeles County's housing and economic base, accounting for 13 percent of the county's residents and almost 14 percent of the county's jobs. These densities are attributed to the residential towers within downtown Los Angeles and the multi-family neighborhoods in the Cities of Maywood, Huntington Park, Cudahy, Bell Gardens, and South Gate. Portions of these cities have densities of over 25,000 persons per square mile (Figure 1-2).

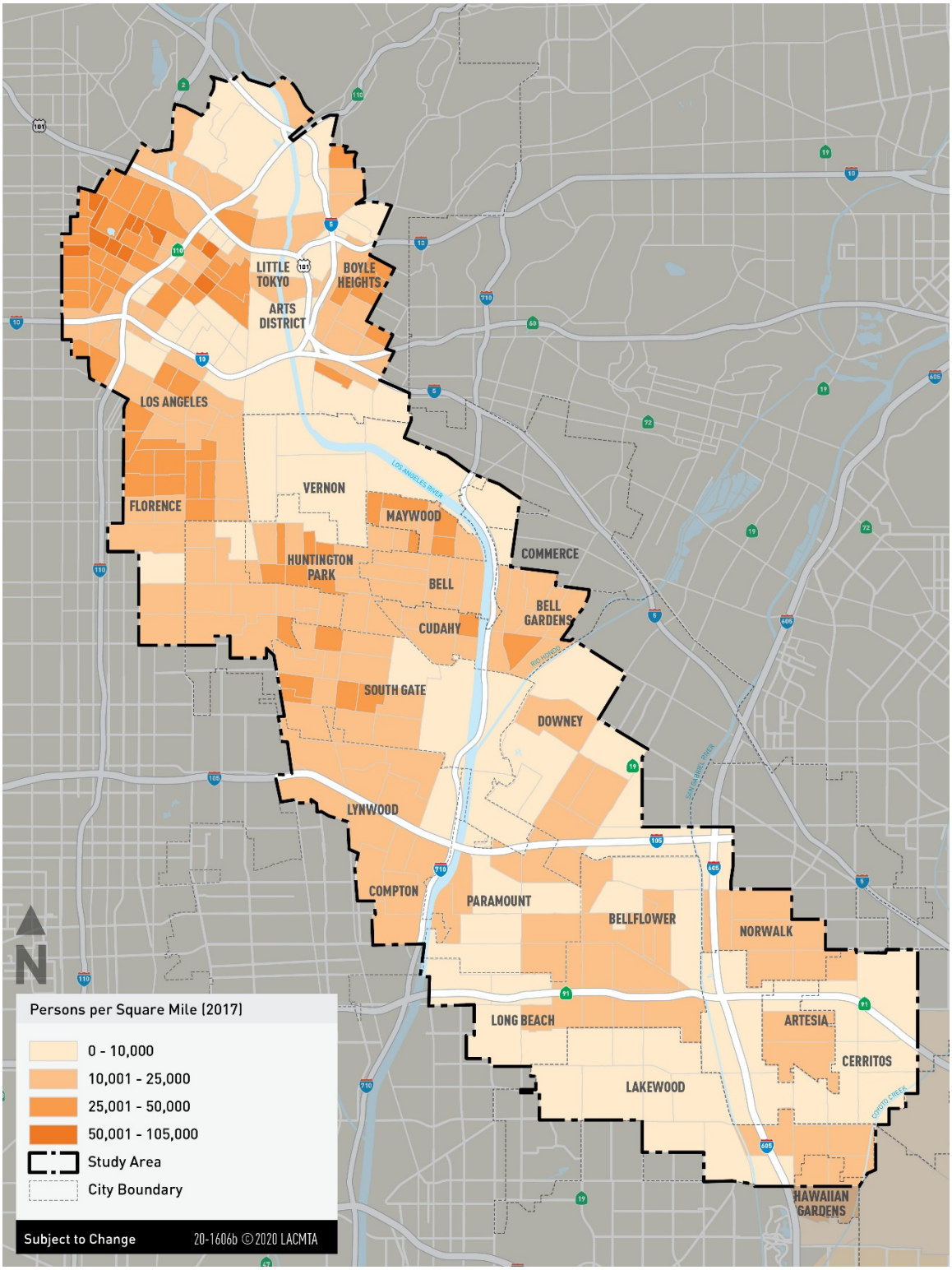
Table 1.1. Existing Population and Employment Characteristics

	Study Area	Los Angeles County
Population (number of persons)	1.4 million	10.6 million
Population Density (persons/square mile)	12,900	2,600
Employment (number of jobs)	618,500	4.5 million
Employment Density (jobs/square mile)	5,700	1,100

Source: Metro Travel Demand Model 2017 – 2042

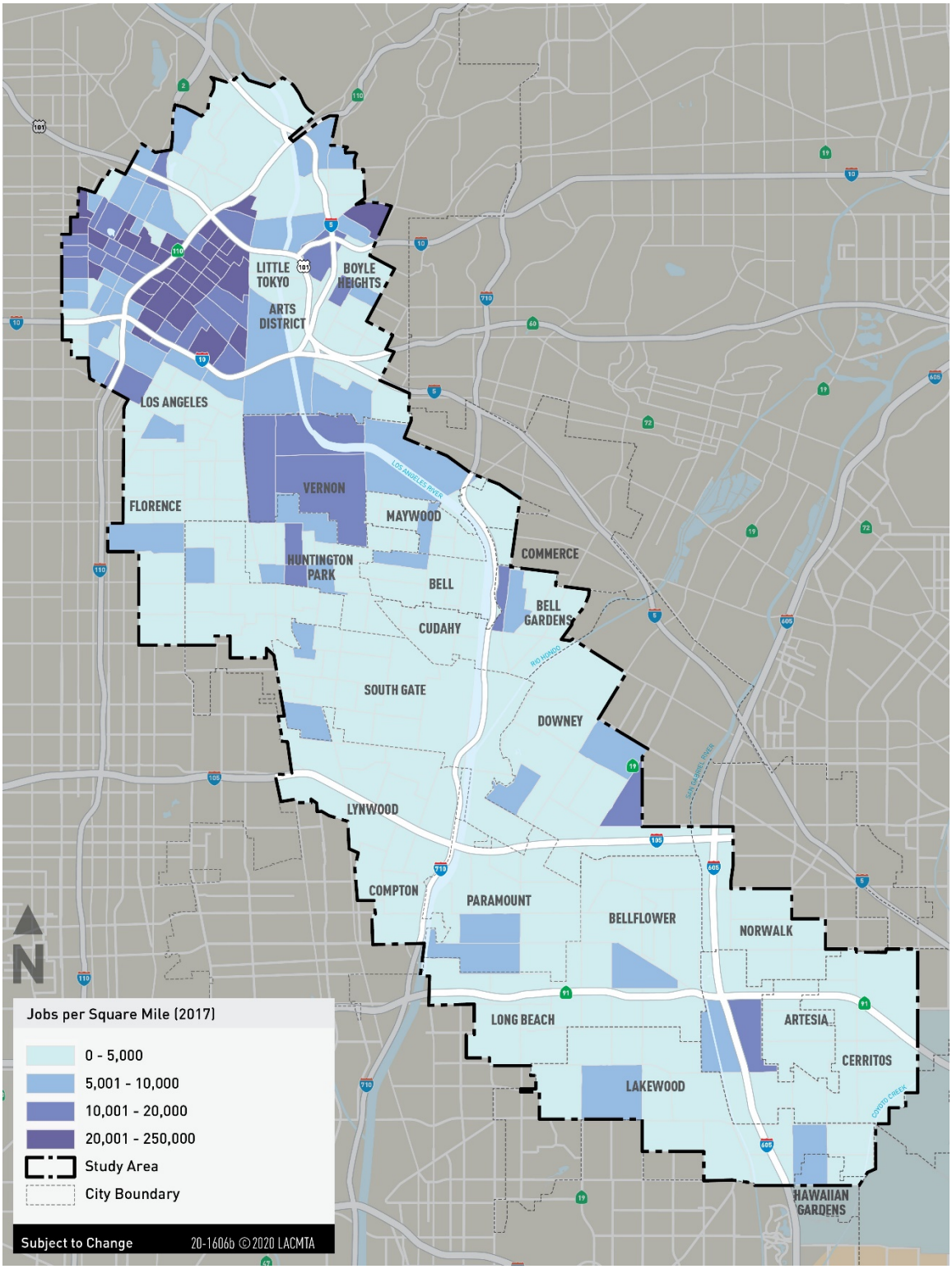
Jobs are mostly concentrated in the northern portion of the Study Area (between 10,000 and 250,000 jobs per square mile), primarily in downtown Los Angeles and in the industrial areas in the Cities of Vernon and Huntington Park. To the south, there are also substantial employment concentrations within the City of Artesia and the commercial areas of Cerritos and Lakewood (Figure 1-3).

Figure 1-2. Existing Study Area Population Density (2017)



Source: Metro Travel Demand Model 2017 – 2042

Figure 1-3. Existing Study Area Employment Density (2017)



Source: Prepared for Metro in 2020

1.3.2 Major Activity Centers and Destinations

Activity centers are key generators of trips, including those made by private and commercial vehicles, bicycles, and public transit. The Study Area includes an abundance of high-use activity sites, including civic and governmental facilities, cultural centers, educational institutions, event venues, industrial and medical facilities, recreational centers, major commercial areas, and sports venues. Figure 1-4 shows some of the major activity centers within the Study Area.

1.4 Regional Transportation System

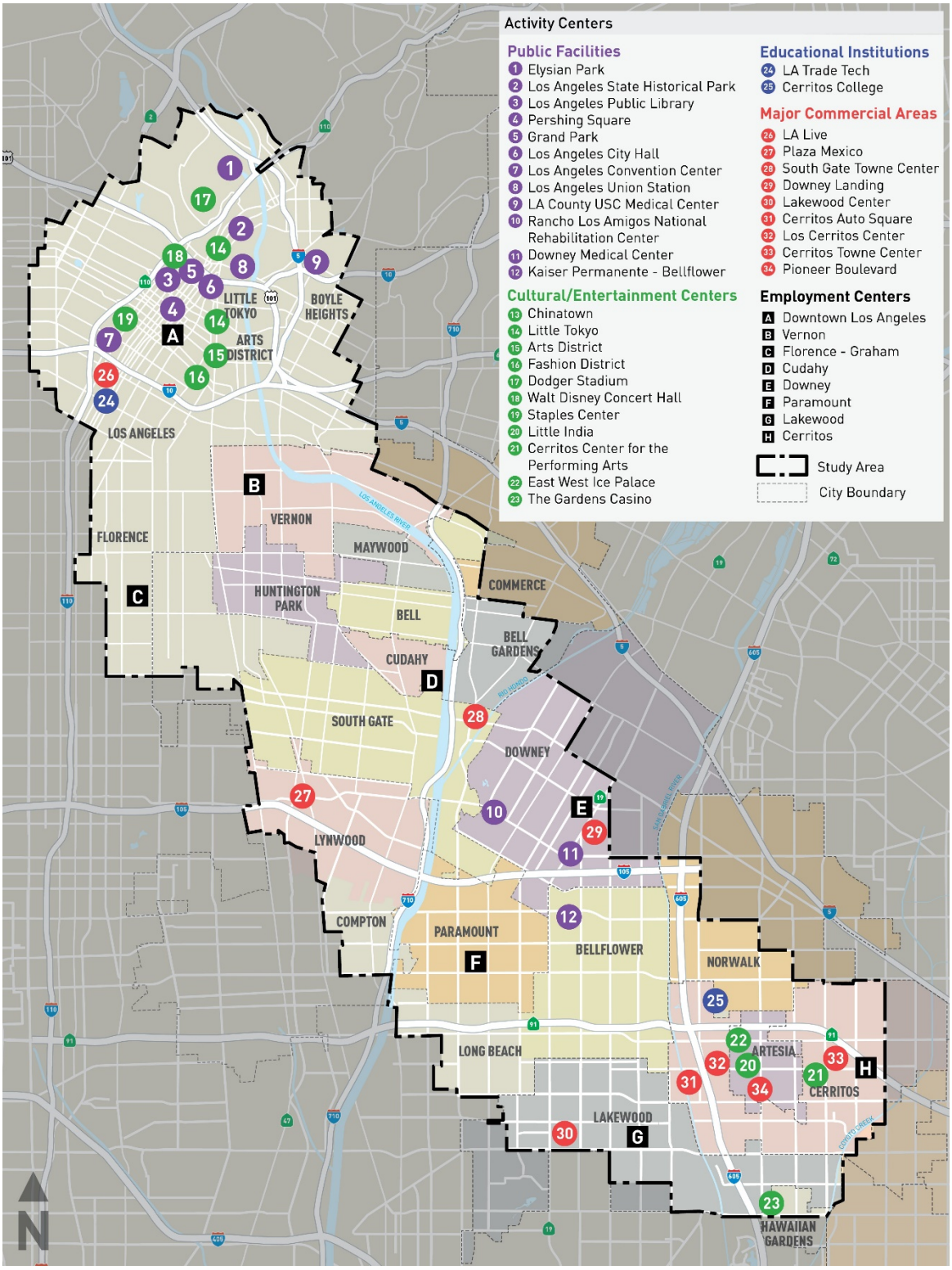
The Study Area includes an extensive freeway system and a grid of major north-south and east-west major arterials. Despite some of the vehicular capacity improvements made to the freeway and major arterials in the Study Area, traffic conditions are typically congested for several hours each day. As a result of slower travel speeds, drivers and buses encounter longer travel times to their destinations. For example, I-5 from the East Los Angeles interchange to the I-605 interchange has average travel speeds at less than 25 miles per hour during peak commute hours, as exhibited in Table 1.2. In addition, I-710 and I-105 have significant variability in travel times, as the upper limit of travel is generally twice as long as the lower limit. These examples clearly demonstrate a need for more reliable and predictive transportation options in the Study Area. Table 1.2 shows peak-hour travel times and speeds for some of the highest congested freeways in the Study Area (refer to Chapter 3, Transportation Impacts, of this Draft Environmental Impact Statement/Environmental Impact Report for a description of existing transportation conditions in the Study Area).

Table 1.2. Freeway Peak-Hour Travel Times and Average Travel Speeds (2017)

Description	Distance (miles)	Peak AM Travel Time (travel speed)	Peak PM Travel Time (travel speed)
I-105 from I-110 to I-605	10.3	18 to 60 minutes (12 to 34 mph)	22 to 55 minutes (11 to 28 mph)
I-710 from SR-60 to SR-91	11.6	20 to 45 minutes (15 to 35 mph)	26 to 60 minutes (12 to 27 mph)
I-5 from East Los Angeles interchange (I-60/I-101/I-5) to I-605 interchange	9.5	24 to 50 minutes (11 to 24 mph)	40 to 75 minutes (8 to 14 mph)

Source: Google Maps 2017
Notes: Peak hours are 6 to 9 a.m. and 3 to 7 p.m. mph = miles per hour

Figure 1-4. Activity Centers



Source: Prepared for Metro in 2020

Peak conditions on major arterials in the Study Area are also severely congested as many are used as alternatives to the freeway system. Table 1.3 is a summary of some of the highest peak-hour travel times along three major arterials that are representative of the high-volume north-south and east-west streets in the Study Area. Similar to the freeway network, high levels of variability in travel times are made worse by low speeds, with the longest travel times typically two to three times the shortest travel times.

Table 1.3. High-Volume Arterial Peak-Hour Travel Times and Average Travel Speeds (2017)

Description	Distance (miles)	Peak AM Travel Time (travel speed)	Peak PM Travel Time (travel speed)
Florence Avenue from I-110 to Lakewood Boulevard	9.8	30 to 70 minutes (8 to 20 mph)	35 to 85 minutes (7 to 17 mph)
Alameda Street from 1st Street to El Segundo Boulevard	9.2	27 to 70 minutes (8 to 20 mph)	28 to 85 minutes (6 to 20 mph)
Atlantic Avenue from I-5 to Orange County Line	11.2	29 to 70 minutes (9 to 23 mph)	30 to 75 minutes (9 to 22 mph)

Source: Google Maps 2017
Note: Peak hours are 6 to 9 a.m. and 3 to 7 p.m. mph = miles per hour.

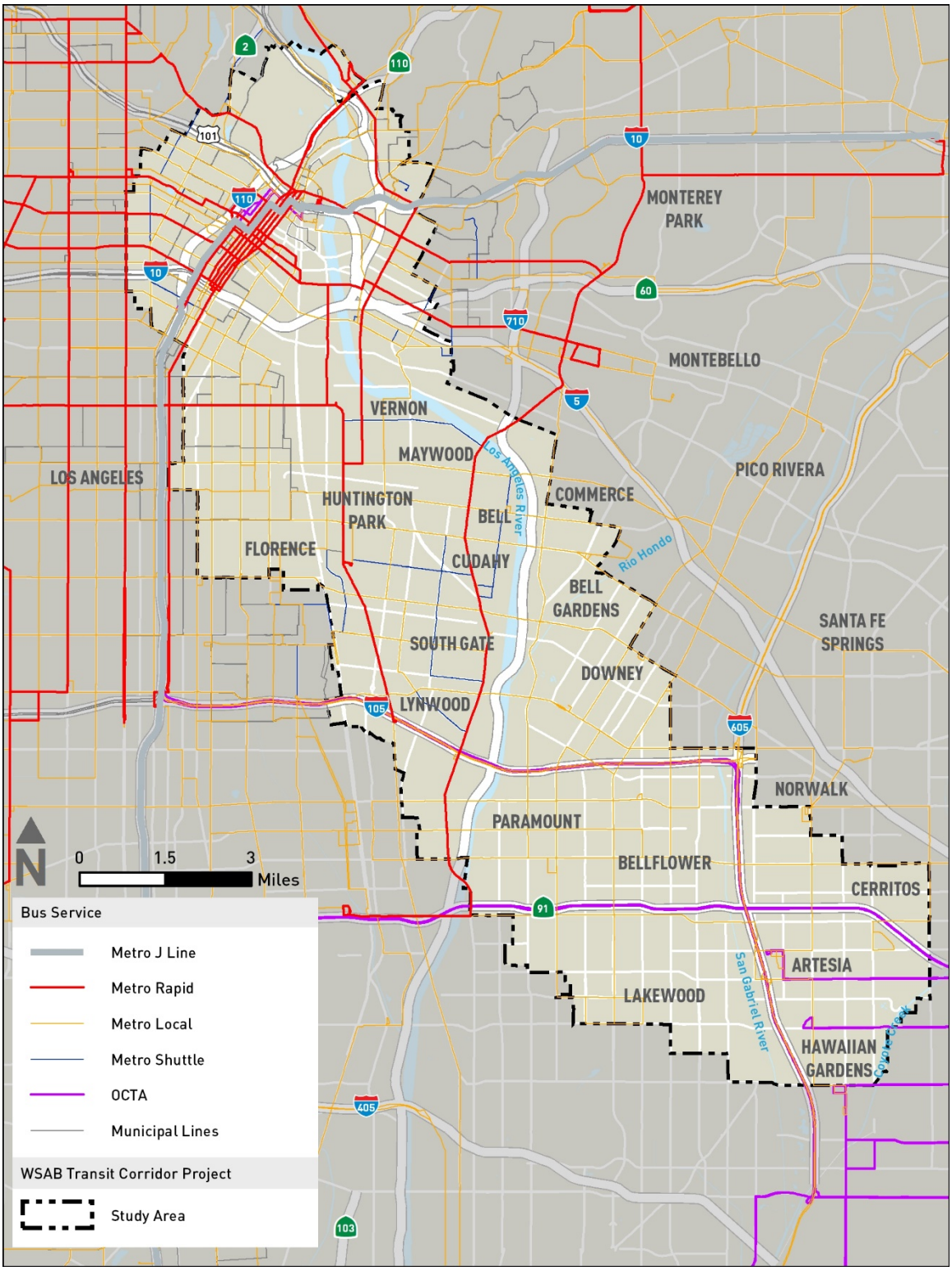
In addition, an overall increase of 21 percent in jobs is projected from 2017 to 2042, resulting in a projected 7.26 million daily trips within the Study Area by 2042. These economic trends, along with limited planned system improvements, suggest that freeways and roadways will be further constrained in the future.

1.4.1 Regional Transit Context

Most of the transit service in the Study Area are local and limited/express buses operating on the congested roadway network. Metro's regional Travel Demand Model indicates 2042 transit travel times for trips that utilize bus service or require users to travel long distances to access transit, will increase, as the roadway congestion continues to worsen and both vehicles and buses will travel at slower speeds. While there are many transit routes serving the Study Area, most do not serve the predominant north-south direction in the Study Area. In addition, traversing through the length of the WSAB Transit Corridor requires several transfers through local and regional transit services (Figure 1-5).

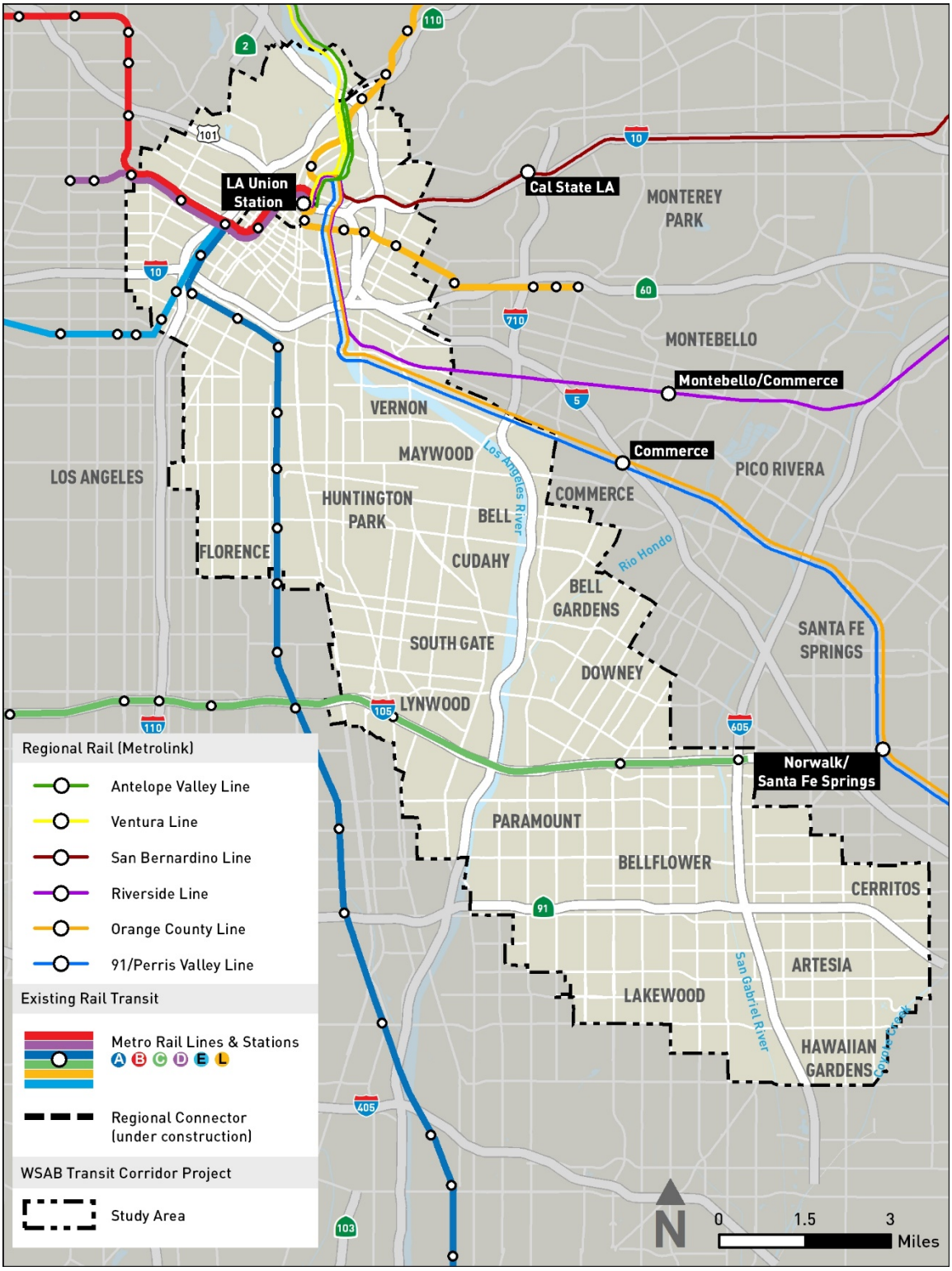
Current regional rail services are largely peripheral to the Study Area serving only partial areas within the corridor. Metro Rail Lines (A (Blue) Line, B (Red) Line, D (Purple) Line, E (Expo) Line, and L (Gold) Line) and Metrolink/Amtrak stations all have primary connections in downtown Los Angeles. The C (Green) Line service runs east-west (along the I-105 freeway) and the A (Blue) Line runs north-south through the western edge of the Study Area. Figure 1-6 shows the current Metro and Metrolink rail lines within the Study Area.

Figure 1-5. Study Area Bus Service



Source: Prepared for Metro in 2020

Figure 1-6. Study Area Rail Service



Source: Prepared for Metro in 2020

1.5 Transportation System Performance

Even with implementation of the planned roadway and transit improvements within the Study Area, the projected increase in daily travel will adversely impact the future highway and arterial network. While extensive capacity is currently provided, traffic volume demands will be even higher, as congestion is prevalent throughout most of the day. In the future year 2042, volumes will remain heavy on all Study Area freeways and service levels indicate the freeway network will continue to be at or beyond capacity. As a result of these reoccurring congestion levels, drivers encounter an increase in travel times associated with the low travel speeds. Exacerbating the issue is the low degree of travel time reliability, as travel speeds and travel times have significant daily variation. Arterial congestion is projected to increase to 90 to 100 percent of capacity on key routes. With buses operating on this roadway network, the worsening congestion will severely impact the overall reliability of services.

Overall, future transit travel in the Study Area will continue to experience mobility issues with transit travel times taking over 1.5 hours from Paramount and Artesia to regional destinations such as downtown Los Angeles, El Segundo, Long Beach, and Santa Ana. Without direct access to a high-quality fixed transit service, cities within the Study Area will not have viable or reliable transit options to regional destinations.

1.6 Travel Demand and Identification of Potential Transit Markets

1.6.1 Travel Markets

Study Area trips currently account for 9 percent of the total daily person trips within LA County. In total, currently around 6.4 million daily person trips travel within, to, and from the Study Area. By the year 2042, these daily person trips are projected to increase by 14 percent to approximately 7.26 million.

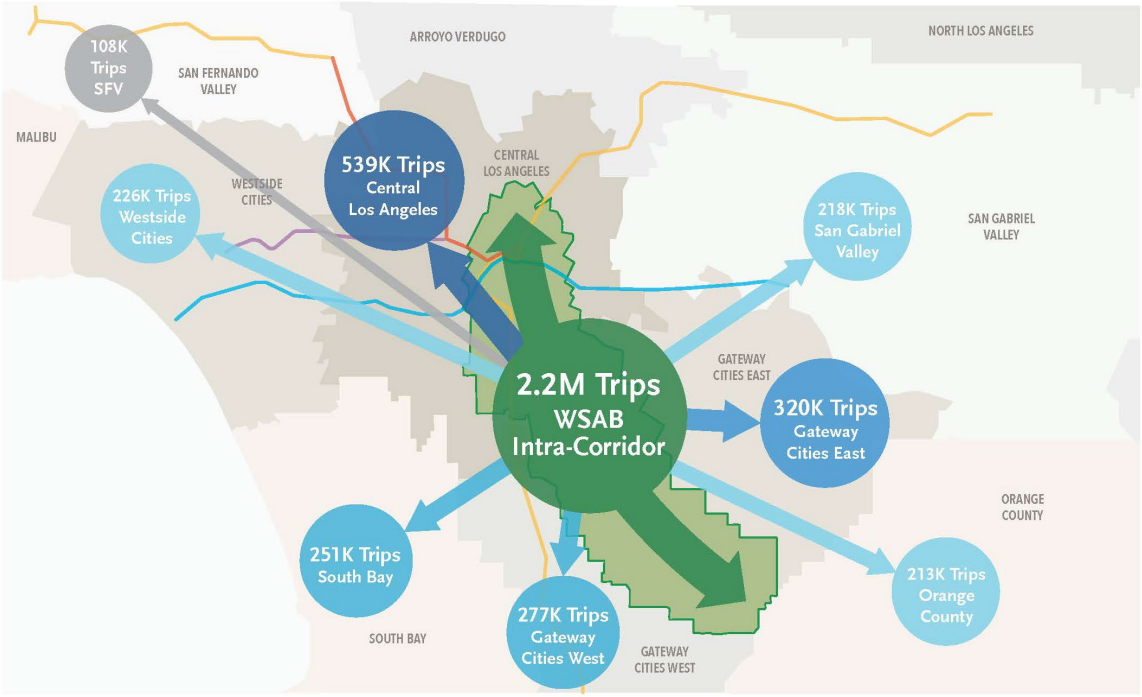
As shown in Figure 1-7 and Figure 1-8, the largest share of the 2.62 million trips leaving and 2.36 million trips entering the Study Area are to/from the west (Central LA, Gateway Cities West, South Bay, Westside Cities). Note that there is a significant number of intra-corridor daily trips (2.27 million) whose origin and destination are both within the Study Area.

In addition, a substantial number of daily person trips are anticipated to pass through the Study Area. For example, approximately 120,000 daily person trips occur between Orange County and the Westside and the San Fernando Valley, suggesting there are likely high levels of pass-through trips through the Study Area that will affect the transportation network.

1.6.2 Transit Usage

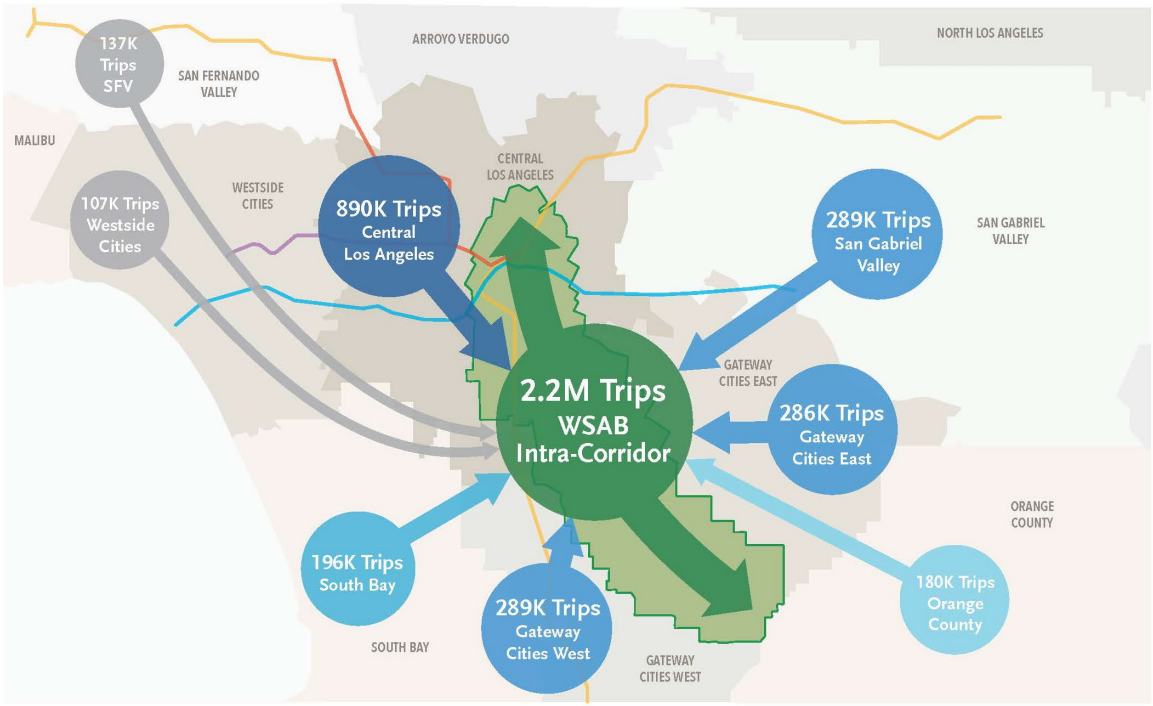
The mode share of home-based work (HBW) trips indicates whether residents are traveling to work by vehicle, transit, or other alternative modes of transportation. HBW trip data can also be used to identify trends associated with the future demand for transit.

Figure 1-7. 2042 Daily Person Trip Productions from the Study Area to Major Travel Markets



Source: Metro Travel Demand Model 2017-2042 (adapted from the SCAG Regional Travel Demand Model)

Figure 1-8. 2042 Daily Person Trip Attractions into the Study Area from Major Travel Markets



Source: Metro Travel Demand Model 2017-2042 (adapted from the SCAG Regional Travel Demand Model)

Consistent with the high transit-dependent populations within the Study Area, HBW transit trips are correspondingly high (Table 1.4). Based on the information, the percentage of residents who use transit are about three times higher (14.3 percent) than the overall Los Angeles County's transit mode share (5.4 percent). This transit demand is projected to increase to 16.1 percent for Study Area HBW trips under 2042 conditions, whereas LA County's transit mode share is anticipated to stay fairly consistent (an increase from 5.4 percent to 6.3 percent). Given the substantial transit demands within the Study Area, it will be important to provide reliable and efficient options to address existing and future transit needs.

Table 1.4. Existing (2017) and Future (2042) Home-Based Work Trip Mode Shares

	HBW (person trips)	HBW (transit trips)	HBW (auto/other trips)	Transit (%)	Auto (%)	Other (%)
WSAB Residents (2017)	744,600	106,600	638,000	14.3%	76.7%	9.0%
WSAB Residents (2042)	888,600	143,500	745,100	16.1%	74.9%	9.0%
LA County (2017)	11,811,000	635,500	11,175,500	5.4%	85.6%	9.0%
LA County (2042)	14,492,100	911,400	13,580,700	6.3%	84.7%	9.0%

Source: Corridors Base Model (CBM)18
Note: The CBM18 HBW non-motorized trips (Other) account for about 9 percent of daily HBW trips.
HBW = home-based work; LA = Los Angeles; WSAB = West Santa Ana Branch

In terms of ridership demand, boardings on the Metro A (Blue) and C (Green) Lines are forecasted to increase 189 percent by 2042; however, the significant increase in boardings on these routes is mostly due to the change in the urban rail system in the future. In particular, with the inclusion of the Regional Connector project, the Metro A (Blue) Line will directly connect with the Metro L (Gold) Line. Also, the alignment and service frequency of the Metro C (Green) Line will be changed in the future. These expansions and changes will support significant ridership increases in the future.

The Study Area bus demand is anticipated to increase from 262,000 trips to 321,000 trips in 2042 (approximately 23 percent). Current ridership for routes with the highest weekday boardings (all of which exceed 15,000 boardings per weekday) within the Study Area are shown in Table 1.5. Among these routes, the highest boardings are on Metro Rapid 720 (around 33,826 average weekday boardings) which travels east-west through the Study Area connecting to Santa Monica and Commerce. The next highest route is Metro Local 51 (Compton to Downtown LA to Koreatown), which travels north-south with over 25,439 boardings weekdays.

Ridership is projected to increase with total transit boardings projected to increase by 71 percent in the Study Area between 2017 and 2042.

Table 1.5. Bus Routes with Highest Ridership in the Study Area

Bus Route	Weekday Boardings
720 (Metro Rapid)	33,826
51 (Metro Local)	25,439
16 (Metro Local)	22,337
18 (Metro Local)	18,566
14 (Metro Local)	18,208
111 (Metro Local)	16,403
108 (Metro Local)	16,362
45 (Metro Local)	15,576
81 (Metro Local)	15,489
4 (Metro Local)	15,443
60 (Metro Local)	15,277
2 (Metro Local)	15,252
115 (Metro Local)	15,005

Source: Metro 2021s

1.6.3 Congestion and Mobility

Between 2017 and 2042, vehicle miles traveled in the Study Area are forecasted to increase substantially by 31 percent (Table 1.6). Vehicle hours traveled is anticipated to increase by an even higher amount (63 percent) in the region. As a result, the regional daily travel speed will decrease by 21 percent by 2042 with the AM peak period having the largest speed reductions.

Table 1.6. Regional Vehicle Miles Traveled and Vehicle Hours Traveled Summary by Year

Time of Day	Existing Year 2017			Future Year 2042		
	Vehicle Miles Traveled	Vehicle Hours Traveled	Average Speed (miles per hour)	Vehicle Miles Traveled	Vehicle Hours Traveled	Average Speed (miles per hour)
AM Peak	101,321,500	4,704,500	21.5	133,428,000	8,493,600	15.7
Mid-Day	133,050,900	3,987,300	33.4	172,860,700	6,157,800	28.1
PM Peak	123,874,800	5,055,200	24.5	161,577,500	8,712,500	18.5
Night	104,998,600	2,103,300	49.9	137,892,400	2,910,600	47.4
Daily Total	**463,245,800**	**15,850,300**	**29.2**	**605,758,600**	**26,274,600**	**23.1**

Source: U.S. Census OnTheMap Application and LEHD Origin-Destination Employment Statistics (2005-2015)

To understand transit constraints currently experienced by residents within the WSAB Transit Corridor, a review was conducted of total transit travel times. Total transit travel time is defined as the door-to-door travel time based on the origin and destination of a trip. Mobility issues can be identified based on the portion of the trip that is "in-vehicle travel time" (IVT) versus "out-of-vehicle travel time" (OVT). If a significant portion of time is spent

traveling OVT (access to and from the stations/stops or waiting for the bus), this demonstrates major mobility constraints, particularly for those who are transit-dependent.

Table 1.7 presents total travel time between key nodes within the Study Area to major regional destinations, and the percentage of the travel time which is IVT versus OVT under Existing 2017 conditions.

Table 1.7. Total Transit Travel Time (Existing 2017 AM Peak Period)

	Downtown Los Angeles (7th/ Metro Station)	North Hollywood (B [Red] Line Station)	Pasadena (Del Mar L [Gold] Line Station)	El Segundo (Sepulveda/El Segundo)	Long Beach (Downtown Long Beach A [Blue] Line Station)	Santa Ana (1st Street/Main Street)
Downtown Los Angeles (7th/Metro Station)	N/A	66 minutes (62% OVT + 38% IVT)	65 minutes (62% OVT + 38% IVT)	82 minutes (46% OVT + 54% IVT)	80 minutes (35% OVT + 65% IVT)	193 minutes (38% OVT + 62% IVT)
Huntington Park (Pacific/ Randolph)	57 minutes (57% OVT + 43% IVT)	110 minutes (57% OVT + 43% IVT)	95 minutes (39% OVT + 61% IVT)	77 minutes (50% OVT + 50% IVT)	82 minutes (53% OVT + 47% IVT)	205 minutes (49% OVT + 51% IVT)
Paramount (Paramount/ Rosecrans)	100 minutes (52% OVT + 48% IVT)	146 minutes (51% OVT + 49% IVT)	145 minutes (51% OVT + 49% IVT)	97 minutes (71% OVT + 29% IVT)	95 minutes (56% OVT + 44% IVT)	183 minutes (50% OVT + 50% IVT)
Artesia (Pioneer/ South Street)	113 minutes (58% OVT + 42% IVT)	164 minutes (52% OVT + 48% IVT)	163 minutes (51% OVT + 49% IVT)	108 minutes (57% OVT + 43% IVT)	97 minutes (50% OVT + 50% IVT)	161 minutes (56% OVT + 44% IVT)

Source: Corridors Base Model (CBM)18
Notes: OVT = Out-of-Vehicle Travel Time (includes access, wait, transfer, and egress time); IVT = In-Vehicle Travel Time (includes time spent on regional rail or bus system); N/A = not applicable

Given that the majority of the Study Area has limited direct access to regional rail systems, these trips require several transfers to get to their destination, as can be seen by the lengthy travel times (some well over two hours). The longest total transit times are from Paramount and Artesia to regional destinations, as shown in Table 1.7 (e.g., North Hollywood and Pasadena), with door-to-door transit travel times from 1.5 hours to almost 3.0 hours.

As shown in Table 1.7, a significant portion of total travel time is spent accessing transit (OVT are generally over 50 percent of the total travel time). This first/last mile connection is a major barrier to efficiently using transit as a means of travel. Based on the travel time information, Paramount and Artesia have the greatest challenge in transit access and transfers, as OVTs from Paramount and Artesia to these regional destinations range from 50 to 71 percent of total trip time.

Under 2042 conditions, transit travel times for trips that utilize bus service, or require users to travel long distances to access transit, will increase, as the roadway congestion will continue to worsen and both vehicles and buses will travel at slower speeds. For Metro rail routes, the IVT is not anticipated to increase, as congested roadway conditions do not affect fixed-route transit systems operating predominantly within exclusive rights-of-way.

It is anticipated that overall regional transit travel time will improve in the future given the planned major transit investments in Los Angeles County, including improvements to bus services. Although bus services may be improved by 2042, the potential to have more delays due to congestion will be greater. However, with the addition of fixed-route transit with more frequent service, transit travel times may be faster within the Study Area.[2]

[2] Based on the CBM18 Model, total transit travel times may improve up to 39 percent under 2042 conditions from the Study Area to regional destinations.