LINSCOTT
LAW &
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engineers

TRANSPORTATION ANALYSIS
BRADLEY COURT CONVALESCENT CENTER

San Diego County, California
November 8, 2022

LLG Ref. 3-21-3378

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EXECUTIVE SUMMARY

The existing Bradley Court Convalescent Center is located at 675 E Bradley Avenue in the County of San Diego. The project would construct a new 26,515 SF assisted living building with 66 resident beds, and a new 10,613 SF skilled nursing building with 31 beds (97 new beds). The existing residential buildings would be converted to a controlled access building. The total project site would include four buildings with 87 skilled nursing beds and 66 transitional care beds, for a total of 153 beds. The existing parking area would be redesigned to accommodate the proposed buildings and provide 73 parking spaces.

The site currently takes access from Bradley Avenue, a County maintained road, via a single full access driveway on the west side of the Project site. This driveway is proposed to be relocated eastward to be more centered to the Project site.

VMT ANALYSIS

Per the SANDAG SB 743 VMT map, the project is in Census Tract 165.04, which has a VMT/Employee of 25.4, or 93.4% of the regional mean. However, the Project TAZ (TAZ 1249), identified as an Infill Area, would meet the proposed VMT screening criteria as the project is located in a Transit Opportunity Areas (TOA) and is not located in a High/Very High Fire Severity Zone. Therefore, the project is presumed to have a less than significant VMT impact and no detailed VMT analysis nor mitigation measures are required. ***Appendix B*** contains a map showing the Project's location in an Infill Area.

TRAFFIC LEVEL OF SERVICE (LOS) ANALYSIS

The Project study area for the traffic analysis includes the following intersections:

1. E. Bradley Avenue / Sams Hill Road
2. E. Bradley Avenue / Project Driveway

Based on the established criteria discussed in *Section 6.0*, no substantial effects are calculated in terms of intersection capacity for the project. Therefore, improvements are not required under these analyses.

PROJECT TRIP GENERATION AND DISTRIBUTION

The Project proposed the development of 97 additional beds: 31 beds at the skilled nursing facility building and 66 beds at the assisted living building. The trip rates for Land Use 254 Assisted Living provided in the *Institute of Transportation Engineer (ITE) Trip Generation Manual, 10th Edition* were used to estimate the trips generated by the Project.

The proposed Project was calculated to generate 263 new daily trips with 19 AM peak hour trips (12 inbound / 7 outbound) and 26 PM peak hour trips (10 inbound / 16 outbound).

The Project traffic was distributed and assigned to the street system based on the distribution of the Project shown in the existing driveway counts, as well as a review of the site location, proximity to

State Route 67 (SR 67), existing traffic patterns in the area, a review of trip distribution of similar land uses from recently approved development projects in the vicinity and anticipated traffic patterns to and from the site.

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BRADLEY COURT CONVALESCENT CENTER

San Diego County, California
November 8, 2022

1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) has prepared this Transportation Analysis for the Bradley Court Convalescent Center. The Project is located on Bradley Avenue in the County of San Diego. The proposed Project includes the expansion of the currently existing convalescent center to add 97 beds.

The traffic analysis presented in this report includes the following:

- Project Description
- Existing Conditions
- CEQA Vehicle Miles Traveled (VMT) Assessment
- Analysis Approach and Methodology
- Substantial Effect Criteria
- Analysis of Existing Conditions
- Trip Generation/Distribution/Assignment
- Cumulative Projects Discussion
- Analysis of Near-Term Scenarios
- Site Access and Queuing Analysis
- Active Transportation Discussion
- Conclusions

2.0 PROJECT DESCRIPTION

2.1 Project Description

The existing Bradley Court Convalescent Center is located at 675 E Bradley Avenue in the County of San Diego. The project would construct a new 25,675 SF assisted living building with 66 resident beds, and a new 11,048 SF skilled nursing building with 31 beds (97 new beds). The existing residential buildings would be converted to a controlled access building. The total project site would include four buildings with 87 skilled nursing beds and 66 transitional care beds, for a total of 153 beds. The existing parking area would be redesigned to accommodate the proposed buildings and provide 74 parking spaces.

2.2 Project Access

The site currently takes access from Bradley Avenue, a County maintained road, via a single full access driveway on the west side of the Project site. This driveway is proposed to be relocated eastward to be more centered to the Project site.

Figure 2–1 shows the Project vicinity and ***Figure 2–2*** illustrates, in more detail, the site location. ***Figure 2–3*** shows the Project's site plan.

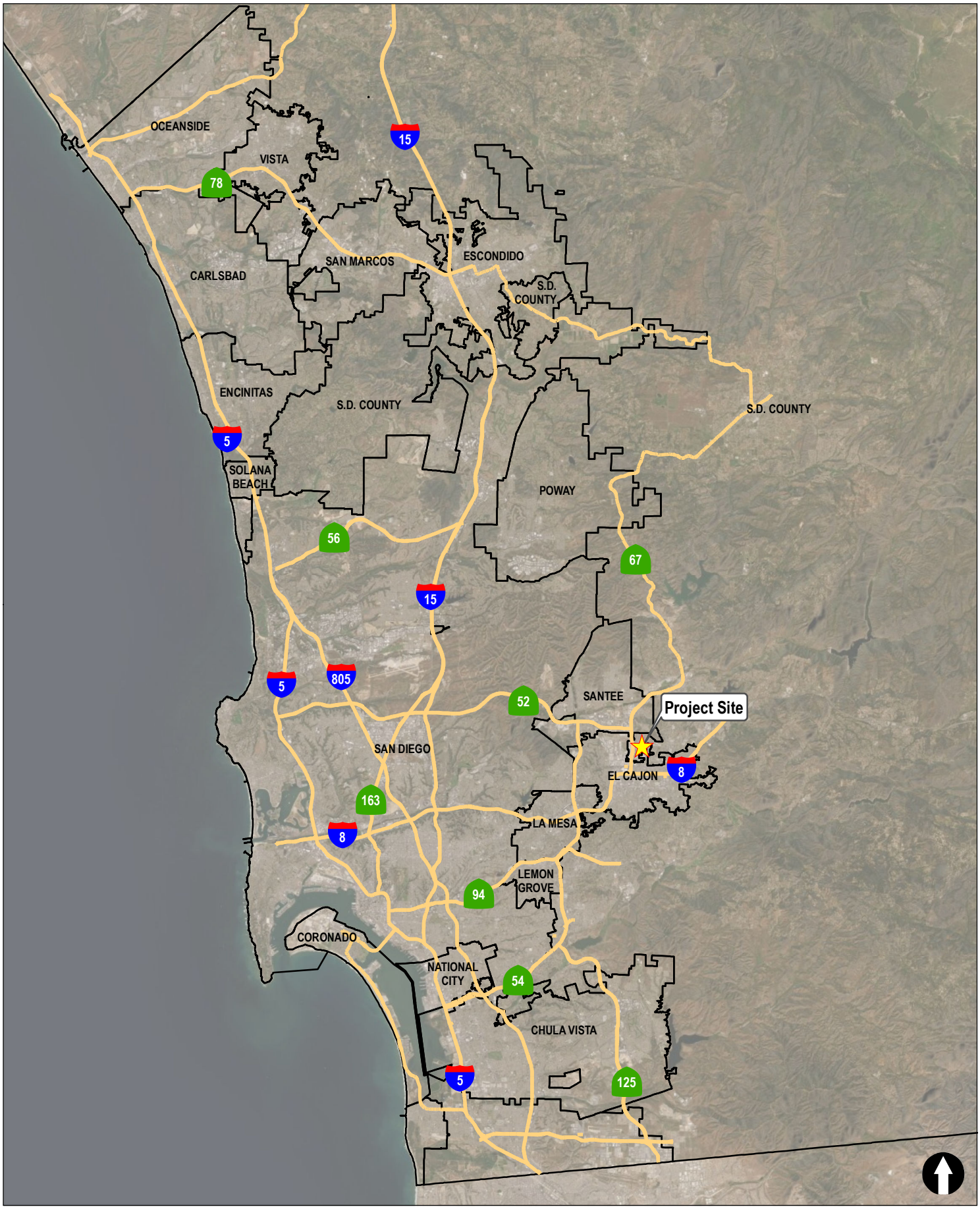

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Figure 2-1

Vicinity Map

BRADLEY COURT CONVALESCENT CENTER

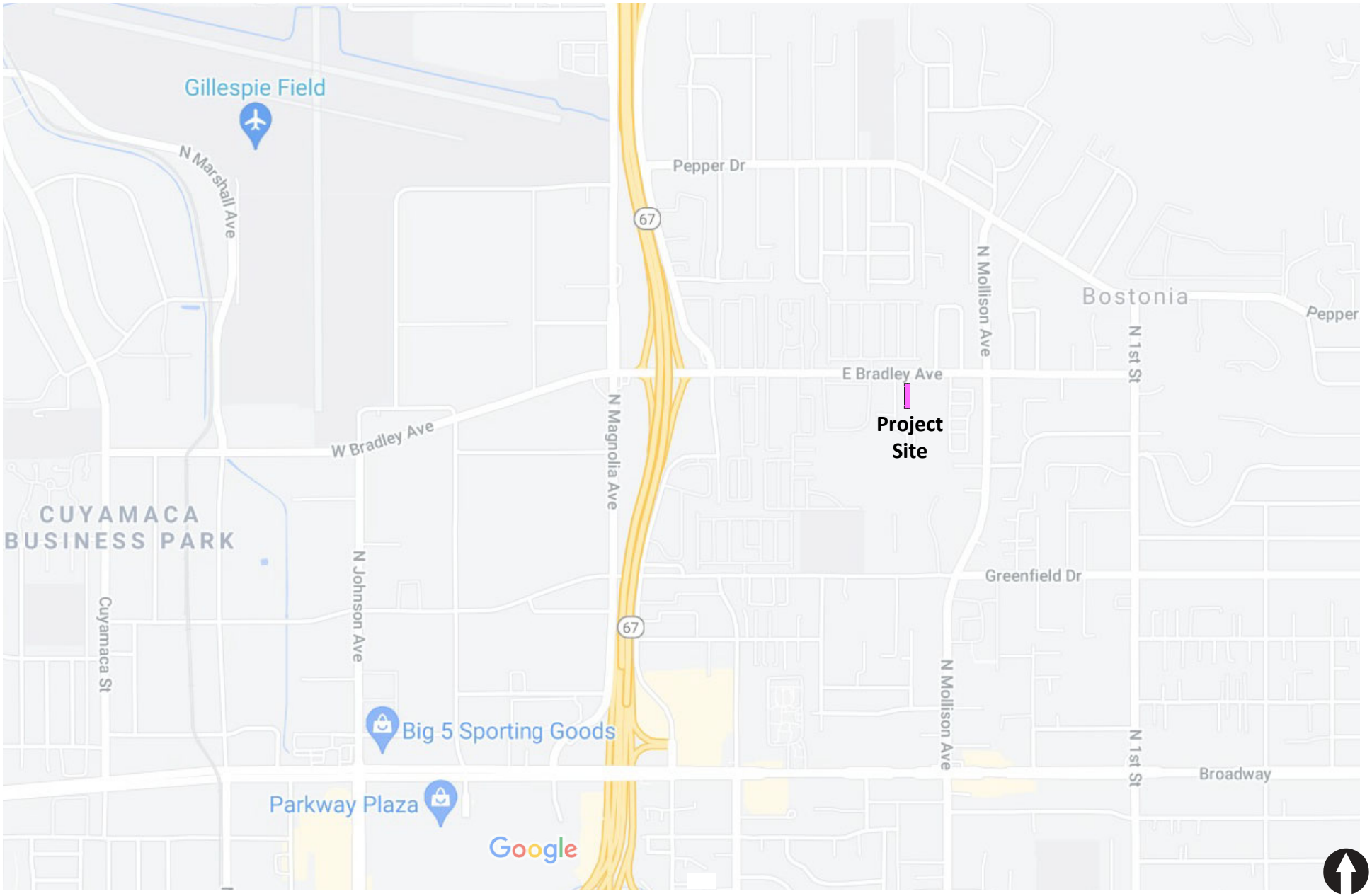

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Figure 2-2

Project Area Map

BRADLEY COURT CONVALESCENT CENTER

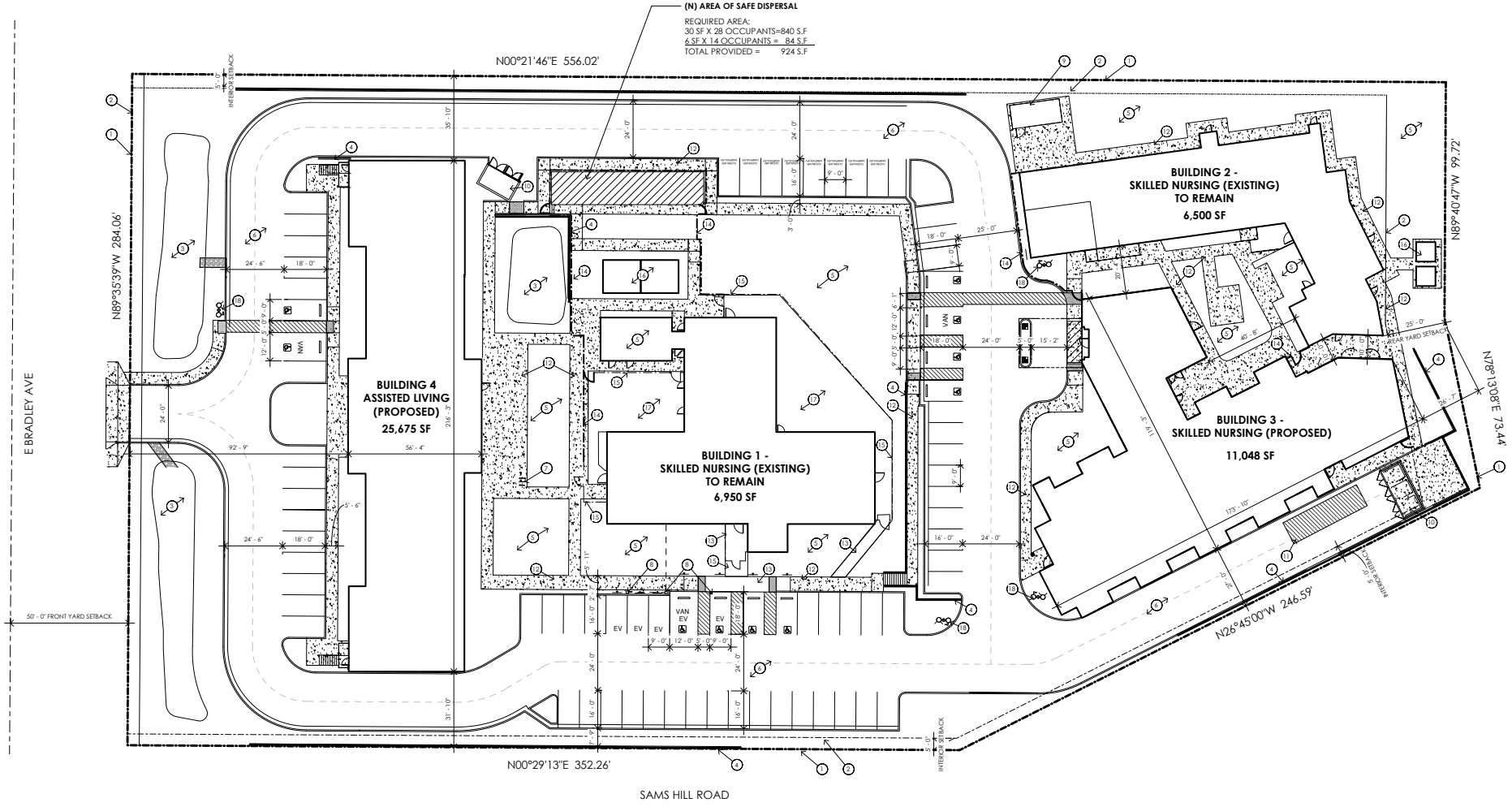

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Figure 2-3

Site Plan

BRADLEY COURT CONVALESCENT CENTER

3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area. ***Figure 3–1*** shows an existing conditions diagram.

The study area includes the following intersections:

INTERSECTIONS

1. E. Bradley Avenue / Sams Hill Road
2. E. Bradley Avenue / Project Driveway

3.1 Existing Street Network

The facilities analyzed in this report fall under the jurisdiction of the County of San Diego. The following is a brief description of the streets and the traffic they serve including vehicles, cyclists and pedestrians in the project area:

E. Bradley Avenue is classified as a 4.1B Major Road with intermittent turn lanes in the *County of San Diego General Plan Mobility Element* within the study area. E Bradley Avenue is currently constructed as a two-lane undivided roadway with a two-way left-turn lane west of the Project site and an undivided roadway with no two-way left-turn lane east of the Project site. Sidewalks are provided on both sides of the roadway west of the Project site, and only on the north side east of the Project site. Bike lanes are not provided. Curbside parking is permitted on both sides of the roadway. The posted speed limit is 40 mph.

3.2 Existing Traffic Volumes

Peak hour intersection turning movement volume counts were conducted at the existing Project driveway and at the Sams Hill Road driveway, just west of the Project driveway, on April 29, 2021. Due to the current Covid situation, traffic counts conducted at this time do not reflect the normal traffic volumes. Hence, research was conducted to identify historical traffic volume counts in the Project study area. However, historical traffic volumes are not available.

LLG has developed Covid Factors for various projects in Southern California for which we conducted traffic studies in the past year (2020). ***Table 3–1*** below summarizes Covid factors that were developed for various projects in the San Diego County / Imperial County regions during this past year. The average of these factors is 30% (i.e., traffic counts during Covid were 30% lower than pre-Covid). Hence a 30% Covid factor was applied to the existing counts to account for Covid.

Appendix A contains the Existing Count Sheets and ***Figure 3–2*** shows the Existing traffic volumes.

TABLE 3–1
COVID FACTORS ADOPTED FOR VARIOUS PROJECTS IN SOUTHERN CALIFORNIA

City / County	Adopted Covid Factor
1. Oceanside Project #1	33%
2. Oceanside Project #2	20%
3. San Diego Project #1	28%
4. San Diego Project #2	30%
5. Imperial County	40%
6. El Centro	30%
Average	**30%**

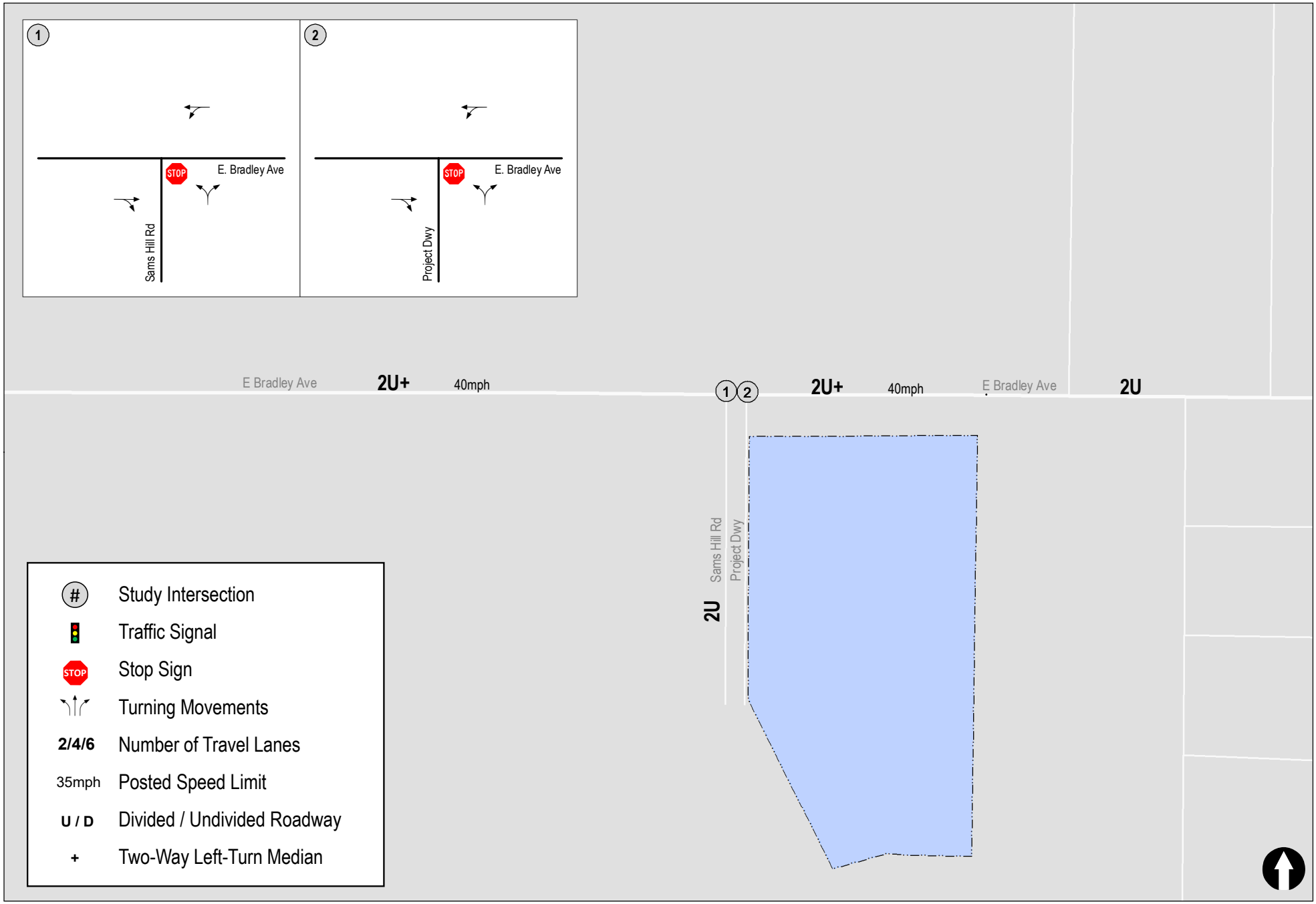

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Figure 3-1

Existing Conditions Diagram

BRADLEY COURT CONVALESCENT CENTER

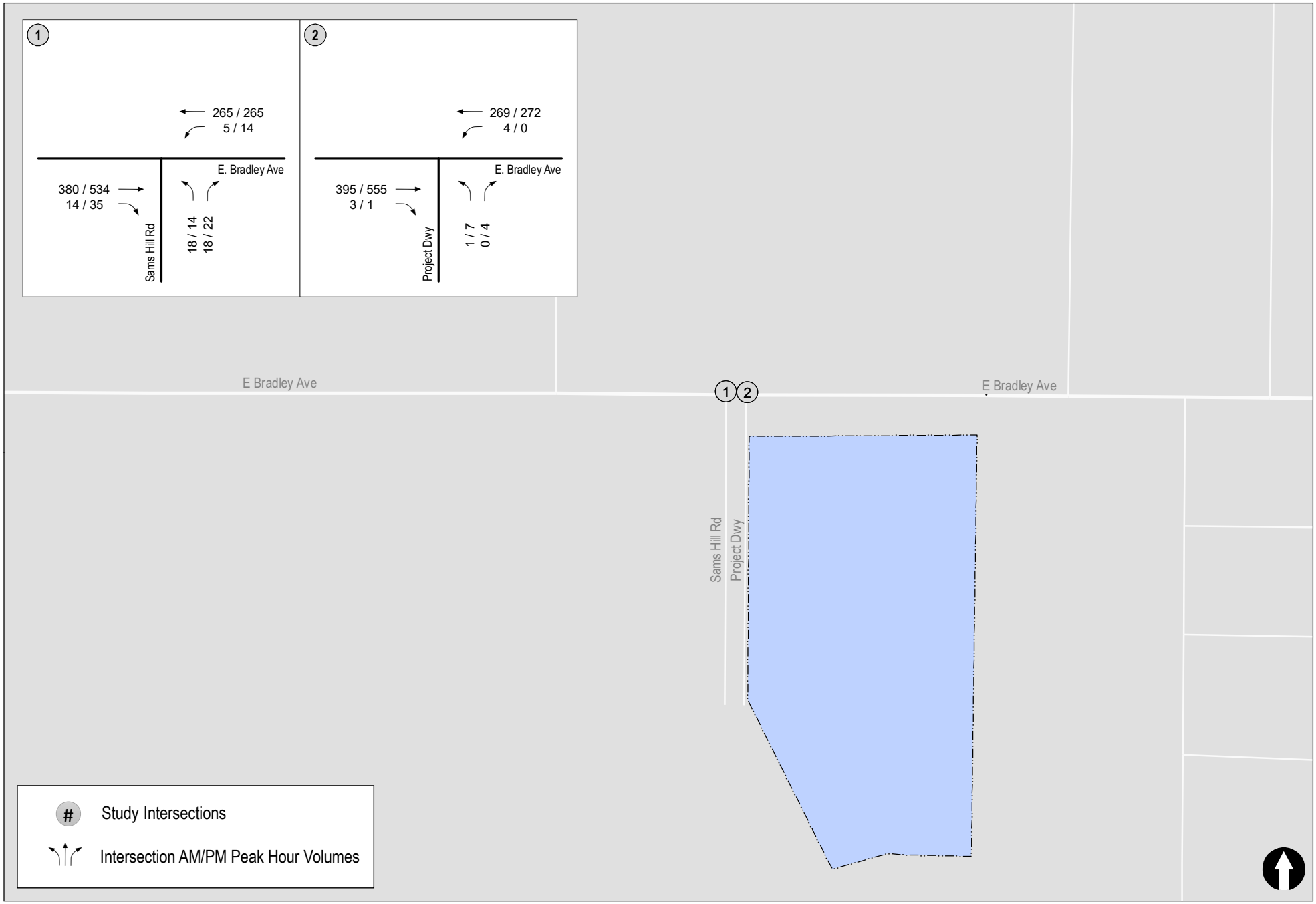

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Figure 3-2

Existing Traffic Volumes

Bradley Court Convalescent Center

4.0 VEHICLE MILES TRAVELED ASSESSMENT

This section discusses the project's Vehicle Miles Traveled (VMT) analysis and screening. The Project is within an Infill Area as defined by the County of San Diego. The Board of Supervisors included direction at the February 9, 2022 Public Hearing for establishing new VMT screening criteria to be considered for adoption at a later date. The Project is also located within a SANDAG Mobility Hub area, one of SANDAG's five key strategies for mobility incorporated in the 2021 Regional Plan.

Based on the analysis in Section 4.1, the Project has a less than significant VMT impact and thus is screened out of a detailed VMT analysis.

4.1 Vehicle Miles Traveled Background, Analysis Approach, and Methodology

4.1.1 *VMT Background*

VMT is a measurement of miles traveled by vehicles within a specified region and for a specified period. VMT measures the efficiency of the transportation network. VMTs are calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round-trip) travel and is often estimated for a typical weekday to measure transportation impacts.

4.1.2 *County of San Diego Transition to VMT*

The County of San Diego does not currently have adopted guidelines that govern the implementation of SB 743 and analysis of projects using a VMT metric. However, on February 9, 2022, the Board of Supervisors provided direction as to what the VMT significance threshold should be and what the guidelines should contain. For this report, the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) was used to inform the methodology for VMT analysis including screening criteria and thresholds for various land use types, and the analysis is consistent with the direction provided by the Board for future guidelines.

4.1.3 *Screening Criteria*

According to OPR, screening thresholds may be used to identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. OPR suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing.

1. **Map-Based Screening for Residential and Office Projects:** Residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or travel demand model, can illustrate areas that are currently below threshold VMT. Because new development in such locations would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.

2. **Screening Threshold for Small Projects:** Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.

3. **Projects Located in a Transit Accessible Area:** Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within a half-mile of an existing major transit stop* or an existing stop along a high-quality transit corridor* may be presumed to have a less than significant impact absent substantial evidence to the contrary. For example, this presumption may not apply if the project:

   - Has a Floor Area Ratio (FAR) of less than 0.75.
   - Includes more parking for use by residents, customers, or employees of the project than required by the County.
   - Is inconsistent with SANDAG's most recent Sustainable Communities Strategy (SCS).
   - Replaces affordable residential units with a smaller number of moderate- or high-income residential units

   *A *major transit stop* is a site containing an existing rail transit station, a ferry terminal serviced by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. *A high-quality transit corridor* contains a fixed route bus service with service intervals no longer than 15 minutes during peak commute periods. Sprinter stations are considered major transit stops.

4. **Locally Serving Retail/Service Projects:** New retail development typically redistributes shopping trips rather than creating new trips. By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter ones, may tend to have a significant impact. Generally, retail development including stores larger than 50,000 square feet might be considered regional serving.

5. **Affordable Housing:** Adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT. In areas where existing jobs-housing match is closer to optimal, low-income housing nevertheless generates less VMT than market-rate housing. Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. Evidence supports a presumption of less than significant impact for a 100 percent affordable residential

development (or the residential component of a mixed-use development) in infill locations. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units.

4.1.4 *Recommended VMT Metrics & Significance Thresholds*

The following project-specific metrics and thresholds in ***Table 4–1*** are used in this analysis:

TABLE 4–1
TRANSPORTATION VMT THRESHOLDS OF SIGNIFICANCE BY LAND USE TYPE

Land Use Type	VMT Analysis Metric	Threshold for Determination of a Significant VMT Impact
Residential	VMT per capita	Below regional mean VMT per capita
Office	VMT per employee	Below regional VMT per employee
Regional Retail	Net change in VMT	Zero net increase in total regional VMT
Mixed-Use	Analyze each land use individual per above categories.	
Redevelopment	Determine based on project type.	Zero net increase in total regional VMT. If project leads to a net overall increase in VMT, analyze proposed land use per above categories.

4.2 Project VMT Approach & Screening Per OPR

4.2.1 *Project Classification*

The existing Bradley Court Convalescent Center, as described in *Section 2.0*, would construct a new 25,675 SF assisted living building with 66 resident beds, and a new 11,048 SF skilled nursing building with 31 beds (97 new beds). The Project's VMT impact will be based on VMT per employee. The significance threshold is the regional mean VMT per employee.

4.2.2 *Determination of Project VMT*

The OPR Technical Advisory provides recommendations regarding methodology to estimate a project's vehicle miles traveled but does not specify any particular methodology.

Consistent with regional practice, transportation VMT analysis for CEQA is estimated using the SANDAG Regional Travel Demand Model. SANDAG produces base year VMT per Capita and VMT per Employee maps that display the regional mean as well as VMT metrics at the census tract level. The latest data from the SANDAG Series 14 ABM 2 model, Base Year 2016 VMT were used.

For projects that generate less than 2,400 daily trips (ADT), the recommended methodology per regional practice, including the Institute of Transportation Engineers (ITE)[1] is to use the SANDAG SB 743 VMT maps to determine the project's VMT per Capita at the census tract level.

The project is in Census Tract 165.04, which has a VMT/Employee of 25.4, or 93.4% of the regional mean.

4.2.3 *Project Screening per OPR Criteria*

None of the OPR screening criteria described previously would apply. The Project ADT exceeds the small project threshold and the Project location is not transit accessible per the CEQA Guideline definition.

4.3 Project VMT Screening per Proposed County Criteria

Given that the County does not currently have adopted VMT guidelines, County staff and the Board of Supervisors are engaged in a process to update the County approach to implementing VMT. Included in Phase One of that process is the goal to remove VMT as a barrier to development in infill areas.

4.3.1 *Qualitative Definition of Infill Development*

Although infill development patterns have been studied for decades by researchers, there is no single, universally accepted definition of what development constitutes "infill." OPR defines infill development as "…building within unused and underutilized lands within existing development patterns, typically, but not exclusively within urban areas."

4.3.2 *Quantitative Evaluation of Infill Development*

The County has prepared a technical memorandum[2] (included in *Appendix B*) to define quantitative criteria for infill development in the County and provide options to the Board in creating policy. The analysis to develop an infill definition and criteria was based on socio-economic data from the SANDAG Series 13 model. The socio-economic data are provided by TAZ.

The following data were compiled into maps and evaluated as part of the process to define infill:

- Population density
- Housing density
- Employment density
- Intersection density
- Access to jobs within a 15-mile radius
- Access to shopping/restaurants within a one-mile radius.

[1] *Guidelines for Transportation Impact Studies in the San Diego Region*. ITE, San Diego Section, Transportation Capacity and Mobility Task Force, SB 743 Subcommittee. May 2019.
[2] *Infill Areas in Unincorporated San Diego County*. October 29, 2021.

Ultimately, the following metrics were defined and quantified to identify infill areas within the County:

- Household density (above 385 housing units/square mile)
- Intersection density (above 128 intersections/square mile)
- Jobs accessibility (above average local employment accessibility)

The Project TAZ (TAZ 2693) was identified as an infill area meeting all three criteria. *Appendix B* contains a map showing the Project's location in an Infill Area.

4.3.3 *Other Considerations*

The County team considered options to smooth the results of the TAZ-based infill analysis and provide a larger infill context. Two approaches were considered. First, include any County Village area that contains an infill area. Second, include any TAZ that is adjacent to an infill area.

The Project TAZ itself meets the infill definition and is also located within a County Village area.

The County team also explored ways to further refine the application of the infill development criteria within the unincorporated County. The County identified high and very high fire areas which could potentially be excluded. Most infill areas, including the Project, are outside of high and very high fire severity zones.

The County also looked at Transit Opportunity Areas (TOAs) which are locations within the unincorporated area that could support future transit services through the expansion of planned Mobility Hubs. As discussed in the following section, the Project is within the El Cajon Mobility Hub area.

Board of Supervisors Actions

On February 9, 2022, the County Board of Supervisors took the following actions related in Infill Area Options:

- Directed County staff to prepare a new VMT screening criteria for within infill areas that includes any surrounding "village" identified in the General Plan that are within Transit Opportunity Areas (TOAs), excluding areas mapped as High and Very High Fire Hazard Severity Zones.

Upon adoption by the Board of Supervisors, the screening criteria will allow projects located in infill areas and any surrounding "village" to move forward without VMT analysis or mitigation. The substantial evidence to support the infill areas would be prepared as part of a new Transportation Study Guide (TSG) or a separate VMT screening threshold. In either case, the new VMT screening threshold will require a public review period prior to consideration and adoption.

The Project TAZ (TAZ 2693), identified as an infill area, would meet the proposed VMT screening criteria as the project is located in a TOA and is not located in a High/Very High Fire Severity Zone.

4.4 Additional Project VMT Context

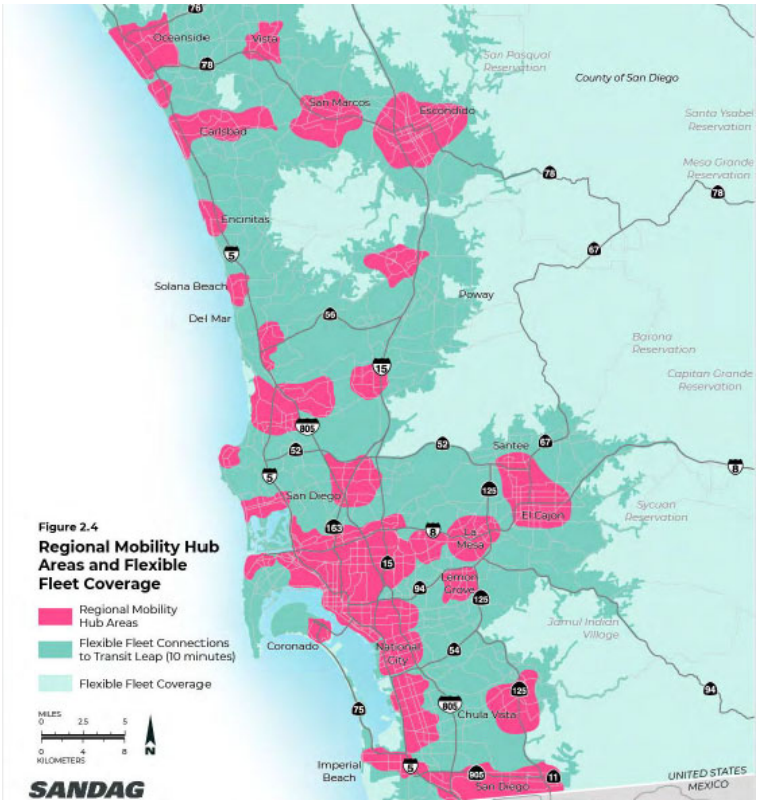
This section presents the project's context within various regional and local plans and regulations.

4.4.1 *SANDAG Mobility Hub*

Mobility Hubs are one of five key strategies for mobility, known as the 5 Big Moves, included SANDAG's 2021 Regional Plan. Per SANDAG, "Mobility Hubs are places of connectivity where different travel options – walking, biking, transit, and shared mobility – come together." See *Figure 2.4* from the Regional Plan, below.

The Project site is located approximately 3½ miles from the El Cajon Transit Center, which has been identified as a Mobility Hub in the SANDAG 2021 Regional Plan. This is within the "access shed" identified by SANDAG based on its proximity to the core transit center.

The El Cajon Transit Center presently lies adjacent to bike facilities and provides bike parking and secure bike lockers. The transit center is served by trolleys as well as several bus routes operated by San Diego Metropolitan Transit System (MTS). As part of the Mobility Hub strategy additional opportunities may be identified and additional features added.



4.5 Project VMT Summary

Consistent with the County's analysis of infill areas and the Board of Supervisors direction to define a new VMT screening criteria for infill areas, the Project meets the infill area VMT screening threshold. The Project can be presumed to have a less than significant VMT impact. No detailed VMT analysis nor mitigation measures are required.

5.0 ANALYSIS APPROACH AND METHODOLOGY

5.1 Analysis Approach

This traffic analysis assesses the study area intersections in the following scenarios to determine the potential impacts to the road network. The Project's expected Opening Year is Year 2023.

- Existing
- Opening Year (2023) without Project
- Opening Year (2023) with Project

5.2 Analysis Methodology

There are various methodologies used to analyze signalized intersections and unsignalized intersections. The measure of effectiveness for intersection operations is level of service (LOS), which denotes the operating conditions which occur at a given intersection under various traffic volume loads.

LOS is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of an intersection. Levels of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Level of service designation is reported differently for signalized and unsignalized intersections. In the 6th edition of the Highway Capacity Manual (HCM), Level of Service for signalized intersections is defined in terms of delay. The level of service analysis results in seconds of delay expressed in terms of letters A through F. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

Table 5–1 summarizes the signalized intersections levels of service descriptions. ***Table 5–2*** depicts the intersection LOS and corresponding delay ranges, which are based on overall intersection delay (signalized intersections) and the average control delay for any particular minor movement (unsignalized intersections), respectively. LOS relative to signalized and unsignalized intersection is further described below.

5.2.1 *Signalized Intersections*

For signalized intersections, level of service criteria is stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of service B describes operations with delay in the range 10.1 seconds and 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of Average delay.

Level of service C describes operations with delay in the range 20.1 seconds and 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of service D describes operations with delay in the range 35.1 seconds and 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or higher volume (demand) / capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are frequent.

Level of service E describes operations with delay in the range of 55.1 seconds to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of service F describes operations with delay in excess of over 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

5.2.2 *Unsignalized Intersections*

For unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement: level of service is not defined for the intersection as a whole. Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

TABLE 5–1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Description
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels

TABLE 5–2
INTERSECTION LOS & DELAY RANGES

LOS	Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: Highway Capacity Manual, 6th Edition.

6.0 VEHICULAR MOBILITY CRITERIA

The following criteria were utilized to evaluate potential vehicular mobility improvements, based on the *County of San Diego Transportation Study Guidelines*, dated June 2020.

6.1 Signalized Intersections

Based on the County of San Diego guidelines, an improvement is required at a signalized intersection if any of the following are triggered:

- Consistent with County General Plan Policy, any intersection that is operating at an acceptable LOS or better without project traffic in which the addition of project traffic causes the intersection to degrade to an LOS E or F should identify improvements to improve operations to LOS D or better.
- Any signalized study intersection that is operating at LOS E or F without project traffic where the project increased delay by 5.0 or more seconds should identify improvements to offset the increase in delay.

6.2 Unsignalized Intersections

Based on the County of San Diego guidelines, an improvement is required at an unsignalized intersection if any of the following are triggered:

6.2.1 *Side Street Stop Controlled*

- The project causes the average intersection delay to be LOS E or F during the peak hour.
- If the worst-case movement is currently operating at LOS E or F:
  - The project adds 5 or more seconds of overall intersection AND
  - The project adds ten (10) or more trips to the worst-case movement OR 50 or more trips to the overall intersection.

6.2.2 *All-Way Stop Controlled*

- The project causes the average intersection delay to be LOS E or F during the peak hour.
- The project adds 5 or more seconds of delay to an intersection that is currently operating at LOS E or F during the peak hour.

7.0 ANALYSIS OF EXISTING CONDITIONS

Table 7–1 summarizes the existing peak hour intersection operations. As shown in *Table 7–1*, all the study area intersections are calculated to currently operate at LOS C or better during both the AM and PM peak hours.

Appendix C contains the Existing intersection analysis worksheets.

TABLE 7–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Delay[a]	LOS[b]
1. E. Bradley Avenue / Sams Hill Road	MSSC[c]	AM	13.0	B
		PM	15.0	C
2. E. Bradley Avenue / Project Driveway	MSSC	AM	13.3	B
		PM	14.6	B

Footnotes:
a. Average delay expressed in seconds per vehicle
b. Level of Service
c. MSSC- Minor Street Stop Controlled intersection. Worst-case movement approach delay and LOS reported.

UNSIGNALIZED	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the Project trip generation calculations and the Project traffic distribution and assignment through the local network.

8.1 Project Trip Generation

The Project proposed the development of 97 additional beds: 31 beds at the skilled nursing facility building and 66 beds at the assisted living building. The trip rates for Land Use 254 Assisted Living provided in the *Institute of Transportation Engineer (ITE) Trip Generation Manual, 10th Edition* were used to estimate the trips generated by the Project.

Table 8–1 summarizes the Project trip generation. As shown in *Table 8–1*, the proposed Project was calculated to generate 252 new daily trips with 18 AM peak hour trips (11 inbound / 7 outbound) and 25 PM peak hour trips (10 inbound / 15 outbound).

8.2 Trip Distribution/Assignment

The Project traffic was distributed and assigned to the street system based on the distribution of the Project shown in the existing driveway counts, as well as a review of the site location, proximity to State Route 67 (SR 67), existing traffic patterns in the area, a review of trip distribution of similar land uses from recently approved development projects in the vicinity and anticipated traffic patterns to and from the site.

Figure 8–1 shows the Project trip distribution. ***Figure 8–2*** shows the Project traffic volumes.

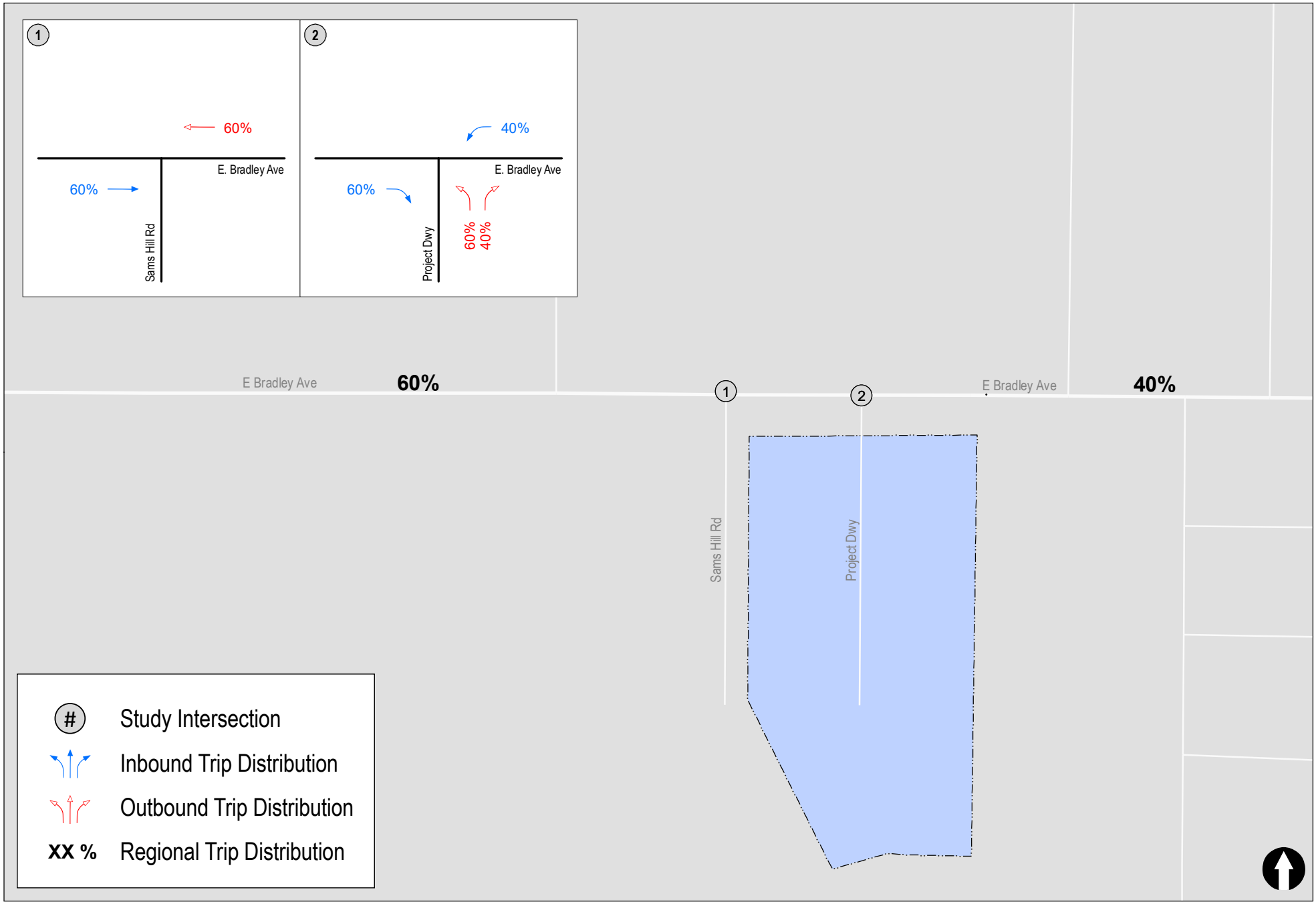
TABLE 8–1
TRIP GENERATION SUMMARY

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	Rate [a]	In:Out Split [a]	Volume			Rate [a]	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Assisted Living	97 beds	2.6/bed[b]	252	0.19 / bed[b]	63:37	11	7	18	0.26/bed[b]	38:62	10	15	25

Footnotes:

a. Rates are based on the trip rates provided in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition*.

b. Rates for Assisted Living (Land Use 254) was used.



LINSCOTT LAW & GREENSPAN engineers

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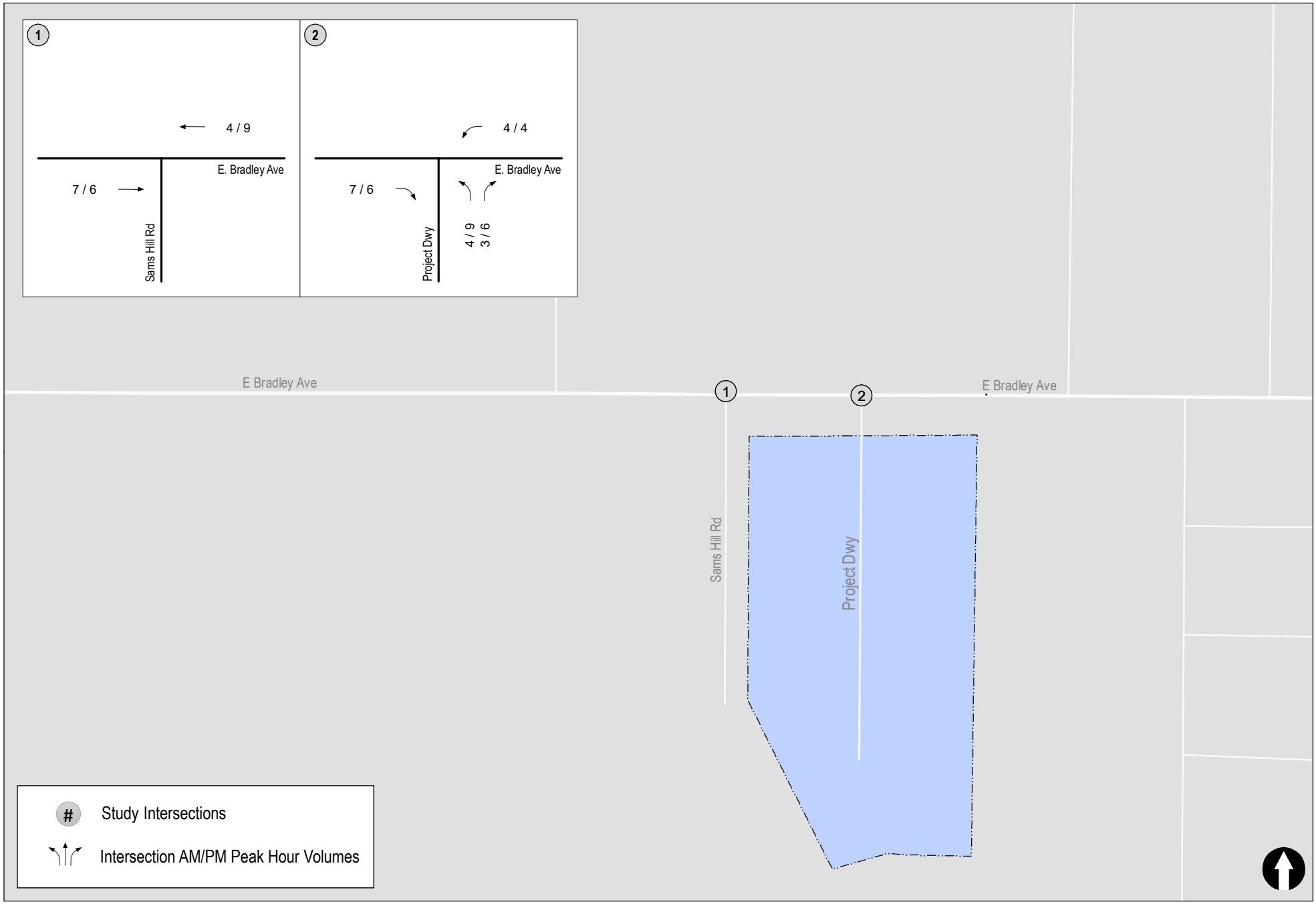
Date: 11/4/2022
Time: 10:41 AM

Figure 8-1

Project Traffic Distribution

BRADLEY COURT CONVALESCENT CENTER



LINSCOTT LAW & GREENSPAN engineers

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Date: 11/4/2022
Time: 10:41 AM

Figure 8-2

Project Traffic Volumes

BRADLEY COURT CONVALESCENT CENTER

9.0 ANALYSIS OF OPENING YEAR (2023) SCENARIOS

The following is a summary of the operational analyses for the Opening Year traffic scenarios. To account for ambient growth in the Project study area, a growth rate of 1% per year for 2 years was applied to represent Opening Year (2023) traffic volumes and represent pre-project baseline traffic.

Figure 9–1 shows the Opening Year (2023) (Existing + Cumulative Projects) without Project traffic volumes. ***Figure 9–2*** shows the Opening Year (2023) + Project traffic volumes.

9.1 Opening Year (2023) (Existing + Cumulative Projects) without Project Conditions

Table 9–1 summarizes the Opening Year (2023) without Project intersection operations. As shown in *Table 9–1,* all the study area intersections are calculated to operate at LOS C or better during both the AM and PM peak hours.

Appendix D contains the Opening Year (2023) intersection analysis worksheets.

9.2 Opening Year (2023) + Project Conditions

Table 9–1 summarizes the Opening Year (2023) + Project intersection operations. As shown in *Table 9–1,* with the addition of Project traffic, all the study area intersections are calculated to continue to operate at LOS C or better during both the AM and PM peak hours.

Appendix E contains the Opening Year (2023) + Project intersection analysis worksheets.

TABLE 9–1
NEAR-TERM INTERSECTION OPERATIONS

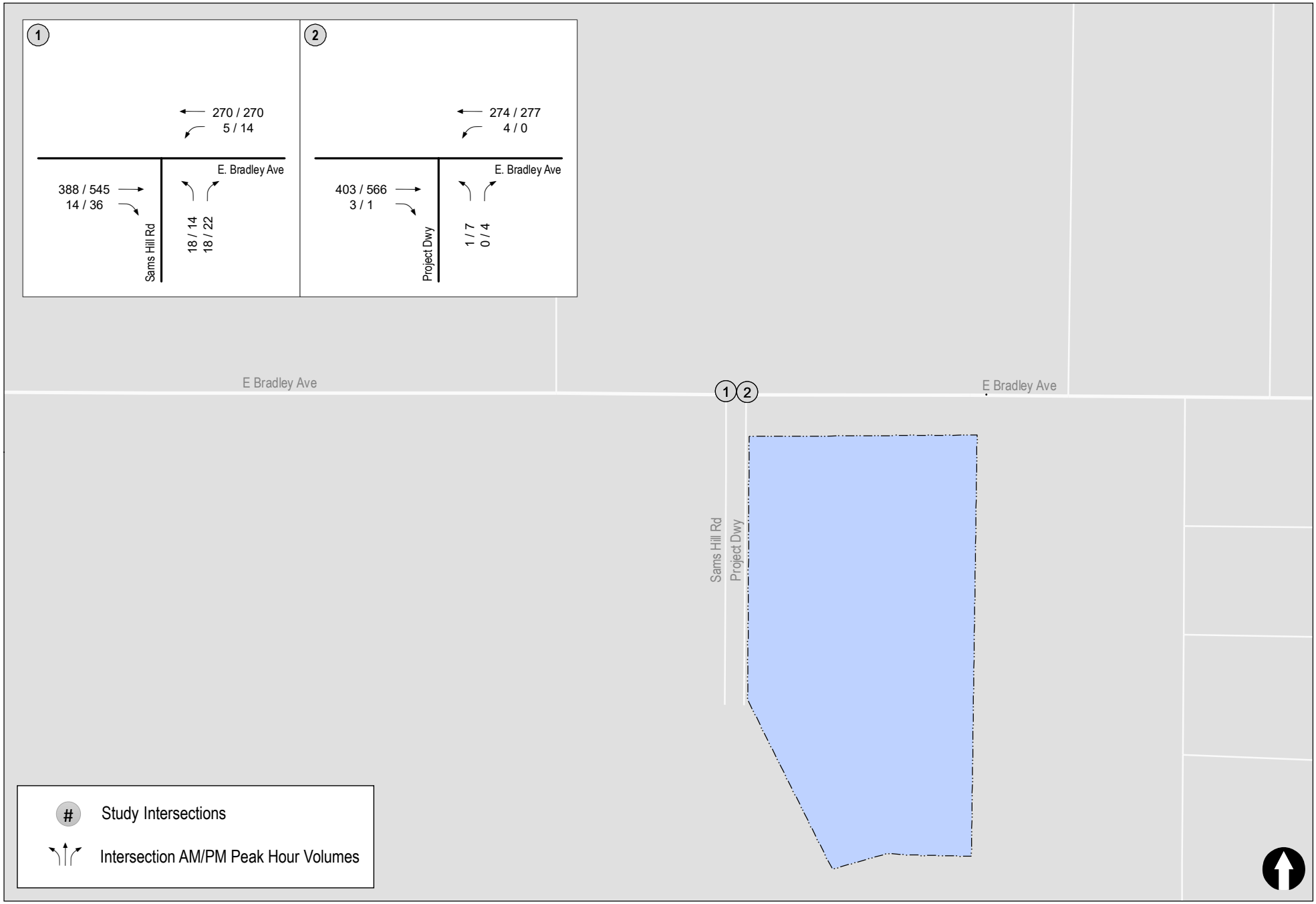
Intersection	Control Type	Peak Hour	Existing		Opening Year (2023) without Project		Δ[c]	Opening Year (2023) + Project		Δ[c]	Substantial Effect?
			Delay[a]	LOS[b]	Delay	LOS		Delay	LOS		
1. E. Bradley Avenue / Sams Hill Road	MSSC[d]	AM	13.0	B	13.1	B	0.1	13.2	B	0.1	No
		PM	15.0	C	15.2	C	0.2	15.3	C	0.1	No
2. E. Bradley Avenue / Project Driveway	MSSC	AM	13.3	B	13.4	B	0.1	13.4	B	0.0	No
		PM	14.6	B	14.8	B	0.2	15.4	C	0.6	No

Footnotes:
a. Average delay expressed in seconds per vehicle
b. Level of Service
c. "Δ" denotes the Project-induced increase in delay
d. MSSC- Minor Street Stop Controlled intersection. Worst-case movement approach delay and LOS reported.

General Notes:
1. DNE – does not exist

UNSIGNALIZED

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F



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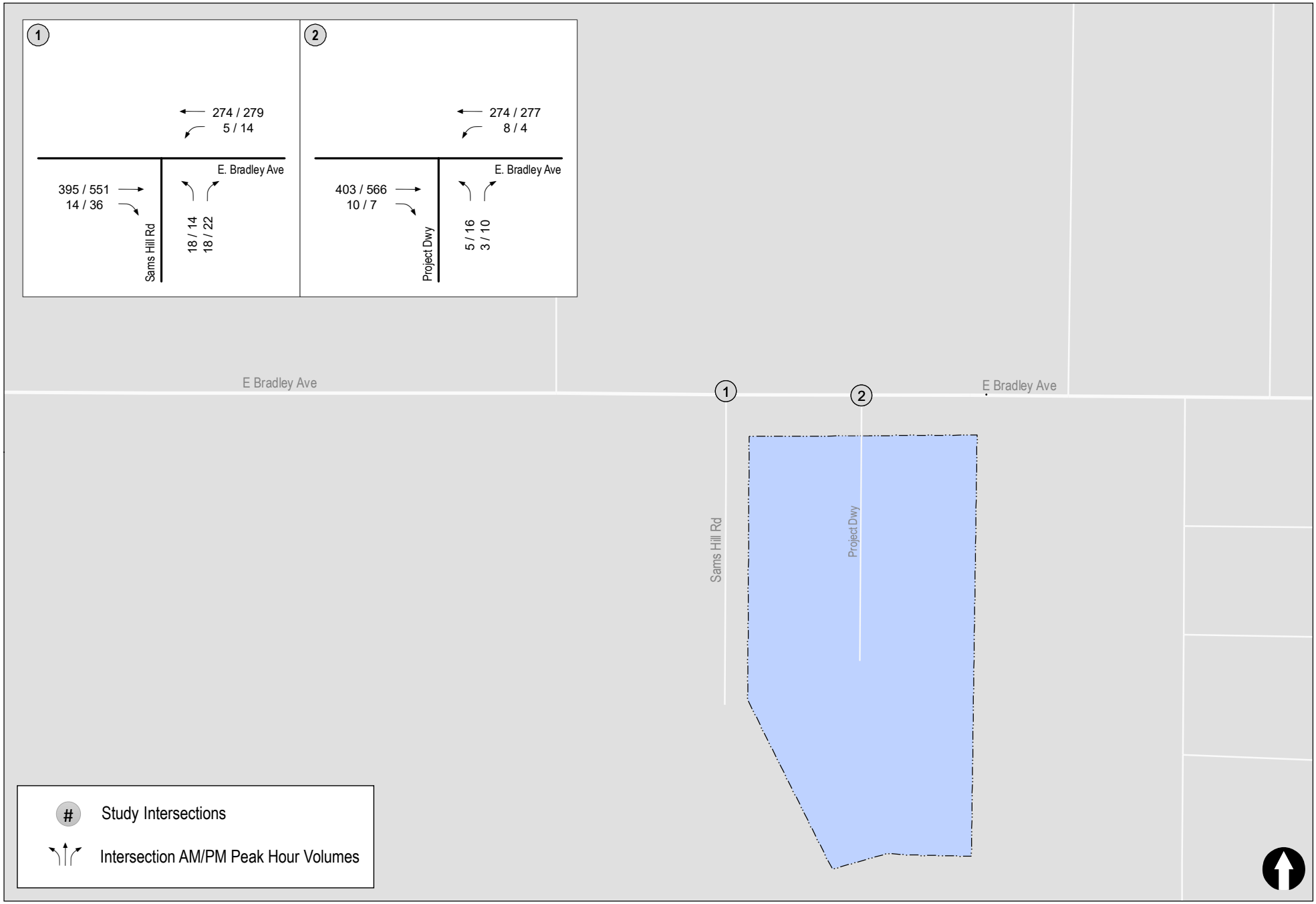
Date: 11/4/2022
Time: 10:48 AM

Figure 9-1

Opening Year (2023) without Project Traffic Volumes

BRADLEY COURT CONVALESCENT CENTER



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Date: 11/4/2022
Time: 10:43 AM

Figure 9-2

Opening Year (2023) + Project Traffic Volumes

BRADLEY COURT CONVALESCENT CENTER

10.0 SITE ACCESS AND QUEUING ANALYSIS

10.1 Site Access

As described in *Section 2.2*, the Project site currently takes access from Bradley Avenue, a County maintained road, via a single full access driveway on the west side of the Project site. This driveway is proposed to be relocated eastward to be more centered to the Project site.

10.2 Queuing Analysis

Access to the Project site will be via a single full access driveway on Bradley Avenue. In order to determine if vehicles turning left into the Project site will cause a queue resulting in potential congestion and backups along Bradley Avenue in the westbound direction, a queuing analysis was conducted at the Project's driveway with the assistance of the *Synchro* (version 10) computer software.

A 95th percentile queue of zero vehicles was calculated at the westbound left-turn movement entering the Project site for all scenarios. In Addition, the roadway fronting the Project has a curb-to-curb width of approximately 80 feet. Even with the provided on-street parking, vehicles traveling in the westbound direction should be able to maneuver around the Project's inbound trips. Therefore, access to the Project driveway will function adequately.

Appendix C, D and *E* contains the queue calculation worksheets for the Existing, Opening Year (2023) without Project and Opening Year (2023) + Project scenarios, respectively.

11.0 ACTIVE TRANSPORTATION

11.1 Pedestrian Mobility

This section presents the pedestrian connectivity within the Project's study area.

E. Bradley Avenue – Within the study area, E. Bradley Avenue currently provides contiguous sidewalks on both sides west of the Project site, and a noncontiguous sidewalk on the north side only east of the Project site. The nearest signalized intersection is approximately ½ mile west of the Project site, near the SR 67 freeway interchange, and provides a controlled crossing location with pedestrian push buttons and crosswalks.

11.2 Bicycle Mobility

A bicycle network inventory was conducted for the study area. Based on a review of the *County of San Diego Bicycle Transportation Plan*, December 2003, a Class III bicycle route is proposed along Bradley Avenue within the study area. There are currently no bike lanes or bike routes provided on Bradley Avenue within the study area.

11.3 Transit Mobility

The El Cajon Transit Center is located approximately 3 miles from the Project site, on the southwest corner of the Main St / Marshall Avenue intersection. There are multiple bus stops along E. Bradley Avenue. These stops are served by MTS bus route 833 which runs from the Santee Town Center to the El Cajon Transit Center. MTS bus route 833 runs along Mission Gorge Road, Magnolia Avenue, Graves Avenue, Pepper Drive, Mollison Avenue, Fletcher Pkwy and Arnele Avenue. Weekday service begins at 5:44 AM with 1-hour headways throughout the day and ends at 6:25 PM. Saturday and Sunday service begins at 8:51 AM with 1-hour headways throughout the day and ends at 5:41 PM. ***Appendix F*** contains the bus route schedule and map.

12.0 CONCLUSIONS

The existing Bradley Court Convalescent Center is located at 675 E Bradley Avenue in the County of San Diego. The project would construct a new 26,515 SF assisted living building with 66 resident beds, and a new 10,613 SF skilled nursing building with 31 beds (97 new beds). The existing residential buildings would be converted to a controlled access building. The total project site would include four buildings with 87 skilled nursing beds and 66 transitional care beds, for a total of 153 beds. The existing parking area would be redesigned to accommodate the proposed buildings and provide 73 parking spaces.

The site currently takes access from Bradley Avenue, a County maintained road, via a single full access driveway on the west side of the Project site. This driveway is proposed to be relocated eastward to be more centered to the Project site.

Per the SANDAG SB 743 VMT map, the project is in Census Tract 165.04, which has a VMT/Employee of 25.4, or 93.4% of the regional mean. However, the Project TAZ (TAZ 1249), identified as an infill area, would meet the proposed VMT screening criteria as the project is located in a TOA and is not located in a High/Very High Fire Severity Zone. The project can be presumed to have a less than significant VMT impact. No detailed VMT analysis nor mitigation measures are required.

Based on the established criteria discussed in *Section 6.0*, no substantial effects are calculated in terms of intersection capacity for the project. Therefore, improvements are not required under these analyses.

LINSCOTT
LAW &
GREENSPAN
engineers

TECHNICAL APPENDICES TO THE TRANSPORTATION ANALYSIS
BRADLEY COURT CONVALESCENT CENTER

San Diego County, California
November 8, 2022

LLG Ref. 3-21-3378

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APPENDICES

APPENDIX	
A.	Intersection Manual Count Sheets and Traffic Volume Adjustments
B.	Technical Memorandum on Infill Areas in Unincorporated San Diego County
C.	Peak Hour Intersection Analysis Worksheets – Existing
D.	Peak Hour Intersection Analysis Worksheets – Opening Year (2023) without Project
E.	Peak Hour Intersection Analysis Worksheets – Opening Year (2023) with Project
F.	Bus Route Map and Schedule

APPENDIX A

INTERSECTION MANUAL COUNT SHEETS AND TRAFFIC VOLUME ADJUSTMENTS

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#01	File Name:	ITM-21-018-01
Intersection:	Sams Hill Road & E. Bradley Avenue	Project:	LLG Ref. 3-21-3378
Date of Count:	Thursday, April 29, 2021		El Cajon

AM	- Southbound			E. Bradley Avenue Westbound			Sams Hill Road Northbound			E. Bradley Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	0	0	40	0	5	0	1	0	28	1	75
7:15	0	0	0	1	40	0	3	0	4	0	37	1	86
7:30	0	0	0	0	48	0	7	0	4	0	68	2	129
7:45	0	0	0	3	44	0	4	0	3	0	102	3	159
8:00	0	0	0	1	65	0	0	0	4	0	72	2	144
8:15	0	0	0	0	47	0	3	0	3	0	50	4	107
8:30	0	0	0	0	33	0	5	0	6	0	60	2	106
8:45	0	0	0	4	47	0	4	0	3	0	86	3	147
Total	0	0	0	9	364	0	31	0	28	0	503	18	953
Approach%	-	-	-	2.4	97.6	-	52.5	-	47.5	-	96.5	3.5	
Total%	-	-	-	0.9	38.2	-	3.3	-	2.9	-	52.8	1.9	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	-	-	-	4	204	-	14	-	14	-	292	11	539
Approach%	-	-	-	1.9	98.1	-	50.0	-	50.0	-	96.4	3.6	
Total%	-	-	-	0.7	37.8	-	2.6	-	2.6	-	54.2	2.0	
PHF			#DIV/0!			0.79			0.64			0.72	0.85

PM	- Southbound			E. Bradley Avenue Westbound			Sams Hill Road Northbound			E. Bradley Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	0	0	1	65	0	3	0	0	0	84	4	157
16:15	0	0	0	2	56	0	1	0	2	0	125	9	195
16:30	0	0	0	2	46	0	5	0	4	0	79	6	142
16:45	0	0	0	2	48	0	2	0	5	0	107	5	169
17:00	0	0	0	5	54	0	3	0	6	0	100	7	175
17:15	0	0	0	3	52	0	4	0	6	0	93	3	161
17:30	0	0	0	5	49	0	2	0	3	0	78	5	142
17:45	0	0	0	2	54	0	4	0	2	0	93	1	156
Total	0	0	0	22	424	0	24	0	28	0	759	40	1297
Approach%	-	-	-	4.9	95.1	-	46.2	-	53.8	-	95.0	5.0	
Total%	-	-	-	1.7	32.7	-	1.9	-	2.2	-	58.5	3.1	

PM Intersection Peak Hour: **16:15 to 17:15**

Volume	-	-	-	11	204	-	11	-	17	-	411	27	681
Approach%	-	-	-	5.1	94.9	-	39.3	-	60.7	-	93.8	6.2	
Total%	-	-	-	1.6	30.0	-	1.6	-	2.5	-	60.4	4.0	
PHF			#DIV/0!			0.91			0.78			0.82	0.87

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

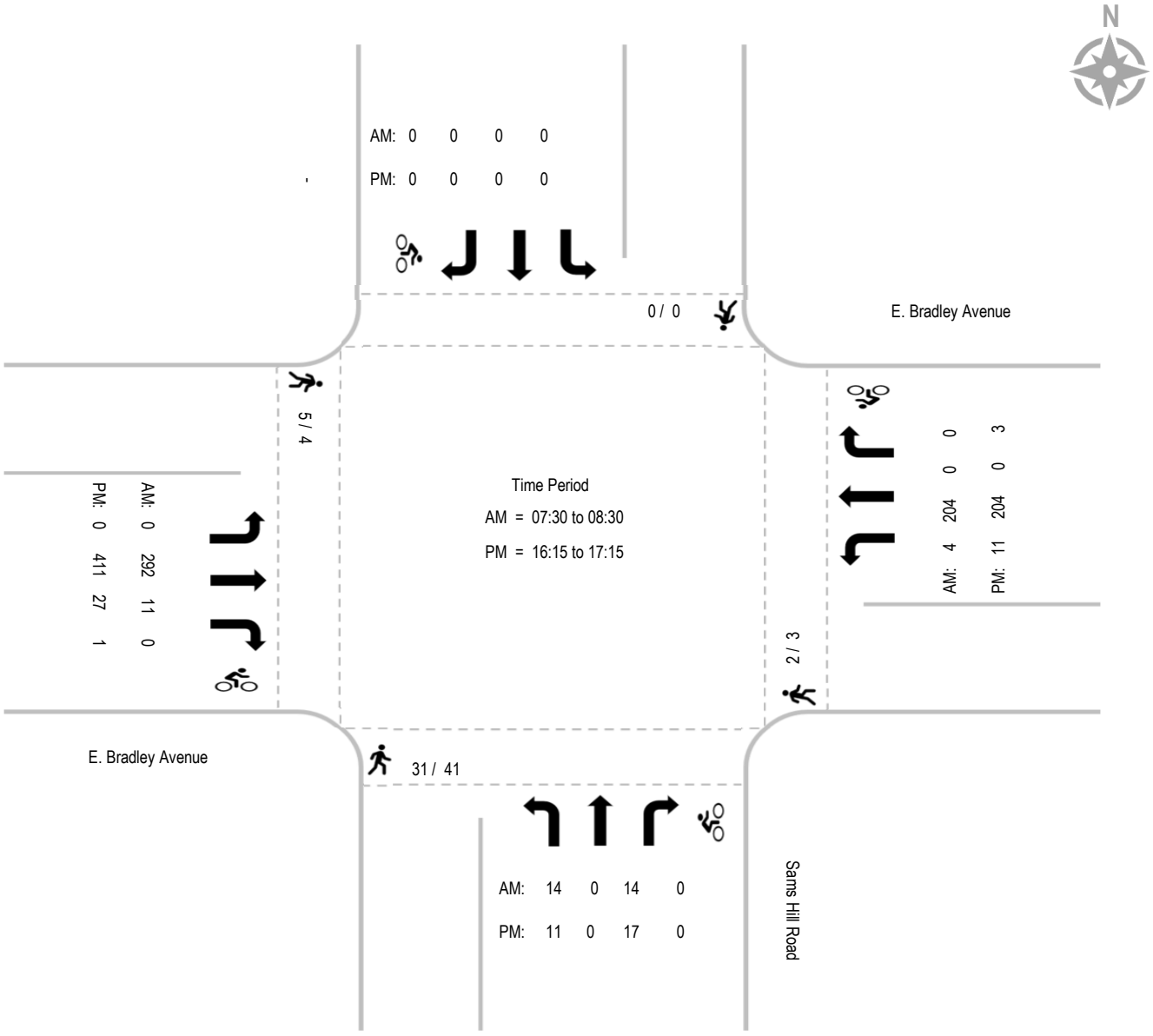
Location:	#01	File Name:	ITM-21-018-01
Intersection:	Sams Hill Road & E. Bradley Avenue	Project:	LLG Ref. 3-21-3378
Date of Count:	Thursday, April 29, 2021		El Cajon

AM	- Southbound				E. Bradley Avenue Westbound				Sams Hill Road Northbound				E. Bradley Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	9	0
7:15	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	4	0
7:30	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	4	0
7:45	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	0
8:00	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	3	0
8:15	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	0
8:30	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	6	0
8:45	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0
Ped Total	0				2				31				5				38	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

PM	- Southbound				E. Bradley Avenue Westbound				Sams Hill Road Northbound				E. Bradley Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	1	6	1
16:15	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	3	0
16:30	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	6	1
16:45	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	10	0
17:00	0	0	0	0	0	0	2	0	7	0	0	0	1	0	0	0	8	2
17:15	0	0	0	0	2	0	0	0	4	0	0	0	1	0	0	0	7	0
17:30	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	0
17:45	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0
Ped Total	0				3				41				4				48	
Bike Total		0	0	0		0	3	0		0	0	0		0	0	1		4

Intersection Turning Movement - Peak Hour Summary

Location:	#01	File Name:	ITM-21-018-01
Intersection:	Sams Hill Road & E. Bradley Avenue	Project:	LLG Ref. 3-21-3378
Date of Count:	Thursday, April 29, 2021		El Cajon



Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#02	File Name:	ITM-21-018-02
Intersection:	Project Driveway & E. Bradley Avenue	Project:	LLG Ref. 3-21-3378
Date of Count:	Thursday, April 29, 2021		El Cajon

AM	- Southbound			E. Bradley Avenue Westbound			Project Driveway Northbound			E. Bradley Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	0	0	0	0	38	0	2	0	1	0	28	1	70
7:15	0	0	0	1	40	0	1	0	0	0	40	1	83
7:30	0	0	0	0	47	0	1	0	0	0	72	0	120
7:45	0	0	0	2	47	0	0	0	0	0	105	0	154
8:00	0	0	0	1	66	0	0	0	0	0	75	1	143
8:15	0	0	0	0	47	0	0	0	0	0	52	1	100
8:30	0	0	0	1	33	0	0	0	0	0	65	1	100
8:45	0	0	0	1	50	0	1	0	0	0	88	1	141
Total	0	0	0	6	368	0	5	0	1	0	525	6	911
Approach%	-	-	-	1.6	98.4	-	83.3	-	16.7	-	98.9	1.1	
Total%	-	-	-	0.7	40.4	-	0.5	-	0.1	-	57.6	0.7	

AM Intersection Peak Hour: **07:30 to 08:30**

Volume	-	-	-	3	207	-	1	-	-	-	304	2	517
Approach%	-	-	-	1.4	98.6	-	100.0	-	-	-	99.3	0.7	
Total%	-	-	-	0.6	40.0	-	0.2	-	-	-	58.8	0.4	
PHF			#DIV/0!			0.78			0.25			0.73	0.84

PM	- Southbound			E. Bradley Avenue Westbound			Project Driveway Northbound			E. Bradley Avenue Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	0	0	0	0	64	0	1	0	0	0	84	0	149
16:15	0	0	0	0	55	0	1	0	1	0	127	0	184
16:30	0	0	0	0	44	0	2	0	0	0	83	0	129
16:45	0	0	0	0	48	0	0	0	1	0	112	0	161
17:00	0	0	0	0	52	0	2	0	1	0	105	1	161
17:15	0	0	0	0	51	0	1	0	1	0	99	0	152
17:30	0	0	0	0	49	0	0	0	0	0	81	0	130
17:45	0	0	0	0	54	0	0	0	0	0	95	0	149
Total	0	0	0	0	417	0	7	0	4	0	786	1	1215
Approach%	-	-	-	-	100.0	-	63.6	-	36.4	-	99.9	0.1	
Total%	-	-	-	-	34.3	-	0.6	-	0.3	-	64.7	0.1	

PM Intersection Peak Hour: **16:15 to 17:15**

Volume	-	-	-	-	199	-	5	-	3	-	427	1	635
Approach%	-	-	-	-	100.0	-	62.5	-	37.5	-	99.8	0.2	
Total%	-	-	-	-	31.3	-	0.8	-	0.5	-	67.2	0.2	
PHF			#DIV/0!			0.90			0.67			0.84	0.86

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

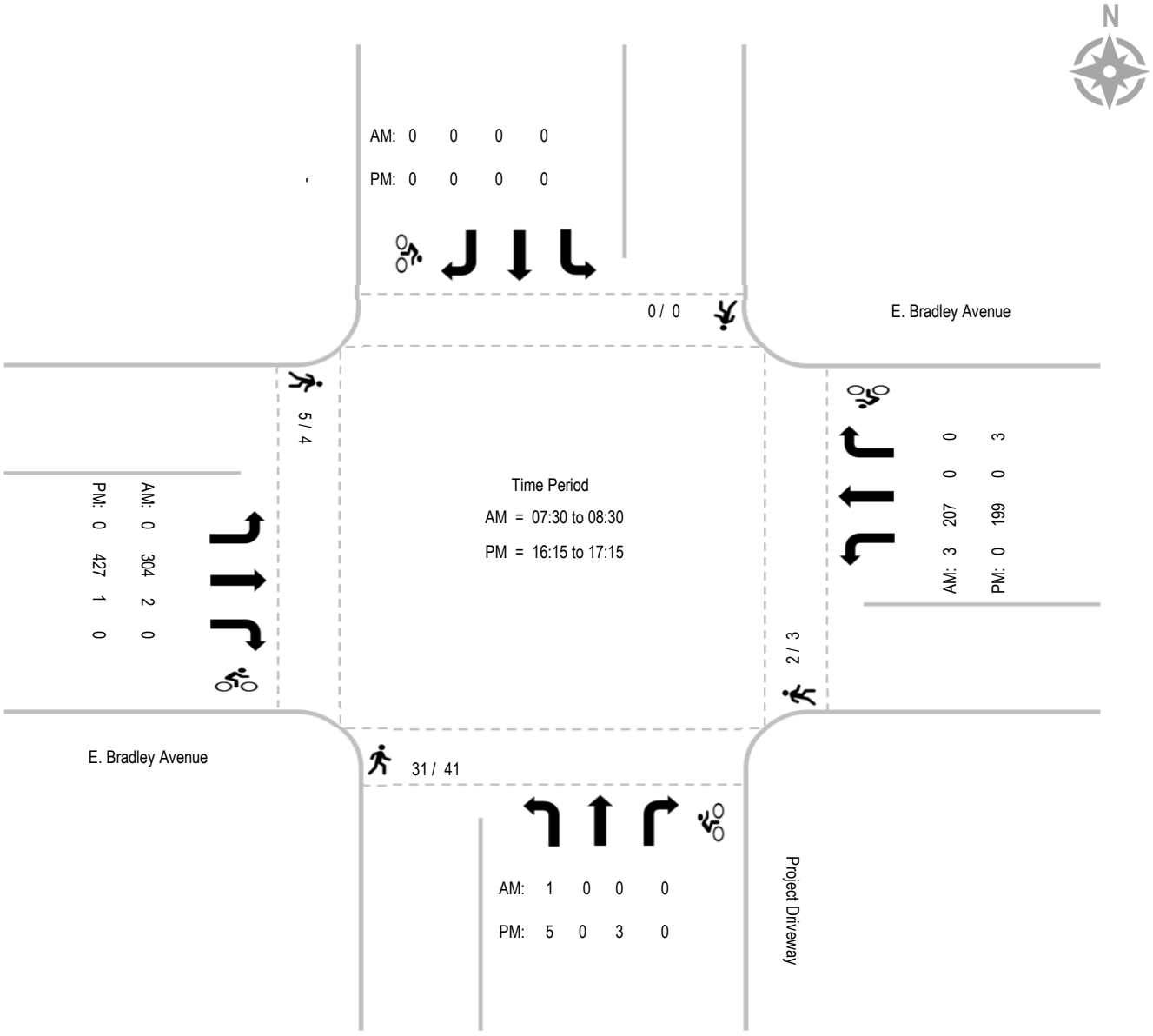
Location:	#02	File Name:	ITM-21-018-02
Intersection:	Project Driveway & E. Bradley Avenue	Project:	LLG Ref. 3-21-3378
Date of Count:	Thursday, April 29, 2021		El Cajon

AM	- Southbound				E. Bradley Avenue Westbound				Project Driveway Northbound				E. Bradley Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	9	0
7:15	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	4	0
7:30	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	4	0
7:45	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	0
8:00	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	3	0
8:15	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	4	0
8:30	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	6	0
8:45	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0
Ped Total	0				2				31				5				38	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

PM	- Southbound				E. Bradley Avenue Westbound				Project Driveway Northbound				E. Bradley Avenue Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	6	0
16:15	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	3	0
16:30	0	0	0	0	0	0	1	0	6	0	0	0	0	0	0	0	6	1
16:45	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	10	0
17:00	0	0	0	0	0	0	2	0	7	0	0	0	1	0	0	0	8	2
17:15	0	0	0	0	2	0	0	0	4	0	0	0	1	0	0	0	7	0
17:30	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	0
17:45	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0
Ped Total	0				3				41				4				48	
Bike Total		0	0	0		0	3	0		0	0	0		0	0	0		3

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers	Location:	#02	File Name:	ITM-21-018-02
	Intersection:	Project Driveway & E. Bradley Avenue	Project:	LLG Ref. 3-21-3378
	Date of Count:	Thursday, April 29, 2021		El Cajon



INTERSECTION	DIRECTION	RAW EXISTING						EXISTING (with 30% growth)					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. E. Bradley Ave / Sams Hill Rd	Sb							0	0	0	0	0	0
	Wb			204	204	4	11	0	0	265	265	5	14
	Nb	14	17			14	11	18	22	0	0	18	14
	Eb	11	27	292	411			14	35	380	534	0	0
2. E. Bradley Ave / W. Project Dwy	Sb							0	0	0	0	0	0
	Wb			207	199	3	0	0	0	269	272	4	0
	Nb	0	3			1	5	0	4	0	0	1	7
	Eb	2	1	304	427			3	1	395	555	0	0

APPENDIX B

TECHNICAL MEMORANDUM ON INFILL AREAS IN UNINCORPORATED SAN DIEGO COUNTY

FEHR PEERS

Memorandum

Date: October 29, 2021

To: Jacob Armstrong and Damon Davis, County of San Diego

From: Katy Cole, Andrew Scher, Jon Stanton

Subject: Infill Areas in Unincorporated San Diego County

SD21-0407

Introduction

The County of San Diego is exploring how infill development will influence the process for evaluating transportation VMT impacts consistent with CEQA Guidelines Section 15064.3: *Determining the Significance of Transportation Impacts*. On September 27, 2013, Governor Jerry Brown signed Senate Bill 743 ("SB 743") into law changing the impact criteria for transportation impact analysis as part of CEQA compliance. The law and subsequent updates to the CEQA Guidelines Section 15064.3 eliminates automobile delay as a basis for determining significant impacts under CEQA. SB 743 includes the following two legislative intent statements:

1. Ensure that the environmental impacts of traffic, such as noise, air pollution, and safety concerns continue to be properly addressed and mitigated through the California Environmental Quality Act.
2. More appropriately balance the needs of congestion management with *statewide goals related to infill development*, promotion of public health through active transportation, and reduction of GHG emissions.

As part of the implementation of SB 743, the California Attorney General's Office of Planning and Research (OPR) produced the Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018). The technical advisory contains suggestions on evaluating transportation impacts including information on when a VMT analysis is necessary and suggestions on characteristics of projects that can be screened from performing analysis. In consideration of SB 743's legislative intent related to infill development and the OPR information about screening projects that meet various characteristics, the County set out to understand the locations within the unincorporated area that may be considered an infill location. This information could be used

to help inform the VMT transportation analysis either as a simple project consideration or to help with future county planning efforts.

To understand what may be considered "infill development" in the unincorporated areas of San Diego County we evaluated multiple land use and transportation network variables to create a quantitative definition for "infill development" in the County. The following sections summarize a methodology for selecting values that define infill development and reflect the intent of the law.

Qualitative Definitions of "Infill" Development

To identify areas where new development would be largely considered as "infill", the term "infill" must be defined, then quantitative values set that would meet the definition of infill.

Infill development patterns have been studies for decades by researchers and each research study and paper has provided varying definitions for "infill" development. *Developing Site Plan Standards for Infill* (Center for Urban Policy Research, Edward J. Bloustein School of Planning & Public Policy Rutgers, The State University of New Jersey New Brunswick, New Jersey) provides a summary the wide variety of definitions for "infill" as shown on Exhibit 1:

TABLE 1.1
Illustrative Definitions of Infill

1. "The development of new housing or other uses on scattered vacant sites in a built-up area." (Moskowitz and Lindbloom 2004.)
2. Infill is the "development of vacant or remnant lands passed over by previous development in urban areas." Redevelopment is "the act or process of redeveloping; *esp.:* renovation of a blighted area. Replacement, remodeling, or reuse of existing structures to accommodate new development." (Otak, Inc. 1999.)
3. "The construction of new buildings on vacant lots, filling a "hole" in the built environment." (Downtown Brookings, Inc. 2004.)
4. "The construction of new buildings along the traditional commercial street. These new buildings relate harmoniously with the older buildings which surround them. Since these buildings are often constructed on vacant lots, thus filling a 'hole' in the street, they are called infill." (City of San Bernardino 2002.)
5. Infill is "the new development of vacant, abandoned, passed over, or underutilized land within built-up areas of existing communities, where infrastructure is already in place. Infill also includes redevelopment of lots in those areas. Redevelopment is described as encompassing construction in previously developed areas, which may include the demolition of existing structures and building new structures or the substantial renovation of existing structures, often changing form and function." (State of Maryland 2001.)
6. "The creative recycling of vacant or underutilized lands within cities and suburbs." (Northeast–Midwest Institute and Congress for New Urbanism 2001.)
7. "Infill development refers to construction of new housing, workplaces, shops, and other facilities within existing urban or suburban areas. This development can be of several different types: building on vacant lots; reuse of underutilized sites, such as parking lots and old industrial sites; and rehabilitation or expansion of existing buildings." (Wheeler 2002.)
8. An infill lot is defined as "any lot that is bounded on one or more sides by lots with existing residences, in an established neighborhood." (Village of Glenview 2003.)
9. "Infill is development that occurs on vacant or abandoned parcels in an otherwise built-up portion of the city." (City of Frederick 2002.)
10. "Urban infill and redevelopment area means an area or areas designated by a local government where (a) public services such as water and wastewater, transportation, schools, and recreation are already available or are scheduled to be provided in an adopted five-year schedule of capital improvements; (b) the area (or one or more neighborhoods within the area) suffers from pervasive poverty, unemployment, and general distress as defined by s. 290.0058 [1998 Florida statutes, chapter 290, section 0058]; (c) the area exhibits a proportion of properties that are substandard, overcrowded, dilapidated, vacant or abandoned, or functionally obsolete that is higher than the average for the local government; (d) more than 50 percent of the area is within one-quarter mile of a transit stop, or a sufficient number of such transit stops will be made available concurrent with the designation; and (e) the area includes or is adjacent to community redevelopment areas, brownfields, enterprise zones, or Main Street programs, or has been designated by the state or federal government as an urban redevelopment, revitalization, or infill area under empowerment zone, enterprise community, or brownfield showcase community programs or similar programs." (State of Florida 2005.)

TABLE 1.1, continued

11. "Developing on empty lots of land within an urban area rather than on new undeveloped land outside the city or town." (State of Massachusetts n.d.)
12. "In housing construction, the process of developing open areas within an established area before developing outside the established area." (Rosner and Rosner 1996.)
13. "Development on vacant lots or through redevelopment to create additional new residential units." (City of Burlington 1994.)
14. "The development of vacant land that was bypassed by earlier waves of development and is now largely surrounded by developed land." (Clark County Board of County Commissioners 2005.)
15. "Development that occurs on a site after completion of the initial development of the area." (Calgary Area, Inc. 1999.)
16. "Infill development is simply redevelopment within existing developments." (Abalos 2003.)
17. "Residential or nonresidential development that occurs on vacant sites scattered throughout the more intensely developed areas of municipalities. Generally, these sites are vacant because they were once considered of insufficient size for development, because an existing building located on the site was demolished, or because there were other, more desirable sites for development." (Schultz and Kasen 1984.)
18. Infill is "development on vacant sites in urbanized areas and redevelopment of areas contiguous to urban development where all services and facilities are projected to have capacity to accommodate additional demand." (Davis 2004.)
19. Infill development is "the process of developing vacant or underused parcels within existing urban areas that are already largely developed." (Municipal Research and Services Center of Washington 1997.)
20. "Infill is the creative recycling of vacant or underutilized lands within cities and suburbs. Successful infill often includes new development on vacant lots within urbanized areas, redevelopment of underused buildings and sites, and the rehabilitation of historic buildings for new uses." (Northeast–Midwest Institute and Congress for New Urbanism 2001.)
21. "Unlike reuse, infill occurs on smaller tracts of vacant land in otherwise developed areas." (Envision Utah 2002.)
22. Infill means "the development of new housing or other buildings on scattered vacant lots in a built-up area." Redevelopment means "the removal or replacement or adaptive reuse of an existing structure or of land from which previous improvements have been removed, including the conservation or rehabilitation of any structure." (New Jersey State Planning Commission 2001.)
23. Infill "is defined as development that occurs on previously developed lots within existing developed areas." (Nisenson 2005).

Exhibit 1: Excerpt from Developing Site Plan Standards for Infill (Center for Urban Policy Research, Edward J. Bloustein School of Planning & Public Policy Rutgers, The State University of New Jersey New Brunswick, New Jersey)

Infill development is defined by OPR as "…building within unused and underutilized lands within existing development patterns, typically but not exclusively within urban areas." (OPR)[1]. A definition for Infill is also codified in California's Public Resources Code (PRC) §21061.3:

> "Infill site" means a site in an urbanized area that meets either of the following criteria:
>
> (a) The site has not been previously developed for urban uses and both of the following apply:
>
> (1) The site is immediately adjacent to parcels that are developed with qualified urban uses, or at least 75 percent of the perimeter of the site adjoins parcels that are developed with qualified urban uses, and the remaining 25 percent of the site adjoins parcels that have previously been developed for qualified urban uses.
>
> (2) No parcel within the site has been created within the past 10 years unless the parcel was created as a result of the plan of a redevelopment agency.
>
> (b) The site has been previously developed for qualified urban uses.[2]

Both definitions refer to development of unused land or redevelopment of land within urban areas. Therefore, if urban areas can be geographically defined within the Unincorporated County, most development within those geographic areas would meet the above standards of having adjacent urban uses and be considered infill. In addition, "urban areas" as referenced by OPR are referring the US Census Bureau's definition of infill. For the 2020 Census, the following documentation is provided on the definition of urban:

> *The Census Bureau proposes to begin the delineation process by identifying and aggregating contiguous census blocks each having a housing unit density of at least 385 housing units per square mile. This aggregation of continuous census blocks would be known as the "initial urban area core." The initial urban area core must encompass at least 385 housing units (consistent with the requirement for at least 1,000 people in the 2010 criteria).*[3]

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[1] OPR: https://opr.ca.gov/planning/land-use/infill-development/

[2] PRC §21061.3: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21061.3

[3] https://www.federalregister.gov/documents/2021/02/19/2021-03412/urban-areas-for-the-2020-census-proposed-criteria#p-44

Early efforts to define urban areas began with characterizing urban sprawl in the 1990's (Pendall 1999)[4], but the first literature that considered a comprehensive set of variables to define urban areas was Cervero & Kockelman (1997) who developed the '3 D's'; Density, Diversity, and Design. The 3 D's included such built environment variables as population density, mix of land uses, and the design of infrastructure (such as street intersection density)[5]. These would be updated by Ewing and Cervero (2010) to 5 D's; adding Destination accessibility and Distance to transit[6]. The 5 D's have become the framework for subsequent literature which has further refined and added variables that compose each of the D's.

Defining places was further refined by Salon (2015)[7] and Frost (2018)[8]. For example, Salon (2015) defined places such as: Central City, Urban, Suburban, Rural-in-Urban, and Rural Places. Many variables representing the built environment were collected based on their relationship and aggregated into key 'factors' representing the 'Ds'.

Creating Quantitative Values for Infill

The analysis to develop an infill definition and criteria was based on the socioeconomic data from the San Diego Association of Governments (SANDAG) Activity-Based Model (ABM) Series 13. The socioeconomic data is provided by traffic analysis zone (TAZ). The core concept of the three 'Ds' and factors provides a framework for selecting appropriate variables and setting thresholds based on the literature. The following data was compiled into maps and evaluated as part of the process to define infill:

- Population density
- Housing density
- Employment density
- Intersection density
- Access to jobs within a 15 mile radius
- Access to shopping/restaurants within a one-mile radius

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[4] Pendall, R. (1999). Do land-use controls cause sprawl? Environment and Planning B: Planning and Design, 26(4), 555–571. https://doi.org/10.1068/b260555

[5] Cervero, R., & Kockelman, K. (1997). Travel demand and the 3Ds: Density, diversity, and design. Transportation Research Part D: Transport and Environment, 2(3), 199–219. https://doi.org/10.1016/S1361-9209(97)00009-6

[6] Ewing, R., & Cervero, R. (2010). Travel and the Built Environment: A Meta-Analysis. Journal of the American Planning Association, 76(3), 265–294. https://doi.org/10.1080/01944361003766766

[7] Salon, D. (2015). Heterogeneity in the relationship between the built environment and driving: Focus on neighborhood type and travel purpose. Research in Transportation Economics, 52, 34–45. https://doi.org/10.1016/j.retrec.2015.10.008

[8] Frost, A. R. (2017). Quantifying the sustainability performance of urban form in California / by Alexander Rijiro Frost. San Diego State University.

Maps of all metrics that were studied as part of defining the infill definition are attached as **Figures 1-13**.

Based on review of each of these maps and the literature review, the following data was considered the largest predictor for "infill" and the specific criteria for each is defined as follows:

1. **Household density.** Household density above 385 housing units/square mile was selected based on the US Census definition for urban area.[9] Household density fulfills the density factor. Figure 1 below (and attached in higher resolution) shows Household Density above 385 units/square mile in the Unincorporated County.

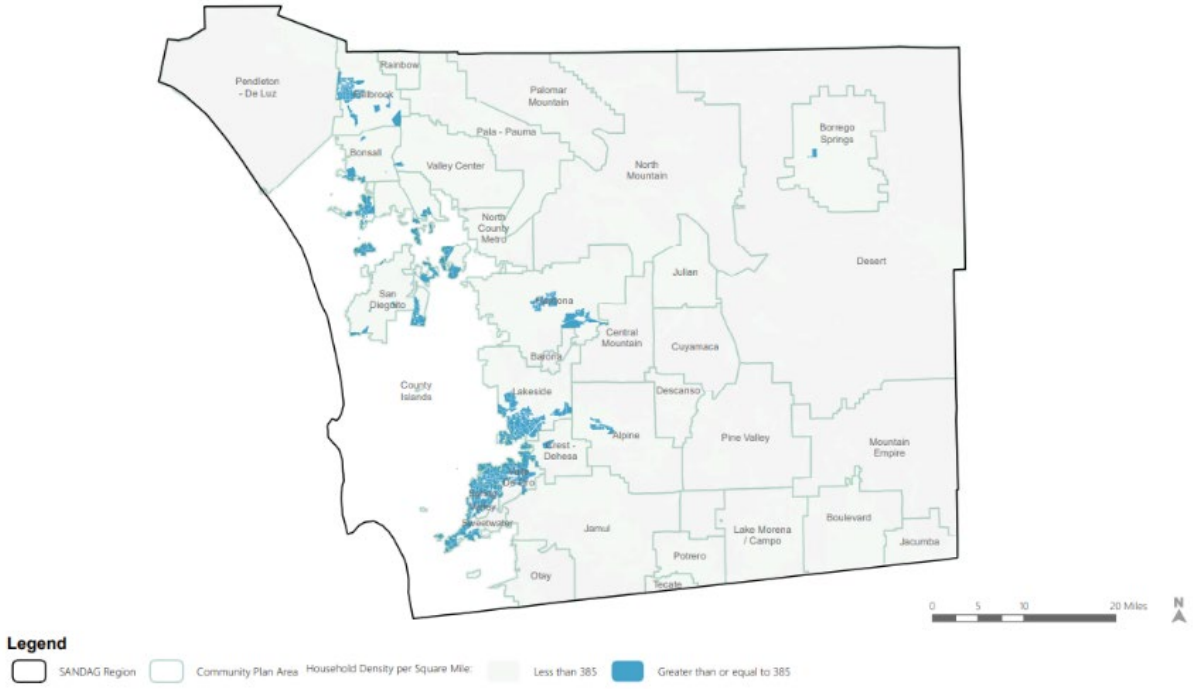


Figure 1: Household Density in Unincorporated San Diego County

[9] https://www.federalregister.gov/d/2021-03412/p-44

2. **Intersection density.** Intersection density above 128 intersections/square mile matches Frost (2018) average value for 'Urban Places'[7]. Intersection density fulfills the design factor. Figure 2 below (and attached in higher resolution) shows Intersection Density above 128 intersections/square mile in the Unincorporated County.

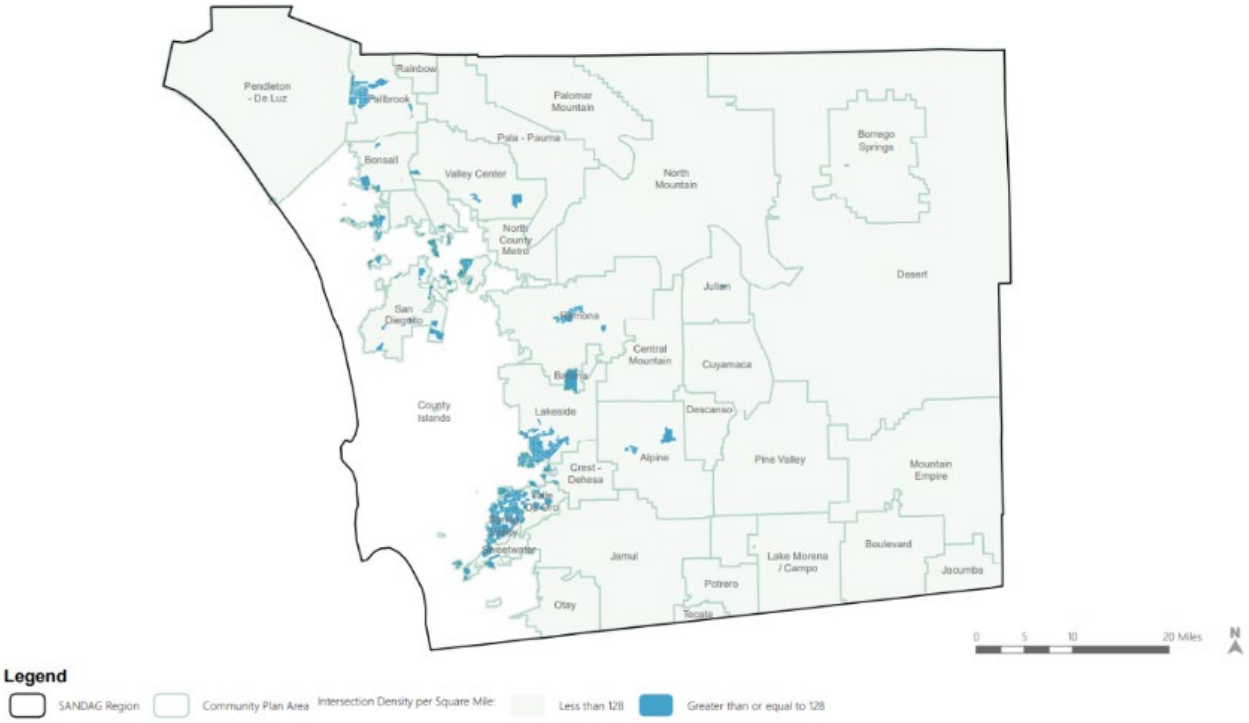


Figure 2: Intersection Density in Unincorporated San Diego County

3. **Jobs Accessibility.**
   Job Accessibility of 12.73 is the average value for local employment accessibility in Salon (2014).[6] Jobs accessibility is measured as an inverse distance-weighted sum of jobs within a 5-mile radius. The current variable used for jobs accessibility for Unincorporated County areas uses an inverse distance-weighted sum for areas within a 15-mile radius. Jobs accessibility fulfills the destination accessibility factor, and more broadly the diversity factor. Figure 3 shows Jobs Accessibility above 12.73 in the Unincorporated County.

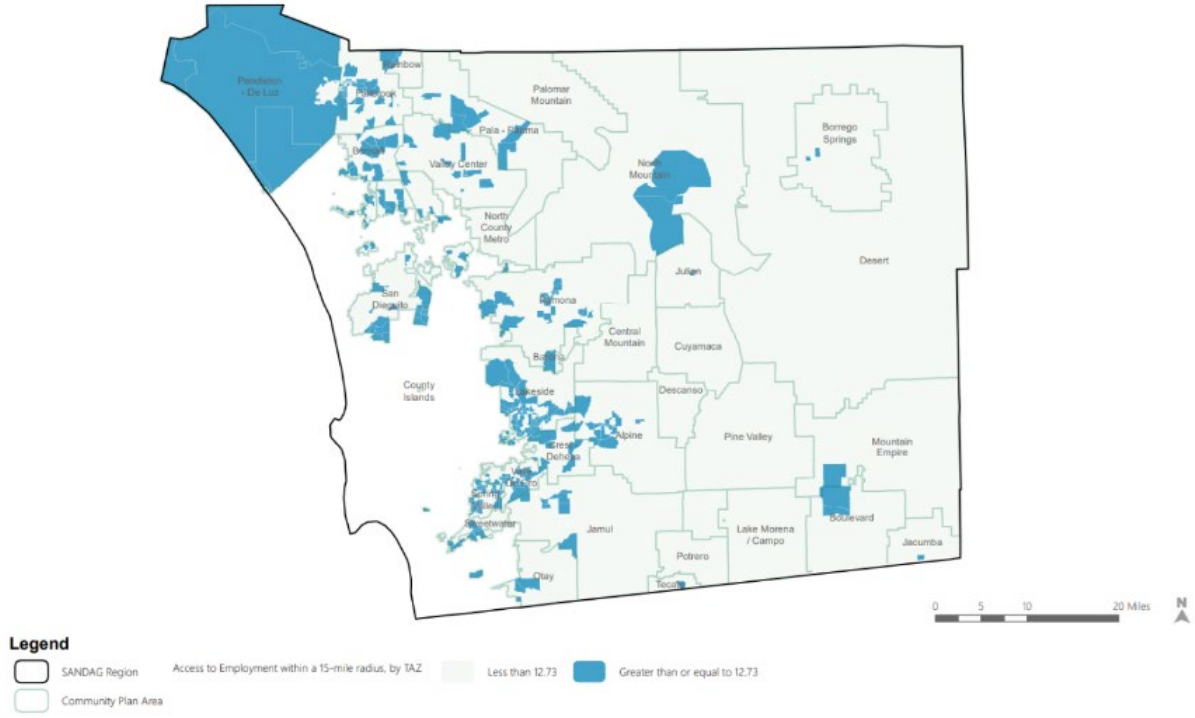


Figure 1: Jobs Accessibility in Unincorporated San Diego County

These variables, while limited compared to the number used in literature, are appropriate in representing the core aspects of the three D's and are among the largest contributing variables to their respective factors. Using the above metrics and cutoff values for Unincorporated County areas creates a narrow selection of geographic areas that are visually and intuitively associated with urban development. Development in dense areas with high job accessibility support the three D's, leading to more diversity in land use, demand for multimodal infrastructure, and shorter vehicle trips which reduce greenhouse gasses.

Results

Applying Infill Values

The above values were used to categorize Traffic Analysis Zones (TAZs) in the Unincorporated County. Out of 1,104 TAZs that lie within the Unincorporated areas of the County, 138 meet the above criteria for household density, intersection density, and jobs accessibility. **Figure 4** shows a map of TAZs that meet the thresholds for urban places and infill in blue.

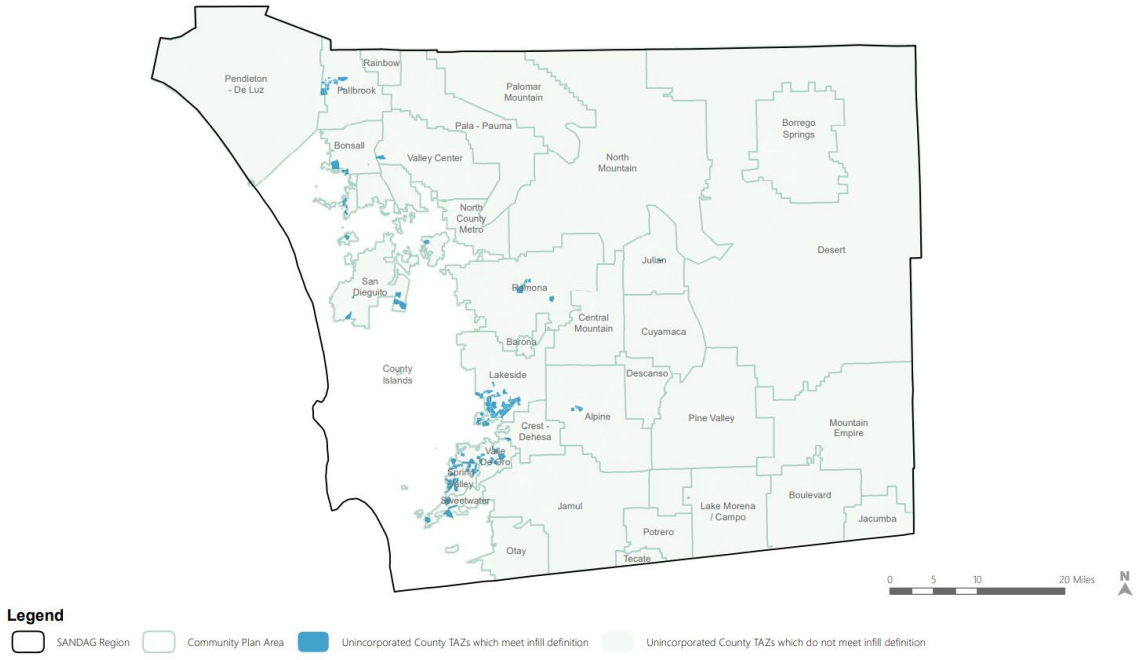


Figure 2: Infill Areas in the Unincorporated San Diego County

The areas that meet the infill definition generally align with intuitive concepts of urban areas. These locations are close to incorporated cities and within the sphere of development for urbanized San Diego. Specifically, core areas of Fallbrook, San Dieguito, Bonsall, Ramona (along Main Street), Lakeside, Valle De Oro, Spring Valley, Alpine, and Sweetwater all meet the definition.

These areas meet the household and intersection density requirements, indicating a certain level of development and compactness to development. There is reasonable access to jobs, and jobs are close enough to be potentially accessible to alternative modes of transportation. Further, developments that occur in these areas would likely meet definitions of infill – being adjacent to urban uses or located in an area with majority urban uses.

Other Considerations

The analysis looked at a variety of other considerations as follows:

- ***Are there infill areas in high fire hazard areas?*** – **Figure 5** displays the results of overlaying the fire severity with the infill areas based on the definition in this technical memorandum. The majority of infill areas are outside of high and very high fire severity zones.
- ***How do the infill areas align with Senate Bill 9 Urbanized Areas?*** – **Figure 6** displays the results of overlaying the SB 9 Urbanized Areas with the infill areas based on the definition in this technical memorandum. All infill areas fall within the SB 9 Urbanized Areas, with the exception of one small area within the Valley Center Community Plan. SB 9 is legislation that was signed into law on September 16, 2021 that allows for the ministerial approval of housing applications that split a parcel into two separate parcels, each parcel with 2 residential units under specific conditions. For housing proposals in an unincorporated area, the development must be located within a US Census Bureau Urbanized Area.
- ***How do the infill areas align with SB 330 Affected Census Designated Places (CDPs)?*** – **Figure 7** displays the results of overalying the SB 330 Affected CDPs with the infill the infill areas based on the definition in this technical memorandum. Many of the infill areas fall within the SB 330 Affected CDPs, with the exception of infill designations in Fallbrook, Bonsall, Valley Center, North County Metro, San Dieguito, Ramona, Lakeside, and Spring Valley. SB 330 is legislation that was signed into law on October 9, 2019 and makes changes to the Permit Streamlining Act and the Housing Accountability Act and establishes the Housing Crisis Act.
- ***Are there other options for expanding and "smoothing" out the infill areas?*** – The County team was curious to explore other options for displaying the infill areas to smooth out the results and provide a larger infill context. Fehr & Peers and County staff discussed two options that are displayed on **Figures 14 and 15**.
    1. Figure 14 displays an option to include any County Village area that contains an infill area. The map shows the original infill areas in blue and the Village area in green.
    2. Figure 15 displays an option in include any TAZ that is adjacent to an infill area. The map shows the original infill areas in blue and the adjacent TAZs in green.

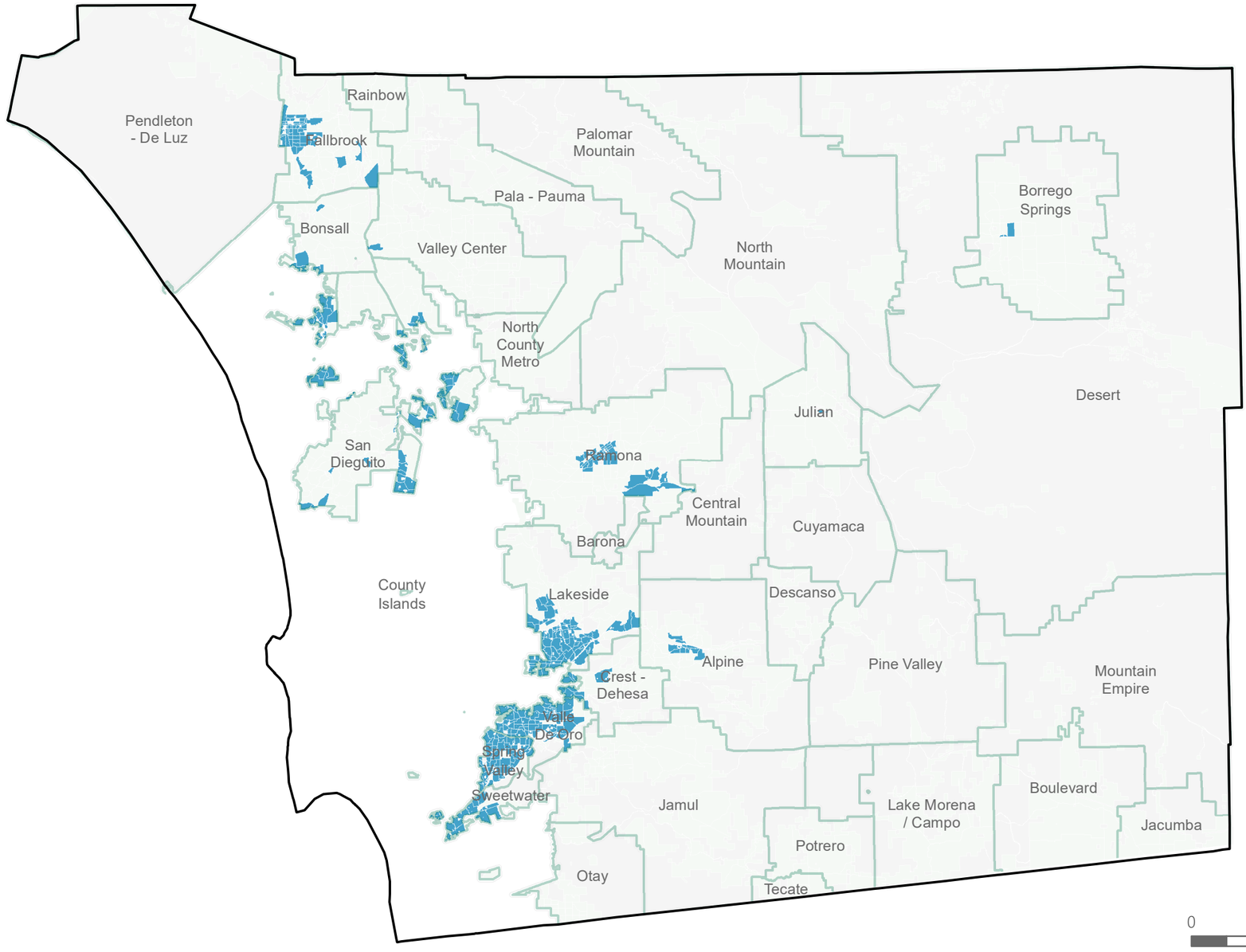
Conclusion

Using the chosen key variables/analysis to define urban places provides a representation of urban areas in the Unincorporated County. These variables provide the foundation for defining infill locations within the Unincorporated County. With guidance from County counsel, the County could use this information to establish a new SB 743 related screening criteria and allow the locations to be screened from performing VMT analysis. This would require evidence to support the determination that projects in these locations would have a less than significant transportation impact and meet the intent of SB 743. Another option is that the County could use

this information as a consideration when evaluating a project and use it to help make the case for adopting a statement of overriding considerations for a project that has a significant VMT impact. Additional County Counsel input is recommended to determine the implications of these options.

Figure 10: Employment Accessibility by TAZ

Draft



Legend

SANDAG Region | Community Plan Area | Household Density per Square Mile: | Less than 385 | Greater than or equal to 385

Figure 1: Household Density in Unincorporated San Diego County

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021

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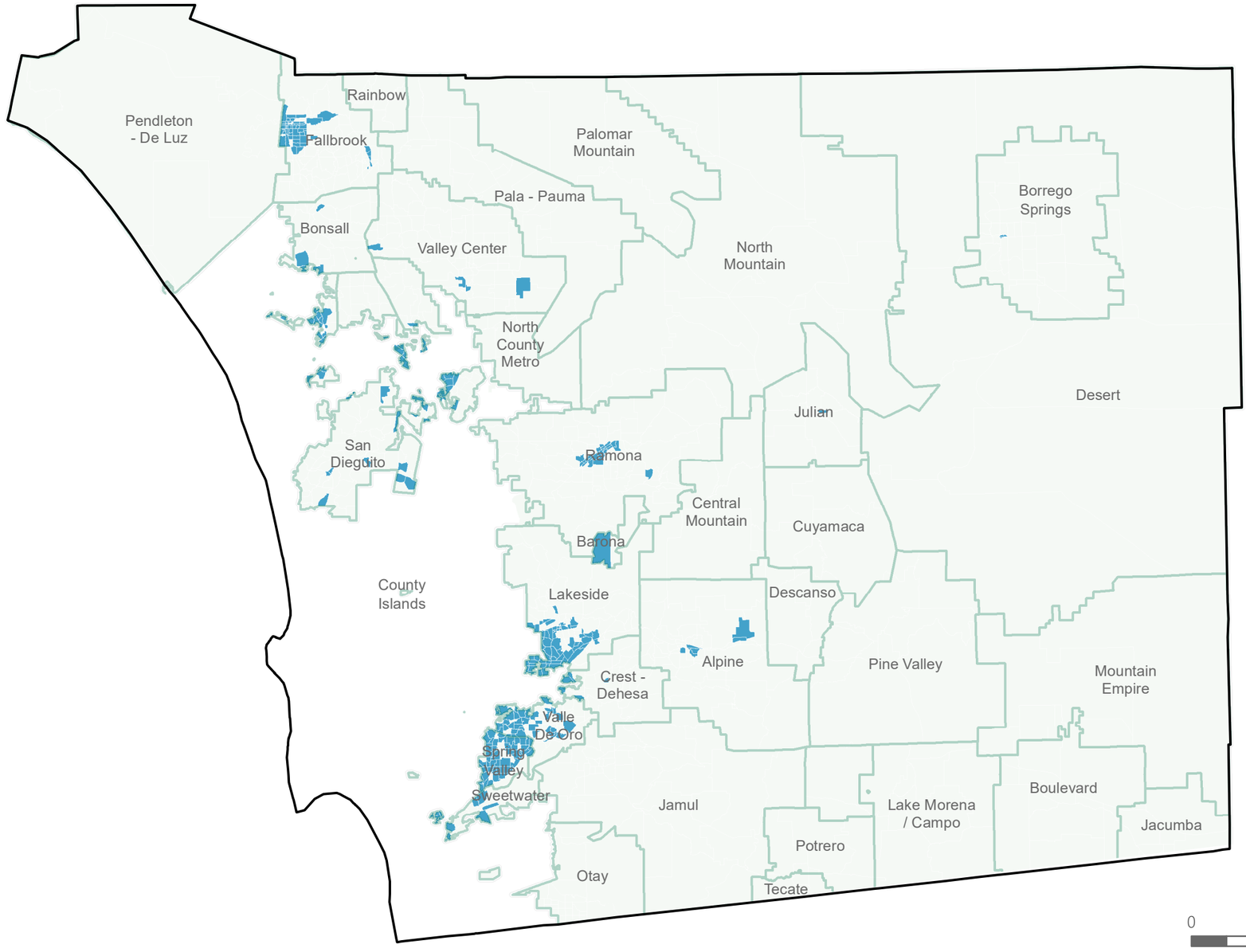


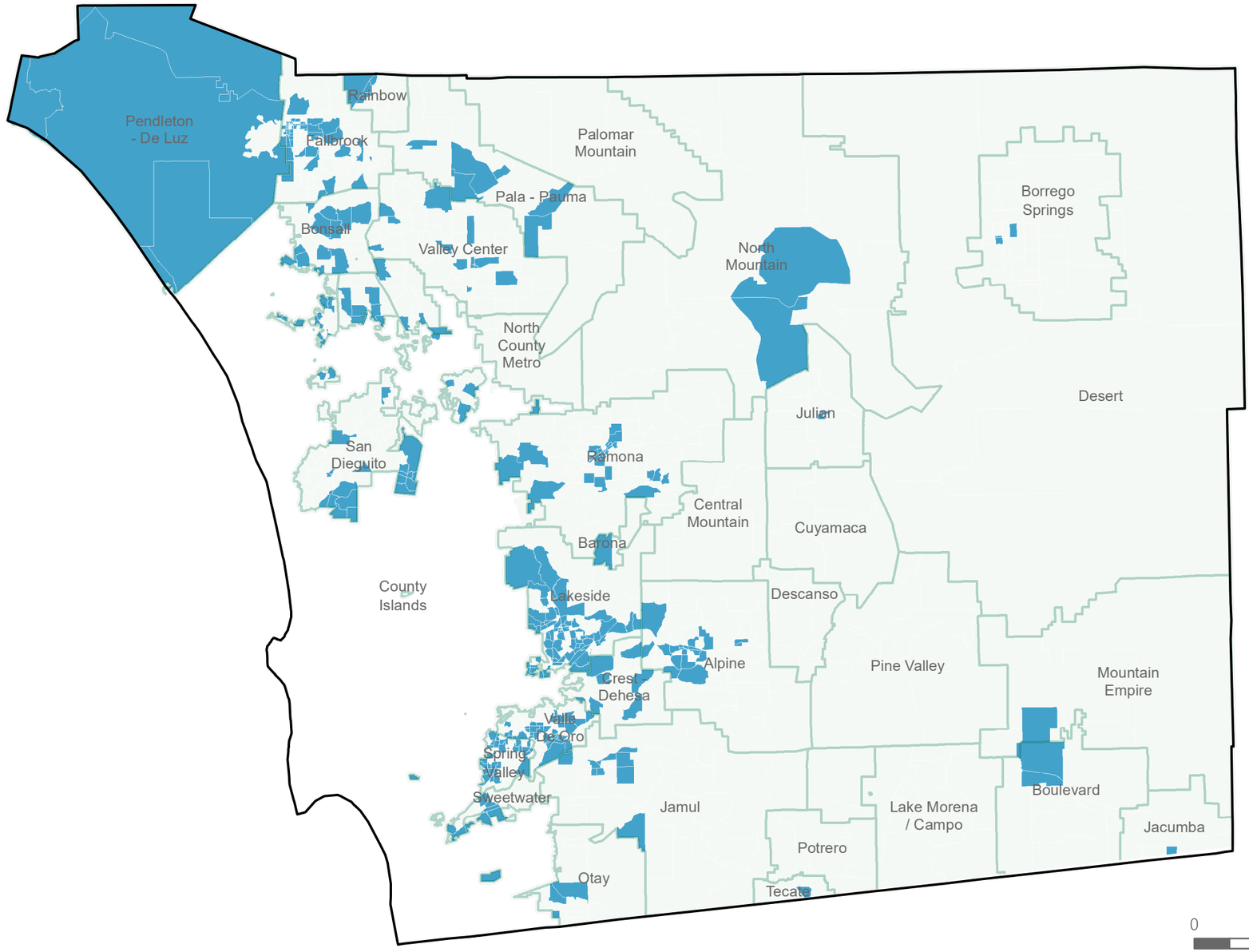
Legend

SANDAG Region | Community Plan Area | Intersection Density per Square Mile: | Less than 128 | Greater than or equal to 128

Figure 2: Intersection Density in Unincorporated San Diego County

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021



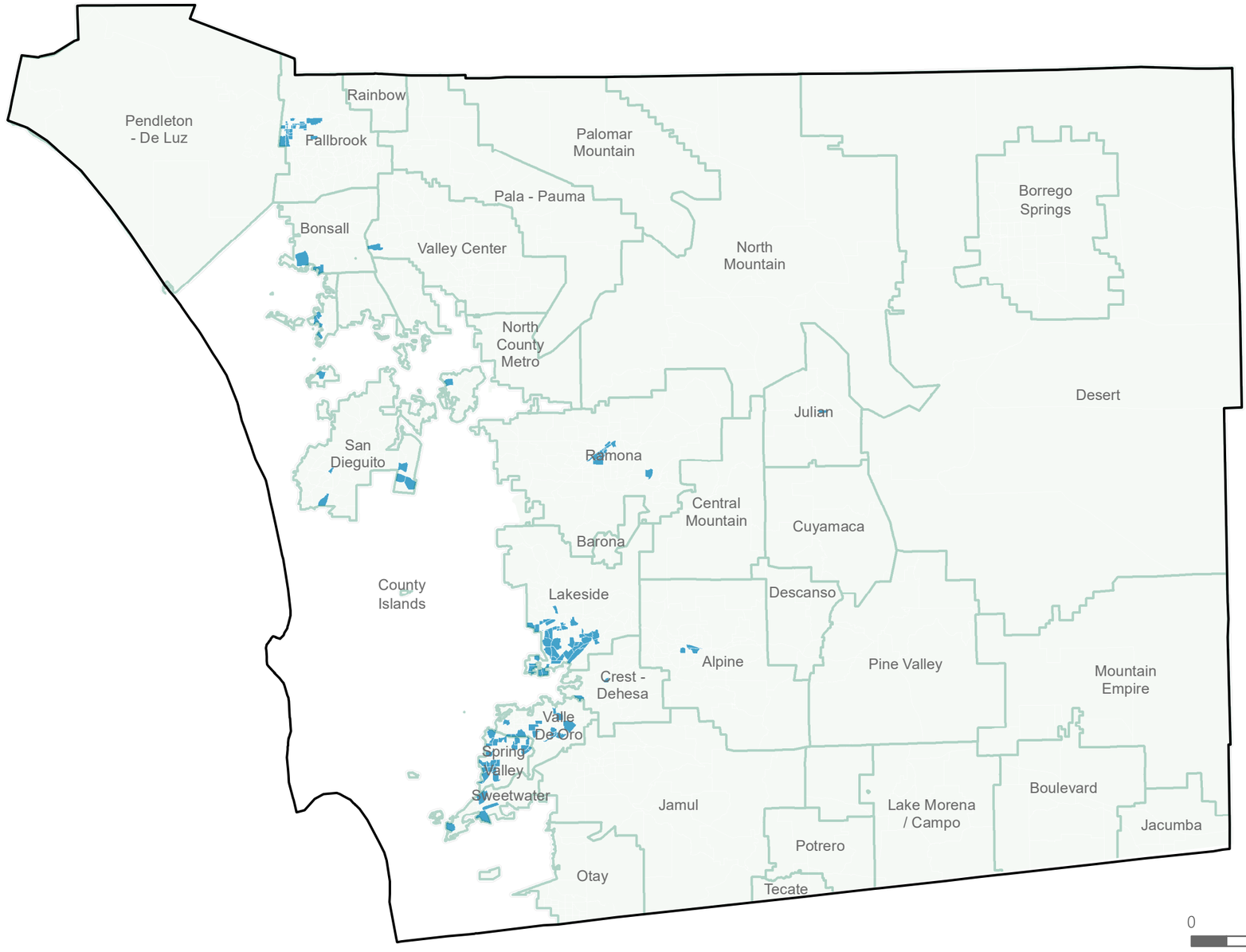
Legend

- SANDAG Region
- Community Plan Area
- Access to Employment within a 15-mile radius, by TAZ
  - Less than 12.73
  - Greater than or equal to 12.73

Figure 3: Employment Accessibility in Unincorporated San Diego County

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021



Legend

- SANDAG Region
- Community Plan Area
- Unincorporated County TAZs which meet infill definition
- Unincorporated County TAZs which do not meet infill definition

Figure 4: Areas of the Unincorporated County Which Meet Infill Definition

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021

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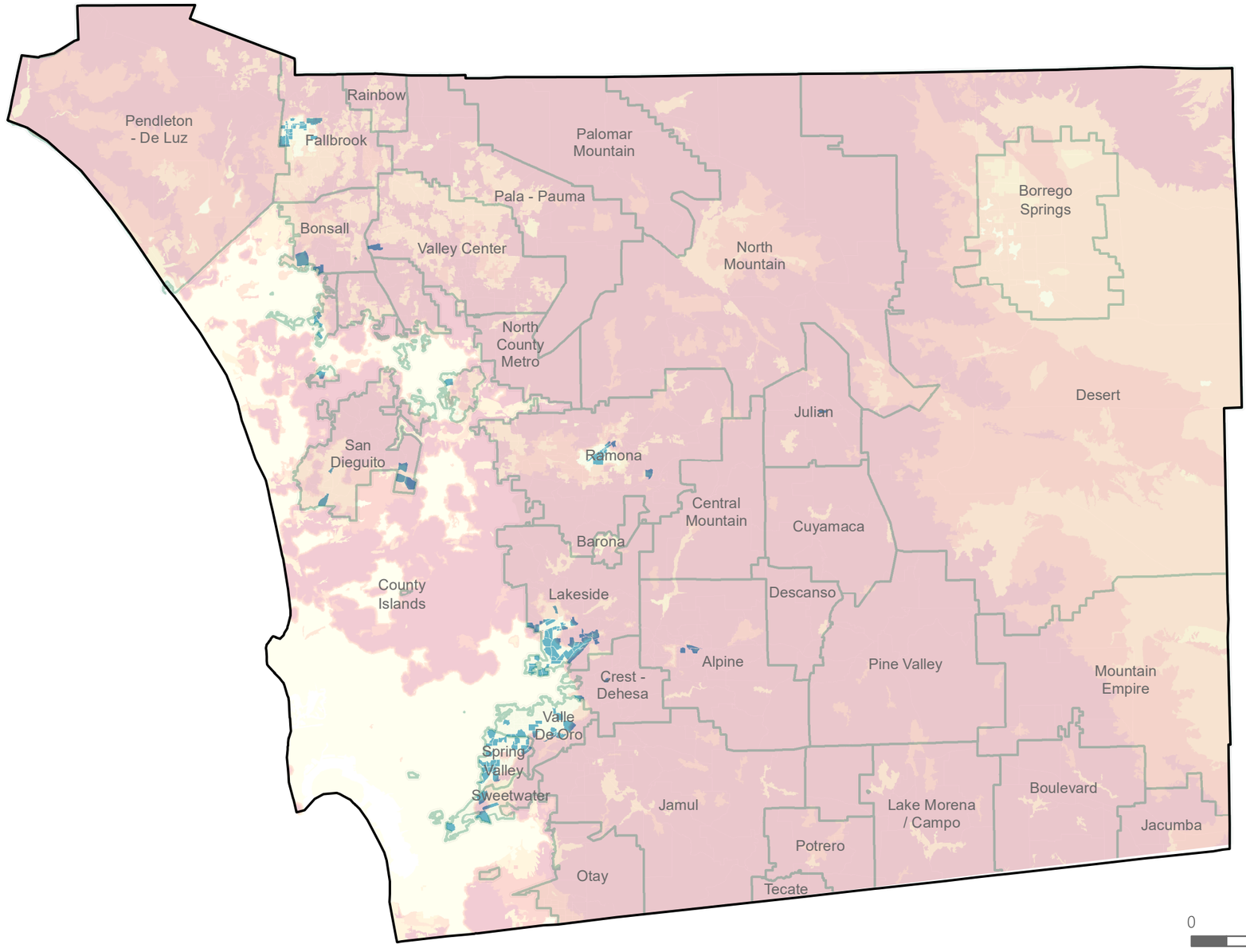

Legend

- SANDAG Region
- Community Plan Area
- Fire Hazard Severity Zone
  - Very High
  - High
  - Moderate
- Non-Wildland/Non-Urban
- Urban Unzoned
- Unincorporated County TAZs which meet infill definition
- Unincorporated County TAZs which do not meet infill definition

Figure 5: County Unincorporated Areas with Infill Areas and Fire Hazard Severity Zones

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021

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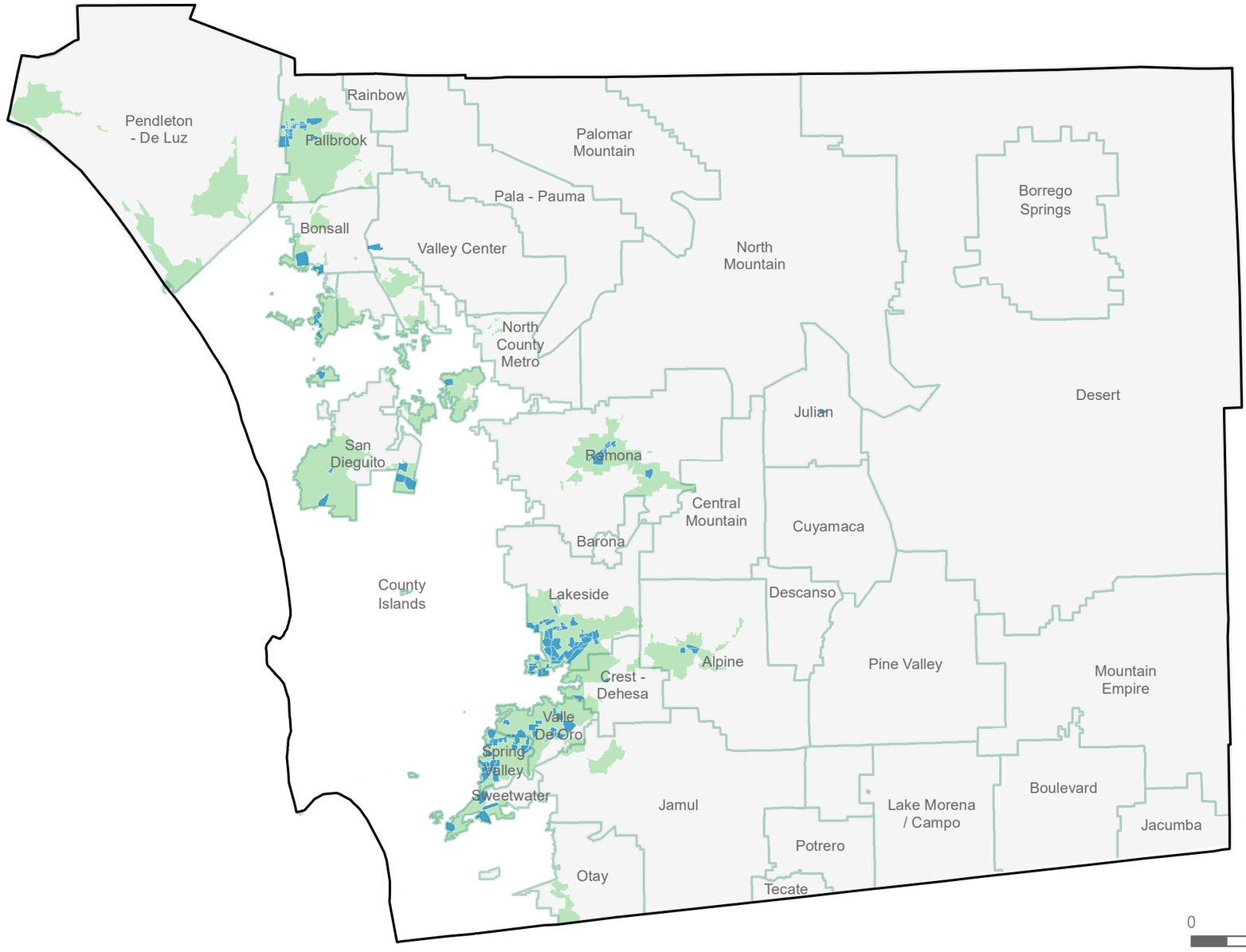


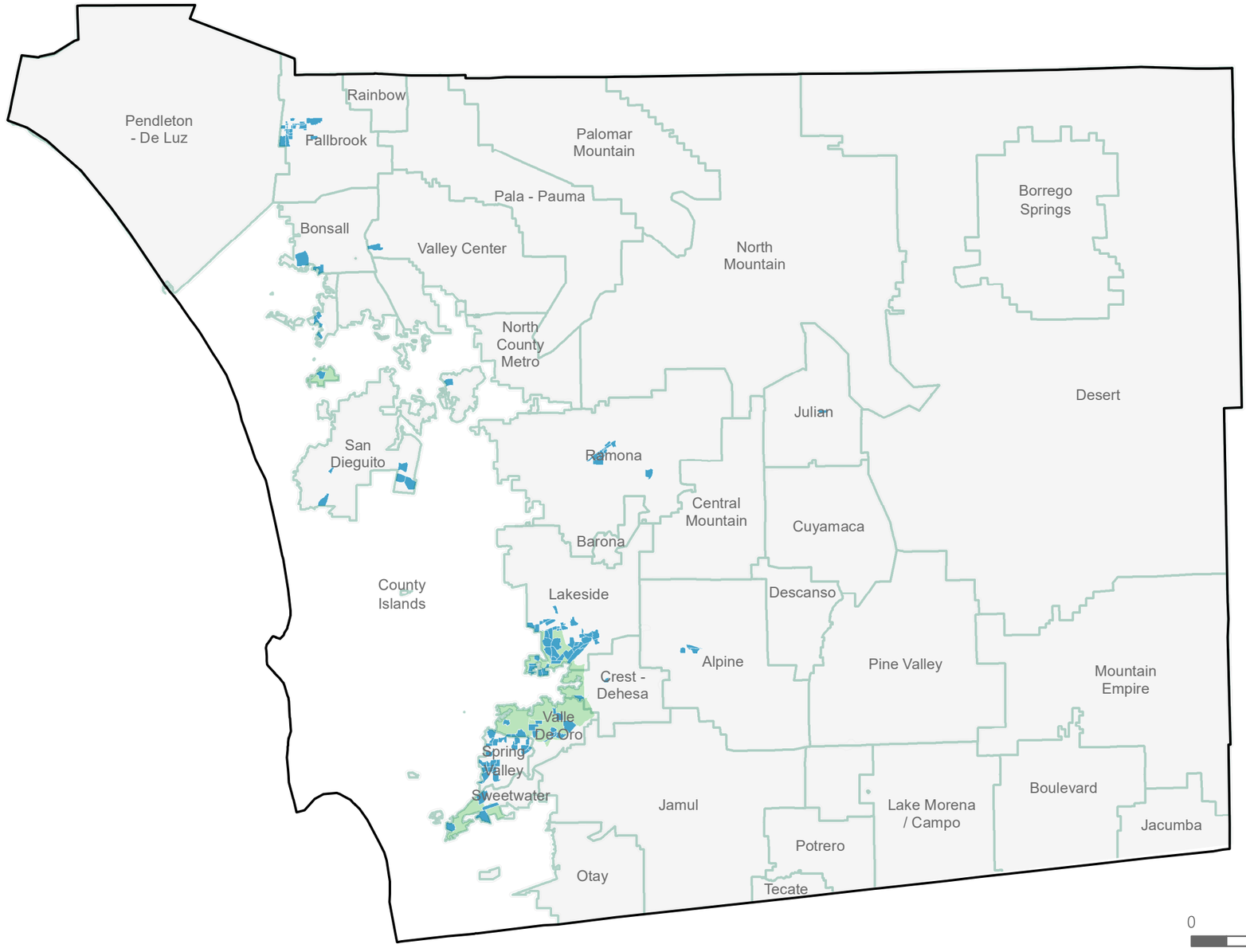
Legend

SANDAG Region | Community Plan Area | Unincorporated County TAZs which meet infill definition | Urbanized Areas

N:\Projects\2018_Projects\0291_County of San Diego SB 743\GIS\MXD\All County\7 October 2021 Place Types Analysis.mxd

Figure 6: Unincorporated County Infill Areas and SB 9 Urbanized Areas (UAs)

*Based on the SANDAG Series 13 Base Year Model

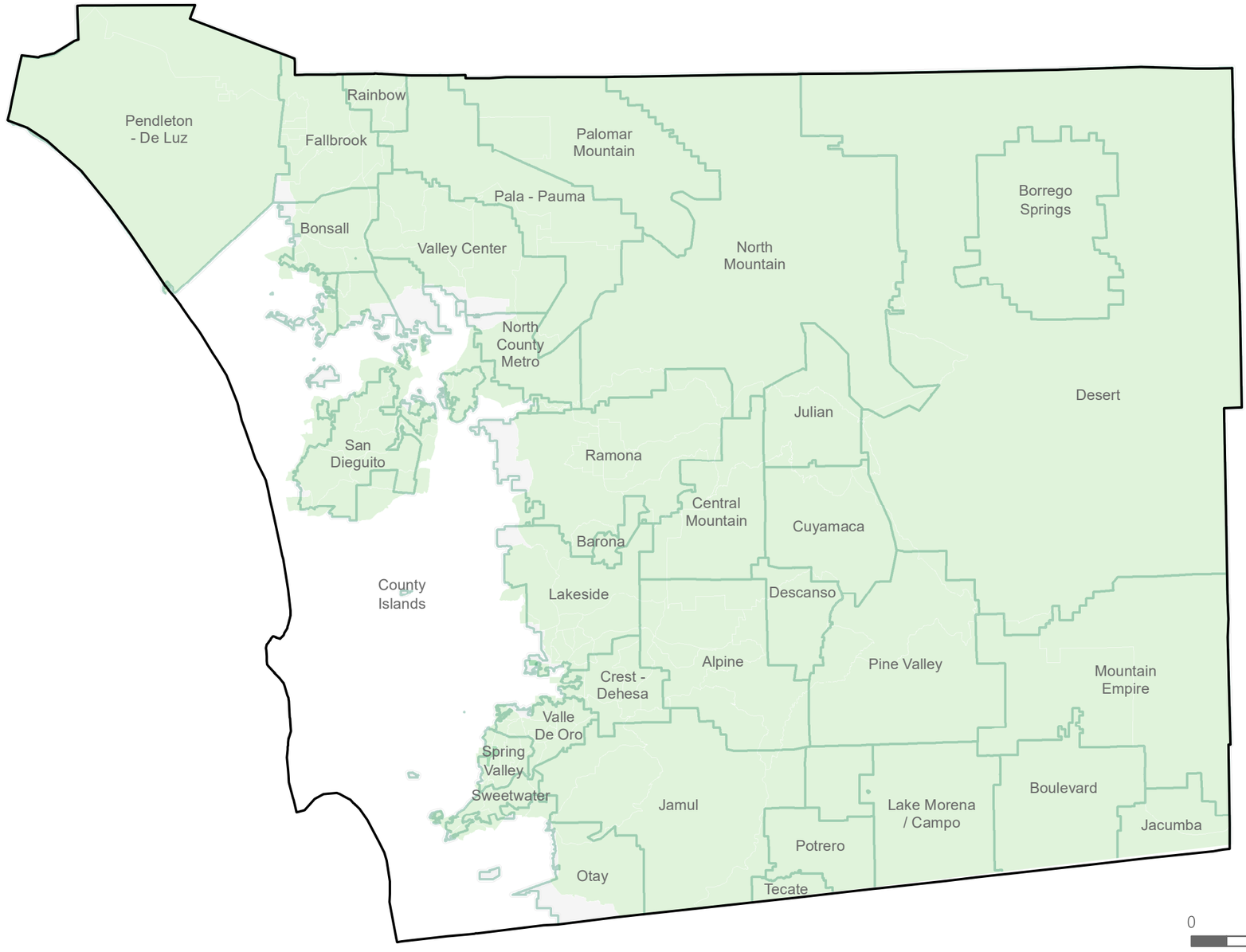


Legend

SANDAG Region | Community Plan Area | Unincorporated County TAZs which meet infill definition | SB 330 Affected CDPs

Figure 7: Unincorporated County Infill Areas and SB 330 Affected Census-Designated Places (CDP)

*Based on the SANDAG Series 13 Base Year Model



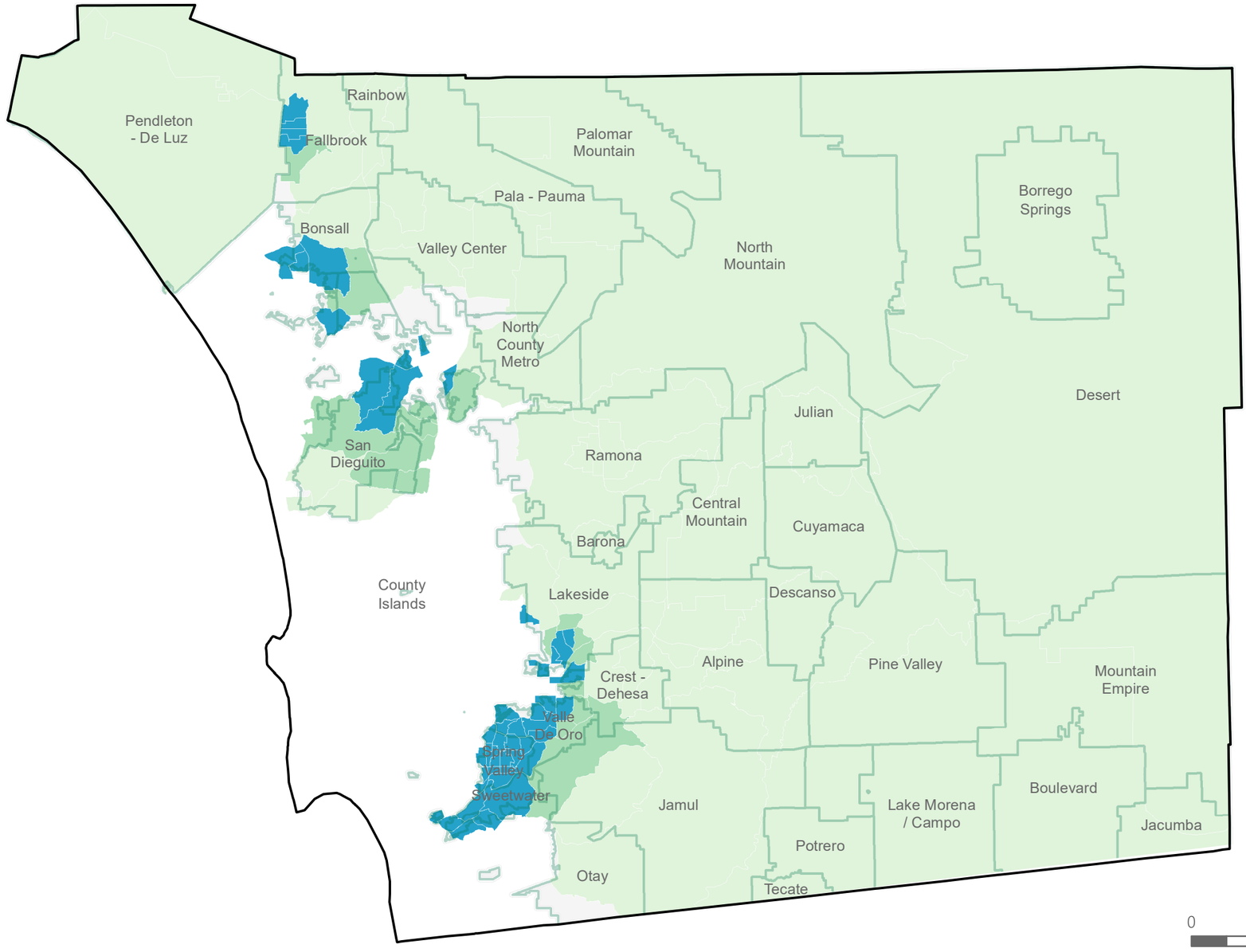
Legend

- SANDAG Region
- Community Plan Area
- At Least 15% below SANDAG Average VMT
- Between 15% below and SANDAG Average VMT
- Above SANDAG VMT

Figure 8: VMT per Capita by Census Tract, Categorized by SANDAG Average VMT per Resident (21.85)

*Based on the SANDAG Series 13 Base Year Model, consistent with Rescinded Transportation Study Guidelines

Draft



Legend

- SANDAG Region
- Community Plan Area
- At Least 15% below County Unincorporated Average VMT
- Between 15% below and County Unincorporated Average VMT
- Above County Unincorporated Average VMT

Figure 9: VMT per Capita by Census Tract, Categorized by Unicorporated County Average VMT per Resident (32.54)

*Based on the SANDAG Series 13 Base Year Model, consistent with Rescinded Transportation Study Guidelines

October 20, 2021

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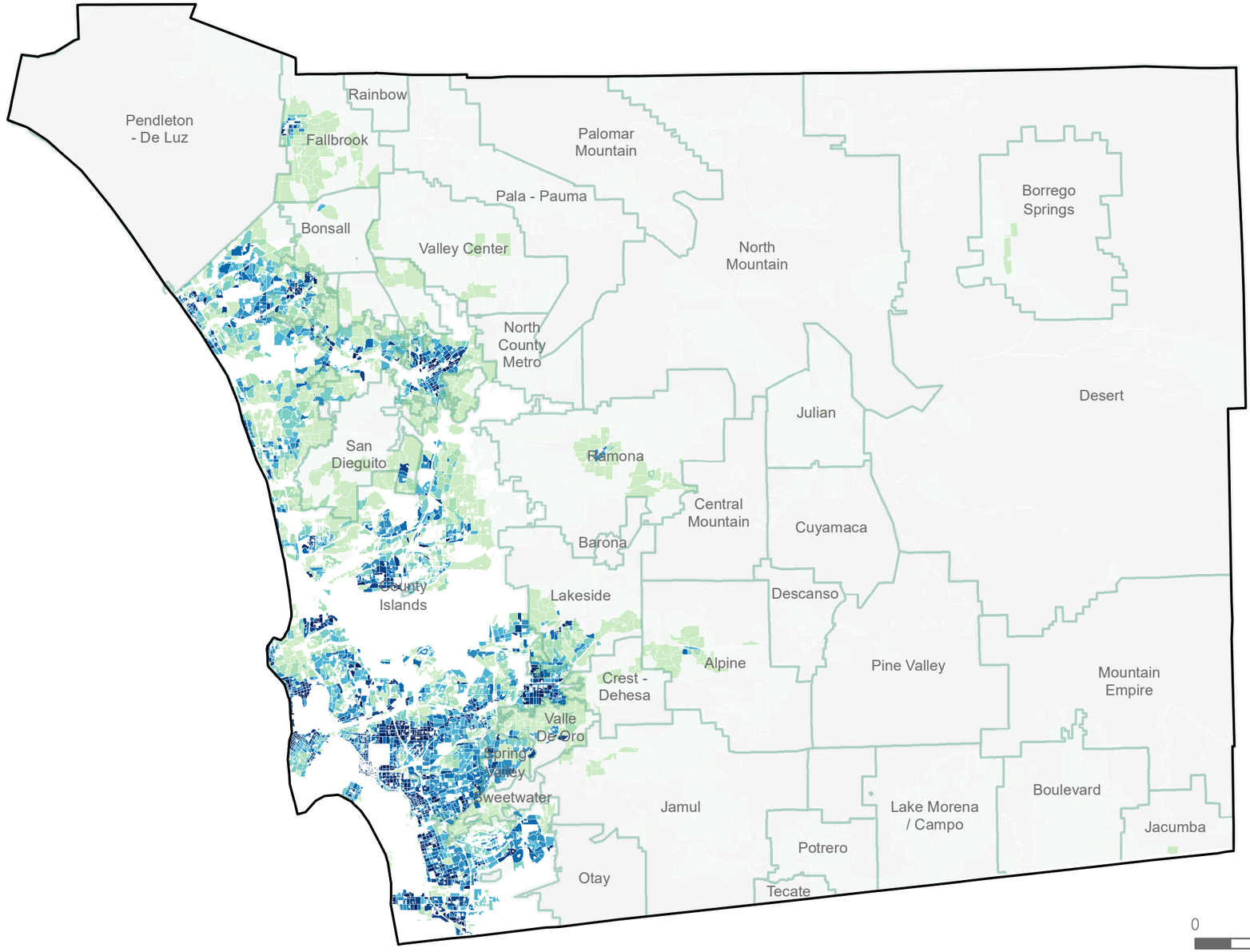


Legend

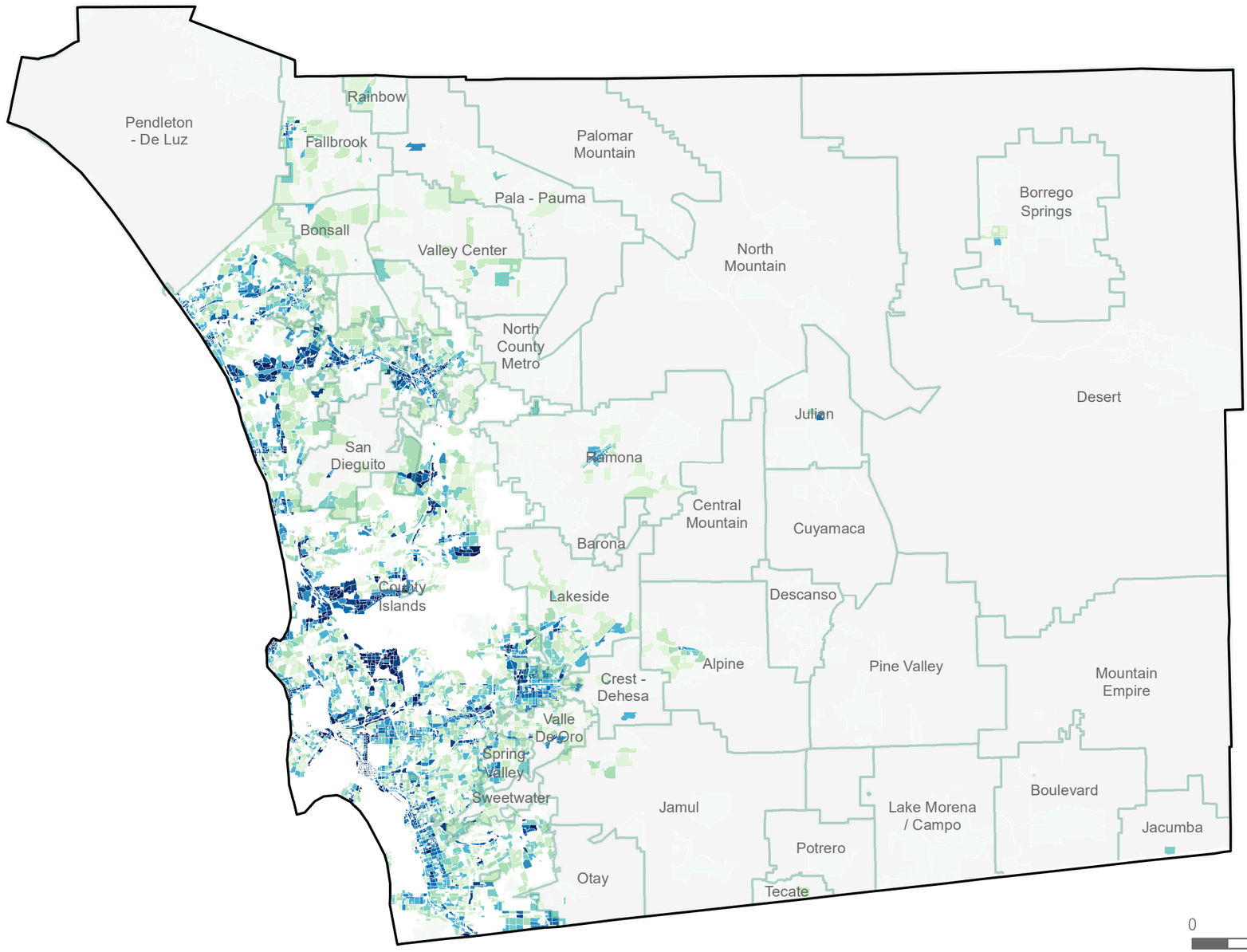
- SANDAG Region
- Community Plan Area

Density (Population/Square Mile)

- Less than 470
- 470 - 1610
- 1610 - 2890
- 2890 - 4350
- 4350 - 5710
- 5710 - 7130
- 7130 - 9060
- 9060 - 12100
- 12100 - 17500
- Greater than 17500

Figure 10: Population Density in San Diego County

*Based on the SANDAG Series 13 Base Year Model



Legend

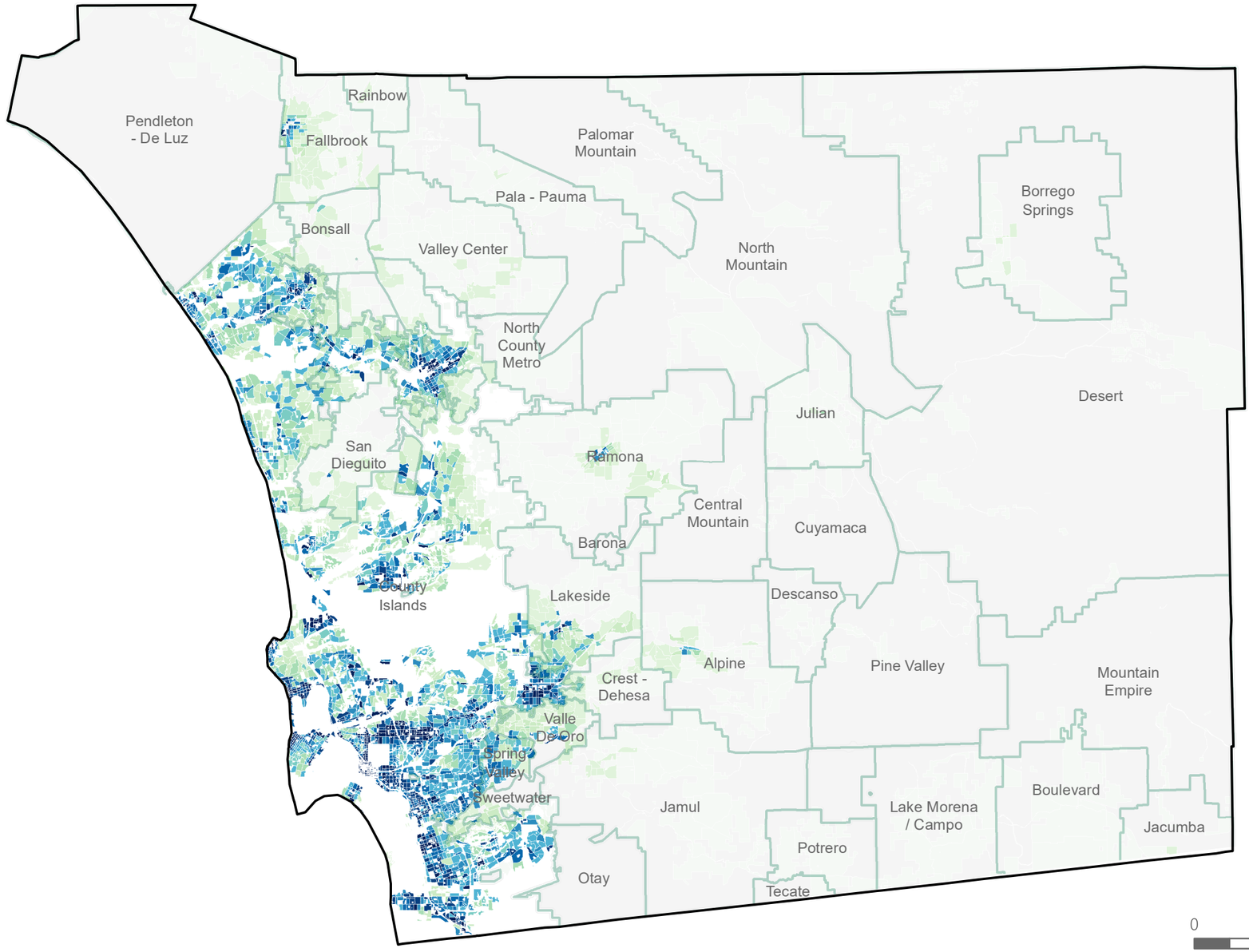
- SANDAG Region
- Community Plan Area

Density (Employees/Square Mile)

- Less than 50
- 50 - 100
- 100 - 210
- 210 - 460
- 460 - 950
- 950 - 1890
- 1890 - 3860
- 3860 - 7390
- 7390 - 14590
- Greater than 14590

Figure 11: Employment Density in San Diego County

*Based on the SANDAG Series 13 Base Year Model



Legend

- SANDAG Region
- Community Plan Area

Service Population Density (Service Population/Square Mile)

- Less than 570
- 570 - 2100
- 2100 - 3620
- 3620 - 5230
- 5230 - 6120
- 6120 - 8580
- 8580 - 11280
- 11280 - 15390
- 15390 - 22350
- Greater than 22350

Figure 12: Service Population Density in San Diego County

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021

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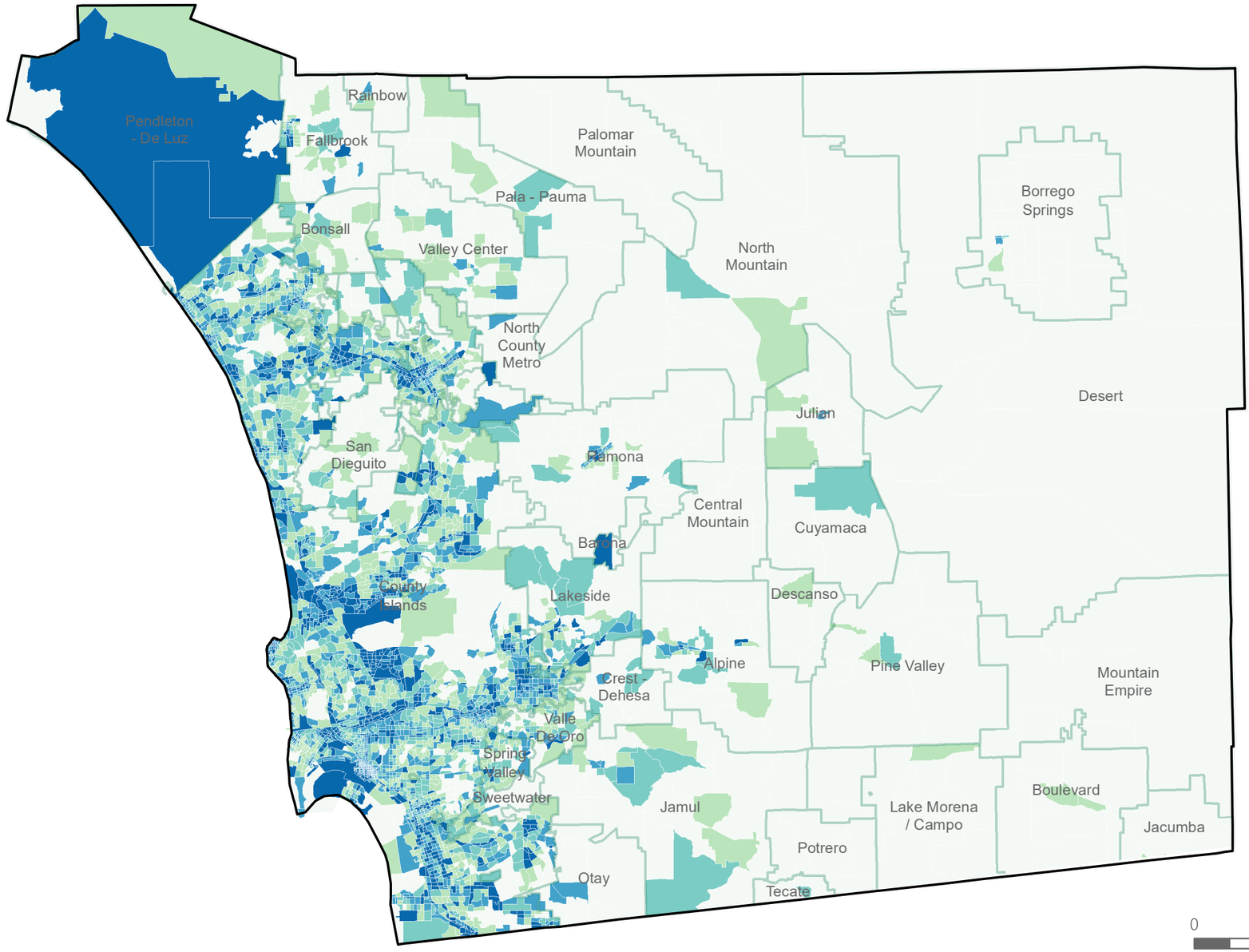


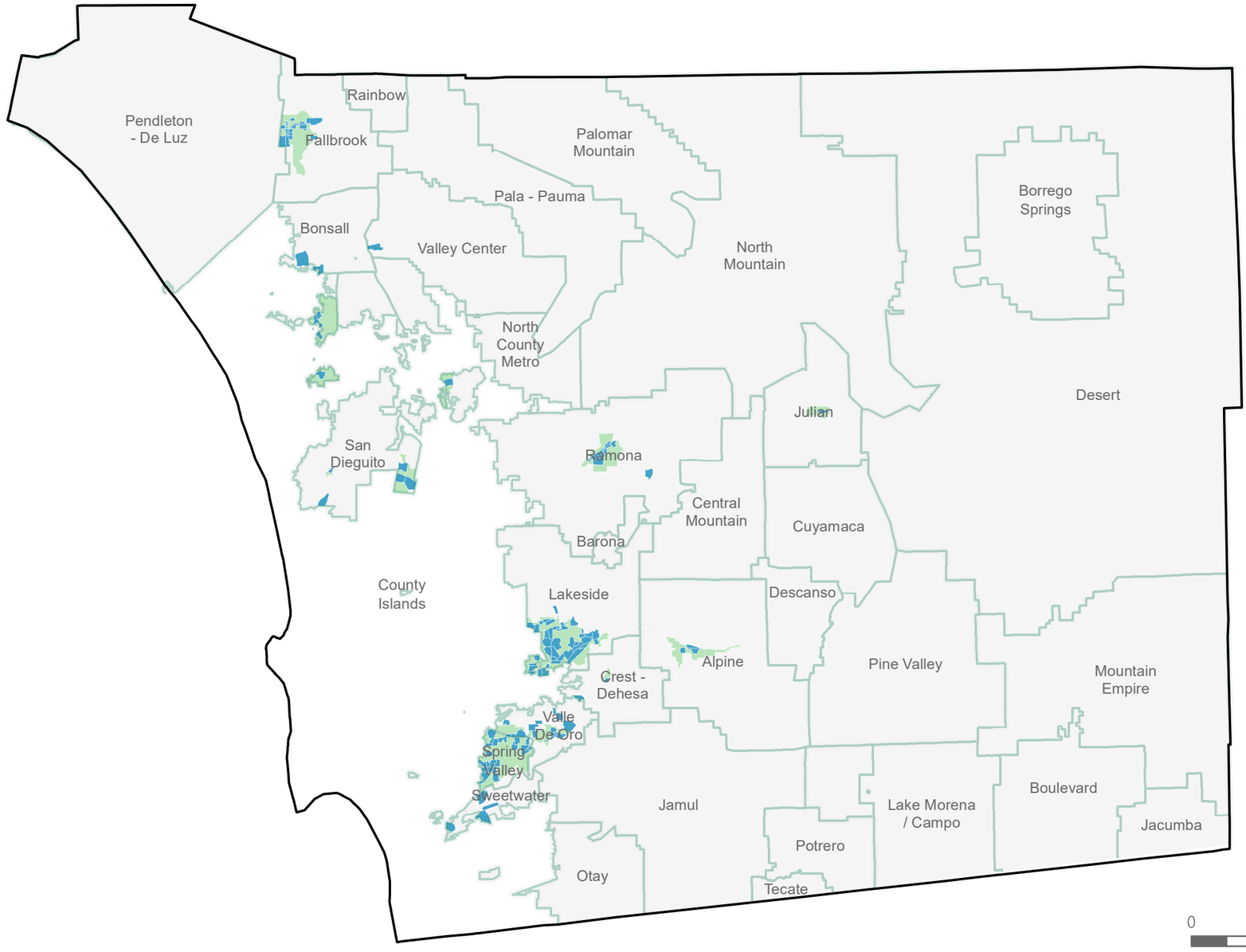
Legend

- SANDAG Region
- Community Plan Area
- Access to Retail and Restuarants within 1-mile, by TAZ
  - Less than 0.09
  - 0.10 - 0.59
  - 0.60 - 2.65
  - 2.66 - 16.35
  - Greater than 16.35

Figure 13: Retail and Restuarant Accessibility in San Diego County

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021

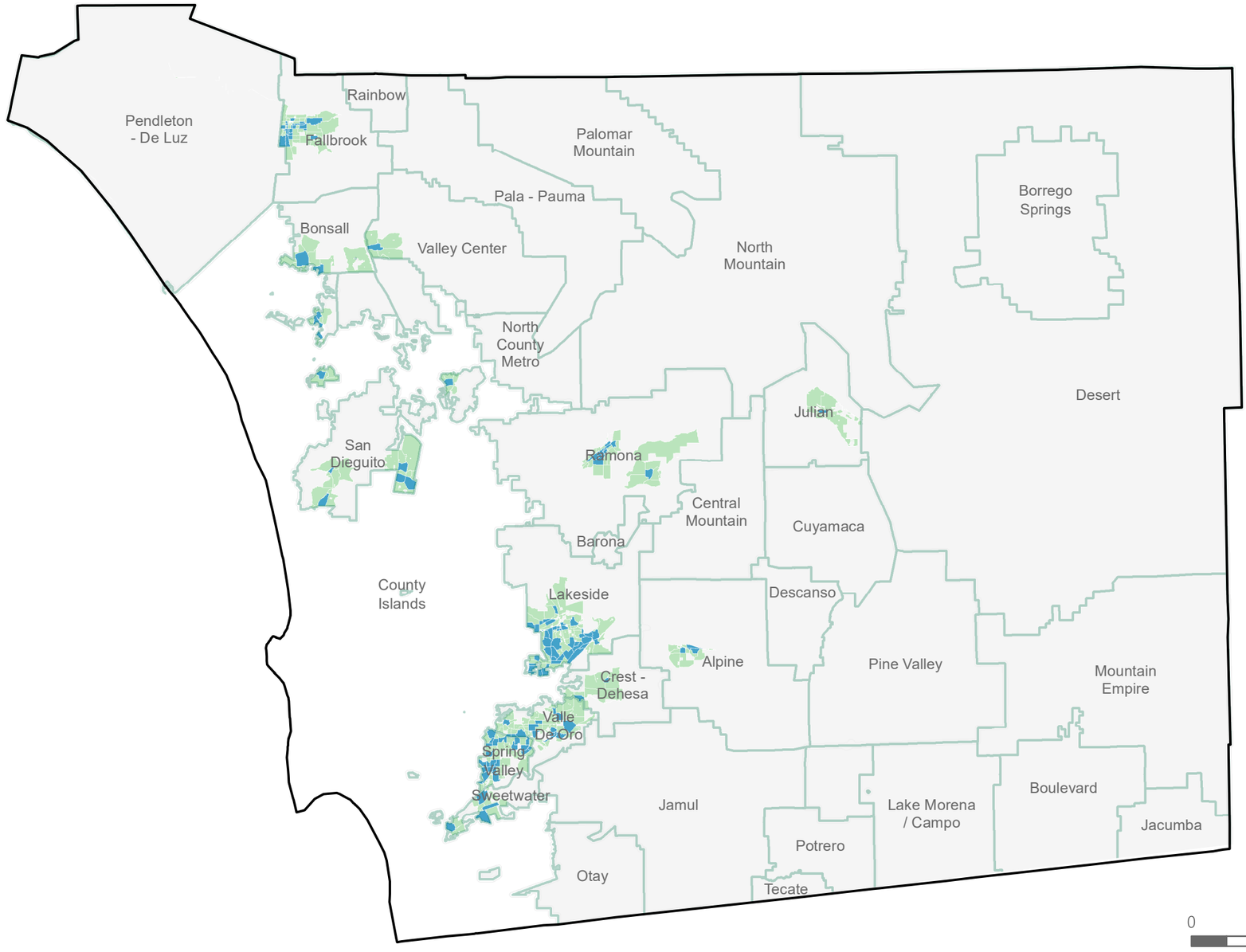


Legend

- SANDAG Region
- Community Plan Area
- Unincorporated County TAZs which meet infill definition
- County Village Areas that Overlap Infill Areas

Figure 14: County Village Areas that Overlap Infill Areas

*Based on the SANDAG Series 13 Base Year Model



Legend

- SANDAG Region
- Community Plan Area
- Unincorporated County TAZs which meet infill definition
- TAZs Adjacent to Infill Areas

Figure 15: Areas of Unincorporated County Which Meet Infill Definition and Adjacent TAZs

*Based on the SANDAG Series 13 Base Year Model

October 20, 2021

APPENDIX C

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – EXISTING

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	380	14	5	265	18	18
Future Vol, veh/h	380	14	5	265	18	18
Conflicting Peds, #/hr	0	31	31	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	447	16	6	312	21	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	494	0	820	496
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	334	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1070	-	345	574
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1038	-	329	552
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	493	-	-	1038	-
HCM Lane V/C Ratio	0.086	-	-	0.006	-
HCM Control Delay (s)	13	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	395	3	4	269	1	0
Future Vol, veh/h	395	3	4	269	1	0
Conflicting Peds, #/hr	0	31	31	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	470	4	5	320	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	505	0	843	513
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	340	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1060	-	334	561
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	721	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1029	-	319	539
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	437	-	-	1029	-
HCM Lane V/C Ratio	0.003	-	-	0.005	-
HCM Control Delay (s)	13.3	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	534	35	14	265	14	22
Future Vol, veh/h	534	35	14	265	14	22
Conflicting Peds, #/hr	0	41	41	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	614	40	16	305	16	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	695	0	1022	685
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	901	-	261	448
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	866	-	243	426
Mov Cap-2 Maneuver	-	-	-	-	366	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	400	-	-	866	-
HCM Lane V/C Ratio	0.103	-	-	0.019	-
HCM Control Delay (s)	15	-	-	9.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	555	1	0	272	7	4
Future Vol, veh/h	555	1	0	272	7	4
Conflicting Peds, #/hr	0	41	41	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	645	1	0	316	8	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	687	0	1013	697
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	907	-	265	441
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	872	-	252	420
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	724	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	387	-	-	872	-
HCM Lane V/C Ratio	0.033	-	-	-	-
HCM Control Delay (s)	14.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX D

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – OPENING YEAR (2023) WITHOUT PROJECT

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	388	14	5	270	18	18
Future Vol, veh/h	388	14	5	270	18	18
Conflicting Peds, #/hr	0	31	31	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	456	16	6	318	21	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	503	0	835	505
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	340	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1061	-	338	567
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	721	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1030	-	322	545
Mov Cap-2 Maneuver	-	-	-	-	440	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	709	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	487	-	-	1030	-
HCM Lane V/C Ratio	0.087	-	-	0.006	-
HCM Control Delay (s)	13.1	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	403	3	4	274	1	0
Future Vol, veh/h	403	3	4	274	1	0
Conflicting Peds, #/hr	0	31	31	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	4	5	326	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	515	0	859	523
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	346	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1051	-	327	554
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1020	-	312	533
Mov Cap-2 Maneuver	-	-	-	-	431	-
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	705	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	431	-	-	1020	-
HCM Lane V/C Ratio	0.003	-	-	0.005	-
HCM Control Delay (s)	13.4	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	545	36	14	270	14	22
Future Vol, veh/h	545	36	14	270	14	22
Conflicting Peds, #/hr	0	41	41	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	626	41	16	310	16	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	708	0	1040	698
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	352	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	891	-	255	440
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	712	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	856	-	237	419
Mov Cap-2 Maneuver	-	-	-	-	361	-
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	689	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	-	-	856	-
HCM Lane V/C Ratio	0.105	-	-	0.019	-
HCM Control Delay (s)	15.2	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	566	1	0	277	7	4
Future Vol, veh/h	566	1	0	277	7	4
Conflicting Peds, #/hr	0	41	41	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	658	1	0	322	8	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	700	0	1032	710
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	897	-	258	434
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	727	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	862	-	245	413
Mov Cap-2 Maneuver	-	-	-	-	365	-
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	720	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	381	-	-	862	-
HCM Lane V/C Ratio	0.034	-	-	-	-
HCM Control Delay (s)	14.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX E

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – OPENING YEAR (2023) WITH PROJECT

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	395	14	5	274	18	18
Future Vol, veh/h	395	14	5	274	18	18
Conflicting Peds, #/hr	0	31	31	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	465	16	6	322	21	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	512	0	848	514
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	344	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1053	-	332	560
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	718	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1022	-	317	538
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	707	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	482	-	-	1022	-
HCM Lane V/C Ratio	0.088	-	-	0.006	-
HCM Control Delay (s)	13.2	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	403	10	8	274	5	3
Future Vol, veh/h	403	10	8	274	5	3
Conflicting Peds, #/hr	0	31	31	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	523	12	10	326	6	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	566	0	916	570
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	356	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1006	-	302	521
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	709	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	976	-	286	501
Mov Cap-2 Maneuver	-	-	-	-	409	-
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	693	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	439	-	-	976	-
HCM Lane V/C Ratio	0.022	-	-	0.01	-
HCM Control Delay (s)	13.4	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	551	36	14	279	14	22
Future Vol, veh/h	551	36	14	279	14	22
Conflicting Peds, #/hr	0	41	41	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	633	41	16	321	16	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	715	0	1058	705
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	885	-	249	436
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	850	-	232	415
Mov Cap-2 Maneuver	-	-	-	-	356	-
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	681	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	-	-	850	-
HCM Lane V/C Ratio	0.106	-	-	0.019	-
HCM Control Delay (s)	15.3	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	566	7	4	277	16	10
Future Vol, veh/h	566	7	4	277	16	10
Conflicting Peds, #/hr	0	41	41	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	658	8	5	322	19	12

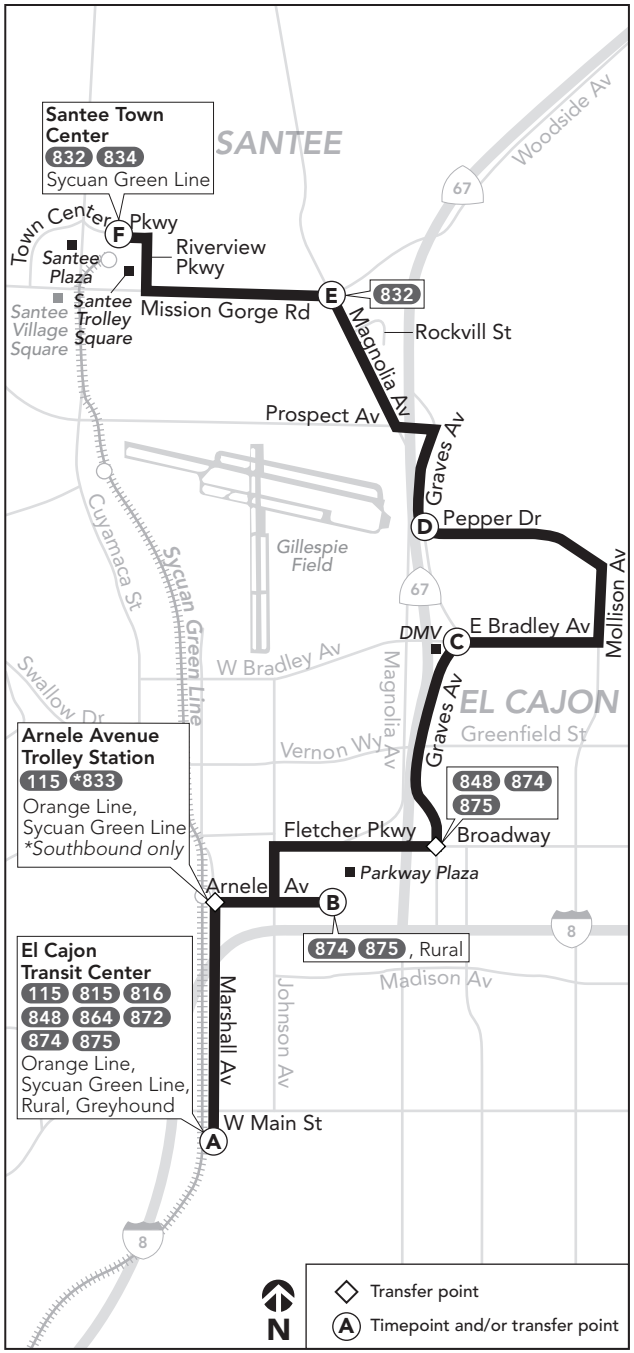
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	707	0	1045	713
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	342	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	891	-	253	432
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	856	-	239	411
Mov Cap-2 Maneuver	-	-	-	-	360	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	707	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	378	-	-	856	-
HCM Lane V/C Ratio	0.08	-	-	0.005	-
HCM Control Delay (s)	15.4	-	-	9.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

APPENDIX F

BUS ROUTE MAP AND SCHEDULE



The schedules and other information shown in this timetable are subject to change. MTS does not assume responsibility for errors in timetables nor for any inconvenience caused by delayed buses.

Los horarios e información que se indican en este itinerario están sujetos a cambios. MTS no asume responsabilidad por errores en los itinerarios, ni por ningún perjuicio que se origine por los autobuses demorados.

DIRECTORY / *Directorio*

MTS Information & Trip Planning *MTS Información y planeo de viaje*	**511** **or/ó** **(619) 233-3004**
TTY/TDD (teletype for hearing impaired) *Teletipo para sordos*	**(619) 234-5005** **or/ó** **(888) 722-4889**
InfoExpress **(24-hour info via Touch-Tone phone)** *Información las 24 horas (via teléfono de teclas)*	**(619) 685-4900**
Customer Service / Suggestions *Servicio al cliente / Sugerencias*	**(619) 557-4555**
MTS Security *MTS Seguridad*	**(619) 595-4960**
Lost & Found *Objetos extraviados*	**(619) 233-3004**
Transit Store	**(619) 234-1060** 12th & Imperial Transit Center M–F 8am–5pm
For MTS online trip planning *Planificación de viajes por Internet*	**sdmts.com**

For more information on riding MTS services, pick up a Rider's Guide on a bus or at the Transit Store, or visit **sdmts.com.**

Para obtener más información sobre el uso de los servicios de MTS, recoja un 'Rider's Guide' en un autobús o en la Transit Store, o visita a ***sdmts.com.***

Thank you for riding MTS! ***¡Gracias por viajar con MTS!***

Effective SEPTEMBER 1, 2019

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El Cajon Transit Center – Santee Town Center

via Parkway Plaza / Graves Ave. / DMV

DESTINATIONS

- El Cajon DMV
- Santee Trolley Square
- Parkway Plaza

TROLLEY CONNECTIONS

- El Cajon
- Arnele Av.
- Santee T.C.

01/21

sdmts.com

Route Alerts, Updated Schedules, Connections & More

ONE-WAY FARES / *Tarifas Sencillas*

Exact fare, please / *Favor de pagar la cantidad exacta*

Adult / *Adulto*	**$2.50**
Senior/Disabled/Medicare* *Personas Mayores/con Discapacidades/Medicare**	**$1.25**
Youth (ages 6-18)* *Jóvenes (edades 6-18)**	**$2.50**

DAY PASS (Regional) / *Pase diario (Regional)*

Adult / *Adulto*	**$6.00**
Senior/Disabled/Medicare* *Personas Mayores/con Discapacidades/Medicare**	**$3.00**
Youth (ages 6-18)* *Jóvenes (edades 6-18)**	**$3.00**

MONTHLY PASSES / *Pases mensuales*

Adult / *Adulto*	**$72.00**
Senior/Disabled/Medicare* *Personas Mayores/con Discapacidades/Medicare**	**$23.00**
Youth (ages 6-18)* *Jóvenes (edades 6-18)**	**$23.00**

*Proof of eligibility required. Senior Eligibility: Age 65+ or born on or before September 1, 1959.
**Se requiere verificación de elegibilidad. Elegibilidad para Personas Mayores: Edad 65+ o nacido en o antes del 1 de septiembre, 1959.*

COMPASS CARDS / *Tarjeta Compass*
There is a $2 charge for Compass Cards, which can be reloaded for future use.
Hay un costo de $2 por la tarjeta Compass Card, la cual puede ser recargada para usos futuros.

COMPASS CLOUD
Download the free Compass Cloud app on your Apple or Android phone.
Descargue la aplicación gratis Compass Cloud en su teléfono Apple o Android.

Visit sdmts.com/fares for more info. ***Visite sdmts.com/fares para más información.***

Alternative formats available upon request. Please call: (619) 557-4555
Formato alternativo disponible al preguntar. Favor de llamar: (619) 557-4555

Route 833 – Monday through Friday / *lunes a viernes*

El Cajon ➡ Santee

Ⓐ El Cajon Transit Center **DEPART**	Ⓑ Parkway Plaza	Ⓒ Graves Av. & E. Bradley Av.	Ⓓ Pepper Dr. & Graves Av.	Ⓔ Mission Gorge Rd. & Magnolia Av.	Ⓕ Santee Town Center **ARRIVE**
5:44a	**B**	5:57a	6:03a	6:08a	6:12a
6:59	**B**	7:12	7:18	7:23	7:27
7:59	**B**	8:12	8:18	8:23	8:27
8:48	8:56a	9:05	9:11	9:16	9:20
9:33	9:41	9:50	9:56	10:01	10:05
10:18	10:26	10:35	10:41	10:46	10:50
11:03	11:11	11:21	11:27	11:33	11:37
11:48	11:56	**12:06p**	**12:12p**	**12:18p**	**12:22p**
12:33p	**12:41p**	**12:51**	**12:57**	**1:03**	**1:07**
1:18	**1:26**	**1:36**	**1:42**	**1:48**	**1:52**
2:03	**2:11**	**2:22**	**2:29**	**2:35**	**2:39**
2:48	**2:56**	**3:07**	**3:14**	**3:20**	**3:24**
3:33	**3:41**	**3:52**	**3:59**	**4:05**	**4:09**
4:18	**4:26**	**4:37**	**4:44**	**4:50**	**4:54**
5:03	**5:11**	**5:22**	**5:29**	**5:35**	**5:39**
5:48	**5:56**	**6:07**	**6:14**	**6:20**	**6:24**

Santee ➡ El Cajon

Ⓕ Santee Town Center **DEPART**	Ⓔ Magnolia Av. & Rockvill St.	Ⓓ Pepper Dr. & Graves Av.	Ⓒ Graves Av. & E. Bradley Av.	Ⓑ Parkway Plaza	Ⓐ El Cajon Transit Center **ARRIVE**
6:19a	6:24a	6:29a	6:37a	**B**	6:53a
7:19	7:24	7:29	7:37	**B**	7:53
8:02	8:07	8:12	8:20	8:33a	8:40
8:47	8:52	8:57	9:05	9:18	9:25
9:32	9:37	9:42	9:50	10:03	10:10
10:17	10:22	10:27	10:35	10:48	10:55
11:02	11:07	11:12	11:20	11:33	11:40
11:47	11:52	11:57	**12:05p**	**12:18p**	**12:25p**
12:32p	**12:37p**	**12:42p**	**12:50**	**1:03**	**1:10**
1:17	**1:22**	**1:27**	**1:35**	**1:48**	**1:55**
2:01	**2:06**	**2:12**	**2:20**	**2:33**	**2:41**
2:46	**2:51**	**2:57**	**3:05**	**3:18**	**3:26**
3:31	**3:36**	**3:42**	**3:50**	**4:03**	**4:11**
4:16	**4:21**	**4:27**	**4:35**	**4:48**	**4:56**
5:01	**5:06**	**5:12**	**5:20**	**5:33**	**5:41**
5:47	**5:52**	**5:57**	**6:05**	**6:18**	**6:25**

Route 833 – Saturday and Sunday / *sábado y domingo*

El Cajon ➡ Santee

Ⓐ El Cajon Transit Center **DEPART**	Ⓑ Parkway Plaza	Ⓒ Graves Av. & E. Bradley Av.	Ⓓ Pepper Dr. & Graves Av.	Ⓔ Mission Gorge Rd. & Magnolia Av.	Ⓕ Santee Town Center **ARRIVE**	
9:41a	9:48a	9:56a	10:02a	10:06a	10:10a	**A**
10:41	10:48	10:57	11:03	11:08	11:12	**A**
11:40	11:48	11:58	**12:04p**	**12:09p**	**12:13p**	**A**
12:40p	**12:48p**	**12:58p**	**1:04**	**1:09**	**1:13**	**A**
1:40	**1:48**	**1:58**	**2:04**	**2:09**	**2:13**	**A**
2:40	**2:48**	**2:58**	**3:04**	**3:09**	**3:13**	**A**
3:40	**3:48**	**3:58**	**4:04**	**4:09**	**4:13**	**A**
4:41	**4:49**	**4:59**	**5:05**	**5:10**	**5:14**	

Santee ➡ El Cajon

Ⓕ Santee Town Center **DEPART**	Ⓔ Magnolia Av. & Rockvill St.	Ⓓ Pepper Dr. & Graves Av.	Ⓒ Graves Av. & E. Bradley Av.	Ⓑ Parkway Plaza	Ⓐ El Cajon Transit Center **ARRIVE**
8:51a	8:55a	8:59a	9:06a	9:17a	9:24a
9:51	9:55	9:59	10:06	10:17	10:24
10:51	10:56	11:00	11:07	11:19	11:27
11:51	11:56	**12:00p**	**12:07p**	**12:19p**	**12:27p**
12:51p	**12:56p**	**1:00**	**1:07**	**1:19**	**1:27**
1:51	**1:56**	**2:00**	**2:07**	**2:19**	**2:27**
2:51	**2:56**	**3:00**	**3:07**	**3:19**	**3:27**
3:51	**3:56**	**4:00**	**4:07**	**4:19**	**4:27**

A = Bus continues as Route 832 to north Santee. / *El autobús continúa como la ruta 832 al norte de Santee.*
B = Trip does not enter Parkway Plaza. Use bus stops on Johnson Ave. or Fletcher Parkway for access to/from Parkway Plaza.
Viaje que no ofrece servicio dentro de Parkway Plaza. Use las paradas en Johnson Ave. o Fletcher Parkway para acceder a Parkway Plaza.

A Saturday/Sunday schedule will be operated on the following holidays and observed holidays
Se operará con horario de sábado/domingo durante los siguientes días festivos y feriados observados
>>> New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, Christmas

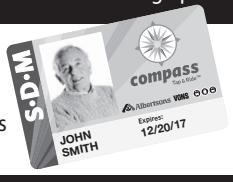
S/D/M and Youth Compass Card

All riders using reduced fares must comply with one of the following options:

compass card

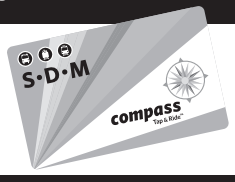
Option 1 *(Recommended by MTS)*

MTS offers a picture ID on a Compass Card to eliminate the need to carry multiple identifications for proof of eligibility.



Option 2

Riders using a standard S/D/M or Youth Compass Card or a one-way ticket must carry supporting identification to prove eligibility.



*For additional benefits of **Option 1** and/or list of valid forms of ID for **Option 2** go to:* ***sdmts.com/reduced-fares***