STA Connected Mobility Implementation Plan
Solano County Market Assessment – DRAFT

August 2022

Solano Transportation Authority

EXECUTIVE SUMMARY

The Solano Transportation Authority's (STA's) Connected Mobility Implementation Plan is a comprehensive reimagining of mobility services in Solano County, representing an inclusive look at how to improve local and regional transportation countywide. The outcome of this project will be a new, attractive, efficient, more equitable, and better-connected mobility network that meets the travel needs of those who live and work in the Solano County.

The Market Assessment, conducted as a part of the Connected Mobility Implementation Plan to inform its development and determination of alternatives, focuses on the mobility needs of Solano County and the built environment that shapes those needs. Through the Assessment, the project team seeks to understand where people live, where they work, how they choose to get from place to place, and how existing mobility networks facilitate both local and interregional trip-making needs**.**

Through a range of qualitative and quantitative considerations, the Assessment has unveiled a comprehensive understanding of Solano County's mobility environment. **Key findings include:**

- **Solano County currently offers a robust mobility network**, featuring the SolanoExpress Intercity Express Bus system, five local transit networks, ADA paratransit services, alternative mobility programs, as well as several connective regional transit providers.

- **While comprising one interconnected mobility network, Solano County's mobility programs do not always integrate effectively**, due to separate orientations of each of these programs, as well as the numerous city and county-based operators and stakeholders that manage the different transit systems.

- **Overall, Solano County offers a range of population densities, numerous of land uses and destination types, and four separate market typologies**, all of which require a variety of mobility offerings tailored to provide effective service in unique environments.

- **Areas with the highest potential transit propensity** include central and northern Vallejo, Suisun City, central and western Fairfield, and to a lesser extent Dixon. These areas correspond with MTC's defined Equity Priority Communities.

- **The workplaces of Solano County residents are scattered widely across the Bay Area and Sacramento regions**, with the largest concentrations located within Solano County, as well as substantial concentrations of workplaces corresponding with the region's economic centers (Concord, Walnut Creek, and Port Richmond in Contra Costa County, Berkeley in Alameda County, Downtown San Francisco, and Downtown Sacramento).

- **Solano County workers endure above average commute times**, with much of the County reporting an average commute trip length of 30 minutes but with some areas, particularly in Vallejo, reporting lengths of 90 minutes or more. In general, there is an apparent need for local mobility connections within Solano County, as well as interregional connections stretching far beyond Solano County's limits.

- **The vast majority of trips made by travelers within Solano County are between the County's three largest cities**, with over 75 percent of intra-county trips having origins and destinations in Vallejo, Fairfield, or Vacaville.

- **The majority of trips between Solano County and other counties within the region are made either to adjacent counties or to major regional employment centers**. Specifically, Contra Costa County is the most popular Solano County trip point of origin or destination, followed by Napa, Alameda, Sacramento, and Yolo Counties.

The comprehensive findings of the Market Assessment are included and discussed in detail throughout the remainder of this document. Overall, the findings indicate that, considering its wide array of market typologies, populations with high levels of transit propensity, and existing travel patterns, Solano County features a mobility environment that includes a variety of needs and a strong demand for connected mobility. With high rates of trip-making both within the County and to areas across the greater Bay Area and Sacramento regions, the County requires a network of integrated mobility programs that interconnectedly provide travelers with the means to initiate and complete local trips within a community, trips around the County, and trips outside the County. By applying targeted connected mobility strategies, STA can better meet the mobility needs of Solano County residents and also align policies and efforts with those of the greater region. The Connected Mobility Implementation Plan engages these assessed market conditions, which represent the foundation for defining Solano County's current mobility-related needs, as a framework for fulfilling the plan's overall goals and objectives.

BACKGROUND

Why Now?

Solano County has continued to grow and change over the past several decades, and its mobility programs have evolved as well. However, a number of recent factors make this the perfect time to assess whether or not the County's mobility services align with its current market and needs, as well as adequately contribute to connected mobility, both county and regionwide. Primary factors include:

- The COVID-19 pandemic has changed travel patterns in unforeseen ways, and this is an opportunity to ensure that mobility services in the County align with these new patterns.
- In response to COVID-19's extensive effects on regional transit performance, the Metropolitan Transportation Commission's (MTC's) Blue Ribbon Transit Recovery Task Force issued a set of 27 recommendations for making Bay Area transit more connected, efficient, and customer-focused. This provides a new opportunity for assessing the connectedness of Solano County's mobility programs and determining how their integration can be enhanced.
- As the effects of climate change become more severe and impactful locally, regionally, and beyond, the Connected Mobility Implementation Planning process allows STA to assess how mobility programs can be better oriented to reduce vehicle miles traveled (VMT) and therefore contribute to cutting-back greenhouse gas emissions (GHG).

- Ensuring that mobility programs are equitable and accessible to all has never been more important. Therefore, assessing, in a way that goes beyond Title VI, the equity of local, countywide, and regional mobility in serving disadvantaged populations and in contributing to fair and balanced access to opportunity is key to evaluating the overall equitability of Solano County's varied communities.

What is the Market Assessment?

The Market Assessment focuses on the mobility needs of Solano County and the built environment that shapes those needs. Through the Assessment, the project team seeks to understand where people live, where they work, how they choose to get from place to place, and how existing mobility networks facilitate both local and interregional trip-making needs**.** Ultimately, there are two key components of assessing the market for mobility programs:

1. Physical Environment - The built environment, influenced by density, land use, street design, and infrastructure to support pedestrian access directly affects transit's ability to be useful and efficient.
2. Customer Demand - By understanding local and countywide demographic trends, equity priorities, overall transit propensity, and specific travel patterns, including points of origin/destination, time of travel, trip purpose, and modal choice, STA can better allocate transportation resources to improve accessibility and better meet demand.

The Market Assessment has been developed in parallel with the Summary and Analysis of Existing Programs and Services documents, which offer a detailed look at mobility program availability, usage, and performance to understand what is and is not working in the current system. Findings from these reports will inform the mobility program analysis, as well as the development of a service framework which will outline guiding principles and design strategies for the new network.

Project Context

The project focuses on mobility within Solano County, which is the San Francisco Bay Area's northeastern gateway, representing the project service area. With a socioeconomically diverse population of almost 500,000, seven incorporated cities, and widely varying landscapes ranging from urban to suburban to rural agricultural, the County features a dynamic mobility environment unique within its region.

Currently, the County offers a variety of transportation services and programs, oriented to meet local mobility needs. These include the following:

- Five local transit services operated by separate local jurisdictions within the County:
    - Dixon Readi-Ride
    - Fairfield-Suisun Transit (FAST)
    - Rio Vista Delta Breeze
    - SolTrans
    - Vacaville City Coach
- SolanoExpress intercity and regional express bus service
- Locally-based ADA paratransit services

- Various countywide mobility programs, including (but not limited to):
    - Solano Mobility First/Last Mile and Vanpool Programs
    - Mobility Call Center
    - Intercity ADA subsidized Taxi Card Program
    - Guaranteed Ride Home Program

While all of these services coexist within Solano County, their separate orientations toward specific cities or unique mobility solutions haven't necessarily established a singular, interconnected transportation network that enables easy and convenient local and regional trips.

As Solano County's travel patterns change in correspondence with population growth, development shifts, and ongoing lifestyle adjustments related to the evolving COVID-19 pandemic, charting a path forward to achieve a more connected mobility network is more important now than ever before. Assessing the conditions of the local transportation market is key to identifying opportunities, challenges, and a path forward to developing a linked mobility network that will not only enable Solano residents to more easily travel throughout their county, but also to access population and employment centers in the greater Bay Area and Sacramento regions.

Data Sources

Population and demographic data for this report comes from the 2010 U.S. Census or 2019 Five-Year Estimates from the American Community Survey. Employment data comes from the U.S. Census OntheMap database, using 2019 jobs data.

Finally, travel demand data is derived from Replica, a data platform that integrates cell phone locations, geographic data, and U.S. Census data to provide insight into regional travel patterns. Replica data used for this report is from the week of January 6, 2020.

SOLANO COUNTY'S EXISTING MOBILITY NETWORK

Consisting of the SolanoExpress Intercity Express Bus system, five local transit networks, ADA paratransit services, several connective regional transit providers, as well as alternative mobility programs as offered by Solano Mobility such as its Intercity Taxi Card program, First/Last Mile programs, and GoGo Grandparent on-demand service for seniors, Solano County's mobility network is relatively robust and provides a variety of services to meet a range of needs. The Summary of Solano County Mobility Programs, completed separately as a part of the Connected Mobility Implementation Plan, details all of the County's current mobility offerings, as well as their level of interconnectivity.

Comprising a Single Integrated Network

Together, SolanoExpress, Solano County's local transit systems (Soltrans, FAST, Vacaville City Coach, Dixon Readi-Ride, and Rio Vista Delta Breeze), and its supplementary alternative mobility programs are meant to comprise one countywide mobility network that links with the greater networks of the Bay Area and Sacramento region. However, due to separate orientations of each of these programs, as well as the numerous city and county-based operators and stakeholders that manage the different transit systems, the programs do not always integrate with one another in a manner that is effective and/or

usable by customers for immediate and seamless trip-making. As a part of the Connected Mobility Implementation Plan, the integration and overall singularity of Solano County's mobility network will be evaluated, and a delivery of targeted improvement recommendations will help lead to an enhanced multimodal, countywide system.

THE CURRENT MOBILITY ENVIRONMENT

Land use and the design of the built environment impact the viability of transit, as well as other supplementary mobility programs, as primary modes of transportation. The 3Ds - density, diversity, and design - of each community intersect to create a market typology that characterizes the community's ability to support transit service. The market typologies will then inform the types of transit solutions that will be most appropriate in each part of the network.

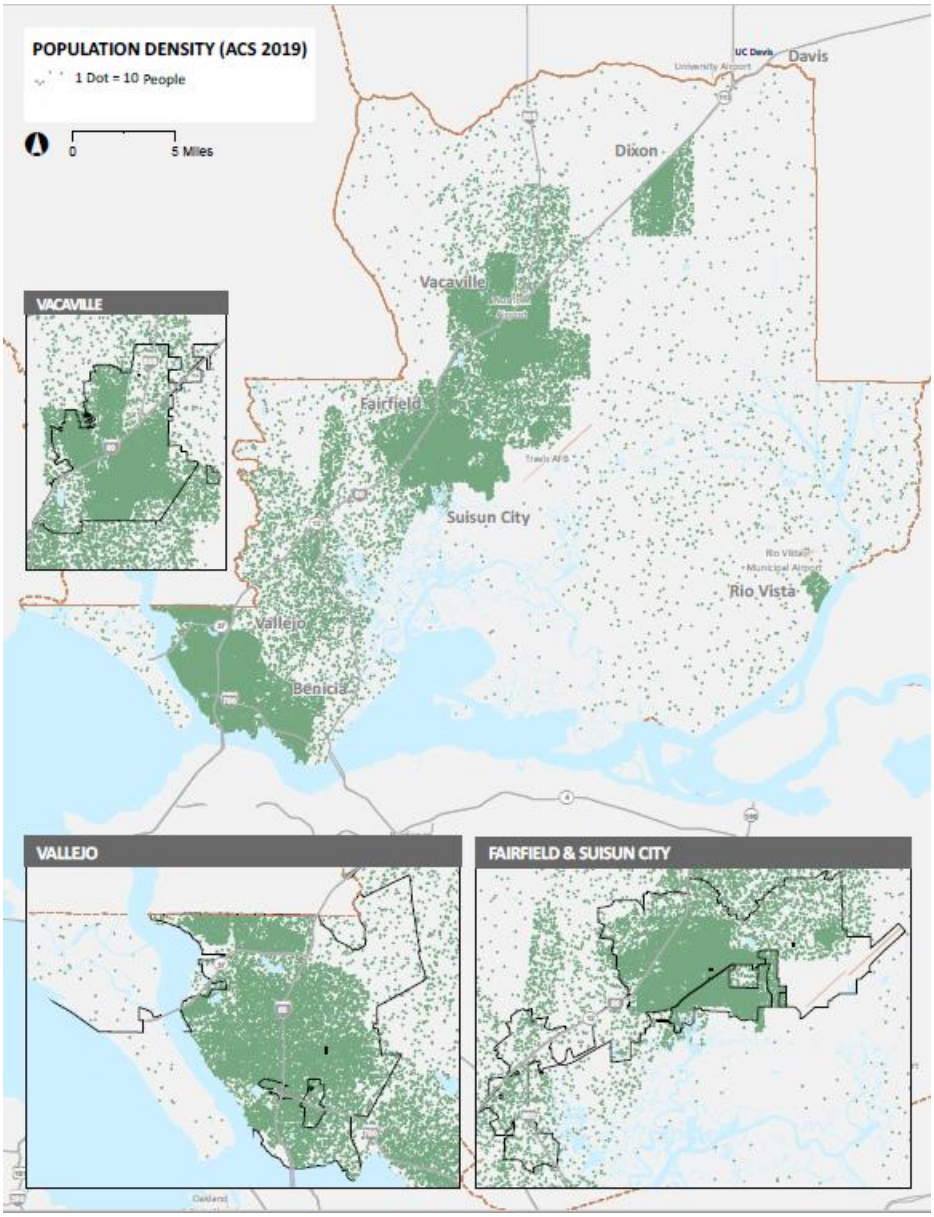
Density

Are there enough people present to generate demand for transit or another mobility program?

Denser areas have more people concentrated together, and the more people there are in a geographic concentration, the larger the potential rider base. Denser areas are ideal for transit because they concentrate a large number of people within a smaller geography, meaning that the bus does not have to travel as far to attract riders.

The map below indicates a range of population densities existing across Solano County, with the highest levels of density existing in Vallejo, Benicia, Fairfield, Suisun City, and the central portion of Vacaville. This reveals areas where local fixed route service is appropriate. For the rest of the County, where levels of density are generally lower, non-fixed-route transit services may be more effective. This means that, for example, on-demand service in Dixon and Rio Vista fit s demand levels and densities.

Figure 3: Solano County Population Density Map



Destinations

Is there a variety of destinations for people to access via mobility programs?

Transit is most successful when the routes serve a variety of destinations including housing, job centers, grocery stores, medical facilities, social services, schools, and shopping malls. A route that travels entirely through a residential neighborhood or one that travels for most of its path to a remote

employer location will not carry many riders, because there is no diversity of destinations for people to travel to along the route.

In general, while the western portion of Solano County features a fairly diverse mix of land uses and potential destinations, the eastern portion of the county, where agricultural uses dominate, is much less diverse. The land use consistency within incorporated cities is also fairly diverse. Diversity among land uses generally corresponds with population density within the County, further indicating potential benefit associated with ensuring that transit services and mobility offerings are widely available where densities are greatest.

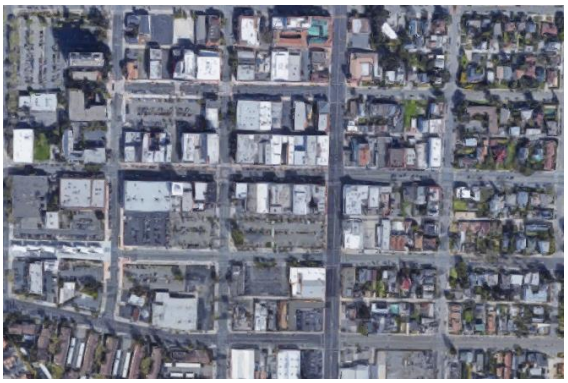
The variety of land uses is depicted in both the countywide and city-specific land use maps included in **Appendix 1**.

Design & Market Typologies

Are the street networks designed to promote walkability and access to major corridors?

The market typologies integrate the findings from the 3Ds of density, diversity, and design to identify the types of transit service that are appropriate in each part of the service area. Since STA and other Solano County transit providers have limited resources with which to operate service, it must make difficult decisions for how and when to allocate transit trips and/or mobility program offerings across the service area. Assigning each part of the service area to one of Solano County's market typologies, as defined *in the table* below, sets expectations for the type of transit service that will be recommended in the final plan.

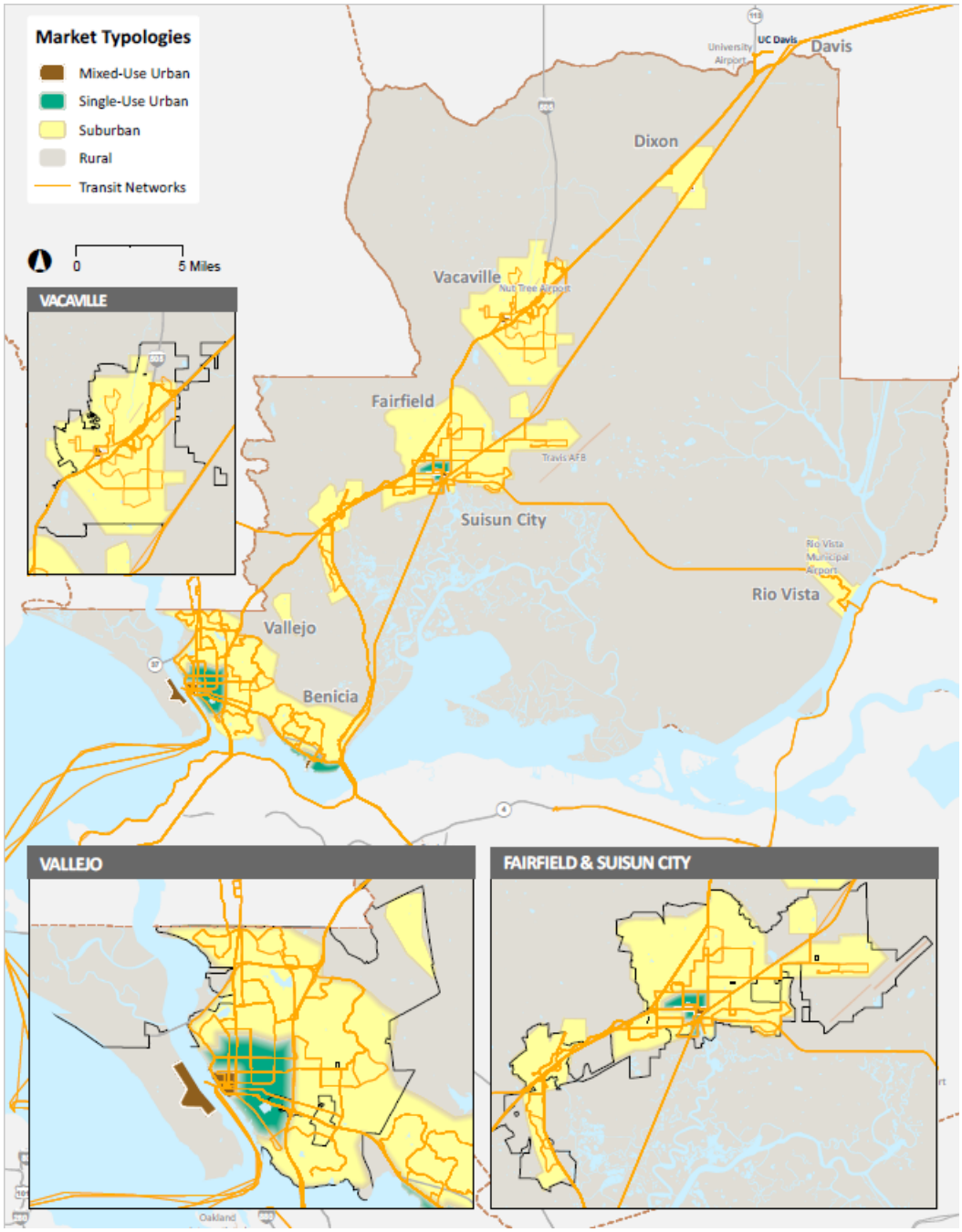
Figure 4: Solano County Market Typologies

MARKET TYPOLOGY	CHARACTERISTICS	LOCATIONS
Mixed-Use Urban 	This is the ideal environment for public transit to thrive, where density, diversity, and design all work together to create high concentrations of origins and destinations. Transit here should feature: • Higher frequencies • Longer service spans • Compatibility with transit priority measures	Downtown Vallejo
Single-Use Urban	These areas are primarily residential, punctuated by occasional corridors with shopping/retail destinations. Transit	Central Vallejo, Downtown Fairfield, and Downtown Benicia

	here should feature frequencies that are relatively high, but are appropriate at rates slightly lower than those for services in the Mixed-Use Urban typology.	
Suburban 	Suburban areas are more difficult to serve effectively with fixed-route transit. They are characterized by lower densities, sprawling auto-centric neighborhoods, and separation of land uses. Transit here should feature: • Lower frequencies • Shorter service spans • Orientation as either fixed-route or point-to-point	Vacaville, Dixon, Rio Vista, Suisun City, Cordelia, and areas surrounding Vallejo, Fairfield, and Benicia
Rural 	These are sparsely-populated or not at all populated areas that are very difficult to serve by transit, and in some cases are not appropriate for traditional transit service provision. In many cases, these areas are better served by an alternative mobility program that is tailored to more on-demand, occasional trip-making.	All other areas of the County

The map below depicts where these different typologies exist across Solano County, as well as how they are concentrated around existing transit service areas.

Figure 5: Solano County Market Typology Map



TODAY'S POPULATION AND RIDER MARKETS

Understanding changes in population growth and composition, as well as an area's rider markets, is an important part of understanding a community's mobility environment. Although population growth alone can increase the potential rider base, it does not automatically translate to a higher demand for

transit. Pew Research's American Trends Panel Survey has shown that certain demographic factors, such as household income or household vehicle rates, are correlated with transit demand. This section discusses current and future population trends, and focuses on nine demographic groups more likely to use public transit: seniors, college students, youth, persons with disabilities, minorities, low-income, zero-vehicle households, MTC-defined Equity Priority Communities, and veterans.

Population Trends

Similar to many other Bay Area jurisdictions, Solano County and the cities within it have been gradually rising in population over the past decades. While populations have increased at a somewhat slower rate in recent years, they are still rising and are expected to continue increasing, especially in the County's more exurban locations like Vacaville and Dixon. The table below indicates how Solano County populations have been changing over the past 40 years.

Figure 6: Solano County Population Trends by Jurisdiction

JURISDICTION	POPULATION				
	1980	1990	2000	2010	2020
Solano County	**235,203**	**343,460**	**397,001**	**413,944**	**453,491**
Benicia	15,376	24,437	26,865	26,997	27,131
Dixon	7,541	10,401	16,103	18,351	18,988
Fairfield	58,099	77,211	96,178	105,322	119,881
Rio Vista	3,142	3,316	4,571	7,360	10,005
Suisun City	11,087	22,686	26,188	28,111	29,672
Vacaville	43,367	71,479	88,625	92,428	102,386
Vallejo	80,303	109,199	116,760	115,942	126,090

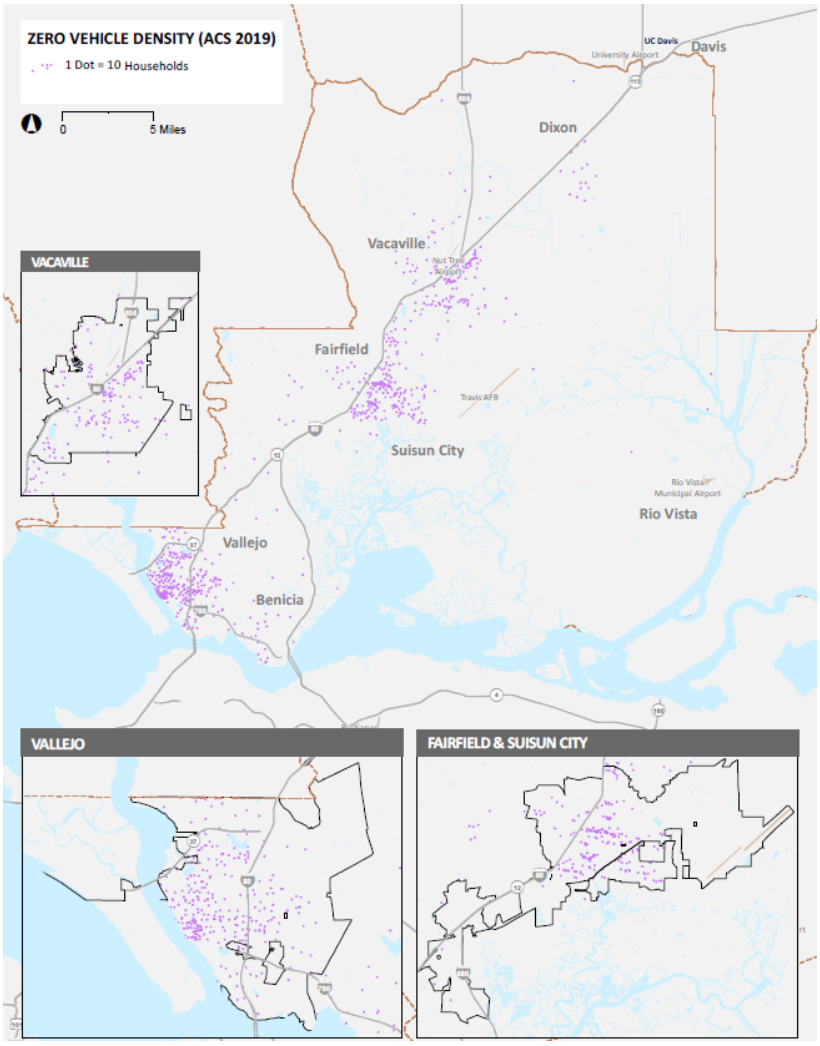
Rider Markets

Included below are assessments of a variety of market factors that are understood to indicate the existence of populations with a high level of transit propensity. Combined with an understanding of MTC's defined Equity Priority Communities, the determination of these market factors and their locations countywide help identify the portions of the County where improving connected mobility may be most important.

Zero-Vehicle Households

Lack of access to a private vehicle is one of the top indicators of someone's likelihood to take transit. Zero-vehicle households represent 6 percent of regional households but 44 percent of transit riders. In Solano County, zero-vehicle households are mostly concentrated in the central portions of Vallejo, Fairfield, and Vacaville, which makes sense as the development patterns outside of these mixed-use urban centers are more auto-centric. SolanoExpress connects each of these areas to provide opportunities for carless riders to make trips around the County. Among local transit providers, SolTrans and FAST serve the concentrations of riders without personal vehicle access.

Figure 7: Map of Solano County Zero-Vehicle Household Density

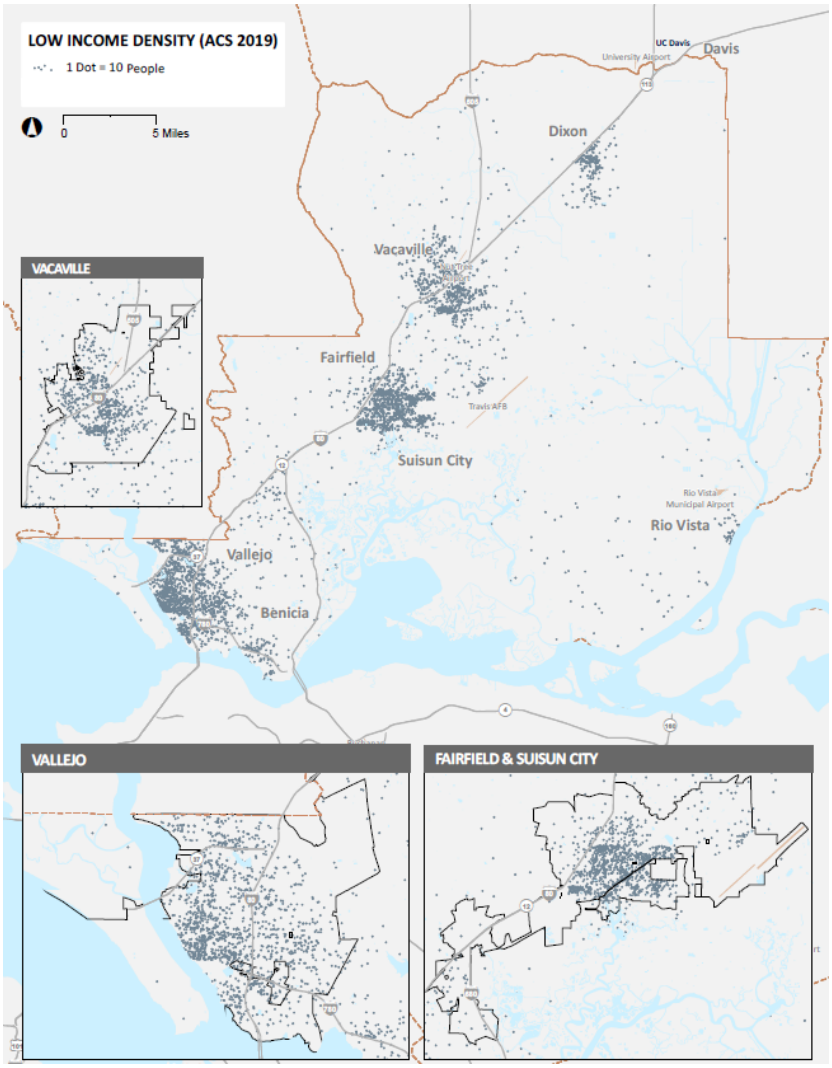


Low Income Households

Low-income populations are more likely to take transit. Because car ownership is expensive, low-income households are less likely to have enough cars to meet all their mobility needs. Low-income riders represent a moderate part of the study area's transit ridership – especially the ridership portion making

local, intra-county trips. The distribution of low-income households in Solano County generally corresponds with population density, with the highest concentrations of low-income residents evident in the most densely-populated areas, such as Vallejo, Fairfield and Suisun City. One exception is Benicia, which is relatively densely-populated but does not feature a high concentration of low-income individuals. Overall, key trip generators and destinations for riders include low-income housing developments, the Social Security Administration and other social services providers, shopping centers, and health facilities.

Figure 8: Map of Solano County Low Income Household Density

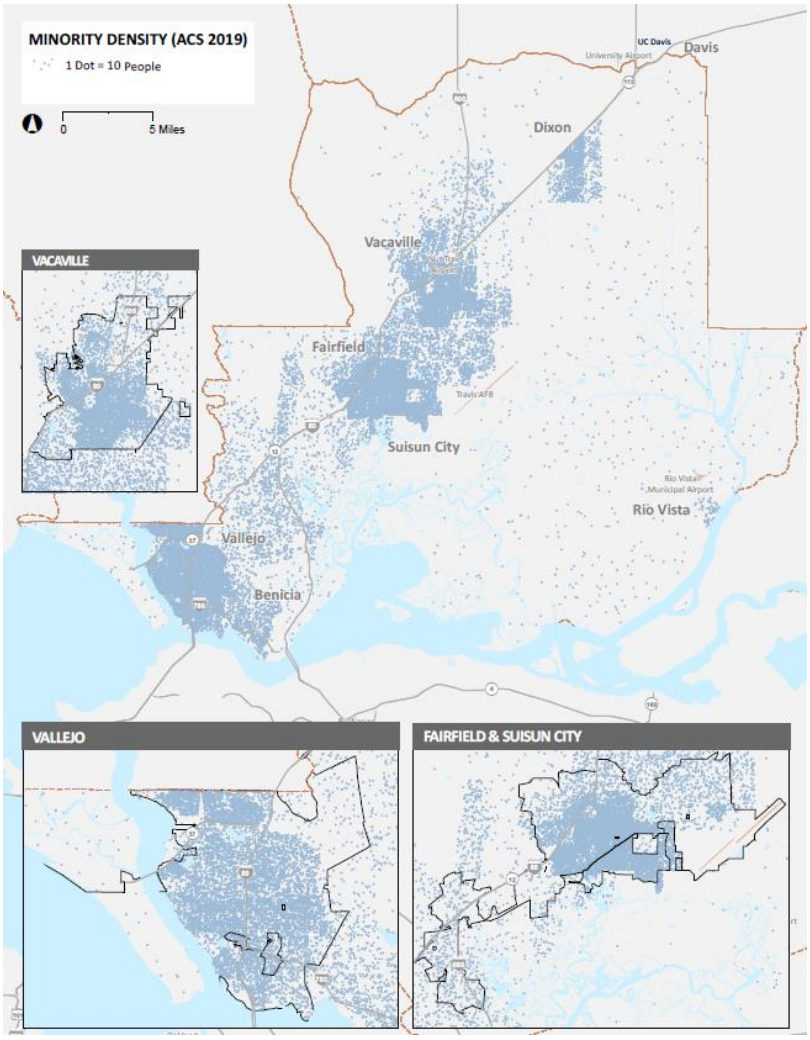


Minority Households

While identifying as a minority household is not a direct indicator of higher transit use, it is important to pay close attention to the concentration and distribution of minority households in the service area for two reasons. The first is STA, as well as its partner agencies, is committed to providing equitable mobility service and access. The second reason is to protect these communities from Title VI implications. Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin by an

entity that receives funding from the federal government, including transit agencies. When transit agencies make service changes, they must ensure that service changes do not place a disparate impact on minority populations. Solano County has a high rate of diversity, and the County hosts minority populations that are quite widespread. While the highest concentrations of minorities are in the far western and central parts of Solano County, minority populations are fairly apparent in all areas of the County that feature some level of population density.

Figure 9: Map of Solano County Minority Household Density

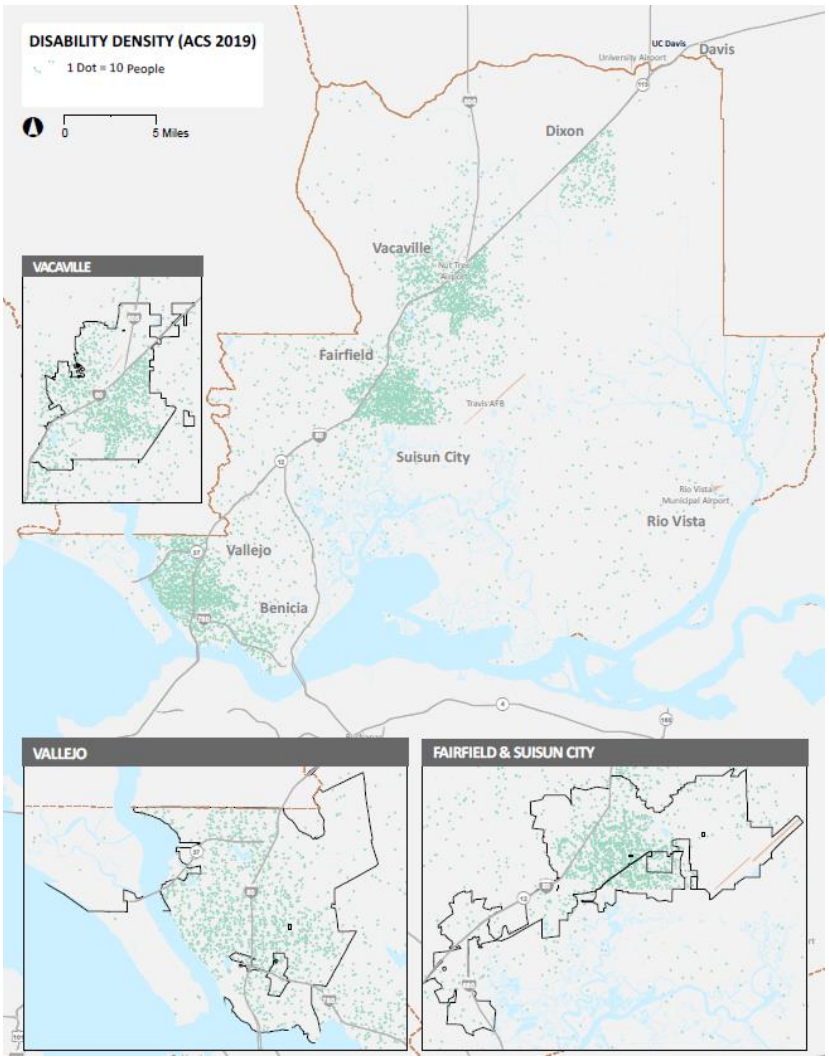


Persons with Disabilities

Persons with disabilities are more likely to be reliant on transit, as they may not be able to or choose not to drive. In Solano County, the population of people with disabilities is distributed relatively evenly throughout the County, based on areas of population density. Interestingly, as compared with other populations, persons with disabilities seemed to be more prevalent across suburban and rural areas of the County. While complementary paratransit service is available, many persons with disabilities routinely ride fixed-route services, indicating success in accommodating access needs of these

customers. Key trip generators and destinations on routes or services accommodating higher-than-average proportions of riders with disabilities include major apartment complexes, medical centers, adult learning and rehabilitation centers, and the Social Security Administration and other social services providers.

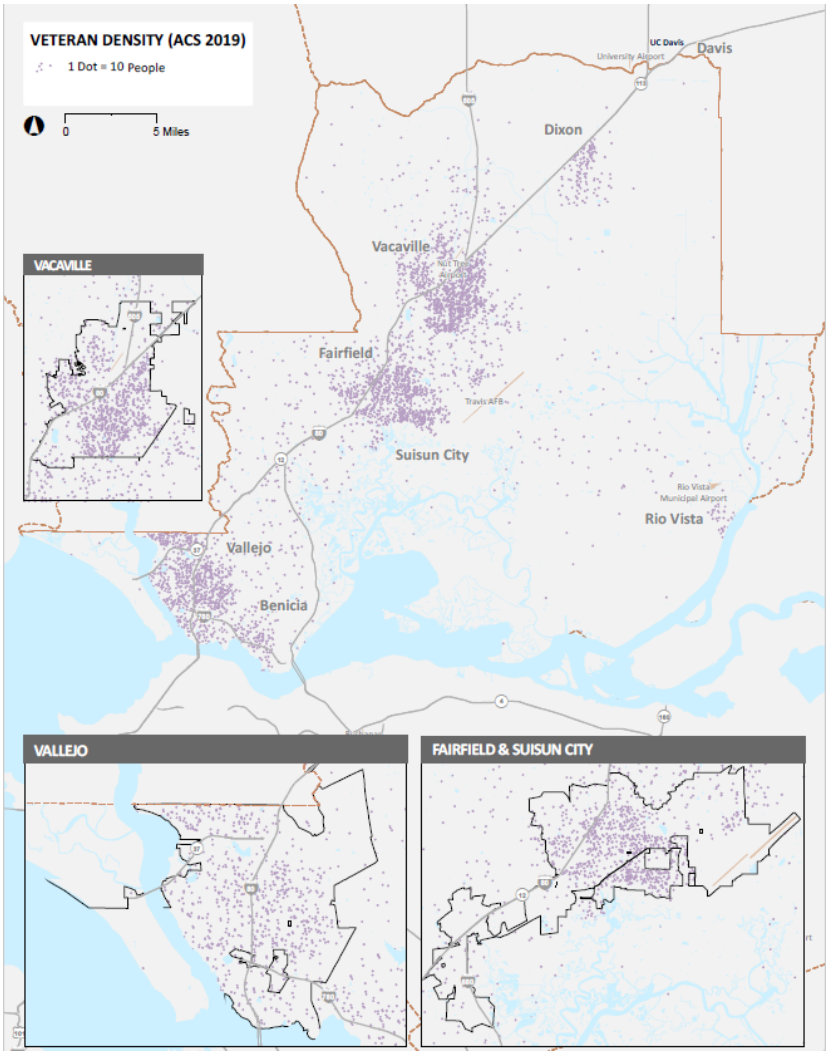
Figure 10: Map of Density of Persons with Disabilities in Solano County



Veterans

Veterans are more likely to be transit-reliant, as they are more likely to experience the range of factors that typically affect other populations with higher transit propensity, including in particular seniors and persons with disabilities. Ensuring that veterans have quality and equitable access to mobility is of key importance, especially in Solano County, which hosts Travis Air Force Base and, in relation to it, a particularly large military presence. As shown below, the highest concentrations of veterans in the County exist in Fairfield and Vacaville, which are the two cities closest to Travis Air Force Base.

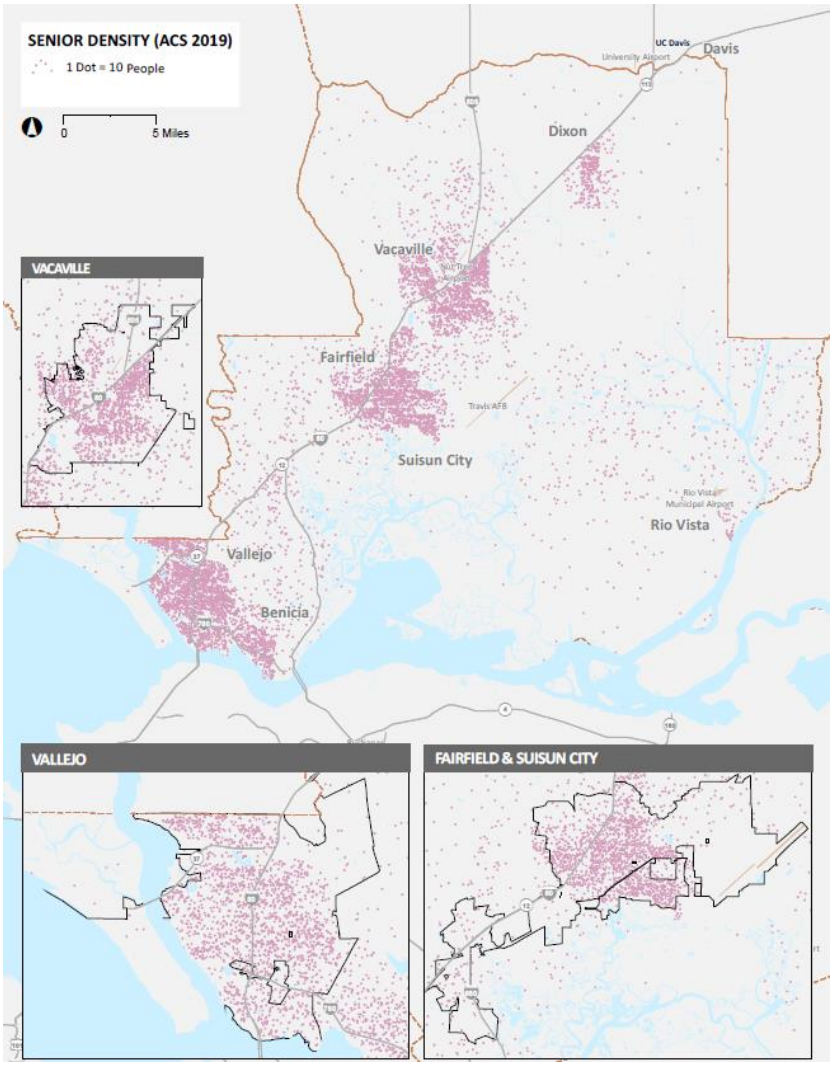
Figure 11: Map of Solano County Veteran Population Density



Seniors

Seniors are more likely to be transit-reliant; they may no longer be able to drive, or they may choose not to, meaning they are more likely to take the bus or use another program for their mobility needs. As the population ages, the senior population is expected to increase 32 percent over the next 20 years. With more seniors choosing to age in place, there will be an increasingly dispersed transit-reliant population that is harder and harder to serve efficiently with traditional public transit service. Routes with the highest proportions of senior riders serve medical centers, senior centers, and the Social Security Administration. The best solutions for senior mobility are most often dedicated midday shuttles that serve shopping or medical destinations or on-demand subscription-based services.

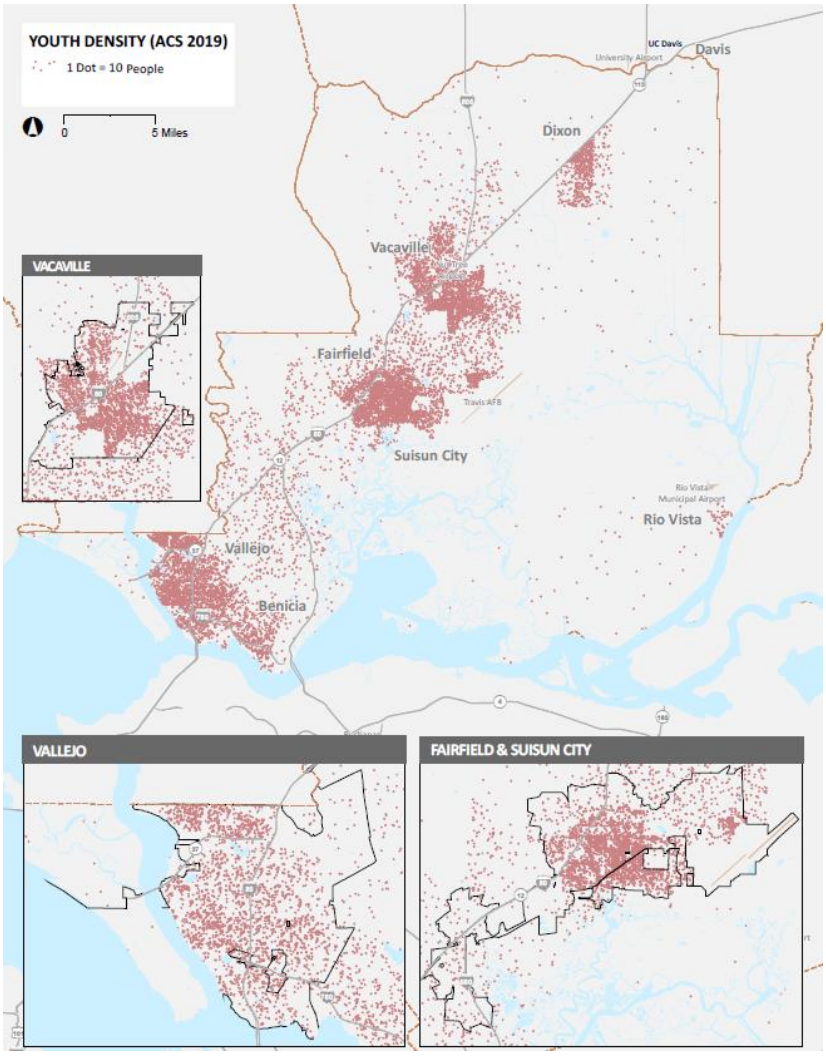
Figure 12: Map of Solano County Senior Population Density



Youth

The under-18 population can also be more transit-reliant, as they may not have access to a car or are too young to drive. Furthermore, Youth populations, however, tend not to have single, large concentrations anywhere, unlike college-aged students with universities or seniors with retirement communities. This is reflected in Solano County, where there are not any clear patterns of youth population distributions, and concentrations basically correspond with areas of higher population density.

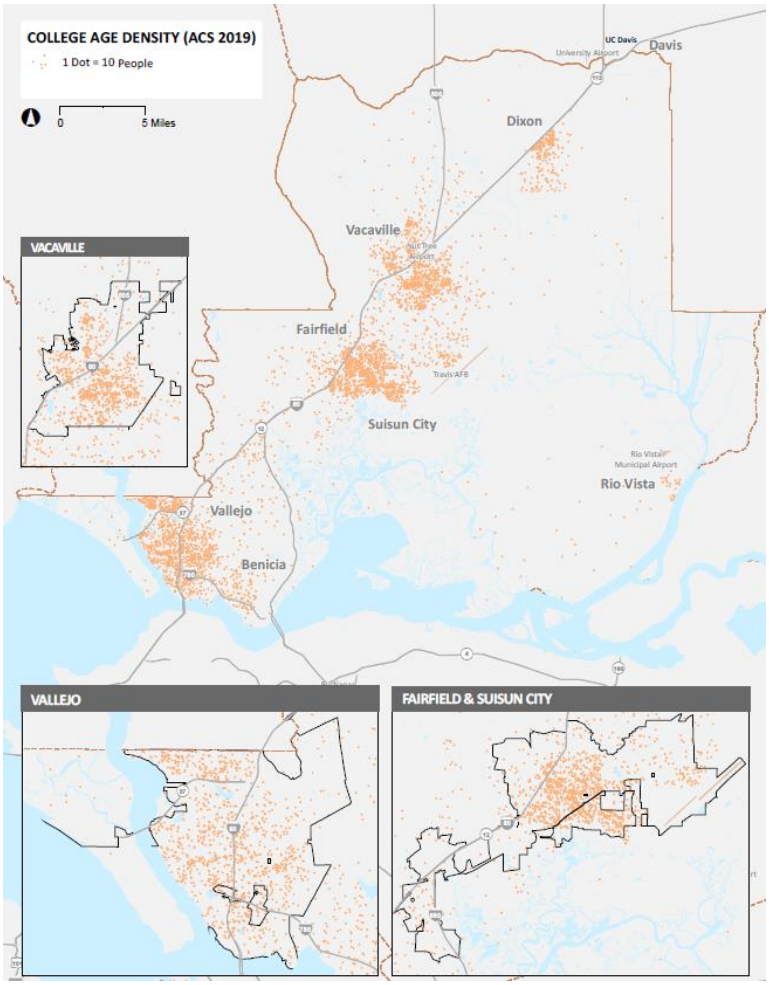
Figure 13: Map of Solano County Youth Population Density



College Students

College students are more likely to take transit due to on-campus parking restrictions or because they are from outside the region and do not bring cars with them. Without a large university community like UC Davis and UC Berkeley within its boundaries, Solano County does not have as large a population of college-aged residents as some of its neighboring counties. However, some densities of college-aged residents in the County do exist, and are particularly noticeable in Fairfield, Suisun City, and Vacaville.

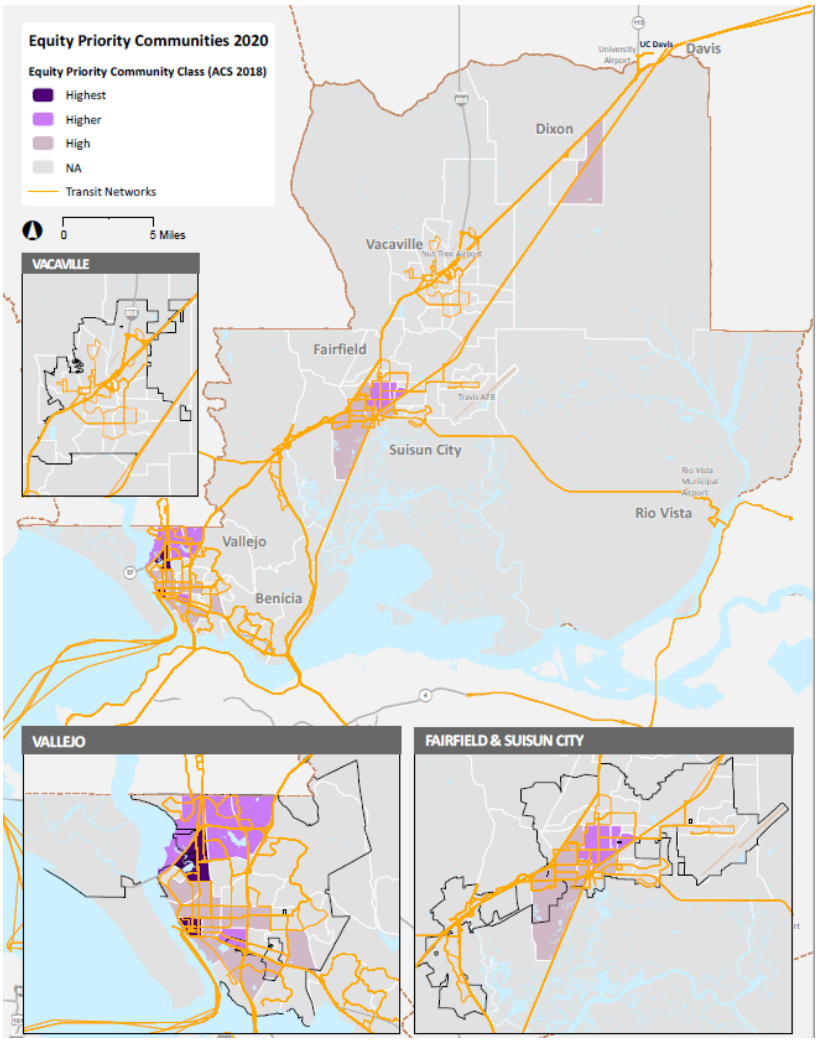
Figure 14: Map of Solano County College-Age Population Density



MTC-Defined Equity Priority Communities

Across the Bay Area region, and including in Solano County, MTC has defined certain census tracts as having, based on their demographic consistency, a particular need in regard to ensuring equity and, in turn, a concentration of the market factors that potentially indicate higher than average levels of transit propensity. These "Equity Priority Communities" exist regionwide, and are defined based on demographic thresholds met related to percentages of populations as people of color, low-income, limited-English proficiency, seniors, carless, single parents, people with disabilities, and rent-burdened households. Since many of these factors overlap with typical indicators of transit proficiency, analyzing where they exist in Solano County helps show where ensuring the equitability of providing mobility services is most important. Based on the map below, as well as on the analyses of the specific market factors discussed above, the northern part of Vallejo and the central portions of Fairfield host the census tracts within Solano County that have the highest level of equity priority.

Figure 15: Map of MTC-Defined Equity Priority Communities in Solano County



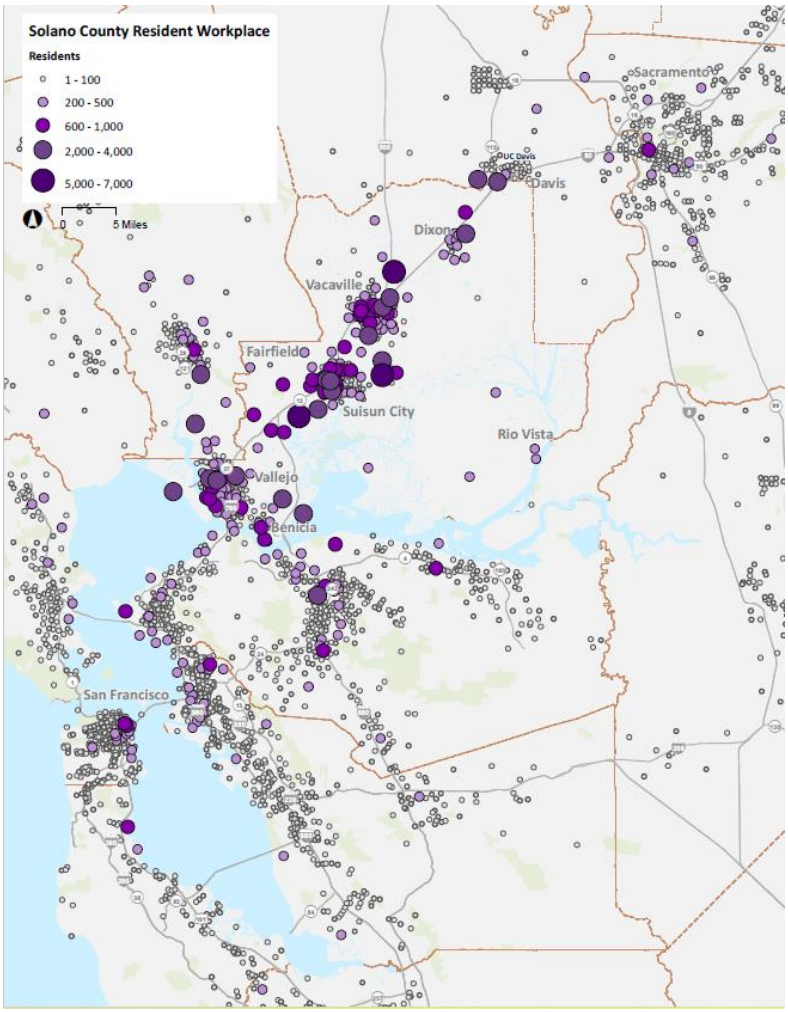
CURRENT TRAVEL PATTERNS AND MOBILITY NEEDS

Determining local and regional travel patterns, including locations across the region where County residents are traveling to work, average commute times for communities around the County, and details about other trip types is also key to understanding the current mobility environment in Solano County. In addition to ascertaining where traveling populations exist, the determination of why people are traveling, where they are traveling from and going to, and how long they are willing to travel paints a much clearer picture of Solano County's overall mobility activity, its potential mobility needs, and opportunities and challenges related to improving mobility integration.

Accessing Employment Centers

As indicated by the map below, the workplaces of Solano County residents are scattered widely across the Bay Area and Sacramento regions. The largest concentrations of employment locations for County residents are, unsurprisingly, located within Solano County, meaning that a substantial portion of local residents both live and work within County boundaries. However, large numbers of County residents also leave the County to access employment, with the highest concentrations of workplaces corresponding with the region's economic centers. These primarily include Concord, Walnut Creek, and Port Richmond in Contra Costa County, Berkeley in Alameda County, Downtown San Francisco, and Downtown Sacramento. Overall, this indicates the need for local mobility connections within Solano County, as well as interregional connections stretching far beyond Solano County's limits.

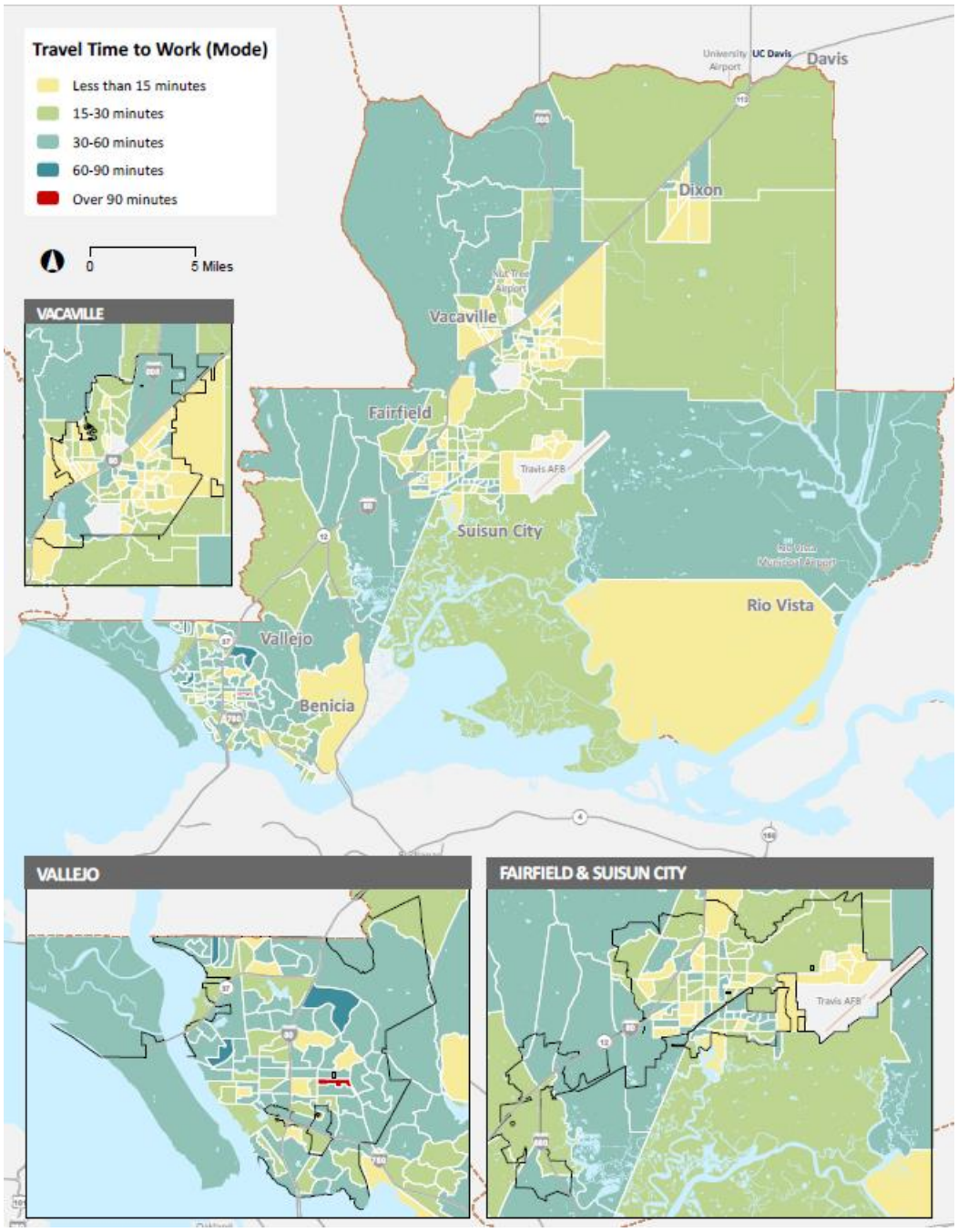
Figure 16: Concentration of Workplaces for Solano County Residents



Corresponding with the largely scattered nature of Solano County residents' employment locations is the fact that many residents report long commute times. Specifically, the map below indicates the commute time ranges reported by the highest number of residents within a census tract. While large

portions of the County report experiencing commute times of over 30 minutes, some, primarily within the City of Vallejo, report commute times of over 90 minutes. In its entirety, the map helps pinpoint the general points of origin for shorter commute trips within the County and long commute trips reaching out across the greater region.

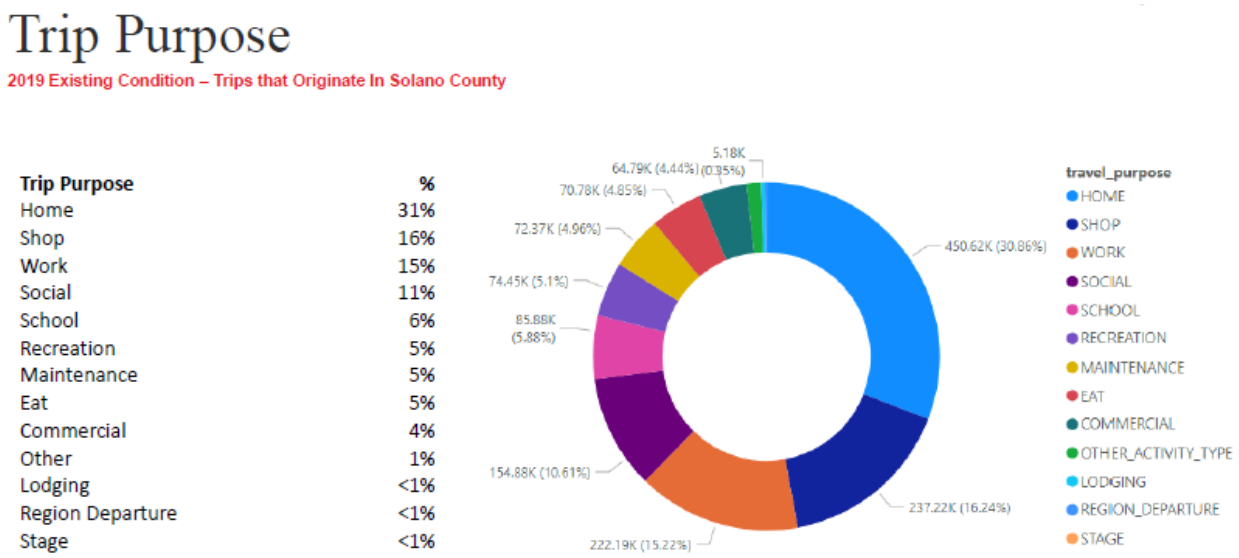
Figure 17: Solano County Resident Travel Time to Work by Census Tract



Trip Purpose – Why are People in Solano County Traveling?

The table below indicates the variety of reasons why people in Solano County make trips. In Solano County, most trips are made between residents' homes and shopping/workplaces. The smaller percentage of trips made for school-related purposes is indicative of the County's lack of a large university campus.

Figure 18: Travel Purpose Percentages



Where are Travelers Going Within Solano County?

For trips made within the County, more than 75 percent are to locations within one of the County's three largest cities (Fairfield, Vacaville, and Vallejo). Fairfield is the destination for most trips within the County. As the county seat and home of Travis Air Force Base, Fairfield is one of Solano's primary employment and retail hubs, and its top rank among County trip destinations corresponds with this fact. With the exception of Suisun City, which is not one of the County's smallest communities but is a destination for only one percent of all trips countywide, cities across the County generally feature destination percentages that correspond with their population sizes.

Figure 19: Share of Local Travel Between Cities Within Solano County

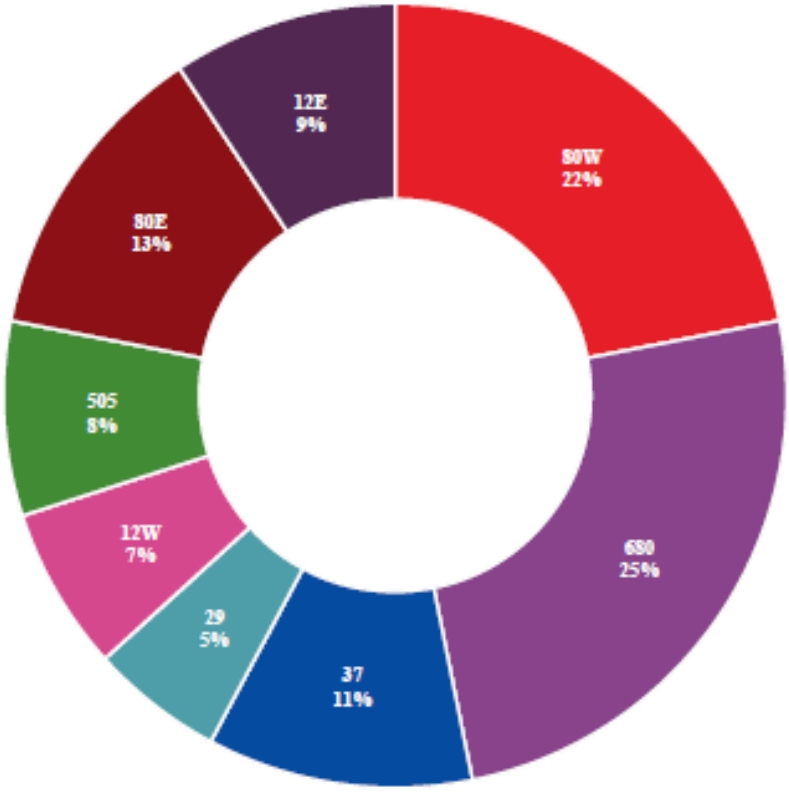
Destination	%
Fairfield	33%
Vacaville	25%
Vallejo	18%
Suisun City	1<1%
Benicia	6%
Dixon	5%
Rio Vista	1%
Hartley	1%
Allendale	1%
Green Valley	<1%

See **Appendix 2** for comprehensive statistics about destinations for trips from specific cities or communities within the County.

Where are Travelers Entering & Departing Solano County?

The chart below indicates the points of entry where Solano County trips that either originate or terminate outside of the County cross the County limits. Unsurprisingly, almost half of these trips enter the County via its primary roadway links with the rest of the Bay Area, including Interstate 680 at the Benicia Bridge and Interstate 80 at the Carquinez Bridge. In contrast, less than 25 percent of these trips cross the County line in the direction of Yolo County and Sacramento via Interstate 80 near Davis and Interstate 505 near Winters.

Figure 20: Most Common Points of Entry & Departure for Solano County Intercounty Trips



Solano County Trip Origins & Destinations

Indicated in the charts and maps below, the origin-destination analysis shows that, for Solano County trips that cross outside of the County, a number of nearby counties serve as points of origin or as destinations. The rates of those counties acting as a point of origin for those trips are almost identical to the rates of acting as a destination, which indicates the round-trip nature of trip-making in this area. Contra Costa County is the most popular Solano County trip point of origin or destination, followed by Napa, Alameda, Sacramento, and Yolo Counties. This corresponds with the concentrations of Solano County resident workplaces, evident in Contra Costa, Alameda, and Sacramento Counties, as well as Solano's shared boundaries with several of these locations, including Napa and Yolo Counties.

Figure 21: Regional Destinations and Modal Access Rates for Intercounty Trips from Solano County

Origin Destination Analysis

All Trips: County Level – County Destination for Trips that Originate in Solano County

Origin County	Destination County	All Trips	SOV	Transit	Carpool
Solano County	Contra Costa County	71,693	47%	1%	43%
	Napa County	43,488	63%	0%	<1%
	Alameda County	31,790	45%	2%	44%
	Sacramento County	29,585	43%	0%	<1%
	Yolo County	28,988	60%	<1%	27%
	San Francisco County	19,074	44%	6%	42%
	Marin County	10,993	67%	<1%	27%
	Sonoma County	9,919	57%	<1%	30%
	Santa Clara County	7,013	45%	1%	41%
	San Mateo County	6,322	48%	2%	42%

Note: Percentages do not include internal Solano County Trips

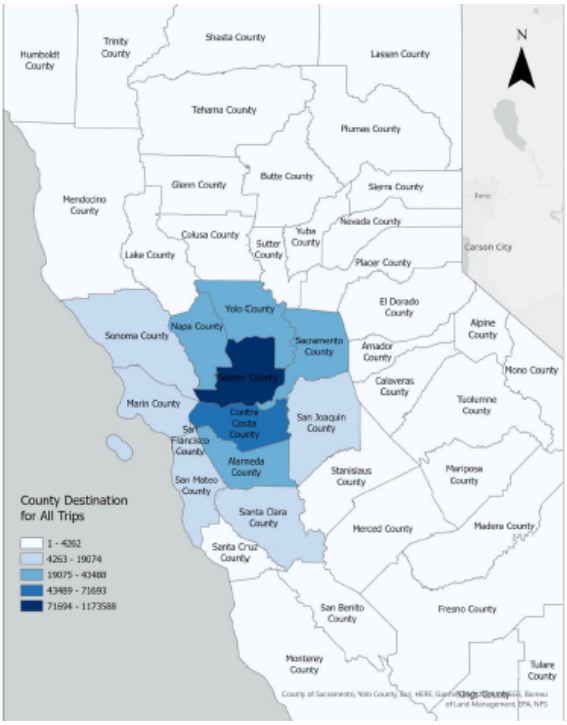


Figure 22: Regional Points of Origin and Modal Access Rates for Intercounty Trips to Solano County

Origin Destination Analysis

All Trips: County Level – County Origin for Trips that End in Solano County

Origin County	Destination County	All Trips	SOV	Transit	Carpool
Contra Costa County	Solano County	70,620	41%	<1%	51%
Napa County		43,284	53%	<1%	38%
Alameda County		31,551	51%	2%	40%
Sacramento County		28,979	49%	<1%	41%
Yolo County		28,318	68%	<1%	18%
San Francisco County		18,398	18%	4%	71%
Marin County		11,108	41%	<1%	52%
Sonoma County		9,883	49%	<1%	39%
Santa Clara County		6,611	67%	<1%	23%
San Mateo County		5,943	52%	2%	41%
San Joaquin County		4,895	73%	<1%	16%
Placer County		4,183	62%	<1%	23%

Note: Percentages do not include internal Solano County Trips

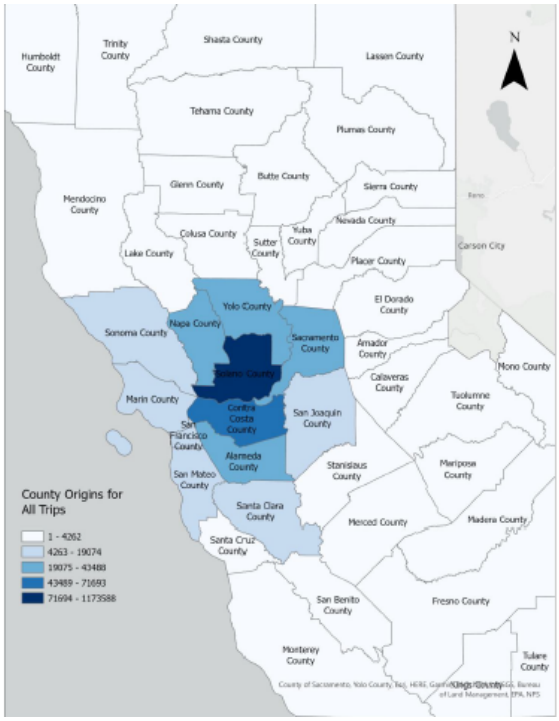
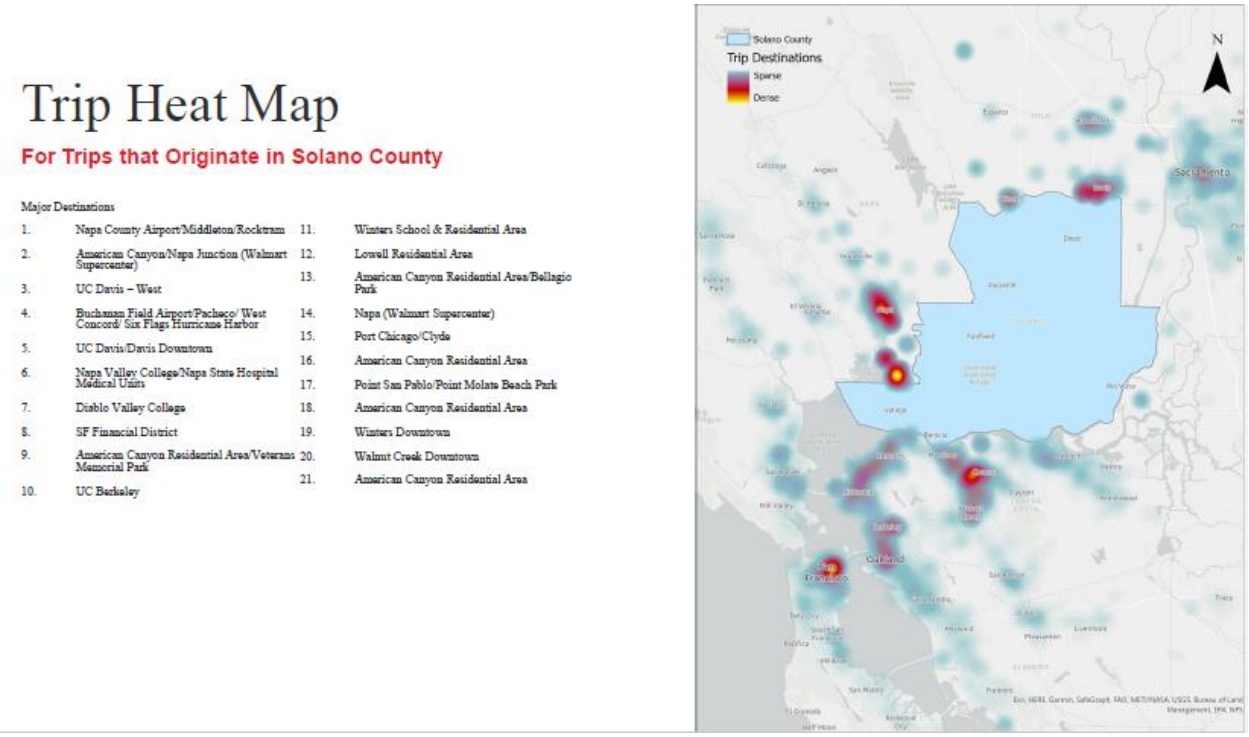


Figure 23: Heat Map of Intercounty Trips Originating in Solano County



See **Appendix 3** for comprehensive statistics about destinations outside of Solano County for intercounty trips from specific cities or communities.

How has Solano County Travel Behavior Changed Since the Onset of COVID-19?

While general travel patterns from prior to the onset of COVID-19 in early 2020 are still evident today, travel behavior has fluctuated somewhat as the pandemic and related public health conditions have evolved. The most noticeable change is that peak travel periods, which were clearly defined pre-pandemic as existing during the morning and evening commute hours, are now less concentrated to certain times of the day and are spread more extensively across the afternoon hours. This corresponds with the higher rate of remote, home-based work that has emerged throughout the pandemic and has allowed for more flexible daily schedules, which reduce the level of traditional morning and evening commute behavior and accommodate more types of trip-making throughout the day. In addition, rates of travel between locations within Solano County have increased slightly, while travel on a daily basis outside the County has decreased somewhat. This trend is also indicative of the uptick in remote work, and the more limited need for daily long-distance work commutes.

CONCLUSION

Considering its wide array of market typologies, populations with high levels of transit propensity, and existing travel patterns, Solano County features a mobility environment that includes a variety of needs and a strong demand for connected mobility. With high rates of trip-making both within the County and to areas across the greater Bay Area and Sacramento regions, the County requires a network of integrated mobility programs that interconnectedly provide travelers with the means to initiate and complete local trips within a community, trips around the County, and trips outside the County. By applying targeted connected mobility strategies, STA can better meet the mobility needs of Solano County residents and also align policies and efforts with those of the greater region, as guided by MTC's Blue Ribbon Transit Recovery Task Force recommendations. The Connected Mobility Implementation Plan engages these assessed market conditions, which represent the foundation for defining Solano County's current mobility-related needs, as a framework for fulfilling the plan's overall goals and objectives.

STA Connected Mobility Implementation Plan
Solano County Market Assessment - DRAFT
Appendix 1: Solano County Land Use Maps

August 2022

Solano Transportation Authority

INTRODUCTION

Included below are land use maps that indicate the variety of uses and destination types that exist across Solano County. In general, the maps indicate how varied destination types range throughout different portions of the County, as well as locations best suited and/or most deserving of robust mobility offerings.

LAND USE MAPS

Figure 1: Solano County Land Use Map

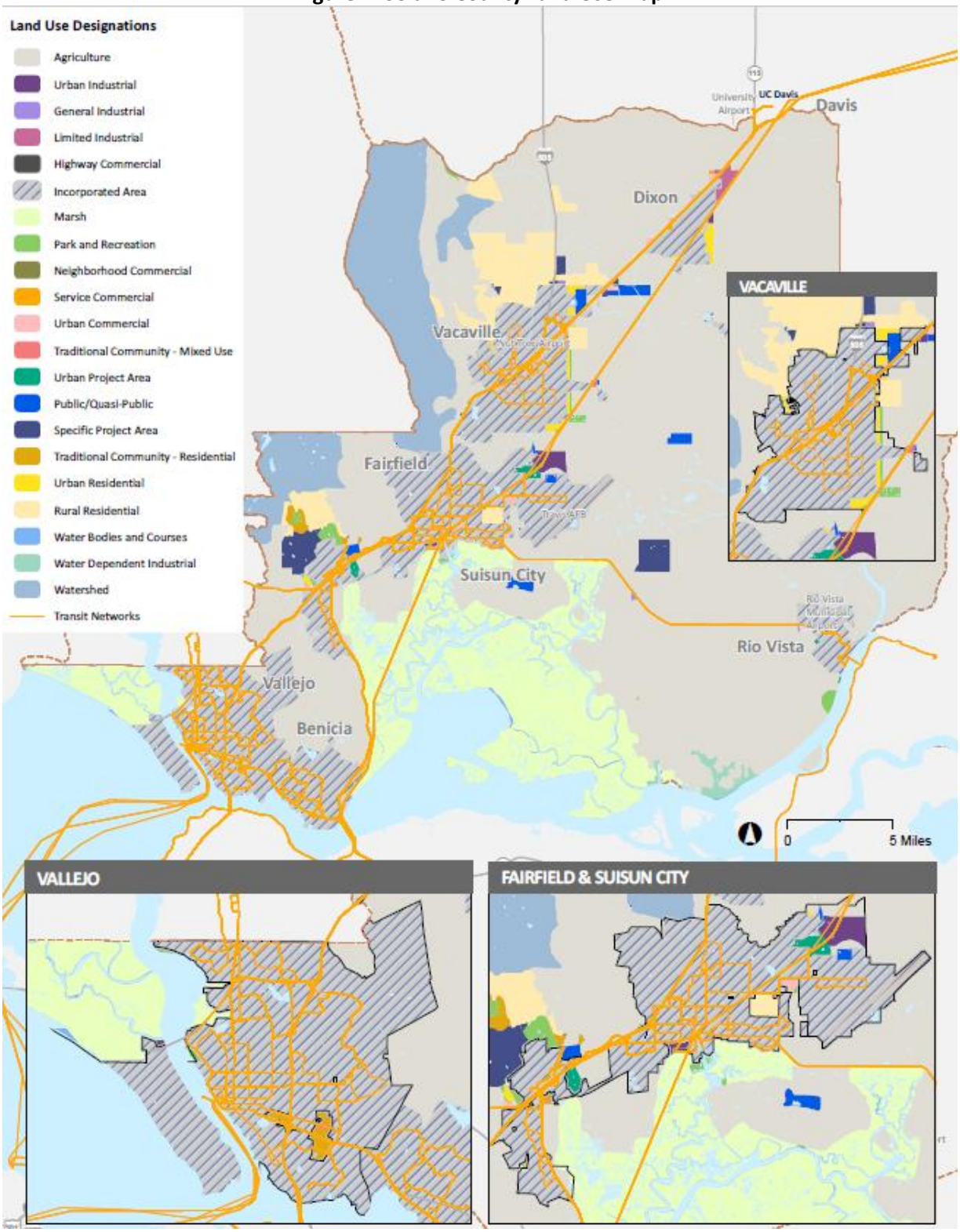
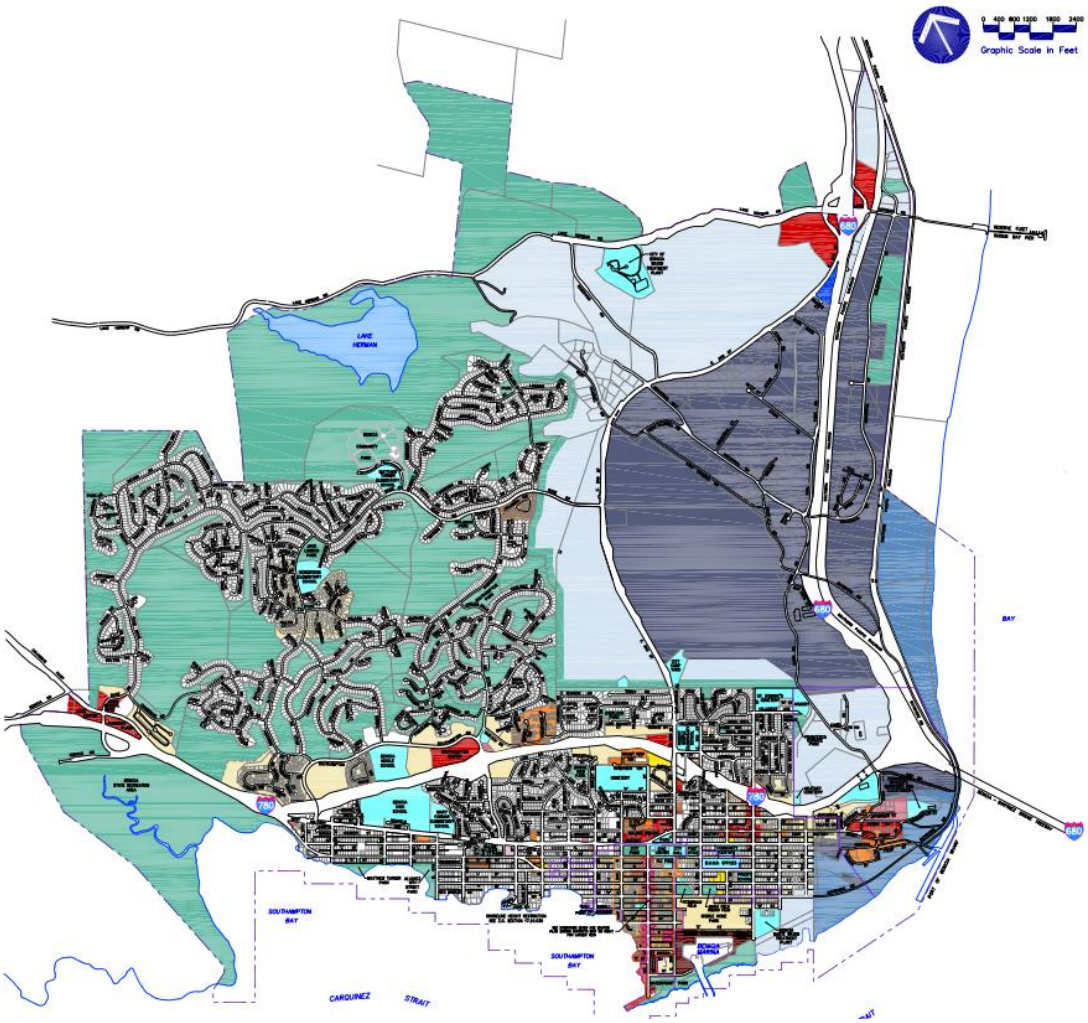


Figure 2: City of Benicia Zoning Map



ZONING MAP LEGEND:

OS	OPEN SPACE
PS	PUBLIC & SEMI-PUBLIC
RS	SINGLE FAMILY RESIDENTIAL • 0 – 7 DU/ACRE
RM	MEDIUM DENSITY RESIDENTIAL • 8 – 14 DU/ACRE
RH	HIGH DENSITY RESIDENTIAL • 15 – 21 DU/ACRE
PD	PLANNED DEVELOPMENT
CC	COMMUNITY COMMERCIAL
CO	OFFICE COMMERCIAL
CG	GENERAL COMMERCIAL
CW	WATERFRONT COMMERICAL
I L	LIMITED INDUSTRIAL
I G	GENERAL INDUSTRIAL
I W	WATER RELATED INDUSTRIAL
I P	INDUSTRIAL PARK

DMUMP MAP LEGEND:

	TOWN CORE
	TOWN CORE-OPEN
	NEIGHBORHOOD GENERAL
	NEIGHBORHOOD GENERAL-OPEN

Figure 3: Dixon General Plan Land Use Map

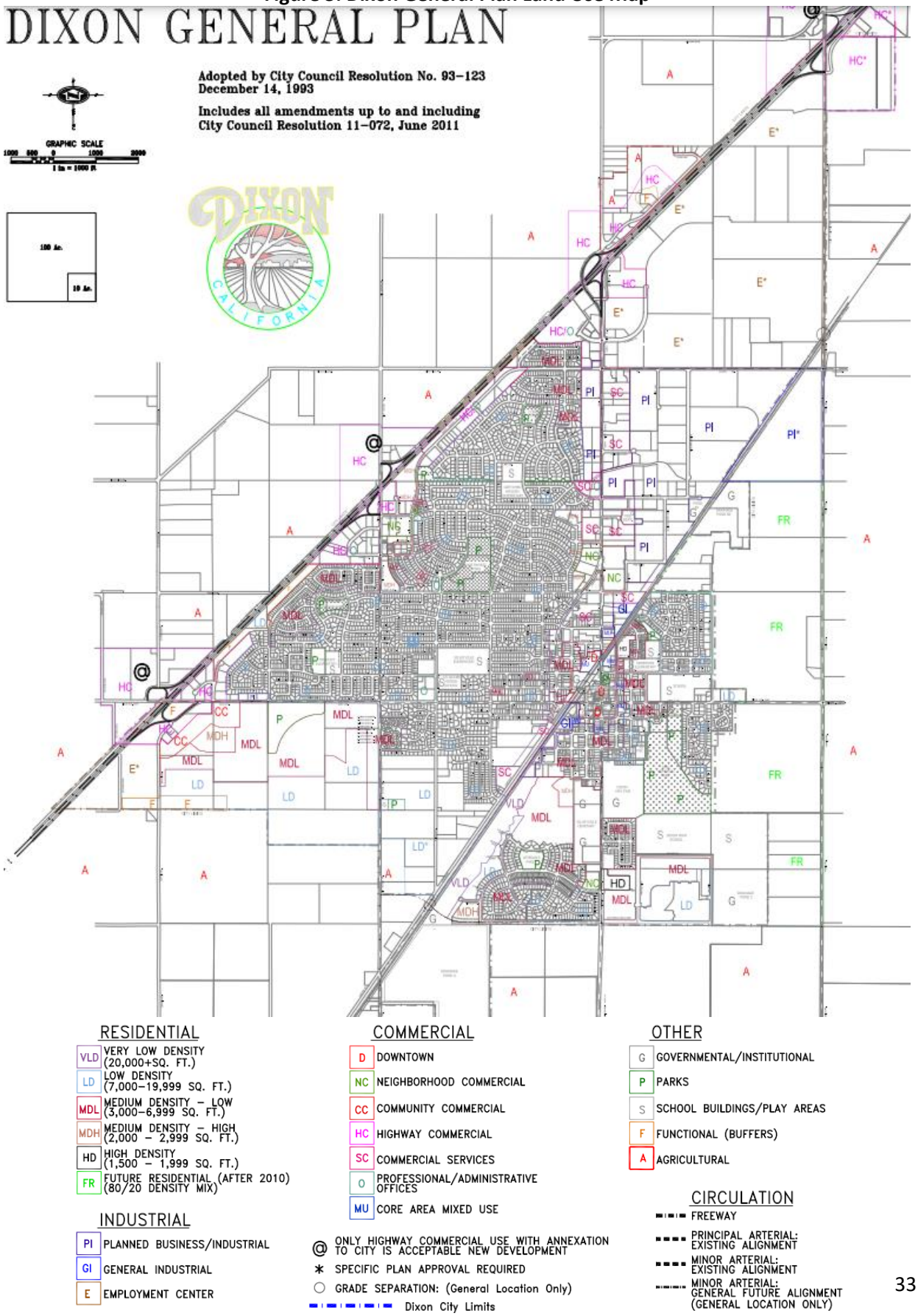


Figure 4: City of Fairfield Land Use Diagram

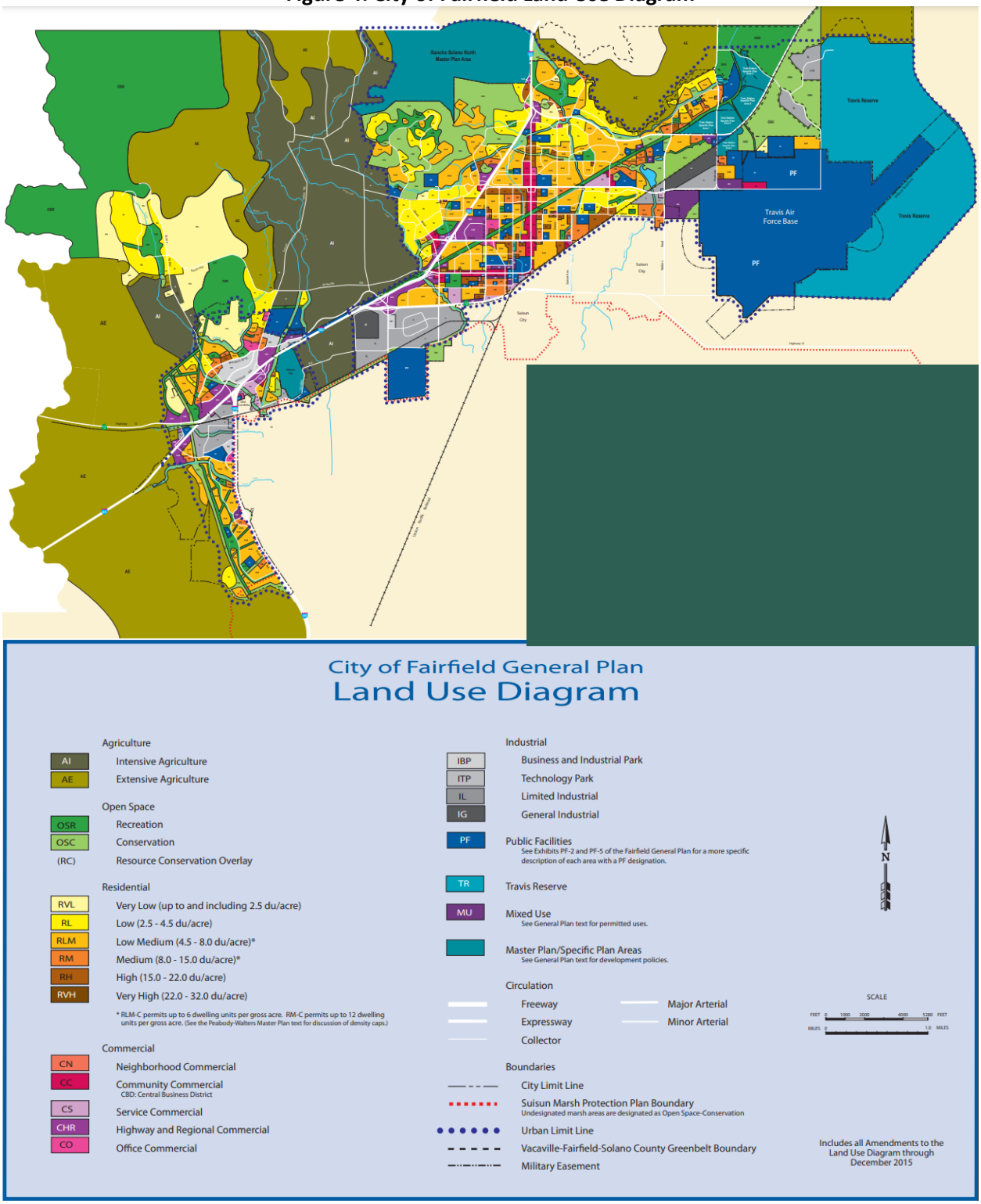


Figure 5: City of Rio Vista Land Use Diagram

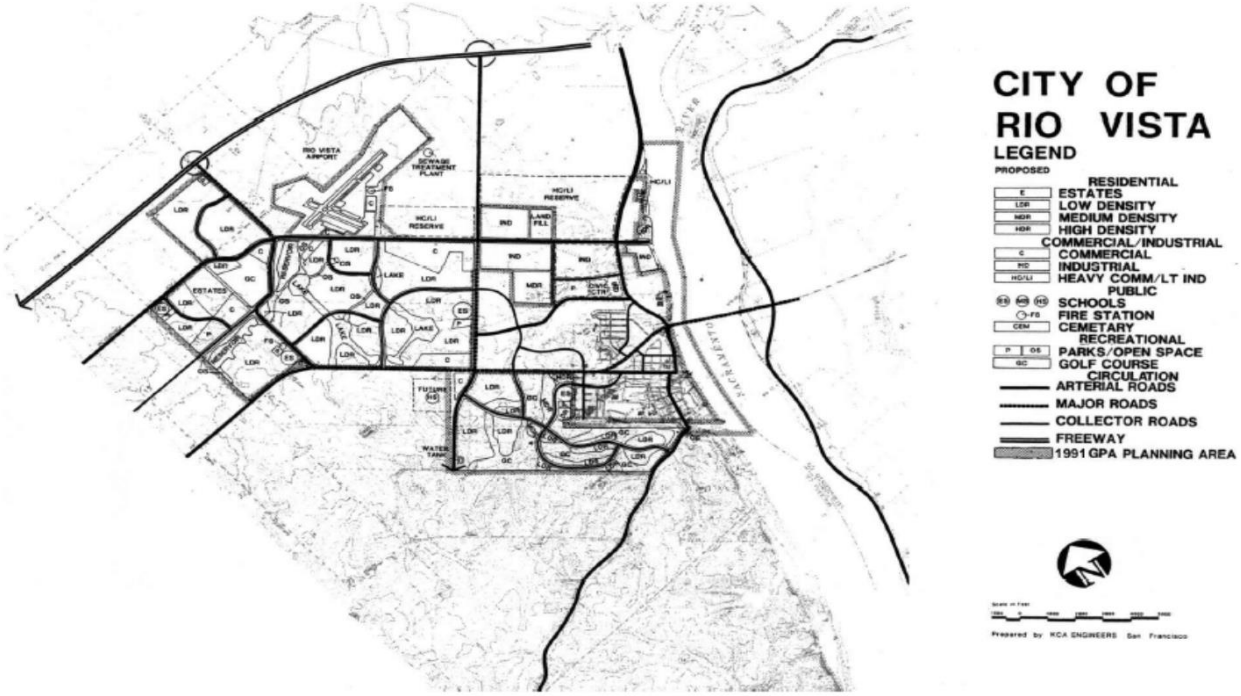


Figure 6: Suisun City Zoning Map

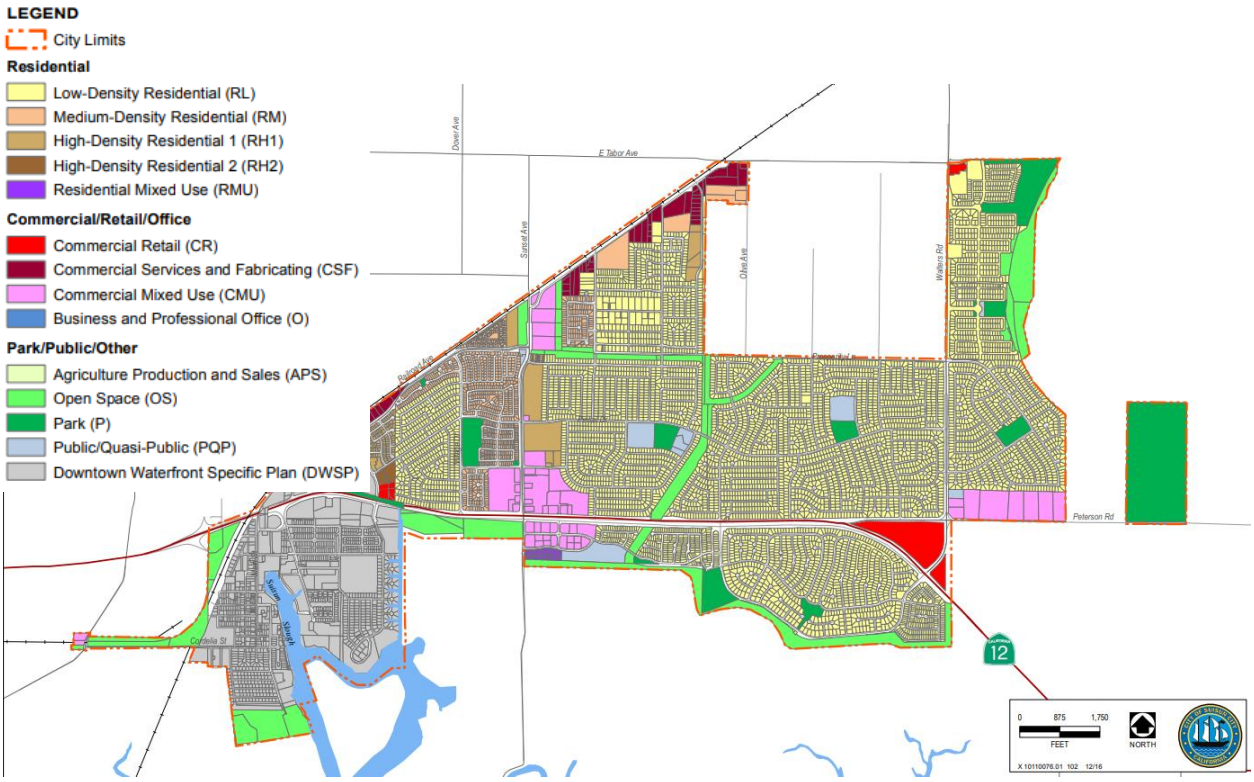


Figure 7: City of Vacaville General Plan Map

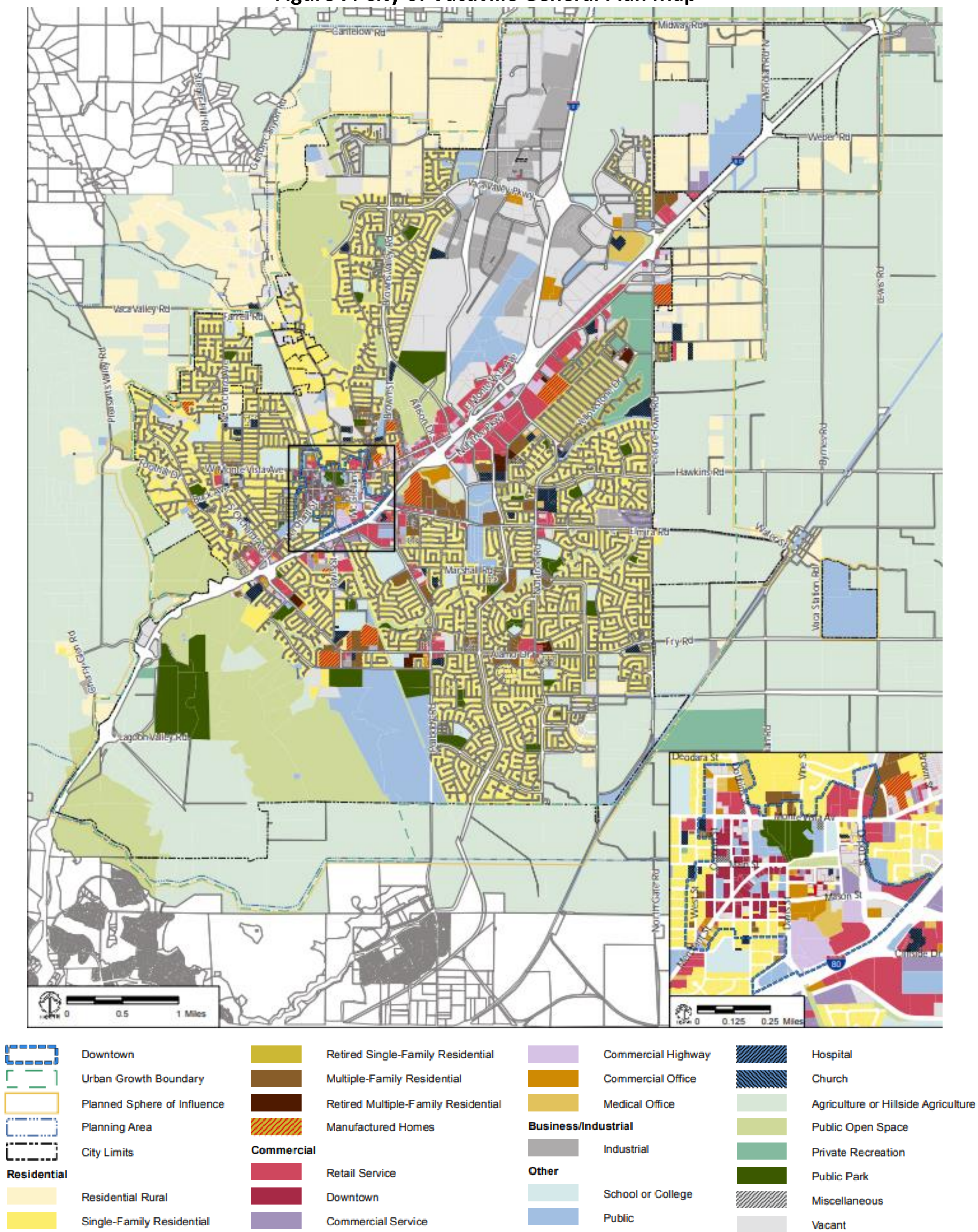
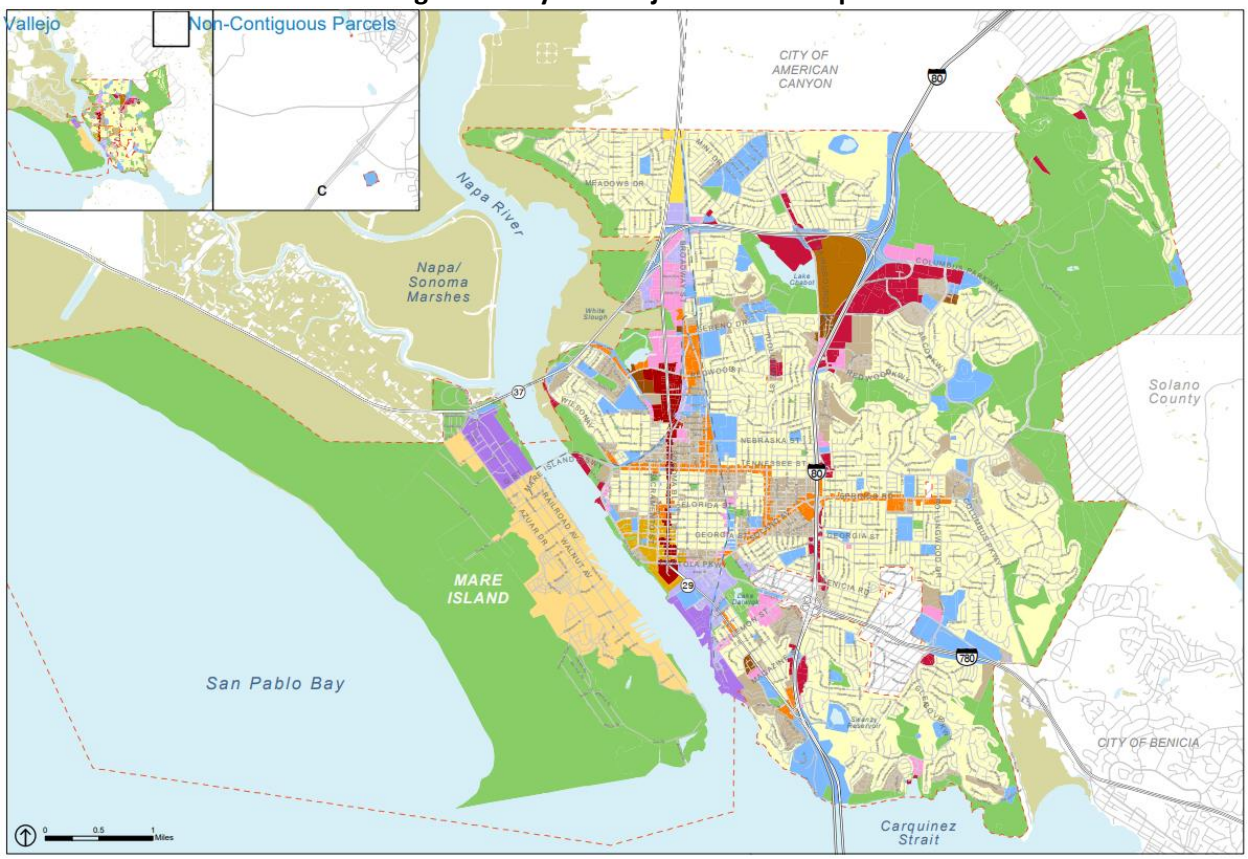


Figure 8: City of Vallejo Land Use Map



Residential

- Primarily Single Family
- Mix of Housing Types
- Primarily Multi-Family

Mixed Use

- District - Downtown/Waterfront
- District - Mare Island
- District - Solano360
- District - North Gateway
- Central Corridor
- Neighborhood Corridor

Business/Industrial

- Retail/Entertainment
- Business/Limited Residential
- Business/Light Industrial
- Industrial

Community

- Parks, Recreation and Open Space
- Public Facilities and Institutions

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Solano County Market Assessment - DRAFT
Appendix 2: Destinations for Trips Made Within Solano County

August 2022

Solano Transportation Authority

INTRODUCTION

Included below are tables that show the destinations for trips made within Solano County from specific cities and communities within the County. The tables also indicate the most common Solano County trip destinations for travelers from specific cities and communities. In general, the statistics reveal the level of demand for intra-county travel between specific locations, and detail the relative need for mobility offerings between different areas.

TRAVEL SHARE STATISTICS BETWEEN CITIES/COMMUNITIES WITHIN SOLANO COUNTY

Figure 1: Intra-County Travel Share from Allendale

Origin	Destination	Trips	%
Allendale	Allendale	2,060	44%
	Unincorporated Solano	1000	21%
	Vacaville	950	20%
	Hartley	260	5%
	Fairfield	160	3%
	Vallejo	130	3%
	Dixon	100	2%
	Suisun City	<100	1%
	Benicia	<100	<1%
	Rio Vista	<100	<1%
	Green Valley	<100	<1%

Figure 2: Intra-County Travel Share from Benicia

Origin	Destination	Trips	%
Benicia	Benicia	66,930	69%
	Vallejo	14,340	15%
	Unincorporated Solano	11,870	12%
	Fairfield	2,410	2%
	Vacaville	1,440	1%
	Suisun City	360	<1%
	Hartley	<100	<1%
	Rio Vista	<100	<1%
	Dixon	<100	<1%
	Green Valley	<100	<1%
	Allendale	<100	<1%

Figure 3: Intra-County Travel Share from Dixon

Origin	Destination	Trips	%
Dixon	Dixon	71,220	76%
	Vacaville	8,750	9%
	Unincorporated Solano	8,620	9%
	Fairfield	3,990	4%
	Vallejo	830	1%
	Suisun City	360	<1%
	Hartley	250	<1%
	Allendale	<100	<1%
	Rio Vista	<100	<1%
	Benicia	<100	<1%
	Green Valley	<100	<1%

Figure 4: Intra-County Travel Share from Fairfield

Origin	Destination	Trips	%
Fairfield	Fairfield	351,220	69%
	Unincorporated Solano	67,290	13%
	Vacaville	44,140	9%
	Suisun City	24,600	5%
	Vallejo	17,110	3%
	Dixon	3,990	1%
	Benicia	2,120	<1%
	Rio Vista	720	<1%
	Hartley	460	<1%
	Green Valley	270	<1%
	Allendale	160	<1%

Figure 5: Intra-County Travel Share from Green Valley

Origin	Destination	Trips	%
Green Valley	Unincorporated Solano	910	52%
	Green Valley	360	20%
	Fairfield	260	15%
	Vacaville	140	8%
	Vallejo	<100	3%
	Suisun City	<100	2%
	Benicia	<100	1%
	Dixon	<100	<1%

Figure 6: Intra-County Travel Share from Hartley

Origin	Destination	Trips	%
Hartley	Hartley	4,010	44%
	Vacaville	2,990	33%
	Unincorporated Solano	980	11%
	Fairfield	460	5%
	Dixon	230	3%
	Allendale	200	2%
	Vallejo	180	2%
	Suisun City	<100	1%
	Benicia	<100	<1%
	Rio Vista	<100	<1%
	Green Valley	<100	<1%

Figure 7: Intra-County Travel Share from Rio Vista

Origin	Destination	Trips	%
Rio Vista	Rio Vista	15,050	69%
	Unincorporated Solano	4,910	22%
	Vacaville	750	3%
	Fairfield	730	3%
	Vallejo	170	1%
	Suisun City	120	1%
	Dixon	110	<1%
	Benicia	<100	<1%
	Hartley	<100	<1%
	Allendale	<100	<1%
	Green Valley	<100	<1%

Figure 8: Intra-County Travel Share from Suisun City

Origin	Destination	Trips	%
Suisun City	Suisun City	48,990	51%
	Fairfield	24,250	25%
	Unincorporated Solano	13,420	14%
	Vacaville	5,290	6%
	Vallejo	2,550	3%
	Dixon	470	<1%
	Benicia	310	<1%
	Rio Vista	140	<1%
	Hartley	<100	<1%
	Green Valley	<100	<1%
	Allendale	<100	<1%

Figure 9: Intra-County Travel Share from Unincorporated Solano County

Origin	Destination	Trips	%
Unincorporated Solano	Unincorporated Solano	230,820	54%
	Fairfield	67,470	16%
	Vacaville	46,470	11%
	Vallejo	40,530	9%
	Suisun City	13,370	3%
	Benicia	12,710	3%
	Dixon	9,440	2%
	Rio Vista	4,990	1%
	Allendale	990	<1%
	Hartley	960	<1%
	Green Valley	920	<1%

Figure 10: Intra-County Travel Share from Vacaville

Origin	Destination	Trips	%
Vacaville	Vacaville	408,020	77%
	Unincorporated Solano	47,680	9%
	Fairfield	43,750	8%
	Vallejo	10,850	2%
	Dixon	8,580	2%
	Suisun City	5,310	1%
	Hartley	3,220	1%
	Benicia	1,330	<1%
	Allendale	1,010	<1%
	Rio Vista	750	<1%
	Green Valley	140	<1%

Figure 11: Intra-County Travel Share from Vallejo

Origin	Destination	Trips	%
Vallejo	Vallejo	454,240	84%
	Unincorporated Solano	40,600	7%
	Fairfield	17,210	3%
	Benicia	14,200	3%
	Vacaville	11,250	2%
	Suisun City	2,630	<1%
	Dixon	730	<1%
	Rio Vista	170	<1%
	Hartley	170	<1%
	Allendale	110	<1%
	Green Valley	<100	<1%

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Appendix 3: Destinations for Intercounty Trips Originating in Solano County

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Solano Transportation Authority

INTRODUCTION

Included below are tables that show the most common destinations outside of Solano County for intercounty trips that originate within the County. The tables also indicate the most common regional trip destinations, outside of Solano, for travelers from specific cities and communities. In general, the statistics reveal the level of demand for intercounty travel between specific locations, and detail the relative need for mobility offerings between different areas of the region.

TRAVEL SHARE STATISTICS FROM CITIES/COMMUNITIES WITHIN SOLANO COUNTY TO DESTINATIONS IN OTHER COUNTIES

Figure 1: Intercounty Travel Share from Allendale

Origin	Destination	Trips	%
Allendale	Other	110	37%
	Sacramento	40	13%
	San Francisco	30	10%
	Davis	20	7%
	Martinez	20	7%
	Winters	20	7%
	Oakland	20	7%
	Arden-Arcade	10	3%
	Santa Rosa	10	3%
	Woodland	10	3%
	Napa	10	3%

Figure 2: Intercounty Travel Share from Benicia

Origin	Destination	Trips	%
Benicia	Other	2,950	29%
	San Francisco	1,460	14%
	Oakland	890	9%
	Pleasant Hill	850	8%
	Concord	820	8%
	Walnut Creek	810	8%
	Martinez	640	6%
	Richmond	590	6%
	Berkeley	450	4%
	Napa	400	4%
	Sacramento	300	3%

Figure 3: Intercounty Travel Share from Dixon

Origin	Destination	Trips	%
Dixon	Other	3,500	35%
	Sacramento	1,670	17%
	Davis	1,570	16%
	Woodland	1,140	11%
	UC Davis	620	6%
	West Sacramento	520	5%
	Roseville	250	3%
	Winters	230	2%
	Elk Grove	160	2%
	Rancho Cordova	160	2%
	Oakland	160	2%

Figure 4: Intercounty Travel Share from Fairfield

Origin	Destination	Trips	%
Fairfield	Other	9,210	38%
	Napa	2,750	11%
	Sacramento	2,470	10%
	San Francisco	2,270	9%
	Oakland	1,730	7%
	Richmond	1,420	6%
	American Canyon	990	4%
	Concord	920	4%
	Pleasant Hill	860	4%
	Berkeley	780	3%
	Walnut Creek	760	3%

Figure 5: Intercounty Travel Share from Green Valley (Unincorporated)

Origin	Destination	Trips	%
Green Valley (Unincorporated)	Other	90	45%
	Napa	20	10%
	San Francisco	10	5%
	Walnut Creek	10	5%
	Oakland	10	5%
	Concord	10	5%
	Richmond	10	5%
	Davis	10	5%
	Windsor	10	5%
	Berkeley	10	5%
	Dublin	10	5%

Figure 6: Intercounty Travel Share from Hartley

Origin	Destination	Trips	%
Hartley	Other	200	33%
	Sacramento	100	16%
	Roseville	50	8%
	Arden-Arcade	40	7%
	Davis	40	7%
	San Francisco	40	7%
	Woodland	40	7%
	UC Davis	30	5%
	Napa	30	5%
	Winters	20	3%
	Oakland	20	3%

Figure 7: Intercounty Travel Share from Rio Vista

Origin	Destination	Trips	%
Rio Vista	Other	1,150	47%
	Sacramento	260	11%
	Antioch	180	7%
	Lodi	160	7%
	Stockton	160	7%
	Pittsburg	140	6%
	Richmond	120	5%
	San Francisco	80	3%
	Elk Grove	70	3%
	Oakland	70	3%
	Martinez	60	2%

Figure 8: Intercounty Travel Share from Suisun City

Origin	Destination	Trips	%
Suisun City	Other	1,800	32%
	San Francisco	960	17%
	Napa	630	11%
	Richmond	450	8%
	Sacramento	400	7%
	Oakland	310	5%
	Pleasant Hill	280	5%
	Concord	240	4%
	Walnut Creek	200	4%
	Martinez	200	4%
	American Canyon	180	3%

Figure 9: Intercounty Travel Share from Unincorporated Solano County

Origin	Destination	Trips	%
Unincorporated Solano County	Other	15,270	43%
	Napa	3,240	9%
	San Francisco	2,930	8%
	Sacramento	2,710	8%
	Oakland	2,220	6%
	Richmond	1,810	5%
	Concord	1,730	5%
	American Canyon	1,490	4%
	Walnut Creek	1,490	4%
	Pleasant Hill	1,440	4%
	Pittsburg	1,200	3%

Figure 10: Intercounty Travel Share from Vacaville

Origin	Destination	Trips	%
Vacaville	Other	12,510	42%
	Sacramento	5,090	17%
	San Francisco	1,950	7%
	Davis	1,770	6%
	Woodland	1,620	5%
	Napa	1,540	5%
	Oakland	1,500	5%
	UC Davis	1,180	4%
	Richmond	1,090	4%
	Concord	830	3%
	Winters	830	3%

Figure 11: Intercounty Travel Share from Vallejo

Origin	Destination	Trips	%
Vallejo	Other	15,190	26%
	San Francisco	9,250	16%
	American Canyon	8,600	15%
	Napa	5,020	9%
	Oakland	5,000	9%
	Richmond	4,340	8%
	Berkeley	2,630	5%
	Concord	2,170	4%
	San Rafael	1,990	3%
	Pleasant Hill	1,800	3%
	Novato	1,580	3%