

Travel Model Report Cornfield Arroyo Seco Specific Plan (CASP 2040)

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FEHR  PEERS

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Introduction

In 2016 the City of Los Angeles updated their new Travel Demand Forecasting Model (Los Angeles Model) as part of the Infill and Complete Streets – Capturing VMT Impacts and Benefits to CEQA Project. The citywide model focused on consistency with the latest version of the SCAG regional travel demand model, improving key components of the model process, and meeting or exceeding industry standards for calibration and validation. The details of the updated Los Angeles Model are available as part of the *2016 City of Los Angeles Travel Demand Model, Model Development Report*¹. The City of Los Angeles Model was used to analyze the Base and Future year scenarios for the Cornfield Arroyo Seco Specific Plan (CASP).

The Cornfield Arroyo Seco Travel Demand Forecasting Model (referred to as the CASP Model in the remainder of this report) builds upon the Downtown Travel Demand Forecasting Model (referred to as the Downtown Model in the remainder of this report) that was previously developed to analyze the Downtown Community Plan Area. The Downtown Model refines the level of detail within the Downtown Community Plan Area for improved sensitivity in measuring the effect of land use development and transportation network changes. The Downtown Model was developed using TransCAD Version 7.0 Build 12410. The model utilizes a conventional 4-step process consisting of trip generation, trip distribution, mode split, and assignment. This report focuses on the SED and network inputs included in the 2040 City of Los Angeles Model scenario, as well as the model enhancements made to the Downtown Model to develop the CASP Model, which was developed for the purpose of analyzing both the 2021 Existing Conditions and the 2040 Proposed Plan scenarios.

Model Inputs

Socioeconomic Data

The Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) provided the initial baseline socioeconomic data estimates for the CASP Area. From this baseline set of data, the City of Los Angeles derived 2017 and 2040 estimates for population, households, and employment. Fehr & Peers used these inputs to interpolate 2021 estimates of population, households, and employment in the CASP Area and the City of Los Angeles, as summarized in Table 1. The CASP Area contains less than 1% of the employment within the City of Los Angeles, and less than 1% of the households.

¹ 2016 City of Los Angeles Travel Demand Model, Model Development Report, Fehr & Peers, February 2017.

Table 1. Existing 2021 Socioeconomic Data

Category	CASP Model Area	City of Los Angeles
Population	6,027	4,088,915
Households	2,012	1,455,656
K12 Students	1,474	616,220
College Students	0	277,680
Employees	5,411	1,884,667

Source: Southern California Association of Governments (SCAG), 2016. City of Los Angeles & Fehr & Peers, 2022.

Traffic Analysis Zone System

Socioeconomic data and other information used in the model are contained in geographically defined areas known as Transportation Analysis Zones (TAZs). These zones provide the spatial unit within which travel behavior and trip generation are estimated. The City of Los Angeles model has TAZ system based on the Tier 1 TAZ system used in the 2016 SCAG RTP/SCS model. The custom zone system was created to add more detail within the City of Los Angeles, so that the zonal boundaries are predominantly defined by roadways or other geographic features. This method of subdividing the SCAG Tier 1 zones improves vehicle access to the local street network. The subdivided TAZs better reflect how and where traffic enters and exits the street network and are divided along logical transportation boundaries like major streets and topography.

Figure 1 shows the TAZ system within the CASP Area used by City staff to develop land use estimates for existing conditions and land use forecasts for the future year scenarios.

As part of the process to subdivide the SCAG Tier 1 zones for the citywide model update, the socioeconomic data was modified using geographic area calculations and aerial imagery within GIS software. Residential, school, and employment disaggregation factors were individually developed for each Tier 1 zone.

For the development of the CASP Model, City staff reviewed the socioeconomic data assumptions for the TAZs within the Plan Area and adjusted the distribution of households and employment. These distribution adjustments were based on data from the Los Angeles County Assessor, but maintained the total number of households, population, and jobs within the Plan Areas based on SCAG's estimates for the model base year.



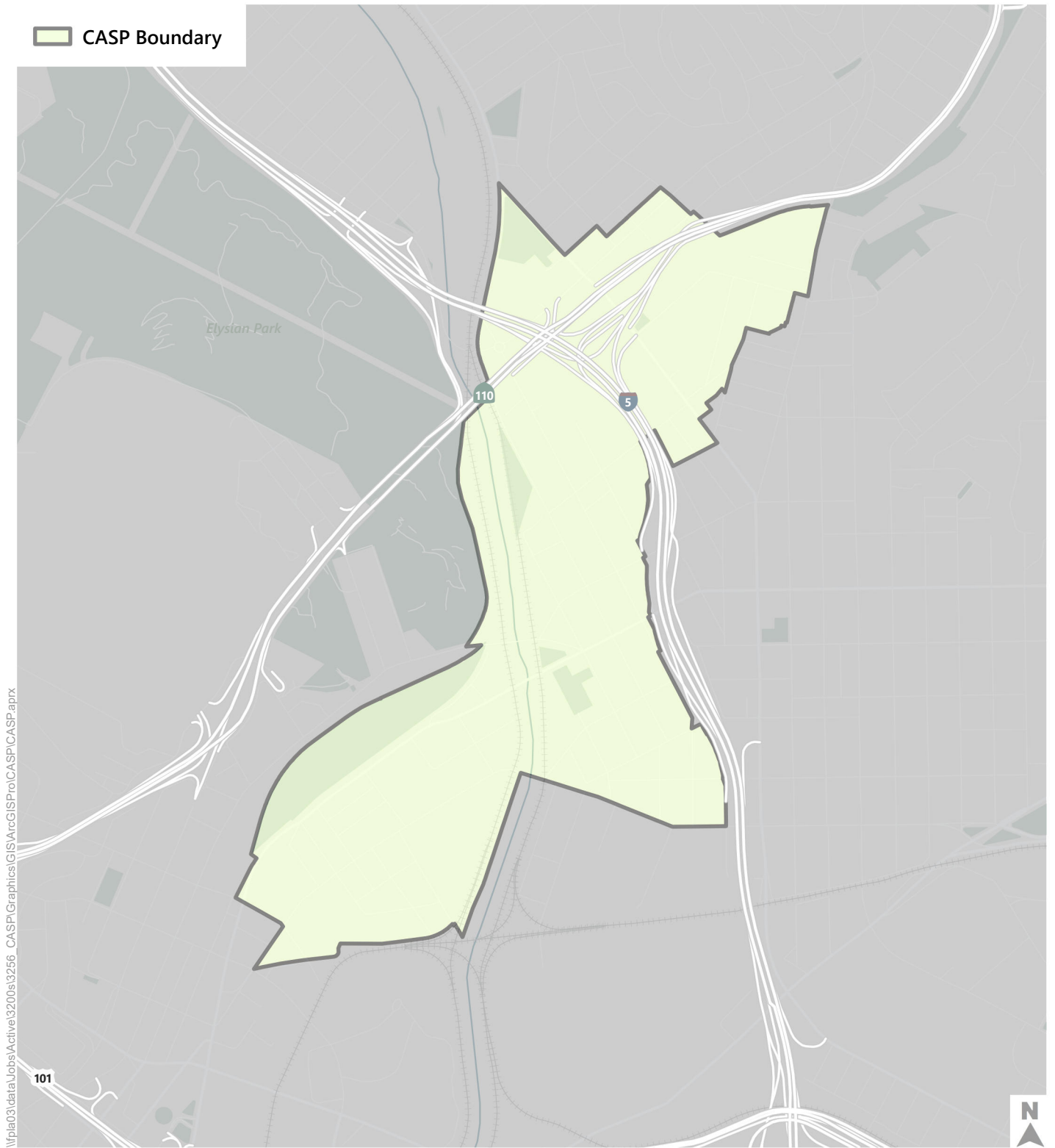


Figure 1

Cornfield Arroyo Seco Specific Plan Area



Highway Network

The highway network within the CASP Model is shown in **Figure 2**. The primary attributes of the network links include directionality (1-way versus 2-way), posted speed limit, and number of lanes (by time of day, including parking restrictions). The network inputs also include turning movement restrictions for each model time period at signalized intersections and freeway ramps where appropriate.

The highway network was also reviewed for consistency with the classifications established in the Los Angeles Mobility Plan 2035 to ensure that facilities classified as Boulevards or Avenues within the Plan Area were included in the model.

Transit Network

The transit network for the citywide model was updated to include the most recently available route and schedule information from the largest transit providers in Los Angeles County. As part of the Downtown Travel Demand Model, the Metro Expo Phase 2 and Gold Line Foothill light rail extensions were included in the transit network. As such, these changes are also included in the CASP Model.

Transit service in the CASP Area is provided by LADOT and Metro:

- Los Angeles County Metropolitan Transportation Authority (Metro)
 - Gold (L) Line Light Rail
 - Metro Local Lines
 - 45
 - 76
 - 90
 - 94
 - 96
 - 251
- Los Angeles Department of Transportation (LADOT)
 - DASH B (Chinatown, Financial District)
 - Dash Commuter Express
 - 413
 - 419



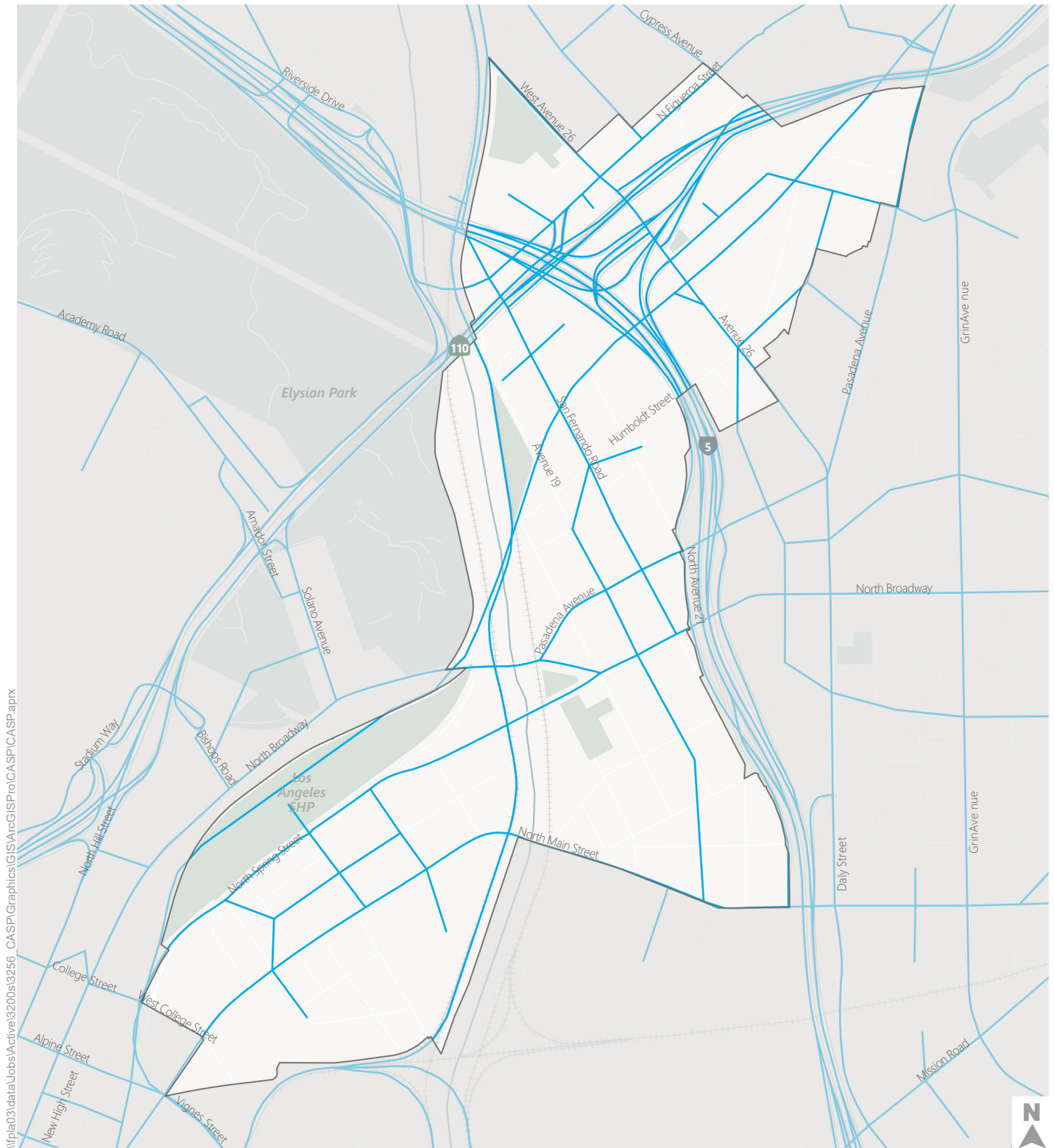


Figure 2

Future Year Conditions

The following future year scenarios were analyzed utilizing the Downtown and CASP Models:

- 2040 Future (No Project) Conditions (Downtown Model)
- 2040 Proposed Plan (Project) Conditions (CASP Model)

The socioeconomic data and transportation networks under these analysis scenarios are presented below.

Future 2040 Socioeconomic Data

Future year socioeconomic household, population, and employment data for the 2040 Future (No Project) Plan and 2040 Proposed Plan scenarios were developed by the Los Angeles Department of City Planning and are described below.

2040 Future (No Project) Conditions

The 2040 Future (No Project) Plan scenario was analyzed using the 2040 Downtown Model because it was anticipated at the time the CASP analysis was conducted that the land use, socioeconomic, and transportation network changes envisioned by the Downtown Community Plan will have been implemented by 2040. This assumption was validated in May 2023 when the Los Angeles City Council voted to approve the Downtown Community Plan. The SED and network within the CASP Area were informed by the Downtown Model but adjustments were made within the CASP Area using updated SED inputs provided by the City of Los Angeles. The 2040 Future (No Project) Conditions SED inputs for the CASP Area are summarized in **Table 2**.

Table 2. 2040 Existing Plan (No Project) Conditions SED

Households	Household Growth*	Population	Population Growth*	Employment	Employment Growth*
12,773	10,761	36,021	29,994	10,004	4,593

Source: Southern California Association of Governments (SCAG), 2016. City of Los Angeles, 2022.

* Growth is calculated as the difference between 2040 Future (No Project) Conditions and Existing 2021 Conditions.

2040 Proposed Plan (Project) Conditions

Socioeconomic data for the Proposed Plan reflect reasonably anticipated future development through the Year 2040 including the proposed land use and zoning changes and housing incentive units. The distribution of household and employment growth with the Proposed Plan were determined at the TAZ level based on planned land use and zoning changes. **Table 3** shows the 2040 Proposed Plan socioeconomic data, as prepared by the Los Angeles Department of City Planning. This SED is based on known approved and



pipeline development projects within the Plan Area in addition to growth associated with the Proposed Plan. **Figures 3** and **4** illustrate the growth distribution for Households and Employment, respectively, comparing the 2040 Proposed Plan scenario with the 2040 Downtown Model Future (No Project) scenario.

Detailed SED data, including household categorization by income level and employment categorization by industry, for TAZs within the CASP Area was developed using the total population, household, and employment data described above.

Table 3. 2040 Proposed Plan (Project) Conditions SED

Households	Household Growth*	Population	Population Growth*	Employment	Employment Growth*
20,036	7,623	56,502	20,481	8,263	-1,741

Source: Southern California Association of Governments (SCAG), 2016. City of Los Angeles, 2022.

* Growth is calculated as the difference between 2040 Future (No Project) Conditions and Existing 2021 Conditions.

Future Transportation Network

2040 Future (No Project) & Proposed Plan (Project) Conditions

The highway and transit network improvements included in the 2040 Future (No Project) Conditions scenario reflect the 2040 Plan scenario of the 2016 SCAG RTP/SCS and Mobility Plan 2035. Related to the 2016 SCAG RTP/SCS, the improvements selected for the City of Los Angeles model 2040 scenario include those projects that have committed funding on the Federal Transportation Improvement Program (FTIP) in the near-term or are included in the fiscally-constrained Regional Transportation Plan (RTP). For a complete description of projects selected in the 2040 Existing Plan model, refer to the *2016 City of Los Angeles Travel Demand Model, Model Development Report*. No RTP or FTIP highway projects included in the 2040 City of Los Angeles model are located within or adjacent to the CASP Area.

In addition to the City of Los Angeles Travel Demand Model 2040 projects, the 2040 Future (No Project) and Proposed Plan (Project) scenarios of the CASP Model also include projects from Mobility Plan 2035. Mobility Plan 2035 provides the framework for future community plan updates, which take a closer look at the transportation system in specific areas of the City and recommend more detailed implementation strategies to realize Mobility Plan 2035. The Mobility Plan 2035 reflects policies and programs that lay the foundation for safe, accessible, and enjoyable streets for pedestrians, bicyclists, transit users, and vehicles throughout the City of Los Angeles, including the CASP Area. Mobility Plan 2035 was adopted by the City in August 2015 and is compliant with the 2008 Complete Streets Act (AB 1358), which mandates that the circulation element of a city’s General Plan be modified to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan.

10/20/2020
 2040 Proposed Plan v. 2040 Existing Plan (No Project)

- Less than 0%
- 0 - 5%
- 5 - 10%
- 10 - 15%
- 15 - 30%+
- Increase from 0 households

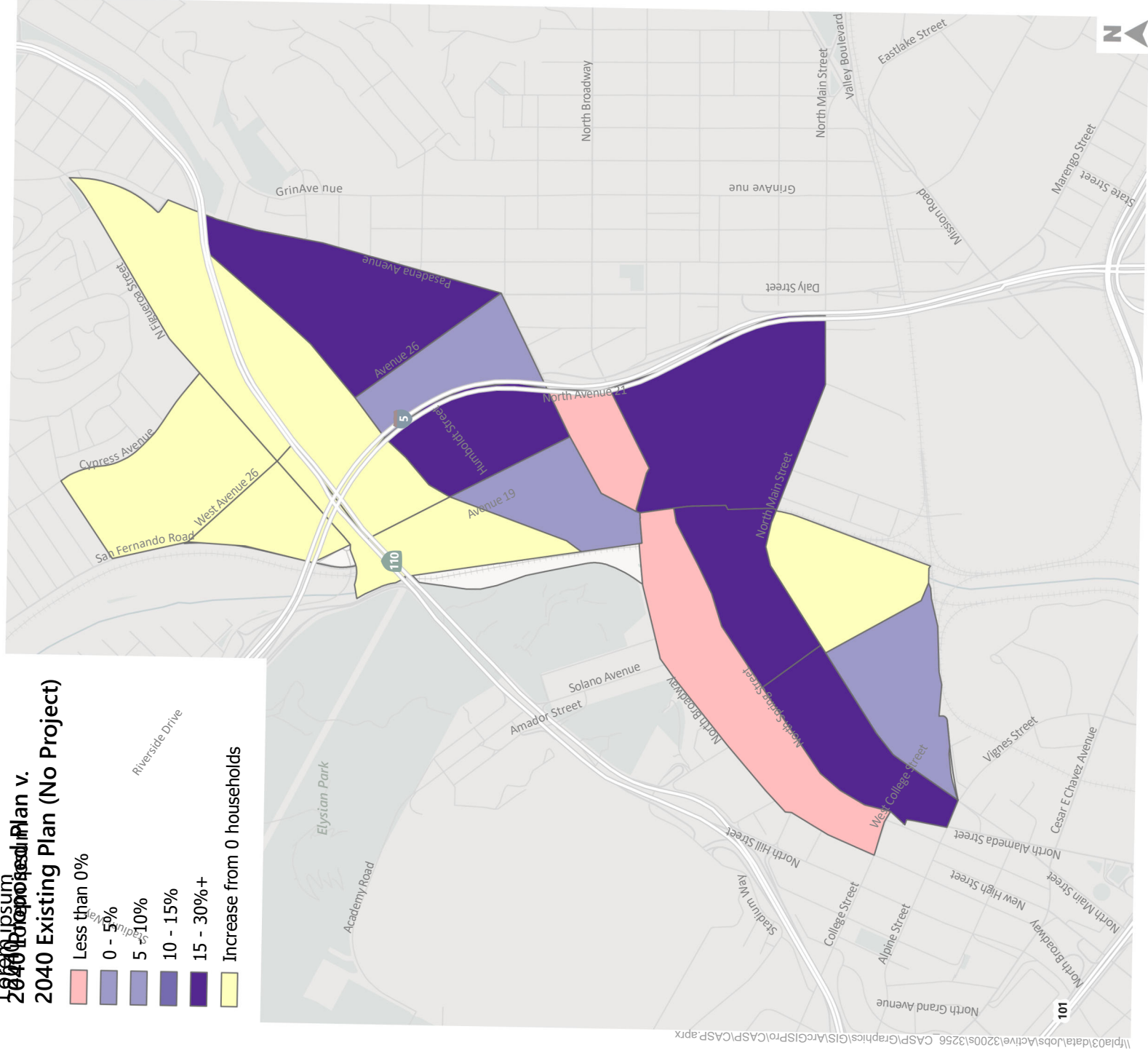


Figure 3

2040 Proposed Plan Household Growth

2040 Proposed Plan v. 2040 Future (No Project)

- More than 0%
- 0 to -5%
- 5 to -10%
- 10% to -15%
- 15% to -30% and More

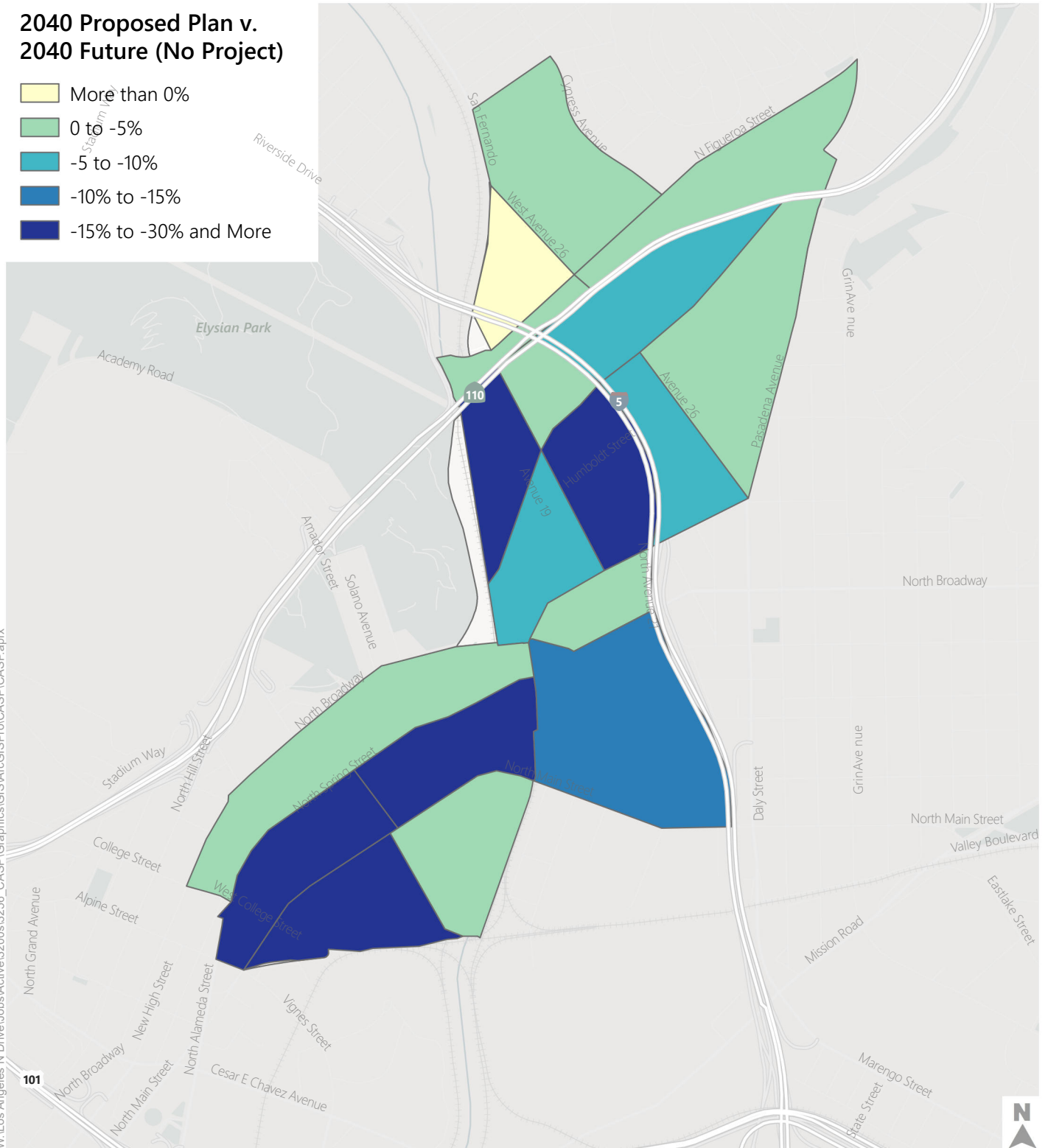


Figure 4

The Mobility Plan 2035 contains a variety of enhanced network treatments within the CASP Area that are incorporated into the 2040 Future (No Project) and Proposed Plan (Project) scenarios of the model. **Figure 5** shows the following enhanced network treatments for roadways in the Plan Area and the surrounding vicinity:

- Bicycle Enhanced Network (BEN)
- Transit Enhanced Network (TEN)
- Vehicle Enhanced Network (VEN)

Additional Mobility Plan 2035 Considerations

Mobility Plan 2035 represents the best indication of long-term capital planning for transportation infrastructure in Los Angeles, and at the time of Mobility Plan 2035 adoption it was envisioned that the identified networks would be realized by the year 2035. As the officially adopted mobility element of the General Plan, the Plan establishes priority for future investments along the various enhanced networks on a citywide scale.

While the City typically accounts for and assumes projects that are built, underway, or have secured funding as part of the horizon year future, there is evidence of a rapid pace of improvements and funding of the enhanced networks in the Plan Area outlined in Mobility Plan 2035. Recent and ongoing investments and prioritization of first-last mile connectivity demonstrate the commitment to improve this infrastructure regardless of whether the CASP itself is adopted. For this reason, it is reasonable to analyze all future scenarios in this area with the inclusion of Mobility Plan 2035.

For all Future 2040 scenarios of the CASP, transportation network assumptions to be applied to the roadways designated for enhanced network treatments are summarized in **Table 4**.



Table 4. CASP Enhanced Networks Model Assumptions

Enhanced Network	Treatment Level	Model Assumptions
Vehicle-Enhanced Network (VEN)	Moderate	• Reduce vehicle travel times by 10% • Add one vehicular travel lane per direction if all-day parking is available, or convert one off-peak parking lane per direction to a full-time vehicular travel lane
	Comprehensive	• Reduce vehicle travel times by 10% • Add one vehicular travel lane per direction if all-day parking is available, or convert one off-peak parking lane per direction to a full-time vehicular travel lane • Increase effective vehicular capacity by 10%
Transit-Enhanced Network (TEN)	Moderate	• No change to lane configurations • Double frequency of bus service
	Moderate Plus	• Convert one vehicular travel lane per direction to a bus only lane during peak periods • Double frequency of bus service
	Comprehensive	• Convert one vehicular travel lane per direction to a bus only lane for the full day • Double frequency of bus service
Bicycle-Enhanced Network (BEN)/Bicycle Lane Network	Bike Lane (Tier 3)	• No change in lane configuration
	Bike Lane (Tier 2)	• Remove one vehicular travel lane per direction to accommodate a bicycle lane or buffered bicycle lane
	Protected Bike Lanes (Tier 1)	• Remove one vehicular travel lane per direction to accommodate a Protected Bike Lane

Source: Mobility Plan 2035 Model Assumptions, Fehr & Peers, City of Los Angeles.

Other model assumptions:

- Tier 1 and Tier 2 bicycle facilities were included as these are facilities planned by the sunset of this plan. Tier 3 was not included as those facilities were not assumed to be implemented by that time.
- In cases where Tier 1 or Tier 2 bicycle facilities, and Moderate Plus or Comprehensive transit enhancements are planned for the same roadway facility, only one vehicle travel lane was removed in each direction of travel as part of the Enhanced Network.
- On roadway facilities with only one general purpose vehicle lane in each direction under existing conditions, no travel lanes were removed from the Enhanced Network.

- For purposes of developing the network in a travel demand model, the Neighborhood Enhanced Networks (NEN) identified in Mobility Plan 2035, while increasing pedestrian safety, will not reduce vehicle capacity and therefore are not included in the transportation analysis.
- On the TEN, Comprehensive and Moderate Plus networks included the conversion of a travel lane, as these enhancements include bus-only lanes at least some of the day. Moderate networks were not modeled, as these are designated for stop enhancements and increases service, with buses operating in mixed flow with vehicles.
- **Table 4** and these assumptions were determined with the project team.

Model Outputs for the Specific Plan

One of the primary uses of the CASP Model is to forecast vehicle miles traveled (VMT) and level of service (LOS) on the roadway network for each analysis scenario. These forecasts help to determine whether a plan would have any environmental impacts. For many years, LOS has been utilized to determine these impacts, but the City of Los Angeles is now using VMT as the primary measurement tool consistent with the California Environmental Quality Act (CEQA). There are two methods for estimating VMT using the travel demand model: the boundary method and the origin-destination (OD) method. Each method is best suited for supporting different types of analysis, such as estimating air pollution and GHG emissions. For purposes of this project, the OD method will be employed.

VMT is a measurement of miles traveled (e.g., private automobiles, trucks and buses) by all land uses (e.g., residential, retail, office) in the Project Area. For this analysis, VMT is reported as Total Daily VMT per Service Population, which equates to all VMT for the Plan Area divided by the number of people living and working within the Plan Area. A reduction in VMT overall and in VMT per capita service population can be used as an indicator of reduced reliance on vehicular travel, primarily by private automobiles. Some VMT metrics focus on VMT per capita and VMT per employee as separate markers of these indications; however, VMT per service population the effects of all vehicular movement in an area. It includes not only trips that are attracted and produced by home and work trips, but those that fit in neither category (i.e. school to grocery store) as well as truck trips. The VMT calculation accounts for internal (II) trips and trips that begin or end (IX or XI) within the Plan Area, as these trips are generated by or attracted to land uses within the CASP Area. The travel behavior effects of land use changes in the CASP Area can be understood by measuring the VMT of trips originating in and/or destined for the Plan Area.



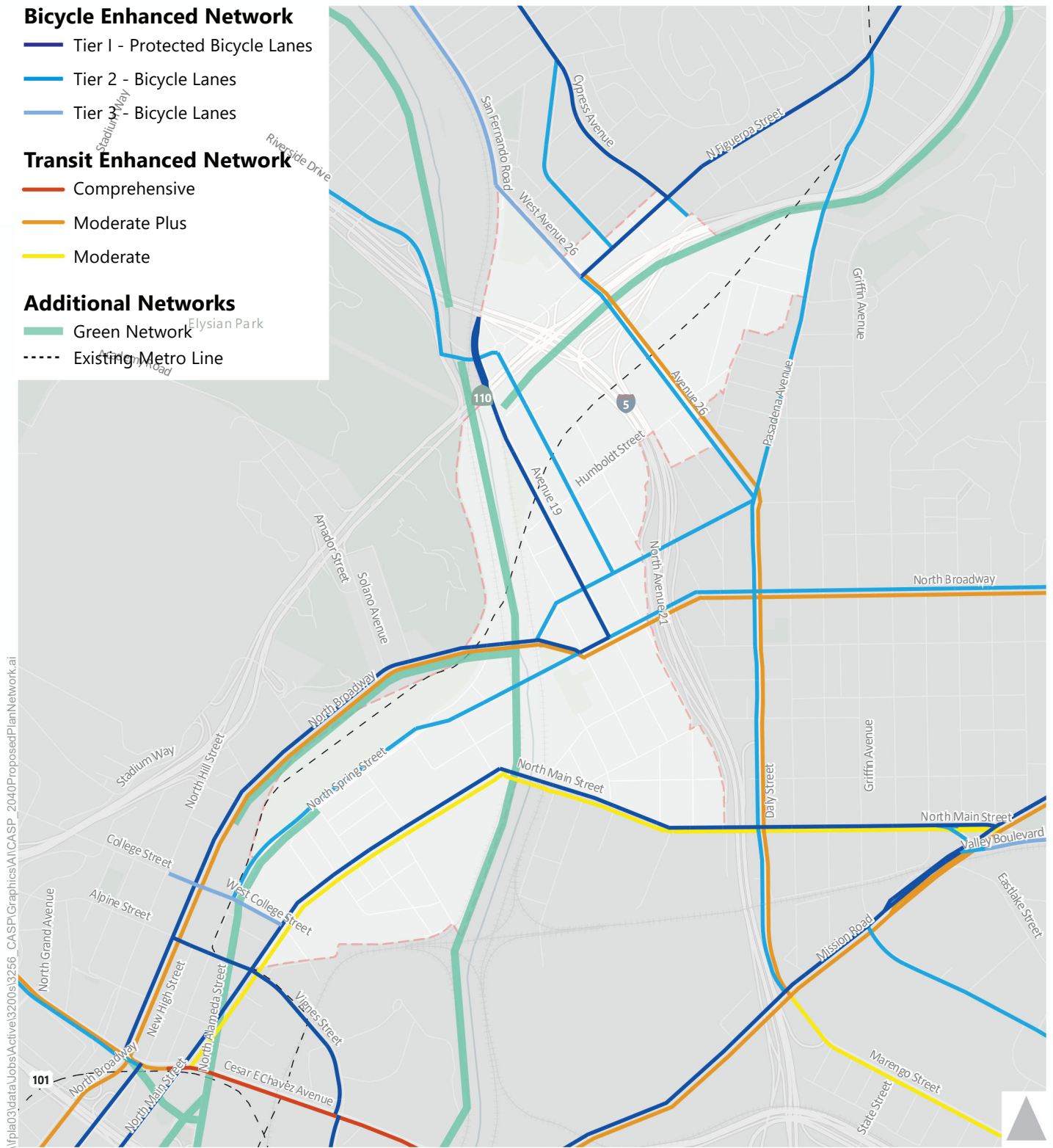


Figure 5