

Calaveras County Active Transportation and Recreational Trails Plan - Existing Conditions Assessment

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FEHR  PEERS

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1. Introduction

This existing conditions assessment serves as the first step in developing the Calaveras County Active Transportation and Recreational Trails Plan (ATRTP). A discussion of previous planning efforts relevant to the ATRTP, an overview of the various communities within the County, and an evaluation of the existing active transportation and recreational trails (ATRT) network in Calaveras County are included. The study area is displayed on **Figure 1**.

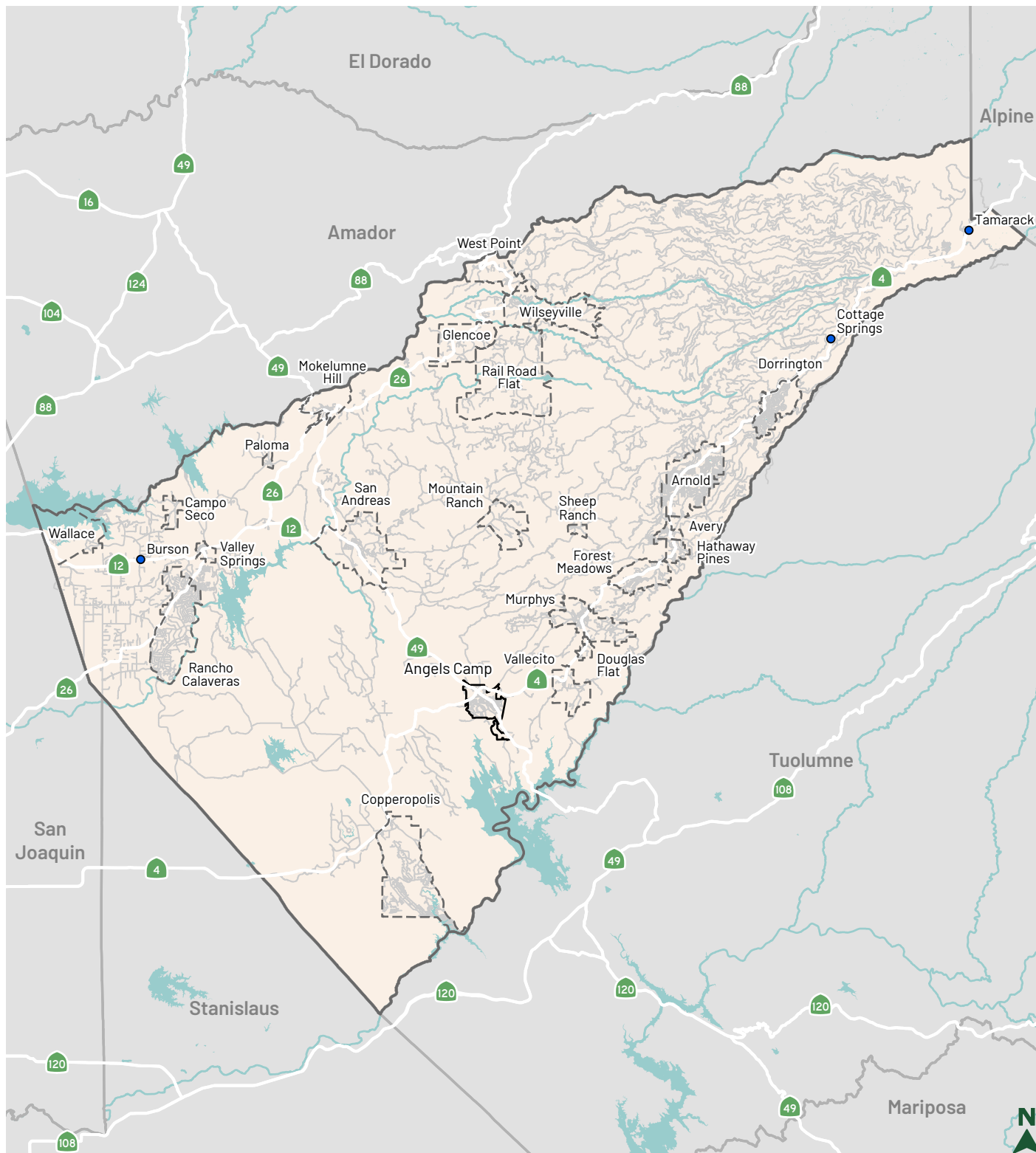
As shown, Calaveras County is comprised of one incorporated city (Angels Camp), and multiple unincorporated community areas. Some community areas are formally designated as a census designated place (CDP) while others are not CDPs but are designated communities in the Calaveras County General Plan. Communities are geographically dispersed throughout the County but there are larger clusters of development which serve the broader adjacent community areas. For example, Valley Springs has grocery, medical, shopping, service, and educational uses which serve residents in the areas of Rancho Calaveras, Burson, Wallace, Campo Seco and western Calaveras County. Likewise, Angels Camp has grocery, medical, shopping, service, and educational uses which serve residents in the areas of Vallecito, Douglas Flat, Murphys, and central Calaveras County.

Although the County is rural in nature, many of these small communities have a variety of land uses that are geographically spaced close together. From a transportation perspective, many trips are short enough that they could be walking or biking trips; however, due to limited bicycle and pedestrian facilities in the County, many people rely solely on vehicles for transportation. The overall intent of the existing conditions assessment is to identify existing opportunities and constraints within the ATRT network, identify key communities and locations in which ATRT facilities would improve access and mobility for people walking and biking, and identify areas in which new trails can be developed and/or existing trails may be expanded to provide more recreational opportunities.

Specifically, the existing conditions assessment is comprised of the following:

- Document Review
- Demographic Review
- Evaluation of Travel Patterns and Key Destinations
- Existing Bicycle, Pedestrian, and Transit Infrastructure
- Safety and Collision Analysis





Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 1



Study Area

2. Document Review

In recent years, the Calaveras Council of Governments (CCOG), Calaveras County, and City of Angels Camp have developed or participated in the development of various planning documents relevant to the ATRTP. A brief summary of previous planning efforts and on-going projects is provided below.

2015 Calaveras County Regional Bicycle, Pedestrian and Safe Routes to School Master Plan

The Calaveras County Regional Bicycle, Pedestrian, and Safe Routes to School Master Plan (Alta Planning + Design and the Calaveras Council of Governments, 2018) was developed by the CCOG in coordination with member agencies and through public outreach efforts. The plan vision is to create “an improved and enhanced bicycle and pedestrian network within Calaveras County that addresses the mobility needs for people of all ages and abilities, while improving the economic health of the county”. Project goals include:

- **Goal 1:** Provide an efficient network of bikeways and pedestrian facilities throughout Calaveras County.
- **Goal 2:** Improve bicyclist and pedestrian safety.
- **Goal 3:** Ensure the timely funding and construction of the bicycle and pedestrian improvements described in this plan.
- **Goal 4:** Increase the number of commutes, recreation, and utilitarian bicycle and walking trips.
- **Goal 5:** Increase the awareness of bicycling and pedestrian travel through encouragement, education, enforcement and evaluation programs.

The Plan identifies approximately 22 miles of existing bikeways and trails in Calaveras County and Angels Camp. A comprehensive needs assessment, which included community outreach and a community survey, collision analysis, commute patterns analysis, and other important considerations, helped identify bicycle and pedestrian projects that would improve connectivity and access for residents and community members. Approximately 17 miles of recommended bikeway projects in Angels Camp and approximately 237 miles of recommended bikeway projects in the County were identified. Funding opportunities and an implementation plan are also included.

Regional Transportation Plan

The Calaveras County 2021 Regional Transportation Plan (LSC Transportation Consultants, Inc and Calaveras Council of Governments, 2021) provides a coordinated 20-year vision of the regionally significant transportation improvements and policies needed to efficiently move goods and people within



the region. The following transportation needs and concerns related to non-motorized transportation are documented in the 2021 Plan:

- Widen shoulders on state highways to reduce conflicts between cyclists and motorists. Particular areas of concern brought up as part of public input include:
 - o SR 4 from Arnold to Big Trees
 - o SR 12 in Valley Springs
 - o SR 26 in Valley Springs
 - o SR 49 between San Andreas and Angels Camp
- Bicycle lanes or separated bicycle paths have been requested in the following areas:
 - o Arnold to Dorrington
 - o Hogan Dam Road to SR 26 near Valley Springs
 - o Vallecito and Red Hill Road
 - o Murphys
- Sidewalks along six-mile road in Murphys
- Gaps in sidewalk and poor bicycle facility connectivity combined with high vehicle speeds in the Angels Camp-SR 49-N. Main Street Corridor
- No shoulders, limited pedestrian facilities, or high vehicle speeds limit the number of potential active transportation users in the Pope Street Corridor in San Andreas despite a relatively short distance between residences and schools
- Safe Routes to School for the Valley Springs Elementary School
- Complete streets improvements throughout the commercial core area in Murphys along SR 4 are needed to address limited bicycle and pedestrian facilities, a high proportion of senior residents and the proximity of an Elementary School
- Limited bicycle and pedestrian facilities combined with heavy truck traffic and projected future growth in all traffic in the SR 49 corridor in San Andreas

While the above concerns were documented, the only funded bicycle/pedestrian related projects identified are in the City of Angels Camp and are documented below¹.

- SR 49 at Murphys Grade – Roadway overlay, sidewalks, and intersection improvements from City limits to Demarest.
- SR 49 in Angels Camp from Copello Road and 4/49 Intersection – Multimodal improvements as identified in the Angels Camp N Main Street Plan including sidewalks and bike lanes, multi-use paths, crosswalks, HAWK beacon, striping, and median island.
- SR 49 in Angels Camp from SR 4/49 Intersection to Utica Park - Multimodal improvements as identified in the Angels Camp N Main Street Plan including contiguous sidewalks and bike lanes with streetscape features and medians as feasible, bus pullouts, bulb-outs, and enhanced crossings.

¹ Although not documented as funded in the 2021 Regional Transportation Plan, the San Andreas Pope Street project and portions of the Valley Springs Elementary School Safe Routes to School project have since received funding through either grants or local funding as identified in the County's Capital Improvement Program.



- Angels Camp Trail Phase 1 – Environmental, PE, and ROW bike/ped access from Stelte Park and Greenhorn Creek Subdivision to downtown corridor.
- SR 4/49 and SR 49/Francis Street – Conversion to roundabouts, bridge, median island, sidewalks, bicycle lanes, multiuse path, retaining wall, and crosswalks.

It is also noted that the RTP identifies Caltrans State Highway Operation and Protection Program (SHOPP) projects which are described in greater detail in the 2021 Caltrans District 10 Active Transportation Plan discussion section of this document.

Calaveras County General Plan

The Calaveras County General Plan (Calaveras County, 2019) serves as the overarching policy document that defines a vision for future change and guides the location and character of development. The Circulation Element specifically provides a framework for decisions concerning the countywide transportation system, which consists of transportation modes, including roads, transit, bike, pedestrian, and aviation from the San Joaquin Valley to the high Sierra Nevada. The following goals and policies identified in the Circulation Element are applicable to the ATRTP.

- **Goal C-1.** A balanced circulation system that provides for the safe and efficient movement of people and goods while maintaining the county's rural and historic character.
- **Policy C 1.1.** Incorporate the concept of complete streets for planning transportation and development, including operations and maintenance, where feasible and suitable to the rural nature of the county and its topography.
- **Policy C 1.3.** Prioritize funding and construction of projects that reduce vehicle miles traveled.
- **Policy C 1.9.** Consider context sensitive designs, i.e., designs appropriate for the unique characteristics of the community in which it is located, for planned circulation improvements, which are intended to preserve the rural character and historic resources of communities in the County. Alternative designs shall be in accordance with standards adopted or accepted by Caltrans or the County intended to provide a safe and efficient transportation system.
- **Policy C 1.13.** Strive to increase roadway connectivity, particularly in Community Areas, to reduce trip lengths, enhance emergency response, encourage opportunities for trips to be made by walking and bicycling.
- **Goal C-5.** A safe, convenient transportation network for pedestrians, cyclists, and users of other non-motorized modes of transportation that is suitable for the rural nature of the county and its topography.
- **Policy C 5.1.** Incorporate safe and convenient bicycle and pedestrian access, where feasible, in all transportation improvement projects.
- **Policy C 5.2.** Bicycle and pedestrian access and circulation shall be designed into new development projects where applicable to enhance internal circulation and interconnectivity with surrounding land uses and to implement any adopted bicycle and/or pedestrian plan.



- **Policy C 5.3.** Safe routes to schools shall be incorporated into new residential projects where appropriate.

In addition to goals and policies in the Circulation Element, the Conservation and Open Space Element includes the following relevant goals and policies:

- **Goal COS-6.** A high-quality system of recreational facilities enhancing the quality of life and health of residents and visitors and contributing to the County's economy.
- **Policy COS 6.3.** Pursue partnerships with public and private entities that make the most of limited funding, share maintenance costs, provide important linkages between recreational facilities and generally expand the quality and quantity of recreational opportunities countywide.
- **Policy COS 6.4.** Facilitate the provision of and access to local and regional trail systems.
- **Policy COS 6.5.** Design recreational facilities to minimize ongoing maintenance costs and reduce potential environmental impacts.

Promoting Safe Bicycle Travel Opportunities for Bicycle Tourism and Economic Development

The Promoting Safe Bicycle Travel Opportunities for Bicycle Tourism and Economic Development (referred to as the Bike Tourism Plan) was developed in 2019 by CalBike, Fehr & Peers, New Economics & Advisory, and Mark Thomas in collaboration with the following five counties: Tuolumne County, Stanislaus County, San Joaquin County, Calaveras County, and Alpine County. The two primary intentions of the plan are to (1) attract visitors and grow the tourism industry for economic development while (2) simultaneously enhancing the opportunity for local residents to enjoy equitable and safe bicycling for transportation and healthy recreation.

The Bike Tourism Plan indicates that bicycle tourism in Calaveras County (as of 2019) generates approximately \$345,000 annually in rider expenditures captured locally. With additional investment in bicycle infrastructure that would increase tourism by 20-40 percent, rider expenditures could increase to \$414,000-\$552,000.

Several "signature" and "supporting" trail projects are identified in the document. The following are particularly relevant to the ATRTP:

Signature Projects:

- East Bay Municipal Utility District (EBMUD) Pipeline Trail from Stockton to Lake Camanche – While the bulk of this signature project is located in San Joaquin County, the overall intent is to provide a car-free connection from Lodi/Stockton areas to the popular and varied recreational opportunities at Lake Camanche as well as a connection to the existing Mokelumne Coast to Crest Trail.



- Angels Creek Trail from Murphys Grade Road near Angels Camp to New Melones Reservoir - This 5.1-mile trail along Angels Creek would offer active access to wine tasting, cavern excursions, outdoor adventures, and world-famous cultural events like the Jumping Frog Jubilee.

Supporting Projects:

- Repaving Dogtown Road to San Domingo Road
- Repaving San Domingo Road from Dogtown Road to Sheep Ranch Road
- Repaving Sheep Ranch Road from San Domingo Road to Main Street in Murphys.
- Establishing a low-stress bicycle route from Murphys Community Park to Ironstone Vineyards along Algiers Street and 6 Mile Road.
- Installing bike amenities at Murphys Main Street, Murphys Community Park, Angels Camp Main Street, Utica Park, and Ironstone Vineyards.

To complement the infrastructural recommendations, this Bike Tourism Plan makes a number of policy and programmatic recommendations. Policy recommendations relate to rumble strips and signage. Programmatic recommendations relate to events and practices.

2021 Caltrans District 10 Active Transportation Plan

The 2021 Caltrans District 10 Active Transportation Plan (Caltrans, 2021) was developed to identify locations with bicycle and pedestrian needs and help implement the vision statement and goals in Toward an Active California and the Statewide Bicycle and Pedestrian Plan.

District 10 covers the San Joaquin Valley and Central Sierra counties of Alpine, Amador, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus, and Tuolumne and has just under nine miles of designated bikeways on its 1,322 highway centerline miles. Most of these facilities are Class II bike lanes and most are in Main Street contexts. No bikeways in the district are considered low stress given the speed and volume of the roadways on which they are present. A companion Story Map² to the Plan was created to more easily highlight pedestrian and bicycling issues and opportunities described in the report. The Story Map indicates a bicycle, pedestrian, or bicycle and pedestrian need on essentially every mile of state highway within Calaveras County. Once needs were identified, they were grouped into three Tiers with Tier 1 being the highest priority and Tier 3 being the lowest priority. Despite having locations with a higher density of public and partner identified needs, all intersections and roadway segments in Calaveras County were categorized as Tier 3.

It is noted that although not identified in the Active Transportation Plan, Caltrans currently has the following State Highway Operation and Protection Program (SHOPP) projects ongoing in the County which will result in bicycle and pedestrian improvements along certain corridors:

² Caltrans District 10 Active Transportation Story Map:

<https://storymaps.arcgis.com/stories/4947c77e35c64647b269d513b04ba480>; accessed August 22, 2024



- State Route (SR) 49 Angels Camp Complete Streets Project – Project will install/upgrade curb ramps, sidewalks, driveways, and accessible pedestrian signal to current American with Disabilities Act (ADA) standards along SR 49 within the City of Angels Camp. This project is currently in the Plans, Specifications, & Estimates (PS&E) and Right of Way Phase and has an estimated completion date of Summer 2026.
- SR 49 Mobility Improvement Project – Project will include intersection, roadway, pedestrian, and bicycle improvements along SR 49 and SR 4 in the City of Angels Camp. The project proposed to modify the SR 49 and SR 4 intersection and the SR 49 and Francis Street intersection and includes sidewalks and bike lanes or a shared-use path along SR 49 between Monte Verda Street and Baker Street. The project is currently in the Project Approval & Environmental Document (PA&ED) phase and has an estimated completion date of Summer 2027.
- SR 49 San Andreas Complete Streets Project – Project will install/upgrade curb ramps, sidewalks, and driveways to current ADA standards and install a Class II bike lane on SR 49 in the town of San Andreas. The project is currently in the PA&ED phase and has an estimated completion date of Fall 2025.
- Valley Oaks Intersection Project – Project will construct a traffic signal at the existing side-street stop controlled intersection of SR 12 and the entrance/exit of the Valley Oaks Shopping Center. The project will include high-visibility crosswalks on all legs of the intersection and may include bicycle and pedestrian facilities adjacent to the intersection. The project is currently in the PA&ED phase and has an estimated completion date of Fall 2025.
- Murphys Americans with Disabilities Act (ADA) Upgrades – Project will include sidewalk and ADA upgrades on SR 4 between Jones Street and Pennsylvania Gulch Road in Murphys. Project specific details, current project status, and/or an estimated completion date is not currently publicly posted online on the Caltrans webpage.

Short-Range Transit Plan 2020-2025

The Short-Range Transit Plan 2020-2025 (Amma Transit Planning and Calaveras Council of Governments, 2021) was prepared with the purpose of guiding the development of public transportation services for Calaveras residents and visitors between 2020 and 2025. The Plan documents existing services and performance and includes a transit needs assessment, a service and fare alternative analysis, a recommended service plan, and an operating and capital financial plan. Origin-destination information as well as demographic information are valuable for the ATRTP. Additionally, bicycle and pedestrian access to existing transit stops will be evaluated.

Other Recent Planning Efforts

In addition to the above referenced projects, the Calaveras Council of Governments (CCOG) has recently completed the following planning documents relevant to the proposed project:

- San Andreas Pope Street and Safe Routes to School Gap Fill Plan (2020)



- Valley Springs Town Center Connectivity Plan (2020)
- Murphys SR 4 Complete Streets Corridor Plan and Project Prioritization (2019)
- Angels Camp North Main Street/SR 49 Complete Streets Corridor Plan and Copello Road Pedestrian Connector (2020)

Each of the above documents focused on identifying bicycle and pedestrian needs in the respective community. Regionally significant projects included in these plans will be considered in the ATRTP; however, projects may differ slightly given that the ATRTP is a regional document and therefore, is looking at improvements from a countywide perspective. Additionally, the ATRTP is based on more recent data which may result in different recommendations.



3. County Demographics

As of 2022, Calaveras County has an estimated population of 45,674³. The median age is 52 years old which is higher than the statewide median age of 37. There are approximately 17,000 workers 16 years and over; 56 percent of which live and work in Calaveras County. The median household income is \$77,526 which is lower than the statewide average of \$91,905. Key countywide demographic information such as means of transportation to work, travel time to work, and vehicles available are displayed in **Tables 1 through 3**.

Table 1: Means of Transportation to Work

Means of Transportation to Work	Calaveras County (%)	State of California (%)
Drive Alone	73.2	67.1
Carpool	9.7	10.2
Public Transportation (excluding taxicab)	0.4	3.1
Walk	2.1	2.5
Bike	0.2	0.8
Taxicab, motorcycle, or other means	1.0	1.7
Work at home	13.5	14.6

Source: 2022 American Community Survey 5-Year Estimates; Table S0801

Table 2: Travel Time to Work

Travel Time to Work	Calaveras County (%)	State of California (%)
Less than 10 minutes	18.0	9.5
10 to 14 minutes	9.6	12.2
15 to 24 minutes	15.2	29.3
25 to 34 minutes	14.9	21.3
35 to 44 minutes	9.7	7.1
45 to 59 minutes	12.9	8.6
60 or more minutes	19.7	11.9
<i>Mean travel time</i>	<i>35.6 minutes</i>	<i>29.2 minutes</i>

Source: 2022 American Community Survey 5-Year Estimates; Table S0802

³ Unless otherwise specified, all demographic data was derived from the US Census Bureau 2022 American Community Survey 5-year Estimates.



Table 3: Vehicles Available

Vehicles Available	Calaveras County (%)	State of California (%)
No vehicle available	2.0	3.3
1 vehicle available	8.4	18.2
2 vehicles available	36.1	37.5
3 or more vehicles available	53.6	41.1

Source: 2022 American Community Survey 5-Year Estimates; Table S0802

Key findings from the above tables indicate that although approximately 73 percent of employed residents drive alone to work, approximately 28 percent have a travel time less than 15 minutes indicating there may be potential to convert these drive-alone trips to walking or biking. Compared to the statewide average, more people in Calaveras County drive alone to work but more people also have a travel time less than 15 minutes. Despite this, the mean travel time in the County is longer than the statewide average, primarily due to a larger percentage of people with a travel time of 60 minutes or more.

Disadvantaged Community Analysis

Various sources were reviewed to determine if Calaveras County, or specific communities within Calaveras County are considered disadvantaged. This analysis is important for an active transportation plan because 1) it helps to ensure that disadvantaged communities are being included in the planning process and special consideration is being given to addressing the respective community needs and 2) certain programs (including Caltrans Active Transportation Program) allocate funding specifically to serving disadvantaged communities and the County and/or CCOG may be able to secure funding through these programs for future transportation efforts in these community areas.

Communities can be considered disadvantaged for a variety of reasons and various statewide tools and maps have been developed to help jurisdictions more easily determine if one of their communities is considered disadvantaged and would qualify for funding.

The 2025 Active Transportation Program (ATP) Guidelines adopted by the California Transportation Commission (CTC) on March 22, 2024 indicate that under the Justice40 Initiative (created by the Biden-Harris Administration under Executive Order 14008), at least 40 percent of federal funds programmed in the ATP must benefit communities identified as disadvantaged in the federal Climate and Economic Justice Screening Tool (CEJEST) or the United States Department of Transportation (US DOT) Equitable Transportation Community (ETC) Explorer. Both tools were evaluated and a total of five tracts within Calaveras County are considered disadvantaged by at least one of the tools.

Additionally, the ATP Guidelines note that SB 99 specifies that at least 25% of all funds must benefit disadvantaged communities and includes additional criteria and tools that can be evaluated to determine if a community is disadvantaged. Each of these criteria/tools were evaluated for the County and census



tracts that are deemed disadvantaged by at least one of these tools (including the CEJEST and ETC tools) are displayed on **Figure 2** and identified in **Table 4**.

Table 4: Disadvantaged Community Status

Census Tract	Median Household Income ¹	CalEnviroScreen 4.0 ²	Healthy Places Index ³	CEJEST ⁴	ETC ⁵
06009000121	X				
06009000122	X				
06009000220					X
06009000301 & 02	X	X	X	X	
06009000400	X		X	X	X
06009000504 ⁶					X
06009000506	X				

Notes:

¹ US Census Bureau Table B19013 2022: ACS 5-Year Estimates was reviewed to determine eligibility for this criteria.

² [CalEnviroScreen 4.0 Results \(arcgis.com\)](https://arcgis.com) was reviewed to determine eligibility for this criteria.

³ [California Healthy Places Index](https://arcgis.com) was reviewed to determine eligibility for this criteria.

⁴ [Explore the map - Climate & Economic Justice Screening Tool \(geoplatform.gov\)](https://geoplatform.gov) was reviewed to determine eligibility for this criteria.

⁵ [ETC Explorer - State Results | USDOT Equitable Transportation Community \(ETC\) Explorer \(arcgis.com\)](https://arcgis.com) was reviewed to determine eligibility for this criteria.

⁶ 06009000504 is excluded from Healthy Places Index and CalEnviroScreen 4.0 due to low population and/or unreliable data.

As displayed, census tracts 06009000301/302 and 06009000400 are considered disadvantaged by multiple of the tools evaluated. The following communities are in these census tracts:

- Glencoe
- Mokelumne Hill
- Mountain Ranch
- Rail Road Flat
- San Andreas
- Sheep Ranch
- West Point
- Wilseyville

Amongst the various tools, these communities are most commonly considered disadvantaged due to income, wildfire risk, health risk/vulnerability, and transportation insecurity including transportation access, transportation cost burden, and traffic safety. There are limited roadways that provide access



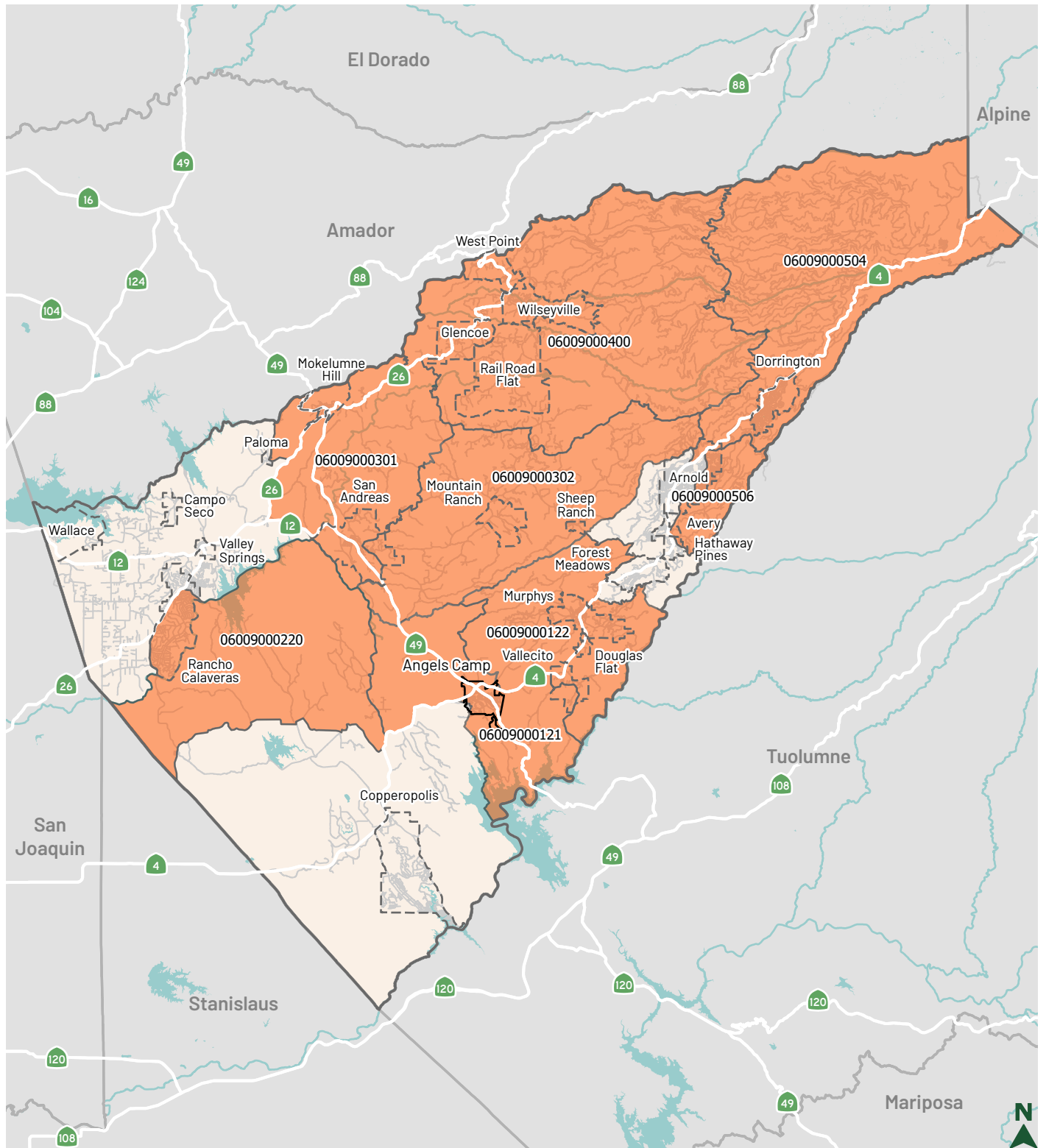
in/out of the communities, limited transit, minimal to no walking or biking facilities, and limited access to jobs, services, health facilities, recreational facilities, and educational facilities. As a result, many residents must make longer trips via automobile just to access basic needs (like schools, jobs, grocery stores, etc.). According to the ETC Tool, all three census tracts are low income with a median household income range between approximately \$45,000 and \$54,000 per year, have a high transportation cost burden where between approximately 18 percent and 22 percent of their annual household income is spent on transportation, and a high housing cost burden where between approximately 41 percent and 59 percent of households spend more than 30 percent of their income on housing. For some of these communities, active transportation investments could alleviate some of the transportation cost burden as trips currently being made by automobile could be converted to walking and biking trips. While other communities in these census tracts are too far from key destinations to walk or bike, active transportation or recreational trail investments could be made to improve overall quality of life by giving residents the opportunity to safely walk or bike in their community, rather than having to drive to a safer location.

It is also noted that if 75% of public school students in a project area are eligible to receive free or reduced-price meals under the National School Lunch Program for the 2022-2023 school year, they may be eligible to receive disadvantaged community funding so long as the project is within two miles of the school(s) represented by this criteria. Review of the 2022-2023 California Department of Education Free or Reduced-Price Meal (Student Poverty) Data identifies the following schools with over 75% of students eligible to receive free or reduced-price meals⁴:

- Calaveras River Academy located at 150 Old Oak Grove Road, San Andreas.
- Oakendell Community School located at 3585 Hawver Road, San Andreas.
- Learner, Empowered Academic Progress (LEAP) located at 981 Tuolumne Avenue, Angels Camp.

⁴ One additional “school” is identified in the state’s dataset; however, the school name is “nonpublic, nonsectarian schools” and it has one student enrolled so is not likely to be considered eligible and therefore, is not documented.





Disadvantaged Community Census Tract
 City of Angels Camp
 Body of Water

Note: Census Tract is considered disadvantaged based on one or more criteria listed in the 2025 ATP Guidelines.
 Census Designated Place
 Calaveras County Boundary

Figure 2



Disadvantaged Communities

4. Travel Patterns and Key Destinations

Travel patterns and key destinations were identified using a combination of local knowledge, stakeholder and community input, Streetlight Origin-Destination (O-D) data, and for the recreational trail component of the ATRTP, recreational data sources like Strava and All Trails were reviewed. While Streetlight offers a variety of data sources and time periods, anonymized location-based cell phone data between March 1 and April 30, 2022 was used for this analysis. This time period was chosen in part because post-April 2022, Streetlight began utilizing connected vehicle data in lieu of strictly cell phone data. Fehr & Peers compared and discussed the two time periods and data sources with CCOG staff and due to the overall sample size and way data from each time period is processed and reported, the above referenced data and time period was selected. Information presented in the “Local Community Trips” section is based on average Tuesday-Thursday trip data to represent typical weekday travel. Information presented in the “Recreational Trips” section is based on average Monday-Sunday trip data given an influx in recreational trips occur on weekends.

Local Community Trips

Given that Calaveras County has multiple communities fairly spread out geographically, a primary goal of this analysis was to evaluate origin-destination (O-D) pairings for trips not only internal to the County, but internal to individual communities within the County. This is helpful for an active transportation plan because it can help determine what percentage of trips currently being taken by vehicle have the potential to be converted to walking or biking trips. The County was split into 60 zones and the number and percentage of trips between each zone was then evaluated to determine overall travel patterns. Given that Streetlight represents a sample, the percentage of trips between origins and destinations is reported rather than total number of trips. It is also noted that trips that originate within the County but have a destination outside of the County and trips that originate outside of the County but have a destination within the County are excluded from this analysis. This is because the purpose of this data is to assist in prioritizing active transportation and recreational trail improvements in Calaveras County and identifying which trips may be converted from local vehicular trips to walking/biking trips is a primary goal of this project. For the purposes of this existing conditions analysis, O-D patterns are presented at the community level or broader county area level (for areas with less destinations) and include the following information:

Graphically displayed in **Figures 3 through 14:**

- Percentage of trips that are internal to individual community or broader county area (i.e. they start and stop within the respective community/county area) and percentage of trips that are internal to the County, displayed from the origin of the trip.



Tabulated in **Tables 5 and 6:**

- Percentage of **internal** trips within a respective community/county area (e.g. start and stop within the same community/area) with a trip length of 0-1 miles and 1-3 miles which have the potential to be converted to walking or biking trips.
- Percentage of trips that end in the respective community (community is the **destination**) with a trip length of 0-1 miles and 1-3 miles which have the potential to be converted to walking or biking trips.

The tabulated data is presented in two ways to display both trip lengths for trips internal to a specific community and trip lengths for all trips traveling to a community. For example, the zones representing Valley Springs and Rancho Calaveras are directly adjacent to each other. Table 5 presents the percentage of trips and the respective trip length data for trips that start and stop within the Valley Springs Area zone. Table 6 presents the percentage of trips and the respective trip length data for trips that end in Valley Springs but do not exclusively originate in Valley Springs. For example, a trip may originate in Rancho Calaveras but have a destination in Valley Springs and due to proximity of these two zones/communities, the trip may be less than three miles and therefore, has potential for conversion. This trip would have been excluded from Table 5 though because it did not originate in Valley Springs.



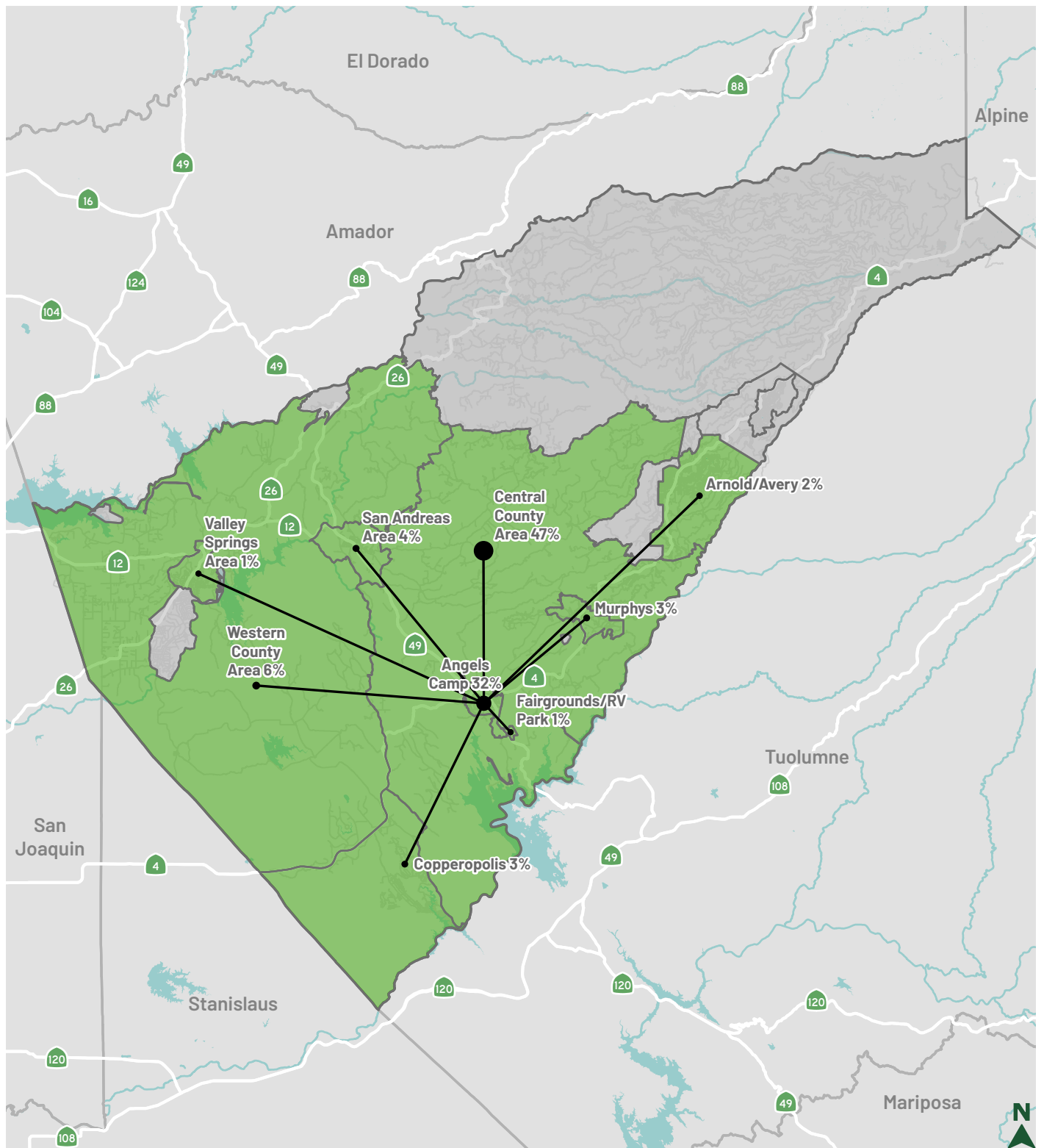


Figure 3



Angels Camp: Community O-D Analysis

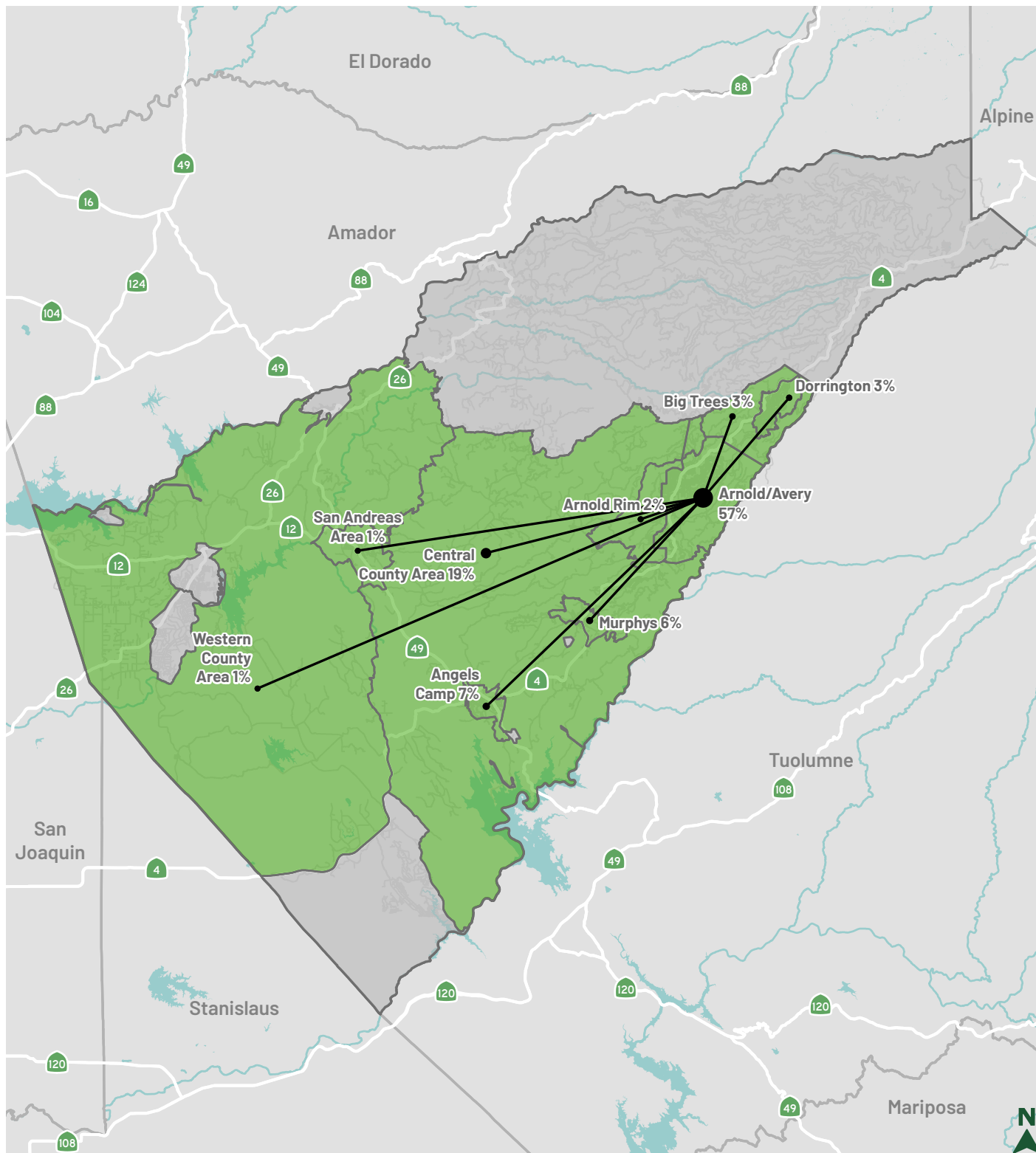


Figure 4

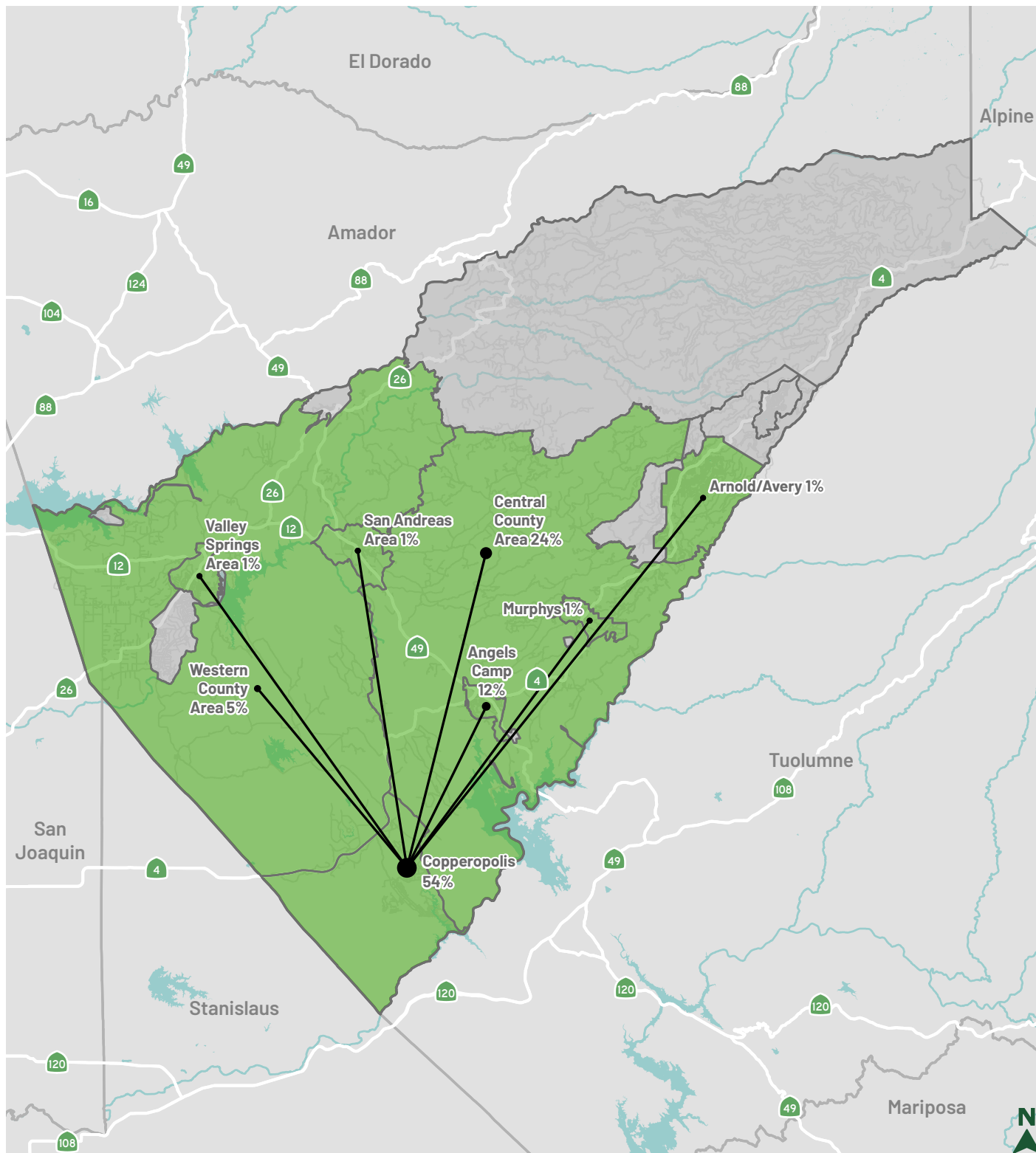


Figure 5

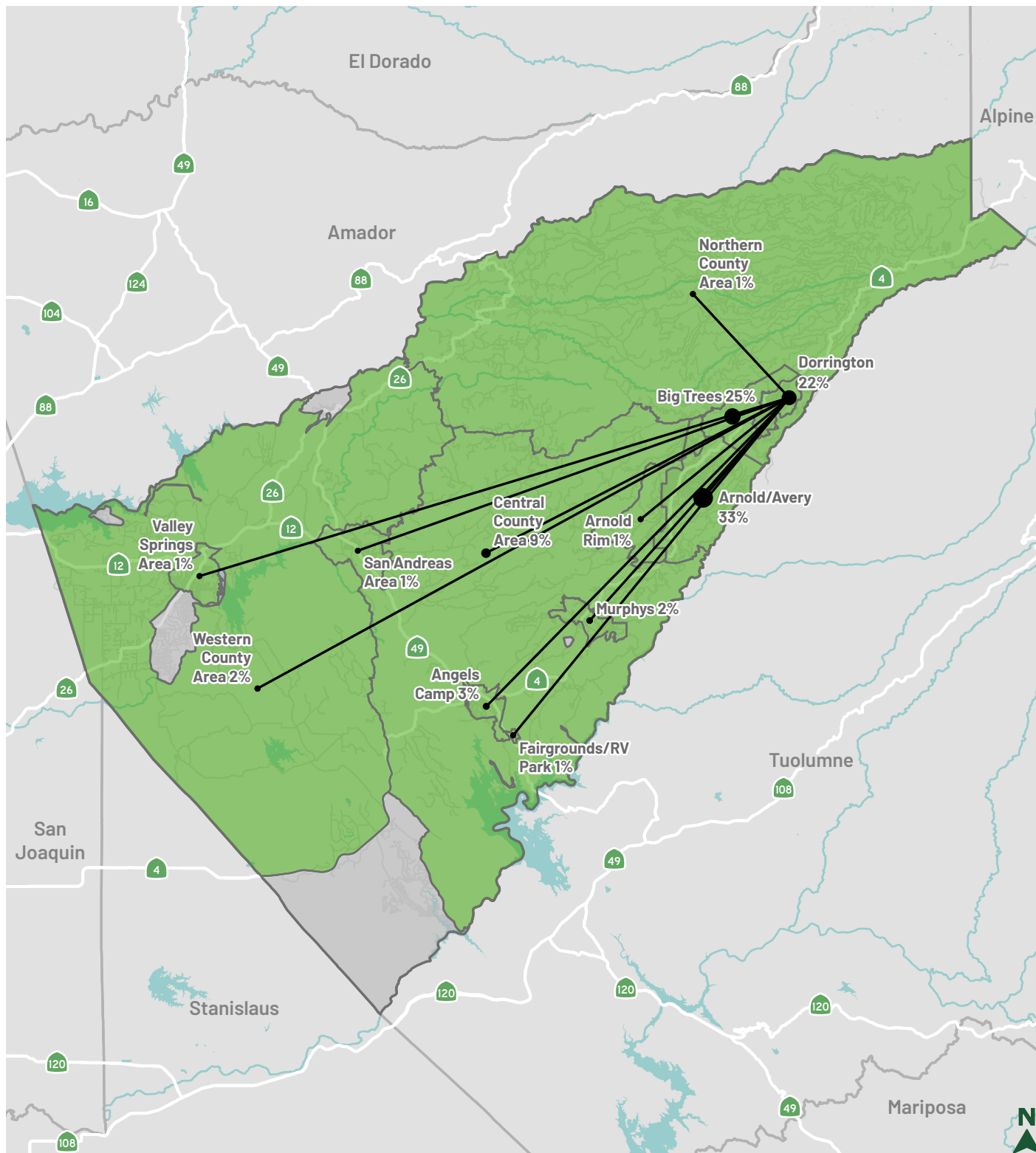
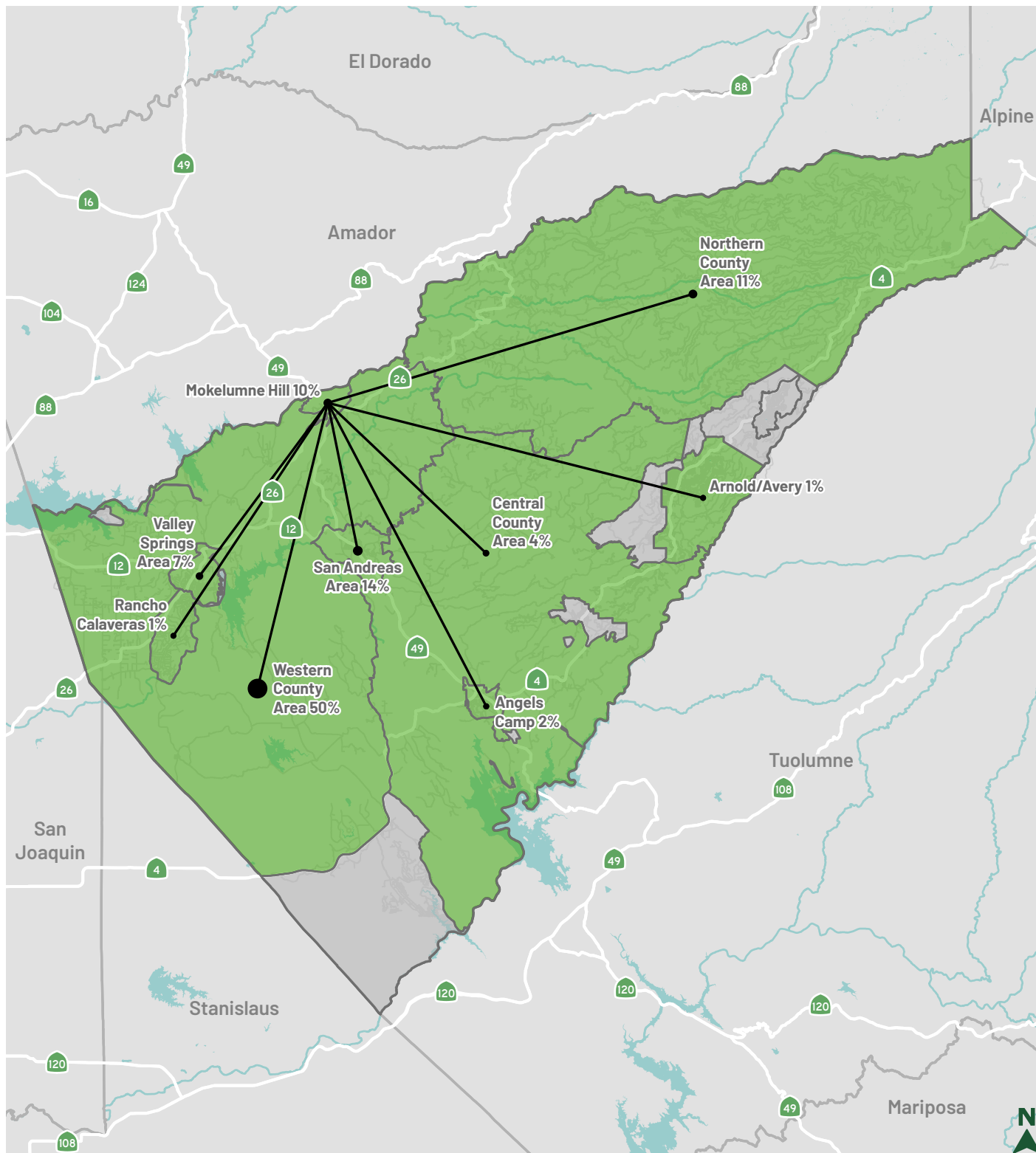


Figure 6



Destination Area Boundary — Origin to Destination Trip Percentage — Body of Water

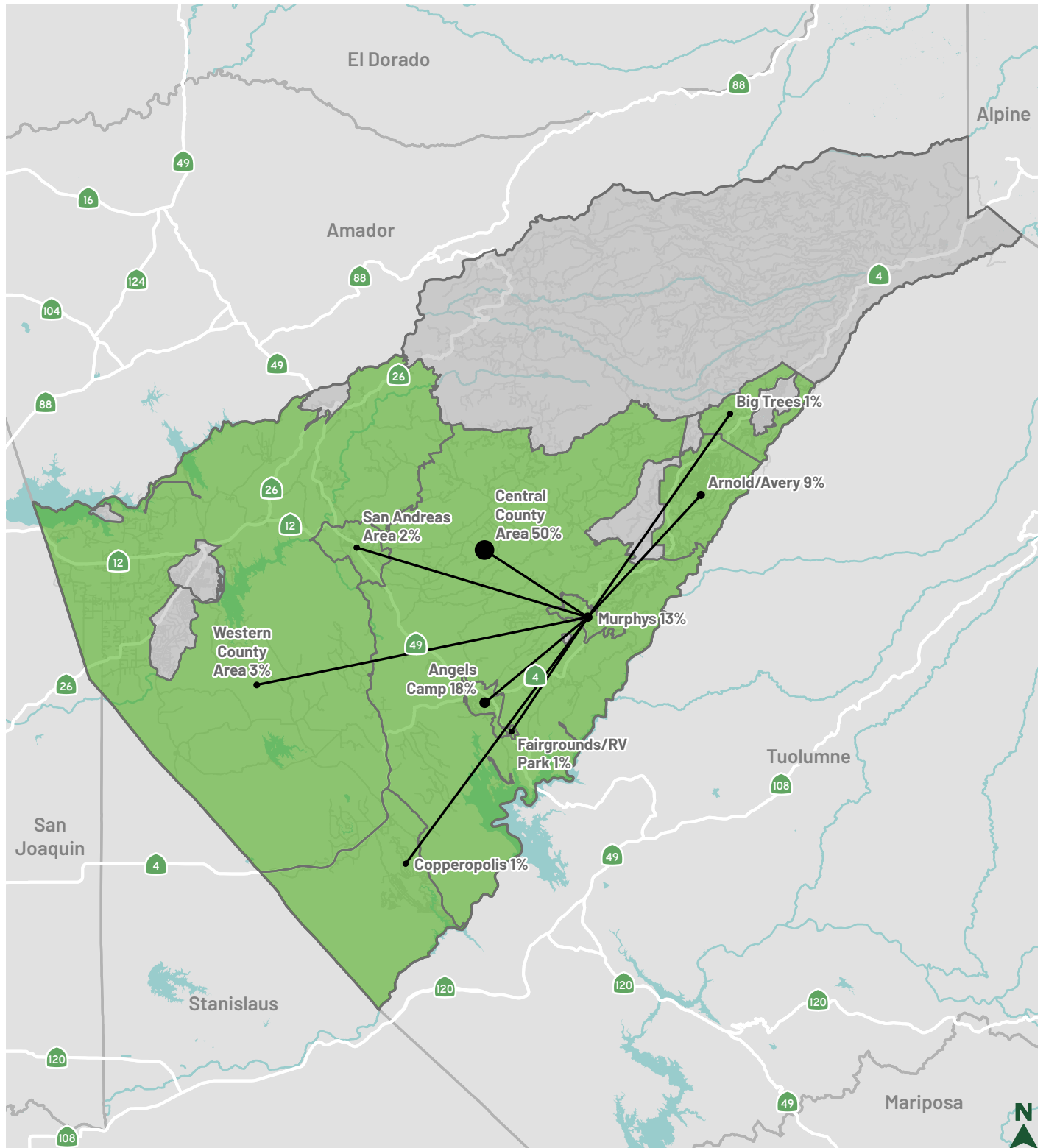
≥1% Travel to
 <1% Travel to

Note: O-D pairings represent typical weekday travel patterns based on Streetlight Data

Figure 7



Mokelumne Hill: Community O-D Analysis



Destination Area Boundary — Origin to Destination Trip Percentage — Body of Water

≥1% Travel to
 <1% Travel to

Note: O-D pairings represent typical weekday travel patterns based on Streetlight Data

Figure 8



Murphys: Community O-D Analysis

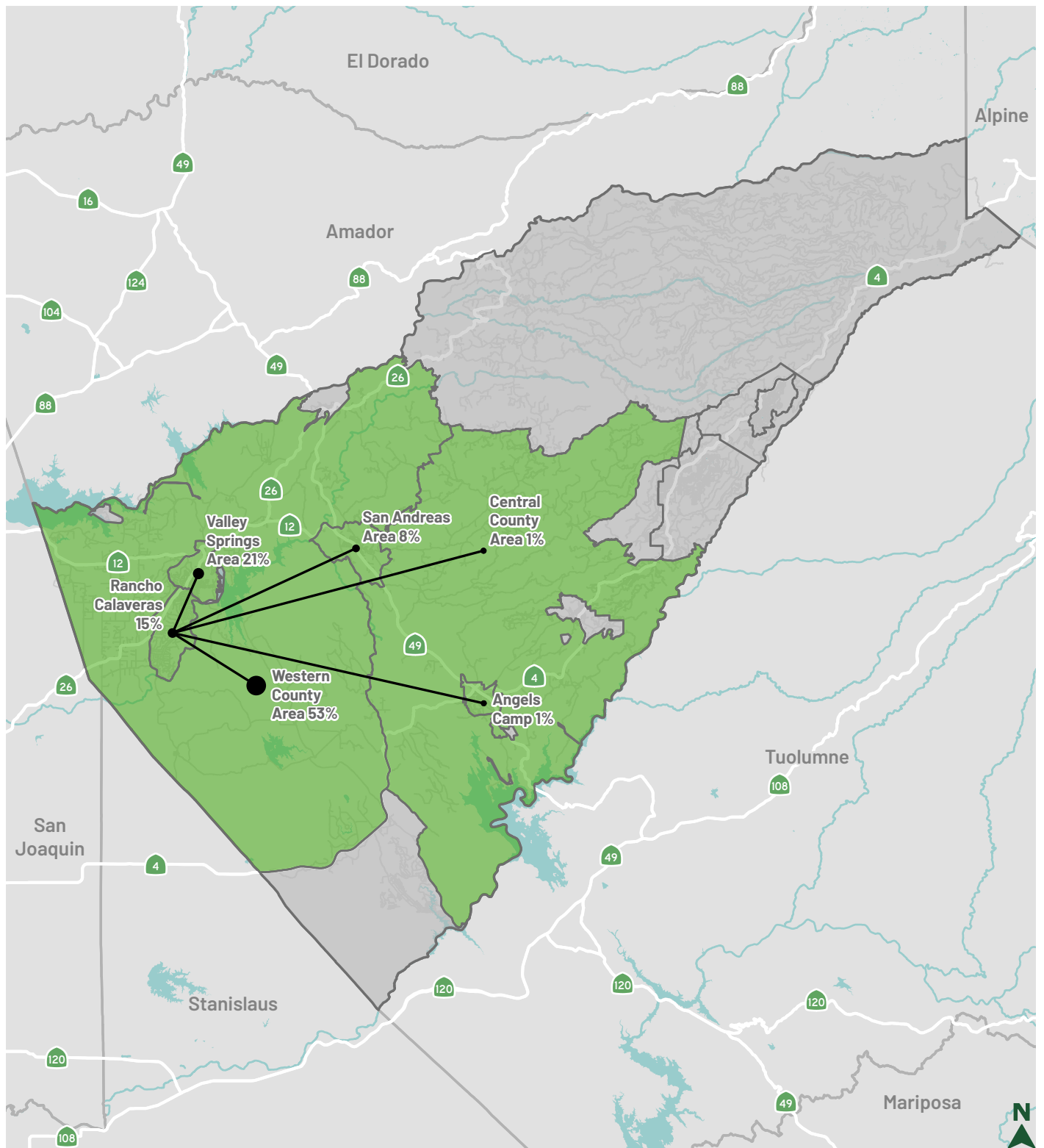
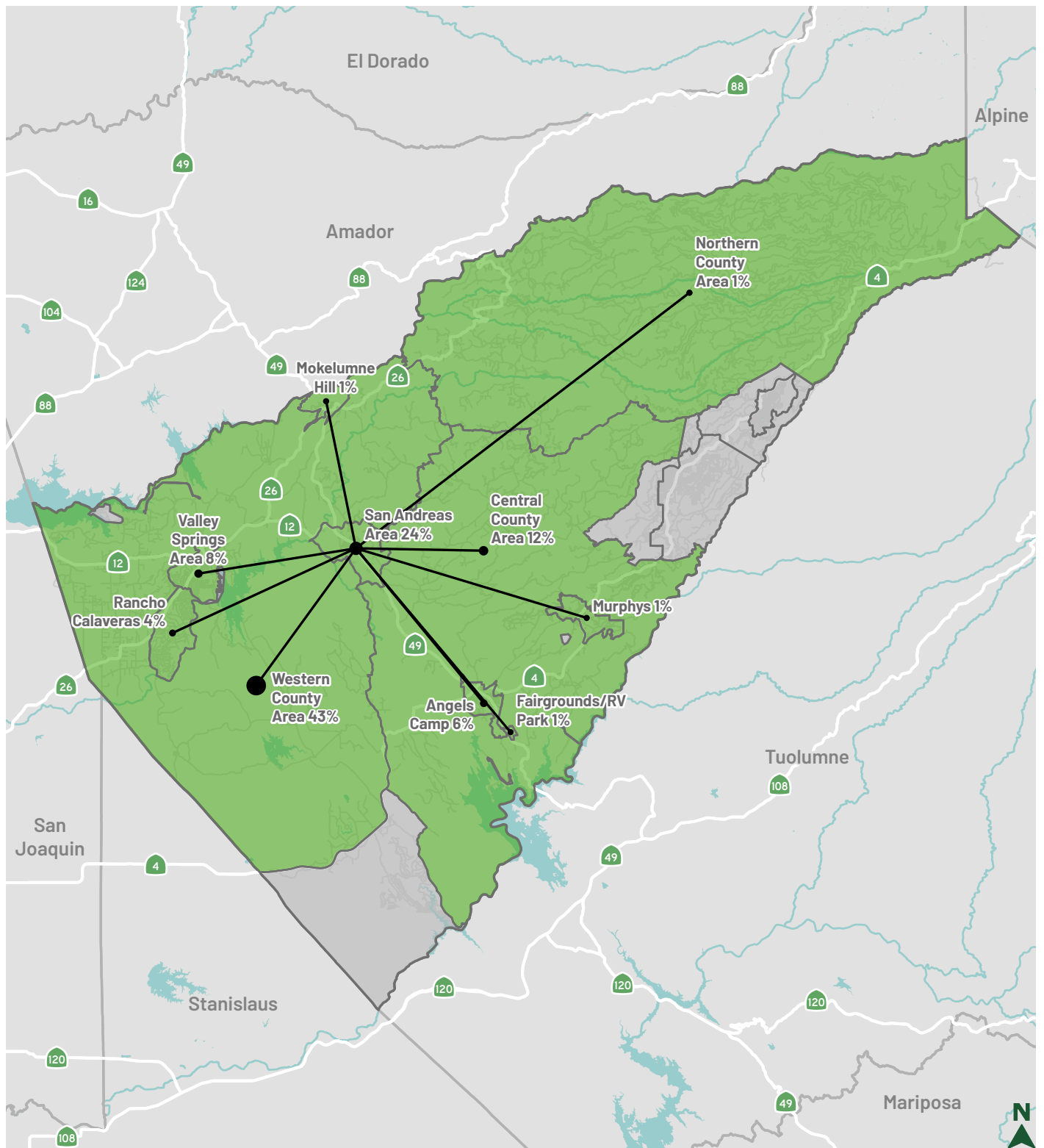


Figure 9



Destination Area Boundary — Origin to Destination Trip Percentage — Body of Water

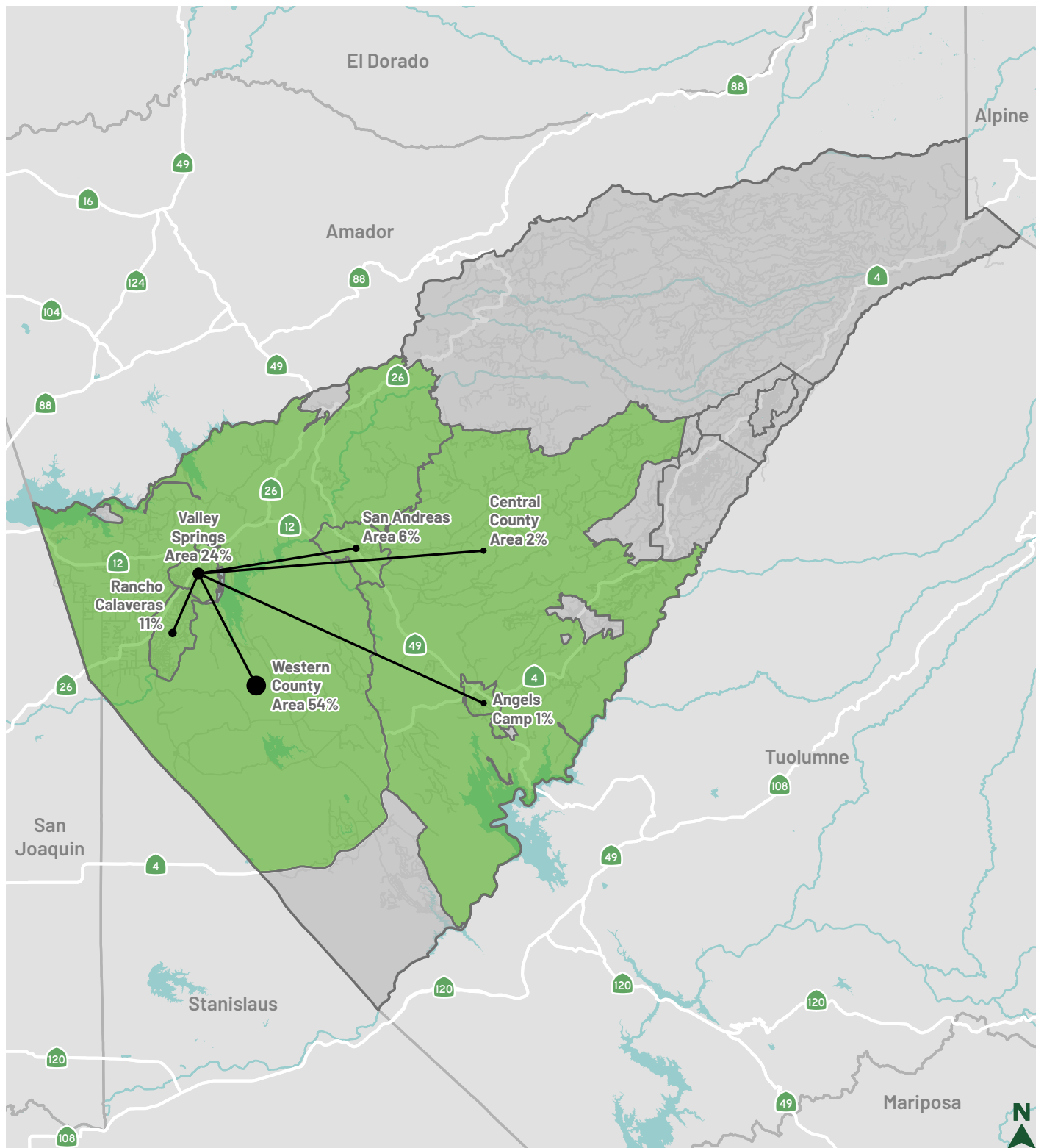
≥1% Travel to
 <1% Travel to

Note: O-D pairings represent typical weekday travel patterns based on Streetlight Data

Figure 10



San Andreas: Community O-D Analysis



Destination Area Boundary — Origin to Destination Trip Percentage — Body of Water

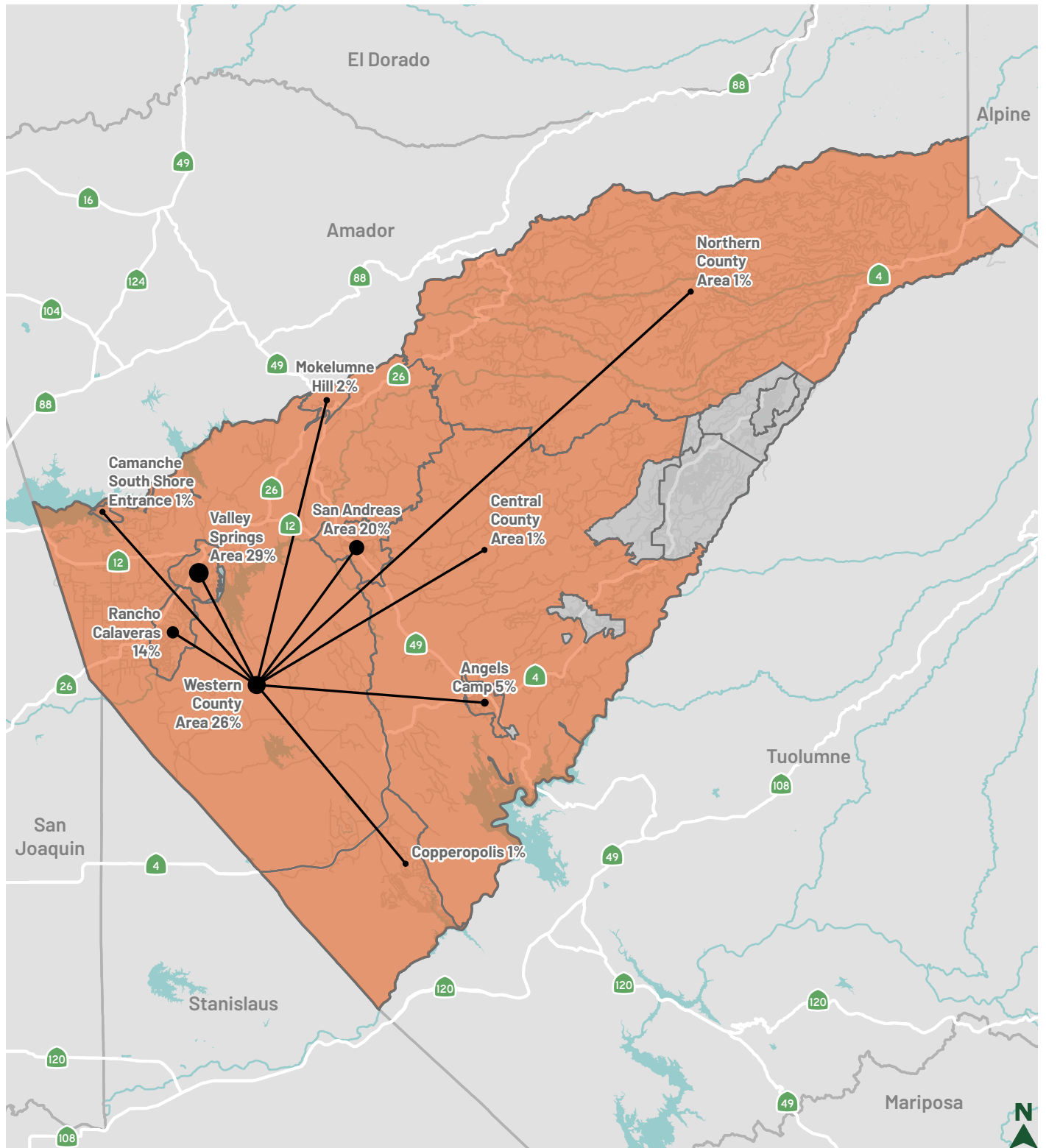
■ ≥1% Travel to
 ■ <1% Travel to

Note: O-D pairings represent typical weekday travel patterns based on Streetlight Data

Figure 11



Valley Springs: Community O-D Analysis



Destination Area Boundary —●— Origin to Destination Trip Percentage Body of Water

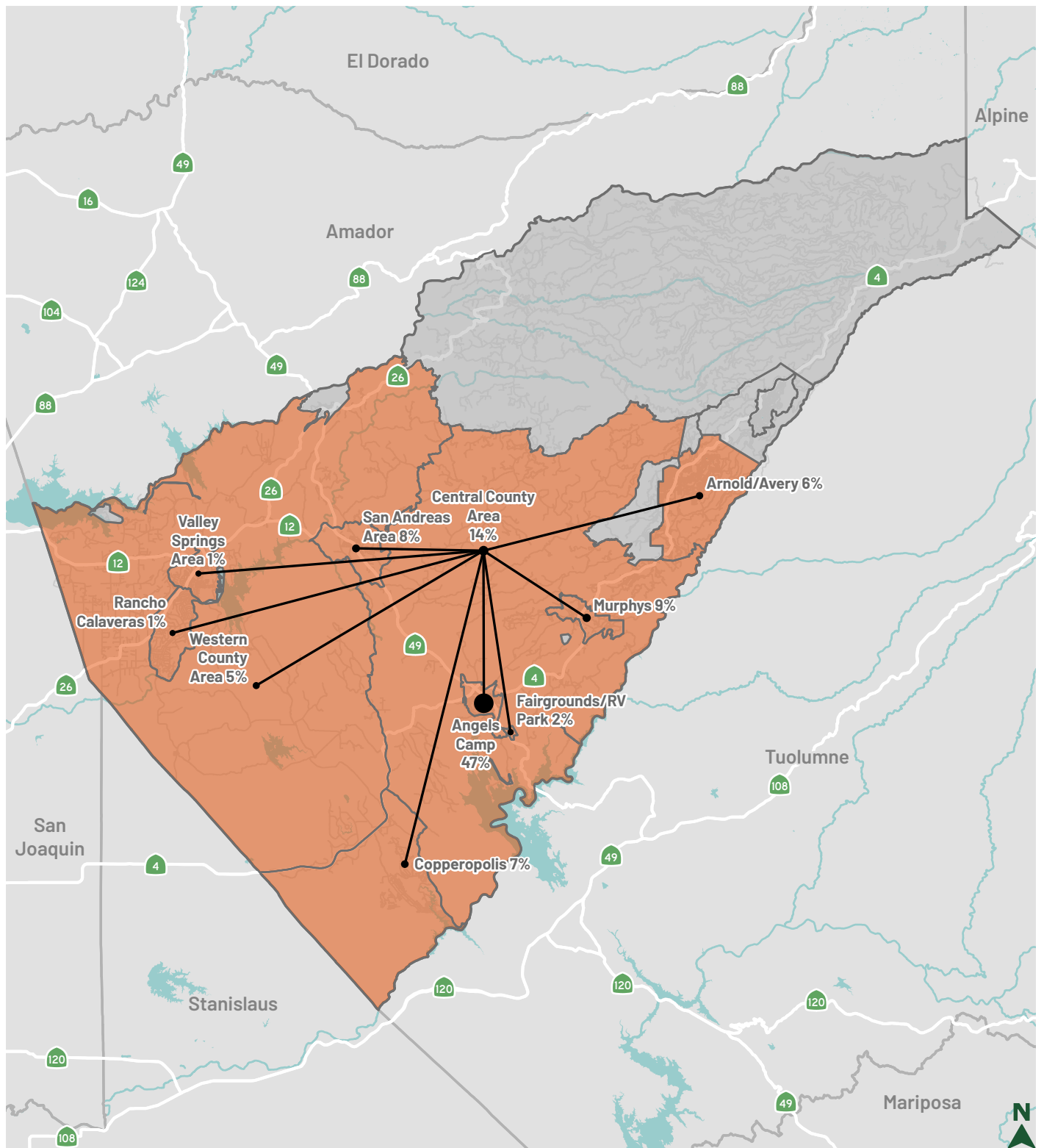
≥1% Travel to
 <1% Travel to

Note: O-D pairings represent typical weekday travel patterns based on Streetlight Data

Figure 12



County Zone West: Broader County O-D Analysis



Destination Area Boundary — Origin to Destination Trip Percentage — Body of Water

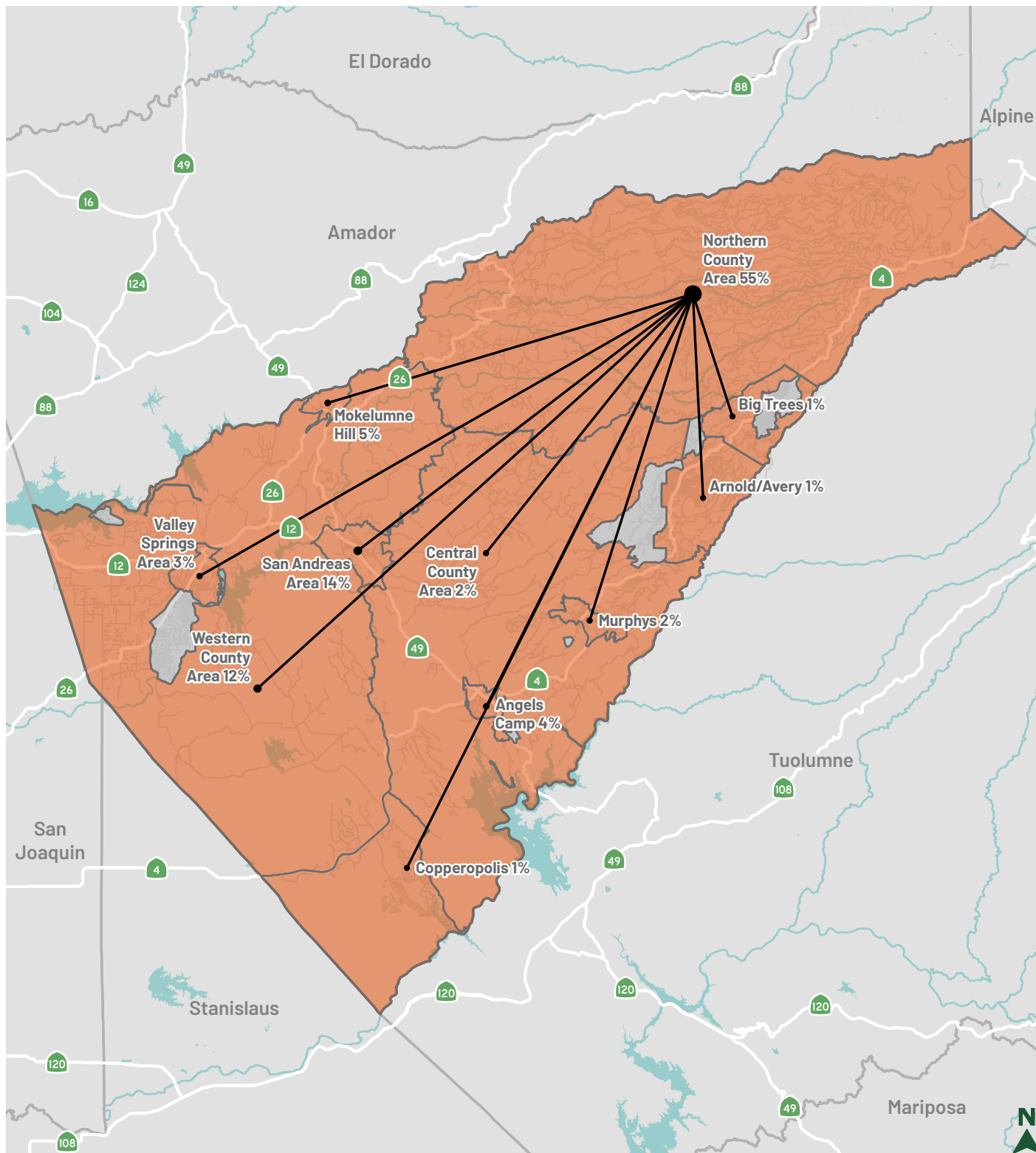
≥1% Travel to
 <1% Travel to

Note: O-D pairings represent typical weekday travel patterns based on Streetlight Data

Figure 13



County Zone Central: Broader County O-D Analysis



Destination Area Boundary — Origin to Destination Trip Percentage — Body of Water

≥1% Travel to
 <1% Travel to

Note: O-D pairings represent typical weekday travel patterns based on Streetlight Data

Figure 14



County Zone North: Broader County O-D Analysis

Table 5: Community Trip Length Information by Internal Trips¹

Community	Internalization %	% of Internal Trips 0-1 Miles	% of Internal Trips 1-3 Miles	% of Trips with Walk/Bike Conversion Potential
Angels Camp	32	33	54	87
Arnold/Avery	57	11	46	57
Copperopolis	54	9	19	28
Dorrington	22	19	41	60
<i>Mokelumne Hill</i>	<i>10</i>	<i>49</i>	<i>25</i>	<i>74</i>
<i>Murphys</i>	<i>13</i>	<i>49</i>	<i>36</i>	<i>85</i>
Rancho Calaveras	15	9	33	42
San Andreas	24	38	49	87
Valley Springs	24	15	50	65
County Zone West	26	10	21	31
County Zone Central	14	17	33	50
County Zone North	55	10	43	53

Notes:

Bold indicates higher internalization and higher walk/bike conversion potential.

Italicized indicates high walk/bike conversion potential but lower internalization.

¹ Trip length information derived from Streetlight data. Percentages shown reflect the percentages of internal trips with a trip length between 0-1 and 1-3 miles. For example, 32% of trips in Angels Camp are internal and of those internal trips, 87% have a trip length of 3 miles or less.

Source: Fehr & Peers, 2024

Table 6: Community Trip Length Information by Destination¹

Community	% of All Trips 0-1 Miles	% of All Trips 1-3 Miles	% of All Trips with Walk/Bike Conversion Potential
Angels Camp	21	37	58
Arnold/Avery	7	27	34
Copperopolis	6	12	18
Dorrington	8	19	27
Mokelumne Hill	10	6	16



Table 6: Community Trip Length Information by Destination¹

Community	% of All Trips 0-1 Miles	% of All Trips 1-3 Miles	% of All Trips with Walk/Bike Conversion Potential
Murphys	14	15	29
Rancho Calaveras	3	17	20
San Andreas	18	24	42
Valley Springs	8	28	36
County Zone West	9	21	30
County Zone Central	16	28	44
County Zone North	5	23	28

Notes:

Bold indicates higher internalization and higher walk/bike conversion potential.

Trip length information derived from Streetlight data. Percentages shown reflect the percentages of a trips within the specified distance with the community as the destination reference point. For example, 21% of trips ending in Angels Camp were 0-1 miles in length.

Source: Fehr & Peers, 2024

The data presented above indicates that Angels Camp, Arnold/Avery Area, San Andreas, Valley Springs, Mokelumne Hill, Murphys, and the County Zone Central have the greatest potential for converting vehicular trips into walking or biking trips. It is noted that the communities of Mokelumne Hill and Murphys specifically have a very high percentage of internal trips three miles or less but the total percentage of internal trips within these communities is lower compared to other communities in the county. The lower internalization could be in part caused by more visitor trips to both of these communities as well as less local options for services like health care, grocery stores, etc. resulting in more external travel. Nonetheless, the vast majority of trips that are internal have the potential to be converted to walking or biking trips. County Zone North has higher internalization and a higher percentage of internal trips three miles or less; however, given the lack of clear and easily identifiable destinations within this zone, it may be more challenging to identify where bicycle and pedestrian infrastructure is needed. Copperopolis has a higher total percentage of internal trips, but the percentage of trips that could be converted to walking or biking is lower due to the larger special distribution of this community.

While public outreach is ongoing and responses to the online survey and interactive map are still being reviewed and summarized, early review of the comments indicate strong support for walking and biking facilities in the communities with high conversion potential referenced above. A total of 360 responses were received for the online survey and many commenters specifically reference needed improvements on highways. It has become clear during this existing conditions evaluation that a key constraint and large barrier to walking and biking throughout the County is the fact that for almost all communities, highways are the primary roadways that provide internal access in specific communities as well as external access



between adjacent communities. As previously noted, there are minimal walking and biking facilities on the highways and due to high speeds, high volumes, and little to no shoulder in many locations, residents do not feel comfortable walking or biking even though they are making short trips and have a desire to walk or bike. For example, multiple residents commented (both in person and online) that they have a desire to walk between the residential communities of La Contenta and Gold Creek Estates to Valley Springs. These residential communities are approximately one to two miles from the jobs, shopping, and educational services located in Valley Springs; however, because there are no walking or biking facilities on State Route 26, residents drive.

During the next phase of the project, O-D patterns in communities with high walk/bike conversion potential will be more closely evaluated to identify specific connections needed such as the one described above. Internal community trip O-D data will be reviewed in conjunction with the location of key community destinations, currently identified on the interactive map developed for the project⁵, to identify where potential improvement projects and connections could and should be made. It is noted that a separate zone was developed for each school in the County and trip making characteristics for schools (specifically as it relates to providing more opportunities for kids to walk or bike to school) will also be included in the next phase of the project. Nonetheless, school enrollment information is provided in **Table 7** as enrollment and/or number of students affected by improvements may be a criteria used during the project prioritization phase.

Table 7: School Enrollment

School	Location	Grades Served	Total Enrollment ¹
Albert A. Michelson Elementary	Murphys	K-5	213
Avery Middle	Avery	6-8	198
Bret Harte High	Angels Camp	9-12	587
Calaveras County Special Education ²	Angels Camp	N/A	N/A
Calaveras High	San Andreas	9-12	746
Calaveras River Academy ²	San Andreas	N/A	N/A
<i>Calaveras Unified Alternative – Sierra Hills Education Center</i>	<i>San Andreas</i>	<i>K-12</i>	<i>111</i>
Copperopolis Elementary	Copperopolis	K-6	203
Gold Strike High	San Andreas	11-12	49
<i>Table continued next page</i>			

⁵ Interactive Map: https://devapps.fehrandpeers.com/Calaveras_County_ATRTP_Crowdsourc_Plus/



Table 7: School Enrollment (Continued)

School	Location	Grades Served	Total Enrollment ¹
Hazel Fischer Elementary	Arnold	K-5	176
Jenny Lind Elementary	Valley Springs/Ranch Calaveras	K-5	442
<i>Learners, Empowered Academic Progress (LEAP)</i>	<i>Angels Camp</i>	3-8	9
Mark Twain Elementary	Angels Camp	K-8	518
Mokelumne Hill Elementary	Mokelumne Hill	K-6	171
<i>Mountain Oaks</i>	<i>San Andreas</i>	<i>K-12</i>	<i>402</i>
Oakendell Community ²	San Andreas	N/A	N/A
San Andreas Elementary	San Andreas	K-7	320
Toyon Middle	Valley Springs	6-8	531
Vallecito Continuation High	Altaville	10-12	46
Vallecito Independent Study (Alternative) ²	Avery	N/A	N/A
Valley Springs Elementary	Valley Springs	K-5	408
West Point Elementary	West Point	K-6	121

Notes:

Italicized indicates school is independent study.

¹ School Enrollment Information derived from each school's School Accountability Report Card (SARS) for the 2022-2023 School Year.

² Calaveras County Special Education, Calaveras River Academy, Oakendell Community, and Vallecito Independent Study (Alternative) schools are identified on the California Department of Education's website; however, detailed school information was not available.

Source: Fehr & Peers, 2024

Recreational Trips

As previously noted, a combination of local knowledge, stakeholder and community input, Streetlight Origin-Destination (O-D) data, Strava and All Trails were reviewed to evaluate key recreational destinations and travel patterns in the County. Key recreational trails are displayed in **Figure 15**. Specific zones were drawn for the following key recreational destinations identified:

- Angels Creek Trail Area - Parking Areas (excluding boat parking and ramps)
- Arnold Rim Area
- Big Trees Area



- Calaveras County Fairgrounds
- Camanche Southshore Entrance (unable to exclude boat related trips given this is the only entrance into southshore)
- Ironstone Vineyards
- Lake Hogan Area - River of Skulls, Observation Point, Cameron Trail, and Wrinkle Cove parking areas (excluding boat parking and ramps)
- Eastbay Municipal Utility District (EBMUD) Mokelumne Coast to Crest Area - Cooks Mesa Trailhead and Campo Seco Staging Area
- Natural Bridges

It is noted that Ironstone Vineyards and the Calaveras County Fairgrounds differ from the remaining recreational destinations in that trips to/from these destinations can be heavily dependent on whether an event is occurring while the other destinations are primarily recreational trails. However, given that these facilities are recreational, can generate a substantial number of trips, are used year-round for multiple events, and community members expressed a desire to be able to walk and/or bike to these destinations, they are included in this analysis.

O-D pairings for recreational related trips are displayed in **Figures 16 through 24**. Recreational trip length by destination is displayed in **Table 8**.

Table 8: Recreational Trip Length Information by Destination¹

Recreational Destination	% of All Trips 0-1 Miles	% of All Trips 1-3 Miles	% of All Trips 3-5 Miles	% of All Trips with Walk/Bike Conversion Potential
Angels Creek Trail Area ²	11	20	18	49
Arnold Rim Area	6	25	13	44
Big Trees Area	6	18	7	31
Calaveras County Fairgrounds	18	20	23	61
Camanche Southshore Entrance	29	23	7	59
EBMUD - Mokelumne Coast to Crest Area	4	0	34	38
Ironstone	1	32	2	35
Lake Hogan Area	2	18	24	44
Natural Bridges ²	11	0	7	18



Notes:

¹Trip length information derived from Streetlight data. Percentages shown reflect the percentages of a trips within the specified distance with the community as the destination reference point.

²Very low sample size may be skewing trip length information.

Source: Fehr & Peers, 2024



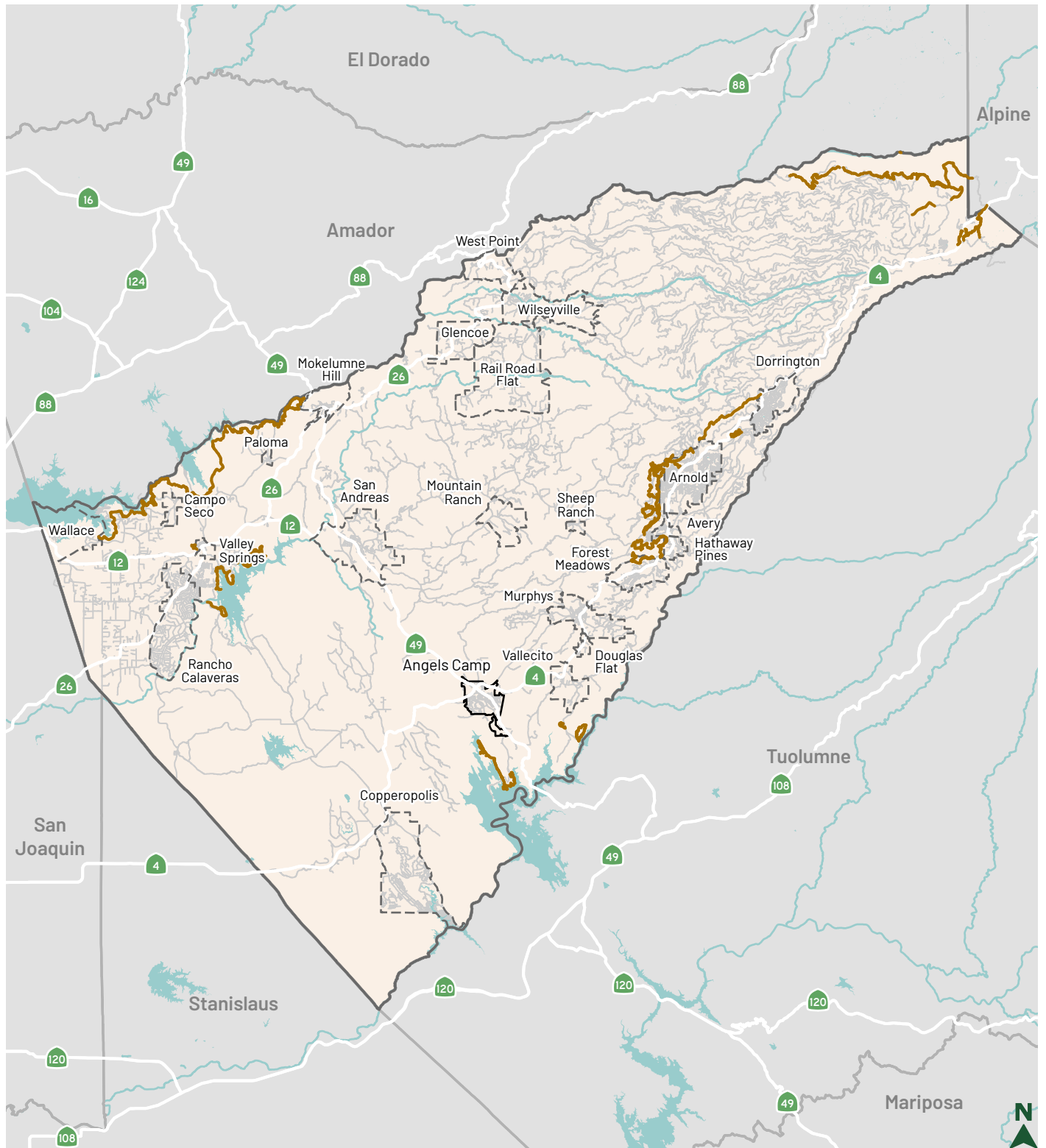


Figure 15



Existing Recreational Trails

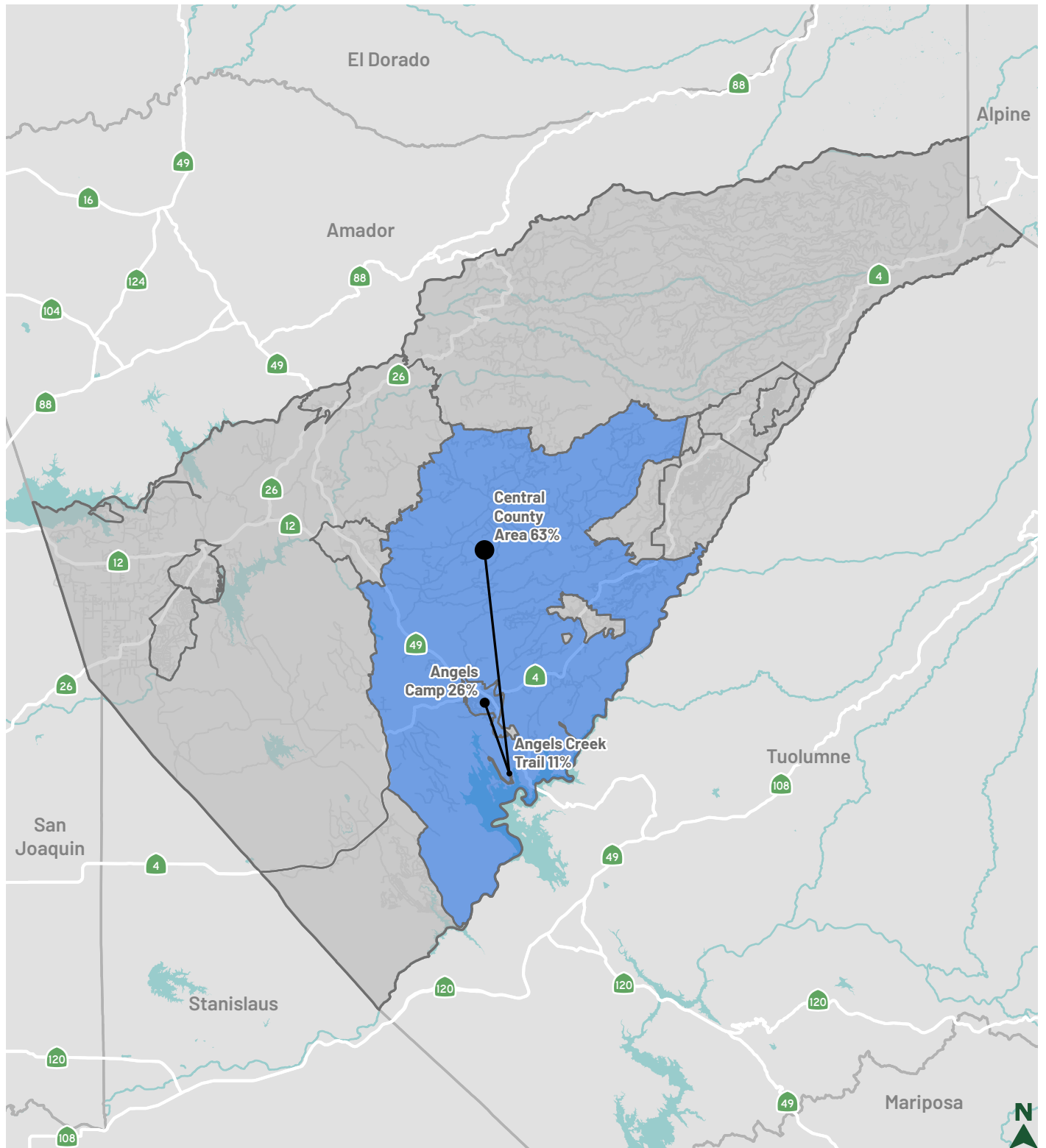


Figure 16



Angels Creek Trail Area: Recreational Trail O-D Analysis

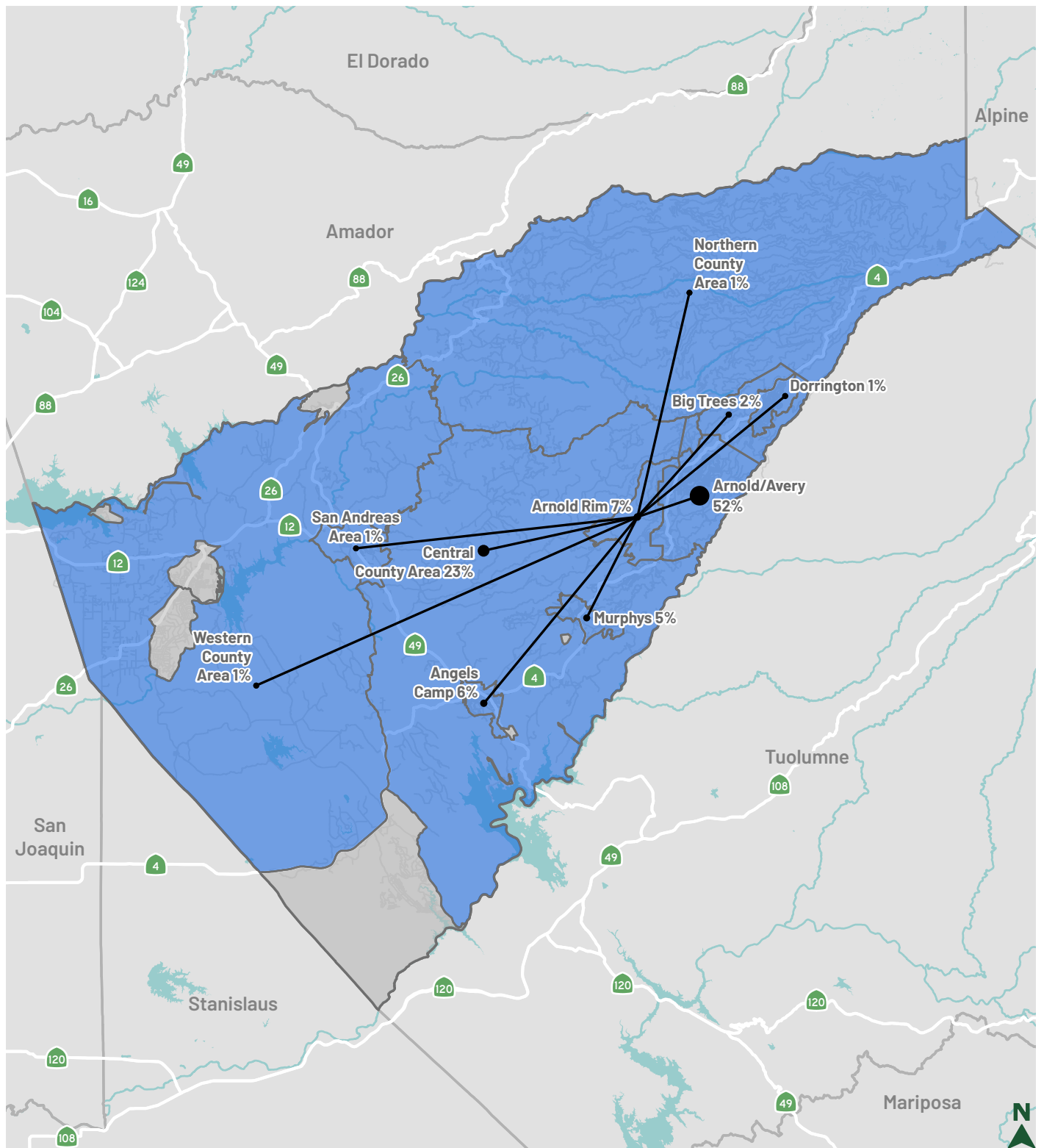


Figure 17

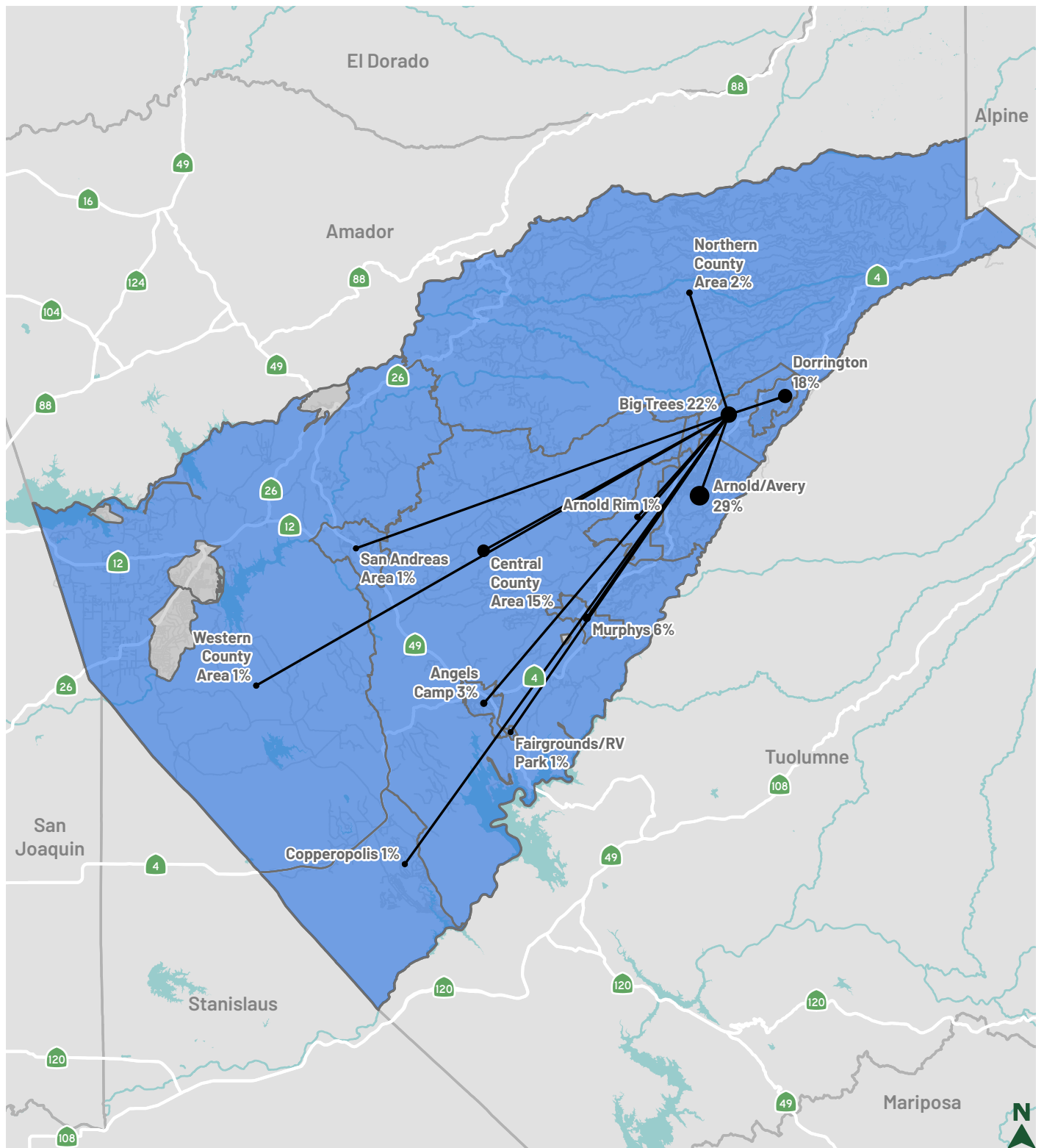
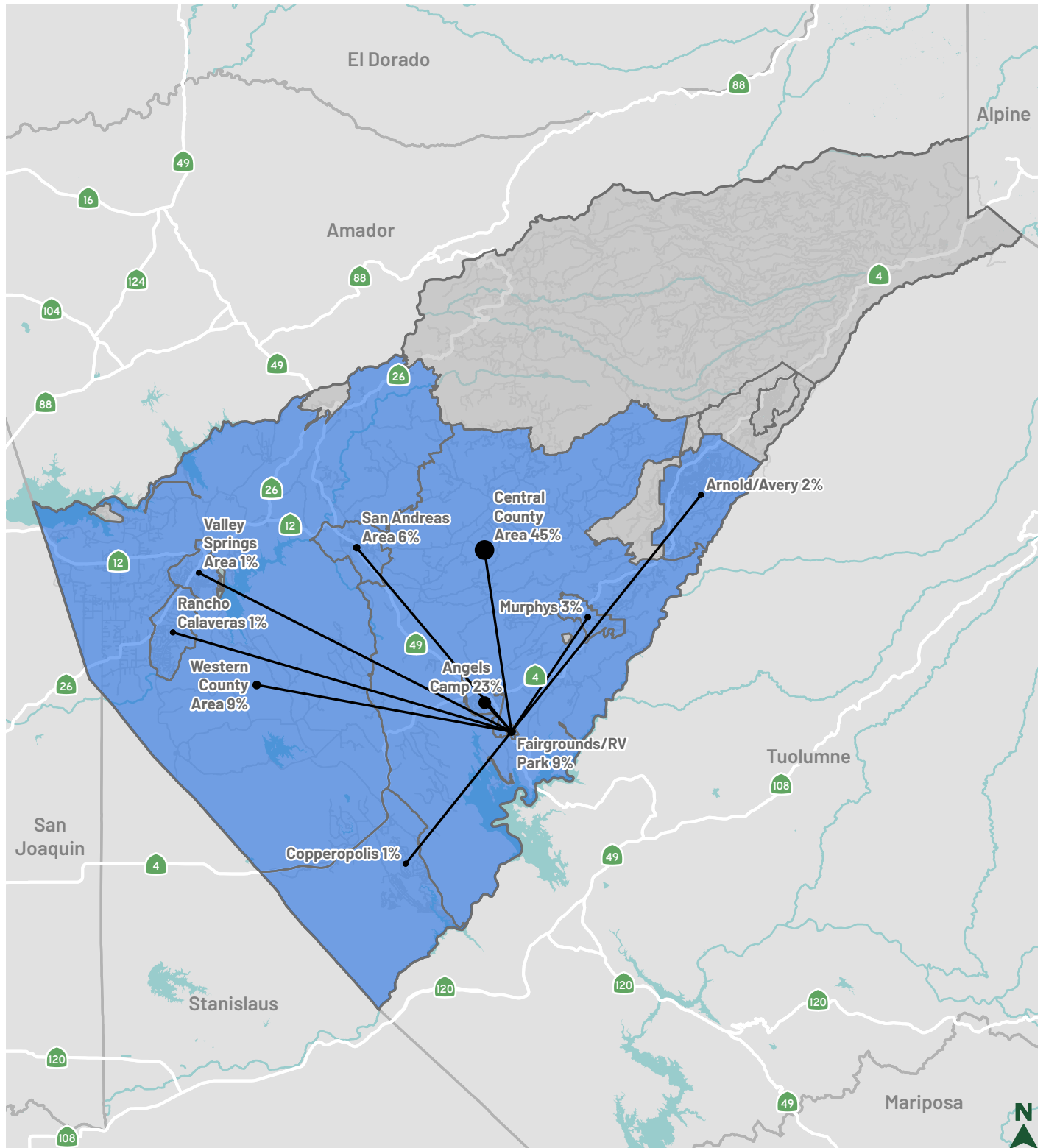


Figure 18



Destination Area Boundary — Origin to Destination Trip Percentage Body of Water

Blue shaded area: ≥1% Travel to

Grey shaded area: <1% Travel to

Note: O-D pairings represent typical daily (weekday and weekend) travel patterns based on Streetlight Data

Figure 19



Calaveras County Fairgrounds Area: Recreational Trail O-D Analysis

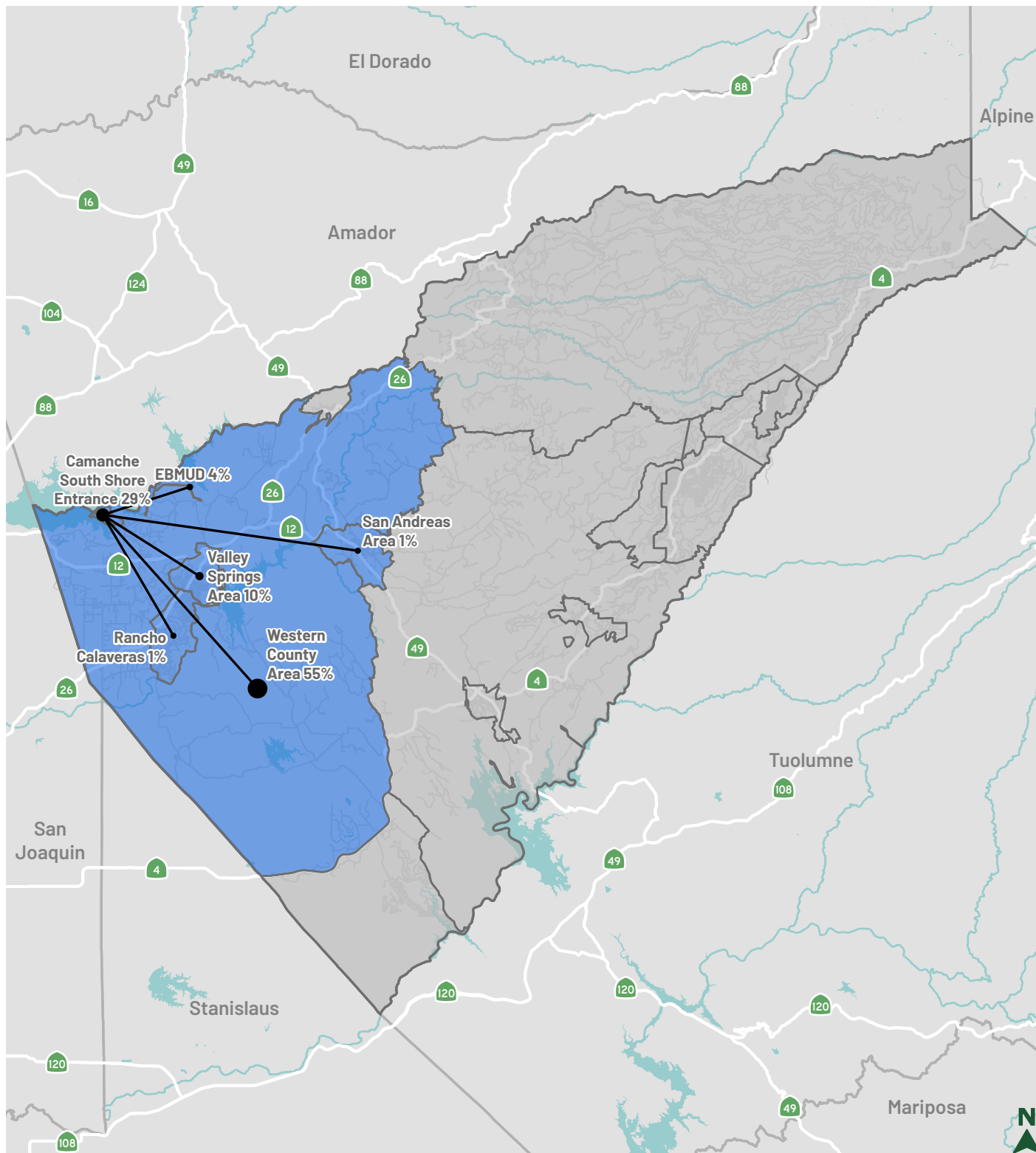


Figure 20

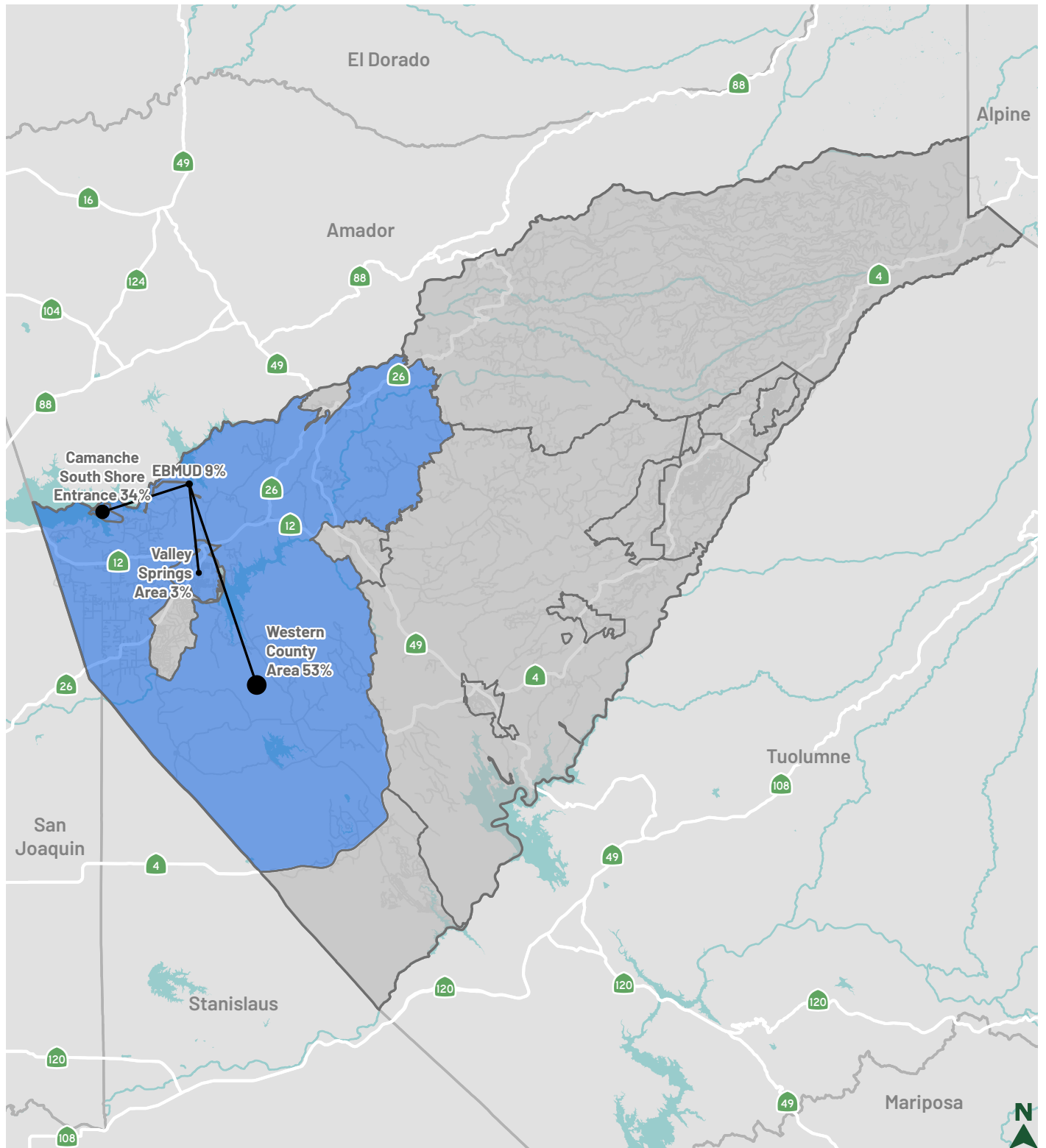
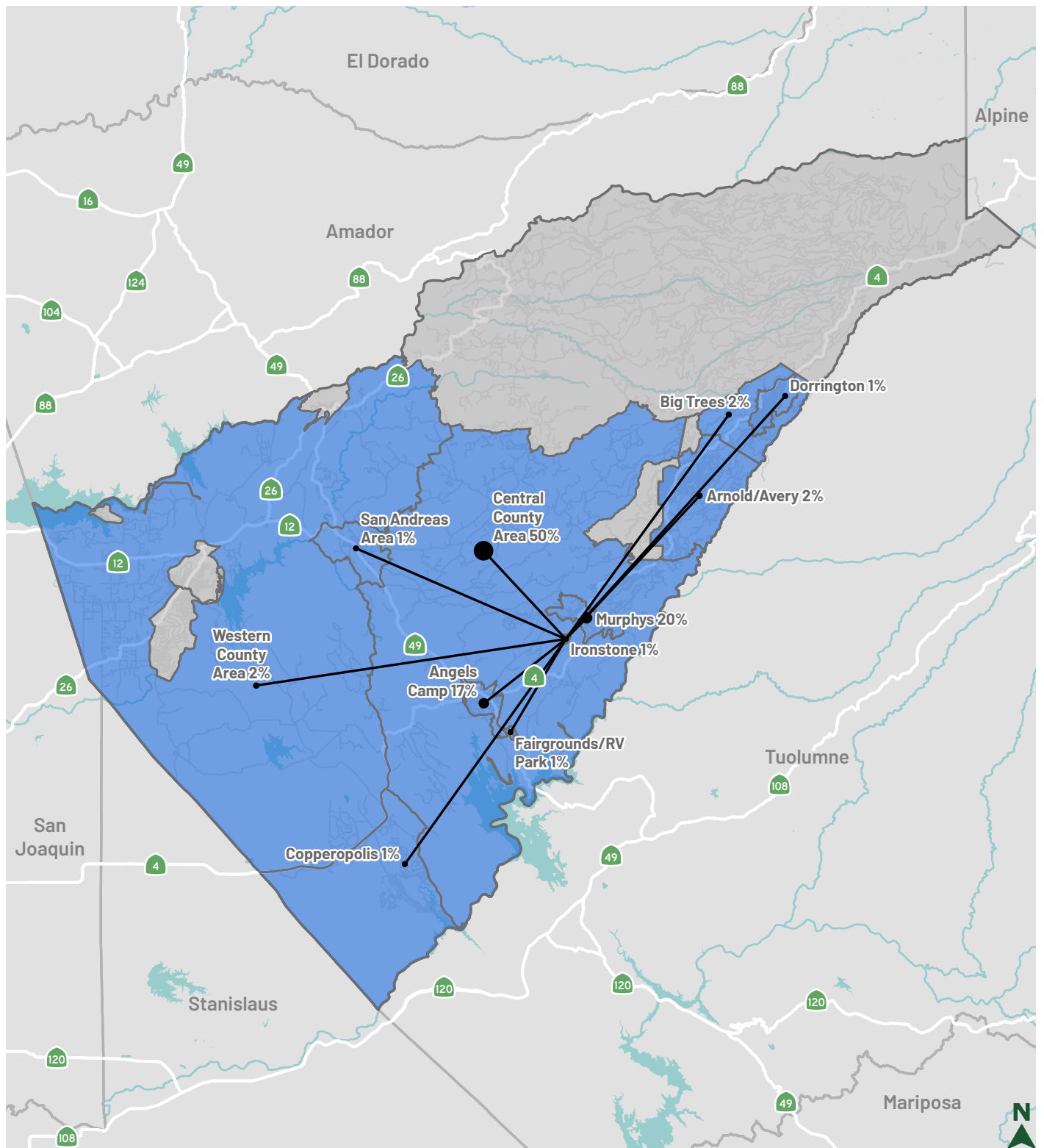


Figure 21

EBMUD - Mokelumne Coast to Crest Area: Recreational Trail O-D Analysis





Destination Area Boundary — Origin to Destination Trip Percentage — Body of Water

Blue shaded area: ≥1% Travel to

Grey shaded area: <1% Travel to

Note: O-D pairings represent typical daily (weekday and weekend) travel patterns based on Streetlight Data

Figure 22



Ironstone: Recreational Trail O-D Analysis

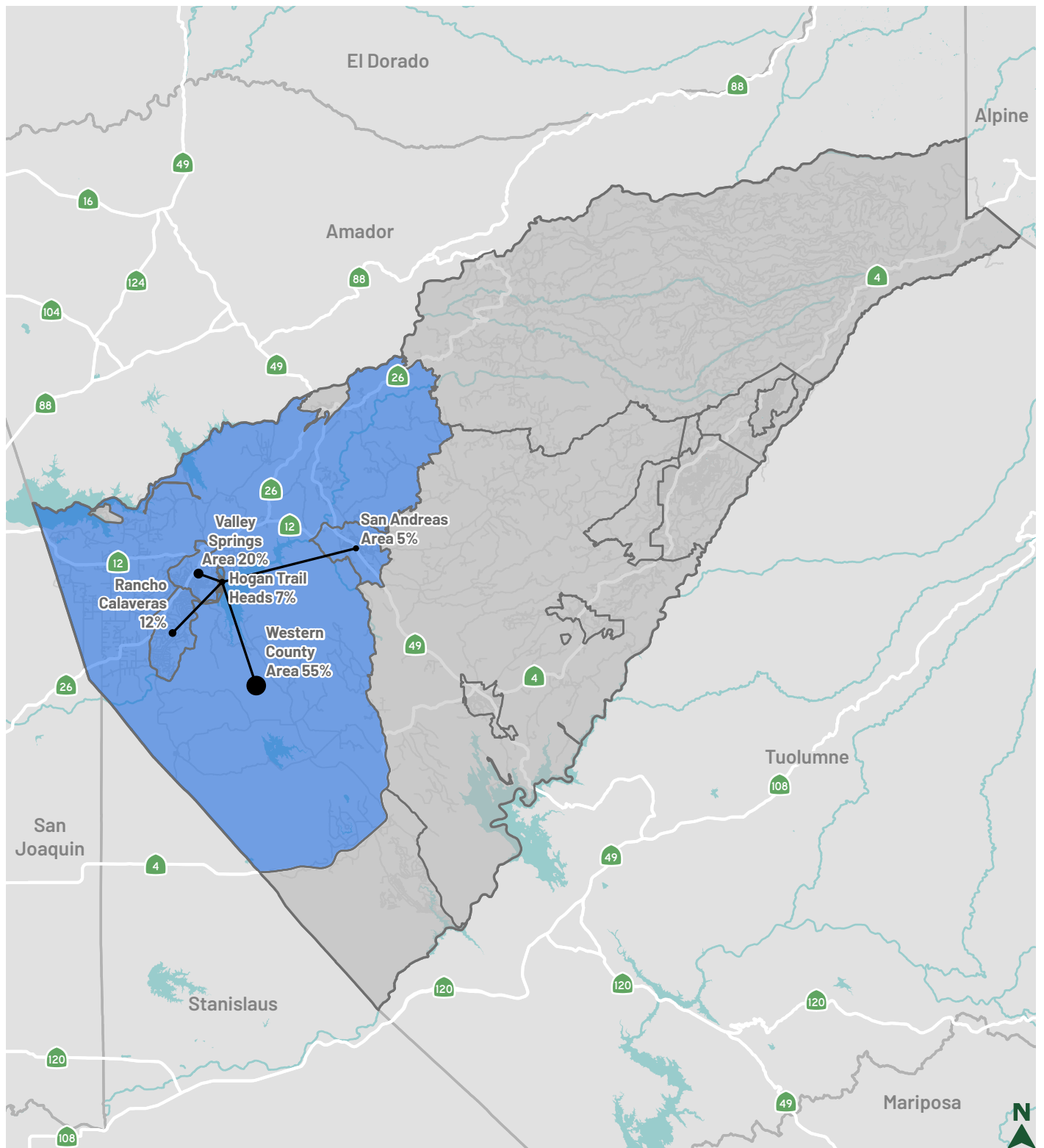


Figure 23

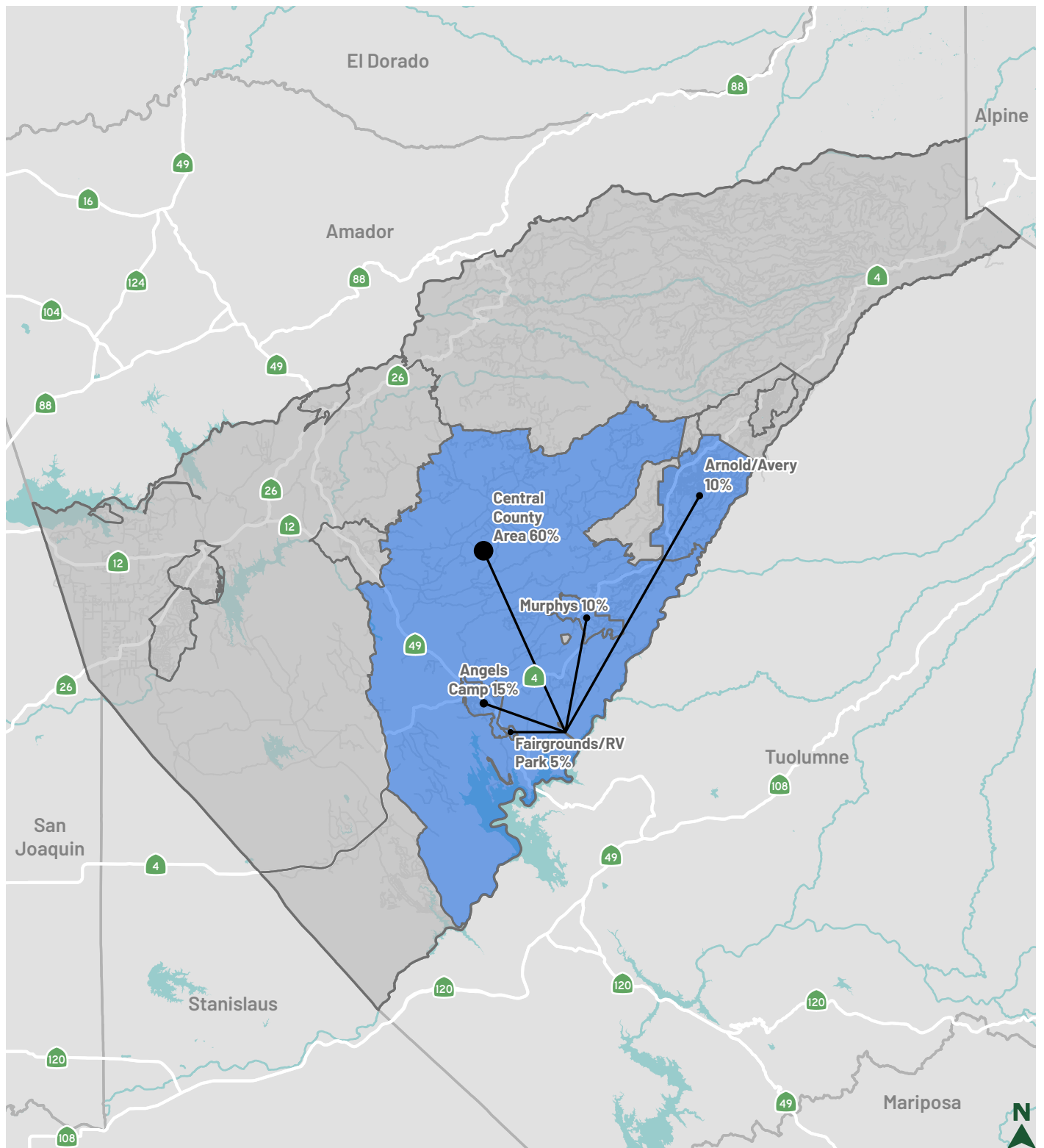


Figure 24

5. Existing Bicycle, Pedestrian, Transit, and Recreational Trail Infrastructure

Fehr & Peers and Green DOT evaluated existing bicycle, pedestrian, transit, and recreational trail infrastructure throughout the County. Multiple sources were reviewed to complete this infrastructure evaluation including:

- Previous planning documents
- Caltrans data
- OpenStreetMap (OSM)
- Physical observations
- Aerial imagery
- Published recreational trail maps
- Strava
- All Trails
- Trail Forks
- Calaveras Connect website

Figures 25 and 15 display the countywide bicycle, pedestrian, transit and recreational trail infrastructure⁶. In addition to these countywide figures, communities with the most existing infrastructure in the County are shown in greater detail below.

⁶ It is noted that in addition to the transit stops identified on Figure 25, Calaveras Connect provides a dial-a-ride transit service which provides curb-to-curb service for various communities in Calaveras. Figure 25 also identifies existing stops in both Amador and Tuolumne County. Although Calaveras Connect provides service to these locations, the ATRTP will not evaluate bicycle/pedestrian facilities to/from these stops given they are not within the County.



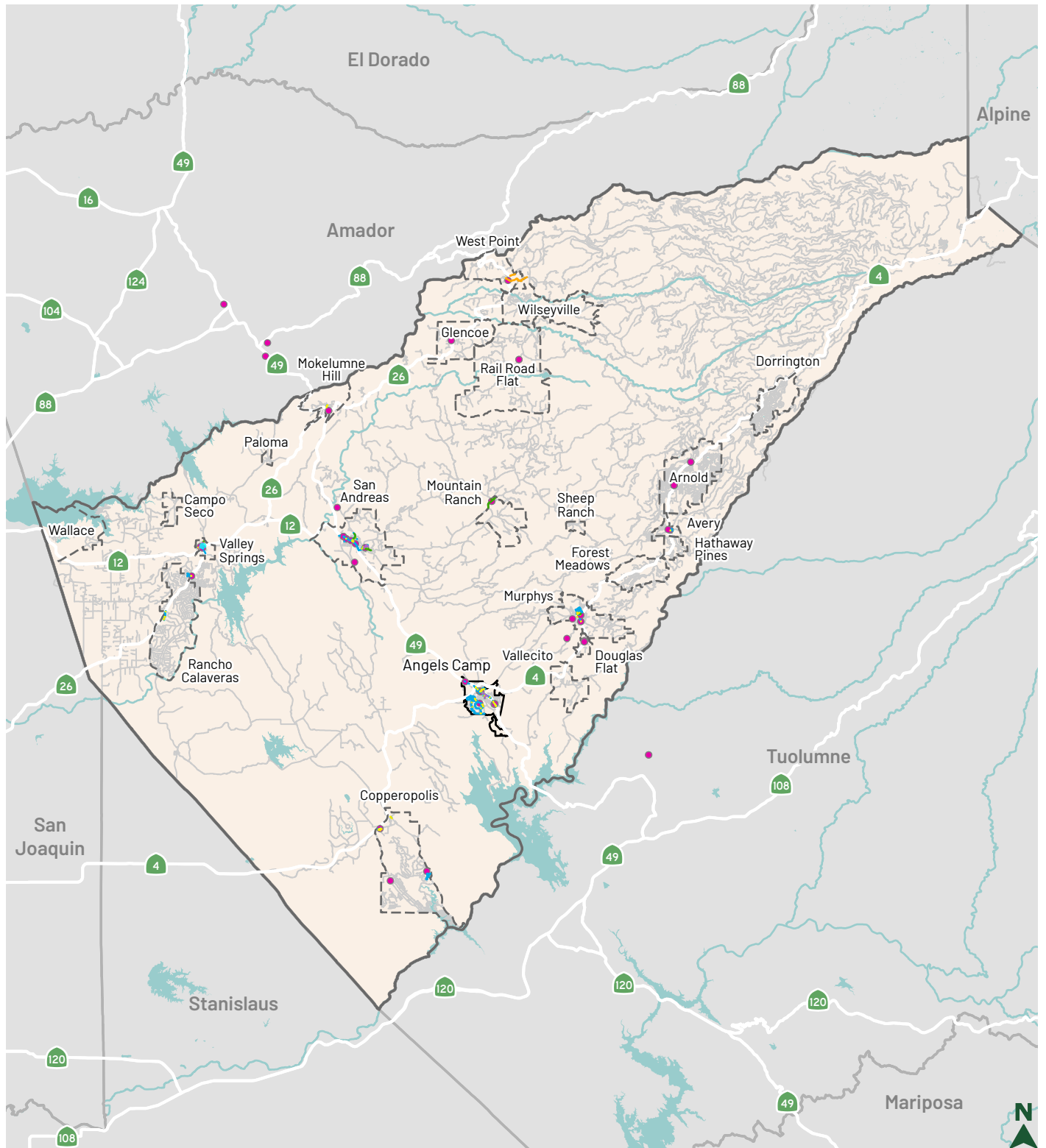
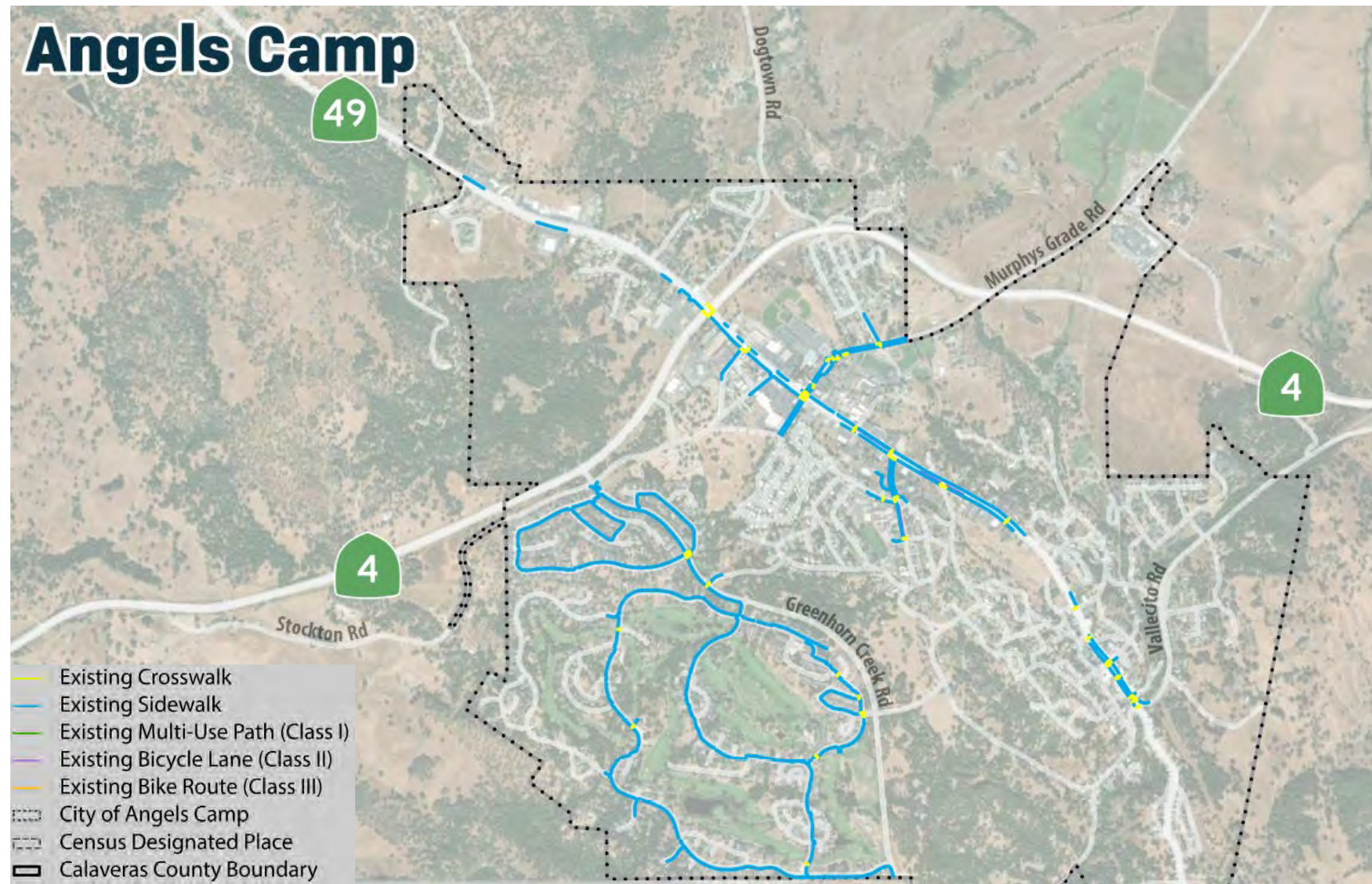
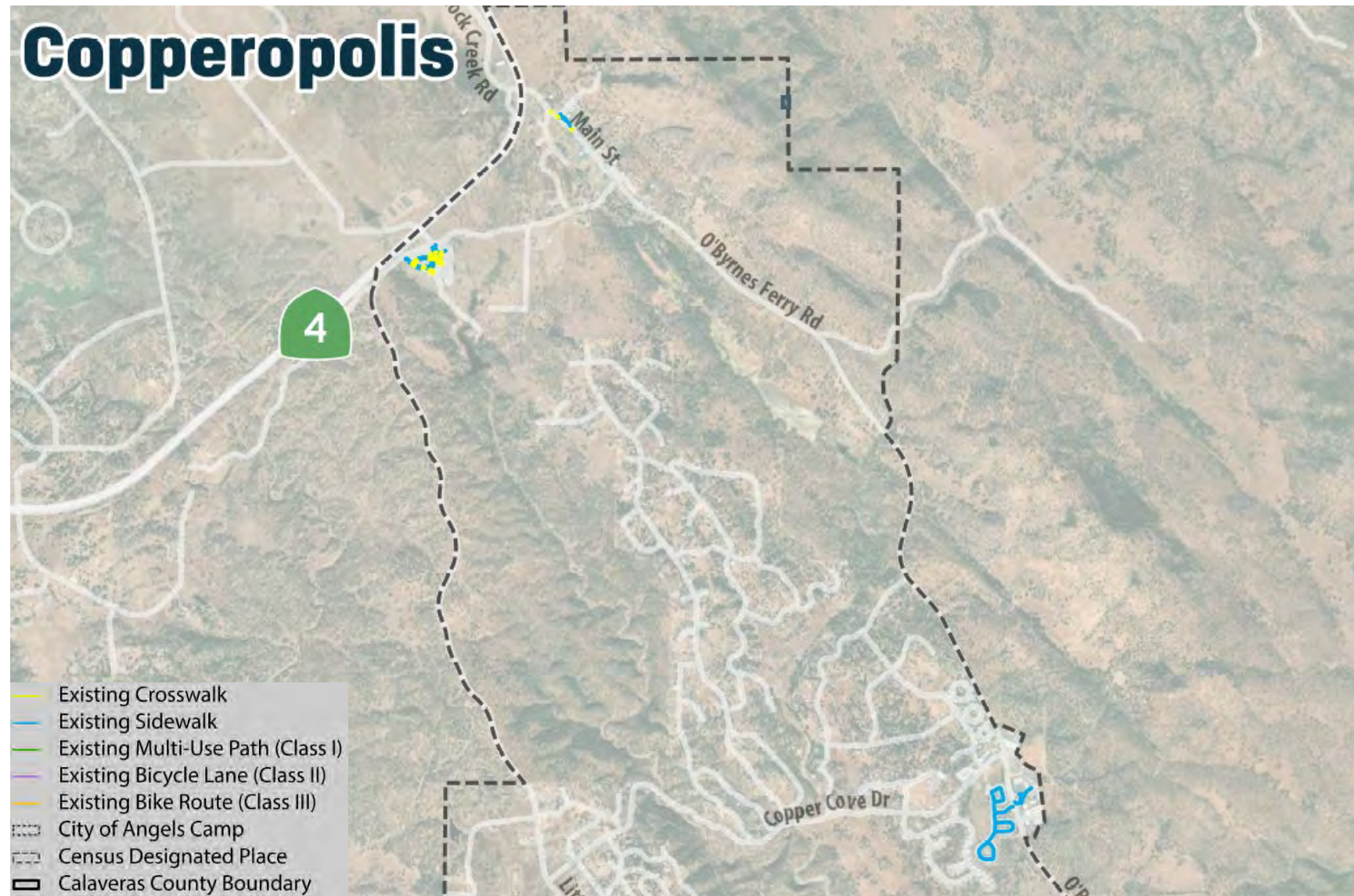


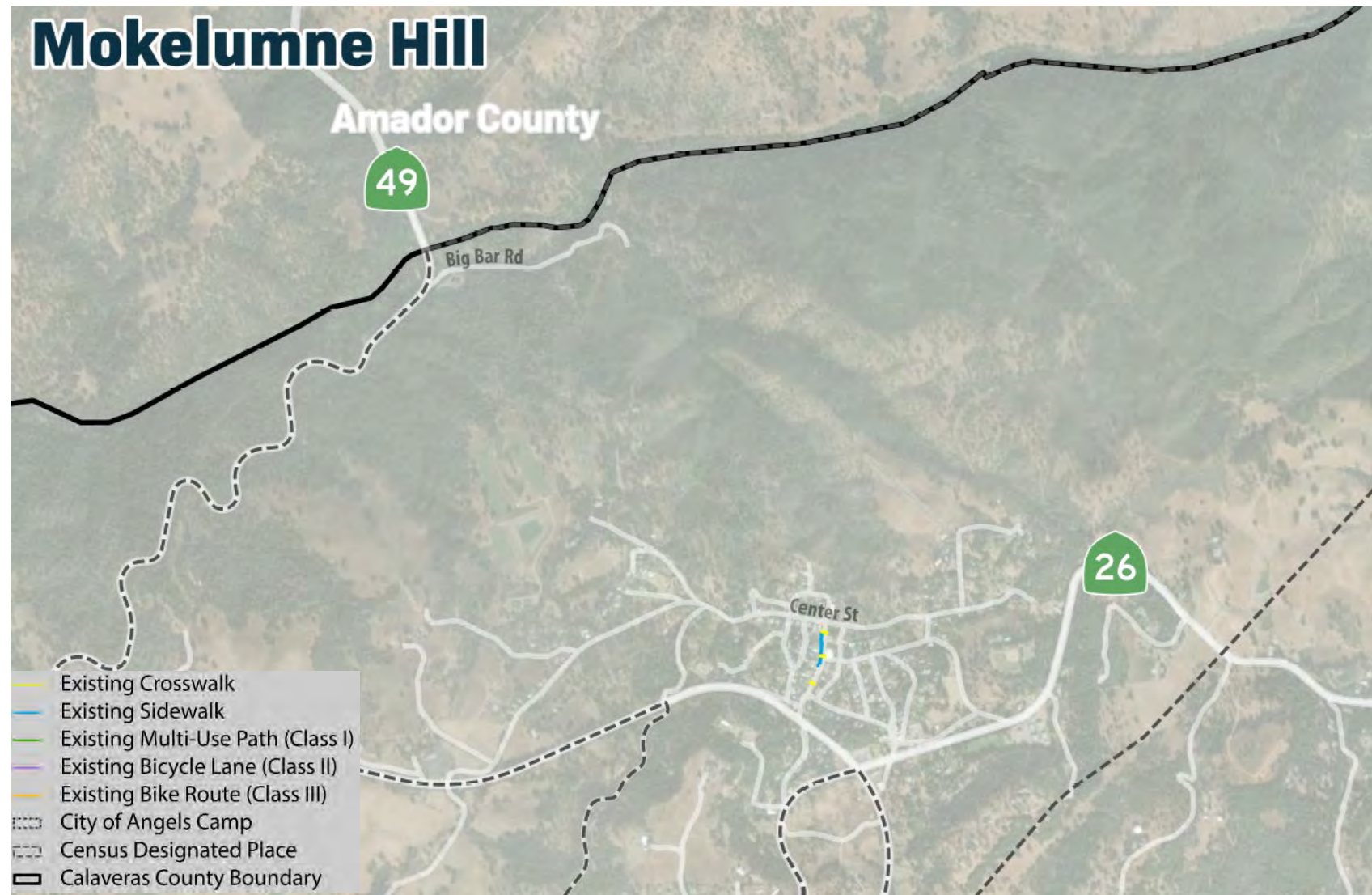
Figure 25

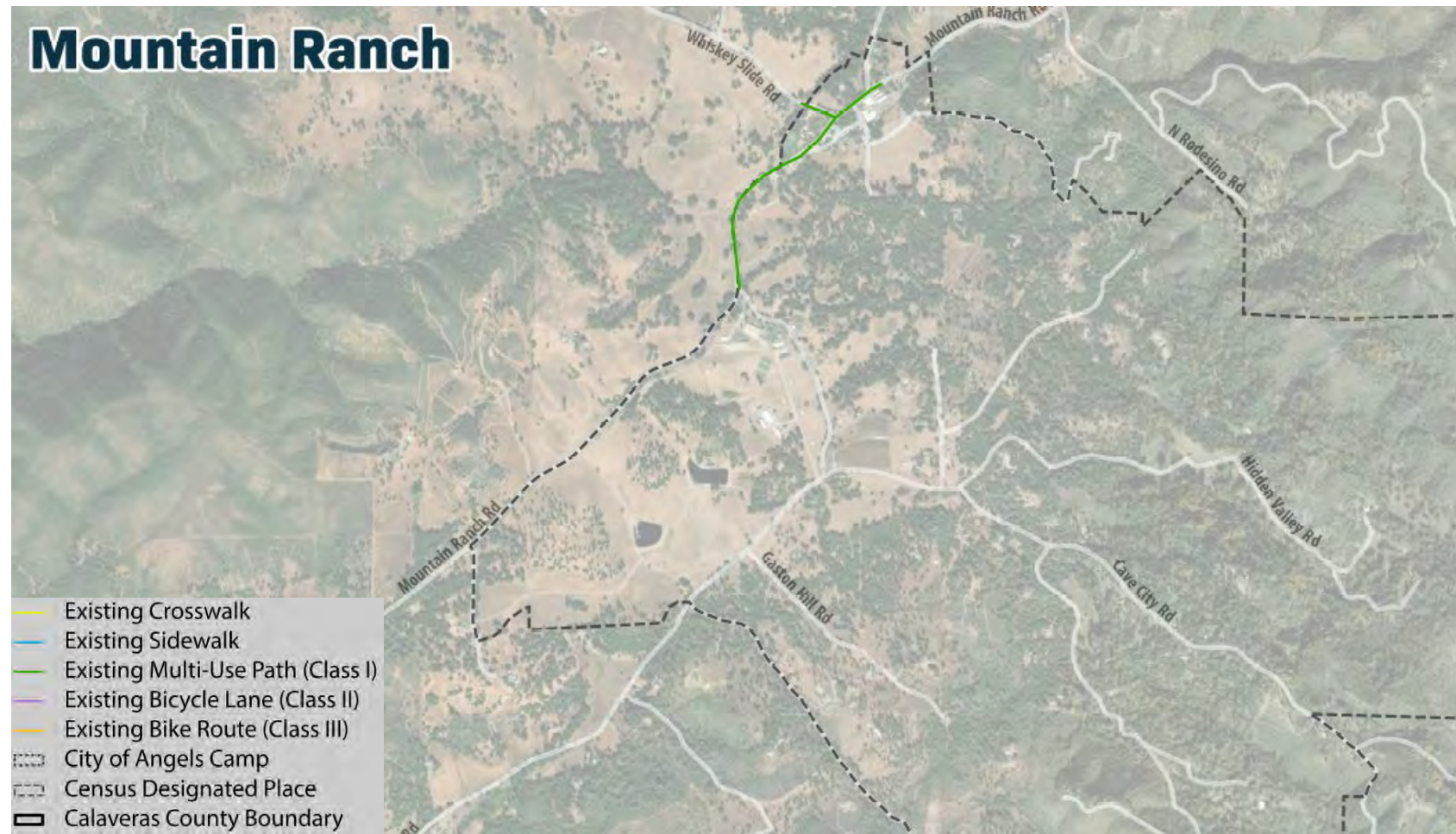


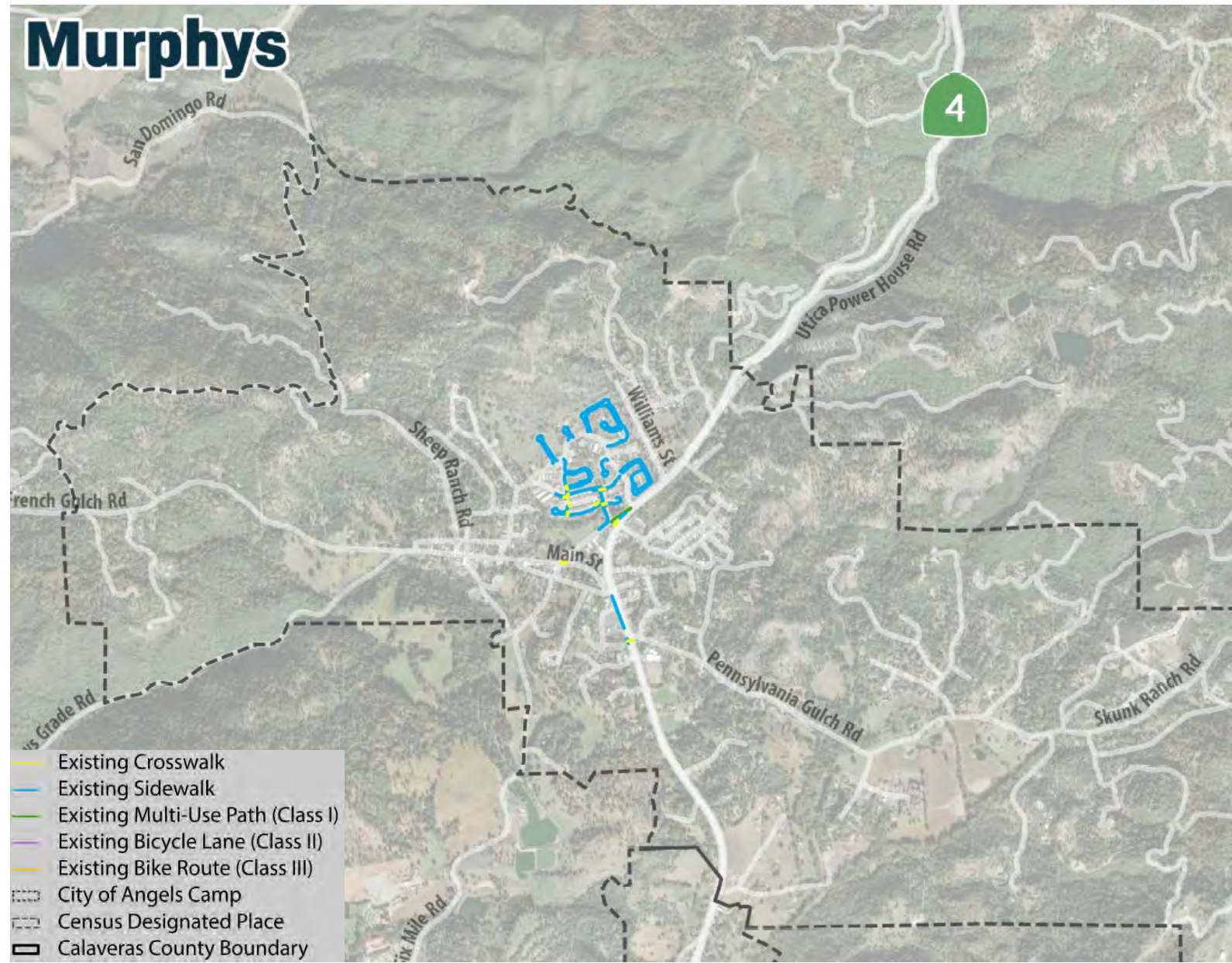
Existing Bicycle, Pedestrian, and Transit Facilities



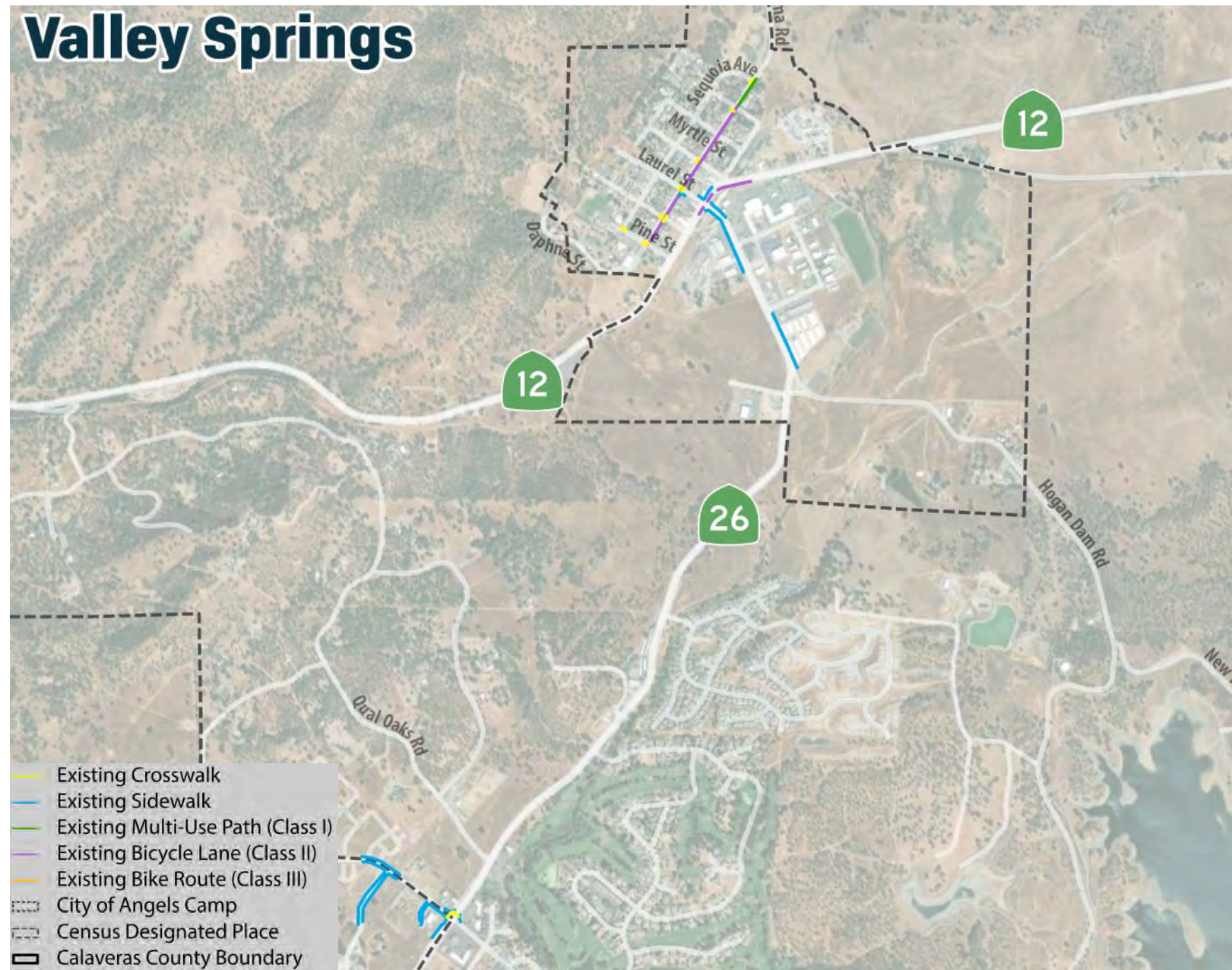


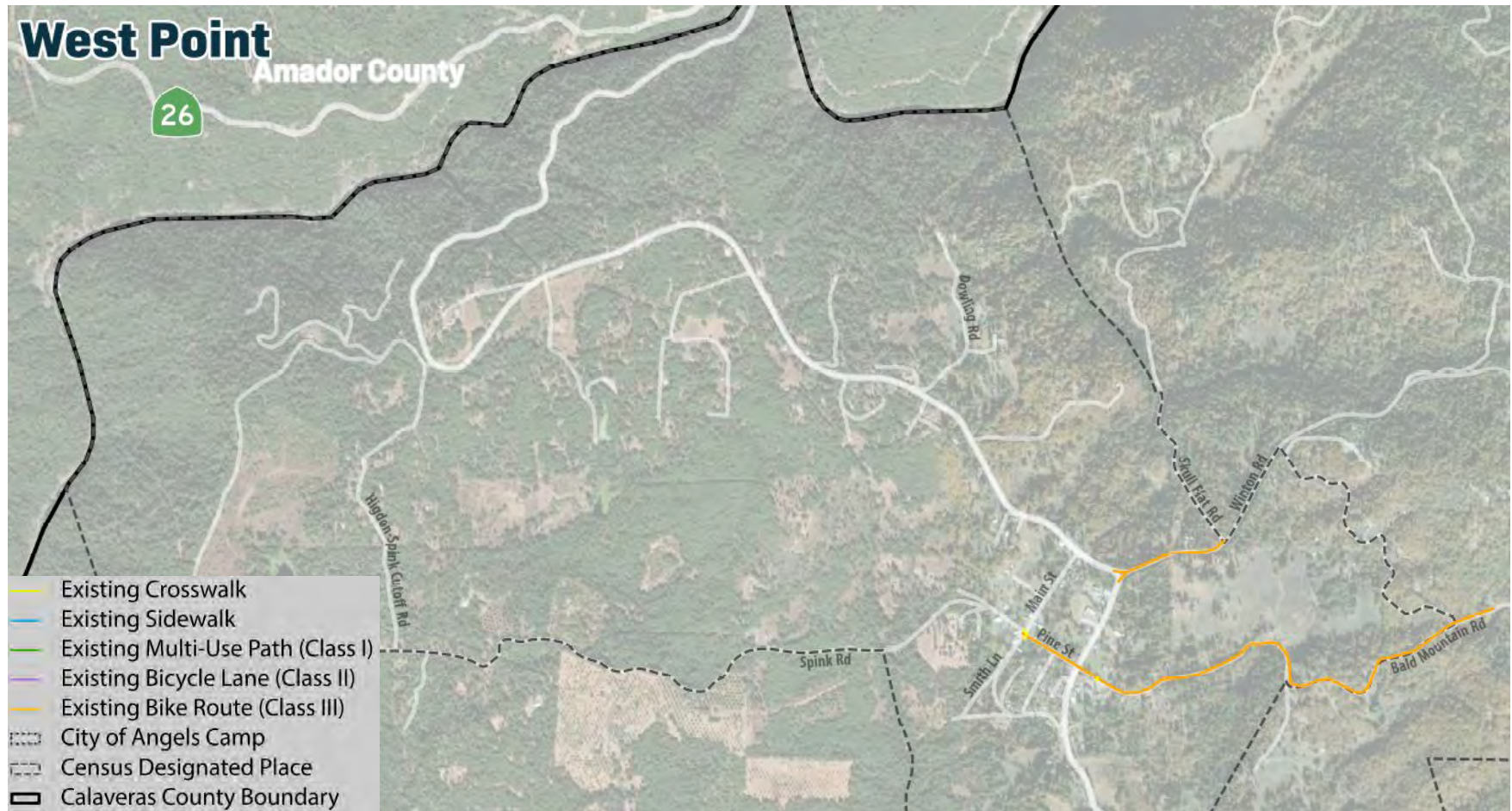












6. Safety and Collision Analysis

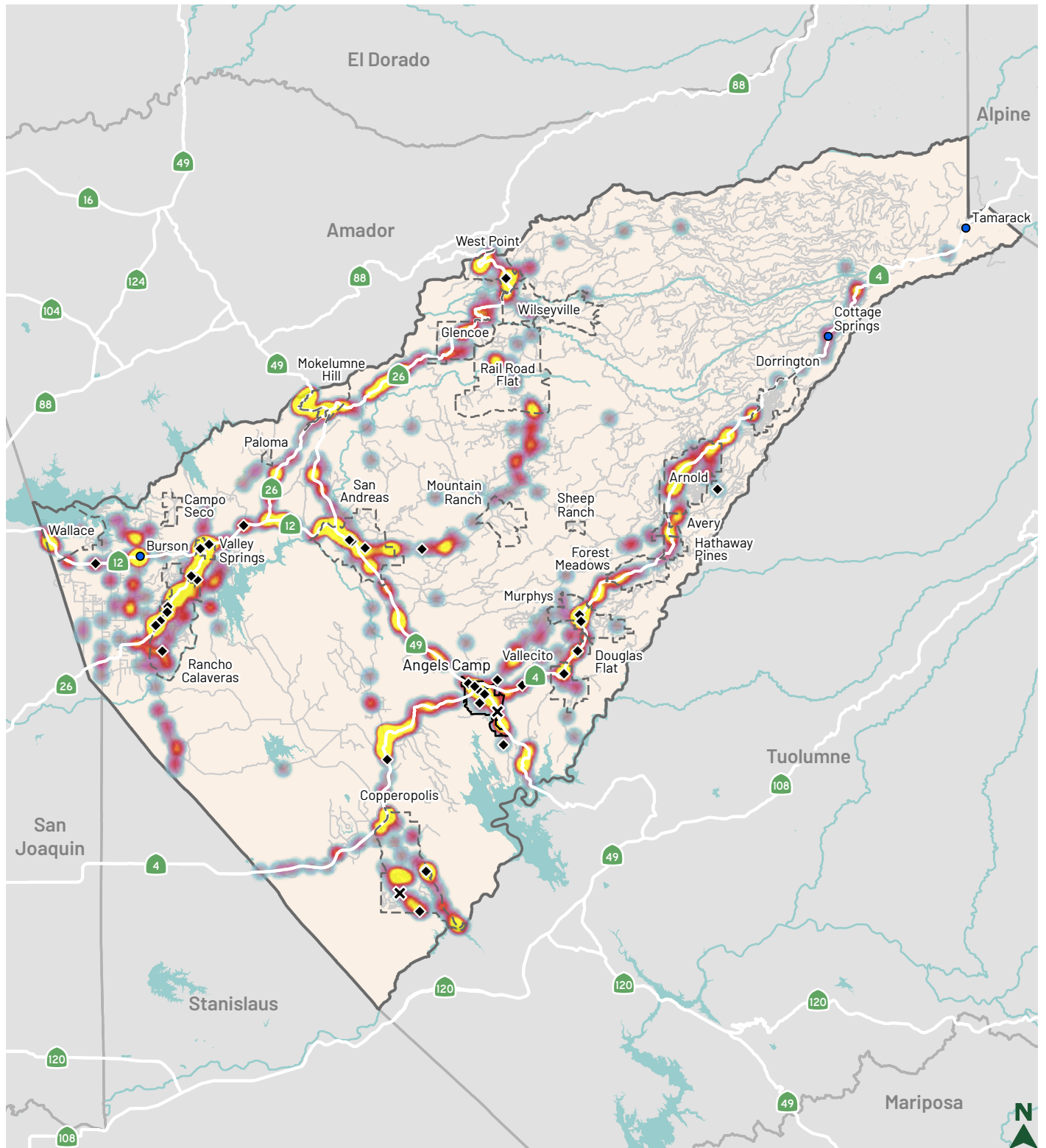
Fehr & Peers evaluated collision patterns in Calaveras County using UC Berkeley's Safe Transportation Research and Education Center (SafeTREC) Transportation Injury Mapping System (TIMS). TIMS data focuses on injury collisions and does not include property damage only collisions. Collision data is geolocated and is valuable for mapping and identifying collision patterns, particularly for fatal and severe injury collisions and collisions involving bicyclists and pedestrians. Collisions reported between 2018 and 2022 (the most recent five-year period available) were used for this analysis.

Collision History

Between 2018 and 2022, there were 1,089 reported collisions in the County, including 232 severe injury collisions and 57 fatal collisions. There were 13 collisions involving bicyclists (resulting in five severe injury collisions and no fatal collisions) and 25 collisions involving pedestrians (resulting in four severe injury and two fatal collisions). Approximately 65 percent of all collisions occurred on state highways or at an intersection with a state highway.

Figures 26 through 32 display a heat map of all reported collisions in the County during the study time period, as well as the location of fatal and non-fatal bicycle and pedestrian involved collisions. For the purposes of this plan, all collision data is displayed in addition to bicycle and pedestrian involved collision data because all collision data can help identify higher risk roadways and intersections that pedestrians and bicyclists may intentionally avoid (i.e. the absence of bicycle and/or pedestrian involved collisions does not indicate an intersection or roadway is safe and in many cases in rural communities, bicycle and pedestrian collision numbers may be low simply because residents are too afraid to walk or bike). The Bike Tourism Plan previously discussed included a level of traffic stress (LTS) analysis (which is a ranking system approximating the level of stress felt when riding a bike on a given stretch of roadway, with 1 being the lowest level of stress and 4 being the highest) on major roadways in Calaveras County and similar to the results of the 2021 Caltrans District 10 Active Transportation Plan, concluded that all major highways were high stress and have an LTS of 4. When these conditions exist, many individuals interested in biking are unwilling to do so because of the high stress environment.

The majority of hot spot locations and bicycle and pedestrian collisions occur on state highways or at intersections with state highways. It is noted that average daily traffic (ADT) volumes for all roadways are not available and collision numbers, rather than collision rates are presented. Therefore, more collisions may be occurring on state highways simply due to higher volumes. Nonetheless, this information is useful for identifying locations where bicycle and pedestrian improvements should be more carefully evaluated during the project identification phase of the ATRTP.



Bicycle and Pedestrian Collisions

- ✕ Fatal
- ◆ Non-Fatal

Collision Density



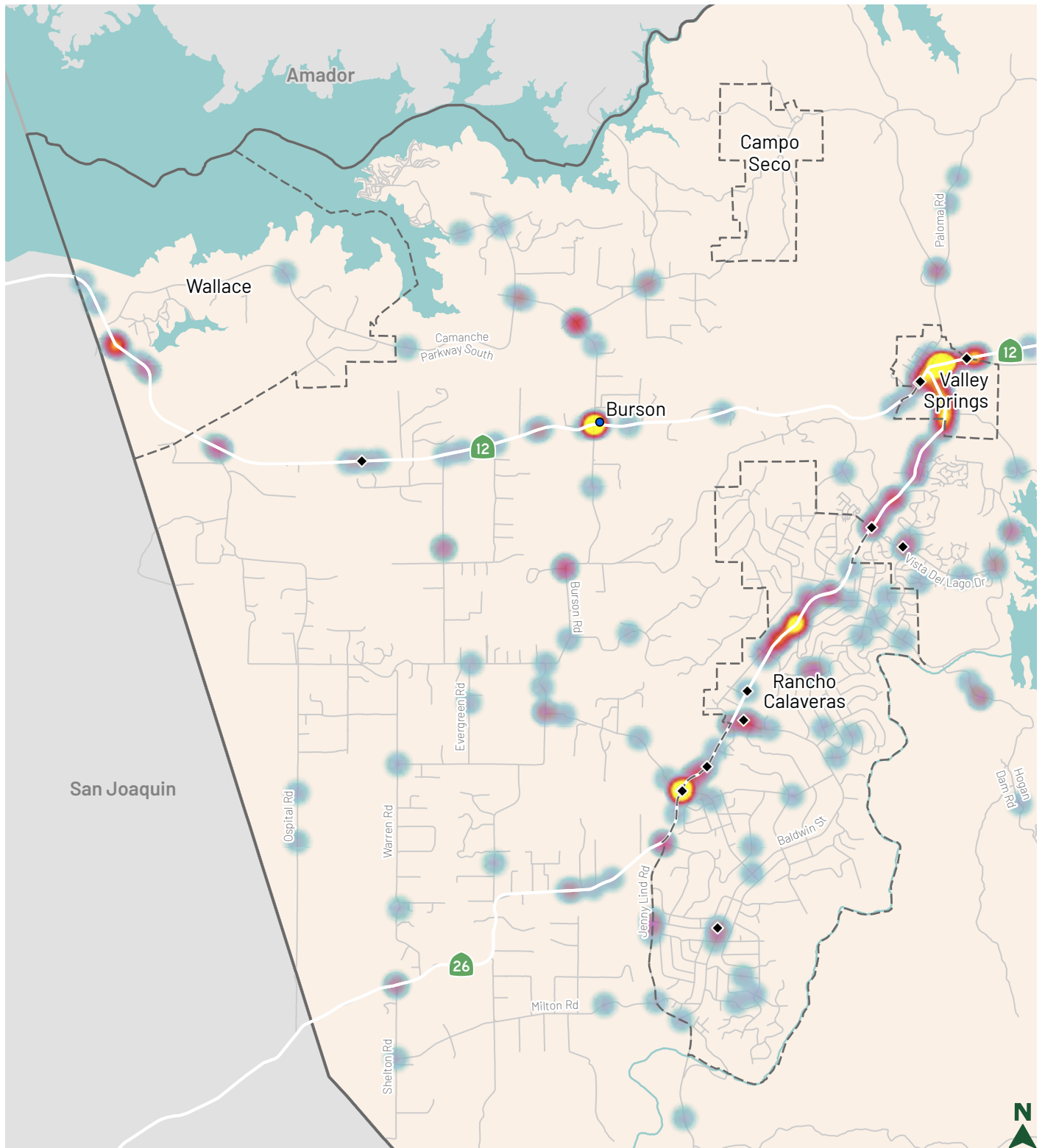
- Community
- ▭ City of Angels Camp
- - - Census Designated Place
- ▭ Calaveras County Boundary
- ▭ Body of Water

Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 26

Collisions 2018 - 2022





Bicycle and Pedestrian Collisions

- ✕ Fatal
- ◆ Non-Fatal

Collision Density

- Sparse
- Dense

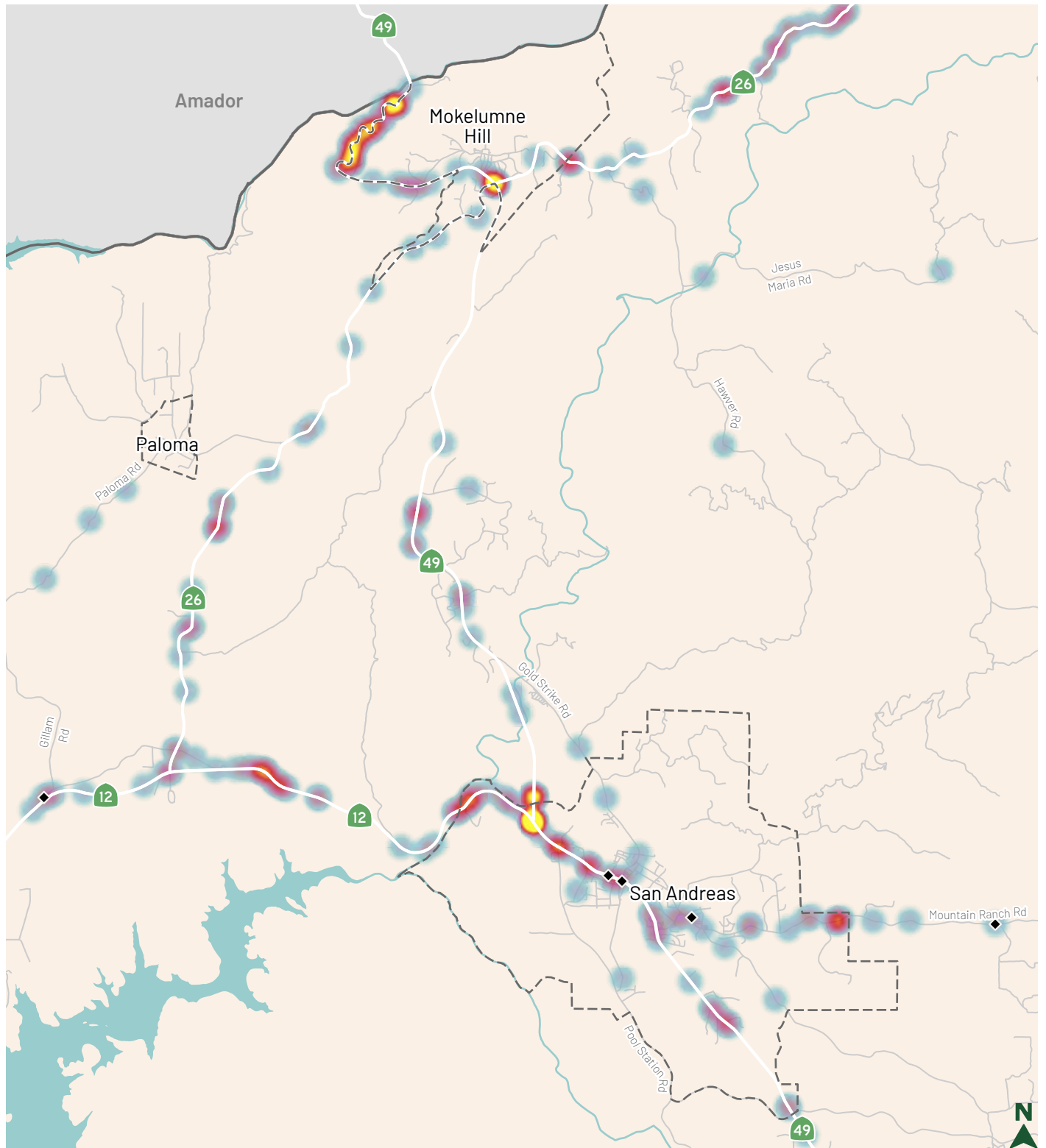
- Community
- Census Designated Place
- ▭ Calaveras County Boundary
- Body of Water

Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 27

Collisions 2018-2022 1 - Western Subregion





Bicycle and Pedestrian Collisions

- ✕ Fatal
- ◆ Non-Fatal

Collision Density

- Sparse
- Dense

Census Designated Place

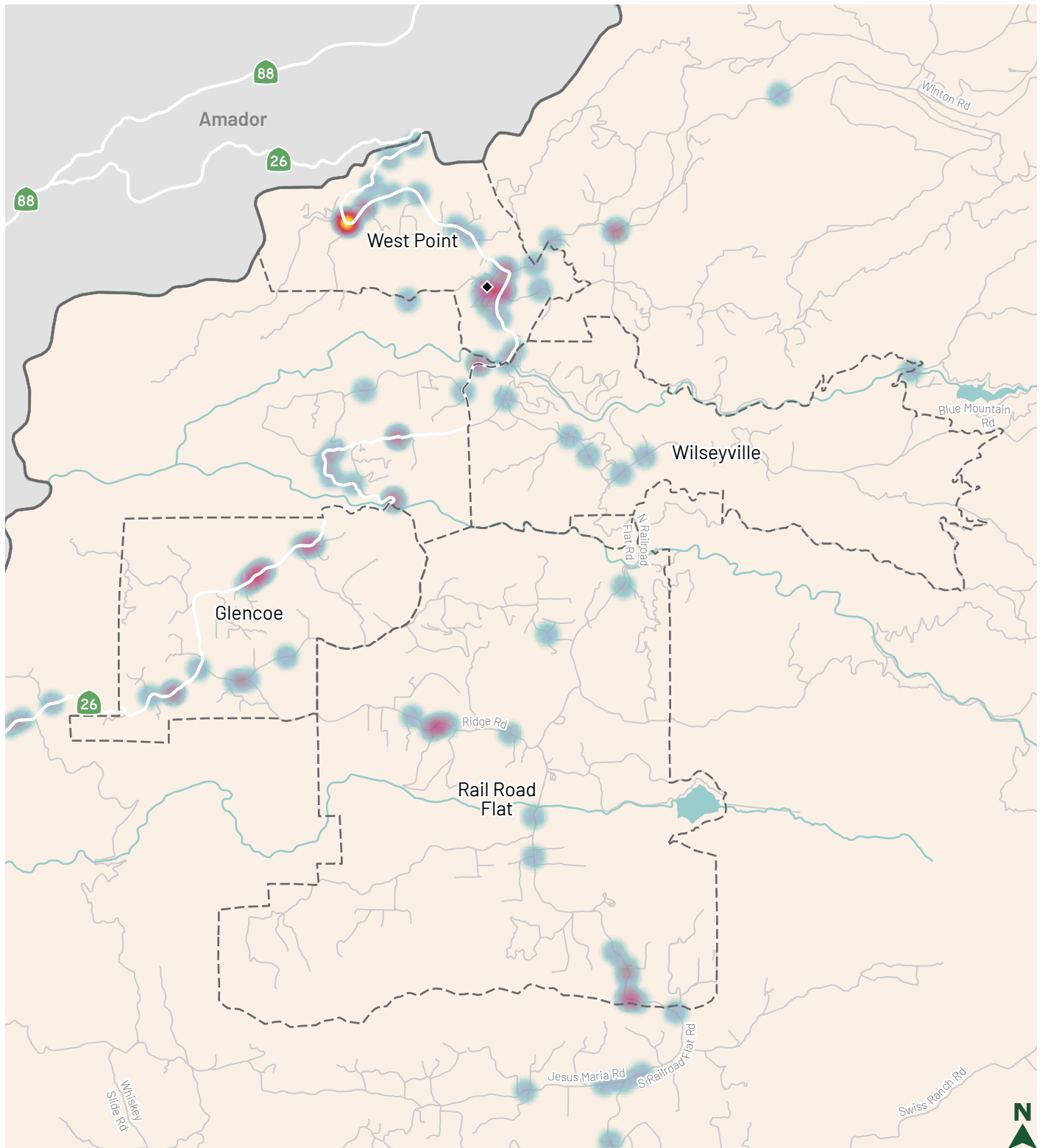
- Calaveras County Boundary
- Body of Water

Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 28

Collisions 2018-2022 2 -North Central Subregion





Bicycle and Pedestrian Collisions

- ✕ Fatal
- ◆ Non-Fatal

Collision Density

- Sparse
- Dense

Census Designated Place

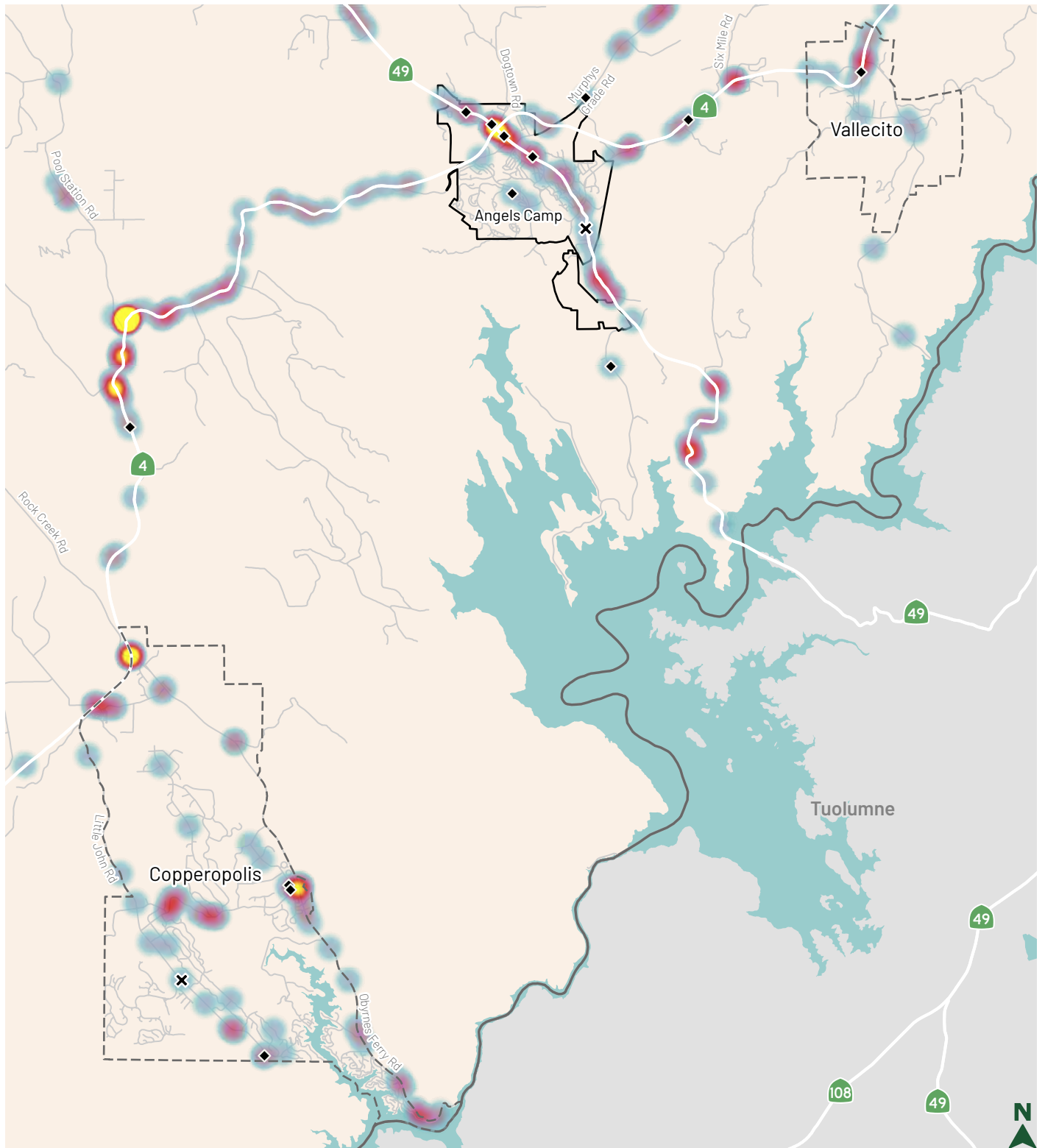
- Calaveras County Boundary
- Body of Water

Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 29

Collisions 2018-2022 3 - Northeast Subregion





Bicycle and Pedestrian Collisions

- ✕ Fatal
- ◆ Non-Fatal

Collision Density

- Sparse
- Dense

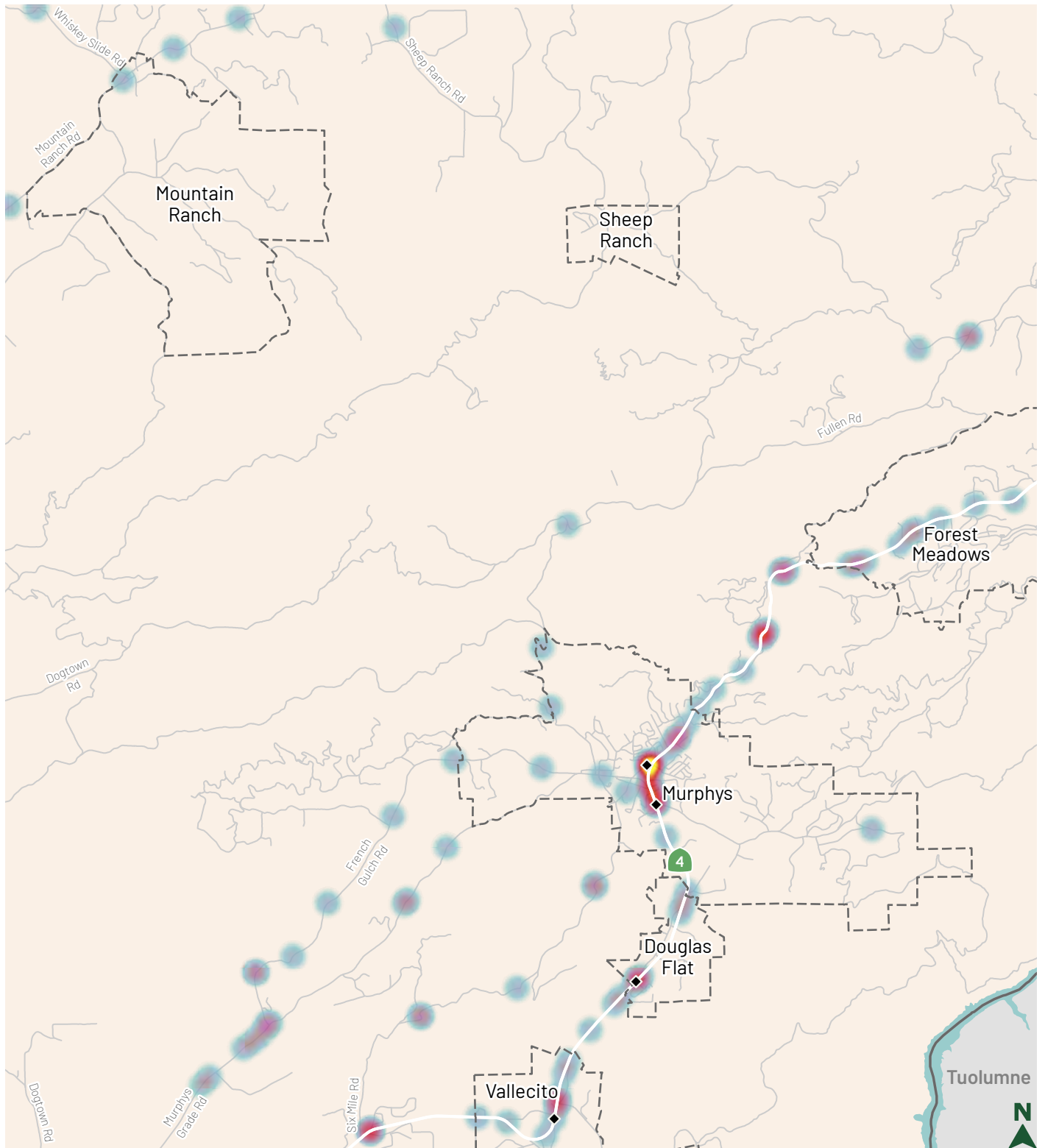
- City of Angels Camp
- Census Designated Place
- Calaveras County Boundary
- Body of Water

Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 30

Collisions 2018-2022 4 - Southwest Subregion





Bicycle and Pedestrian Collisions

- ✕ Fatal
- ◆ Non-Fatal

Collision Density

- Sparse
- Dense

Census Designated Place

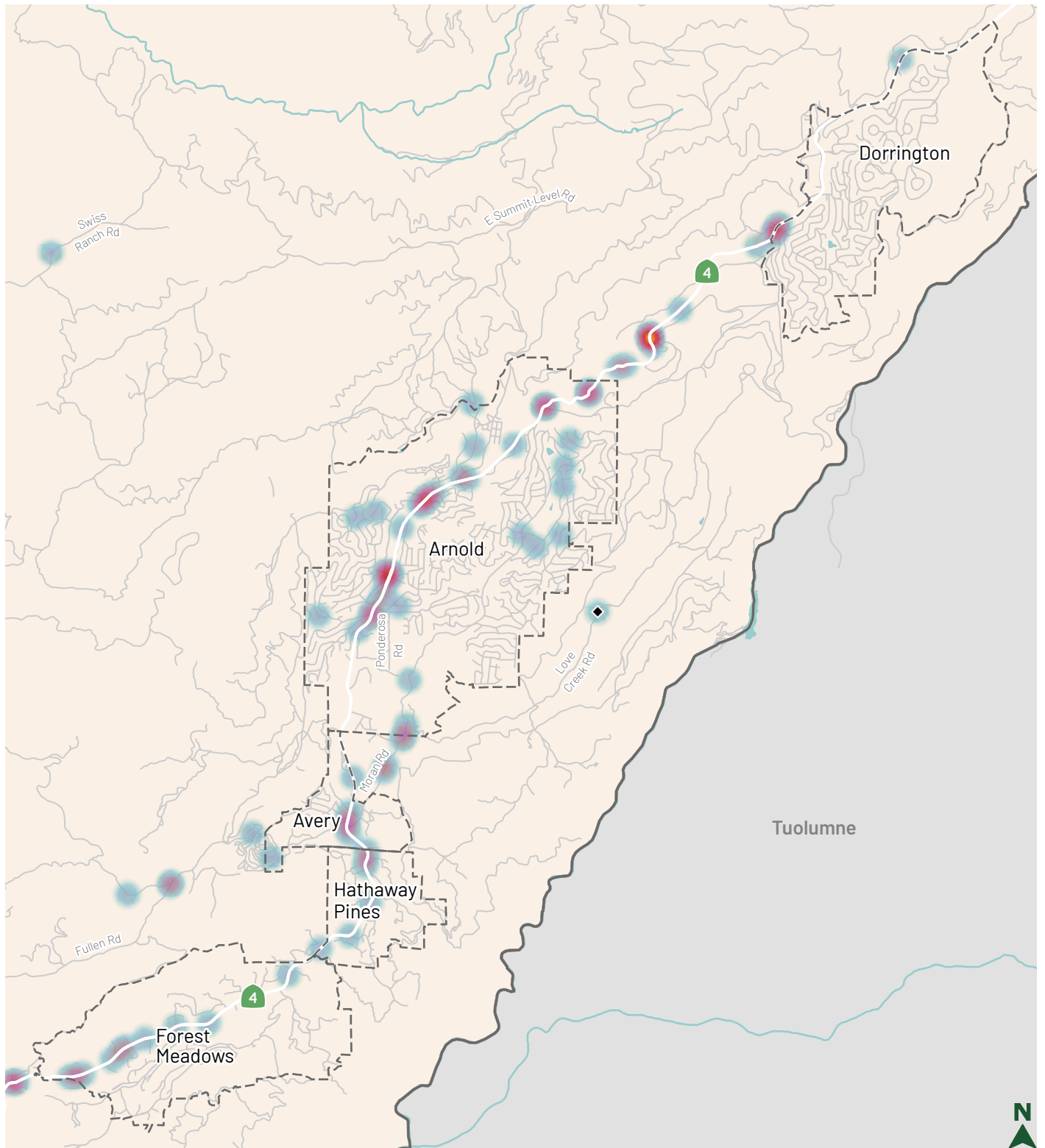
- Calaveras County Boundary
- Body of Water

Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 31

Collisions 2018-2022 5 - Central Subregion





Bicycle and Pedestrian Collisions

- ✕ Fatal
- ◆ Non-Fatal

Collision Density

- Sparse
- Dense

Census Designated Place

- Calaveras County Boundary
- Body of Water

Census Designated Places are derived from the US Census Bureau TIGER/Line data. Community locations derived from Calaveras County GIS Open Data Portal.

Figure 32

Collisions 2018-2022 6 - Eastern Subregion



Table 9 displays the primary collision factors (PCF) for all collisions, separated by all collisions and killed and severe injury (KSI) collisions. **Tables 10 through 15** display the PCF, time of day, lighting, age of victims, and location information for bicycle and pedestrian involved collisions, followed by a short summary of the data below each table.

Table 9: PCF Violation Category: All Collisions – 2018-2022

Category	Total Collisions	%	KSI Collisions	%
Improper Turning	383	35	97	34
Unsafe Speed	202	19	42	15
Driving Under the Influence	199	18	80	28
Vehicle Right of Way Violation	148	14	30	10
Wrong Side of Road	76	7	27	9
Other Than Driver	33	3	6	2
Other ¹	48	4	7	2
Total	1,089	100	289	100

¹Includes collisions attributed to impeding traffic, following too closely, improper passing, pedestrian right of way violation/pedestrian violation, traffic signals and signs, hazardous parking, other hazardous violation, unsafe starting or backing, other improper driving, not stated and unknown.

Represents the two highest categories for collisions.

Source: TIMS, Fehr & Peers, 2024.

As displayed, the most common PCFs for all collisions include improper turning, unsafe speed, driving under the influence and vehicle right of way violation. The percent of KSI collisions by PCF relative to total collisions is generally proportional; however, KSI collisions attributed to driving under the influence are disproportionately high compared to total collisions.

Table 10: PCF Violation Category: Bicycle and Pedestrian Involved Collisions – 2018-2022

Category	Bicycle Involved Collisions	%	Pedestrian Involved Collisions	%
Wrong Side of Road	4	31	-	-
Improper Turning	3	23	3	12
Unsafe Speed	2	15	4	16
Other Improper Driving	2	15	0	0
Vehicle Right of Way Violation	1	8	0	0
Pedestrian Right of Way Violation	-	-	4	16

Table 10: PCF Violation Category: Bicycle and Pedestrian Involved Collisions – 2018-2022

Category	Bicycle Involved Collisions	%	Pedestrian Involved Collisions	%
Pedestrian Violation	-	-	8	32
Unsafe Starting or Backing	-	-	2	8
Other than Driver	-	-	1	4
Traffic Signals and Signs	-	-	1	4
Unknown or Not Stated	1	8	2	8
Total	13	100	25	100

Represents the two highest categories for collisions.

Source: TIMS, Fehr & Peers, 2024.

The most common PCFs for bicycle involved collisions include wrong side of road and improper turning. The most common PCFs for pedestrian involved collisions include pedestrian violation, pedestrian right of way violation, and unsafe speed. Notably, pedestrian violations account for almost 50 percent (12 collisions) of all pedestrian involved collisions. Of these 12 collisions, nine involved pedestrians crossing (two in a crosswalk at an intersection, two in a midblock crossing, and five crossing outside of a crosswalk) and three involved pedestrians walking in the road (including the shoulder). However, the classification of pedestrian violation is not truly representative of the cause of the collision as it may be viewed as the pedestrian being at fault. Upon further review of these specific collisions, the PCF violation detail indicates that four of these 12 collisions were due to the driver not yielding at a crosswalk, four indicate the pedestrian crossed outside of a crosswalk or legal crossing but there is no crossing (marked or unmarked) near where the collision occurred, and one has no additional details regarding the cause of the collision so it is unclear what the pedestrian violation was.

While this indicates there may be opportunity for increasing pedestrian visibility at crosswalks (both midblock and at intersections) and/or installing crosswalks or sidewalks in locations they do not currently exist, the location of these collisions is inconsistent and no single intersection stands out as having a high frequency of collisions based on this data set. However, as noted, in some cases bicyclists and pedestrians intentionally avoid certain roadways and/or intersections due to safety concerns. Potential locations this may be occurring at will be evaluated during the next phase of the ATRTP.

Table 11: Time of Day and Lighting – 2018-2022

Time	Bike Collisions	%	Pedestrian Collisions	%
Overnight (7 PM-6 AM)	1	8	11	44
Morning Peak (6 AM-10 AM)	4	31	2	8

Table 11: Time of Day and Lighting – 2018-2022

Time	Bike Collisions	%	Pedestrian Collisions	%
Midday (10 AM-3 PM)	7	54	4	16
Evening Peak (3 PM-7 PM)	1	8	8	32

Source: TIMS, Fehr & Peers, 2024.

Table 12: Lighting – 2018-2022

Age	Bike Collisions	%	Pedestrian Collisions	%
Dark, No Streetlights	1	8	10	40
Dark, Streetlights	-	-	3	12
Daylight	12	92	12	48

Source: TIMS, Fehr & Peers, 2024.

Tables 11 and 12 indicate lighting is not likely a key contributor to bicycle involved collisions; however, it could be a key contributor to pedestrian involved collisions. The majority of pedestrian involved collisions occurred when it was dark and approximately 40 percent occurred in locations with no streetlights. These collisions occurred both as pedestrians were crossing the street and walking on the road.

Table 13: Age – 2018-2022

Age	Bike Collisions	%	Pedestrian Collisions	%
Under 15	1	8	5	19
15-64	9	69	15	58
65+	3	23	6	23

Source: TIMS, Fehr & Peers, 2024.

Table 13 indicates approximately 40 percent of victims of bicycle/pedestrian involved collisions are under 15 or 65 and over. These ages are often considered more vulnerable populations and can be disadvantaged from a transportation perspective if they are unable to drive and/or do not have access to a vehicle.

Table 14: Location – 2018-2022

Location	Bike Collisions	%	Pedestrian Collisions	%
Roadway	11	85	15	60
Intersection	2	15	10	40

Source: TIMS, Fehr & Peers, 2024.

Table 15: Location of Pedestrian Involved Collisions – 2018-2022

Location	Pedestrian Collisions
Crossing in Crosswalk at Intersection	3
Crossing in Crosswalk Not at Intersection	2
Crossing Not in Crosswalk	6
In Road, Including Shoulder	13
Not in Road	1

Source: TIMS, Fehr & Peers, 2024.

Tables 14 and 15 indicate the majority of bicycle and pedestrian involved collisions occurred in the roadway; however many pedestrian involved collisions did occur at intersections. Pedestrians were walking on the road/shoulder in over half of the collisions (note, sidewalks are not present in almost all locations these collisions occurred) and crossing outside of a crosswalk (often because no crosswalk was present) in almost 25 percent of the collisions.

Conclusion

As previously noted, between 2018 and 2022, there were 1,089 reported collisions in the County, including 232 severe injury collisions and 57 fatal collisions. There were 13 collisions involving bicyclists (resulting in five severe injury collisions and no fatal collisions) and 25 collisions involving pedestrians (resulting in four severe injury and two fatal collisions). Approximately 65 percent of all collisions and the majority of hot spot locations and bicycle and pedestrian collisions occur on state highways or at intersections with state highways.

The most common PCFs for all collisions include improper turning, unsafe speed, driving under the influence and vehicle right of way violation. The most common PCFs for bicycle involved collisions include wrong side of road and improper turning, The most common PCFs for pedestrian involved collisions include pedestrian violation, pedestrian right of way violation, and unsafe speed. However, as discussed in greater detail above, the classification of pedestrian violation is not truly representative of the cause of the collision in many cases.

During the next phase of this analysis, collision data will be reviewed in conjunction with results of the online survey responses to identify if there are additional locations where near miss collisions occur and/or if there are specific locations community members intentionally avoid walking and/or biking due to safety concerns.