

MEMORANDUM

To:	Oscar Uranga, PMP IMG Construction Management	Date:	March 29, 2022
From:	Walter B. Musial, PE, RSP LLG, Engineers	LLG Ref:	3-19-3113
Subject:	Escondido Estates (PDS2019-IC-19-009) VMT Approach & Analysis		

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Linscott, Law & Greenspan, Engineers (LLG) has prepared this memo to discuss the vehicle miles traveled (VMT) analysis for the proposed Escondido Estates project. The project is located south of Idaho Avenue and east of San Pasqual Valley Road in the unincorporated County of San Diego. This memo discusses VMT analysis and screening.

The Project is within an Infill Area as defined by County research and which direction the Board of Supervisors directed 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 consistent with the County's General Plan land use designation of Village Residential (VR) 2 and is 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 below, the Project has a less than significant VMT impact and thus is screened out of a detailed VMT analysis.

PROJECT DESCRIPTION

The Escondido Estates residential project lies within the North County Metropolitan Subregional Plan Area (North County Metro) in the County of San Diego. The Project site is situated in the southeast quadrant of the San Pasqual Valley Road (SR-78) / Idaho Avenue intersection. Vehicular access to the project is proposed via one full-access driveway on Idaho Avenue.

The Project proposes to construct 20 single-family residences on a 10.28-acre parcel. The Project is consistent with the General Plan Land Use Designation of Village Residential (VR-2).

Figure 1 illustrates the project site plan and **Figure 2** shows the project area.

Project Trip Generation

Trip generation estimates for the Project were based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition).

As shown in **Table A**, the Project is expected to generate 229 average daily trips (ADT) with 17 AM peak hour trips (4 inbound/ 13 inbound) and 22 PM peak hour trips (14 inbound/ 8 outbound).

TABLE A
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs) ^a		Peak Hour	% of ADT ^b	In:Out	Volume		
		Rate ^b	Volume			Split ^b	In	Out	Total ^c
Single-Family Residential (210)	20 DU	11.45 /DU	229	AM	7.4%	26%:74%	4	13	17
				PM	9.6%	63%:37%	14	8	22

Footnotes:

- a. ADT = Average Daily Traffic.
- b. Rates are based on Institute of Transportation Engineers (ITE) *Trip Generation Manual* 11th Edition.
- c. Total was calculated using the Fitted Curve Equation.

General Notes:

- DU = dwelling units
- (210) = ITE Land Use Code

VEHICLE MILES TRAVELED BACKGROUND, ANALYSIS APPROACH, AND METHODOLOGY

VTM Background

Vehicle miles traveled (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.

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.

Screening Criteria

According to OPR, screening thresholds may be used to quickly 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.

Recommended VMT Metrics & Significance Thresholds

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

TABLE B
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.

PROJECT VMT APPROACH & SCREENING PER OPR

Project Classification

The Project, as described previously in this memo is a 20-unit residential development estimated to generate 229 daily trips. The Project's VMT impact will be based on residential VMT per capita. The significance threshold is the regional mean VMT per capita.

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 207.05, which has a VMT/Resident of 18.9, or 99% of the regional mean.

Project Screening per OPR Criteria

None of the OPR screening criteria described previously would apply. The Project ADT exceeds the small project threshold, the Project location is not transit accessible per the CEQA Guideline definition, and the Project land use type does not conform to the remaining criteria related to locally-serving retail and 100% affordable housing.

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.

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.

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.”

Quantitative Evaluation of Infill Development

The County has prepared a technical memorandum² (included as *Attachment A*) 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.

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 1249) was identified as an infill area meeting all three criteria.

² *Infill Areas in Unincorporated San Diego County*. October 29, 2021.

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.

Although the Project TAZ itself meets the infill definition, it 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 Escondido 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 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 Severity Zone.

ADDITIONAL PROJECT VMT CONTEXT

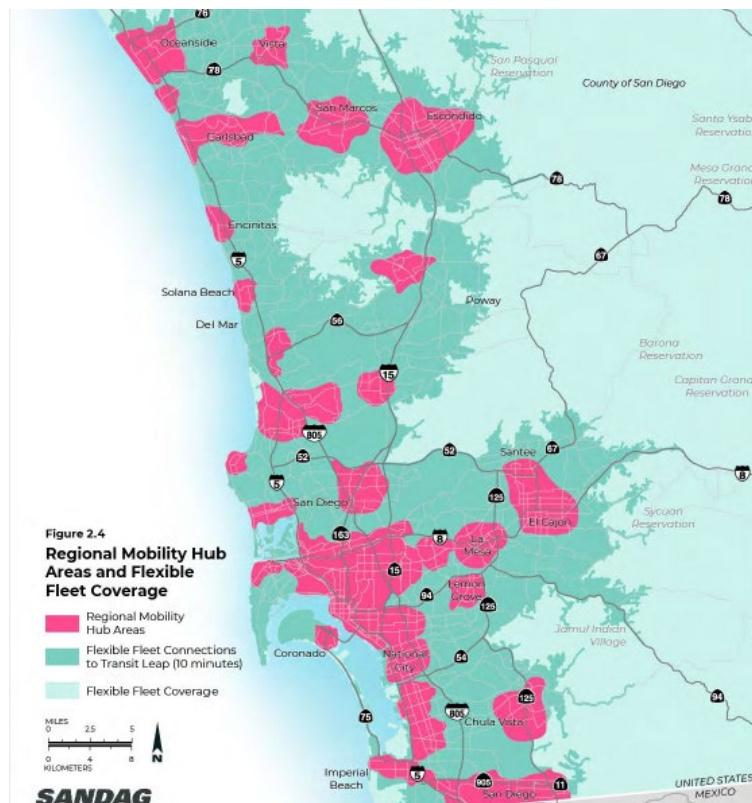
This section presents the project's context within various regional and local plans and regulations.

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 2½ mile from the Escondido 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 Escondido Transit Center presently lies adjacent to bike facilities and provides bike parking and secure bike lockers. The transit center is served by the Sprinter as well as several bus routes operated by North County Transit District (NCTD), San Diego Metropolitan Transit System (MTS), and Riverside Transit Agency (RTA). As part of the Mobility Hub strategy additional opportunities may be identified and additional features added.



County General Plan

Community development in the County is implemented through the General Plan by three regional categories that broadly reflect the character and land use development goals of differing developed areas of the unincorporated County. Per the County General Plan Land Use Element

*The Community Development Model directs the highest intensities and greatest mix of uses to **Village** areas, while directing lower-intensity uses, such as estate-style residential lots and agricultural operations, to **Semi-Rural** areas. The Semi-Rural category may effectively serve as an edge to the Village, as well as a transition to the lowest-density category, **Rural Lands**, which represents large open space areas where only limited development may occur.*

The Project is located within the Village category, which as described above function as the center of community planning areas and contain the highest population and development densities. The Project's General Plan land use designation is Village Residential 2 (VR-2) which allows a maximum density of 2 units per acre. The proposed Project is consistent with this designation. Based on this designation the site is allowed a maximum of 20 dwelling units and is proposing the maximum number of units.

PROJECT VMT SUMMARY

The Project is located within a census tract that has an average VMT per capita that is below the regional mean. Furthermore, 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.

cc: File

ATTACHMENT A

TECHNICAL MEMORANDUM ON INFILL AREAS IN UNINCORPORATED SAN DIEGO COUNTY

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 studied 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." (Nisenso 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

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§ionNum=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 transit⁶. 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

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](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.

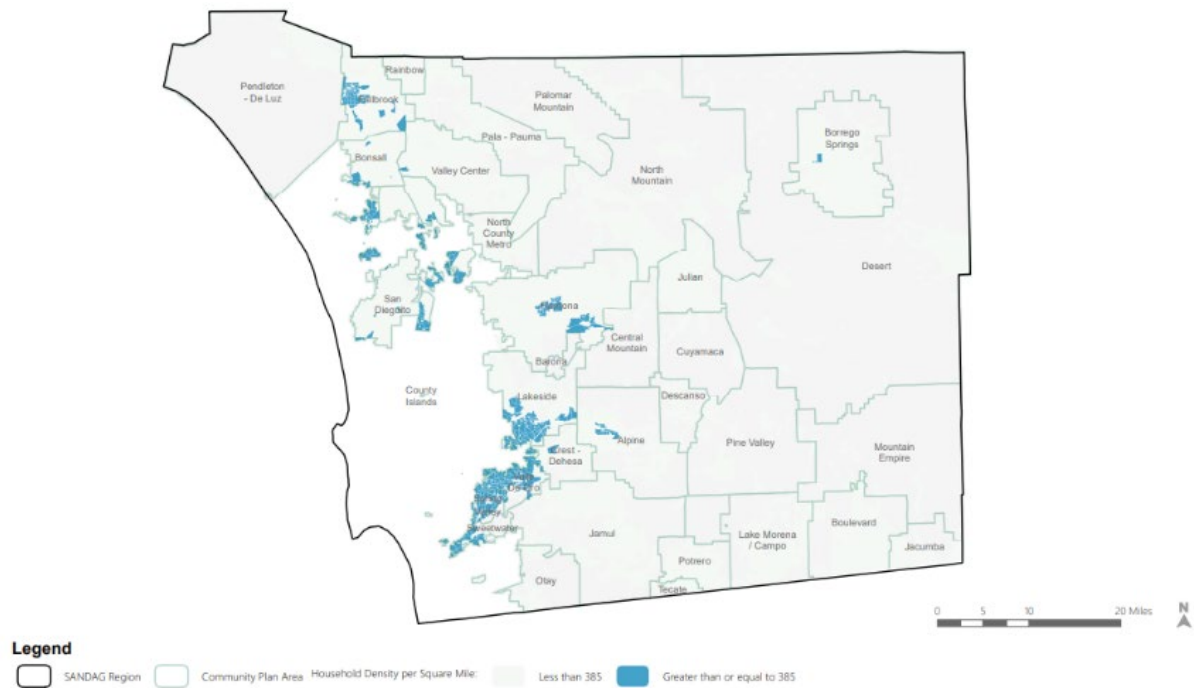


Figure 1: Household Density in Unincorporated San Diego County

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.

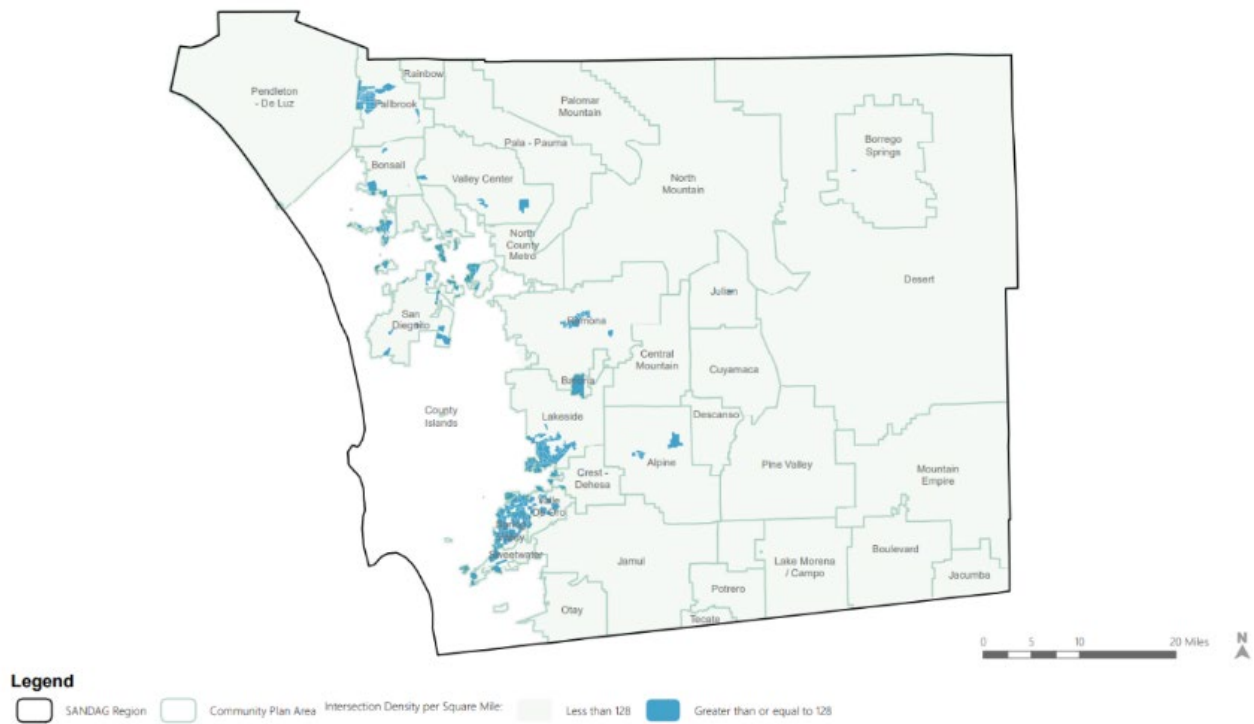


Figure 2: Intersection Density in Unincorporated San Diego County

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.

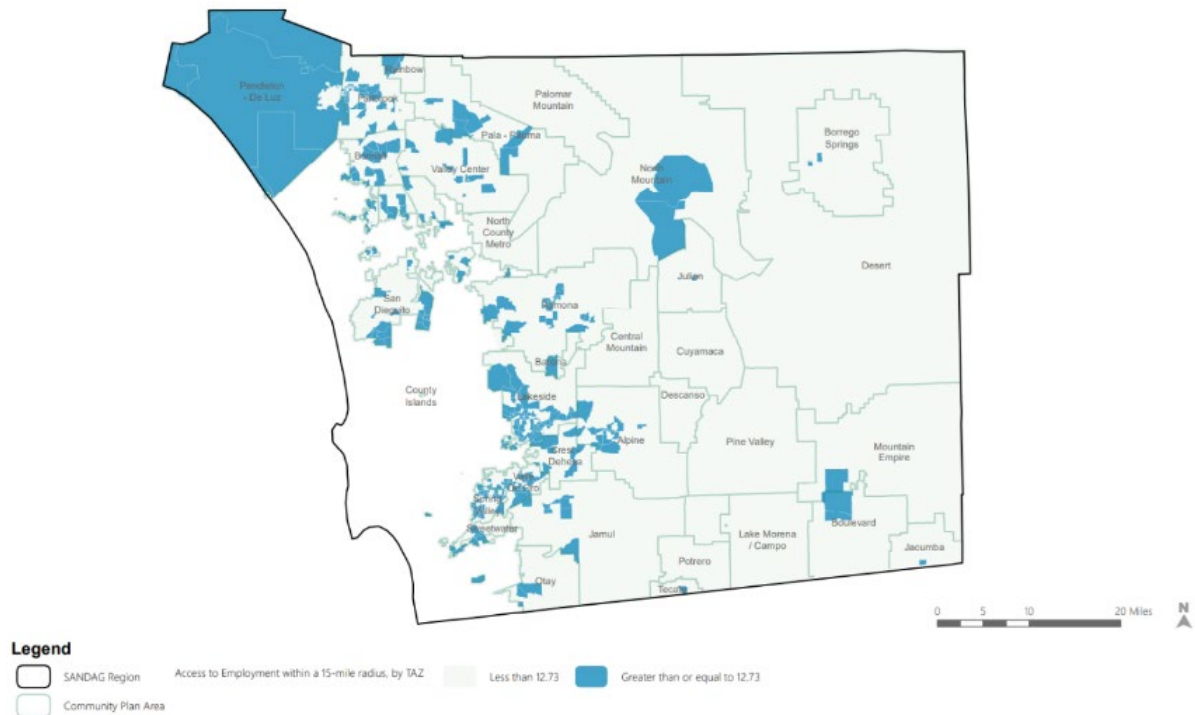


Figure 1: Jobs Accessibility in Unincorporated San Diego County

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.

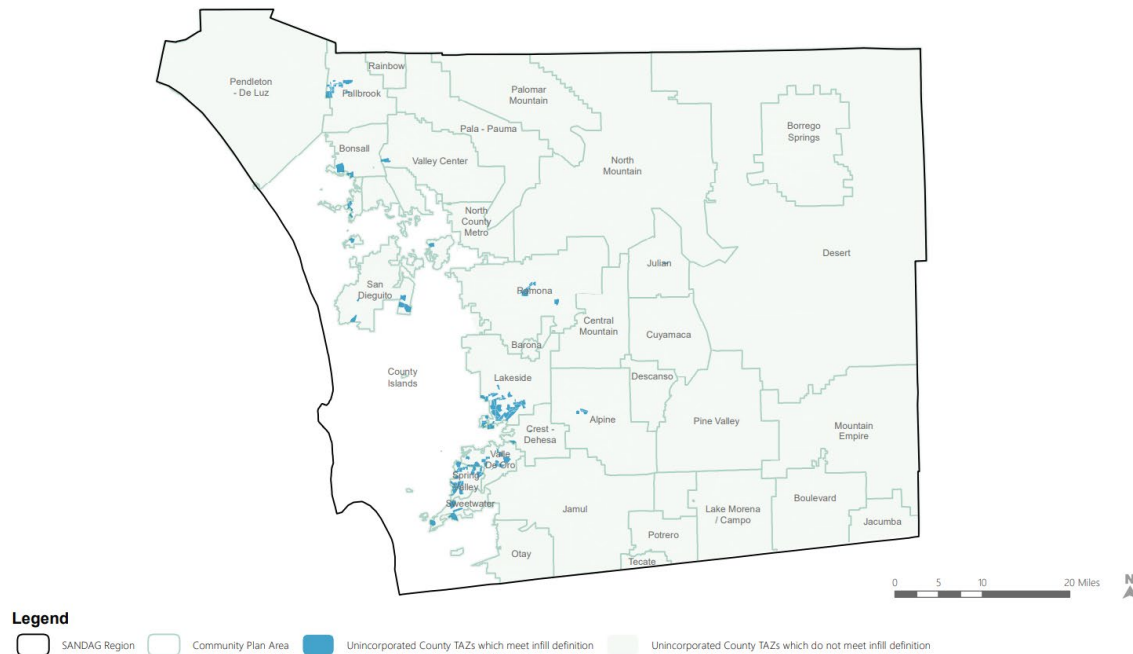


Figure 2: Infill Areas in the Unincorporated San Diego County

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:

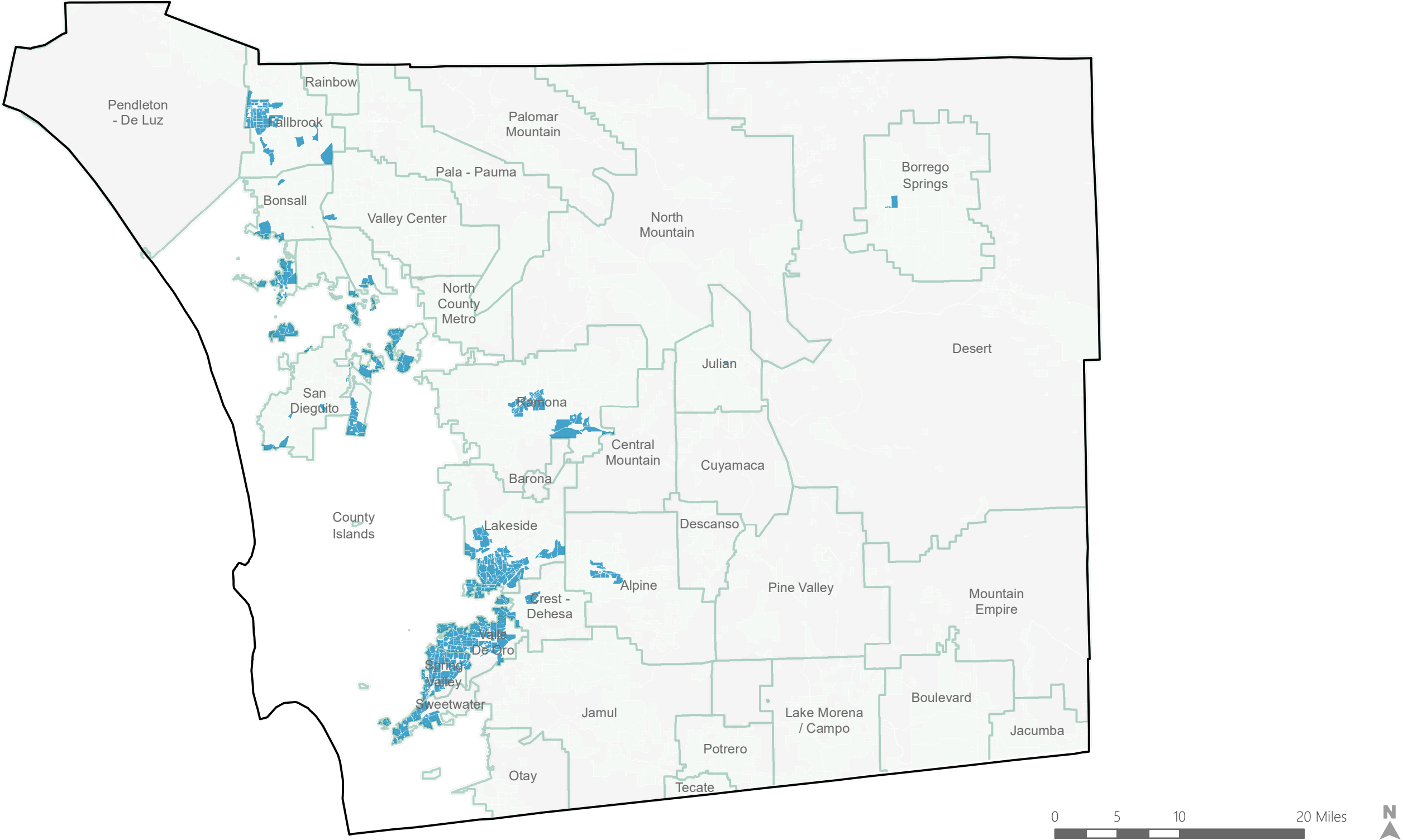
- ***Are there infill areas in high fire hazard areas?*** – **Figure 5** displays the results of overlaying the fire severity with the infill areas based on the definition in this technical memorandum. The majority of infill areas are outside of high and very high fire severity zones.
- ***How do the 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 overlaying 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

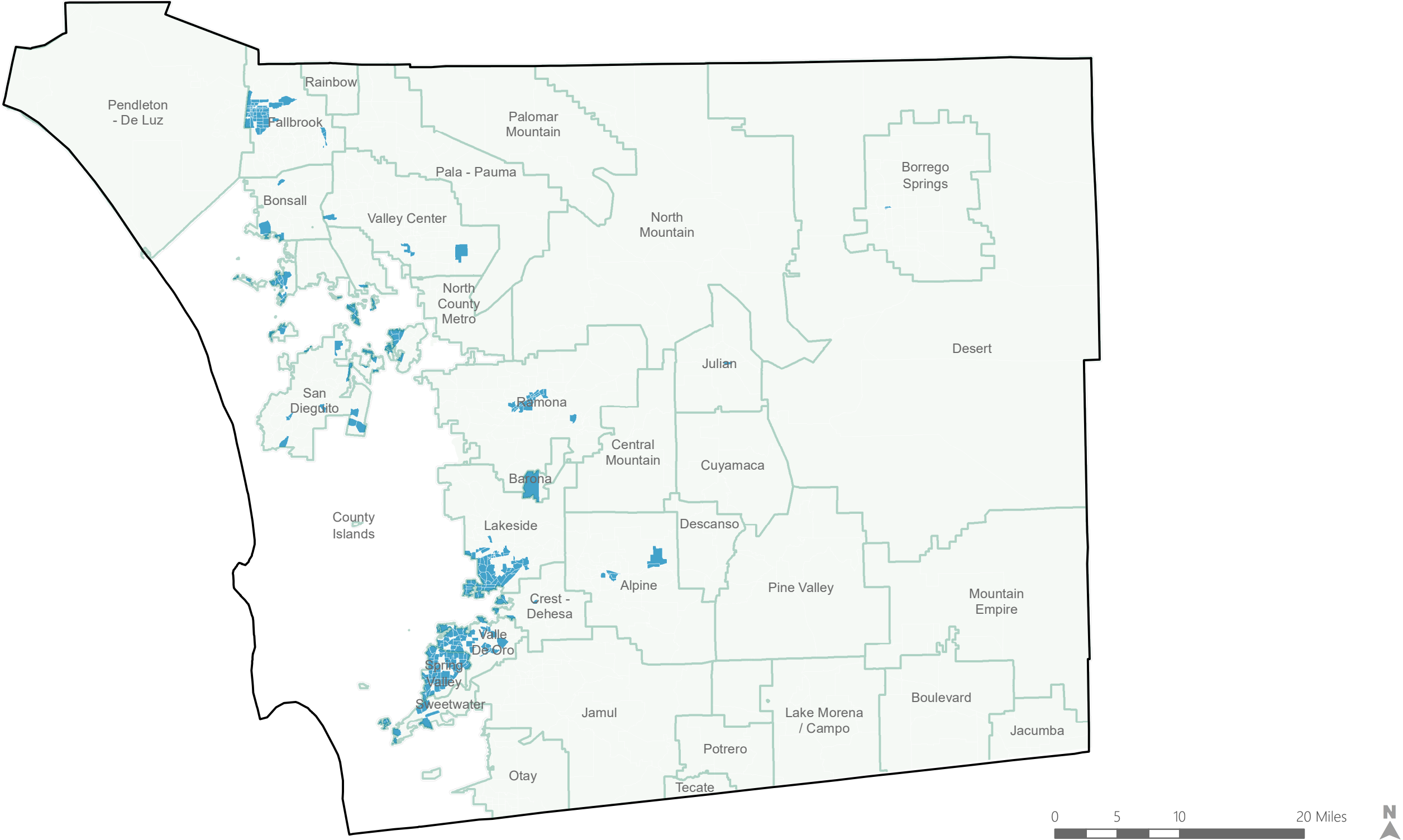


Legend

- 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



Legend





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

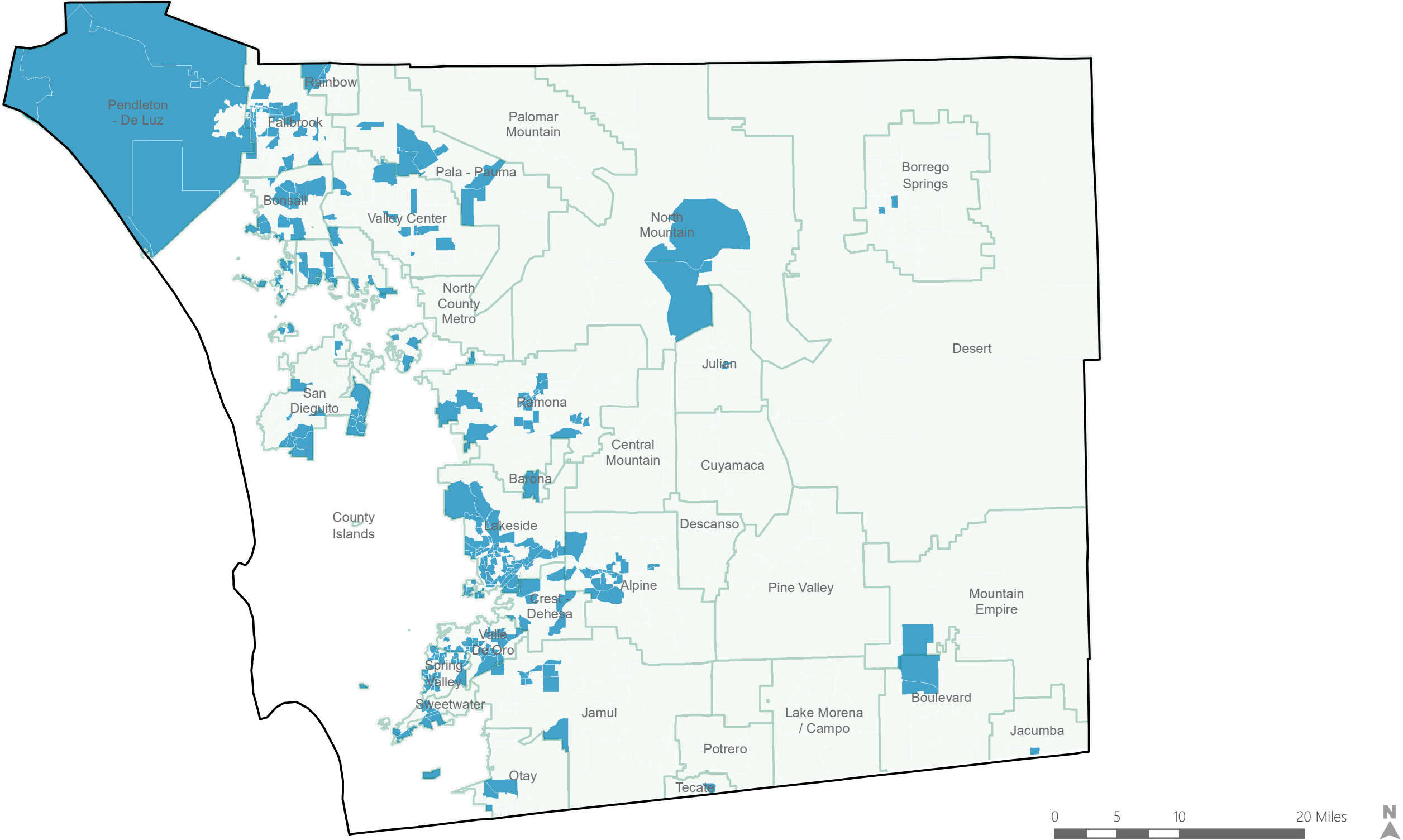


Figure 2: Intersection Density in Unincorporated San Diego County

*Based on the SANDAG Series 13 Base Year Model

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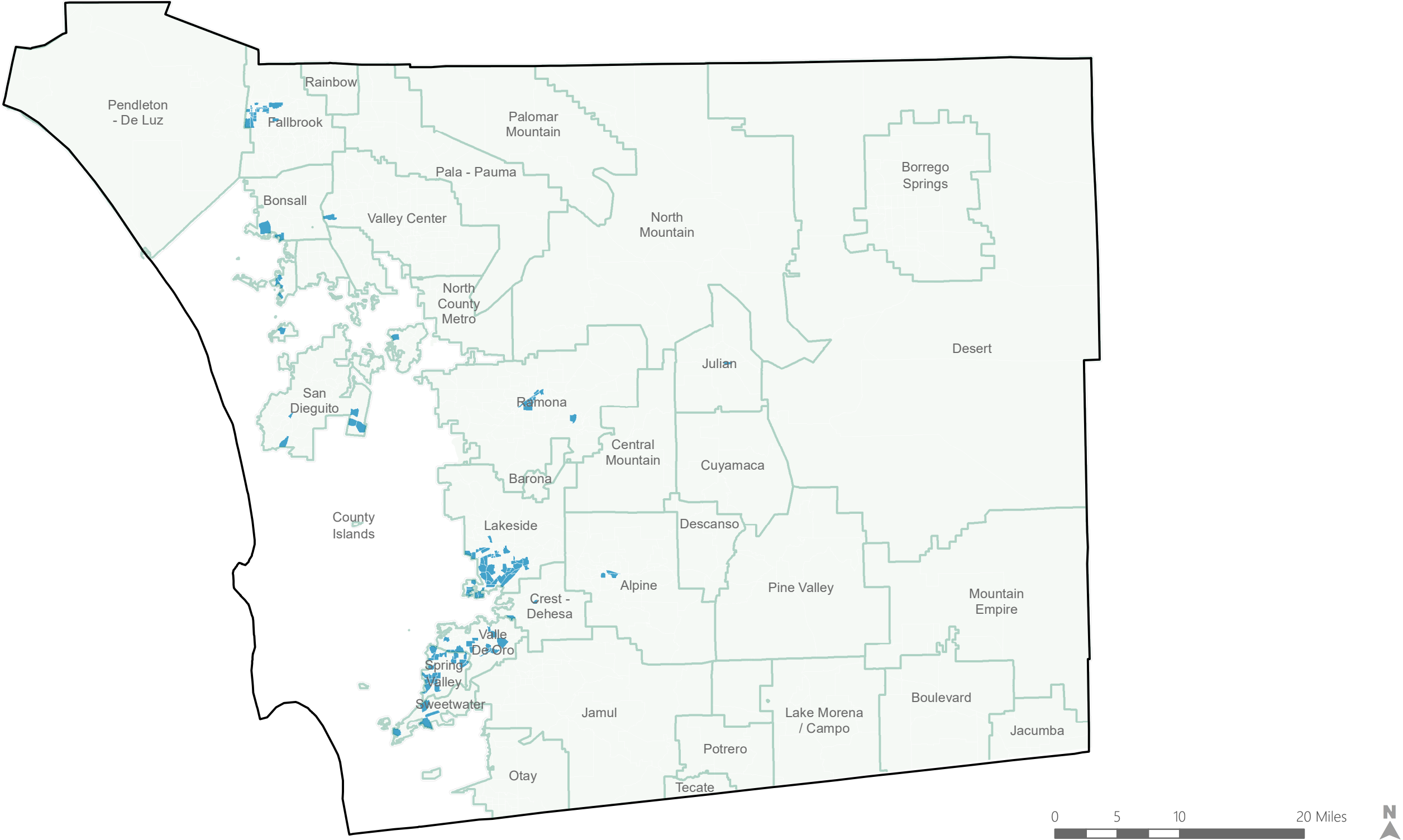
Legend

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



Figure 3: Employment Accessibility in Unincorporated San Diego County

*Based on the SANDAG Series 13 Base Year Model



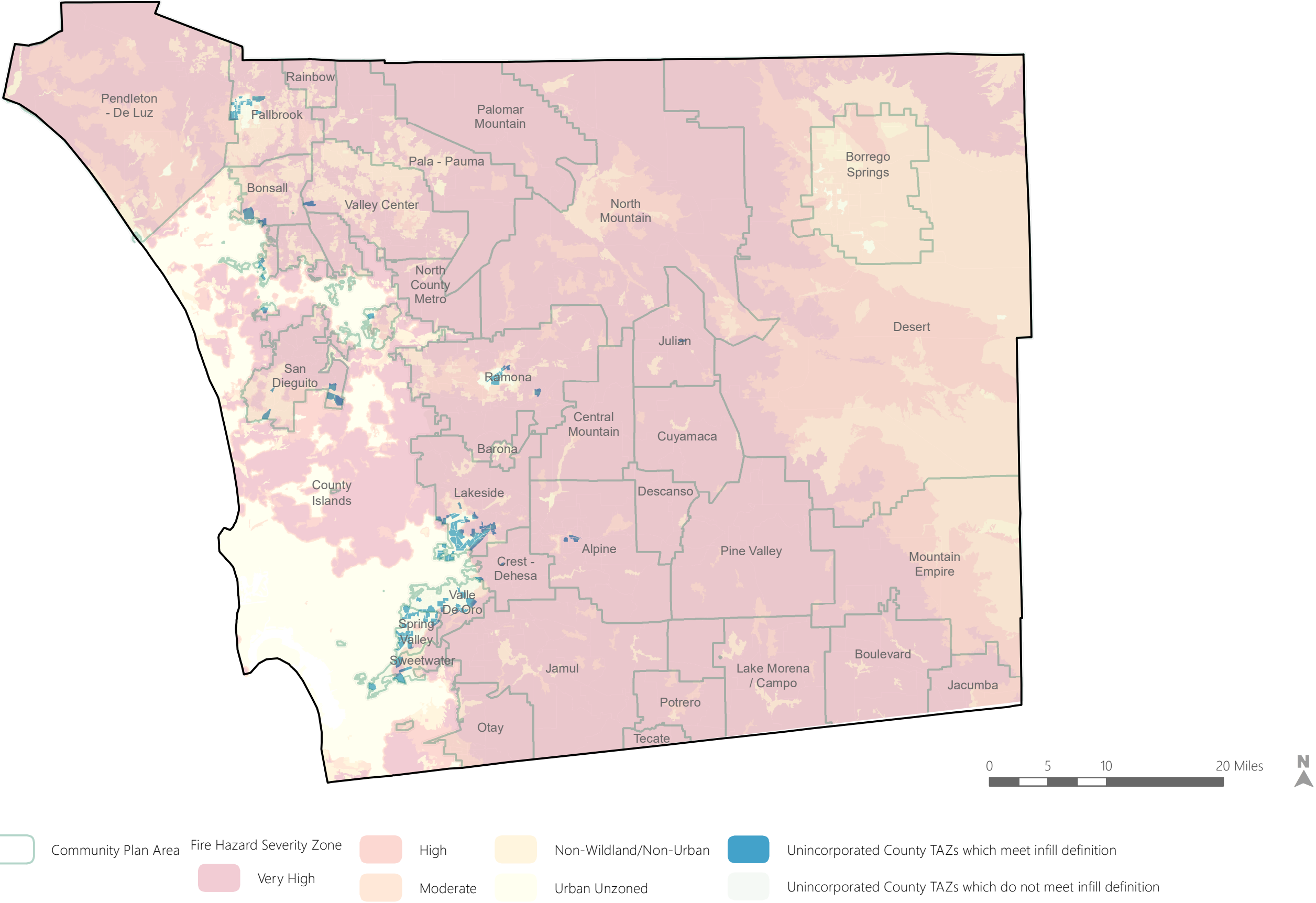
Legend

- 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

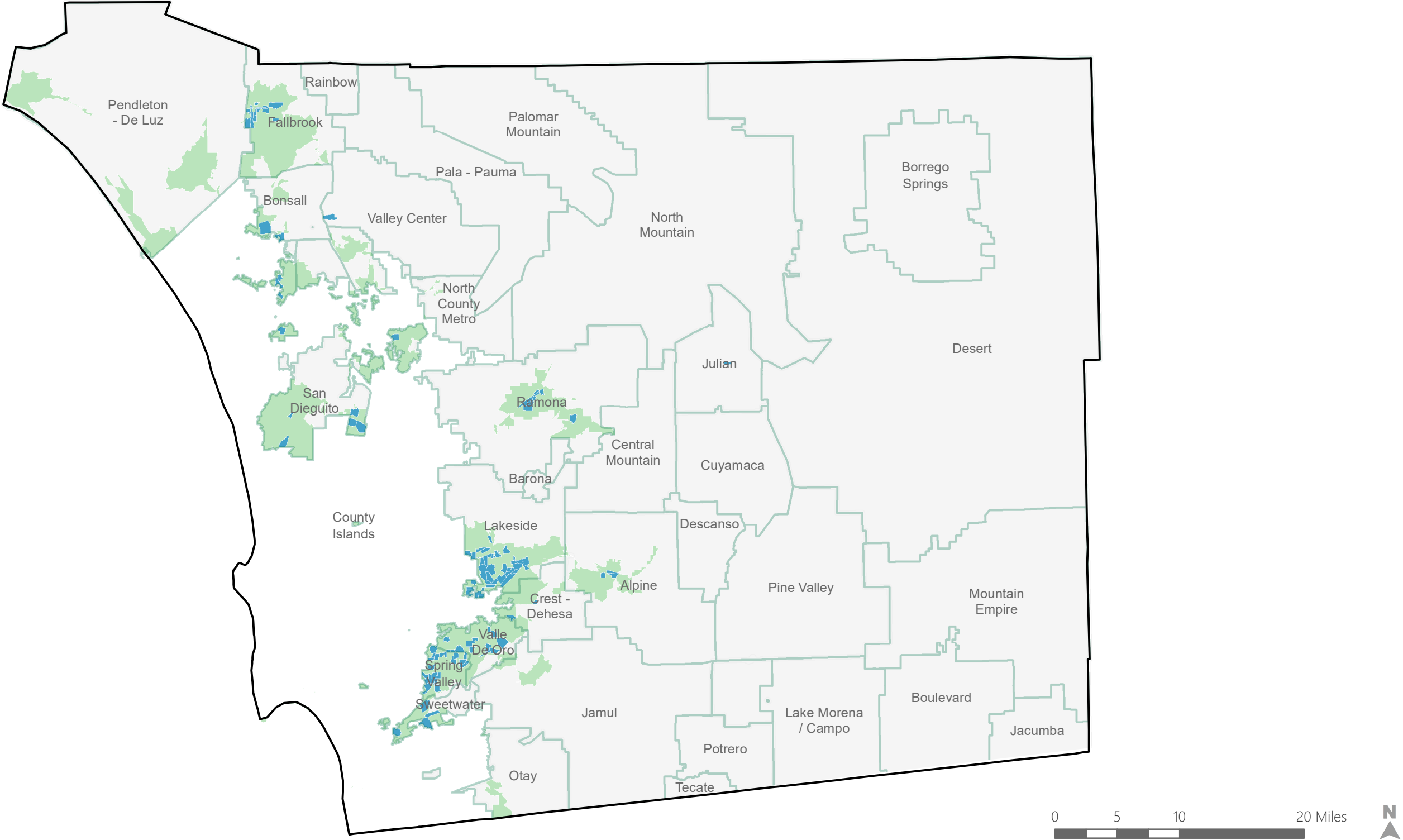
*Based on the SANDAG Series 13 Base Year Model



Legend

- SANDAG Region
- Community Plan Area
- Fire Hazard Severity Zone: High
- Fire Hazard Severity Zone: Moderate
- Fire Hazard Severity Zone: Very High
- 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



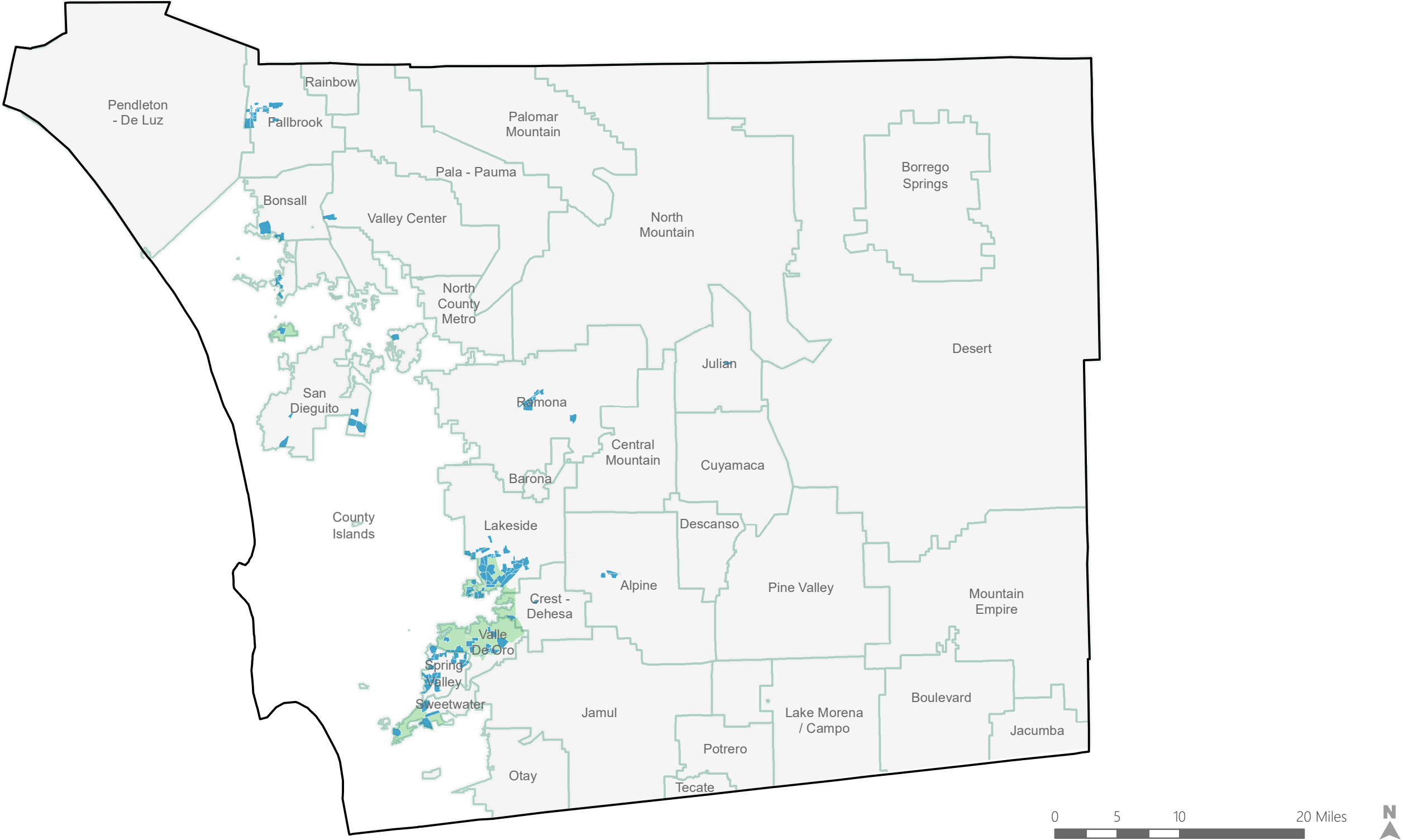
Legend

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



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

*Based on the SANDAG Series 13 Base Year Model



Legend

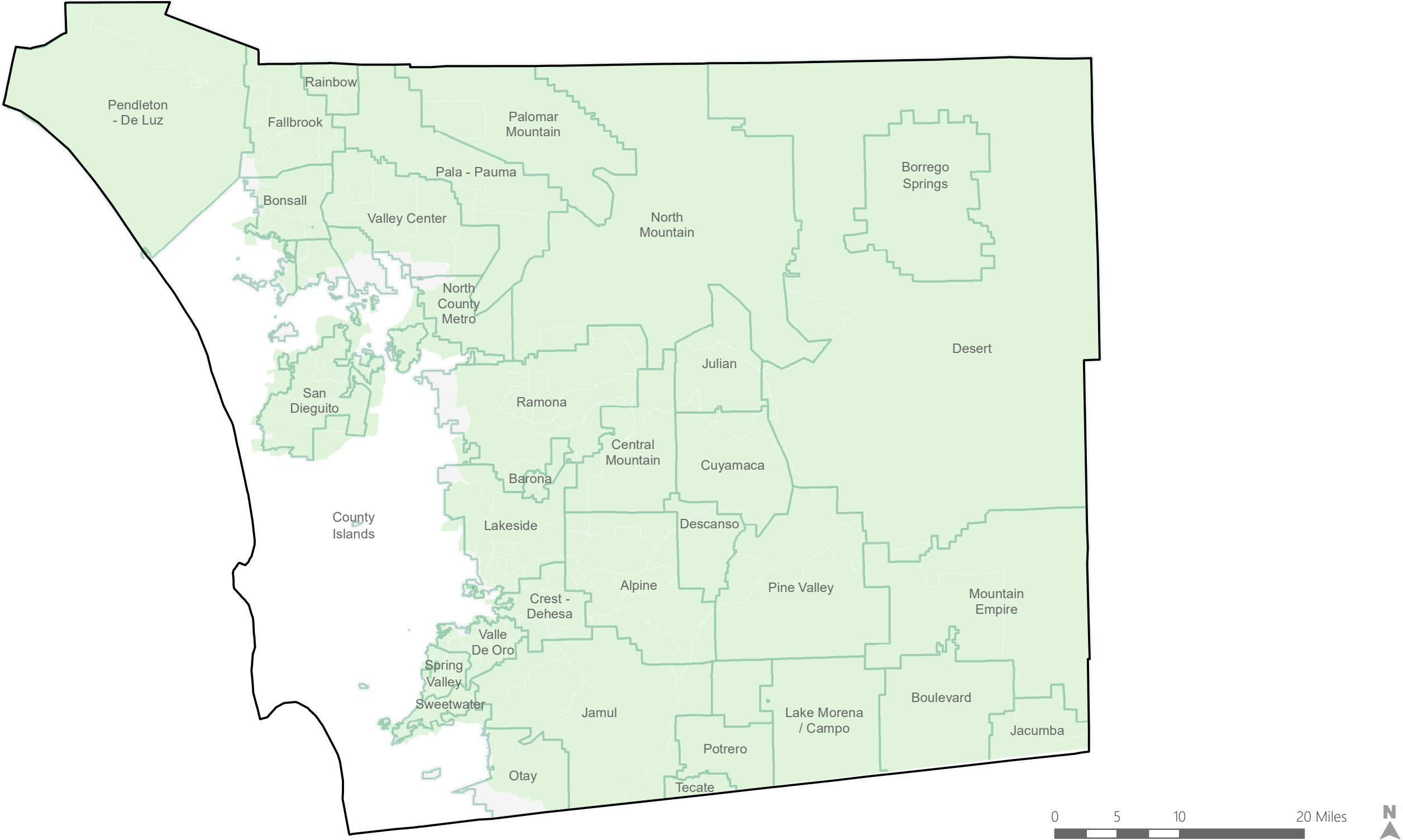
- SANDAG Region
- Community Plan Area
- Unincorporated County TAZs which meet infill definition
- SB 330 Affected CDPs



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

*Based on the SANDAG Series 13 Base Year Model

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Legend

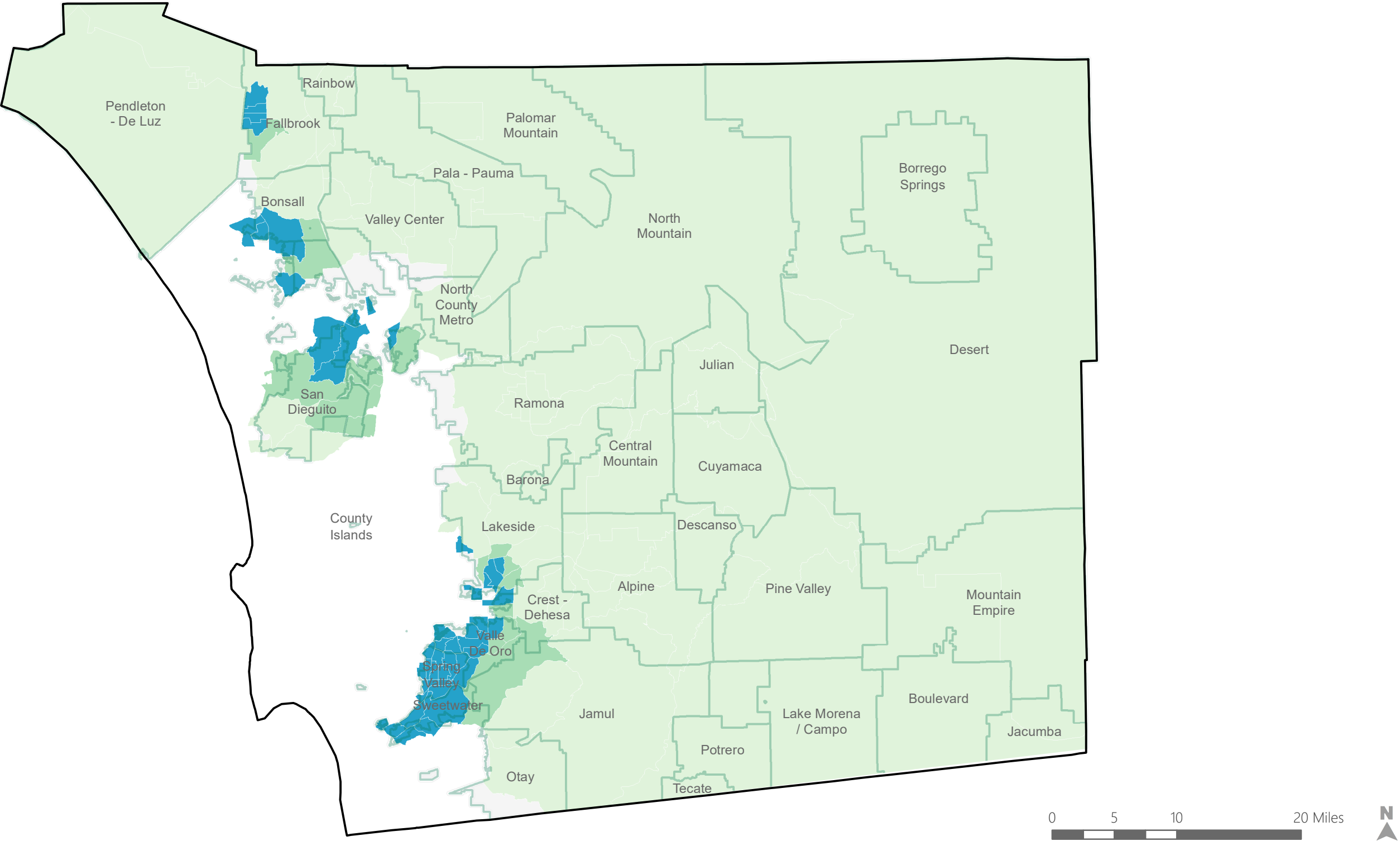
- SANDAG Region
- Between 15% below and SANDAG Average VMT
- Above SANDAG VMT
- At Least 15% below SANDAG Average VMT
- Community Plan Area



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

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Legend

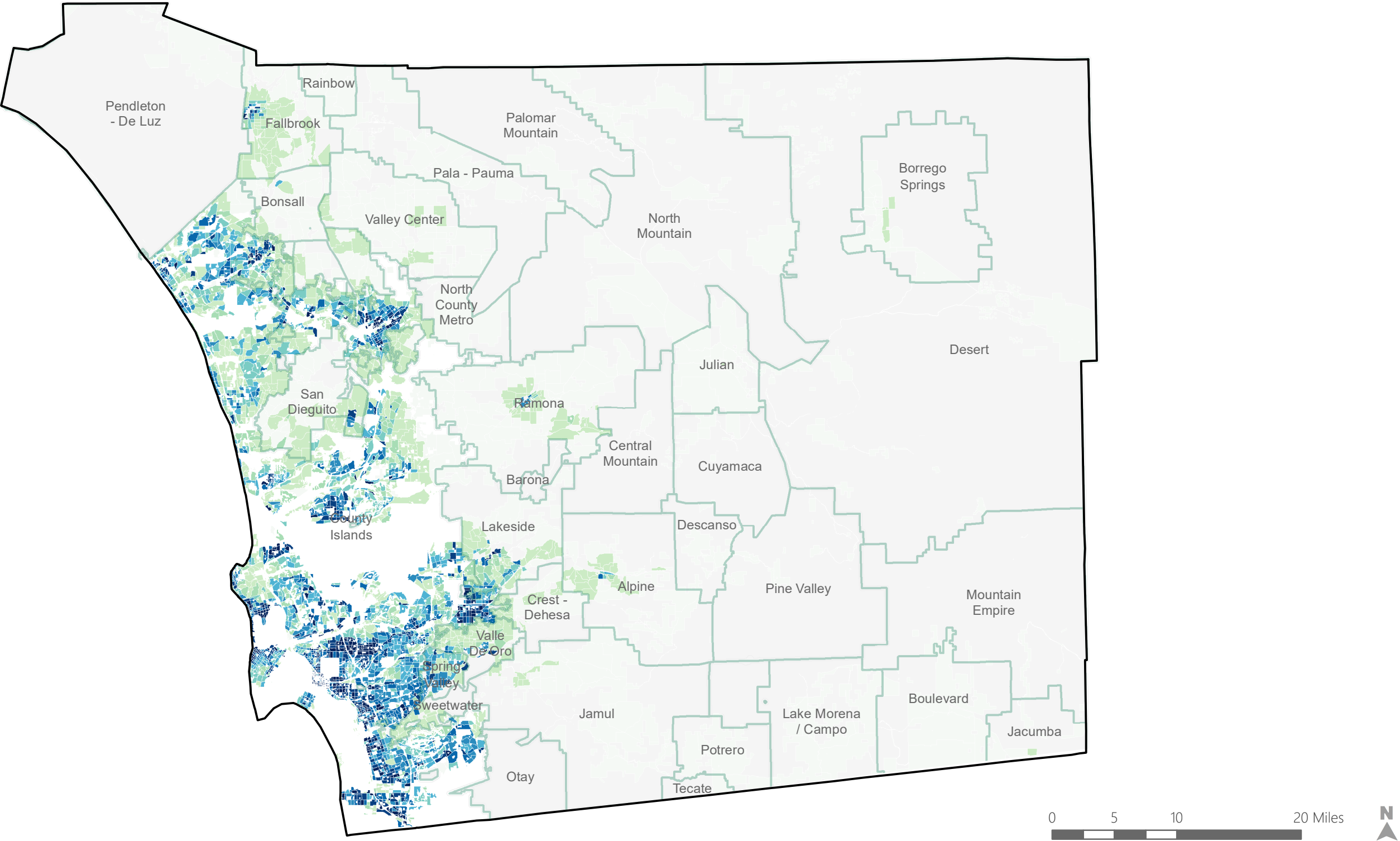
- SANDAG Region
- Community Plan Area
- At Least 15% below County Unincorporated Average VMT
- Between 15% below and County Unincorporated Average VMT
- Above County Unincorporated Average VMT

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

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



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Legend

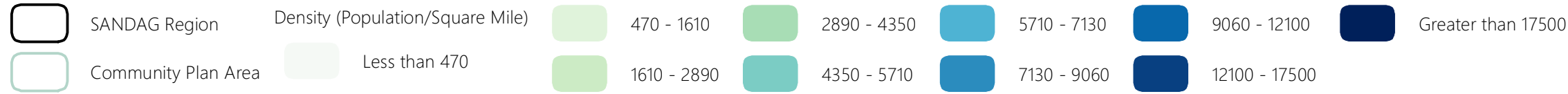


Figure 10: Population Density in San Diego County

*Based on the SANDAG Series 13 Base Year Model

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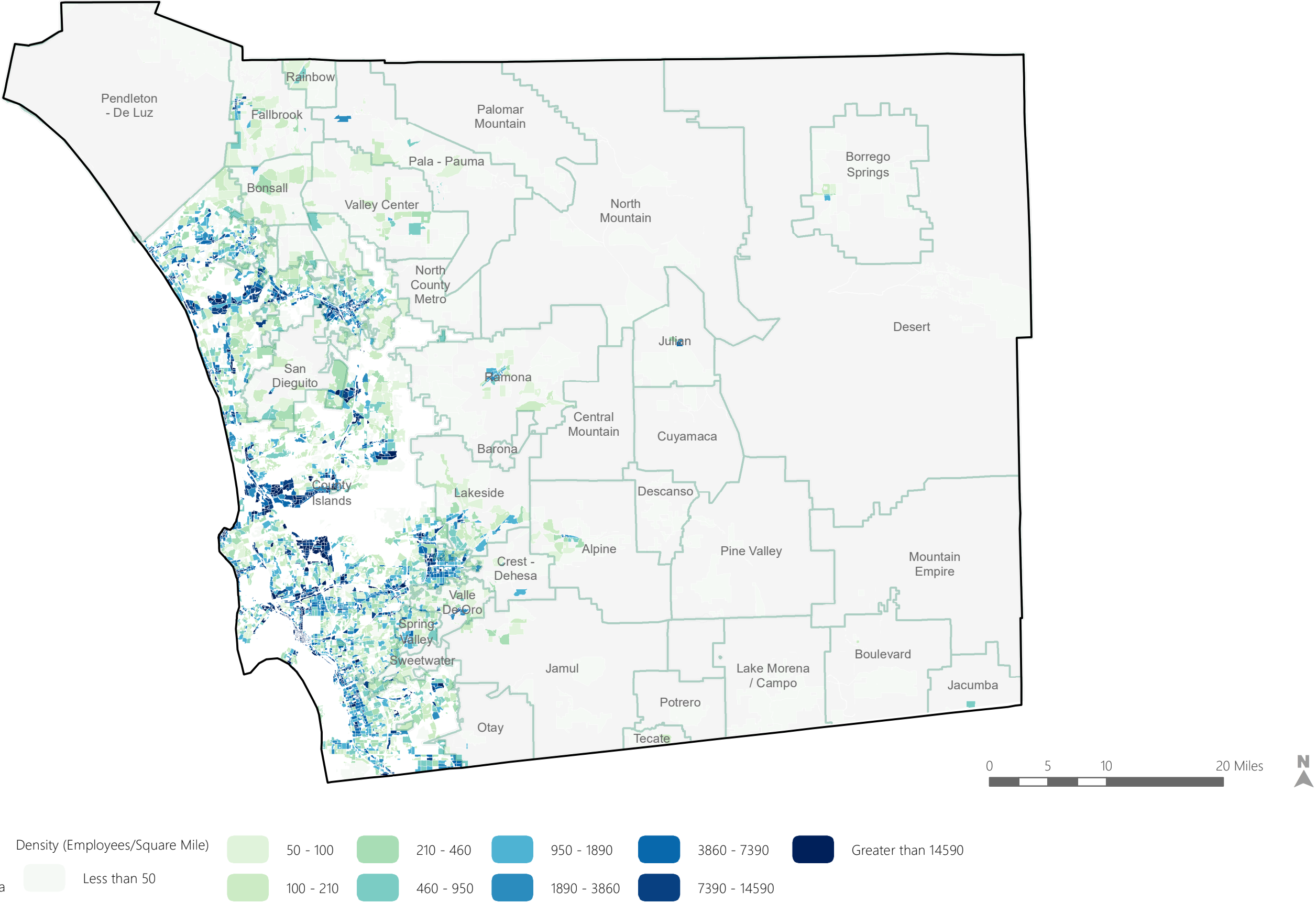
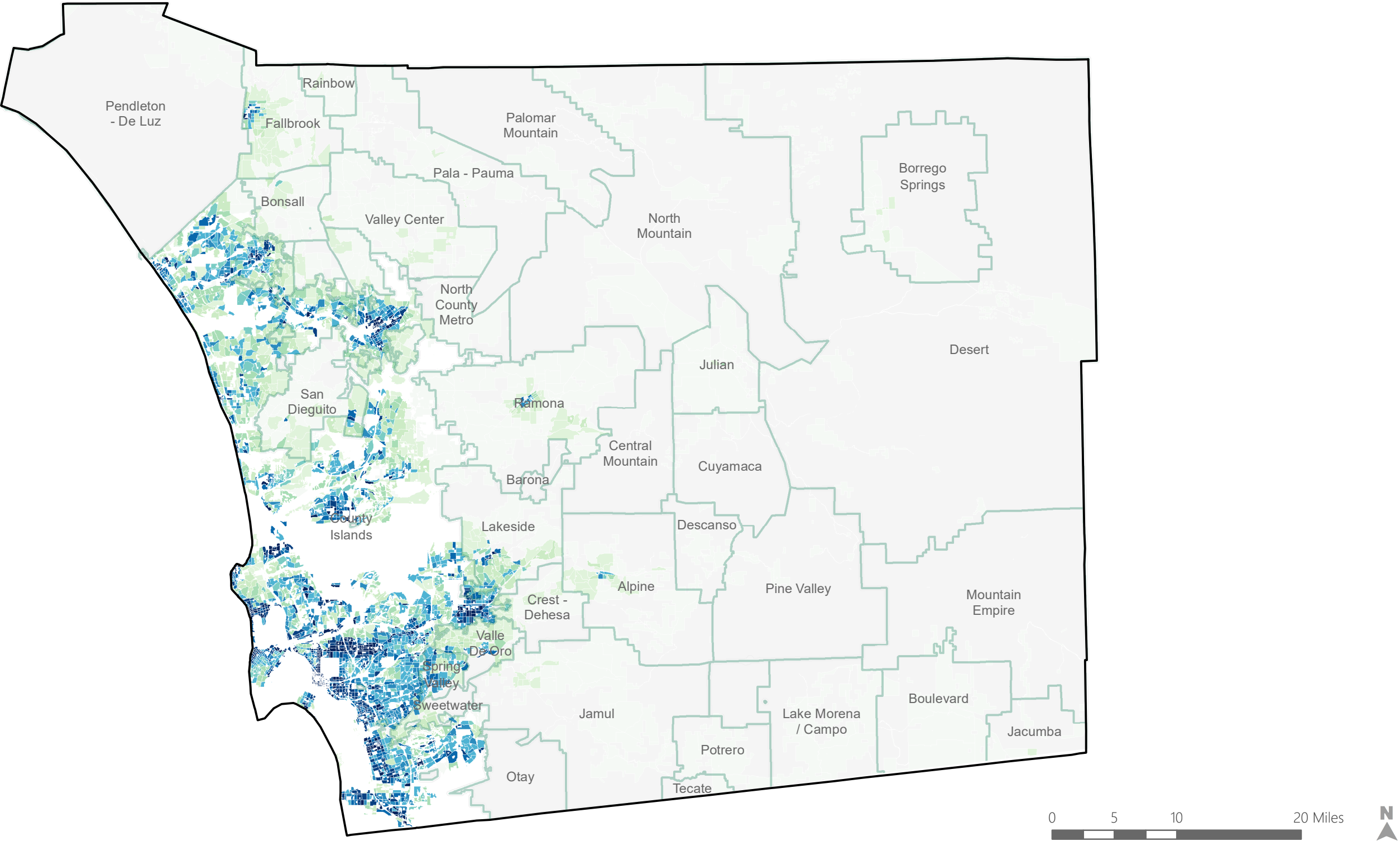


Figure 11: Employment Density in San Diego County

*Based on the SANDAG Series 13 Base Year Model

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Legend

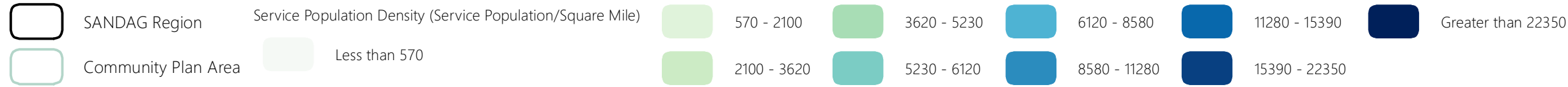
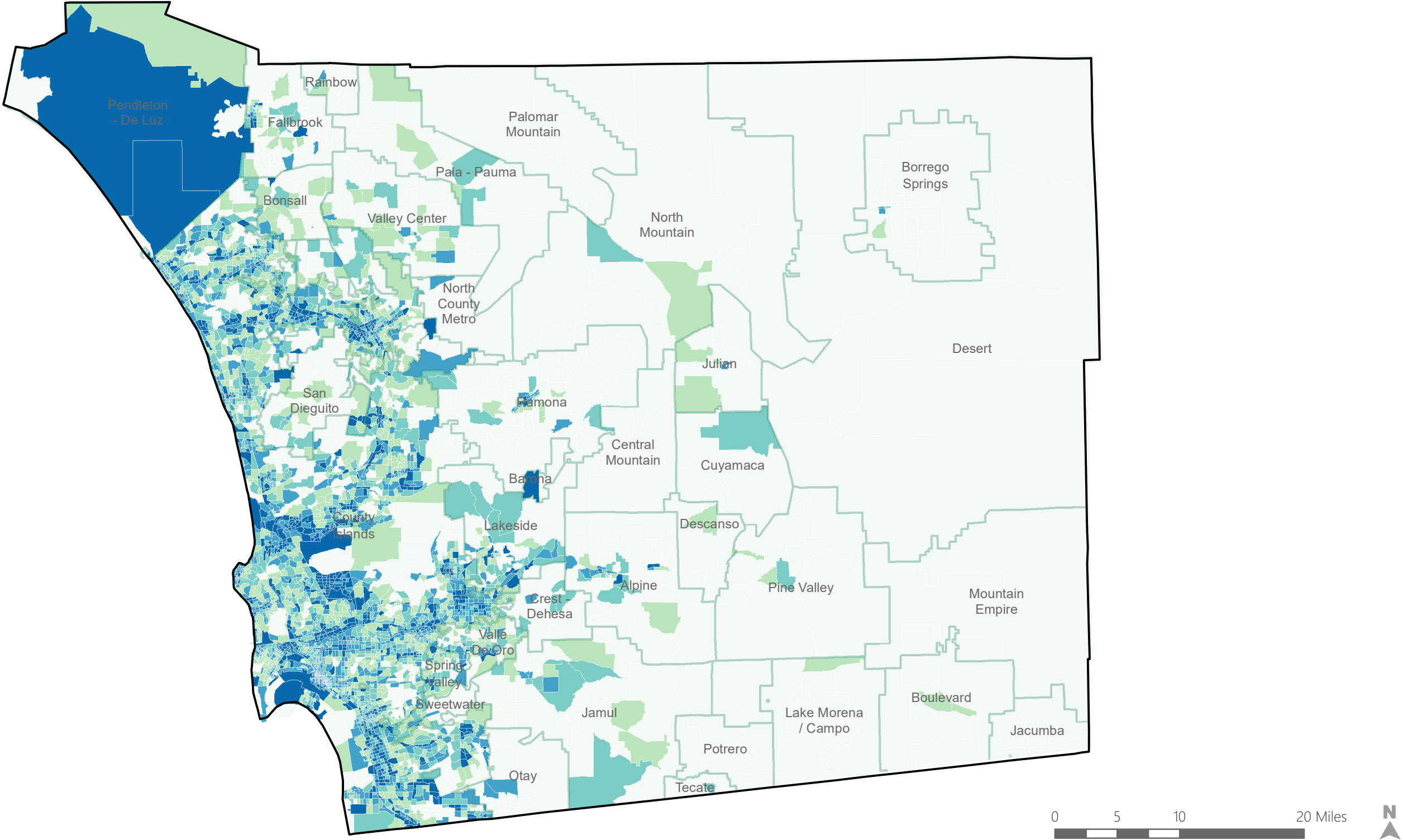


Figure 12: Service Population Density in San Diego County

*Based on the SANDAG Series 13 Base Year Model

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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

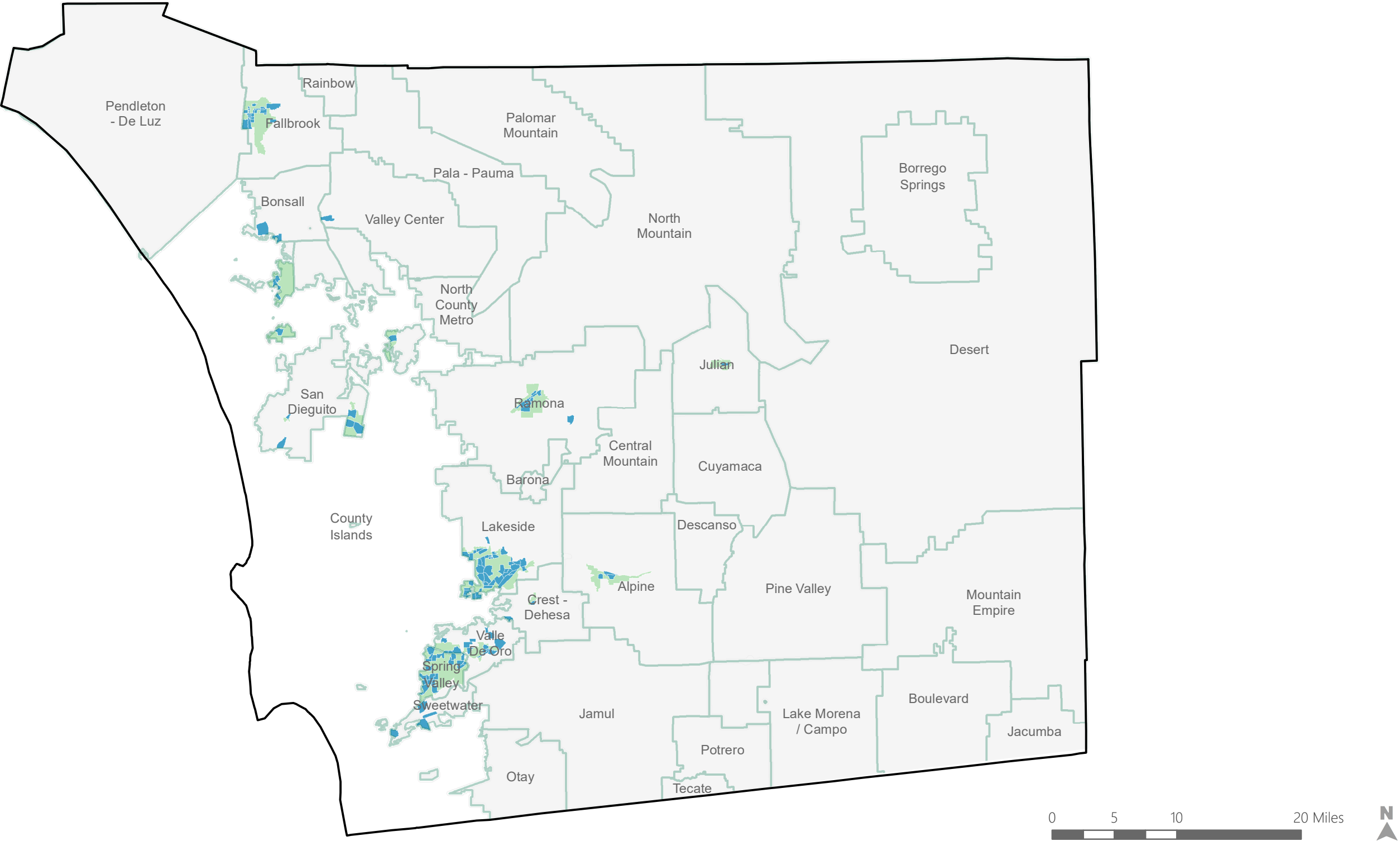
2.66 - 16.35

Greater than 16.35



Figure 13: Retail and Restuarant Accessibility in San Diego County

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Legend

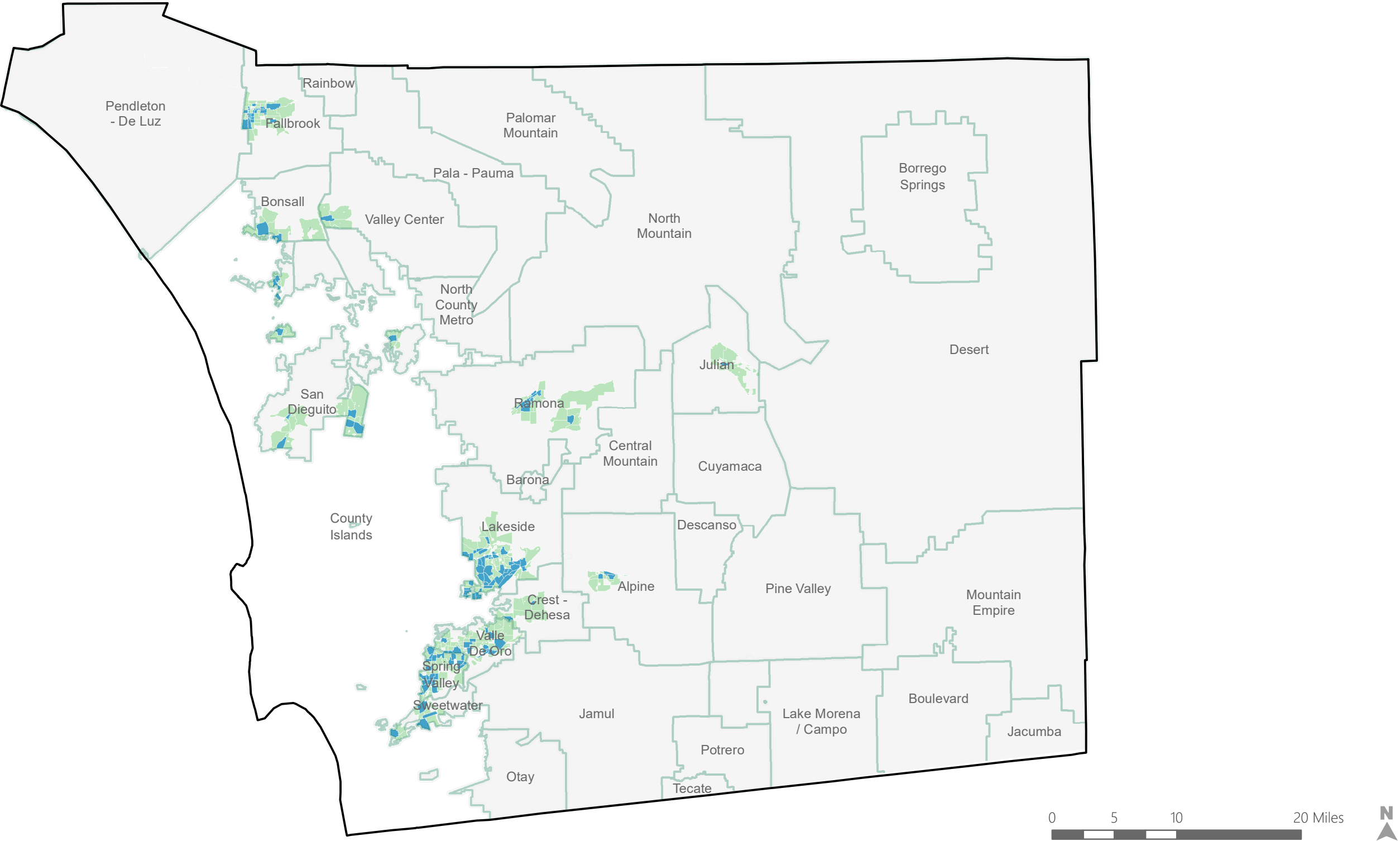
- SANDAG Region
- Unincorporated County TAZs which meet infill definition
- County Village Areas that Overlap Infill Areas
- Community Plan Area



Figure 14: County Village Areas that Overlap Infill Areas

*Based on the SANDAG Series 13 Base Year Model

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Legend

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



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

*Based on the SANDAG Series 13 Base Year Model