

Western Placer County
Comprehensive Operational Analysis & Short-Range Transit Plan
**Technical Memorandum 3:
Ridership and Needs Analysis**



Prepared for the
**Placer County Transportation
Planning Agency**

January 19, 2024



*Western Placer County
Comprehensive Operational Analysis
&
Short-Range Transit Plan
Technical Memorandum Three –
Ridership and Needs Analysis*

Prepared for the

Placer County Transportation Planning Agency
299 Nevada Street,
Auburn, CA 95603

Prepared by

LSC Transportation Consultants, Inc.
2690 Lake Forest Road, Ste. C
Tahoe City, CA 96145
530-583-4053

January 19, 2024

This page intentionally blank

TABLE OF CONTENTS

<i>CHAPTER</i>	<i>PAGE</i>
Chapter 1: Introduction	1
Chapter 2: Population, Employment, and Land Use	3
Population and Employment Levels and Distribution	3
Land Use Patterns	5
Transit Service Review	10
Chapter 3: Transit Needs Index.....	15
Transit Service Review	20
Chapter 4: Major Activity Centers	21
Transit Service Review	22
Chapter 5: Origins and Destinations	27
Transit Service Review	29
Chapter 6: Transit Service Performance Overview	31
Chapter 7: Transit Needs Survey Results.....	33
Online Survey	33
Onboard Survey.....	33
Community Events.....	34
Equity Focus Groups	34
 <i>APPENDIX 1: DENSITY RESEARCH</i>	
<i>APPENDIX 2: MAPS OF ACTIVITY CENTERS</i>	
<i>APPENDIX 3: RIDERSHIP PERFORMANCE</i>	

LIST OF FIGURES

<i>FIGURES</i>	<i>PAGE</i>
Figure 1: Western Placer County Population Density	4
Figure 2: 2027 Western Placer County Employment Density	6
Figure 3: 2016 Auburn Area High Transit Demand Land Uses	7
Figure 4: 2016 Colfax/Alta High Transit Demand Land Uses	8
Figure 5: 2016 Foresthill High Transit Demand Land Uses.....	8
Figure 6: 2016 Lincoln Area High Transit Demand Land Uses.....	9
Figure 7: 2016 Rocklin/Loomis High Transit Demand Land Uses	11
Figure 8: 2016 Granite Bay High Transit Demand Land Uses.....	12
Figure 9: Intersection Density in Western Placer County	13
Figure 10: Western Placer County Transit Needs Index.....	16

Figure 11: Auburn Area Transit Needs Index..... 17
Figure 12: Lincoln Area Transit Needs Index by Block Group 18
Figure 13: Rocklin/Loomis Transit Needs Index 19
Figure 14: Auburn Area Development Projects..... 23
Figure 15: Lincoln Area Development Projects 24
Figure 16: Rocklin/Loomis Area Development Projects 25
Figure 17: Regional Analysis Districts 28

Technical Memorandum One: Existing Conditions analyzed factors influencing transit demand in western Placer County. These include population and demographic information, existing and planned developments, origin-destination travel patterns, as well as Placer County Transit (PCT) and Auburn Transit service and performance. *Technical Memorandum Two: Survey and Boarding Data Overview* summarized the results of online and onboard surveys that included questions about individuals' travel patterns and transit needs.

This memo, *Technical Memorandum Three: Ridership and Needs Analysis*, builds on the prior memos by considering existing and near-term transit needs in western Placer County for PCT and Auburn Transit.¹ It provides a basis for the development of service scenarios that can be evaluated in the context of those needs and ridership demand. This memo includes seven chapters. The next four chapters present information on factors that contribute to increased transit ridership:

- Chapter 2 addresses transit ridership potential by looking at population characteristics and land use patterns.
- Chapter 3 identifies transit needs based on socioeconomic factors for individuals most likely to rely on transit for getting around within and outside the county.
- Chapter 4 notes key destinations that attract a large volume of trips and that could be served by transit.
- Chapter 5 summarizes origin/destination patterns that have large person trip volumes that could potentially yield higher levels of transit ridership.

Chapter 6 evaluates the ridership performance of the present transit network concerning the ridership demand and needs identified in Chapters 2-5. Finally, Chapter 7 summarizes transit service needs expressed by participants in recent online and onboard surveys, events, and focus groups.

Decisions on how to best allocate limited operations funding are an ongoing challenge for transit agencies. Therefore, the Placer County Transportation Planning Agency (PCTPA), PCT, and Auburn Transit must identify areas with the highest ridership potential. Several factors contribute to ridership demand, thus consideration of these factors in combination best identifies opportunities for increasing ridership and serving the mobility needs of western Placer County residents.

¹ Roseville Transit is conducting a parallel COA that is coordinated with this COA for PCT and Auburn Transit. Results from both COAs will be included in a unified Short-Range Transit Plan for all three providers.

This page intentionally left blank.

POPULATION, EMPLOYMENT, AND LAND USE

Building and sustaining a robust transit network that is well-used and integrated into local communities is key to achieving a sustainable future for western Placer County and the region. A transit system can increase ridership and cost-effectiveness if it serves areas with higher population and employment densities as well as centers or corridors that have a mix of land uses and good pedestrian connectivity.

POPULATION AND EMPLOYMENT LEVELS AND DISTRIBUTION

Population Growth

Placer County's population growth rate has been faster than the rate in the state as a whole. Between 2010 and 2021, Placer County's population grew almost two percent annually, while California saw less than one percent average annual growth during the same period. This growth has occurred through the development of undeveloped land as well as infilling in previously developed areas. Both types of growth increase the demand and need for transit services, including expanded coverage, more frequent service, and a longer span of service. Within the county, Lincoln, Rocklin, and Roseville's growth outpaced the county's overall growth rate between 2015 and 2021.

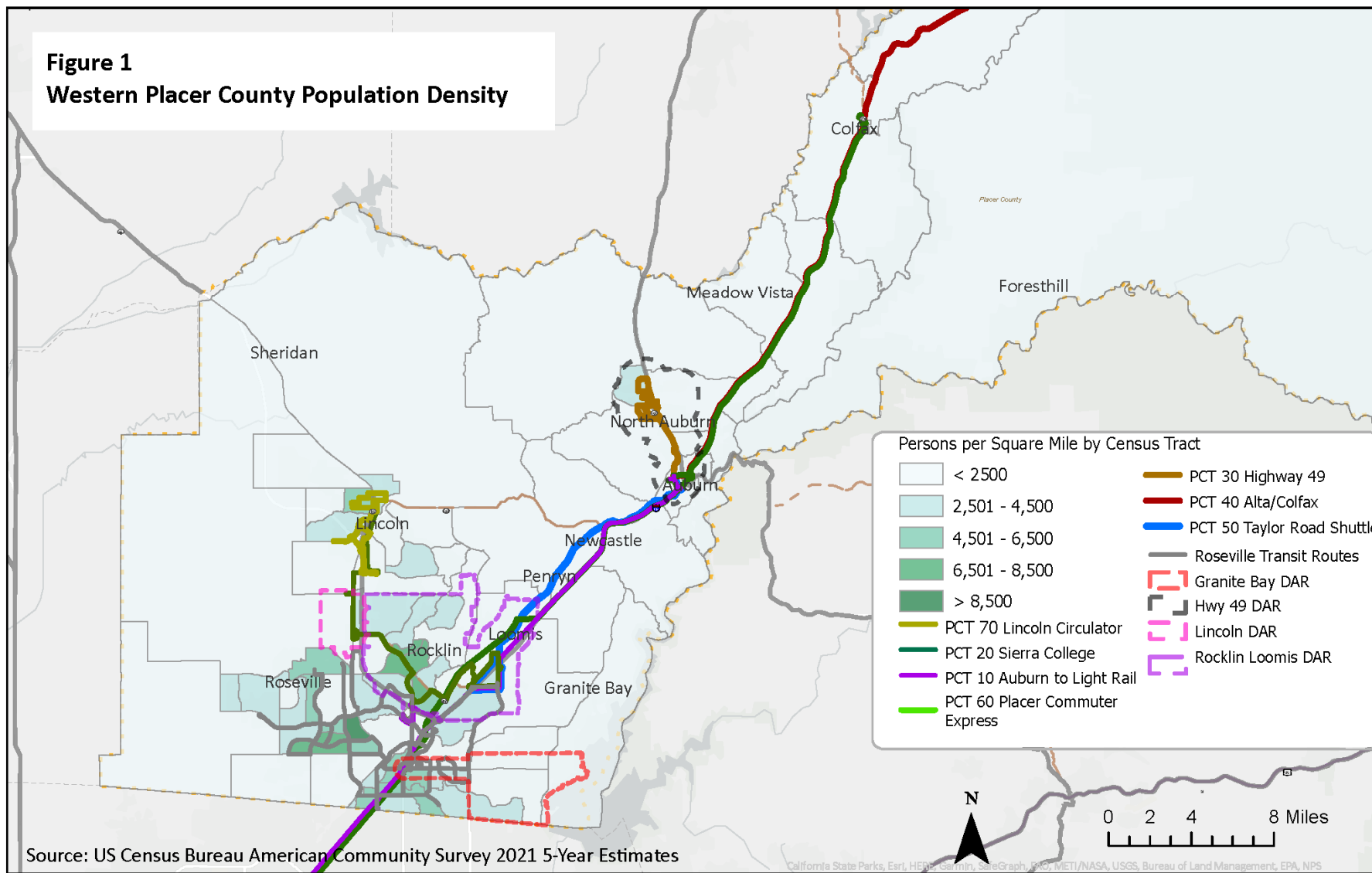
Population is projected to continue to grow 1.3% annually over the next 15 years which is slightly less than the rate experienced between 2015 and 2021 (1.5% annually), but still faster than the state as a whole.

Population Density

Placer County's population totaled 400,330 in 2021, per the American Community Survey 5-Year Estimates. Six communities in western Placer County (Auburn, Colfax, Lincoln, Loomis, Roseville, and Rocklin) account for 72% of the county population. As Figure 1 shows, census tracts with the highest population density are in Roseville and West Rocklin. Population density is a key determinant of transit ridership: the higher the density, the more likely people are to use transit or other active transportation modes such as walking or biking. One key challenge facing transit usage in the county is how to serve communities with dispersed populations. Buses traveling long distances to serve lower-density areas do not attract high levels of ridership and, therefore, are not very cost-effective. Nevertheless, residents in these areas may depend on transit for transportation to essential needs such as nutrition, health, or work. Literature reviews and pre-pandemic service standards of transit agencies suggest that population densities of at least 4,500 – 6,500 people per square mile are needed for cost-effective hourly fixed route bus service. Densities above 6,500 people per square mile are needed to support 30-minute service. Appendix 1 includes a summary of the studies that were used to estimate these thresholds.

While providing transit service to these areas with higher densities results in more cost-effective service, transit agencies in western Placer County must continue to serve residents in lower-density areas because residents in those areas might depend on transit for basic mobility needs. Transit agencies need to balance service allocation between areas with higher ridership demand and areas that have lower ridership demand but that have a high proportion of transit residents who rely on transit.

**Figure 1
Western Placer County Population Density**



Employment Density

Another element that factors into transit ridership demand is employment density. High concentrations of jobs located in employment centers increase potential ridership and should be considered in service planning. Some areas with high employment, such as shopping malls, medical centers, and colleges attract especially high numbers of trips and further enhance the ridership potential for these locations.

Data for projected 2027 employment density was collected from the Sacramento Area Council of Governments (SACOG) Sacramento Activity-Based Travel Simulation Model (SACSIM). As shown in Figure 2, areas with high employment densities include downtown Auburn, downtown Lincoln, and southern Roseville. There are also pockets of high job density along State Route (SR) 65 north of Roseville and on Luther Road in North Auburn.

LAND USE PATTERNS

High Transit Demand Land Uses

Data from the SACSIM was used to identify land uses that generate higher transit demand and ridership. These land uses include high-density and mixed-use developments (e.g., apartments or multifamily housing), activity centers (e.g., schools and hospitals), and uses that serve residents who are more reliant on transit (e.g., senior living facilities and mobile home parks). Fixed route service can effectively serve centers or corridors with these land uses. Still, it is harder to productively serve individual or isolated locations with fixed routes - these locations could be more suitable for on-demand services.

Highlights of land use with high ridership potential are summarized and mapped on the following pages for several communities (Figure 3-Figure 8).

Auburn and North Auburn (Figure 3): Most of these parcels are located along SR 49 and at the intersection of Interstate 80 (I-80) and Foresthill Road. PCT Route 30-Highway 49 serves the SR 49 corridor with hourly weekday and Saturday service. Route 40-Alta/Colfax provides a few rush-hour trips along I-80 but does not stop at the Foresthill Road interchange. Other locations include schools located within neighborhoods and two mobile home parks located farther east along the I-80 corridor. These are served by Auburn OnDemand on weekdays and Saturdays.

Colfax/Alta (Figure 4): high transit demand land uses are concentrated near downtown Colfax and south along the I-80 corridor. In Alta, these uses are limited to two parcels close to Lake Alta and I-80. The majority of locations are served by PCT Route 40-Alta/Colfax and PCT 60-Placer Commuter Express.

Foresthill (Figure 5): land uses with high transit demand are stretched along Foresthill Road, from downtown Foresthill westward. Foresthill is not currently served by PCT or Auburn Transit services.

Lincoln (Figure 6): high concentrations of parcels are in downtown Lincoln and are served by PCT Routes 20-Lincoln / Sierra College and 70-Lincoln Circulator, with some schools and civic/institution uses outside downtown that are served by Lincoln Dial-a-Ride).

Figure 2
2027 Western Placer County Employment Density

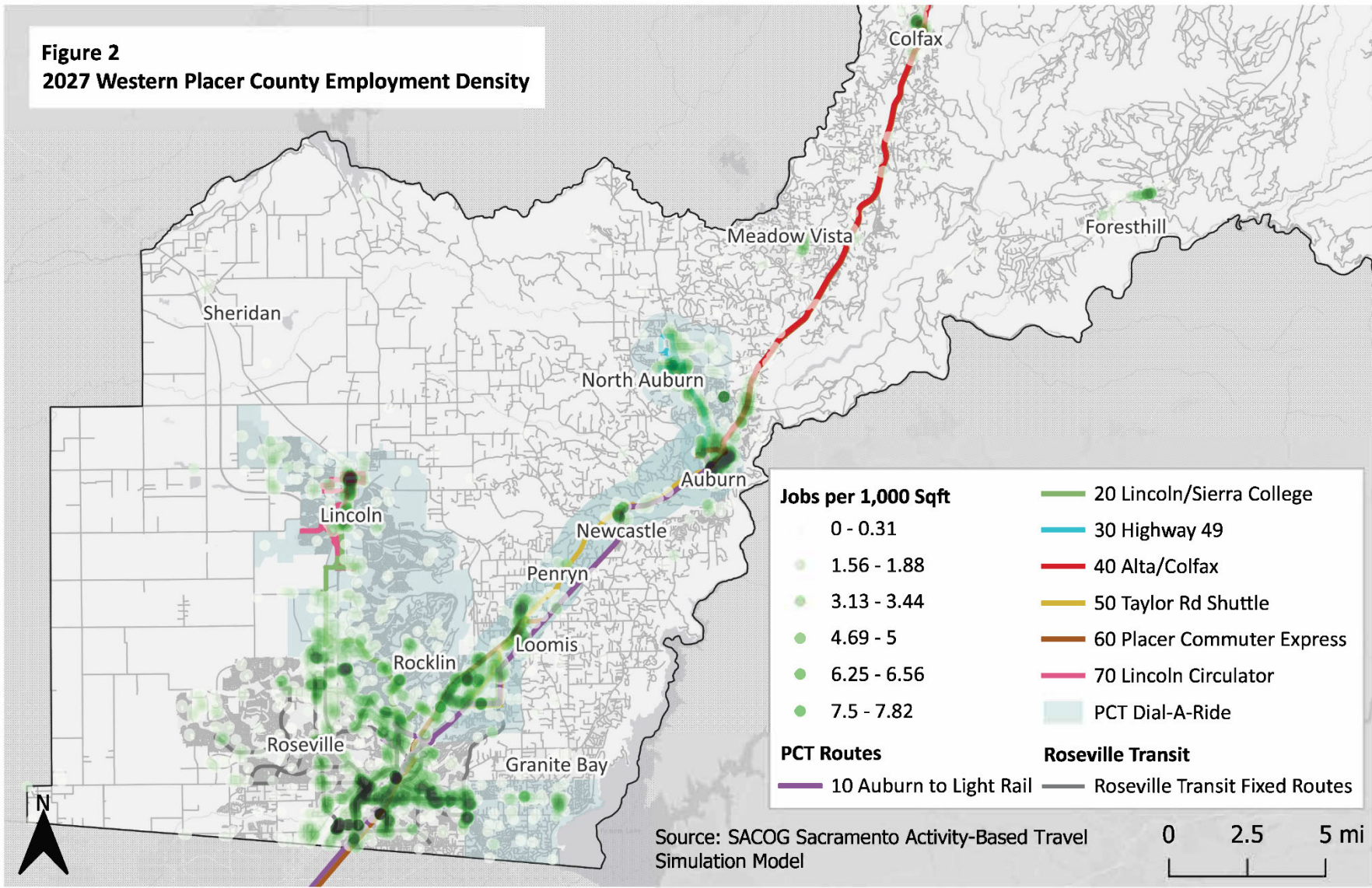
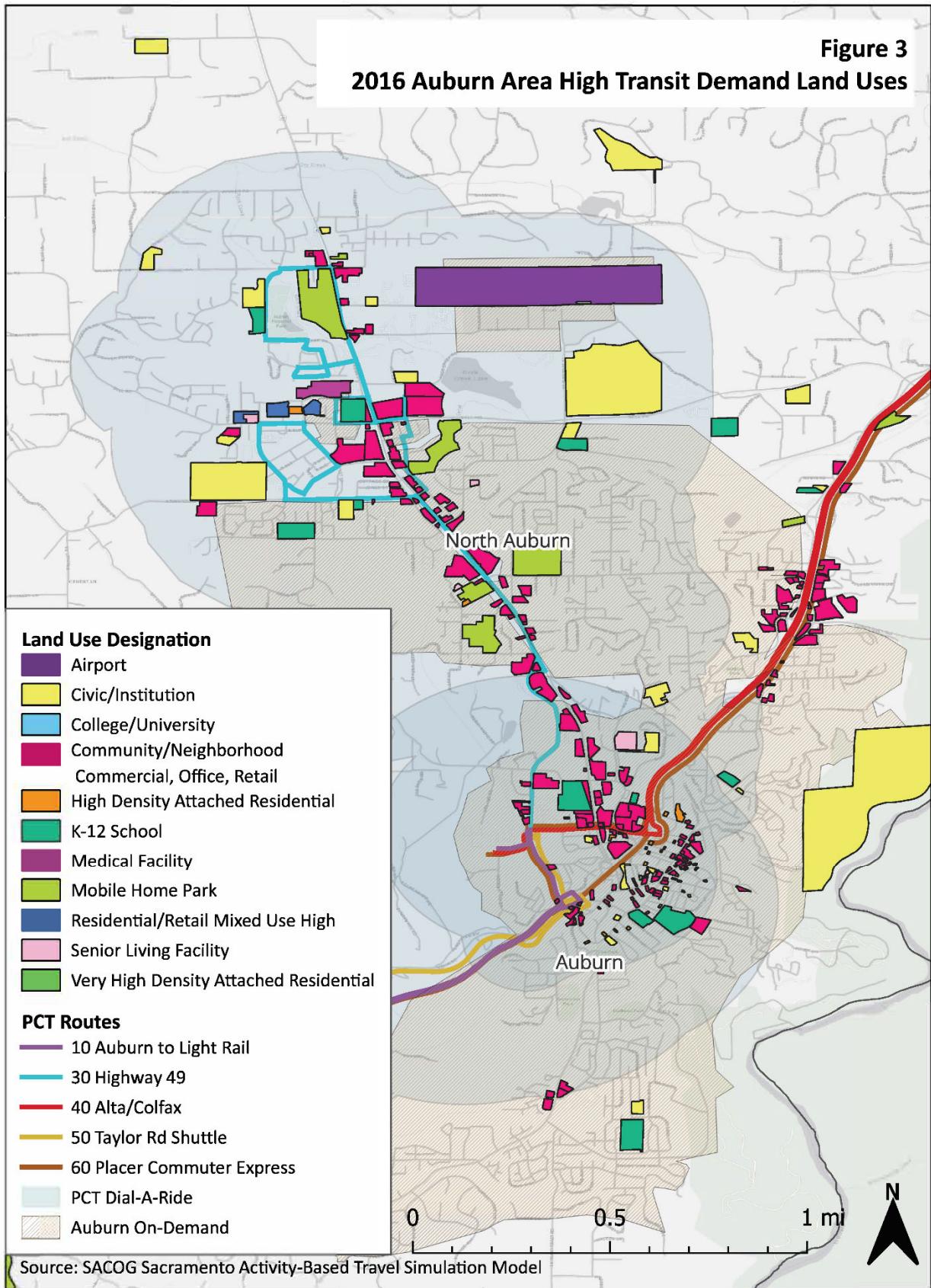


Figure 3
2016 Auburn Area High Transit Demand Land Uses



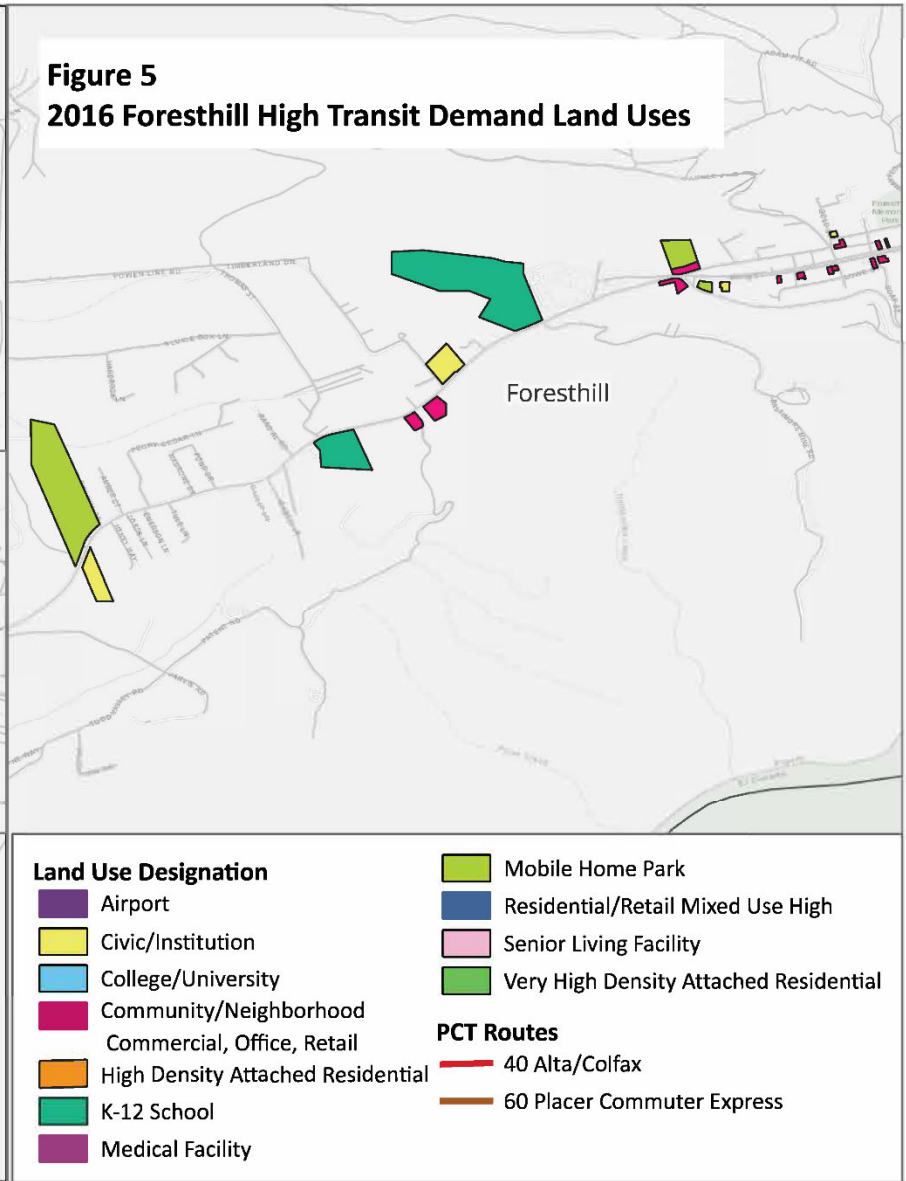
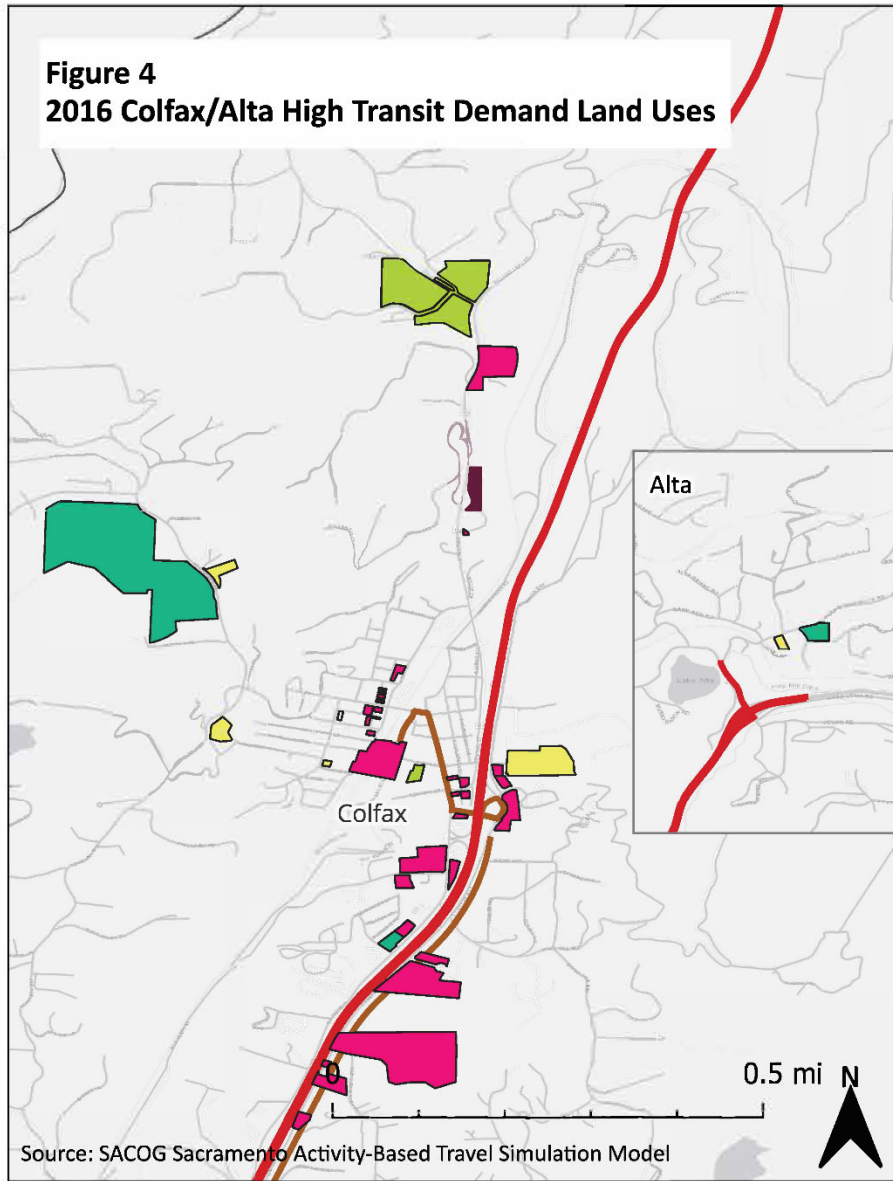
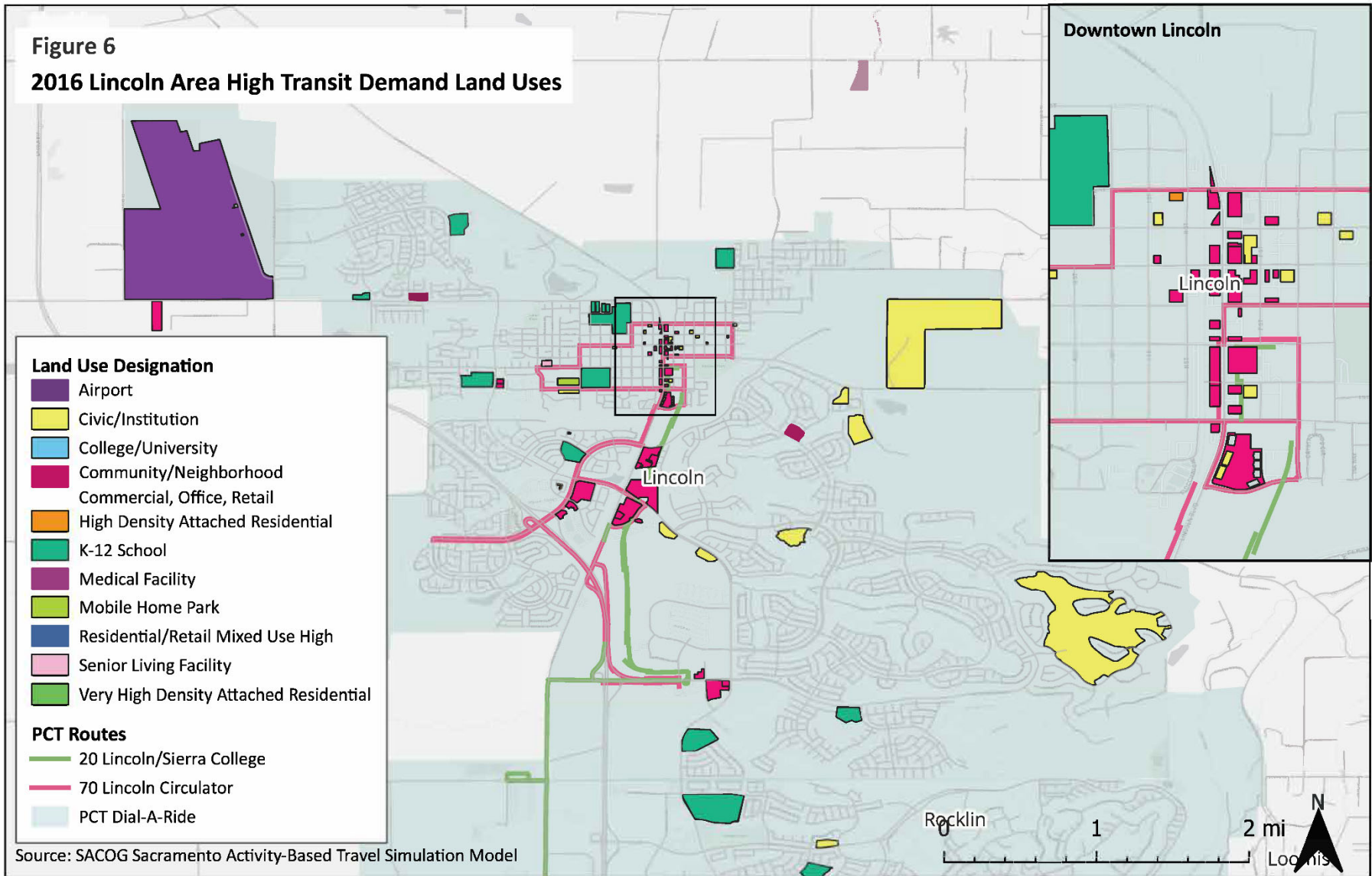


Figure 6
2016 Lincoln Area High Transit Demand Land Uses



Rocklin/ Loomis (Figure 7): High-density mixed-use centers are concentrated at major intersections and retail and offices along the SR 65 corridor, served by PCT Route 20-Lincoln / Sierra College, and the I-80 corridor between Loomis and Rocklin, served by PCT routes 10-Auburn to Light Rail (Watt/I-80), 50-Taylor Rd Shuttle, and 60-Placer Commuter Express. In Loomis, higher-intensity uses are along Taylor Road adjacent to downtown and near I-80. Fixed route service along major roadways can serve many of these locations with on-demand services reaching additional activity centers.

Granite Bay (Figure 8): Commercial land uses are clustered near the intersection of Auburn Folsom Road and Douglas Boulevard. The area is served by the Granite Bay Dial-a-Ride.

Intersection Density

Intersection density is a measure of how accessible bus stops are for pedestrians from nearby areas along a route. Neighborhoods with higher intersection densities have less personal vehicle use and higher use of transit, walking, and biking. As shown in (Figure 9), downtown areas, and higher-density residential developments (i.e., downtown Auburn east of I-80 and the southwest portion of the Westpark neighborhood in Roseville) have the highest intersection density while rural portions of the county (Granite Bay) have lower intersection density.

TRANSIT SERVICE REVIEW

Auburn Transit and PCT provide fixed route coverage to the densest areas of western Placer County that are not located within the City of Roseville. These areas include Auburn, North Auburn, Lincoln, and Rocklin, as shown in Figure 1. While the transit network generally matches where more people are living and working, the service is infrequent and is not provided on Sundays. The densest portions of the county in Rocklin west of I-80 are served by one route, Route 20-Lincoln / Sierra College which offers hourly service. The area near the I-80/SR 65 interchange has slightly less density but is served by PCT routes 20-Lincoln / Sierra College (hourly service), 50-Taylor Rd Shuttle (bi-hourly service), and the Placer Commuter Express (two round trips per day from Colfax Depot). The densest portion of Lincoln, near the SR 65/SR 193 interchange, is served by PCT routes 20-Lincoln / Sierra College, 70-Lincoln Circulator (hourly service), and 80 Lincoln Circulator Overflow (one trip in each direction per day between Nicolaus Road/Joiner Parkway and 3rd Street/F Street).

While less dense than the areas listed above, Auburn coverage includes PCT routes 10-Auburn to Light Rail (Watt/I-80) (hourly service), 30-Highway 49 (hourly service), 40-Alta/Colfax (two round trips per day from Auburn Station), and the Placer Commuter Express. PCT Route 30-Highway 49 also serves the relatively dense area of North Auburn.

On-demand transit service also provides transit coverage in these denser areas of the county. Dial-a-Ride covers Lincoln and Rocklin while Auburn OnDemand covers Auburn and North Auburn. These services help fill in the gaps between the fixed route network and provide an alternative option for residents to get around within each community. However, on-demand services can have variable pick-up times, which can limit their convenience.

Within the County, outside of Roseville, the largest cluster of land uses with high ridership potential are located within Auburn, Lincoln, and Rocklin. Similar to areas with higher population density, these areas have fixed route service but frequencies are low, thereby limiting the usefulness of the service as a viable travel option.

Figure 7
2016 Rocklin/Loomis High Transit Demand Land Uses

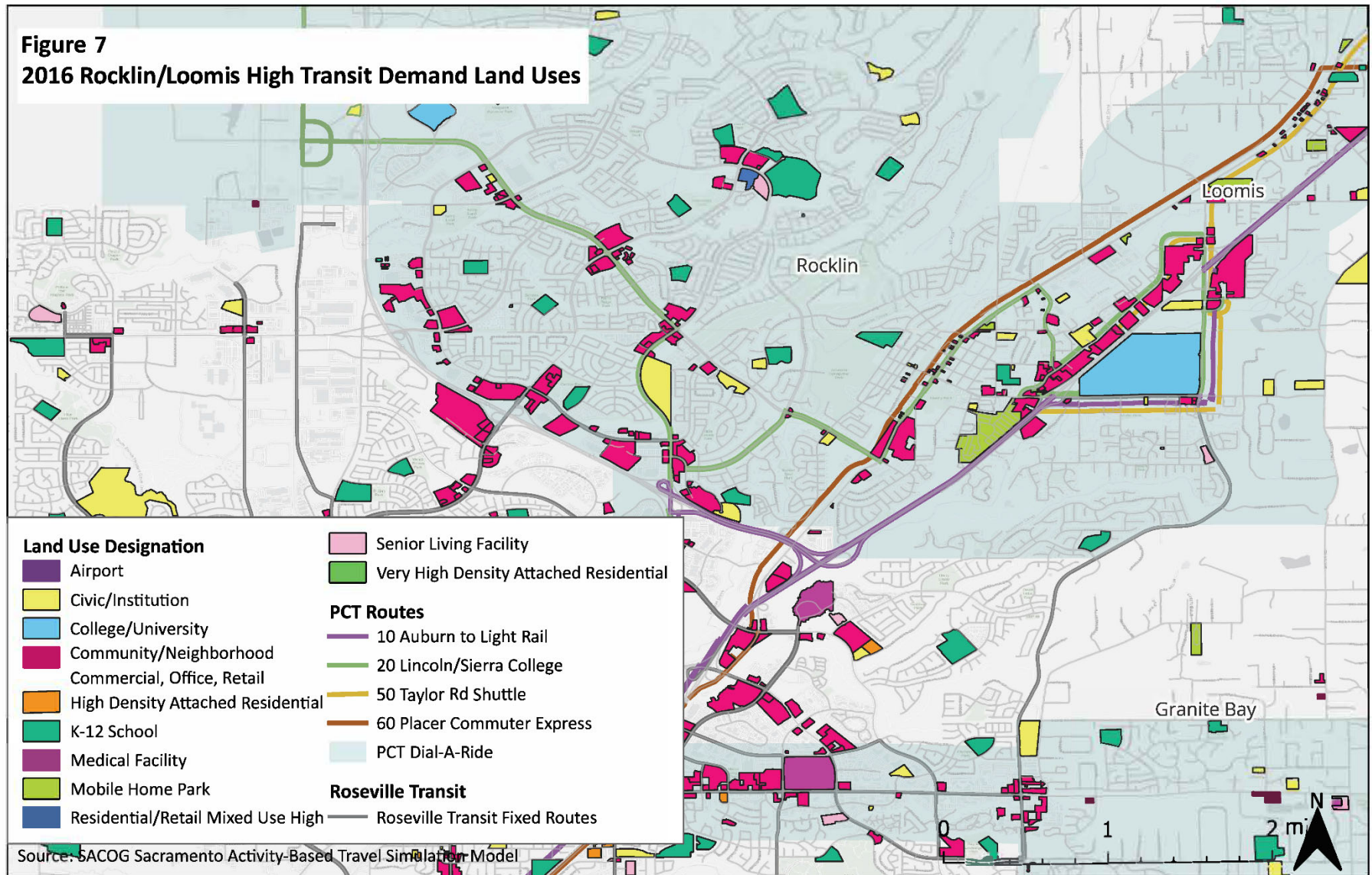


Figure 8
2016 Granite Bay High Transit Demand Land Uses

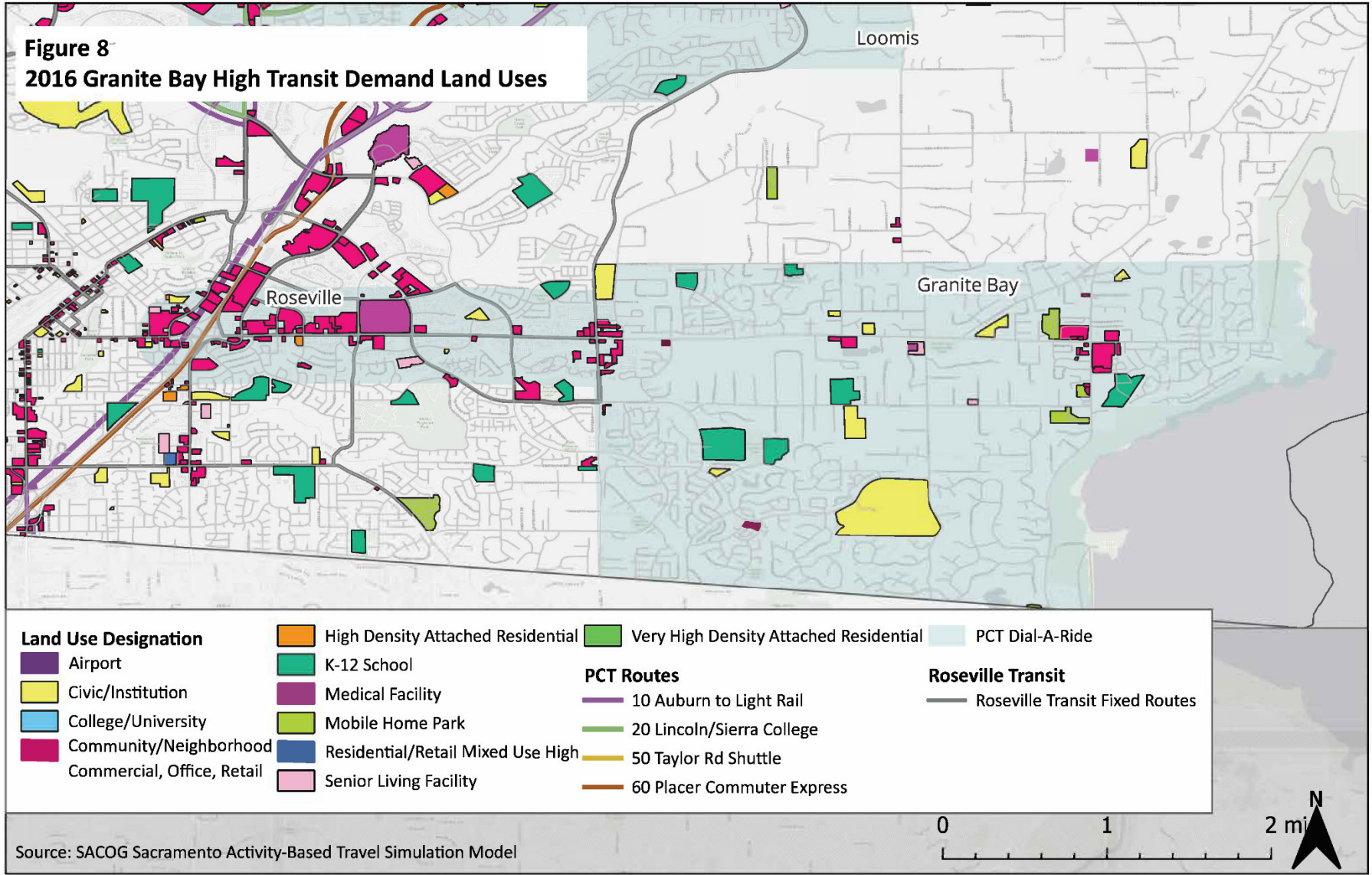
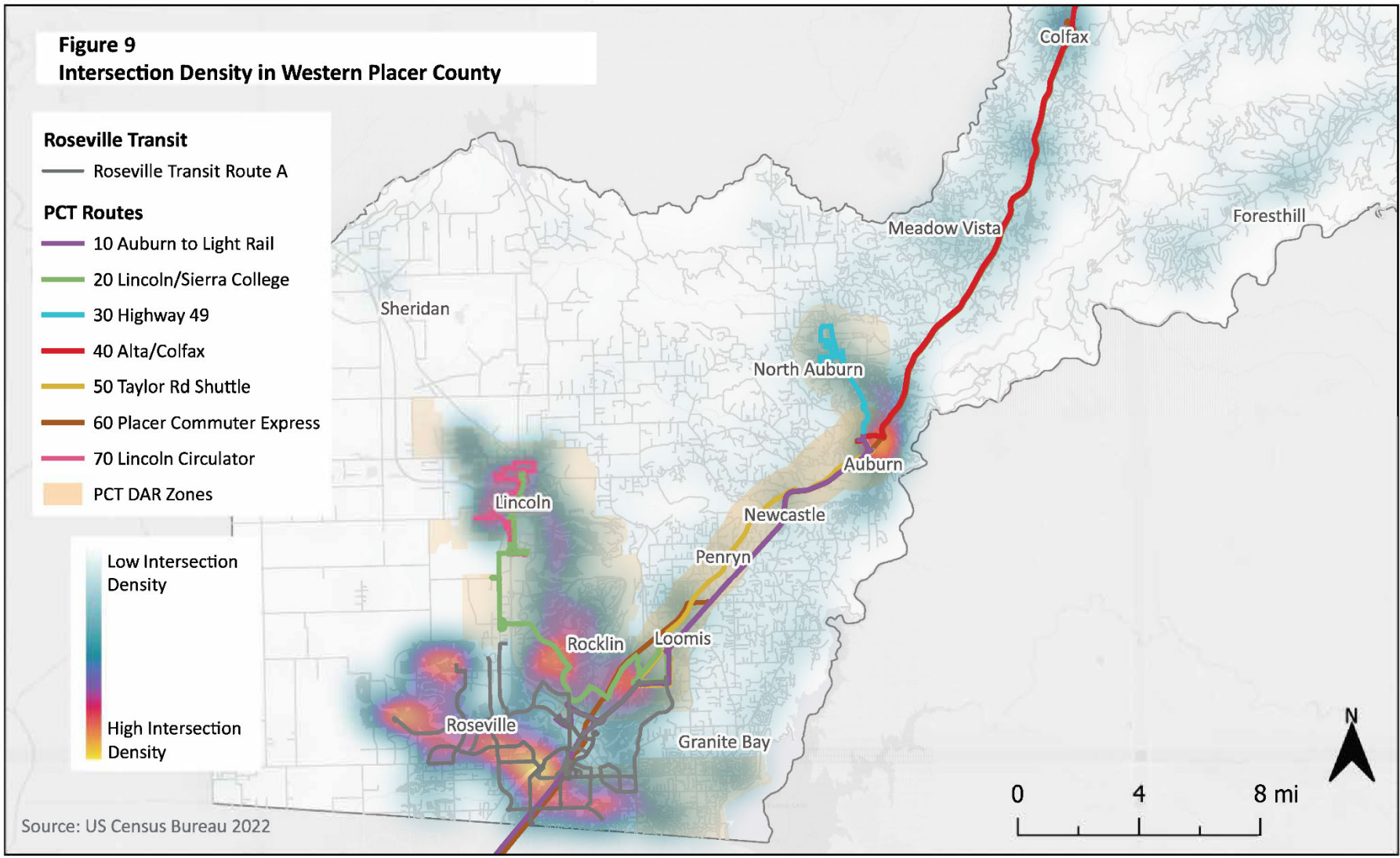


Figure 9
Intersection Density in Western Placer County



As shown in Figure 3, the SR 49 corridor, which has a variety of land uses that are conducive to transit ridership, is served by PCT Route 30-Highway 49. While PCT Route 40-Alta/Colfax and the Placer Commuter Express operate on I-80, neither of these routes directly serve the area around the Elm Avenue exit which includes the Auburn Town Center. PCT routes 10-Auburn to Light Rail (Watt/I-80), 30-Highway 49, 40-Alta/Colfax, 50, and the Placer Commuter Express either stop or terminate at Auburn Station which provides connections to the Capitol Corridor train and thruway bus service. However, Auburn Station is sandwiched between rail lines and a major roadway which limits the potential for property development and expansion. Auburn OnDemand covers the entirety of these land uses.

As shown in Figure 6, downtown Lincoln is the location of several transit-supportive land uses including commercial, offices, retail, and schools. While PCT routes 70 and 80 provide coverage to the downtown core including several schools, particularly for PCT Route 80, they also extend south to areas that are not as conducive to transit usage (other than the Lincoln Crossing Marketplace). PCT Route 20-Lincoln / Sierra College connects two key areas in Lincoln and Rocklin with transit-supportive land uses. In between the two terminals, the route passes through several industrial and single-family areas.

Rocklin has the most transit-supportive land uses of these three areas and they are dispersed throughout the city. As shown in Figure 7, there are clusters of these land uses including near Sierra College and along SR 65. The college is served by PCT routes 10-Auburn to Light Rail (Watt/I-80), 20-Lincoln / Sierra College, and 50-Taylor Rd Shuttle. The closest route to SR 65 is PCT Route 20-Lincoln / Sierra College which primarily runs along Sunset Boulevard.

Similar to population density, areas with higher intersection and employment density include Auburn, Lincoln, North Auburn, and Rocklin. As explained above, most of these areas have fixed route service but the frequency of service is low which can discourage residents from relying on the existing transit network.

Key Takeaways

- *The projections for continued population growth in Placer County indicate a need for increased levels of service to keep up with population growth.*
- *Western Placer County has a mix of urbanized areas and less dense communities. While PCT routes cover many transit-supportive land uses in the county, the frequency of service is low and service spans are limited, which hinders the willingness of residents to rely on transit as a primary mode of travel.*
- *Population densities suggest 30-60-minute fixed route service could be provided on several fixed routes cost-effectively.*
- *High transit demand land uses are concentrated in the core areas of Auburn, Lincoln, and Rocklin and along some corridors in those communities. More isolated trip generators are located between these centers.*

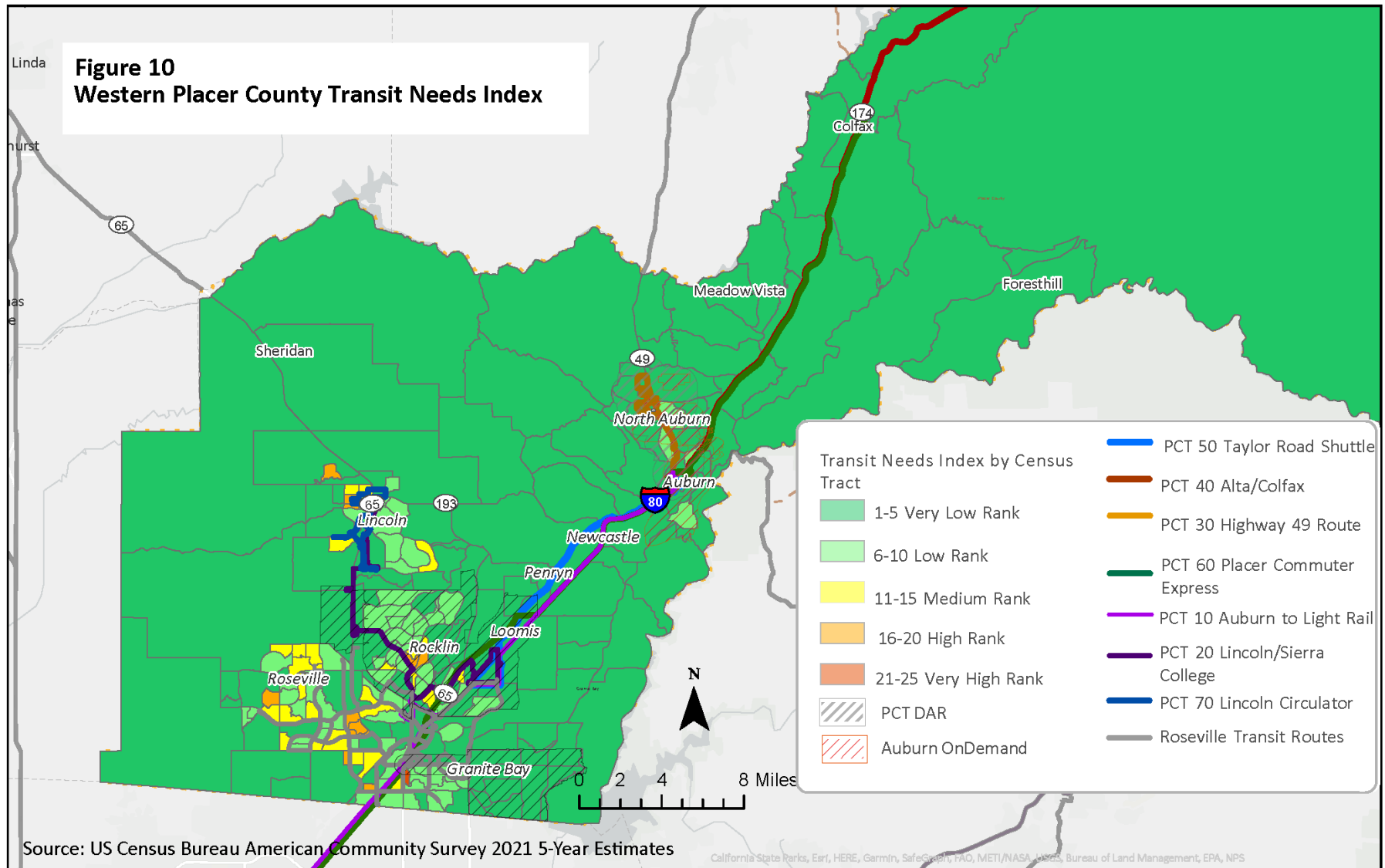
The Transit Needs Index (TNI) consolidates several socio-economic statistics for populations that most heavily rely on transit into one overall relative score. This score identifies areas with the greatest relative need for transit services to provide basic mobility options. It calculates the score based on five density factors: youth under 18 years old, seniors (age 65 and older), individuals with a disability, low-income individuals (below the federal poverty level), and households without a vehicle. *Technical Memorandum One: Existing Conditions* includes an explanation of how the TNI is calculated.

Figure 10 shows the TNI at the census tract level relative to PCT's current fixed route and on-demand services. Most areas with medium to very high ranking are served by fixed routes, except the medium-scoring areas in east Lincoln and North Rocklin which are only served by on-demand services.

The TNI ranking was also calculated at the block group level for western Placer County and is shown for Auburn, Lincoln, and Rocklin/Loomis (Figures 11-13). The areas with the highest transit need at the block group level for each area are:

- Auburn and North Auburn (Figure 11): One of the two block groups with a very high TNI score in the study area is in North Auburn around Quartz Drive and Galena Drive (Tract 216.03 Block Group 2).
- Lincoln (Figure 12): High TNI scores are found surrounding the intersection of 3rd Street and R Street (Tract 214.03 Block Group 4), around First Street Community Church in southwest Lincoln (Tract 214.03 Block Group 1), in the vicinity of Fred Festersen Park (Tract 213.25 Block Group 2) and northwest Lincoln near Lakeside Drive and Floradale Way (Tract 234 Block Group 2). Medium TNI scores are found around Lincoln High School (Tract 214.03 Block Group 2) and Joiner Park (Tract 214.03 Block Group 5) to the northwest and around Nela Luken Park (Tract 213.25 Block Group 1) and Mel Hamel Park (Tract 213.28 Block Group 3) to the south.
- Rocklin/Loomis (Figure 13): High TNI scores are found in northwest Rocklin in the area surrounding Gold Circle (Tract 211.31 Block Group 2) and the intersection of Cobblestone Drive and Summit Drive (Tract 211.31 Block Group 1), (Tract 211.31 Block Group 2). Medium TNI scores are found nearby around Cobblestone Elementary School (Tract 211.31 Block Group 3), in downtown Rocklin (Tract 211.03 Block Group 2), and in west Rocklin north of Powder Pass Drive and west of Park Drive near the Rocklin Ranch Apartments (Tract 229 Block Group 2) and in the area around Marlee Way and Turquoise Drive (Tract 211.28 Block Group 1).
- Overall, the highest TNI at the block group level in western Placer County exists in southeast Roseville around Centerpoint Community Church (Tract 207.12 Block Group 2) and in North Auburn around Quartz Drive and Galena Drive (Tract 216.03 Block Group 2).

Figure 10
Western Placer County Transit Needs Index



**Figure 11
Auburn Area Transit Needs Index**

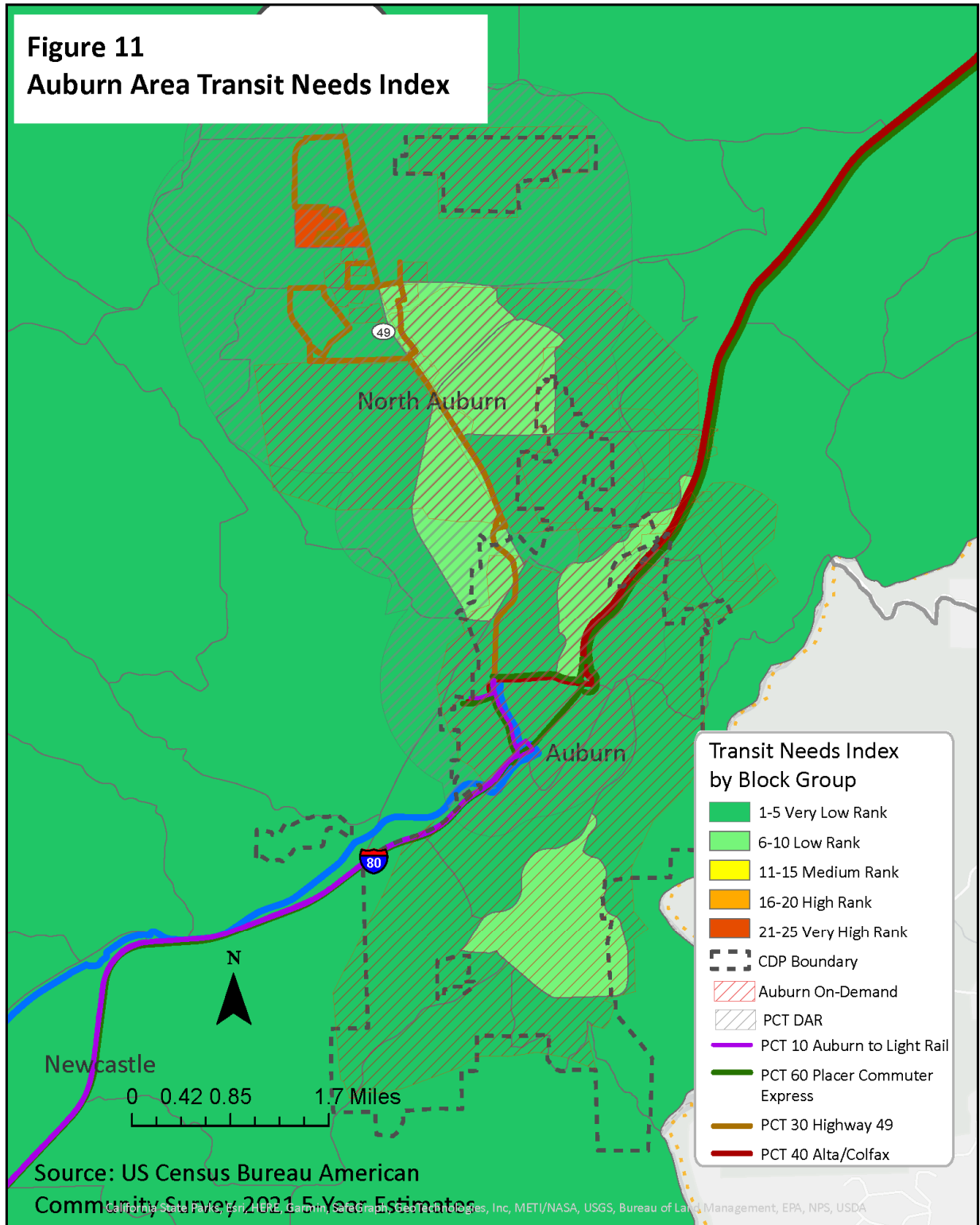


Figure 12
Lincoln Area Transit Needs Index
by Block Group

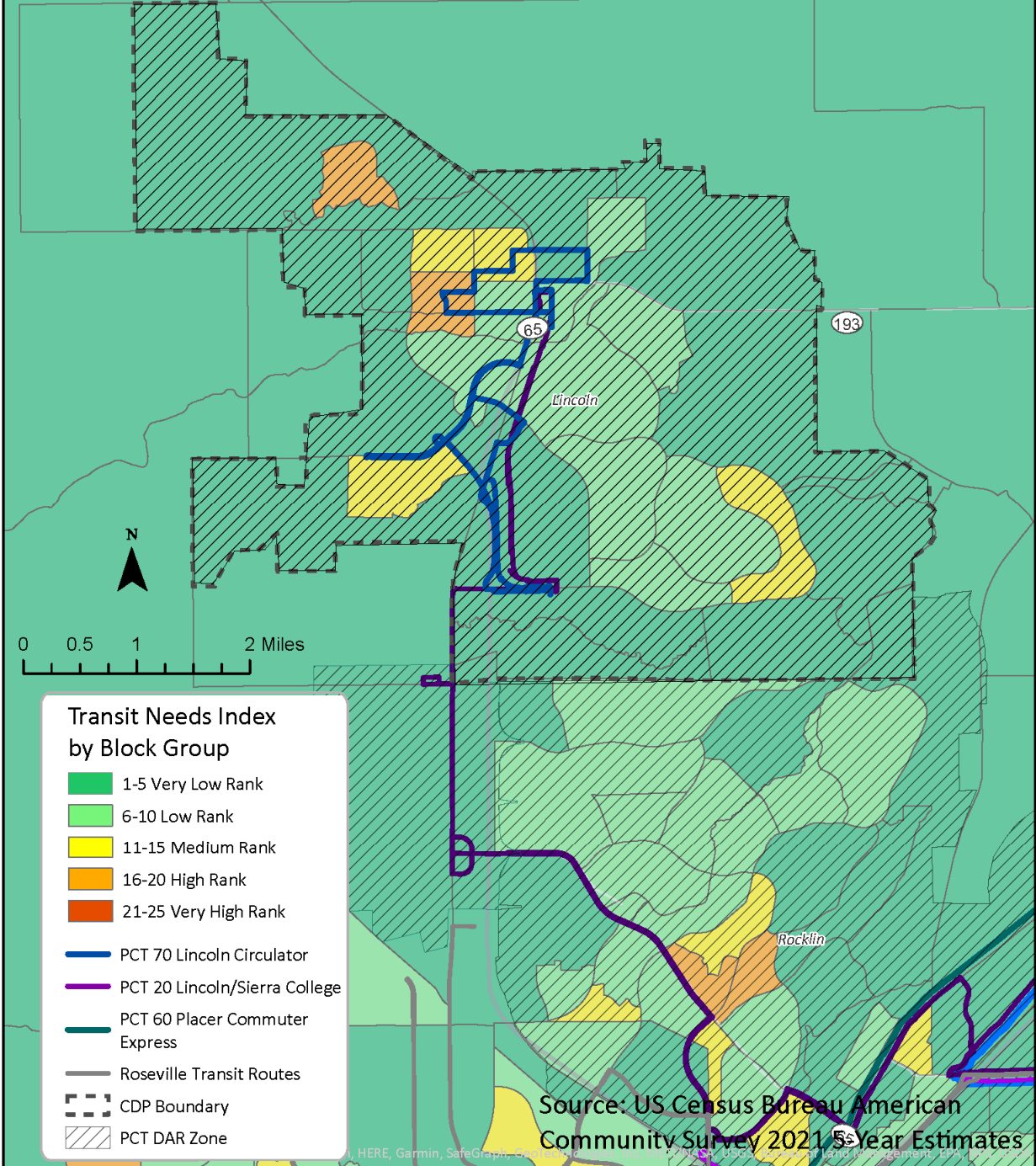
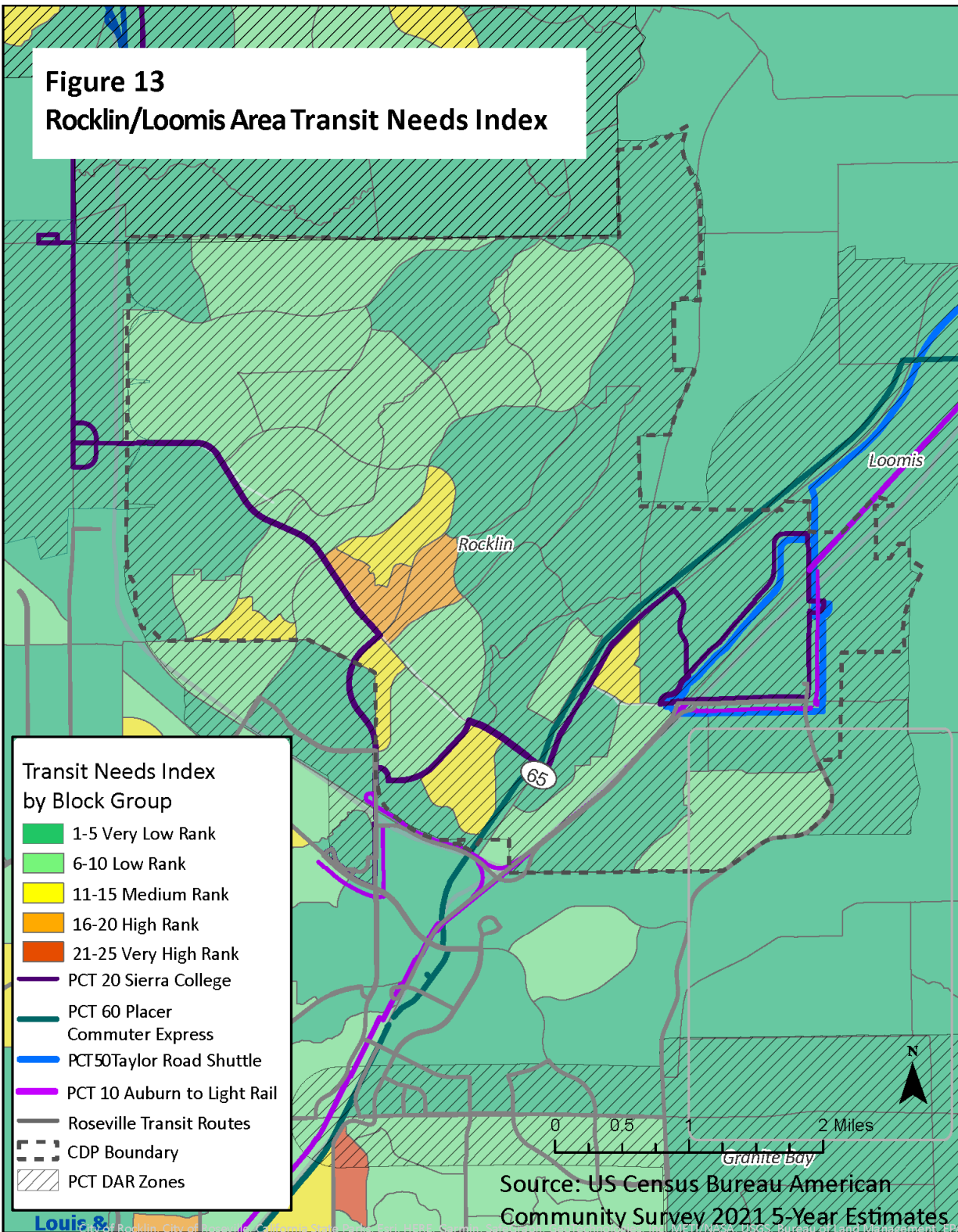


Figure 13
Rocklin/Loomis Area Transit Needs Index



TRANSIT SERVICE REVIEW

Most areas with high and very high scores for the transit needs index that are outside of Roseville are served by fixed-route transit. However, access to these routes could be challenging due to the connectivity of the transportation network. Several areas are outside walking distance to/ from the routes, such as south of downtown Auburn, east/southeast of downtown Lincoln, and east of SR 65 in Rocklin. Many of these areas are served by on-demand services.

In North Auburn, the two areas with very high rank and high-rank TNI scores are served by PCT Route 30-Highway 49. In Central Lincoln, three areas have very high rank or high-rank TNI scores and are served by PCT route 70-Lincoln Circulator. Rocklin contains several areas with very high rank or high rank TNI scores which are served by PCT routes 20-Lincoln / Sierra College and 60-Placer Commuter Express. Two high-rank areas in Rocklin are not directly served by fixed-route transit but dial-a-ride is available.

Key Takeaways

- *The TNI identifies census tracts and block groups with high transit needs based on the density of potentially transit-dependent populations: youth, seniors, persons with a disability, low-income individuals, and households with zero vehicles.*
- *The maps indicate that block groups with the highest transit need are generally served by existing fixed route services, but several higher-need areas are outside the walking/rolling distance of these routes. On-demand services are available to many areas that are outside walking/distance of these fixed routes.*

Major activity centers of regional significance include large employers, colleges, medical centers, entertainment facilities, and large retail centers. These regional activity centers are the destinations for trips originating from throughout western Placer County in addition to trips originating from within the local community. Like the distribution of high transit demand land uses, major activity centers are concentrated along primary transportation corridors in the Auburn and North Auburn areas, as well as downtown Lincoln.

In addition to these regional destinations, local activity centers include schools, libraries, government services, senior facilities, medical offices, and commercial nodes or strips. Appendix 2 includes maps of regional and local activity centers for communities in the study area. Both regional and local activity centers are a source of transit ridership and community access, so it is important to consider both when service planning.

Large Employers

The largest employers in western Placer County represent diverse sectors including medical services, government, retail, and recreational/entertainment. Many of these large individual employers are in areas with high employment densities as shown in Figure 2. Suppose most employees of these organizations work at a single site, such as Sierra College's Rocklin campus or Thunder Valley Casino. In that case, those locations provide an opportunity for transit ridership due to the concentration of employees. Nevertheless, challenges to this translating to transit ridership include shifts other than the traditional "nine-to-five" workday and employees working remotely, and that some appointments are conducted virtually. Some of the other large employers (e.g., Pride Industries) have multiple work sites in the region, a layout that is not as conducive to generating ridership.

Most of these large employers are served by fixed routes, but the frequency and span of service might not meet all shift times.

Colleges

Colleges generate significant demand for transit by students and staff. Sierra College has 17,500 students enrolled at its Rocklin campus. About 60% of those students reside in south Placer County and 25% in Sacramento County, with 40% being full-time students and 60% part-time. Part-time students are less likely to use transit because classes can be before or after job shifts or in the evening. The Rocklin campus is served by PCT routes 10-Auburn to Light Rail (Watt/I-80), 20-Lincoln / Sierra College, and 50-Taylor Road Shuttle. William Jessup University's Rocklin campus near the SR 65 and Sunset Boulevard interchange has an estimated enrollment of fewer than 2,000 students.

Medical Centers

Hospitals generate trips throughout each day of the week by staff, visitors, and patients. The two largest medical centers, Kaiser Permanente and Sutter Health, are located in Roseville but draw patients from areas outside the city. Connections between PCT Routes 10-Auburn to Light Rail (Watt/I-80) and 20-Lincoln / Sierra College and Roseville Transit routes are available at the Galleria.

Sutter Faith Hospital, a short-term, acute care facility with 64 beds in North Auburn near Highway 49 and Bell Road intersection is served by PCT Route 30-Highway 49 and the Auburn/Hwy 49 Dial-a-Ride. UC Davis Health plans to build a medical campus including a 120-bed hospital, 110-room hotel, research space, nursing facility, and surgery center next to the medical office along SR 65 at 550 West Ranch View Drive in Rocklin. This site is served by the Rocklin-Loomis Dial-a-Ride and is located just south of the Lincoln Dial-a-Ride area.

Recreational, Entertainment, and Retail Centers

These facilities generate significant trip volumes particularly during non-rush hours, including weekends and evening periods. Both employees and customers are a source of ridership demand. Notable destinations in this category include the Thunder Valley Casino and Resort just southwest of Lincoln on the west side of SR 65 and the Westfield Galleria Mall in Roseville just south of SR 65. The former is served by PCT Route 20-Lincoln / Sierra College and the latter by PCT Routes 10-Auburn to Light Rail (Watt/I-80) and 20-Lincoln / Sierra College and the Rocklin-Loomis Dial-a-Ride.

Major Planned Residential Developments

Most future large residential developments will occur in and adjacent to Roseville. Several developments are planned in the Lincoln area, including Twelve Bridges Village, Village 7, Independence at Lincoln, and Esplanade at Turkey Creek. Other major residential developments include Bickford Ranch, Placer One mixed-use development, and Terracina at Whitney Ranch. Figures 14-16 show planned developments in Auburn, Lincoln, and Rocklin, respectively.

TRANSIT SERVICE REVIEW

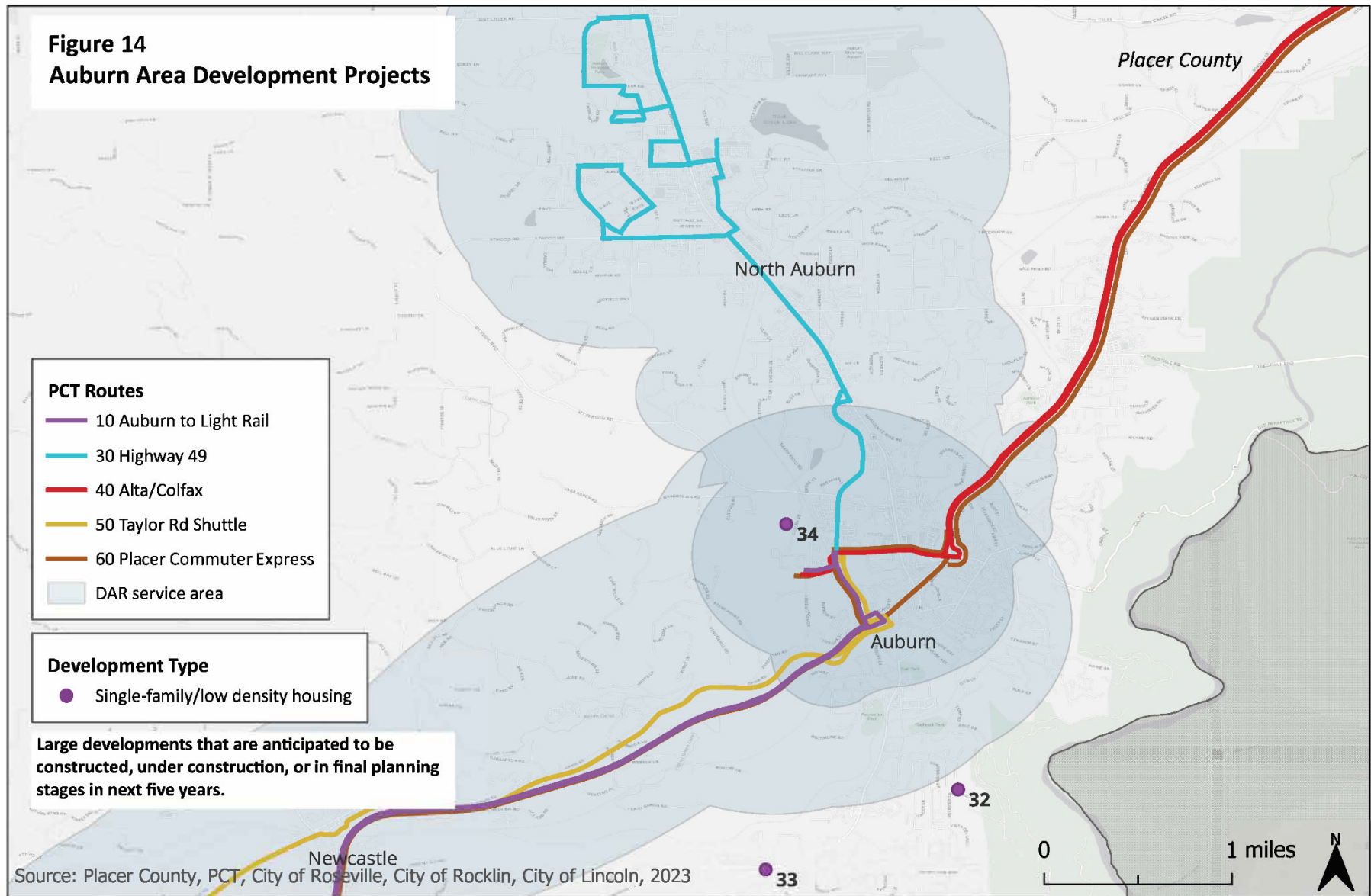
Existing fixed routes in the Auburn and Lincoln areas serve many of the activity centers identified in Chapter 4. In the Rocklin/Loomis area, activity centers are concentrated along the SR 65 and I-80 corridors, which are served by fixed routes. In Auburn, centers are clustered along SR 49 which is also served by a fixed route.

While many activity centers have good coverage, frequency and service span improvements would improve access to them. Many of these activity centers generate demand throughout the day, seven days a week. Attracting local ridership, in particular, depends on frequent service because average wait times for a bus are a higher proportion of total trip time (wait plus in-vehicle time). For example, waiting 15 minutes for an hour-long in-vehicle trip is more acceptable than waiting 15 minutes for a ten-minute in-vehicle trip.

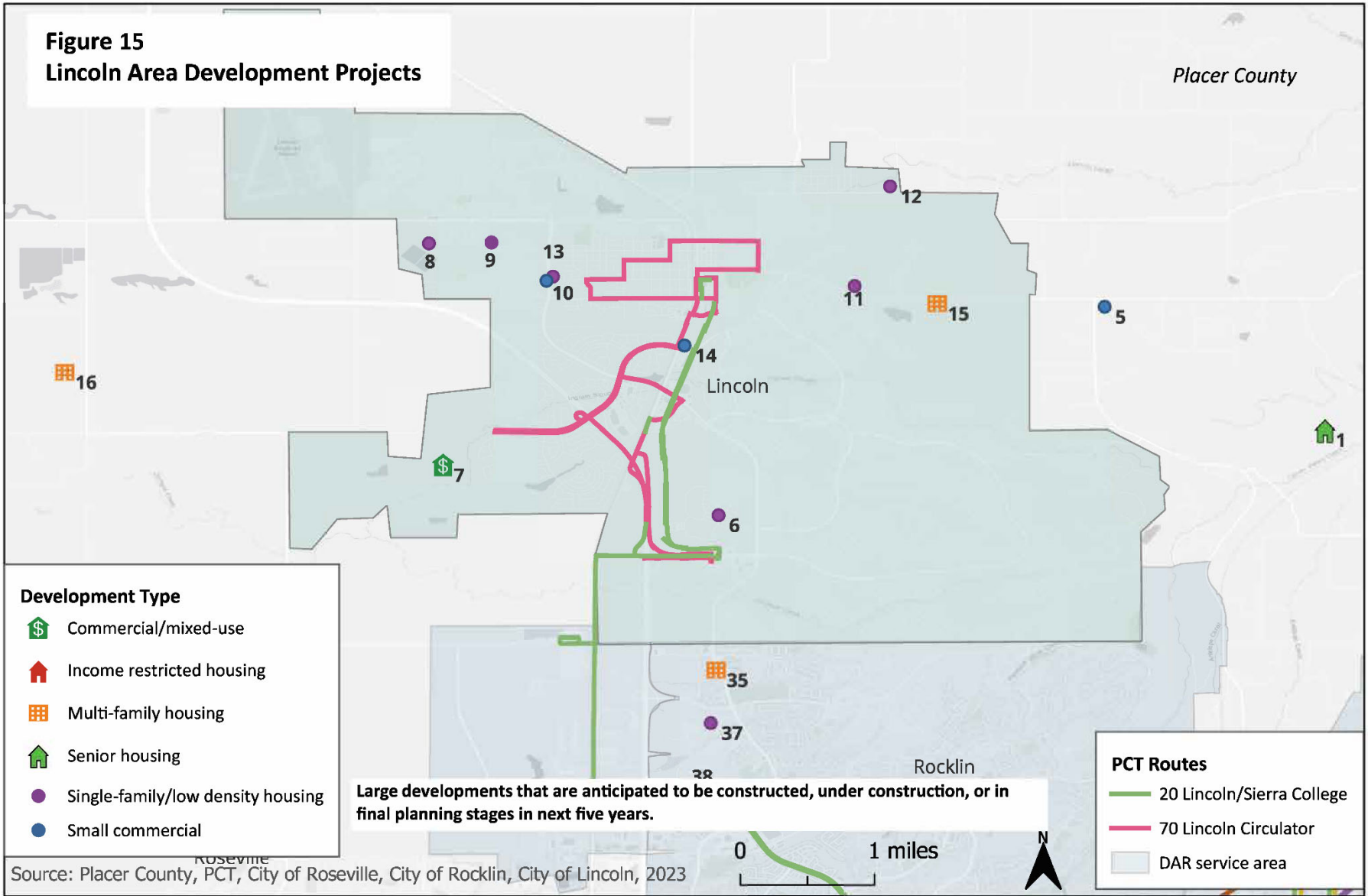
Key Takeaways

- ***Major activity centers and mixed-use developments should be considered in route and service planning as these locations produce higher transit ridership by serving multiple populations. Although urbanized, western Placer County has very few high-density mixed-use developments. Important commercial and residential uses tend to be more spread out, along major corridors.***
- ***Several large developments are either under construction or planned that will increase the demand for service.***

**Figure 14
Auburn Area Development Projects**








**Figure 15
Lincoln Area Development Projects**









**Figure 16
Rocklin/Loomis Area Development Projects**

Large developments that are anticipated to be constructed, under construction, or in final planning stages in next five years.

Development Type

-  Large commercial/mixed-use
-  Income-restricted housing
-  Multifamily
-  Single-family/low-density housing
-  Small commercial

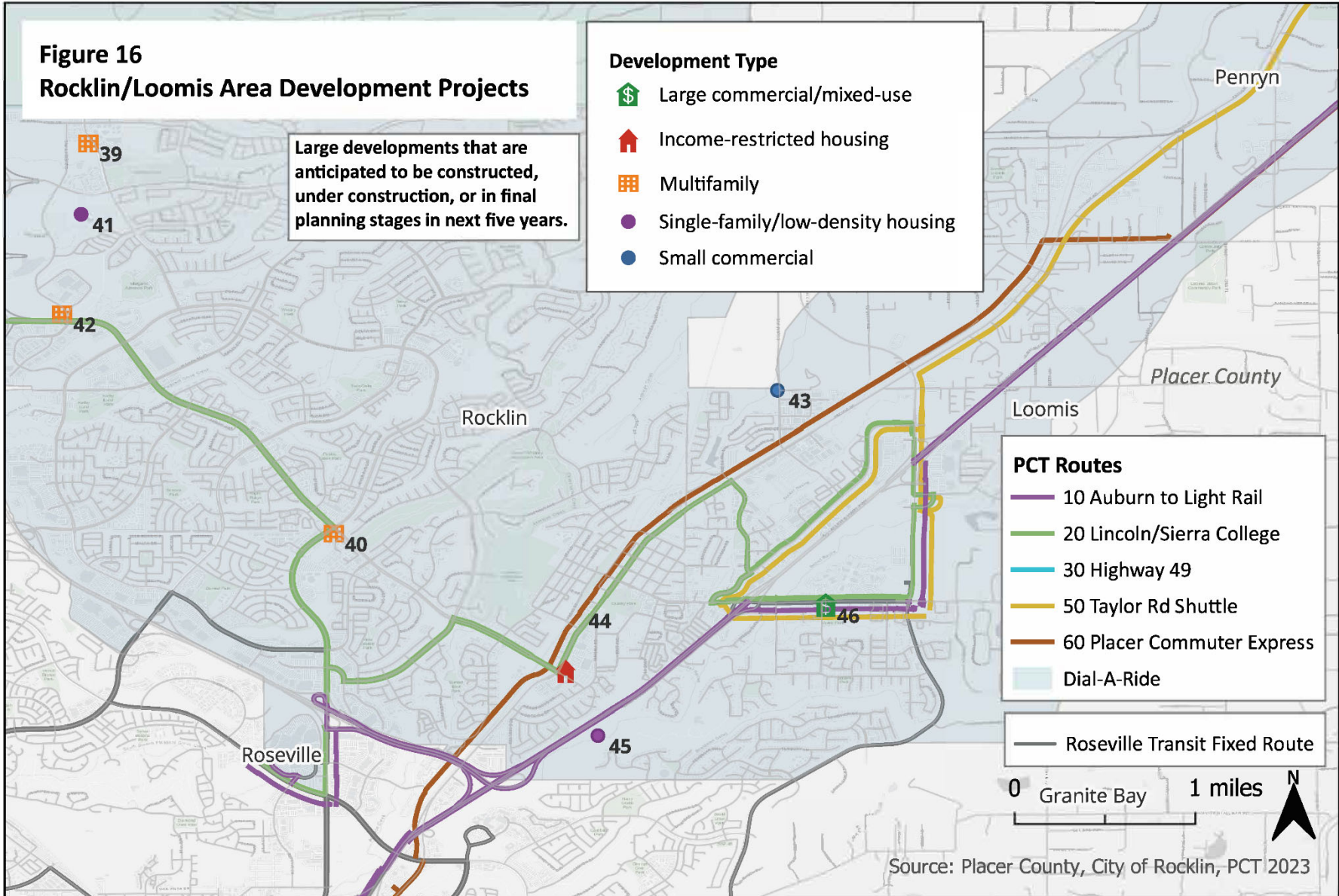
PCT Routes

-  10 Auburn to Light Rail
-  20 Lincoln/Sierra College
-  30 Highway 49
-  50 Taylor Rd Shuttle
-  60 Placer Commuter Express
-  Dial-A-Ride

 Roseville Transit Fixed Route

0 Granite Bay 1 miles 

Source: Placer County, City of Rocklin, PCT 2023



This page intentionally left blank

In addition to where people live and work, their socioeconomic conditions, and where major activity centers are located, transit ridership potential is also affected by where a trip begins and ends. Identifying the areas within western Placer County that have the highest volumes of daily trips between them (by all types of transportation) indicates opportunities to attract a sizeable number of those transit trips. Information on the historical and recent volume of person trips between subareas in western Placer County was summarized based on anonymous cell phone data collected by Replica.² Future projections for trip volumes were available from the SACSIM regional travel demand model.

Person trip origin/destination data was aggregated based on SACOG's Regional Analysis Districts. Figure 17 shows the transit analysis districts considered in this study. The following origin-destination pairs within western Placer County have at least 10,000 weekday or Saturday person trips in each direction based on Fall 2023 Replica data.

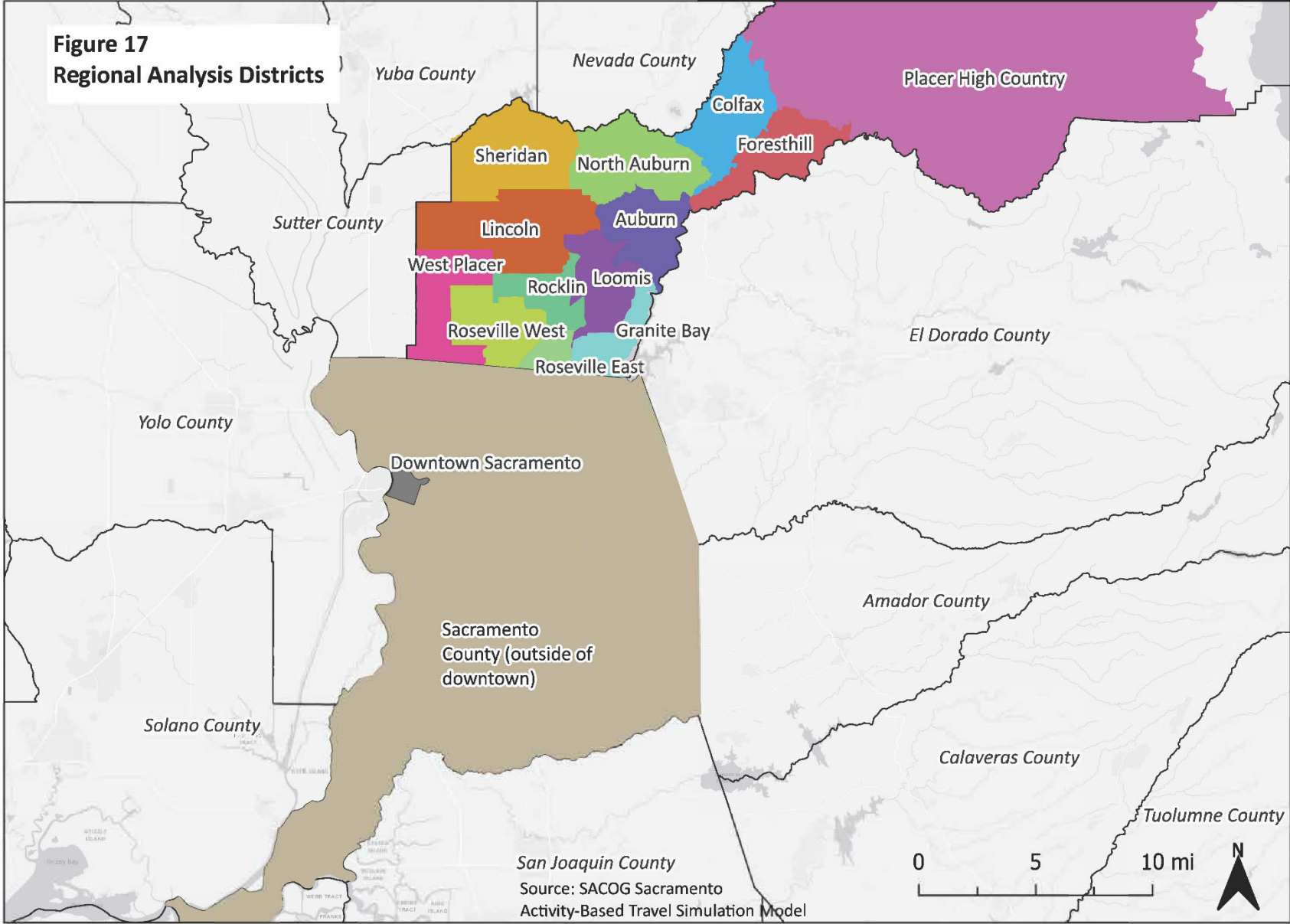
- Auburn-North Auburn
- Granite Bay-Roseville East
- Lincoln-Rocklin
- Lincoln-Roseville West
- Rocklin-Loomis
- Rocklin-Roseville East
- Rocklin-Roseville West
- Roseville East-Roseville West

The last two (Rocklin-Roseville West and Roseville East-Roseville West) each have 20,000 or more weekday person trips in each direction. By 2027, Lincoln-Rocklin and Rocklin-Roseville East are expected to also exceed 20,000 daily person trips per SACOG projections.

Trips to and from downtown Sacramento in 2023 are a small share of total person trips. For example, there are fewer than 2,500 one-way person trips between Rocklin and downtown Sacramento, 1,500 from Lincoln, and 500 from Auburn.

² Replica is a commercial software platform that models trips based on anonymous mobile location data, population data, and other data available from government agencies.

**Figure 17
Regional Analysis Districts**



The following areas in western Placer County have more than 10,000 daily person trips per direction to and from Sacramento County (outside downtown Sacramento).

- Granite Bay
- Lincoln
- Loomis
- Rocklin
- Roseville East
- Roseville West

While trip volumes between these locations and Sacramento County are large, the trip volumes could be dispersed across the large area (over 900 square miles) that is encompassed by Sacramento County. Future analysis in the COA can identify if there are subareas within Sacramento County that have a proportionately large number of trips to/ from locations in western Placer County.

Some districts also have large volumes of intra-district trips (those trips that both begin and end within the district). Districts with 50,000 or more 2023 intra-district weekday person trips include:

- Auburn
- Lincoln
- Rocklin
- Roseville East
- Roseville West

These shorter intra-district trips can be challenging to attract to transit or microtransit for several reasons: walking or biking could be a viable and faster option, such trips can involve transporting goods (such as groceries) or children, and the wait time for transit can be high relative to the in-vehicle time for the trip (e.g., waiting 30 minutes to take a five to 10-minute bus trip). The more frequent service is on a route or the shorter the pickup times on microtransit, the easier it is to use transit for shorter trips because wait times are less and people have more flexibility for when they depart on a trip.

TRANSIT SERVICE REVIEW

The origin-destination pairs with the highest person trips are generally served by existing transit services. The Auburn-North Auburn trips are served by PCT Route 30-Highway 49 and Auburn OnDemand. Lincoln-Rocklin trips are served by PCT Route 20-Lincoln / Sierra College. Rocklin-Loomis trips are served by PCT routes 50-Taylor Rd Shuttle and 60-Placer Commuter Express. Roseville Transit serves Granite Bay-Roseville East, Rocklin-Roseville East, Rocklin-Roseville West, and Roseville East-West. There is not a direct connection between Lincoln and Roseville West, but the PCT Route 20-Lincoln / Sierra College provides a connection to the Roseville Galleria, from which riders can transfer to Roseville Transit services.

Key Takeaways

- *The five destinations with the highest number of overall trips from study area communities are Lincoln, Sacramento County (excluding downtown Sacramento), Rocklin, Roseville East, and Roseville West.*
- *The origin-destination pairs with the highest person trips are generally served by existing transit services but frequencies are low and service spans are limited.*
- *Large trip volumes between several districts in western Placer County and Sacramento County could indicate the potential for direct connections to activity centers/ transit hubs outside downtown Sacramento.*
- *Areas with large volumes of intra-district trips could be candidates for more frequent fixed-route service and shorter microtransit wait times.*

TRANSIT SERVICE PERFORMANCE OVERVIEW

Placer County Transit and Auburn Transit routes that serve areas with relatively higher population and employment density, high transit needs index scores, major activity centers, high intersection density, and that also provide connections between communities (major origin/ destination pairs) have the highest ridership performance measured by passenger trips per service hour. These include routes 10-Auburn to Light Rail (Watt/I-80), 20-Lincoln / Sierra College, and 30-Highway 49, which average five or more trips per service hour. The Lincoln Circulator (Route 70-Lincoln Circulator) also achieves close to five rides per hour. Routes 40-Alta/Colfax and 50-Taylor Rd Shuttle, which serve lower-density areas and operate infrequently, have lower ridership effectiveness than the other routes.

Commuter service on Route 60-Placer Commuter Express has not recovered ridership post-COVID and has low rides per hour. Ridership is less than 20% of pre-COVID levels despite significant growth since stay-at-home orders were lifted. However, the commuter service serves longer-distance trips which reduces automobile vehicle miles traveled.

Auburn's OnDemand service has the highest passenger trips per hour among the on-demand services, while the Placer County Dial-a-Ride services all perform below two trips per hour. This ridership effectiveness is slightly less than other microtransit services nationwide that average approximately two to three rides per hour. On-demand services are useful not only for short trips within their service area but also for connections to fixed routes for trips to other communities.

Appendix 3 includes a summary table of route performance.

Key Takeaways

- *Fixed route service performance generally matches areas with the highest transit ridership potential, but frequency and span of service on these routes are limited.*
- *Commuter route ridership is not expected to recover from the pandemic ridership losses in the foreseeable future.*
- *Microtransit ridership has generally increased post-pandemic and overlaps with fixed-route local service in some areas.*

This page intentionally left blank.

TRANSIT NEEDS SURVEY RESULTS

This chapter presents an overview of results from recent surveys regarding transit services in western Placer County as they relate to service needs and design. A complete summary of the onboard survey results is in *Technical Memorandum Two: Survey and Boarding Data Overview*. Full results of the online surveys will be available as part of the Short-Range Transit Plan supporting documents. The surveys complement the findings from the technical analysis presented in Chapters 2-5 and are an essential part of transit service planning. They collect information regarding residents' travel behavior, perceptions of current service, and needs for future service, as well as insights regarding the relative importance of various types of service improvements.

ONLINE SURVEY

The Placer Transit Needs Survey, conducted online between September 5 and October 31, 2023, resulted in a total of 311 survey responses. The survey included a question about reasons for not using transit for a trip. Respondents could choose as many reasons as they thought applicable. Service characteristics cited by respondents as reasons for not using transit included: "Does not go where I need to go" (45 percent), "Does not run frequently enough" (33 percent), "Does not operate hours I need" (23 percent), "I do not know about the service available" (19 percent), and "Costs too much" (6 percent).

Also noteworthy is the lack of awareness of the GO South Placer app: 78 percent (232) of respondents are not aware of the app and its associated services compared to less than 20 percent who said they do not use transit because they do not know about the services available.

Participants were asked to rank ten improvements that would make them more likely to use transit. The top six improvements ranked from highest to lowest are:

1. More frequent local bus service (Frequency)
2. Better bus route coverage (Coverage)
3. More app-based on-demand service (Mode and Coverage)
4. Expanded on-demand service areas (Mode and Coverage)
5. Increased service hours (Span)
6. More frequent commuter service (Frequency)

The lowest-ranking improvements were free/reduced fares, better bus stop amenities, on-board internet, and more payment options on the bus.

ONBOARD SURVEY

PCT Fixed Route

When asked to rank six different types of transit improvements on a scale of 1 (highest priority) to 6 (lowest priority), survey respondents prioritized the following:

- 33 percent of respondents ranked “more frequent service” as their highest priority, followed by Sunday service (26 percent), and later evening service (20 percent).
- “More routes/extended services” was most consistently ranked last with 45 percent of respondents indicating it as the sixth (lowest) priority of all the improvements.

When each improvement and priority rank was weighted, more frequent service received the highest overall score at 4.4, followed by late evening service (4.1), and Sunday service (3.7).

The following responses were provided by PCT riders when asked, on a scale of 1 (poor) to 5 (excellent), how would you rate service on each of the following:

- Drivers received the most ‘excellent’ scores amongst survey respondents with 77 percent giving driver courtesy an excellent ranking.
- 67 percent of participants ranked fare cost as excellent as well, indicating that fares seem reasonable to over half of those taking the survey.
- Over half (58 percent) of survey participants rated the condition of bus stops at a score of 4 or lower, suggesting that improvements to bus stop waiting areas could warrant improvement.
- Overall, few people rated any characteristics as ‘poor,’ with an average ‘poor’ rating being between 3 percent and 6 percent across all characteristics.

Auburn OnDemand

When asked “Are there areas or times of day not currently being served...that you would like to see added?”, 63 percent responded “no” and 37 percent “yes”. Individual requests were for earlier service on weekdays and Saturdays, later service on Monday-Thursday, as well as adding Sunday service. New coverage around Dry Creek was also mentioned.

When asked “Do you have other suggestions or comments regarding...the service?”, Auburn OnDemand riders suggested expanded coverage, shorter pick-up times, Sunday service, and set pick-up locations.

COMMUNITY EVENTS

PCTPA staff attended eight community events throughout western Placer County between September 16 and October 23, 2023, to discuss transit needs. Comments included the need for more transit services in the later evening hours and on Sundays, more frequent service, expanded service to Sheridan, inconvenience of transfer connections (fares, timing of schedules), and challenges accessing service (routes are not close enough to home, some bus stops are not accessible for people with mobility devices, and/or stops need infrastructure improvements and pedestrian amenities).

EQUITY FOCUS GROUPS

PCTPA is developing a framework for an equity index to measure the factors that are important to transportation for disadvantaged and vulnerable communities. A total of four in-person focus groups were conducted in October and November 2023: three with participants representing BIPOC communities (specifically the Latinx and Spanish-speaking community) and one with representatives for seniors and low-income individuals. The following highlights that pertain to public transit were distilled from the overall focus group results.

- Transportation equity should primarily be measured by access (including reliability of bus service and access to information) and affordability—everyone has a right to and has the same access to transportation.
 - When asked to consider which types of public transportation are preferred and why, session participants suggested the following improvements:
 - The addition of vans with lifts and wide doors to transit fleets.
 - Expanded Auburn OnDemand service area.
 - Reliable intercity bus service and more frequent local service.
 - Expanded hours of service (both earlier and later service).
 - More access to service information in Spanish.
 - It was important to acknowledge that seniors and disabled persons are not likely to use walking or biking as a mode of transportation.
 - When asked what challenges exist to accessing bus and/or on-demand services for the communities represented, participants highlighted the following:
 - Better communication and education are needed for seniors and disabled populations who need assistance scheduling transportation.
 - On-demand service boundaries can be challenging for those not familiar with the concept.
 - Cost can be a barrier for mobility-impaired persons to access door-through-door services.
 - Technology can be a barrier to seniors and people with special needs, yet can also provide solutions (e.g., for the hearing impaired or for those who need translation services).
 - Access to bus stops (and service) is limited in rural areas.
 - Bus service is not reliable, forcing people to plan far in advance to get to work on time.
 - Buses do not run during hours when many individuals need transportation to get to work (e.g., early in the morning).
 - Service information needs to be more accessible, especially in Spanish.
-

Key Takeaways

- ***Improved service frequency and coverage were mentioned as priorities by online survey respondents (riders and non-riders).***
- ***More frequent service and Sunday service were mentioned as priorities by onboard survey respondents (riders).***

This page intentionally left blank.

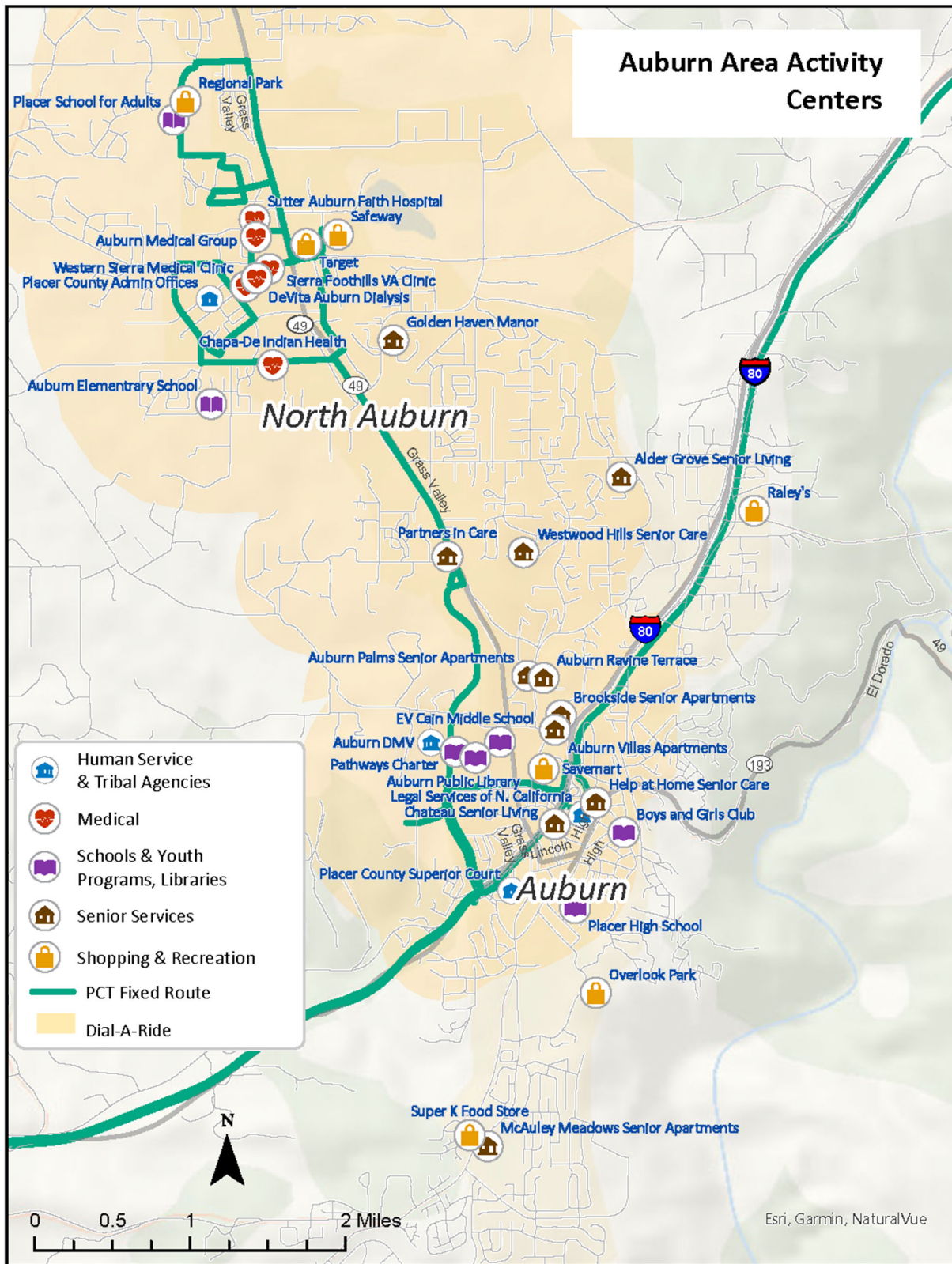
APPENDIX 1-DENSITY RESEARCH

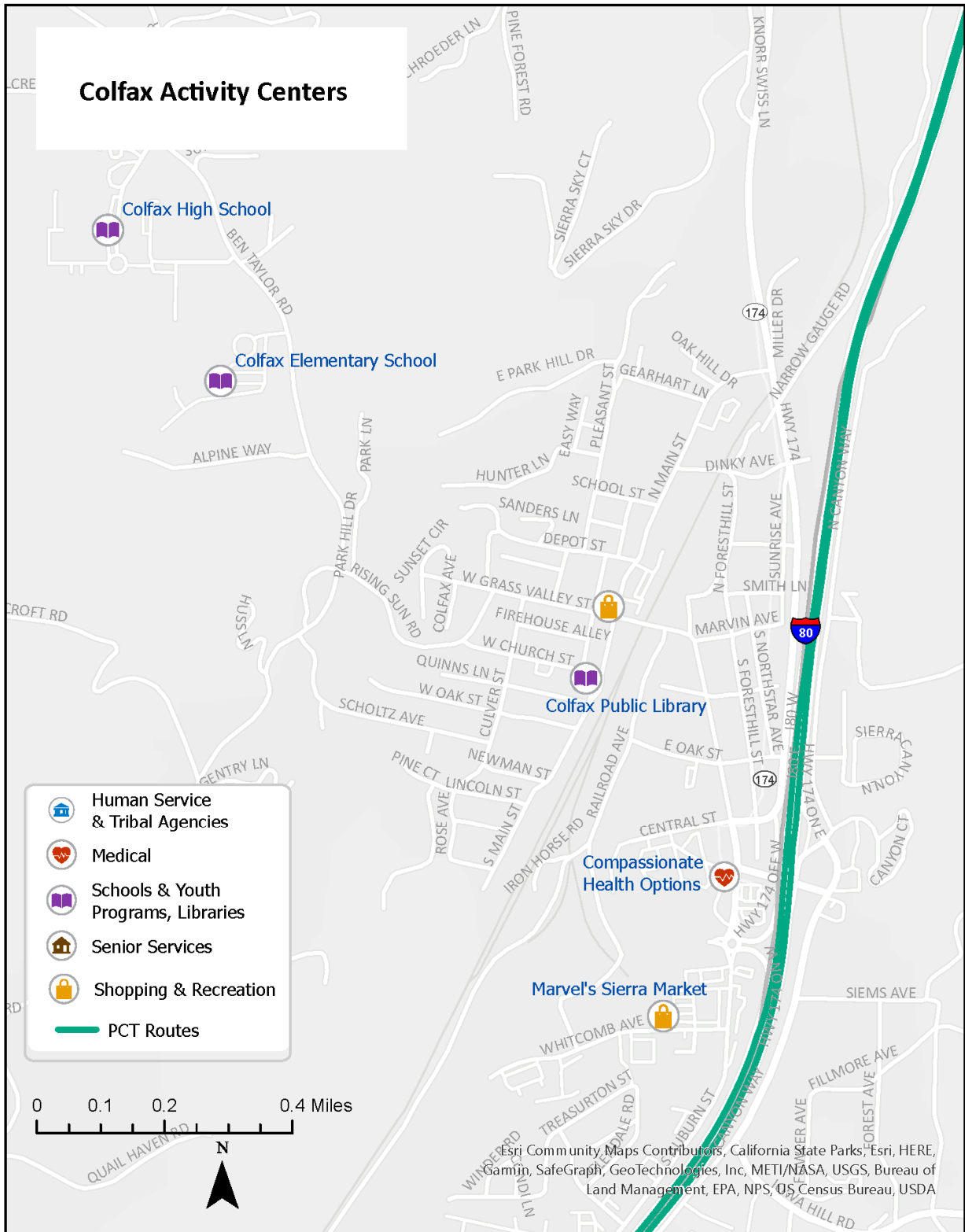
This appendix reviews research on benchmarks for population and employment densities that support different ranges of bus service frequencies.

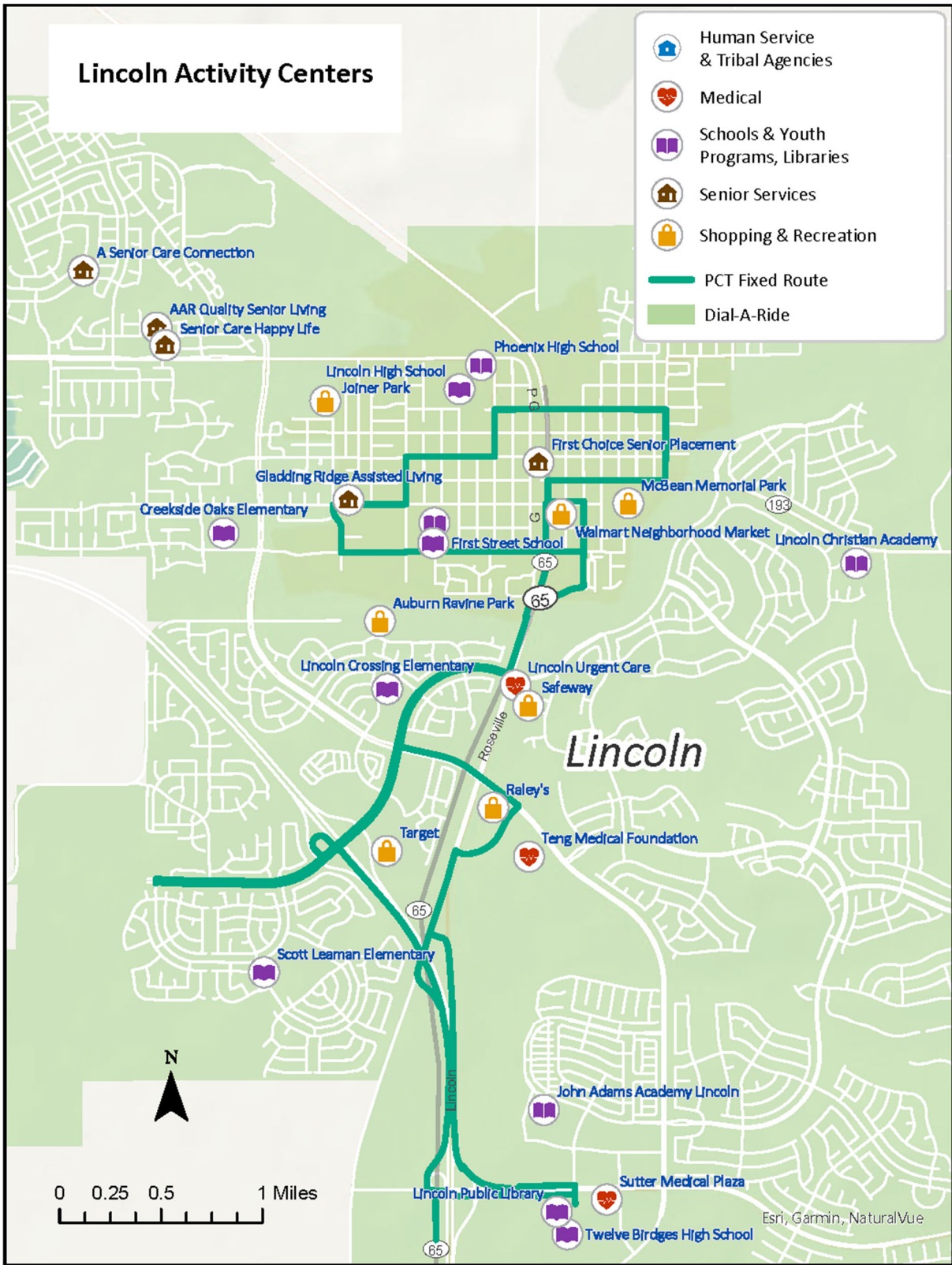
- At least 4-5 dwelling units per acre (6,600-8,300 people per square mile) are needed to support hourly service and 7 dwelling units per acre (11,600 people per square mile) for 30-minute service.
Combining Transport and Community Development. Regional Plan News no. 99 New York, New York. Pushkarev, P. and Zupan, J. (1977)
- Twelve to 20 dwelling units per acre for 20-minute service.
Cities and Automobile Dependence: An International Sourcebook, Grower Publishing. Newman, P. and Kentworthy, J. (1989)
- Four to seven dwelling units per acre (about 6,600 to 11,600 people per square mile). 7-15 dwelling units per acre are required to support 30 minutes or better service.
A Guide to Land Use and Public Transportation for Snohomish County, Washington. Snohomish County Transportation Authority (1989)
- Minimum residential land use density required to support a fixed-route bus service with a 60-minute frequency between arrivals (headway) is approximately four housing units per acre (about 6,600 people per square mile).
A Toolbox for Alleviating Traffic Congestion. Institute of Transportation Engineers (1989)
- Four to seven dwelling units per acre for local bus service.
City Limits. Lowe, M., World Watch Institute (1992)
- Service Minimum Residential Density for hourly service is four dwelling units per acre and seven dwelling units per acre for half-hourly service.
Central Okanagan Smart Transit Plan Transit-Supportive Guidelines, IBI Group (2008)
- Four dwelling units/acre = 20 buses a day (hourly); seven dwelling units/acre = 40 buses a day (30 min); 15 dwelling units/acre = 120 buses a day (10 min).
The Density Transit Connection. Municipal Research and Services Center, Seattle (2012)
- The minimum residential density for hourly transit service to be feasible is a density of approximately three dwelling units per gross acre (about 5,000 people per square mile).
Transit Capacity and Quality of Service Manual Third Edition, Transportation Research Board (2017)
- Less Frequent Fixed-Route: (30-minute all-day service): seven to 15 people per acre (4,480-9,600 people per square mile).
Flexible, On-Demand: fewer than seven people per acre (4,480 people per square mile).
- Reliable Fixed-Route, Frequent (15- to 20-minute all-day service): 15 to 30 people per acre (9,600-19,200 people per square mile).
Draft Long-Range Plan Community Transit (Snohomish County, Washington) (2023)

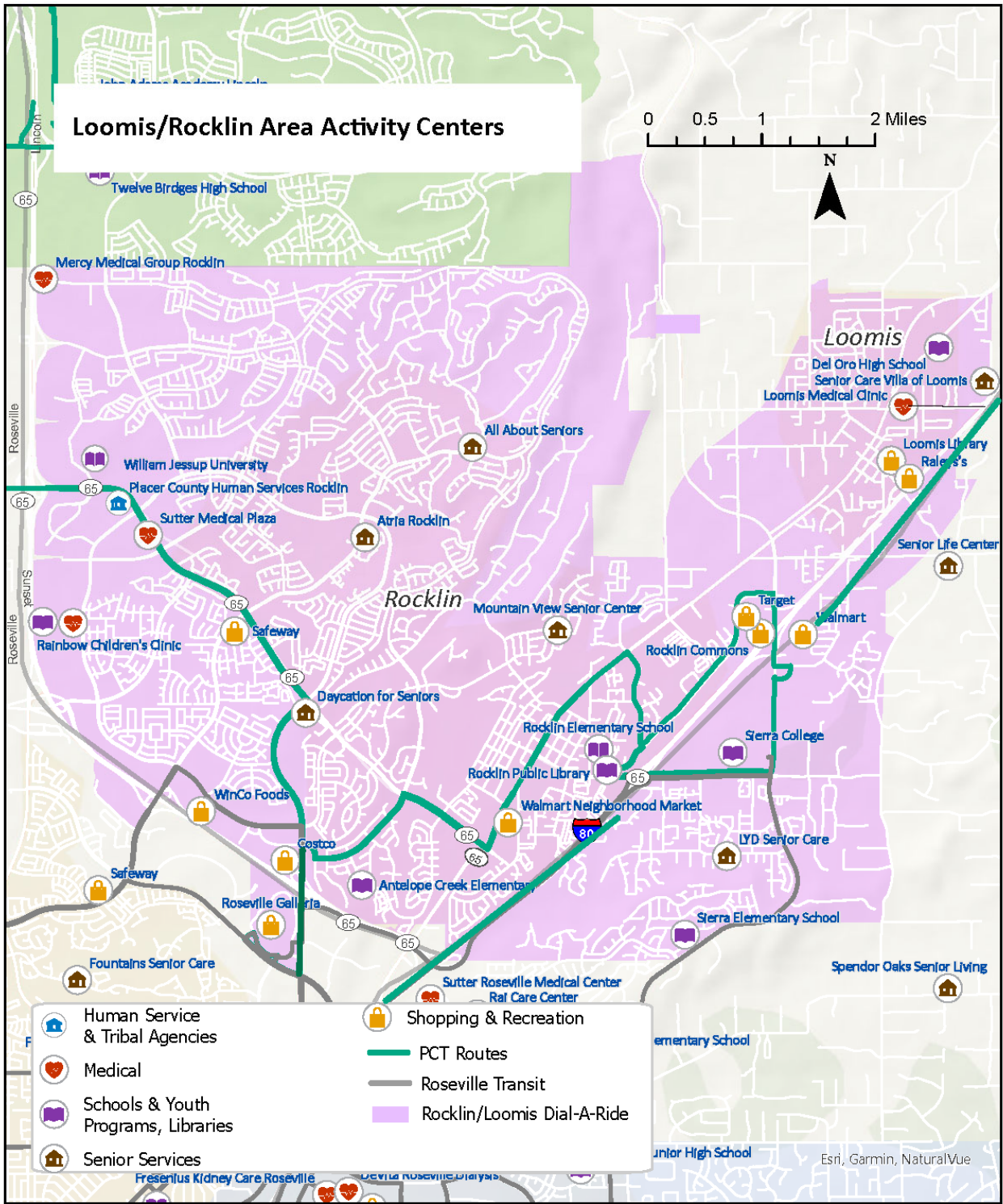
This page intentionally left blank.

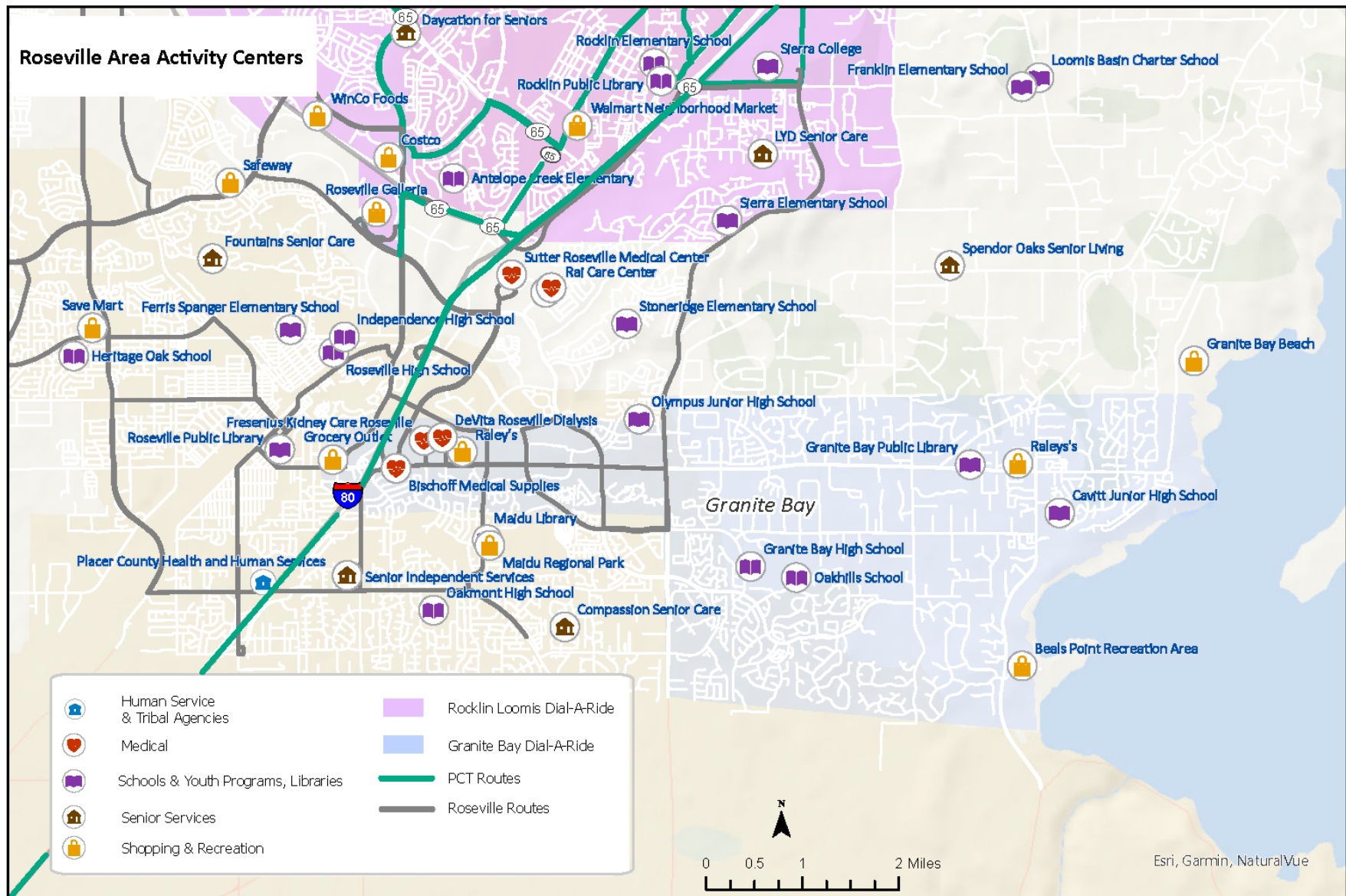
APPENDIX 2- MAPS OF ACTIVITY CENTERS











This page intentionally left blank.

APPENDIX 3 RIDERSHIP PERFORMANCE

Service	Service Days		Annual Ridership by Fiscal Year				Change	
	Service Days	Weekday Frequency	2018-2019 PRE COVID	2020-21	2021-22	2022-23 POST COVID	Pre-Post COVID (2022-23 as percent of 2018-19)	Post Recovery Change (2021-22 to 2022-23)
Fixed Route								
Route 10 - Auburn / Light Rail	M-SA	60	89,095	41,471	50,244	61,577	69%	23%
Route 20 - Lincoln / Sierra College	M-SA	60	68,566	38,258	50,502	57,247	83%	13%
Route 30 - Highway 49	M-SA	60	52,296	25,172	26,584	30,324	58%	14%
Route 40 - Alta / Colfax	M-F	2 Round Trips	3,173	1,880	1,945	3,014	95%	55%
Route 50 - Taylor Road Shuttle	M-SA	120	6,430	3,622	3,974	3,798	59%	-4%
Route 70 - Lincoln Circulator	M-SA	60	34,517	11,753	17,325	16,007	46%	-8%
Route 80 - School Tripper	M-F	1 Trip per Direction	--	--	8,527	14,646	N/A	N/A
Commuter								
Placer Commuter Express	M-F	2 Round Trips	79,095	5,203	9,326	11,037	14%	18%
Vanpool		N/A	23,930	5,253	3,227	2,064	9%	-36%
Demand-Responsive								
Highway 49 Dial-a-Ride	M-SA	N/A	8,811	5,666	7,273	8,839	100%	22%
Rocklin / Loomis Dial-a-Ride	M-SA	N/A	12,769	5,305	6,232	6,812	53%	9%
Granite Bay Dial-a-Ride	M-F	N/A	110	23	95	146	133%	54%
Lincoln Dial-a-Ride	M-SA	N/A	7,040	4,707	4,049	5,245	75%	30%
Auburn Transit								
Auburn Loop	M-SA	N/A	N.D.	N.D.	13,733	6,762	N.D.	-51%
Auburn OnDemand	M-SA	N/A	N.D.	N.D.	7,230	20,552	N.D.	184%
Confluence Route (April1-Oct 1)	FR-SA	N/A	N.D.	N.D.	108	41	N.D.	-62%
Auburn Transit Total			N.D.	N.D.	21,071	27,355	N.D.	30%