

MERCED COUNTY ASSOCIATION OF GOVERNMENTS

San Joaquin Valley Express Transit Study

Final Report



Nelson\Nygaard Consulting Associates
785 Market Street, Suite 1300
San Francisco, CA 94103

May 2009

Nelson | Nygaard
consulting associates

Table of Contents

	Page
Executive Summary	1
Study Goals	1
Chapter 1. Study Purpose.....	1-1
Background	1-1
Hierarchy of Services	1-1
Chapter 2. Regional Context.....	2-1
Communities.....	2-1
Chapter 3. Population and Employment Trends.....	3-1
Population.....	3-1
Employment.....	3-5
Chapter 4. Existing Transportation Services	4-1
Passenger Rail	4-1
Bus Service	4-4
Private Bus Operators	4-10
Vanpool Programs.....	4-11
Connecting Services.....	4-11
Summary of Inter-County Transit Services.....	4-13
Chapter 5. Case Studies	5-1
A. Front Range Express (FREX)	5-2
B. Clean Air Express	5-3
C. San Luis Obispo Regional Transit Authority Route 10.....	5-5
D. New Mexico Park-and-Ride	5-6
E. Caltrain.....	5-8
F. Kings County Vanpool (KART/AITS).....	5-10
Case Study Findings	5-12
Chapter 6. Travel Demand and Transit Competitiveness Analysis	6-1
Travel Demand Analysis.....	6-1
Transit Competitiveness Projections	6-22
Travel Demand/Transit Competitiveness Analysis Summary Conclusions	6-43
Chapter 7. Stakeholder Input.....	7-1
Chapter 8. Service Recommendations	8-1
Summary of Policy Recommendations.....	8-20
Appendix A: Summary of Stakeholder Interviews with Employers and Business Organizations	
Appendix B: San Joaquin Valley Express Transit Study: Summary of Stakeholder Interviews with Transit Operators	

Table of Figures

	Page
Figure ES-1 Summary of Proposed Services.....	ES-2
Figure ES-2 Map of Proposed Services.....	ES-6
Figure 2-1 San Joaquin Valley County and Major City Populations	2-1
Figure 2-2 San Joaquin Valley	2-3
Figure 2-3 Mean Commute Times (In Minutes).....	2-5
Figure 2-4 Inter-county Commuters.....	2-6
Figure 2-5 Commute Mode Share	2-7
Figure 2-6 Commute Mode Share (for those employed outside of home county).....	2-8
Figure 3-1 Population Density (2000).....	3-3
Figure 3-2 Projected Population Density (2030).....	3-4
Figure 3-3 Existing Major Employers and Employment Density (2000)	3-7
Figure 3-4 Existing Major Employers and Projected Employment Density (2030)	3-8
Figure 4-1 Existing Publicly Operated Inter-County Transit Service	4-2
Figure 4-2 Passengers per Revenue Service Hour.....	4-9
Figure 6-1 2000 Interregional Commute Trips.....	6-3
Figure 6-2 2030 Interregional Commute Trips.....	6-4
Figure 6-3 2000 Inter-County Commute Trips.....	6-6
Figure 6-4 2030 Projected Inter-County Commute Trips.....	6-7
Figure 6-5 2000 Commute Trips (Location-to-Location).....	6-10
Figure 6-6 2030 Projected Inter-county Commute Trips (Location-to-Location)	6-11
Figure 6-7 2000 Inter-County Commute Trips (Location-to-Location).....	6-12
Figure 6-8 2030 Projected Inter-County Commute Trips (Location-to-Location).....	6-13
Figure 6-9 San Joaquin Valley Inter-County Commute by Freeway Corridor: Northern Highway 99 and SF Bay Area	6-16
Figure 6-10 San Joaquin Valley Inter-County Commute by Freeway Corridor: Northern Highway 99 and SF Bay Area	6-17
Figure 6-11 San Joaquin Valley Inter-County Commute by Freeway Corridor: Northern Highway 99 and Sacramento Area (2000)	6-18
Figure 6-12 San Joaquin Valley Inter-County Commute by Freeway Corridor: Northern Highway 99 and Sacramento Area (2030)	6-19
Figure 6-13 San Joaquin Valley Inter-County Commute by Freeway Corridor: Commute to the City of Fresno (2000).....	6-20
Figure 6-14 San Joaquin Valley Inter-County Commute by Freeway Corridor: Commute to the City of Fresno (2030).....	6-21
Figure 6-15 Production TCIs in the San Joaquin Valley Region	6-24
Figure 6-16 Attraction TCIs in the San Joaquin Valley Region	6-25
Figure 6-17 Northern Highway 99 Production TCIs.....	6-27
Figure 6-18 Northern Highway 99 Attraction TCIs.....	6-28
Figure 6-19 Sacramento Region Attraction TCIs.....	6-30
Figure 6-20 San Francisco Bay Area Attraction TCIs.....	6-31
Figure 6-21 Los Banos and Merced Production TCIs	6-33
Figure 6-22 Silicon Valley Attraction TCIs	6-34

Table of Figures

	Page
Figure 6-23 Tulare County Production TCIs.....	6-36
Figure 6-24 Tulare County Attraction TCIs.....	6-37
Figure 6-25 Madera and Fresno County Production TCIs.....	6-38
Figure 6-26 Madera and Fresno County Attraction TCIs.....	6-39
Figure 6-27 Kern County Production TCIs	6-41
Figure 6-28 Southern California Region Attraction TCIs	6-42
 Figure 8-1 Summary of Proposed Services.....	 8-1
Figure 8-2 Summary of KART Vanpool/AITS Revenues and Expenses	8-3
Figure 8-3 Summary of Recommended Services.....	8-19
Figure 8-4 Summary of Policy Recommendations	8-21

Executive Summary

Study Goals

The primary goal of this study is to identify markets that can support inter-county commuter express transportation services within the San Joaquin Valley region, and between the San Joaquin Valley and its neighbors. Commuter express transit is designed primarily to serve workers traveling to their places of employment, generally over longer distances than typical intra-urban bus routes. These services provide workers with improved choice, relieve pressure on congested freeways during peak times, and decrease emissions that contribute to air pollution.

The study evaluates travel demand projections, existing services, and the characteristics of the San Joaquin Valley's diverse communities to determine the investments that will best serve the region's inter-county commuters. This report documents the outcomes of this study including recommendations.

Sections include:

1. An evaluation of existing commute conditions and available inter-county transportation service in the region.
2. Case studies of existing inter-county commuter transportation services from across the United States, with lessons learned for the San Joaquin Valley.
3. An analysis of the demand for inter-county transportation services. This analysis is based on stakeholder interviews, travel demand models, and current demographics and growth projections.
4. Recommendations for services to meet the projected transportation needs, including policy changes and the organizational and funding arrangements required to implement these policy changes.

The study considers the full range of possible strategies for providing higher-capacity transportation choices for Valley commuters. These represent a continuum from very basic incentives for carpooling to higher occupancy vanpools, subscription bus services, and finally higher-capacity public transit services including commuter rail.

Travel Demand Study Findings

The travel demand analysis carried out for this study confirms that the San Joaquin Valley is a challenging environment for inter-county commuter transit. Most of the region's land area is rural or very low-density residential in character, and is expected to remain so for the foreseeable future. Even in the region's urban areas, residential and employment densities are low and too dispersed to be served by a transit service that could be competitive with the auto. Long distance travel, with dispersed origins and destinations spread over a wide geographic area is very difficult to serve with traditional transit services. Given these constraints, for most of the region's communities, the most attractive alternative to single-occupancy vehicle travel will remain ridesharing.

However, there are a number of corridors where investments in transportation services may help improve commuter choice in a cost-effective way. They are:

1. *The northern Highway 99 corridor, extending from Merced through Modesto, Manteca, Stockton, Lodi, and continuing to Sacramento.* This corridor includes a cluster of the region's most transit competitive cities, and its strongest internal travel markets. There will be nearly 10,000 daily trips on Route 99 heading towards Sacramento by 2030.
2. *The northern Highway 99 corridor to the Bay Area.* The stretch of I-580 that crosses the Altamont Pass between Tracy and Livermore is expected to carry more than 50,000 commute trips per day by 2030, with commuters on the west side of the pass dividing between a diverse set of Bay Area destinations. Service planning will focus on ways to enhance connections to ACE and BART, as well as ways to enhance service to destinations very close to the west side of the Altamont pass.
3. *The Cities of Madera and Visalia to the City of Fresno.* Fresno attracts a large number of workers from the surrounding communities, and these commute markets are expected to grow substantially in the coming decades. The most feasible origin points for transit service into Fresno are Visalia in to the south and Madera to the north.
4. *Los Angeles County to Edwards Airforce Base in Eastern Kern County.* More than 20,000 people work at Edwards Air Force Base, and it is likely that many of these employees are included in the projected flow of workers from Los Angeles to Kern County by 2030. This study considers connecting transit service from Lancaster Metrolink station to the Air Force Base.

Service Recommendations

The study builds on the key corridors identified above to provide recommendations for investments to improve inter-county commute choices in the San Joaquin Valley. The San Joaquin Valley is a large region made up of a diverse group of communities. Regional policymakers should seek to tailor transportation investments based on the specific land use, population, and employment context in each community.

Figure ES-1 lists the Valley's key inter-county commute corridors, and the type of service enhancement proposed for each.

Figure ES-1 Summary of Proposed Services

Proposed Service	Key Travel Corridor			
	Northern SR 99 corridor, to Sacramento	Northern SR 99 corridor to the Bay Area.	Madera and Visalia to the City of Fresno.	Northern LA County to Eastern Kern County
Ridesharing	X	X	X	X
Vanpool	X	X	X	X
Commuter Express Bus	X	X		
Commuter Rail Improvements	X	X		

Ridesharing/Vanpool

Recognizing that lower-density land use patterns will continue to dominate most of the San Joaquin Valley for the foreseeable future, the expansion of the ridesharing and vanpool opportunities should be the primary investment to increase transportation choices for inter-county commuters in most of the region. Vanpools offer the opportunity for relatively high-capacity commute transportation service with operating costs far lower than traditional fixed-route transit. With new transit operating funds expected to be difficult to access, and with many transit operators considering reductions in service within their traditional service area, expanded vanpool access may be the most promising avenue to improve commuter choice in the near term.

While the whole of the Valley can benefit from enhanced ridesharing opportunities, this will be the primary alternative to single-occupancy vehicle travel for most inter-county commuters travelling to employment destinations other than those along northern SR 99 corridor, the San Francisco Bay Area, and Sacramento. *Recommendations for expanding access to ridesharing and vanpool services are as follows:*

1. Continue with plans to form a Joint Powers Authority in the Southern portion of the Valley to operate KART and AITS Vanpool.
2. Expand Commute Connection's service area to include Merced County, and enhance coordination between the participating MPO's. .
3. Commute Connection should consider pilot testing lease-purchasing vanpool vehicles.
4. Prioritize vanpooling to Fresno.
5. Provide a single valley-wide ride-matching and vanpool website.
6. Invest in more marketing of vanpool to choice riders.
7. Expand park-and-ride opportunities.
8. Offer Guaranteed Ride Home throughout the Valley.
9. Seek to influence the development of the new Air District trip reduction rule, so that it can fund and promote ridesharing to large employers..

Inter-county express bus

While much of the Valley has employment trip densities far too low to support commuter transit service, three key corridors identified through this study (Northern SR 99 corridor to Sacramento; Northern SR 99 corridor to the Bay Area; Northern LA County to Edwards Air Force Base in Eastern Kern County) have potential for commuter express transit services.

Currently, seven San Joaquin Valley transit agencies provide at least some bus service across county lines. Four agencies provide service between the San Joaquin Valley and neighboring regions. These services operate with reasonable productivity, and align well with the key demand corridors identified by this study. In an extremely challenging funding environment, transit operators should attempt to maintain these services to the extent possible. *Recommendations for express bus services are as follows:*

1. Maintain existing inter-county commuter service
2. Enhance San Joaquin Regional Transit District subscription routes to Sacramento and the San Francisco Bay Area as funding becomes available.
3. Study express bus service between Lancaster Metrolink and Edwards Air Force Base.

Commuter Rail

Nearly half of the San Joaquin Valley's inter-county commuters travel not between Valley counties but between the Valley and the neighboring San Francisco Bay Area and Sacramento areas. High trip densities, congested roads, and the opportunity to connect to dense downtowns and high quality local rail service on the destination end make these corridors good candidates for commuter rail service. The Altamont Corridor is already served by the region's only existing commuter railroad, the San Joaquin Regional Rail Commission's Altamont Commuter Express (ACE). While there is no commuter-oriented rail service between San Joaquin County and Sacramento County, Amtrak operates four daily San Joaquin trains from Sacramento to Stockton.

Expanding and improving passenger rail service in these corridors may be the best way to serve San Joaquin Valley commuters in the coming decades. The most practical way to enhance commute options for these commuters may be for the Valley to advocate for regional, state, and federal investments in rail service improvements. *Recommendations for commuter rail are as follows:*

1. Develop a coordinated regional advocacy plan for enhanced state and federal investments in commuter rail.
2. Work cohesively as Valley Counties to upgrade ACE.
3. Work cohesively as Valley Counties for a direct ACE/BART connection.
4. Work toward expansion of commuter rail service between Merced and Sacramento.
5. Invest in great station area planning.

Summary of Recommendations

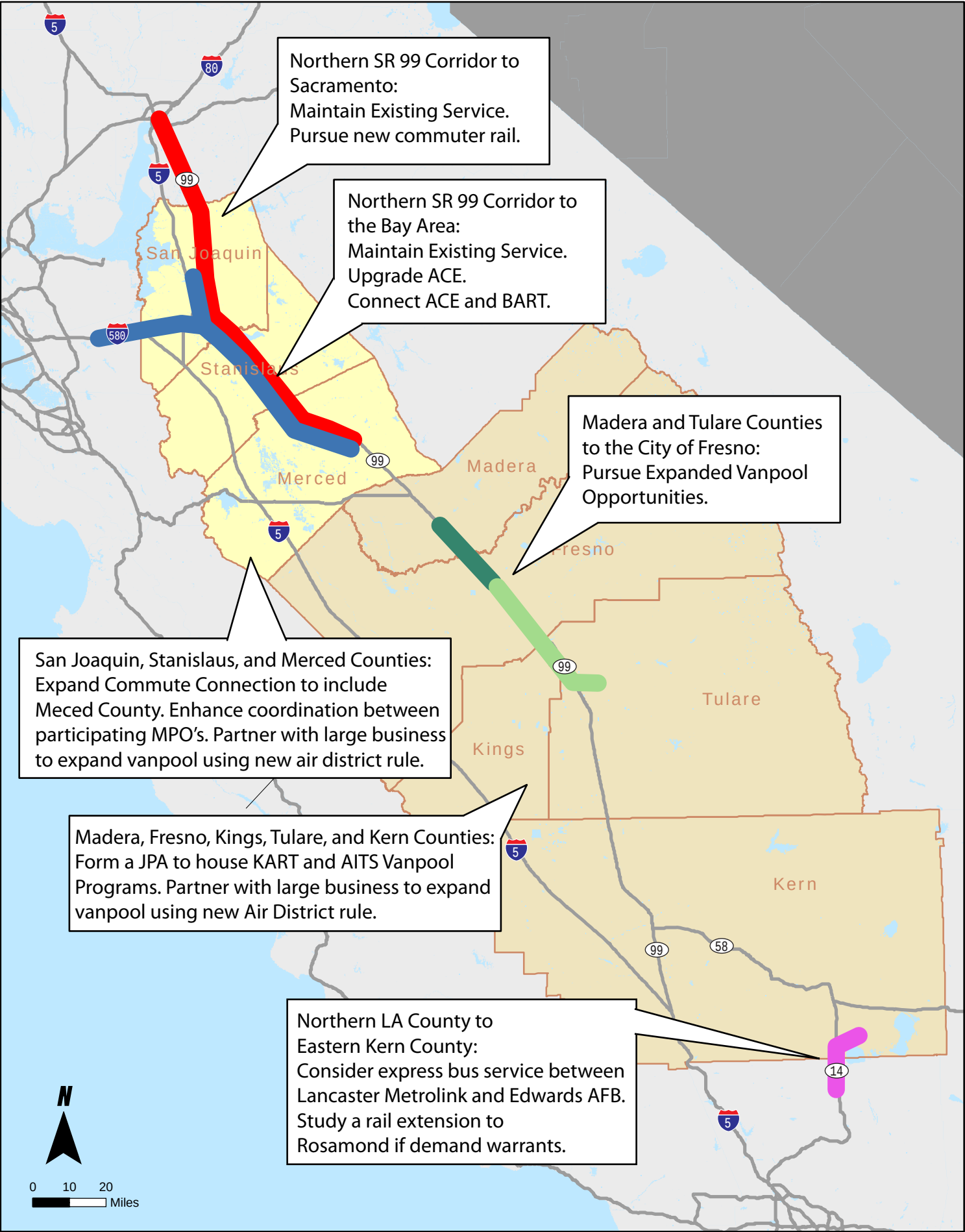
For a majority of the region, investments in ridesharing are the most cost-effective strategy for increasing inter-county commuter services. The region's focus should be on expanding vanpool offerings in both the northern and southern parts of the Valley. The new Air District rule requiring trip reduction programs from large employers offers the opportunity both for a new funding stream, and an effective marketing strategy for expanded vanpool offerings.

The region's existing inter-regional bus offerings match the highest demand corridors. In an extremely difficult funding environment for transit, the region's first priority should be to maintain these services to the extent possible. As additional funding becomes available, it should consider expanding subscription bus service from Stockton to Sacramento and the Bay Area. The region should also consider implementing bus service between Lancaster Metrolink station and Edwards Air Force Base in Eastern Kern County in partnership with the base.

Finally, the region's long-term vision for its highest demand corridors should include significant upgrades to commuter rail service. The region should lobby for state and federal funds to upgrade the speed, capacity, and reliability of ACE, and to add a similar service between Sacramento and Stockton (and perhaps as far south as Merced). If demand warrants, the region

should also consider extending LA Metrolink into eastern Kern County. To the extent possible, all passenger rail investments should seek to capitalize on California High Speed Rail investments.

Figure ES-2 Map of Proposed Services



Chapter 1. Study Purpose

Background

The San Joaquin Valley Express Transit Study was designed to identify markets that can support inter-county commuter express transportation services within the San Joaquin Valley region, and between the San Joaquin Valley and neighboring regions. The need for convenient and competitive commute choices carrying people between counties in and adjacent to the Valley is clear. With the growth of freeway capacity limited by both physical space and cost, it is clear that a multimodal strategy is needed to maximize mobility at a reasonable capital, operating and social cost.

Commuter express transportation is designed primarily to serve workers traveling to their places of employment, generally over longer distances than typical intra-urban bus routes. While much of the transportation services in the San Joaquin Valley are currently oriented to providing “lifeline” bus service to transit-dependent populations, commuter service focuses on attracting choice riders by providing transportation that is competitive with driving alone during peak commute hours for the markets that it serves. In doing so, it strives to provide workers with improved choice, relieve pressure on congested freeways during peak times, and decrease emissions that contribute to air pollution. While the scope of the study is limited to inter-county commute travel, many of the principles and service models described in this report may also apply to the many long intra-county commutes that the study does not explicitly consider.

This study evaluates travel demand projections, existing services, and the characteristics of the San Joaquin Valley’s diverse communities to determine the investments that will best serve San Joaquin Valley commuters. This report documents the outcomes of this study. Sections include:

1. An evaluation of existing commute conditions and available inter-county transportation service in the region.
2. Case studies of existing inter-county commuter transportation services from across the United States, with lessons learned for the San Joaquin Valley.
3. An analysis of the demand for inter-county transportation services. This analysis is based on stakeholder interviews, travel demand models, and current demographics and growth projections.
4. Recommendations for services to meet the projected transportation needs. These recommendations include policy changes, as well as the organizational structures and funding arrangements required to implement these policy changes.

Hierarchy of Services

The study considers the full range of possible strategies for providing higher-capacity transportation choices for Valley commuters. These represent a continuum from very basic incentives for carpooling to higher occupancy vanpools, subscription bus services, and finally higher-capacity public transit services including commuter rail. In the lowest-density environments, simple incentives to choose carpooling can help to divert a share of commuters away from single-occupancy vehicles. In the highest-density environments with the greatest concentrations of commute trips, much higher-capacity strategies have a chance to capture a significant share of the commute market, and to attract some share of non-work trips. Some of the key service options available to the Valley are:

- 1. Ridesharing and Transportation Demand Management:** Commuters can be encouraged to choose carpooling over single-occupancy vehicle travel through a variety of programs, ranging from administrative support (such as ridematching services) to monetary incentives (including support for carpoolers and charges for SOV travel including parking charges). Such programs may be run by public agencies, or by individual employers or groups of employers. Ridesharing programs have the advantage of being low cost, and of being feasible in very low density environments. Their total potential to shift travel away from single-occupancy vehicles depends upon the particular strategies employed. For example, ridematching support for carpooling might have a modest impact as a single strategy. When carpool incentives are combined with other strategies such as employee paid parking (or parking cash-out) and Guaranteed Ride Home, the impact of these programs can be quite robust.

San Joaquin Valley Examples: South Valley Rideshare, Commute Connection

- 2. Vanpool:** Vanpools offer many of the advantages of carpools, but can accommodate more passengers per vehicle (generally up to 15 for large vans). Because they are operated by riders and are not required to make an unproductive return trip, vanpools have lower operating expenses than public transit, and so they can be more cost-effective than fixed-route transit for many trips. Vanpools are most effective at serving commuters travelling to individual large employers or to clusters of employers. They can be particularly effective for long commutes, where the cost savings of sharing a ride are sufficient to justify the time cost for commuters of gathering at a central meeting place. Communities can encourage vanpooling by either partially or completely subsidizing the cost of vehicles, and by increasing access to park-and-ride facilities.

San Joaquin Valley Examples: Kings Area Rural Transit (KART) Vanpool, Agricultural Industries Transportation Services (AITS) Vanpool, Commute Connection

- 3. Subscription Bus:** Transit agencies may decide to provide bus service in a targeted way by enrolling regular commuters and scaling the level of service to demand. This type of service is similar to vanpools in that it usually serves a particular employer or destination, but offers higher capacity than a vanpool because it uses a larger vehicle, generally provided by the transit agency. Subscription bus services can be passenger-operated (with appropriate licensing), or they can be operated by professional drivers. This type of service makes few trips per day, resulting in limited flexibility for riders as compared to more robust fixed-route bus service.

San Joaquin Valley Examples: San Joaquin RTD Subscription Routes

- 4. Fixed-Route Express Bus:** In travel corridors with a sufficient density of trips at the origin and destination end, transit agencies may be able to provide cost-effective fixed-route express bus service. This category of service includes a wide range of possible service plans, from targeted, one-way, peak-only transit to frequent all day service. They generally don't serve a particular employer but are well suited to serve a downtown, an employment cluster, or a rail connection. Like carpools, vanpools, and subscription buses, fixed-route transit in low density areas may benefit from park-and-ride facilities. Buses are more flexible and have lower initial capital costs than rail. However, they must compete with roadway congestion. Compared to ridesharing and vanpooling, buses offer much higher capacity, but suffer from first-and-last mile challenges and high

operating costs. Even the most productive bus services in the United States cover less than half of their operating costs through fares.

San Joaquin Valley Examples: Modesto MAX ACE and BART service.

5. **Commuter Rail:** Commuter rail service can be the most appropriate transit option in very high demand corridors. Commuter trains offer very high capacity. They provide service that does not have to compete with freeway congestion, although in some rail corridors passenger trains must share tracks with freight trains, which may cause delays. Development of commuter rail also offers the opportunity for transit-oriented development near rail stations. Capital costs for rail service can be extremely high compared to bus service. In the San Joaquin Valley, there are opportunities to take advantage of existing rail corridors. However, even in these cases expensive upgrades are generally required. In order to justify very high capacity transit service, rail must either serve high-density origins and destinations, or it must rely on strategies to get passengers to and from rail stations, such as park-and-ride facilities, feeder transit, and or employer shuttles.

San Joaquin Valley Examples: Altamont Commuter Express (ACE).

Each of the strategies described above is appropriate for a different set of operating environments. Generally, the lower-cost, lower-capacity investments are most appropriate for low-density environments where homes and employers are dispersed. The higher-cost, higher capacity investments become feasible as population and employment density increase. These investments can build on each other: ridesharing strategies can complement fixed-route bus service; the park-and-ride facilities and guaranteed ride home services that benefit carpoolers can also benefit bus riders. As higher capacity options become feasible for implementation, they do not necessarily fully replace other options, but add to the range of commute options available, allowing commuters to choose what works best for them.

Chapter 2. Regional Context

Communities

The San Joaquin Valley is California's fastest growing region. This large and diverse area, making up the southern half of California's Great Central Valley and comprised of eight counties — San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern — has grown in population by more than 70% since 1980. Population has surged as demand for housing within commuting distance of the San Francisco Bay Area, Sacramento, and Los Angeles has encouraged rapid suburban development on the Valley's relatively inexpensive agricultural lands. With this growth have come major new challenges, including degraded air quality and traffic congestion.

The eight counties of the San Joaquin Valley are currently home to 3.9 million people. Of these, more than two million live in the three counties that border the major metropolitan areas north and south of the region: 1.2 million residents live in San Joaquin and Stanislaus counties adjacent to the San Francisco Bay Area and 800,000 live in Kern County, adjacent to the greater Los Angeles area. Of the remaining 1.9 million residents in the interior counties of the Valley, roughly half live in Fresno County.

Figure 2-1 San Joaquin Valley County and Major City Populations

County or City (pop. greater than 20,000)	Population (2007 est., to nearest '000)	County or City (pop. greater than 20,000)	Population (2007 est., to nearest '000) ¹
San Joaquin County	680,000	Stanislaus County	521,000
Stockton	290,000	Modesto	209,000
Tracy	81,000	Turlock	69,000
Manteca	65,000	Ceres	42,000
Lodi	64,000	Riverbank	21,000
Merced County	252,000	Madera County	149,000
Merced	80,000	Madera	56,000
Los Banos	35,000		
Atwater	28,000		
Fresno County	918,000	Kings County	151,000
Fresno	481,000	Hanford	50,000
Clovis	92,000	Corcoran	25,000
Reedley	25,000	Lemoore	24,000
Sanger	23,000		
Selma	23,000		
Tulare County	429,000	Kern County	802,000
Visalia	118,000	Bakersfield	313,000
Tulare	56,000	Delano	53,000
Porterville	51,000	Ridgecrest	28,000
Dinuba	20,000	Wasco	24,000

Source: California Department of Finance
(<http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E1/E-1text.php>)

The Valley has five cities with populations of at least 100,000. These are, from north to south: Stockton (290,000); Modesto (209,000); Fresno (481,000); Visalia (118,00); and Bakersfield (313,000). A further 11 communities have at least 50,000 residents (Tracy, Manteca, Lodi, Turlock, Merced, Madera, Clovis, Hanford, Tulare, Porterville, and Delano), and all eight counties have at least one community of this size. About six in ten San Joaquin Valley residents live in an incorporated city with at least 20,000 residents. The rest live in rural areas or newer urbanized areas that have not yet been incorporated. Figure 2-2 shows the locations of these cities in relation to the major transportation infrastructure in the region.

Figure 2-2 San Joaquin Valley



As the population of the Valley has grown, the form of development and the use of land have also changed radically. The Valley is now a mix of urban, rural and suburban communities, with the bulk of the population growth occurring in relatively low-density suburban neighborhoods. The Valley has more workers than jobs, and significant numbers of workers commute to either the San Francisco Bay Area or the greater Los Angeles area.

Despite the recent economic downturn, the suburbanizing trend is expected to continue in the coming decades. As California's population booms, a large percentage of the state's expected growth is projected to occur in the San Joaquin Valley. The Valley expects more than 2.5 million new residents by 2030, many of whom will have workplaces far from their homes.

Transportation Facilities

The Valley relies on a few major transportation facilities. One major north-south artery, Interstate 5, bypasses most of the Valley's major urban areas, while California Highway 99 connects the Valley's population centers, including Bakersfield, Visalia, Fresno, Modesto, Merced, and Stockton. Major east-west highways include State Highways 58, 46, 152, 198, and 120. A large share of commuter traffic travels on Highway 99, a facility that currently suffers from serious congestion problems.

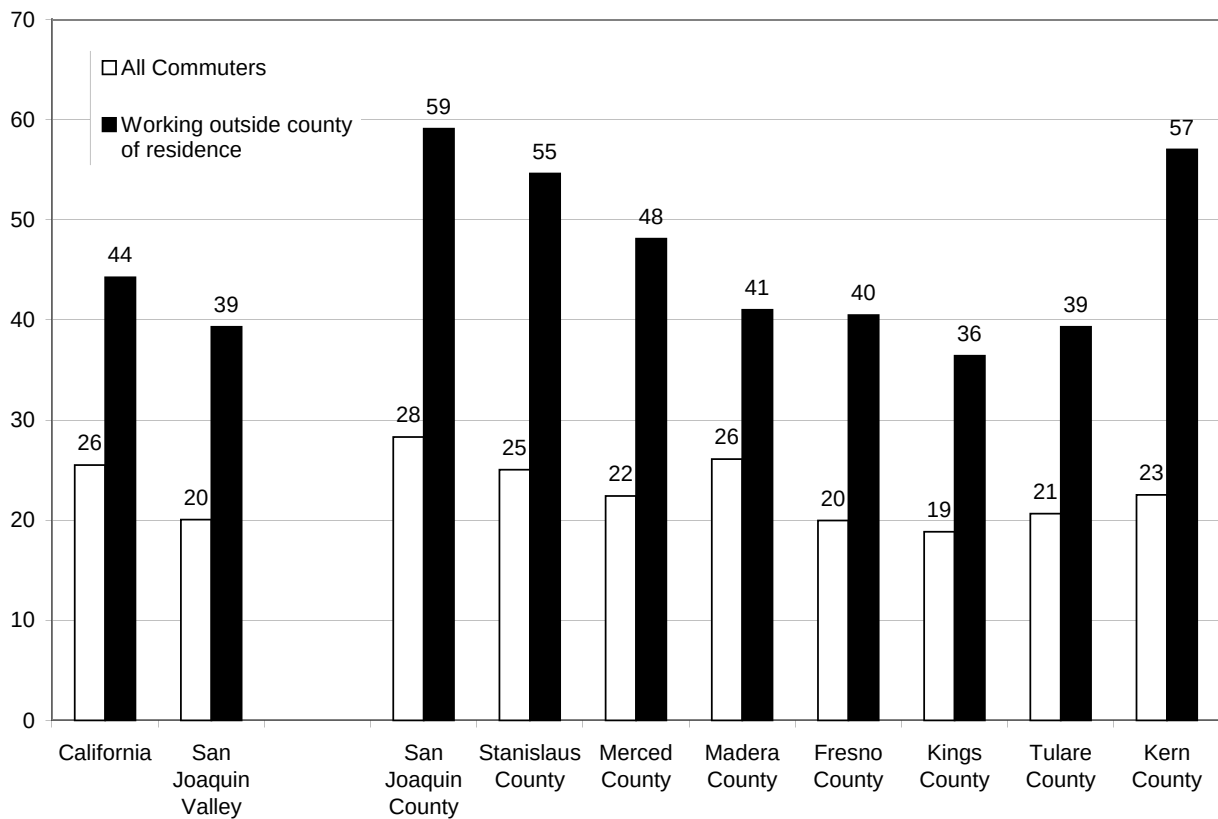
The Valley also has rail service. The Altamont Commuter Express (ACE) rail line carries commuters from Stockton and Tracy across the Altamont Pass to the Bay Area. While not specifically oriented towards commuters, the northern part of Amtrak operates six daily round trips between Bakersfield and either Oakland or Sacramento. Existing express bus services connect commuters to ACE, to Bay Area Rapid Transit (BART), and to Southern California's Metrolink commuter rail system.

The combination of rural and low-density suburban development, with large communities connected by just a few (frequently congested) freeways, make it a particularly challenging environment in which to provide fixed-route bus service. However, all eight counties in the Valley have at least one countywide bus service operator, and the region has numerous municipal bus services and dial-a-ride providers. These services are primarily focused on providing mobility within a single county or urban area. However, several transit operators do provide at least some inter-county service. Local connections can be made between operators in some cases, and between local transit operators and regional carriers. Countywide services and major local services are described in Chapter 4. Smaller local providers and dial-a-ride services are outside the scope of this study.

Commuting in the San Joaquin Valley¹

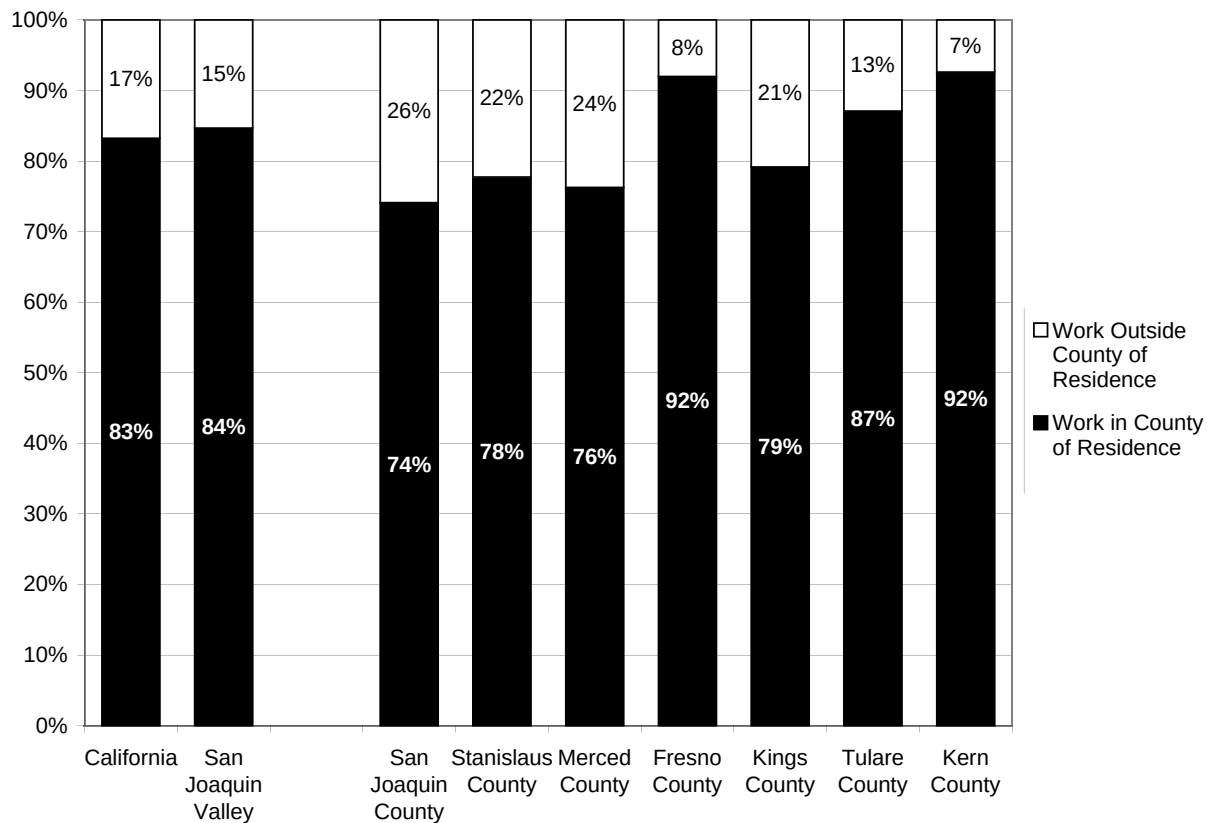
The typical employed resident in the Valley spends about 20 minutes traveling to work, about six minutes less than the typical worker in the state as a whole. Mean commute times vary from 19 minutes in Kings County to 28 minutes in San Joaquin County. Generally, workers living in the higher population, more suburban counties near the north and south of the region, have longer commute times than more rural counties in the interior of the region.

¹ Note: The source of all commute data in this section is the US Census, American Community Survey 2006. Some data is not available for Madera and Kern Counties.

Figure 2-3 Mean Commute Times (In Minutes)

Significant numbers of San Joaquin Valley residents cross county lines for work. Of the Valley's estimated 1.5 million workers employed outside the home, about 15% work outside their home county. This rate is comparable to the state of California as a whole, where 17% commute across county lines. The Valley is far from uniform on this measure. In San Joaquin, Stanislaus, Merced, and Kings Counties, more than a fifth of employed residents leave the county to work. In Fresno and Kern Counties, less than one in ten employed residents do so. San Joaquin County, with 26% of workers crossing county lines for employment, has the highest number of inter-county commuters.

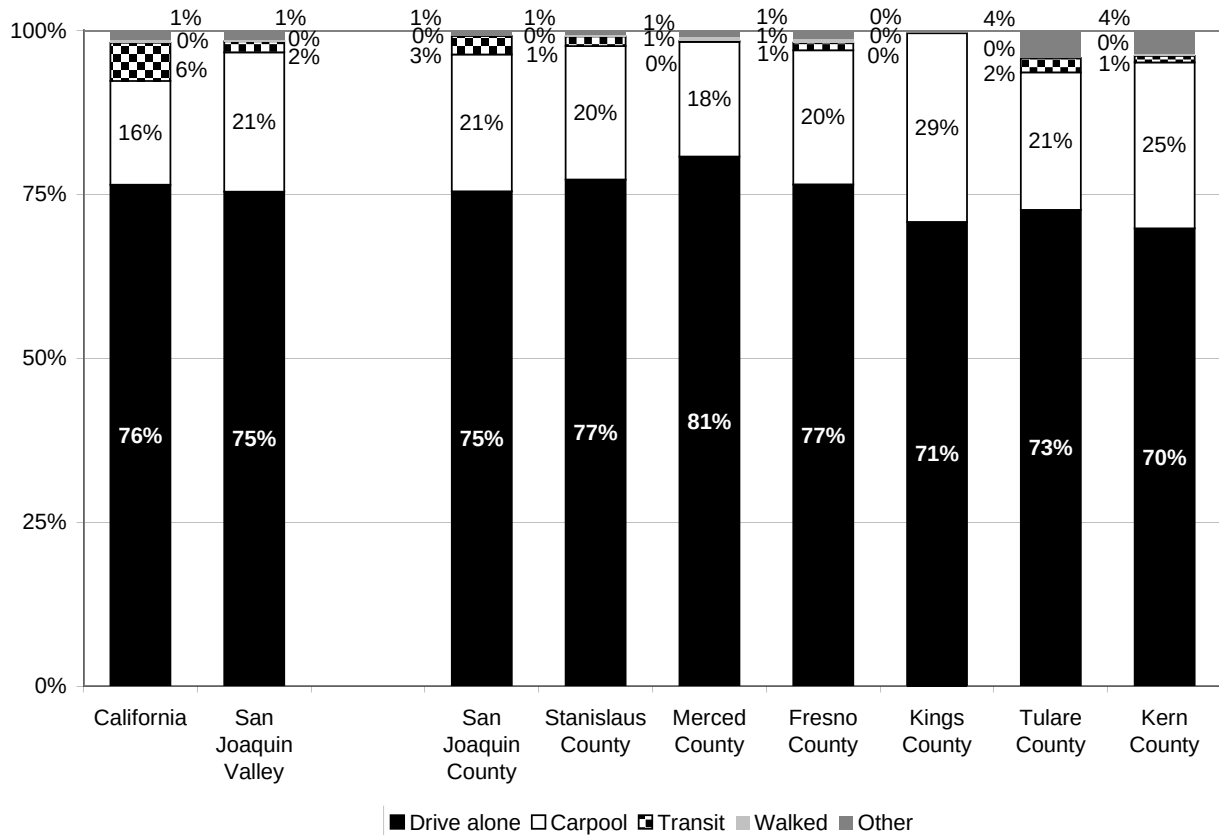
As would be expected, inter-county commuters spend more time traveling to work than the average commuter. Both in the San Joaquin Valley and in the state as a whole, traveling to another county adds about 19 minutes to the typical commute. Inter-county commuters living in San Joaquin County, many of whom travel over the congested Altamont pass into the San Francisco Bay area or north on Interstate 5 to Sacramento, have the longest mean commute times, at 59 minutes. Inter-county commuters in Stanislaus County (also adjacent to the Bay Area) and Kern County (adjacent to the greater Los Angeles area) also have mean inter-county commute times over 55 minutes.

Figure 2-4 Inter-county Commuters

Note: ACS 2006 data not available for Madera County.

In the San Joaquin Valley, as in California as a whole, most commuters drive alone to work. Census estimates show that fully three-quarters (75%) of commuters in the region travel to work alone in a private vehicle, consistent with statewide averages. This share varies only slightly among the region's counties, from 72% in Kings County to 79% in Stanislaus County.

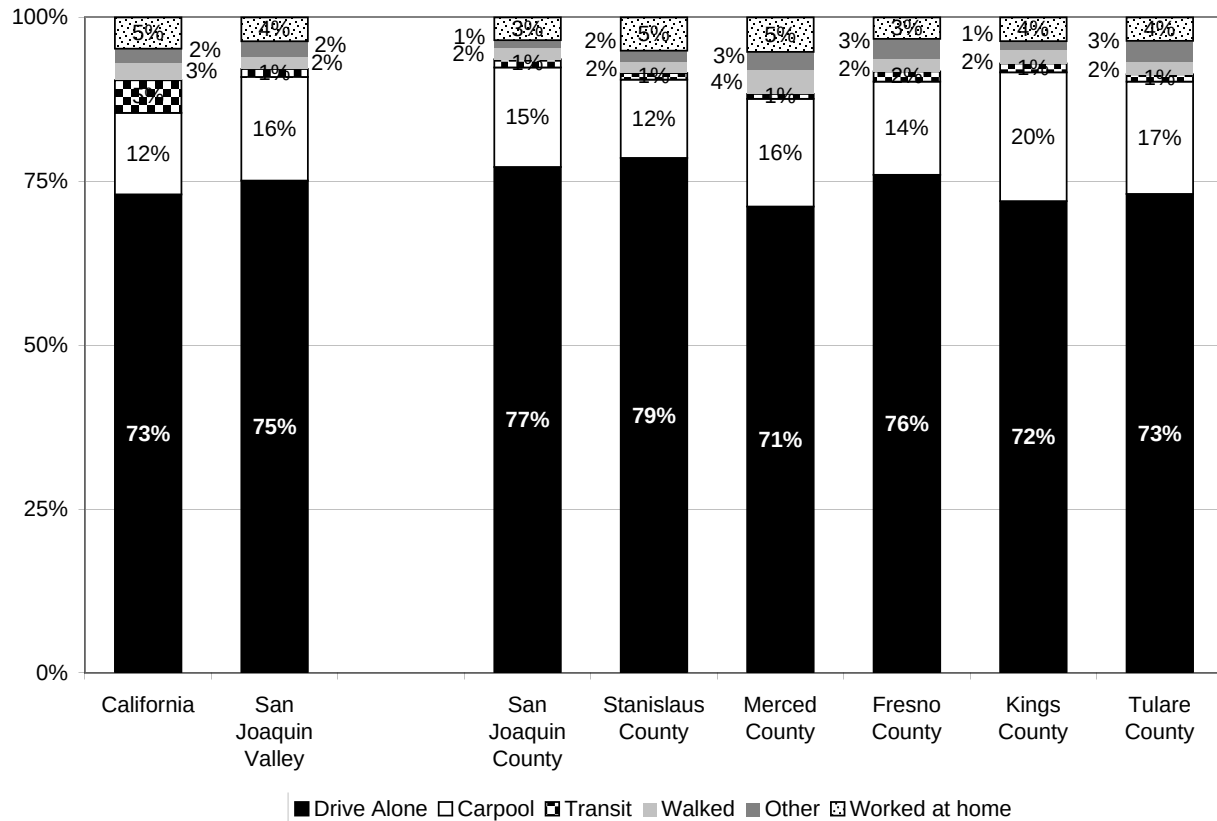
In the San Joaquin Valley and in California as a whole, about 17% of workers either take transit or carpool to work, but Valley commuters are less likely to take transit and more likely to carpool than the statewide average. In California as a whole, 5% take transit and 12% carpool; in the San Joaquin Valley, transit mode share is much lower (1%), but rates of carpooling are higher (16%). No San Joaquin Valley county has a transit mode share for commuters above 2%, and carpooling mode share varies between 12% (Stanislaus County) and 20% (Kings County). It appears that, while low-density residential development patterns, dispersed employment centers in the region, and constrained resources make providing efficient transit service difficult, commuters have responded to limited transit options by carpooling in greater numbers than in other parts of the state. Valley transit providers have responded to this trend by investing in vanpooling services.

Figure 2-5 Commute Mode Share

Note: ACS 2006 data not available for Madera County.

For workers employed outside of their home county, commute modes are broadly similar to all workers. Both in the San Joaquin Valley and in California, about three quarters of inter-county commuters drive alone. By definition, no inter-county commuters work at home, and very few walk, bike, or take other modes such as taxi cabs. Even without these commute options available, rates of driving alone and transit usage remain about the same as for all workers—the additional mode share is made up by higher-than-average rates of carpooling among inter-county commuters. In California as a whole and in the San Joaquin Valley, carpooling mode share is about 5% higher for inter-county commuters as compared to all workers. For most San Joaquin Valley counties, this difference varies between 6% and 9%. The exception to the rule is Merced County, where carpooling mode share for inter-county commuters is just 2% higher than for all commuters, and drive-alone mode share is a striking 10% higher (81% compared to 71%).

**Figure 2-6 Commute Mode Share
(for those employed outside of home county)**



Note: ACS 2006 data not available for Madera County.

Transit mode share is significantly higher for inter-county commuters than for all commuters in just one county in the region: In San Joaquin County, about 3% of inter-county commuters take transit to work, compared to 1% of all commuters. San Joaquin County has both very long inter-county commute times and robust inter-county commuter-oriented transit service into the Bay Area, including ACE rail, shuttles to BART, and Regional Transit District Interregional Commuter Service program (ICS) commuter bus services (see Chapter 4).

Chapter 3. Population and Employment Trends

This section provides an account of current population and employment densities throughout the region. Projections are based on data from the statewide passenger travel demand model (SPTM), developed by Cambridge Systematics for the California High Speed Rail Authority. The model allows us to examine both year 2000 travel patterns and projections of travel behavior in 2030. To supplement information about employment density, this section documents the locations of the Valley's largest employers.

It should be noted that the 2030 projections for employment and population density used in this analysis are based on current growth trends and the existing land use regulations and general plans of the communities in the San Joaquin Valley. Actual future patterns of population growth and economic development are not now known, and will be driven in part by the decisions made by San Joaquin Valley policymakers. To the extent that future population and job growth can be concentrated in existing urban areas, increased density will contribute to more opportunities to create transportation choices, including productive commuter transit service.

San Joaquin Valley policymakers are currently working to develop a regional vision for land use planning in the San Joaquin Valley. This process, known as the San Joaquin Valley Blueprint, will develop detailed technical data that can be used by local policymakers as they make land use decisions, and by councils of government in each county as they make transportation planning decisions. The recommendations of the Blueprint Regional Advisory Committee will inform the service planning recommendations of this study. More information on the blueprint planning process is available at: <http://valleyblueprint.org>.

Population

Low population and employment densities throughout the region, and long distances between population centers, create a challenging environment for transit service. Most of the San Joaquin Valley's land area has less than 5 persons per acre—a density at which any transit service would have to rely on park-and-ride facilities to generate the volume of passengers required to make a service viable.

Densities in the urban areas generally varied between 6 and 20 persons per acre in the year 2000 and each of the five largest cities has at least one “central” area where population density exceeds 10 persons per acre. Year 2000 model data reveals that only Bakersfield has any transportation analysis zones with population densities exceeding 15 person per acre. These low densities limit realistic short-term expectations for longer distance transit performance.

Looking into the future, 2030 model data projects that the bulk of the Valley's land area will maintain population densities lower than 5 persons per acre. However, most of the region's major cities, including Fresno, Bakersfield, Stockton, Tracy, Manteca, Visalia, and Tulare, will see significant increases in density. Stockton, Manteca, Madera and Visalia will all experience development in their central areas with population densities exceeding 15 persons per acre. However, even these relatively dense communities will maintain significant land area with population densities below 10 persons per acre.

In the San Francisco Bay Area, population densities far exceed those of the densest San Joaquin Valley cities not only in the central cities of San Francisco, Oakland, and San Jose, but also in

more suburban areas such as Berkeley, Hayward, Fremont, and the San Francisco Peninsula. The urban core of the city of Sacramento is far denser than any San Joaquin Valley City, although most of Sacramento County is low density. Nearly all of Los Angeles County has higher population densities than any San Joaquin Valley city.

Figure 3-1 Population Density (2000)

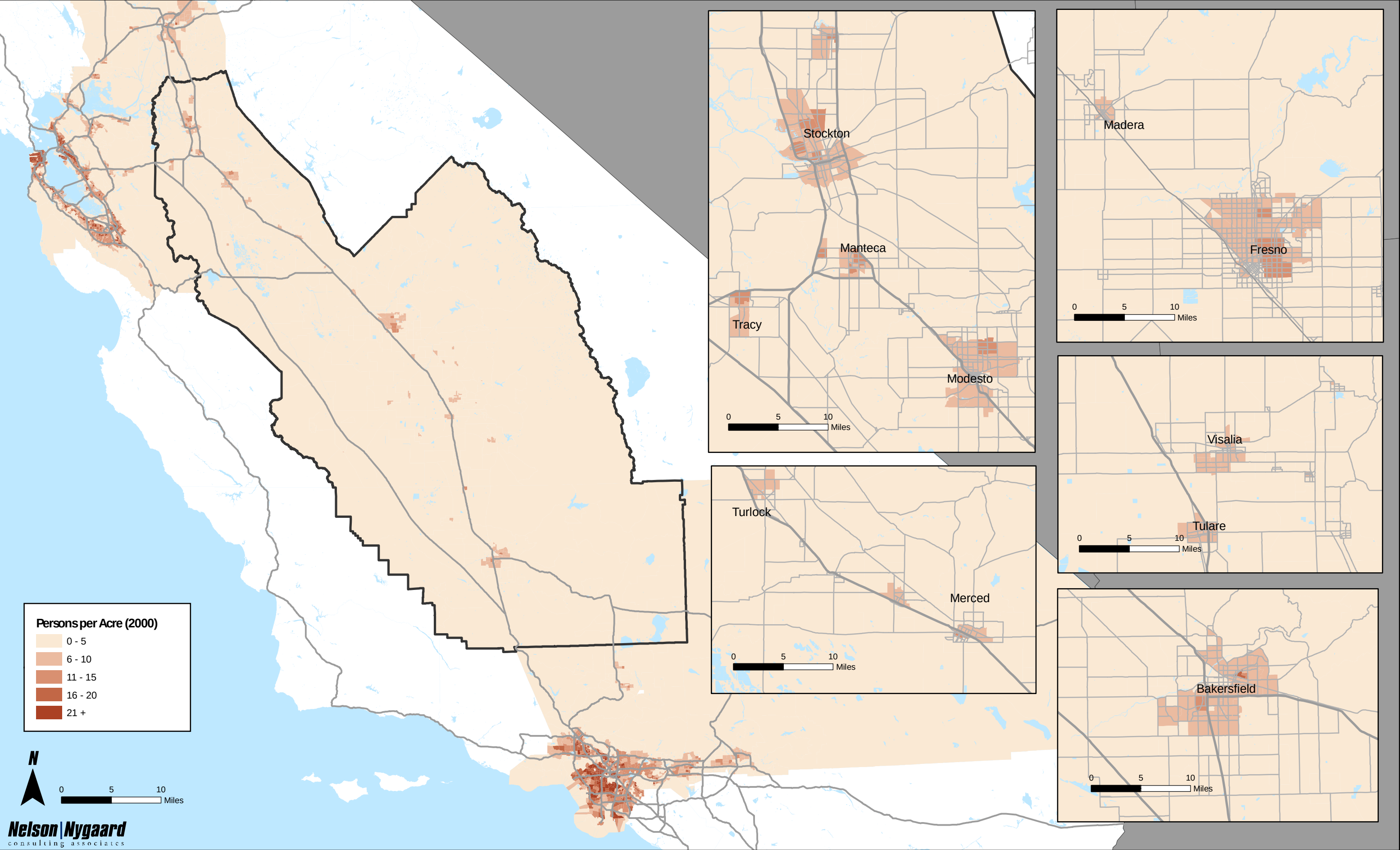
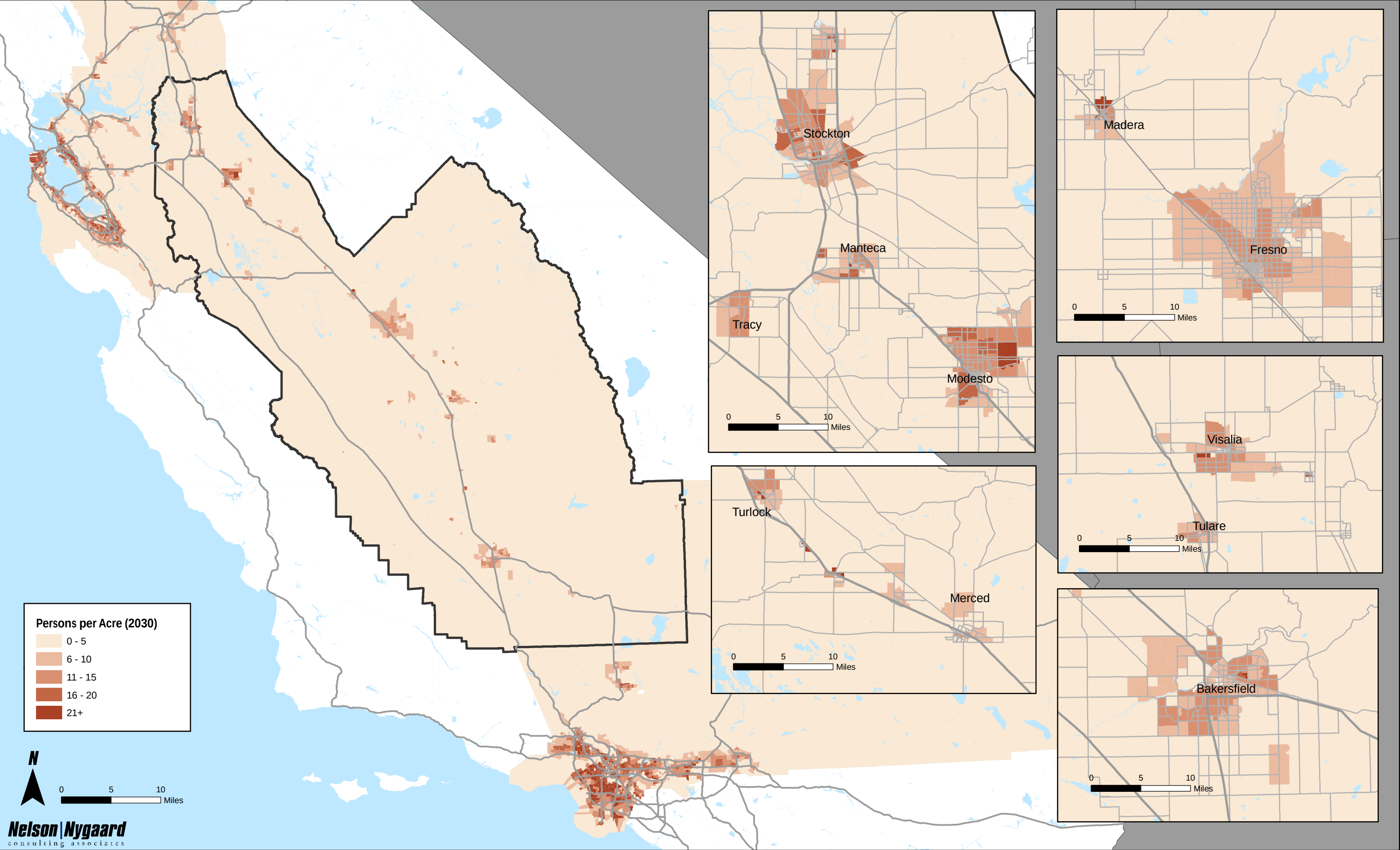


Figure 3-2 Projected Population Density (2030)



Employment

With far more residents than jobs, and a significant share of employment in the agricultural sector, the Valley as a whole currently has very low employment density. Even in the region's densest urban areas, employment density generally does not exceed 15 jobs per acre. Even more than low population density, low employment density is the region's greatest barrier to effective commuter transit service. With employment sites spread out over a large area, it is not possible to serve every employer directly. Even commuters who might like to take transit may choose not to ride because the closest stops leave them more than a short walk from their destination.

Employment density in all of the region's major cities is expected to increase by 2030, but most will still remain below 10 jobs per acre. Stockton and Modesto may have core downtown areas where employment density exceeds 20 jobs per acre, and among the region's cities, Stockton will see the largest increase in employment density.

One way to address significant "last mile" gaps and to serve commuters effectively in an environment with low employment density would be to provide direct service to large employers with enough workers to justify their own route. This type of service has been implemented successfully on San Joaquin RTD's ICS routes, and by Merced Transit's Carless Commute program. A survey of major employers made available by the California Employment Development Department finds that there are 84 employers in the region with between 1,000 and 5,000 employees. The only very large employers (more than 5,000 employees) are the region's military facilities.

This page intentionally left blank.

Major Employers

- 1,000-4,999 Employees
- 5,000-9,999 Employees
- 10,000 + Employees

Employment per Acre (2000)

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 +

Major Employers by City:

- Stockton:** Sanitary City Disposal Co, Lodi Memorial Hospital, Pacific Coast Producers, San Joaquin Delta College, St Joseph Medical Ctr, San Joaquin General Hospital, Deuel Vocational Institution.
- Manteca:** Memorial Medical Ctr, Doctor's Medical Ctr, Modesto Junior College, Stanislaus Food Products, Gallo Winery, Modesto Bee.
- Modesto:** Memorial Medical Ctr, Doctor's Medical Ctr, Modesto Junior College, Stanislaus Food Products, Gallo Winery, Modesto Bee.
- Turlock:** Emanuel Medical Ctr, Foster Farms Inc.
- Merced:** Merced College, Mercy Medical Ctr, Merced County Superintendent.
- Madera:** D P Enterprises Llc, Children's Hospital Central Ca, Shehadey Pavilion At St Agnes, St Agnes Medical Ctr, Fresno Metropolitan Regional, Pelco International Operations, Us Veterans Hospital, Fresno City College, Fresno Police Dept, Fresno County Sheriff's Dept, Fresno County Economic, Beef Packers Inc, Foster Farms.
- Visalia:** Alfredo Padilla Labor Contr, Quad Knopf Inc, Kaweah Delta Health Care Dist.
- Tulare:** (No specific employers listed).
- Bakersfield:** Baroid Drilling Fluids, Bakersfield Memorial Hospital, Kern Medical Center, Mercy Hospital, Kern County School Supt, Human Services Dept, State Farm Insurance, Giumarra Vineyards Corp, Nestle Ice Cream Co.

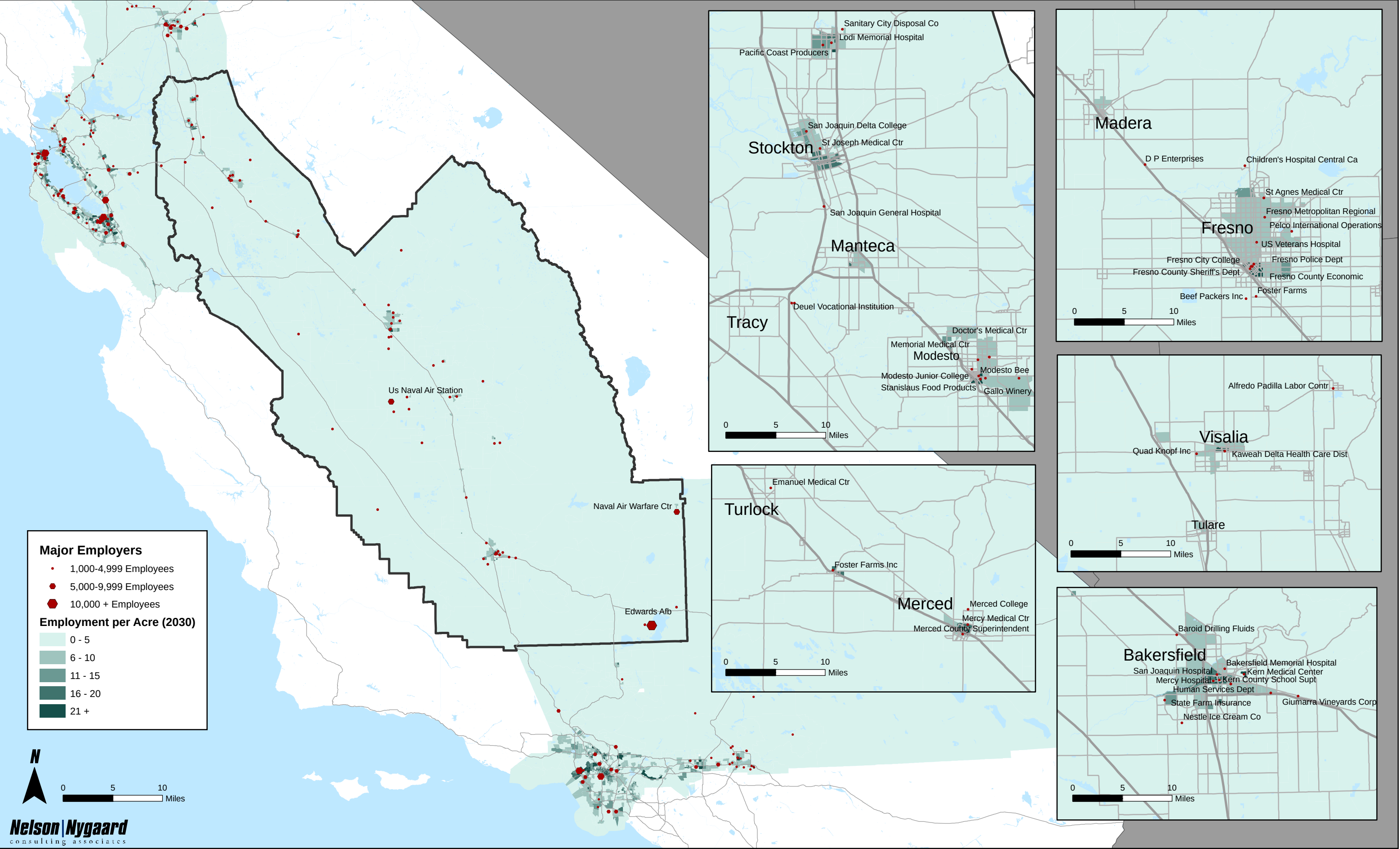
Other Major Employers: US Naval Air Station, Naval Air Warfare Ctr, Edwards AFB.

Scale: 0, 5, 10 Miles

North Arrow: N

Nelson Nygaard consulting associates

Figure 3-4 Existing Major Employers and Projected Employment Density (2030)



GIS Data Source: Cambridge Systematic Statewide Travel Demand Model, ESRI, CASIL
Employment Data Source: California Employment Development Department

Chapter 4. Existing Transportation Services

This section summarizes the services provided by the San Joaquin Valley's two passenger railroads, 12 large public bus operators, three private inter-city bus operators, and two vanpool services. It also summarizes rail systems outside the San Joaquin Valley, to which San Joaquin Valley commuters might wish to connect. Smaller local providers and dial-a-ride services are outside the scope of this study

Passenger Rail

Amtrak

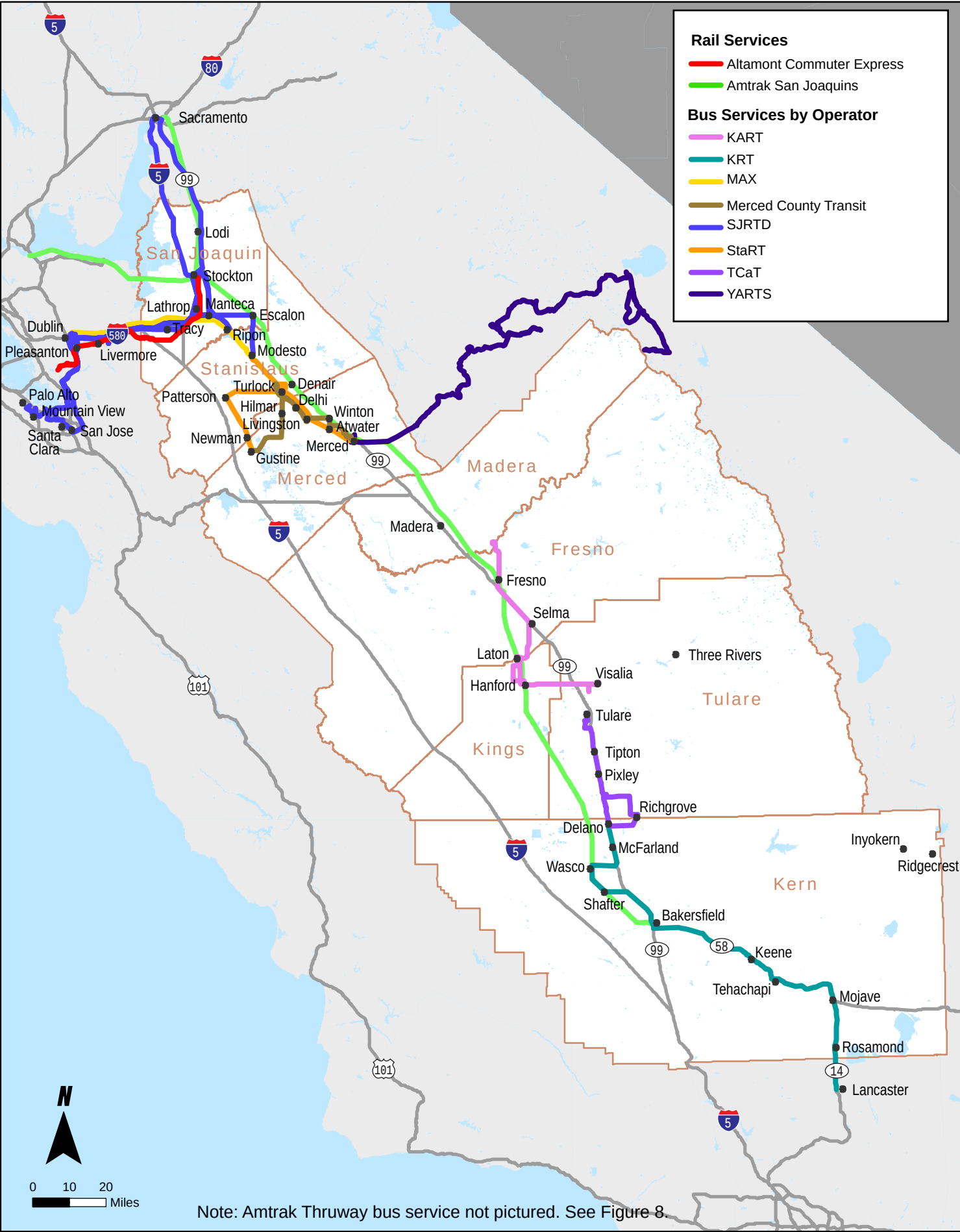
Amtrak California's San Joaquin route makes four daily roundtrips between Bakersfield and Oakland, and another two roundtrips daily between Bakersfield and Sacramento. End to end, scheduled running times for Bakersfield-Oakland trips are generally six to six-and-a-half hours, and Bakersfield-Sacramento trips are approximately one hour shorter. In the San Joaquin Valley, stations are located at Bakersfield, Wasco, Corcoran, Hanford, Fresno, Madera, Merced, Turlock/Denair, Modesto, Stockton, and Lodi.

While the San Joaquin is not a commuter-oriented service, some trains operate during commute hours. However, fares are generally higher than might be expected for commuter services; for example, a one-way ticket from Bakersfield to Fresno, a distance of approximately 110 miles, typically costs \$19, while a one-way ticket from Modesto to Stockton, a distance of approximately 30 miles, typically costs \$9.

Amtrak connects to local transit services throughout the Valley, to Sacramento Regional Transit light rail in downtown Sacramento, to Altamont Commuter Express rail in Stockton (see below), and to Bay Area Rapid Transit (BART) in Richmond. It also connects to Amtrak's Capitol Corridor route in Sacramento and in Richmond, and to various Amtrak Thruway bus routes (see below).

Amtrak California also either operates or contracts out to other inter-city transit providers a number of connecting bus routes. Under state law, however, passengers may only use these routes in combination with train trips. Bus-only travel is permitted as part of a roundtrip that includes train travel in the opposite direction. Some "mixed mode" buses operated under contract by other providers are included in the network, but Amtrak passengers are required to buy tickets to the next Amtrak fare point beyond their destination. Nonetheless, Amtrak Thruway services provide valuable connectivity; notably, Amtrak riders are able to continue past Bakersfield to Los Angeles, Las Vegas, Palmdale, Indio and Santa Barbara using Thruway connections, and Stockton buses continue on to San Francisco, San Jose and Redding.

Figure 4-1 Existing Publicly Operated Inter-County Transit Service



Altamont Commuter Express (ACE)

ACE currently consists of a single, 86-mile line between Stockton and San Jose, with a total of nine stations (scheduled running times, end to end, are generally 2 hours and 10 minutes). It primarily serves commuters from the Northern San Joaquin Valley to the employment centers of the Tri-Valley and Silicon Valley, in the San Francisco Bay Area. In the San Joaquin Valley, stations are located at Stockton, Lathrop/Manteca, and Tracy.

ACE operates three westbound trains during the morning peak, Monday through Friday, and three trains in the reverse direction during the evening peak; since 2006, it has also offered a mid-day roundtrip.

Trains connect to Amtrak's San Joaquin via a shuttle between the Stockton ACE and Amtrak stations; to Bay Area Rapid Transit (BART) via a Livermore Amador Valley Transit Authority bus route between the Pleasanton ACE station and the Dublin/Pleasanton BART station; to Capitol Corridor service to Oakland and Sacramento; to Santa Clara Valley Transportation Authority (VTA) light rail service in Santa Clara and in San Jose; and to Caltrain service to San Francisco in San Jose. ACE sponsors a number of shuttle services operated by local transit providers, and employers sponsor additional connecting shuttles.

ACE is managed by the San Joaquin Regional Rail Commission (SJRRRC), with a board made up of elected officials from San Joaquin and Alameda counties. Operating costs are split among SJRRRC (\$2.32 million in fiscal year 2006/2007), the Alameda County Congestion Management Agency (\$1.81 million), and the Santa Clara Valley Transportation Authority (\$2.58 million).

In the spring of 2007, ACE claimed daily ridership of 3,037, or approximately 175 passengers per revenue service hour.¹ While this figure is significantly higher than local bus services, it is a function both of the rail line's greater capacity and of its relatively limited (peak-oriented, with hourly headways) service.

ACE's 2007 Short Range Transit Plan calls for two additional roundtrips daily within a decade and three more within 25 years, and a draft expansion study is considering new commuter-oriented service in several corridors in the northern San Joaquin Valley, including between Merced and Sacramento. Finally, the 2007 Bay Area Regional Rail Plan recommended exclusive right-of-way for passenger trains in the Altamont Corridor, and direct connection to BART at a new intermodal station in the Tri-Valley area. A detailed discussion of potential ACE upgrades is discussed in Chapter 8.

California High Speed Rail

The California High Speed Rail Authority was established in 1996 to plan, construct, and operate a high-speed train system between the major metro areas of California. A \$9.95 billion bond approved by California voters in November 2008 will provide the initial funds to begin acquiring rights-of-way and constructing this system.

The planned route for the first phase of the system includes service from southern California with stops in Bakersfield and either Visalia, Tulare, or Hanford before proceeding to the San Francisco

¹ Using scheduled running times (which amount to a total of 17 hours and 25 minutes per day), an exact figure of 174.4 boardings per revenue service hour was calculated. Note, however, that this figure is *per train*. According to the 2006 National Transit Database, the number of boardings per revenue hour *per vehicle*, or individual railcar, was 34.34.

Bay Area via the Pacheco Pass. A branch of the system, currently envisioned as part of the second phase of the project, would include stops in Merced, Modesto, and Stockton before proceeding to Sacramento. Finally, the Altamont corridor has also been identified by the Authority as a “separate but related” project, and funding for infrastructure improvements may be made available through the bond funds.

High speed trains operate at speeds that would allow travel from Bakersfield to Merced in an estimated 52 minutes. California High Speed Rail is envisioned as primarily serving long distance trips, with travel times and fares that would be competitive with airplane travel. However, planners have also considered the possibility of “regional overlay” service, with stops and fares attractive to commuters but using high speed train compatible equipment. This is the service envisioned for the Altamont corridor.

Bus Service

This section profiles the 12 largest public agencies providing bus service within the cities and counties of the San Joaquin Valley: it does not describe every bus operator in the Valley, but it includes all countywide and large-community fixed-route service.

Most of these organizations are focused primarily on providing local service within the boundaries of the cities and counties they serve. While this study is focused on inter-county and inter-regional commuter express transportation, these organizations are profiled here because they may serve as connecting services for any new commuter express transit; because they may be partners in or potentially even sole providers of a new service; and because they demonstrate models for the kinds of entities that could be established to provide transit in the region. In addition, seven of these bus operators in the valley provide at least one inter-county route.

San Joaquin Regional Transit District (RTD)

San Joaquin RTD is a Joint Powers Agency, a partnership between San Joaquin County and the City of Stockton. With approximately 5 million annual boardings, it is the third-largest bus operator in the San Joaquin Valley. In 2008, the organization had \$34 million in annual operating funding and \$15.8 million in annual capital funding. While 46 of RTD’s 59 routes serve the Stockton area, it also provides fixed-route and deviated service throughout San Joaquin County. Its new “Metro Express” service is a bus rapid transit (BRT) line operating on 15-minute headways between the new Downtown Transit Center and Hammer Road in North Stockton, with service to University of the Pacific.

RTD provides the bulk of the region’s commuter-oriented inter-county express bus routes. All but one of these routes fall under RTD’s Interregional Commuter Service program (ICS), which provides limited stop service between San Joaquin County communities (primarily at park-and-ride facilities) and employment centers and transit connections in other counties. While day passes are available for travel on these routes, the agency highly recommends monthly subscriptions. RTD currently uses Measure K funding to support ICS operations.

RTD runs 17 ICS routes, each making one daily roundtrip. Two routes serve downtown Sacramento; one departs from central Stockton, the other from east Stockton. The remaining routes serve the employment centers of the San Francisco Bay Area, including the Tri-Valley and Silicon Valley. Six provide service from Stockton, Manteca, and Escalon to Lawrence Livermore National Laboratories and Sandia Labs, just across the Altamont Pass from San Joaquin County

on the west side of Livermore. One provides service to Dublin/Pleasanton BART station. Nine routes serve the job centers of Silicon Valley, including Sunnyvale, Mountain View, Milpitas, Santa Clara, and San Jose. Morning service for most routes begins before RTD fixed-route service. Route 162, with service to Lockheed Martin, and Route 157, with service to Hacienda business park, were discontinued in spring 2009 due to budget cuts.

Together, these subscription routes carry more than 1,300 passengers per weekday,² at a rate of 16.7 passengers per hour. While this is lower productivity than the system's overall weekday productivity of 22.5 passengers per hour, it is far higher than the other fixed-route inter-county services in the region. Higher productivity can be explained in large part by the limited, highly specialized nature of the product: each of its 19 routes makes a single daily roundtrip, and most routes are destined for the doorsteps of major employers. For employees of those companies, then, the routes essentially amount to a shuttle service—and a commute option that is significantly cheaper than driving.

RTD also provides one standard inter-county fixed route, which runs three times daily from Escalon (a community of less than 20,000 residents) to Modesto in Stanislaus County.

Modesto Area Express (MAX)

MAX is the City of Modesto's municipal transit provider, operated under contract by MV Transportation. It consists of 20 routes operating seven days per week. MAX operates two transfer centers, at the Downtown Transportation Center and at the Vintage Faire Mall in northwest Modesto (it also serves the Modesto Amtrak station east of the city). MAX operates two commuter express bus routes with connecting service to two commuter rail systems.

The BART Express Route provides four daily roundtrips over the 56-mile route from Modesto to Dublin/Pleasanton BART station. The BART Express service carries approximately 28,000 passengers per year.³ The service is bidirectional, but reverse commute trips (from Dublin/Pleasanton to Modesto in the morning, and the reverse in the evening) carry just 10% of the service's passengers. In total, the service carries between 7 and 8 passengers per vehicle service hour. While these figures indicate that the BART Express service is less than half as productive as RTD's commuter service (ICS), almost the entire difference is due to the fact that ICS is unidirectional, while MAX provides service in the reverse-commute direction.

The MAX to ACE route makes three morning trips directly from Vintage Faire Mall in Modesto to the ACE station in Lathrop/Manteca, and three evening return trips to Modesto. MAX to ACE carried approximately 22,600 passengers per year⁴, at a rate of 9.7 passengers per revenue service hour.

Stanislaus Regional Transit (StaRT)

A division of Stanislaus County, StaRT operates nine routes throughout the county, including connections between Modesto, Turlock, and Patterson. While StaRT's routes are not coordinated with Modesto MAX's schedules, most routes do serve Modesto's Downtown Transportation Center.

² Fiscal year 2007

³ Fiscal year 2007

⁴ Fiscal year 2007

StaRT runs two inter-county routes. Route 45 runs from Turlock (the second largest city in Stanislaus County), through Patterson to Gustine in Merced County. It connects to Merced County Transit's The Bus service. This route carries 18,000 passengers per year, at a productivity of 4.8 passengers per hour. This is somewhat lower than StaRT's systemwide productivity of 6.7 passengers per hour.

StaRT also operates Route 70, which makes one run daily from Modesto to Merced. It makes an intermediate stop in Turlock. This route operates at a very low productivity of 1.7 passengers per hour.

Finally, StaRT offers two "Medivan" services: one travels to Bay Area medical centers, the other travels to Madera and Fresno. This service is oriented toward medical facility users rather than commuters, and riders must schedule trips seven days in advance. This service carries about 2,200 passengers per year ⁵, at rate of about 1 passenger per hour.

Merced County Transit (The Bus)

Merced's The Bus is governed by a joint powers agreement, administered by Merced County, and operated under contract by First Transit, Inc. It consists of 16 routes within Merced and around the county; most routes serve the Merced Transpo Center in downtown Merced. Fares vary according to distance. Additional transfer centers are planned near Merced Community College and in Los Banos.

The Bus has two inter-county routes. Route 7 travels from Merced across the county line to Turlock every two hours on weekdays. This 25-mile route carries 45,000 passengers per year, with productivity of 9 passengers per hour. Route TSA-10 travels 23 miles from Gustine to Turlock three times per day. Combined, these routes carry approximately 9.1 passengers per revenue service hour. The city of Turlock shares a portion of the cost of these routes using a share of Federal Transportation Administration Urbanized Area formula funds.

Merced County Transit also operates Carless Commute, which provides tailored service to designated employers in Merced County. The agency offers to organize a new trip when 8-12 passengers bound for a specific employer commit to participate. Service is provided both from passengers homes, and from park-and-ride facilities. The program has been in existence for 4 years. It currently provides 18 daily runs using ten 26-passenger vehicles. The run with the highest occupancy currently carries 23 passengers, and most carry between 12 and 15. Service is made more efficient by having 8 runs meet at a central location in Merced to allow for transfers. Carless Commute is supplemented by a Guaranteed Ride Home program, which offers passengers a free ride home in case of emergency.

Madera County Connection (MCC)

A division of Madera County, MCC operates three fixed routes from outlying areas to the City of Madera.

While none of MCC's routes extend beyond the county, the Eastern Madera County-Madera Route connects to Fresno Area Express Route 58E (to Riverpark transfer center, North Fresno) at Children's Hospital Central California in southern Madera County, providing bus access to Fresno County.

⁵ Fiscal year 2006.

Fresno Area Express (FAX)

FAX is the municipal transit operator for the City of Fresno. With 15.5 million annual boardings and an operating budget of approximately \$33 million, it is the largest local transit provider in the San Joaquin Valley. With systemwide productivity in 2007 of 45 passengers per revenue service hour, it is also among California's most efficient transit operators.⁶

FAX consists of 21 fixed routes, four of them operating on headways of just 15 minutes, and it operates three major hubs: the Downtown Transit Mall (which is near, but not adjacent to the Fresno Amtrak station), the Manchester Transit Center along Blackstone Avenue north of downtown, and a transfer point at the River Park shopping center in North Fresno. FAX is currently developing a fourth transfer center in Southeast Fresno, the "Transit Village," that will include 129 units of affordable housing for seniors. The agency is also planning to implement bus rapid transit (BRT) service in four corridors.

While FAX's Route 58E crosses into Madera County, it is a very short route to Children's Hospital, and is not a regional express service.

Fresno County Rural Transit Agency (FCRTA)

A Joint Powers Agency consisting of 13 incorporated cities and Fresno County, FCRTA coordinates transit service in rural Fresno County. Operations are contracted out to 18 separate providers, both public and private. Individual systems serve a sphere of influence as defined by the county's Local Agency Formation Commission (LAFCO). One of FCRTA's operators, Coalinga Transit, formerly provided service to Avenal in Kings County, but no longer does.

In 2007, Fresno COG used Measure C funds to initiate a study of the regional transit system in Fresno County. That study recommended measures for closer coordination between Fresno County transit agencies, and recommended a long-term move toward consolidating regional transit agencies, including Fresno FAX, FCRTA, and Clovis Transit, under a single Joint Powers Agency. Staff from Fresno COG and FCRTA are currently investigating whether support exists in the region to move forward with this proposal.⁷

Kings Area Rural Transit (KART)

A Joint Powers Agency partnering Kings County with the cities of Hanford, Lemoore and Avenal, KART operates a half-dozen fixed routes in the city of Hanford as well as routes throughout Kings County. All routes converge on the Hanford Amtrak station.

KART provides three inter-county bus routes. Each proceeds from Hanford, the largest city in Kings County, to a sizeable community nearby. There are three roundtrips per weekday to Visalia in Tulare County; two roundtrips per weekday just 9 miles north to Laton (in Fresno County); and one weekday roundtrip per weekday to hospitals in the city of Fresno. Combined, they carry about 1,500 passengers per month. They are funded solely by KART. KART's Hanford-Fresno Hospital routes carry about 1.6 passengers per hour, and its Hanford-Visalia route carries 6.7 passengers per hour.

⁶ Fiscal year 2007

⁷ "Public Transportation Regional Agency Formation Study," Council of Fresno County Governments DRAFT Final Report, May, 2007.

KART also operates a large vanpool program that serves 5 counties in the region. This program is described in the Vanpool section of this document.

Tulare County Area Transit (TCaT)

A division of Tulare County, TCaT operates nine fixed routes throughout the county. Because of the passage of a county sales tax measure, service hours were recently expanded, and new connections to Visalia City Coach are planned.

One route, the Route 20 South County, proceeds from Tulare to Delano in Kern County, 30 miles south on Route 99. This Route makes five roundtrips per week day, and 2 roundtrips on Saturday. The route carries 13,000 passengers per year,⁸ at a productivity of about 5 passengers per hour. As of August 2008, TCaT has plans to begin providing service from Dinbua to the city of Reedley in Fresno County.

Golden Empire Transit District (GET)

The Golden Empire Transit District covers Bakersfield and adjacent communities. It has an annual ridership of 6.5 million⁹, making it the second-largest transit operator in the Valley. GET operates 18 fixed routes and two major hubs: the Downtown Transit Center (which is near, but not adjacent to the Bakersfield Amtrak station) and the Southwest Transit Center. GET's base fare is \$0.90, and an unlimited-ride day pass is available for \$2.25.

Among other improvements, the agency plans to expand express service over the next decade. GET does not currently provide any inter-county services; instead, inter-county services are provided in the Bakersfield area by Kern Regional Transit (see below).

Kern Regional Transit (KRT)

A division of Kern County, KRT is operated under contract by First Transit, Inc. It provides 13 routes of inter-city service across the 8,000 square miles of Kern County. Fares vary according to distance.

Just one of its 13 routes crosses county lines. The East Kern Express bus provides six roundtrips per day from Bakersfield to Lancaster, nearly 90 miles to the southeast and outside of the San Joaquin Valley. This line provides access to the Metrolink rail system, which serves the greater Los Angeles area. The East Kern Express provides seven roundtrips per weekday and three roundtrips on Saturdays. This route carries 72,000 boardings per year, for a productivity of 6.75 passengers per hour.¹⁰ The service is paid for using 5311 F funds.

Yosemite Area Regional Transportation System (YARTS)

Yosemite Area Regional Transportation System (YARTS) is unique among the public bus operators described in this section, because it does not provide service primarily inside one city or county. Instead, it is a Joint Powers Agency, established as a partnership of Merced, Mariposa and Mono Counties, as well as the National Park Service, and it provides only inter-county routes. It serves primarily Yosemite National Park visitors and employees. As a partnership established

⁸ Fiscal year 2006

⁹ Fiscal year 2006

¹⁰ Fiscal year 2007.

between several local governments for the purposes of providing a niche transit service, YARTS can be a model for the type of new entity envisioned by this study.

YARTS service primarily operates between Merced and Yosemite National Park; in the winter, it makes six roundtrips along Highway 140 between 5:50 AM and 8:40 PM, and in the summer it makes another two daily roundtrips, operating until 11 PM. During the peak summer season, it also makes a single daily roundtrip along Highway 120 between Yosemite and Mammoth Lakes (seven days a week in July and August, and on weekends in June and September). Roundtrip fares range from \$4 to \$25.

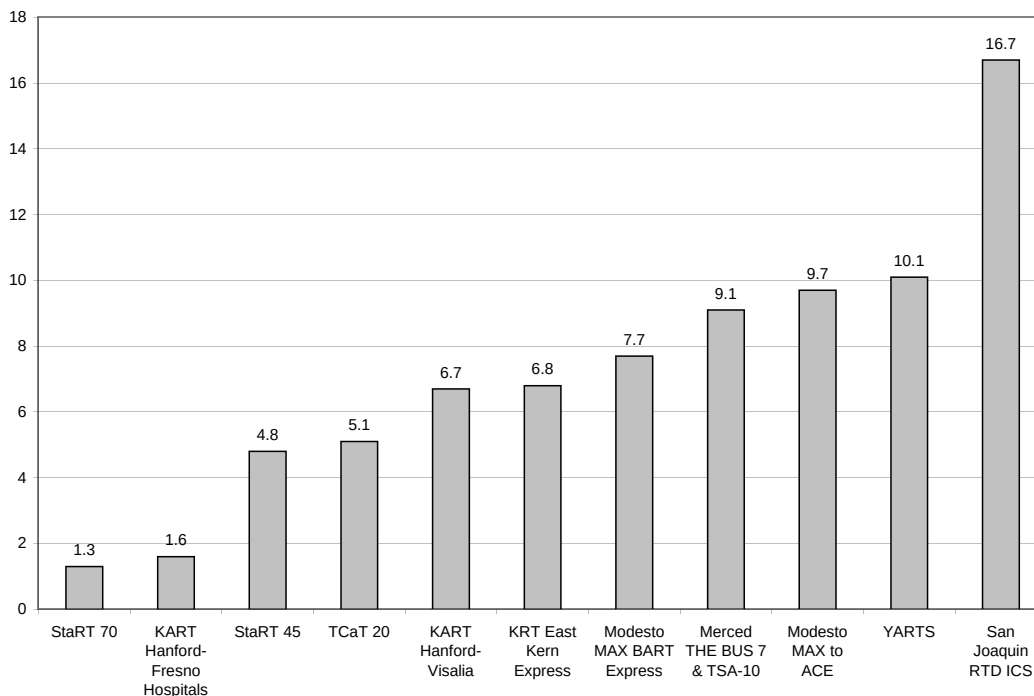
YARTS carried about 75,000 passengers in 2004/2005, at a productivity of about 10 passengers per hour. Since 2006 a rockslide on Highway 140 has constrained the size of the vehicles that YARTS can use on that route, reducing ridership capacity.

Using funds from the Alternative Transportation in Parks and Public Lands (ATPPL), YARTS will add two roundtrip runs daily, from May through August 31, between Merced and Yosemite National Park. One daily roundtrip will be added in September and October, and the current schedule will be maintained during the winter months.

Productivity of Public Inter-County Bus Services

The figure below illustrates boardings per hour of revenue service, an important measure of demand, productivity and efficiency. For some providers operating multiple inter-county routes, a combined figure for all inter-county routes is given.

Figure 4-2 Passengers per Revenue Service Hour



Source: Transit Agencies

The average productivity of inter-county bus services in the region is just over 7 passengers per hour. The San Joaquin RTD ICS routes (16.7 passengers per hour) have much higher productivity than the rest of the inter-county routes. StaRT route 45 (1.3 passengers per hour) and KART's Hanford-Fresno hospital routes (1.6 passengers per hour), which focus on "lifeline" service, rather than commuters, have much lower productivity.

San Joaquin RTD's relatively high productivity can be explained in large part by the limited, highly specialized nature of the product it offers: each of its 19 routes makes a single daily roundtrip, and most routes are destined for the doorsteps of major employers. For employees of those companies, then, the routes essentially amount to a shuttle service—and a commute option that is significantly cheaper than driving. Modesto MAX's commuter express services to BART and ACE have productivities between 7 and 10 passengers per hour. This productivity measure for the BART Express service is depressed by the fact that it offers bidirectional service but carries about 90% of its passengers in the peak-commute direction.

StaRT's Route 70 and KART'S Hanford-Fresno hospitals route, meanwhile, are relatively new services — they were launched in August 2007 and July 2006, respectively – and like RTD, the Fresno hospitals route is a highly customized one. Unlike the San Joaquin Commuter routes, however, it does not serve large job sites; rather, it provides essential community service to major medical centers, an important function of a transit system, but one that is typically less cost-effective to provide than commuter-oriented services.

YARTS maintains a higher-than-average level of productivity (10.1 passengers per hour) by offering a specialized service to Yosemite National Park. This service caters both to park employees and park visitors, making its operating characteristics not directly comparable to pure commuter services.

Overall, inter-county service is somewhat less productive than intra-county service in the region. These productivity numbers demonstrate the difficulty of providing traditional fixed-route bus service over long distances in a low-density environment. The relatively high productivity of the RTD commuter routes highlight the potential value of examining alternative models such as subscription-based, employer-focused services. Another alternative model, vanpool programs, is discussed below.

Private Bus Operators

Greyhound

Greyhound operates inter-city bus service over the full length of the Valley. North-south service is provided on Highway 99, Interstate 5, and south of Bakersfield on Highway 58. East-west service is provided on Highway 152 through the Pacheco Pass and I-580 through the Altamont Pass. These services reach the Valley's population centers, including Bakersfield, Fresno, Lodi, Los Banos, Madera, Merced, Modesto, Stockton, Tracy, and Tulare. Service between some cities is relatively frequent; for example, more than a dozen buses depart Fresno daily for Bakersfield. There are six daily departures from Stockton to Modesto, seven from Modesto to Merced, four from Modesto to Madera, and seven from Merced to Fresno. Service to communities not located on the Highway 99 corridor is more limited, but still available.

Non-refundable one-way fares are typically higher than most commuters would be willing to pay. Fares for the journey from Fresno to Bakersfield, which takes approximately two to two-and-a-half

hours, typically exceeds \$20. One-way fares for shorter distances, such as Merced to Turlock, are approximately \$11.

Orange Belt Stages

Visalia-based Orange Belt was historically a major operator of inter-city bus services within the San Joaquin Valley. Its core business now consists of charters and tours. However, it still operates two routes. The first consists of a daily roundtrip between Visalia and Santa Maria and a second roundtrip between Bakersfield and Santa Maria, arriving and departing Bakersfield in the mid-afternoon. This route also serves Goshen, Hanford, Lemoore, and Kettleman City. The second route consists of a single daily roundtrip between Las Vegas and Hanford via Bakersfield, Porterville, Visalia and Goshen. Fares vary according to distance; one-way fares from Bakersfield to Hanford are \$27.

Transportes Intercalifornias (TI)

Tijuana-based TI makes multiple daily roundtrips between Mexican and Southern California cities and Valley cities including Bakersfield, Fresno, Merced, Modesto and Stockton.

Vanpool Programs

Two large vanpool programs operate in the region: Kings Area Vanpool in the southern part of the region, and Commute Connection, which primarily serves San Joaquin and Stanislaus Counties.

The KART/AITS vanpool program is operated by Kings County Area Public Transit Agency (KCAPTA), a Joint Powers Agency made up of Kings County and the cities of Hanford, Lemoore, and Avenal. The agency also has agreements with the Counties of Madera, Fresno, Tulare and Kern. The program serves 5 counties: Fresno; Kern; Kings; Madera; and Tulare. Many vans do not have either origins or destinations in Kings County. The service currently has approximately 350 vehicles, most of which are 15-passenger vans, and the vans carry more than 900,000 trips per year. Just over 100 vehicles serve agricultural workers, with the rest serving other workers. The agency leases and maintains vehicles, but they are operated by commuters.

The San Joaquin Council of Governments also registers vanpools through a program called *Commute Connection*. The COG provides a \$150 per month subsidy for one year after a vanpool begins, and the San Joaquin Valley Air Pollution Control District offers a further \$350 Commuter Vanpool Passenger Subsidy. There are currently 182 vanpools registered through the COG's Commute Connection program. The majority of these serve origins and destinations in San Joaquin and Stanislaus counties, while some also provide transportation for other counties to employers in San Joaquin and Stanislaus.

Connecting Services

Each of the three major metropolitan areas adjacent to the San Joaquin Valley – Sacramento and the San Francisco Bay Area in the north, and Los Angeles to the south – is served by regional rail systems. Cities near each end of the Valley are connected to those systems by Altamont Commuter Express trains and by express buses operated by Valley transit providers, greatly expanding the areas accessible to users of public transportation in the Valley.

Amtrak Capitol Corridor

Amtrak's Sacramento-Bay Area line is of limited use to San Joaquin Valley commuters. San Joaquin RTD buses while coming within a few blocks, do not directly serve the Downtown Sacramento Amtrak station, and the first daily San Joaquin train currently does not arrive in Sacramento until 12:30 PM, too late in the day to be useful to the majority of commuters. Amtrak Thruway bus service arrives at the Sacramento Amtrak station at 9:50 AM; riders, however, must first have taken a train from at least as far south as Modesto, approximately 75 miles from Sacramento, before transferring to a bus in Stockton. Nonetheless, the Capitol Corridor does operate 16 daily trains westbound toward the Bay Area. Trips to Davis take 15 minutes and cost \$7.

Sacramento Regional Transit (RT)

San Joaquin RTD buses connect to RT light rail in downtown Sacramento. RT operates two rail lines: the Blue line extends northeast to Watt Avenue and I-80 and south to Meadowview Road and generally operates on 15-minute headways from 4:20 AM until 12:40 AM weekdays, while the Gold Line extends east through Rancho Cordova to Folsom and generally operates on 15-minute headways from 3:50 AM until 12:50 AM weekdays. Base fare is \$2, and a basic monthly pass is available for \$85.

Bay Area Rapid Transit (BART)

The 103-mile Bay Area metro system is available to San Joaquin Valley commuters via the Dublin/Pleasanton station, which is served by San Joaquin RTD and Modesto Area Express buses and, via transfer to shuttle, by ACE. Direct service is available on the Dublin/Pleasanton line to Oakland, San Francisco, and during evenings and on weekends, to San Francisco International Airport (SFO). Other destinations in Alameda, Contra Costa, and San Mateo counties can be accessed via transfers to the Fremont, Richmond, Pittsburg/Bay Point, and (during weekdays when direct service is unavailable) SFO/Millbrae lines. BART lines generally operate on 15-minute headways, and fares vary by distance (trips from Dublin/Pleasanton to downtown San Francisco stations take approximately 45 minutes, and one-way fares are \$5.25). No passes are available.

Santa Clara VTA Light Rail

ACE connects to the Silicon Valley light rail system at Santa Clara's Great America station and at Diridon Station near downtown San Jose; San Joaquin RTD buses also connect to stops. Destinations in North San Jose are directly accessible from Great America via the Mountain View-Winchester line, and Milpitas is accessible via a transfer to the Alum Rock-Santa Teresa line. Both lines serve Diridon, connecting to points south. The Mountain View-Winchester line generally operates on 15-minute headways from 4:40 AM to 12:30 AM, and the Alum Rock-Santa Teresa line generally operates on 15-minute headways from 4:20 AM to 2:15 AM. Base fare is \$1.75, and a basic monthly pass is available for \$61.25.

Caltrain

ACE also connects to Caltrain, the San Jose-San Francisco commuter rail line, at Diridon, from which service is available to Santa Clara, Sunnyvale, Mountain View, Palo Alto and points north. Caltrain operates a combination of local, limited-stop and express stop service on headways of as little as 5 minutes during peak hours, although mid-day headways are generally 30 minutes.

Caltrain fares are based on zones; San Jose-Santa Clara, one-zone fares are \$2.25, while trips from San Jose to Sunnyvale, Mountain View and Palo Alto require a two-zone fare of \$4.

Metrolink

Kern Regional Transit's East Kern Express route terminates at the Metrolink station in Lancaster. Metrolink is a commuter rail system serving the greater Los Angeles area; the Antelope Valley line, which starts in Lancaster, continues through Palmdale, Santa Clarita, the San Fernando Valley, Burbank and Glendale to Union Station in downtown Los Angeles, where connections are available to Los Angeles County Metro trains and buses. Headways range from approximately 30 minutes to several hours, and fares vary by distance (trips from Lancaster to downtown Los Angeles take just less than two hours, and one-way weekday fares are \$10.50).

Summary of Inter-County Transit Services

There are four agencies providing bus service between the San Joaquin Valley and neighboring regions. They are:

- The San Joaquin Regional Transit District's "San Joaquin Commuter" subscription-only routes from San Joaquin County to the San Francisco Bay Area and Sacramento. This service makes up more than half of the inter-county bus routes in the region. It is also the most productive bus service, at 16.7 passengers per hour.
- Modesto Area Express's Altamont Commuter Express and Bay Area Rapid Transit Express services from Modesto. These services provide connections to rail service to the Bay Area.
- Kern Regional Transit's East Kern Express route provides traditional fixed-route bus service over the 90 miles from Bakersfield to Lancaster in Los Angeles County.
- YARTS provides a unique service, carrying park visitors and employees from Merced to Yosemite National Park in Madera County.

Inter-county bus service in the San Joaquin Valley is limited, and is generally designed as "lifeline" rather than viable commute service. Productivity for inter-county routes operating entirely within the San Joaquin Valley is generally quite low, ranging between 1 and 9 passengers per hour. They are as follows:

- Stanislaus Regional Transit routes 45, from Turlock to Gustine, and 70, from Modesto to Merced
- Merced The Bus routes 7, from Merced to Turlock, and TSA-10, from Gustine to Turlock
- Kings Area Rural Transit's Hanford-Visalia and Hanford-Fresno Hospitals routes
- Tulare County Area Transit Route 20, from Tulare to Delano

Just two of these, (TCaT route 20 from Tulare to Delano and StaRT's route 70 from Modesto to Merced) operate primarily along the Highway 99 corridor.

Inter-regional rail services are also important connections to the greater Bay and Los Angeles areas. The Altamont Commuter Express (ACE) provides cost-effective service through the high demand travel corridor from Stockton into the Tri-Valley and Silicon Valley job markets. While this service is currently limited in scope, its offerings may expand significantly in the coming years.

Upgrades to this service are particularly likely if the approval of high speed rail makes funds available to upgrade the rail corridor. While Amtrak provides service north and south throughout the whole Valley, its schedules and fares are not currently oriented towards daily commuters. Metrolink service, meanwhile, does not extend into the Valley proper, but buses connecting to the service from Kern County allow Valley commuters to access jobs in the Los Angeles area.

Chapter 5. Case Studies

This section presents research into best practices among inter-county transit providers in regions similar to the San Joaquin Valley. Its purpose is to suggest lessons that will inform planning for new commuter express transit services in the Valley.

The providers described here have been selected from inter-county transit services across America for their particular relevance to the San Joaquin Valley's current planning effort. Factors in determining relevance include:

- **Operating environment, or geographic context.** Service areas were deemed to be “similar” to the San Joaquin Valley if they featured:
 - cities similar in size to those in the San Joaquin Valley
 - cities separated by distances similar to those in the San Joaquin Valley
 - transportation infrastructure comparable to that in the San Joaquin Valley (primarily auto-oriented, possibly including limited inter-city or commuter rail service)
 - land use and travel patterns comparable to those in the San Joaquin Valley (notably, without major job centers, and with dispersed commute patterns)Service areas were deemed to be dissimilar to the Valley if they featured “traditional” commuter transit service (i.e., suburb-to-city).
- **Service models.** A variety of transportation services are included, ranging from vanpool to peak-hour, unidirectional commuter bus service, to all-day service enabling reverse commute and non-work trips, to commuter rail.
- **Organizational models.** Peers were evaluated not just on the basis of geographic similarity or mode, but for administrative and political models that might be of use to the San Joaquin Valley in implementing new service.

Services profiled include:

- A. **Front Range Express:** An all-day express bus service operating between Colorado Springs and Denver, Colorado
- B. **Clean Air Express:** A peak-only express bus service operating between Santa Maria, Lompoc, Goleta and Santa Barbara, California
- C. **San Luis Obispo RTA Route 10:** A full-time local and peak-only express bus service operating between Santa Maria and San Luis Obispo, California
- D. **New Mexico Park-and-Ride:** A state-operated commuter bus service operating in Albuquerque and several smaller cities in New Mexico
- E. **Caltrain:** A commuter rail service in the San Francisco Bay Area chosen for the insights it offers into multi-party partnerships
- F. **Kings County Vanpool:** A large vanpool program now operating in the southern San Joaquin Valley.

A. Front Range Express (FREX)

Colorado Springs to Denver, Colorado

<http://www.frontrangeexpress.com>

Service: Express bus (all-day, weekday-only)

Operator: Transit agency (with funding partners)

Context: Service between a medium-sized city to large city approximately 70 miles away, with stops in the towns along the way.

Key Findings:

- This new service has proven popular with riders, and has developed broad political support.
- The high level of amenities and distinctive branding contribute to success.
- Frequent, all day service requires higher subsidies per passenger than more targeted service.
- A majority of passengers would have driven alone to work if the service had not been available.

FREX is an inter-city commuter-express bus service operated by Mountain Metropolitan Transit (Mountain Metro), a division of the City of Colorado Springs. It was introduced four years ago as an alternative to driving in the increasingly congested Interstate 25 corridor between Colorado's two largest cities. While FREX primarily serves commuters from the Colorado Springs area to greater Denver, it operates all day in both directions, with mid-day headways of as little as 20 minutes. The service offers its passengers amenities such as wireless internet, and new buses feature distinctive branding.

The service attracts an annual ridership of more than 150,000 passengers, at an operating cost of \$9 per boarding. After two fare increases in recent years, FREX's fares vary between \$4 and \$9, or about 9 cents per mile. Despite hourly operating costs lower than many of its peers, its relatively frequent all-day service results in a farebox recovery ratio below that of operators providing more targeted, peak-hour, unidirectional commuter service: fare revenue covers about 40% of costs.

Like any future service introduced in the San Joaquin Valley, FREX faces a challenging operating environment. The corridor it serves primarily consists of a four-lane, increasingly congested highway, and it must attract passengers prepared for relatively long travel times. Despite FREX's freeway alignment (outside downtown Denver, it primarily stops at park-and-ride lots just off of I-25), scheduled travel times between Colorado Springs and Denver can be as much as 2 hours and 15 minutes, for an average speed of about 30 mph.

Despite its challenges, the service is widely considered a success: introduced as a pilot program, its ridership grew 31% between its first and second full years of service, and continued to rise even as fares were increased. When its initial Congestion Mitigation and Air Quality (CMAQ) grant expired in 2007, cities, counties and transit agencies in the corridor agreed to fund a continuation of the service, with the state contributing nearly \$8 million for new buses.

FREX's new coaches offer free wireless internet service, and all vehicles are equipped with double bicycle racks and overhead luggage racks. They are also distinguished by a unique marketing campaign: buses are painted black, and each has a custom branding scheme (one "reader" bus features, in distinctive fonts, the words "memos," "news," "reports," "research," "plans," "proposals," and "budgets"). In 2006, a passenger survey found that 69% of FREX riders would have driven their cars if FREX has not been available, and another 12% would not have made their trips at all.

Despite similarities, the San Joaquin Valley must be careful not to assume too close a parallel with FREX: in important ways, the Front Range is unlike the San Joaquin Valley. An important difference is that the Denver urban area, with a population of approximately 2 million, is significantly larger than any San Joaquin Valley city. Denver has two major employment centers Southeast and downtown Denver, each with more than 25 million square feet of office space. FREX riders can also connect to Denver International Airport, the world's tenth-busiest, using local Denver transit.

However, commuters in the San Joaquin Valley may be attracted by similarly important employment destinations situated just outside the Valley itself. Metropolitan Denver is roughly equivalent in size to greater Sacramento, and is much smaller than the San Francisco Bay Area or metropolitan Los Angeles. Moreover, San Joaquin Valley borders the outlying areas of greater Los Angeles and the Bay Area, where connections to express rail service is possible. Although FREX connects to a light rail line in suburban Denver, that service is actually slower than the express bus service and FREX parallels it into downtown Denver.

The success of FREX demonstrates several key points for the San Joaquin Valley. First, it is possible to develop new, well used, politically supported commuter express transit services: FREX has proven popular with riders, and has developed broad political support. Second, FREX demonstrates that a high level of amenities and distinctive branding can contribute to success, and attract choice riders who would have otherwise driven private vehicles. The Valley should note however that while FREX's chosen service model (frequent, all day, and bidirectional bus service) may help maximize ridership and contribute to its popularity, this model requires a higher subsidy per passenger than more targeted services that operate only during peak commute hours.

B. Clean Air Express

Lompoc and Santa Maria to Goleta and Santa Barbara, California

<http://www.cleanairexpress.com>

Service: Express bus (weekday peak only)

Operator: Metropolitan Planning Organization (MPO)

Context: Connects small cities to mid-sized cities approximately 75 miles away

Key Findings

- A successful commuter-express transit service can operate between small cities.
- While it has high operating costs, this service is ultimately cost-effective due to high farebox revenue.

- Even high fares are significantly cheaper than driving for many commuters.
- Because service is provided by a metropolitan planning organization (MPO) and not a traditional transit provider, funding options are limited.

The Santa Barbara County Association of Governments' Clean Air Express commuter bus service is a relatively modest one: each weekday morning, four buses leave Lompoc, and three leave Santa Maria, for Goleta; two buses depart each city for Santa Barbara. Then, in the afternoon, the buses return. (There are also connecting shuttles from Goleta to the University of California, Santa Barbara.)

This service operates along a four-lane highway not unlike the Valley's Route 99 corridor, and the cities served are smaller than the Valley's larger cities. Like other parts of California, Santa Barbara County is divided between relatively affordable bedroom communities (Lompoc and Santa Maria) and more expensive job centers an hour or more away (Santa Barbara and Goleta). Clean Air Express provides an attractive alternative for white-collar "extreme commuters" who may value comfortable, charter-style coaches with wireless service, but also value monthly savings, according to an estimate on the Clean Air Express website, a monthly savings of \$500 or more in reduced fuel costs and wear and tear on their automobiles – even after paying relatively high fares. And indeed, an article in the Santa Maria Sun noted that "No one mentioned 'going green' or cutting down on air pollution as motivation to ride the bus for this story. The decision to ride seemed to be based primarily on cost, with convenience being a bonus."

The service carries nearly 130,000 passengers per year. The targeted service model results in high efficiency: buses carry almost 20 passengers per revenue service hour. SBCAG has chosen a very different service than FREX: Instead of a frequent, two-way, all day service, its service model is targeted to commuters traveling in the peak direction during peak commute hours. As a result, it carries nearly as many passengers annually, but more than three times as many passengers per service hour.

With a relatively high base fare of \$7, and a monthly pass of \$140, the service recovers more than 60% of its costs through fares. Its net cost per passenger, after fares, was less than \$3. High fares, of course, only result in high fare revenues if demand remains strong, but "we have a situation where we're turning away riders," as a service planner explained. "We've just skimmed the actual market."

Although a targeted service model allows Clean Air Express to efficiently carry large numbers of passengers, and it is able to recover an impressive share of its costs through fares, the service does have relatively high hourly operating costs: It costs \$145 per service hour, the highest costs of any bus service in this study. Because SBCAG is a Metropolitan Planning Organization (MPO) operating only this service, not a transit agency with multiple other routes, it cannot take advantage of economies of scale to reduce overhead, and its limited service hours result in high administrative costs.

It should be noted that there would be no additional administrative cost attached to the marginal costs of increased service if the SBCAG decided to expand service. However, despite its popularity, SBCAG has not expanded the service since 2004. CMAQ funding expired when Santa Barbara County was found to be in compliance with federal clean air standards, and as an MPO, SBCAG is ineligible for other key funding sources such as state Transportation Development Act funds. Local transit operators, meanwhile, have proven reluctant to take over service that would

“export their citizens” to distant jobs. In the long-term, SBCAG hopes to generate additional funding through a renewal of the county sales tax for transportation.

Clean Air Express offers several important lessons for the Valley. First, it is possible to run an efficient, productive transit service between small cities. Given a service that meets their needs, commuters can realize significant cost saving from riding transit even over long distances—and cost savings, rather than other factors such as environmental concern, may be the factor that motivates most commuters to use transit. Given the high cost of long-distance commuting in a private vehicle, express bus service may be able to offer significant cost savings even with relatively high fares. Finally, SBCAG’s experience demonstrates that some funding opportunities depend on the choice of operating entity. Some organizations, like MPO’s, may not be eligible for all funding opportunities. Using an existing transit agency may also reduce overhead expenses and reduce operating costs.

C. San Luis Obispo Regional Transit Authority Route 10

Santa Maria to San Luis Obispo, California

<http://www.slorta.org/>

Service: Local bus, plus peak-only express bus

Operator: Transit agency (with funding partners)

Context: Connects small cities approx. 35 miles apart

Key Findings

- Multi-party funding arrangement is stable despite absence of long-term, binding partnership.
- A variety of methodologies are available to determine equitable allocation of operating costs.

The San Luis Obispo Regional Transit Authority’s Route 10 connects San Luis Obispo County destinations including California Polytechnic State University (Cal-Poly), downtown San Luis Obispo, and the “Five Cities” along the county’s southern coast to Santa Maria in Santa Barbara County. Local-stop service operates hourly Monday through Friday, and there are additional peak-period express runs along a modified route (limited service is available on weekends). Base fares vary according to distance but range from \$1 to \$2, consistent with other RTA fares. A standard monthly pass good only on Route 10 is available for \$30. Route 10 offers connections to Amtrak at two locations.

The service is jointly funded by San Luis Obispo and Santa Barbara Counties. For its first decade or so of operation, service consisted of only a handful of daily roundtrips, and the City of Santa Maria made a small annual contribution from its share of state Transportation Development Act (TDA) funds. In the late 1990s, however, ridership grew rapidly, and in the year 2000 U.S. Census Santa Maria’s urbanized area (UZA) was expanded to include the town of Nipomo in San Luis Obispo County. As urbanized areas receive Federal Transit Administration 5307 funding, this led to new negotiations between Santa Maria and San Luis Obispo County, resulting in a

methodology under which operating costs are distributed according to relative shares of the urban area's population, the route's vehicle miles, and ridership originating in each county.

Although San Luis Obispo Council of Governments staff believe that a formal memorandum of understanding, or MOU, was never executed, Santa Maria has so far upheld terms including formula-based annual increases in funding and periodic renegotiations. In 2007, SLOCOG decided to expand service without seeking additional funding from Santa Maria.

As an express version of a local bus service established through an existing transit agency, RTA Route 10 is a different organizational model than either FREX or Clean Air Express. Fares are lower, and the service operates over significantly shorter distances (the average route length is 44 miles, compared to more than 70 miles for FREX and Clean Air Express). The service is relevant to the Valley, as it operates between small cities along a corridor primarily consisting of a four-lane highway.

Route 10 carries just over 100,000 passengers per year. Reflecting the economies of scale that come with operating under the umbrella of an existing transit agency, the route has manageable operating costs of approximately \$80 per revenue hour. However, because of low fares and modest ridership (12 boardings per revenue hour), farebox recovery is just 31% and the subsidy per boarding is more than \$6. While these operating statistics are better than most local transit, they are less efficient than the other commuter express transit systems reviewed for this study.

RTA's experience with this route demonstrates a case in which a funding partnership between neighboring jurisdictions can sustain an inter-county commuter express transit system that benefits all of the participating jurisdictions. In this case, a multi-party funding arrangement is stable even in the absence of long-term, binding partnership. The Valley should note that variety of methodologies is available to determine equitable allocation of operating costs

D. New Mexico Park-and-Ride

Albuquerque, Santa Fe, and surrounding towns

<http://www.nmshtd.state.nm.us/main.asp?secid=14635>

Service: Express bus with park-and-ride access

Operator: Private charter, under contract to the State Department of Transportation

Context: Connects large cities approx. 45 miles apart

Key Findings:

- Commuter-express bus service can be operated relying solely on park-and-ride access.
- A state Department of Transportation is a possible managing agency for commuter-express bus service.

The New Mexico Park-and-Ride network of commuter bus routes operates 26 buses on seven inter-city routes and one local shuttle service. Unlike the rest of the services reviewed in this study, Park-and-Ride is the project of a state agency. It is managed by New Mexico Department of Transportation, and operated under contract by All Aboard America!, a private charter and tour bus company. Operating costs are partly funded by the Federal Transit Administration.

Routes operate from the city of Santa Fe to Albuquerque, Espanola, and Los Alamos; from Espanola to Los Alamos; and from Albuquerque to Moriarty. A free state Shuttle runs from the New Mexico Department of Transportation General Office drop-off in Santa Fe to additional locations in the city. There are no reservations, and a monthly pass does not guarantee a seat on a bus. Some routes offer only commute hour service, while some travel all day.

The system was developed in part as an alternative to expensive, disruptive road widening projects. In 1996, three Native American tribes opposed to road widening on their reservations convinced the New Mexico Department of Transportation to consider transportation demand management (TDM) alternatives, and the package of alternatives ultimately implemented – including an express bus route – cost \$1 million less than widening. In 1997, a two-week demonstration of express bus service to the remote, 16,000-employee Los Alamos National Laboratories site attracted more than 500 riders. Still, service was not introduced until 2003. From nine buses on three routes, the Park-and-Ride system grew within four years to its present size of 26 buses on seven inter-city routes, plus a local shuttle service. Ridership, meanwhile, increased 278%.

With more than 300,000 boardings in fiscal year 2007, New Mexico Park-and-Ride has grown to be the fourth largest transit service in the state. Average daily ridership has grown from about 350 passengers per day in 2003 to 1,335 passengers per day in 2007. NMDOT estimates that the service saves their pass holders \$774 per month, as compared to the cost of driving alone. The service carries an estimate 12.1 passengers per hour. This productivity is on par with San Luis Obispo RTA, about twice as high as FREX, but significantly less than Clean Air Express.

While the other services included in this review operate along a single corridor, New Mexico Park-and-Ride serves several corridors under a single operating plan and a single brand. Only two of the seven routes serve the state's largest city, Albuquerque; four serve Santa Fe (urban area population: 80,000), and three serve Los Alamos. The localities served by the service vary in size from towns to small cities (Santa Fe, 80,000), and one large city (Albuquerque). It should be noted that the routes serving Santa Fe account for most of the boardings in this system. The typical route travels 42 miles, the shortest distance covered by any service reviewed here. This service is also unique among those reviewed here because it operates exclusively between park-and-ride facilities and employment centers. Parking is free throughout the system, except at the Alvarado transit center in downtown Albuquerque.

Fares average 7 cents per mile, less than the other bus services reviewed here. Monthly pass prices vary by route. A \$150 monthly pass allows travel on all routes. It also has by far the lowest farebox recovery rate, at less than 20%. Operating with contracted tour vehicles, this service does not have the same focus on amenities or branding as FREX. The State of New Mexico provides some funding for the shuttle, and the USDOT provides funding as well.

The service works in tandem with RailRunner commuter rail in the Albuquerque area: buses are timed to meet trains at RailRunner's northern terminus, providing a connection to Santa Fe. Moreover, most Park-and-Ride monthly passholders can ride the train for free. One line, the Purple Route connects to City of Albuquerque buses in downtown Albuquerque, as well as to Greyhound and Amtrak. All Santa Fe routes connect with that city's transit system, which accepts Park-and-Ride monthly passes during peak hours.

New Mexico Park-and-Ride provides several useful lessons for the San Joaquin Valley. First, it is another example of a growing commuter express bus service. As a service that is operated by a private charter bus company and managed by a state department of transportation, it offers an

operating model for the valley to consider. In addition, while express bus service in the San Joaquin Valley could potentially serve the downtown areas of the Valley's denser cities, commuter express bus service can only serve rural and very low-density suburban areas if it offers park-and-ride facilities; New Mexico's service proves that such a service model can be sustained. It is important to consider that, unlike FREX and Clean Air Express, New Mexico's service has provided few amenities, and has charged low fares. Its farebox recovery rate (19.5%) is much lower than the other services described here.

E. Caltrain

San Jose to San Francisco, California

<http://www.caltrain.com>

Service: Regional rail

Operator: Joint Powers Board, contracting operations to Amtrak

Context: Connects large cities approx. 45 miles apart

Key Findings

- A variety of methodologies are available to determine equitable allocation of operating, capital and startup costs, as well as political representation
- Once established, a new service can be upgraded incrementally

Caltrain is a commuter rail service operating between the cities of San Francisco and San Jose, with stops on the San Francisco Peninsula and the job centers of Silicon Valley. Some weekday runs also continue south of San Jose to the town of Gilroy. Caltrain runs 98 trains per day, of which 22 are "baby bullet" express trains. Trains include amenities such as restrooms and bike parking. Caltrain connects to the Bay Area Rapid Transit (BART) system at an intermodal station in Millbrae, and commuter shuttles also connect to Caltrain at many stations on the San Francisco Peninsula. Caltrain currently services more than 9 million boardings annually. The addition of express service in 2004 significantly boosted the service's ridership and revenue.

The northern part of the San Joaquin Valley already has a commuter rail service of its own (Altamont Commuter Express (ACE), providing service from Stockton to San Jose), and this study is not focused on creating a new rail service. However, Caltrain's experience is useful to the study of commuter express transit in the Valley not because of the type of service that it provides, but because of how it was organized and funded. The service was created under a multi-jurisdictional partnership with a complex funding agreement. From tentative beginnings, it has matured into an important and well-used commuter transit option for the region.

Prior to 1991, rail service in the corridor was operated by Southern Pacific Railroad. In 1991, local government agencies in the region came together to create the Peninsula Corridor Joint Powers Board. The board is a complex entity that is the result of a joint powers agreement between the City and County of San Francisco, the San Mateo County Transit District (SamTrans), and the Santa Clara Valley Transportation Authority (VTA) of Santa Clara County. It allocates responsibilities in a variety of ways:

- The JPB is overseen by a board of directors consisting of three members appointed by each of the three counties.
- Administration (with the exception of the General Manager position) is provided by SamTrans (the JPB reimburses SamTrans for these costs).
- Operations are contracted out to Amtrak.
- Operating costs are allocated according to a formula based on each county's share of AM peak period boardings (more specifically, annual incremental increases are allocated using a five-year rolling average of AM boarding shares).
- Capital costs benefiting a local entity (e.g., grade separations or station upgrades) are paid for by that county's partner agency (unless station upgrades result in operational improvements).
- Capital costs with systemwide benefits, such as track improvements, are divided evenly between the three agencies.
- SamTrans advanced funds to purchase the right-of-way, and other startup costs were divided evenly among the agencies (with the exception of a contribution from Amtrak).

The funding and operating arrangements were arrived at through a process of political negotiation. The rationales underlying most methodologies are clear enough; however, the reasoning behind some might appear obscure. Notably, the operating cost formula appears designed to benefit counties with a disproportionate share of daytime destinations – job centers – while disadvantaging counties consisting largely of bedroom communities. In fact, that was its intent: the City and County of San Francisco, which pays less than one-seventh of operating costs, contributes no funding to most of the other regional transit agencies that serve its financial district, and according to Caltrain staff, the AM boardings formula was envisioned as “a way to engender operating support from San Francisco.”

Despite its success, Caltrain's existing funding sources (fares and agency subsidies) still do not cover its operating budget, and Caltrain continues to suffer from a structural operating deficit. Despite its deficit, Caltrain has been able to continue to upgrade its infrastructure with capital grants from outside agencies. The agency's strategic plan envisions continued upgrades to the rail corridor, including conversion from diesel to electric trains and additional grade separations. These upgrades could potentially be carried out through the integration of the corridor into a statewide high speed train system.

The example of Caltrain lends important lessons for the valley. First, the Caltrain JPB demonstrates an example of a complex multi-party funding arrangement. It also demonstrates that a variety of methodologies are available to determine equitable allocation of operating costs; these methodologies must be negotiated between partner agencies, and their final structure may depend as much on political concerns as technical concerns. Finally, the example of Caltrain shows that the establishment of an important transportation system may be an incremental process.

F. Kings County Vanpool (KART/AITS)

Southern San Joaquin Valley, California

<http://www.southvalleyrideshare.com/>

Service: Vanpool Service

Operator: County Transit Agency

Context: Ridesharing services in 5 rural counties

Key Findings

- Investing in ridesharing incentives can be a cost-effective alternative to providing transit service.
- Vanpools can be particularly effective for serving destinations in very low-density environments.
- Worker-based subsidies can help create demand for ridesharing.
- Constraints on the expansion of vanpool programs include the availability of funds for marketing and the availability of park-and-ride facilities.

The preceding case studies have focused on commuter express transit services outside of the San Joaquin Valley. They include four express bus services and one regional rail service, operating in a variety of contexts using a variety of organizational and service models. As the Valley considers these models, it should also note that the dominant alternative to commuting by single occupancy vehicles now used in the region is carpooling. In low-density environments like parts of the San Joaquin Valley, investments in rider sharing (including carpooling and vanpooling) can sometimes be the most cost-effective way to shift commuters away from single-occupancy vehicles.

The best example of a ridesharing investment for the region to consider is a program that is already operating in the Valley. Kings County Area Public Transit Agency currently operates a very large vanpool program. The program serves 5 counties: Fresno; Kern; Kings; Madera; and Tulare. Many vans do not have either origins or destinations in Kings County. The service currently operates 350 vehicles, most of which are 15-passenger vans, and the vans carry more than 900,000 trips per year. The system averages 11 passengers per hour: this is comparable to the express bus services run by San Luis Obispo RTA and New Mexico Park-and-Ride, although less than Clean Air Express.

While the vanpool runs as a single operation, marketed on the web under the brand name South Valley Rideshare, it is actually two separate programs: Agricultural Industries Transportations Services (AITS), which serves only agricultural workers, and KART vanpool, which is open to all workers. Currently just over 100 vehicles serve agricultural workers, and the rest serve the general worker population. The general worker vanpools are currently composed almost entirely of California Department of Corrections workers, who receive a \$65 subsidy from the state that can be applied to ride sharing.

The program began in 2000, when Kings County Area Public Transportation Authority (KCAPTA) received a \$5.8 million grant to establish transportation alternative in Fresno, Kings, and Tulare Counties. It later grew to include Kern and Madera. KCAPTA now has Joint Powers Agreements with the boards of supervisors in each of these counties. The farm worker portion of the program (AITS) started in 2002.

Program participants agree to operate the vans—in return, drivers do not pay program fees, and are permitted incidental use of vehicles. Fares are based on the number of trips and distance traveled, and costs are divided among passengers. Drivers collect the payments and send them to KART. Pickup points and route times are chosen by the driver. GPS and gas billing records verify that vehicles have traveled distances submitted by driver.

Most operating funding for the program comes from passenger fares (both out of pocket costs and subsidies to passengers). Capital costs are dealt with differently for farm worker vanpools as compared to general worker vanpools. For the general worker vanpools, capital costs are amortized and repaid out of passenger fares. For farm workers, the vehicles now in use were paid for out of the program's original \$5.8 million in grant funding. Both programs also receive capital funding from a variety of statewide and federal grant programs. The program intends to replace farm worker vehicles that must be retired using vehicles that have been paid off through five years of use in the general worker vanpool program. In this way, the program believes it can be self-sustaining financially. Fresno County also contributes \$500,000 annually to the program: these funds are used to reduce passenger fares for passengers from Fresno County.

Demand continues to be strong for new vanpools, however, growth has been constrained by a number of factors. First, the program lacks marketing funds, and staff believes it could benefit from greater visibility. Second, most program participants currently access vanpools by driving to a central location and parking—however, the supply of secure, well-lit parking available to commuters is limited. Program staff believe that the program could expand faster if more park-and-ride lots were available. The program has investigated ways to expand beyond its core markets of agricultural and corrections workers. For example, vans that go unused by farmworkers in the summer have drawn interest from industries with a high season in the winter, such as a ski lodge.

A further constraint on growth is the lack of subsidies for non-corrections workers. Clearly, it is more difficult to attract unsubsidized participants than it is to attract subsidized participants, especially among populations that have access to private vehicles. It is possible, however, that increased fuel prices might work to create similar incentives to shift to vanpooling for even unsubsidized workers. In addition, the Valley may wish to investigate whether the cost of creating further subsidy programs may be lower, on a per-passenger basis, than funding new express bus service.

KCAPTA has proposed to create Joint Powers Authority to manage the vanpool program. It envisions this entity as including the Metropolitan Planning Organizations from the five participating counties. The intention would be to share the administrative burden between the participating localities, manage costs, and to encourage cohesive planning.

The experience of the Valley's largest vanpool service has important lessons for the region as it looks to improve commuter transit options. First, this program shows that investing in ridesharing incentives can be a cost-effective alternative to providing transit service. Vanpools can be particularly effective for serving destinations in very low-density environments, such as agricultural work sites. The program's experience serving workers at state corrections facilities

demonstrates that worker-based subsidies can help create demand for ridesharing. While this program continues to grow, its growth is currently constrained by the availability of funds for marketing, and the availability of park-and-ride facilities.

Case Study Findings

The key findings of this research as it applies to the development of new inter-county transit services in the San Joaquin Valley are as follows:

1. It is possible to establish stable and cost-effective commuter express transit service, even in challenging geographic and political contexts. This investigation presents successful, stable services operating in small cities as well as large cities, and serving 100,000 to 300,000 boardings per year. For the express bus services profiled here, productivity varies between seven and 19 passengers per revenue hour, with two services carrying roughly 12 passengers per hour. Operating costs range from \$60 to \$145 per hour, and farebox recovery ranges from 20% to 64%. Fares range from \$0.07 to \$0.12 per mile. Caltrain, as a commuter rail service, has higher ridership and higher operating costs.
2. Frequent, all day service requires higher subsidies per passenger than more targeted service. The most cost-effective commuter express transit concentrates service during peak commute hours. Alternatively, frequent, all day service can help to maximize ridership, and may help attract political support in some contexts.
3. While the most productive transit services include origins and destinations in higher-density urban areas, and/or connections to other regional transit systems, it is possible to serve passengers from low-density areas by providing park-and-ride access.
4. Amenities and branding can be important tools in ridership development. Long-distance bus services typically offer relatively comfortable coaches with reclining seats and other features, but optional amenities such as wireless service, luggage racks and bicycle racks may be attractive to “choice” riders for whom the alternative of a private automobile is available. Wireless service, in particular, can effectively convert buses into “mobile offices.” Likewise, distinct branding schemes can allow buses to be “mobile billboards” for the service, and package it not as simply a low-cost or low-stress alternative to driving, or a more effective use of one’s valuable time, but as a sustainable or “cool” mobility option.
5. Inter-county transit service that is attractive to choice riders can afford to charge somewhat higher fares, and higher-cost service can often be rendered relatively cost-effective by increased farebox revenues. The bus service reviewed here that has the lowest subsidy-per-passenger is also the service with the highest operating costs per hour. Already, many long-distance commuters could save several hundred dollars per month by switching to public transportation: should fuel prices continue to rise, even relatively “high” transit fares will become more attractive as compared to the cost of driving alone.
6. Successful commuter express transit services have been established and operated using a wide variety of institutional arrangements. The services profiled here include existing transit operators, metropolitan planning organizations (MPO’s), a state Department of Transportation, and multi-party partnerships using joint powers arrangements. Ensuring stable, long-term funding opportunities depends on choosing the appropriate operating entity. For example, funding sources that are available to

transit operators may not necessarily be available to a metropolitan planning organization, joint powers board or other “non-traditional” transit providers.

7. Once established, a new service can be upgraded incrementally. Where funding is limited and partners are reluctant to commit to an unproven service, an incremental approach may be best.
8. Investing in ridesharing incentives can be a cost-effective alternative to providing transit service. Vanpools can be particularly effective for serving destinations in very low-density environments, and worker-based subsidies can help create demand for ridesharing,

Chapter 6. Travel Demand and Transit Competitiveness Analysis

This study completed an analysis to better understand inter-county commuter travel between counties in the 8-county San Joaquin Valley region, and between San Joaquin Valley counties and three neighboring regions: the Sacramento Area, the San Francisco Bay Area, and the greater Los Angeles area. The analysis relied on the statewide passenger travel demand model (SPTM), developed by Cambridge Systematics for the California High Speed Rail Authority. This model allows for examination of both year 2000 travel patterns and projections of travel behavior in 2030. Trips are divided into four types: Commute, Business (non-commute), Recreation, and Other.¹ The first part of this chapter analyzes existing and projected commute travel patterns for all modes; the second identifies areas within the study where transit may be most competitive for attracting a significant share of the total market.

It is important to note that this analysis includes only projected inter-county commute trips. Trips that begin and end in the same county were not considered, as these are suited to local transit services, which already exist or are planned separately. In addition, the analysis did not consider non-commute Business, Recreation, and Other trips. While these trips may add to a market for inter-county transit service, by themselves, they are unlikely to create a market. Commute trips are distinct from other types of trips because they occur regularly, rather than only occasionally, and are generally made at the same time every day.

Travel Demand Analysis

This section presents existing and projected travel demand for all modes, not just transit. However, transit can only be successful in areas with a relatively high overall travel demand. Given that transit commutes in the San Joaquin Valley are seldom more than 10% of the total commute travel between two points, it is clear that only the highest volume corridors can justify transit service. However, when comparing corridors with reasonable trip volumes, it is also true that other conditions may make one corridor more attractive as a transit corridor than another.

Commuting Between Regions

Figure 6-1 demonstrates the scale of the inter-county commute market in the San Joaquin Valley, and between the Valley and the neighboring regions. Figure 6-2 demonstrates the projected growth of these markets.

Figure 6-1 demonstrates that the largest share of inter-county commute trips now occurs between counties in the San Joaquin Valley itself (57,000 trips). By far the next largest destination is the San Francisco Bay Area. Nearly 42,000 San Joaquin Valley commuters cross into the Bay Area every day. The reverse commute from the Bay Area into the San Joaquin Valley is smaller but still significant (27,000 trips).

¹ The directionality of trips is represented as a function of the trip's "generator", generally the traveler's home, and the trip's "attractor," generally the traveler's place of work. A commuter travelling from his or her home in Modesto to a job in Stockton in the morning and then returning to Modesto in the evening is counted here as two trips between Modesto and Stockton, with the directionality of travel represented as an arrow pointing from Modesto to Stockton. Conversely, all trips for commuters travelling between homes in Stockton and jobs in Modesto are represented by a single arrow pointing in the direction of Modesto.

The commute market from the Valley to the Sacramento Area is smaller than the market to the Bay Area, but still significant. More than 10,000 San Joaquin Valley commuters travel to Sacramento each day. Currently, the commute in from Greater Los Angeles to the San Joaquin Valley (12,000 trips) is larger than the commute out from San Joaquin Valley to Los Angeles.

Figure 6-2 demonstrates that the San Joaquin Valley inter-county market is projected to nearly double by 2030 (112,000 trips). Similar growth is projected for the commute to Sacramento (19,500). The Los Angeles commute will more than double, and the in-commute from Los Angeles is expected to nearly triple. The San Joaquin Valley to the Bay Area commute is expected to increase to 74,000 trips.

Figure 6-1 2000 Interregional Commute Trips

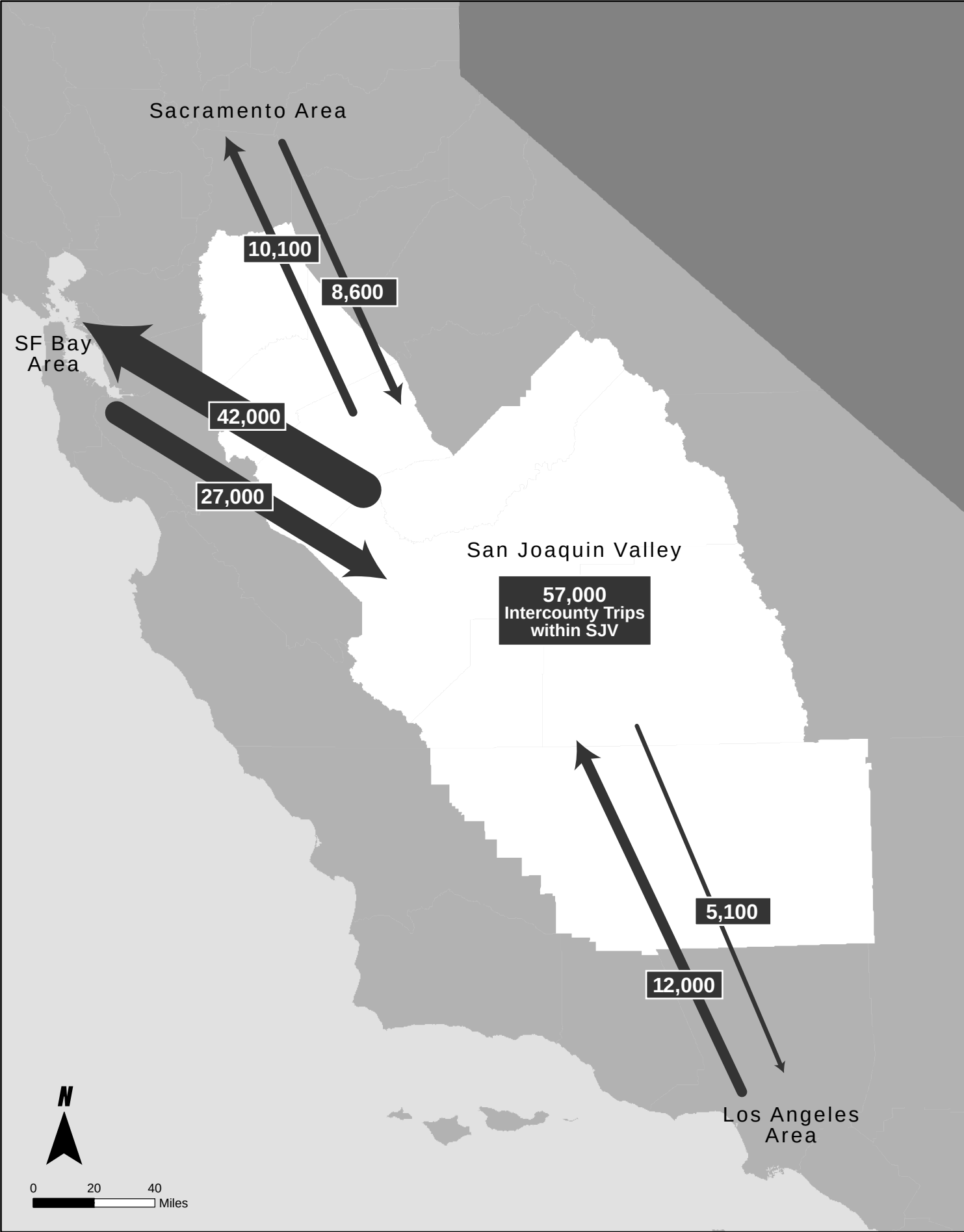
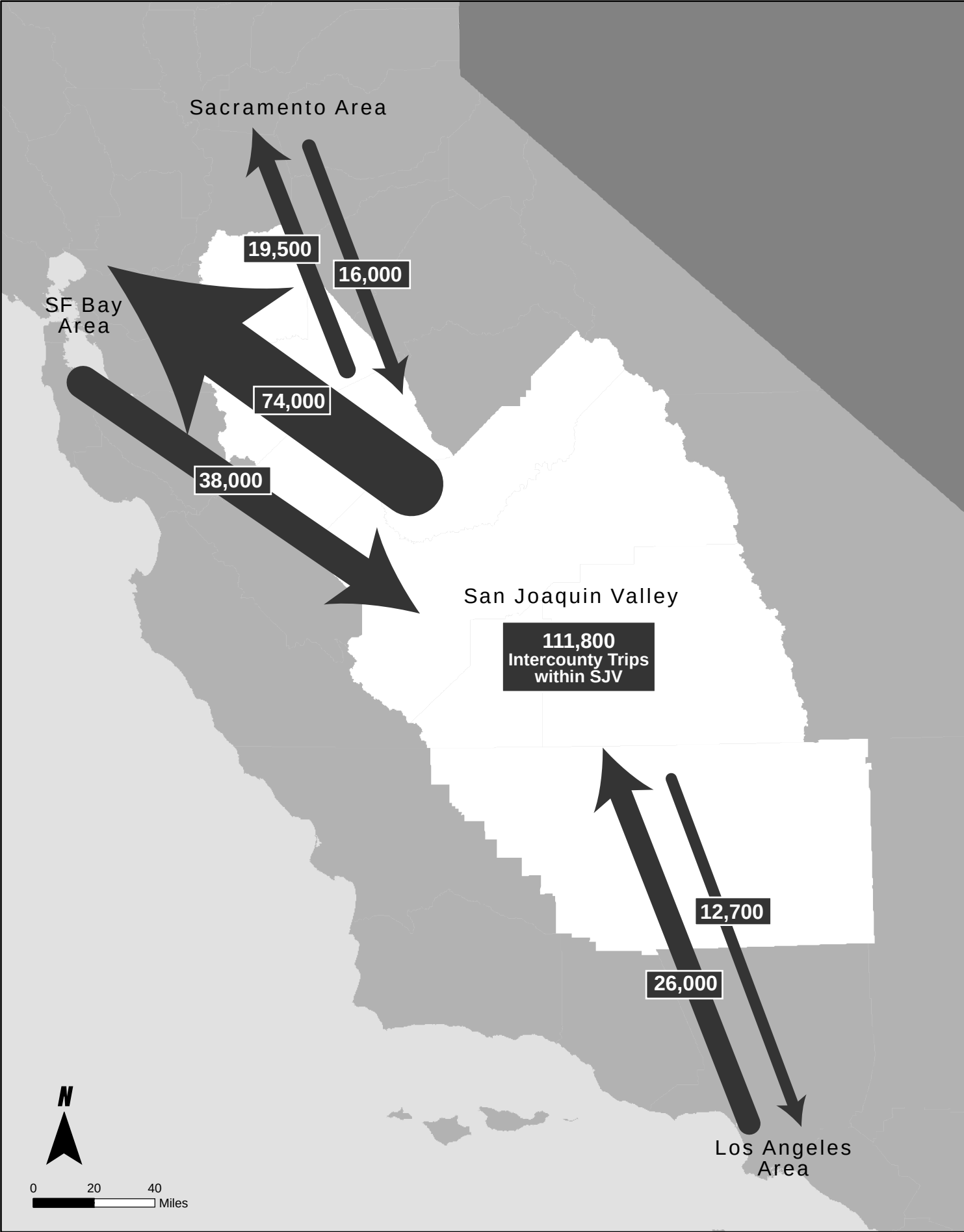


Figure 6-2 2030 Interregional Commute Trips



Commuting Between San Joaquin Valley Counties

Figures 6-3 and 6-4 illustrate projected travel between San Joaquin Valley counties, and between individual counties and neighboring regions. These illustrations include only travel markets expected to generate at least 1,000 trips, as smaller markets are unlikely to generate enough transit ridership to be considered for service.

The figures demonstrate that, based on 2000 data, the largest inter-county commute market within the San Joaquin Valley is from Tulare County to Fresno County (14,000 trips). San Joaquin County receives significant numbers of commuters from Stanislaus (11,000 trips), but also sends 3,000 back to Stanislaus. Madera County sends 6,500 commuters to Fresno County. Merced County sends nearly 6,000 commuters daily to Stanislaus and 3,000 daily to San Joaquin. Kings County contributes 2,800 daily commuters to Fresno, and receives 2,200 daily from Kern. Kern County sends 3,700 commuters daily to Greater Los Angeles.

Currently, more than half of the Bay Area commute market from the Valley originates in San Joaquin County. Most of the remainder comes from Stanislaus County, and a small but significant share originates in Merced County.

2030 projections foresee dramatic growth in inter-county commuting. Generally, most existing strong commute markets are projected to roughly double in size. The largest inter-county markets remain Tulare to Fresno (24,000 trips), and Stanislaus to San Joaquin (22,000). The commute from Madera to Fresno will increase to 12,000 trips. The share of the Bay Area commute market originating from San Joaquin, Stanislaus, and Merced counties stays roughly as it is today.

Figure 6-3 2000 Inter-County Commute Trips

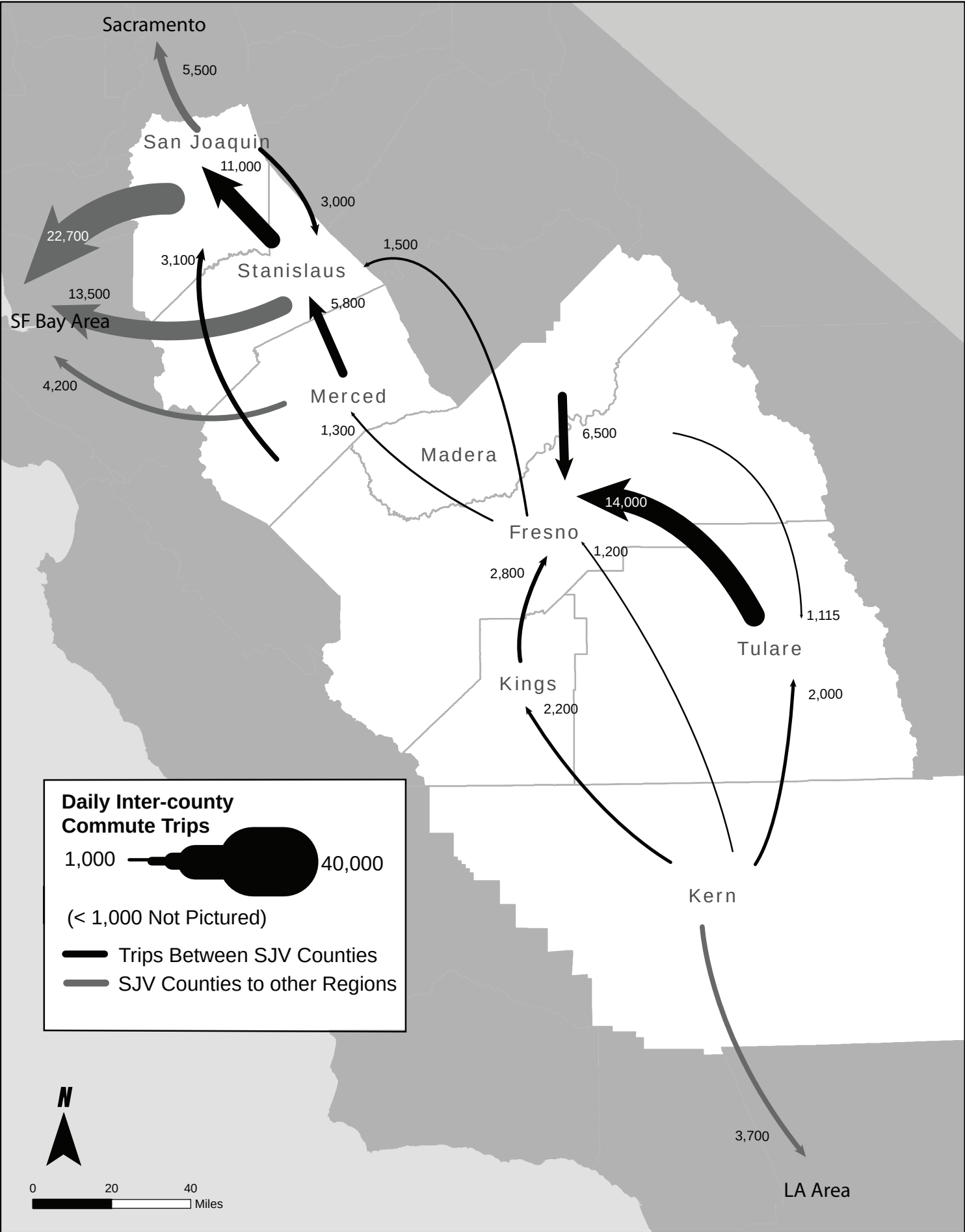
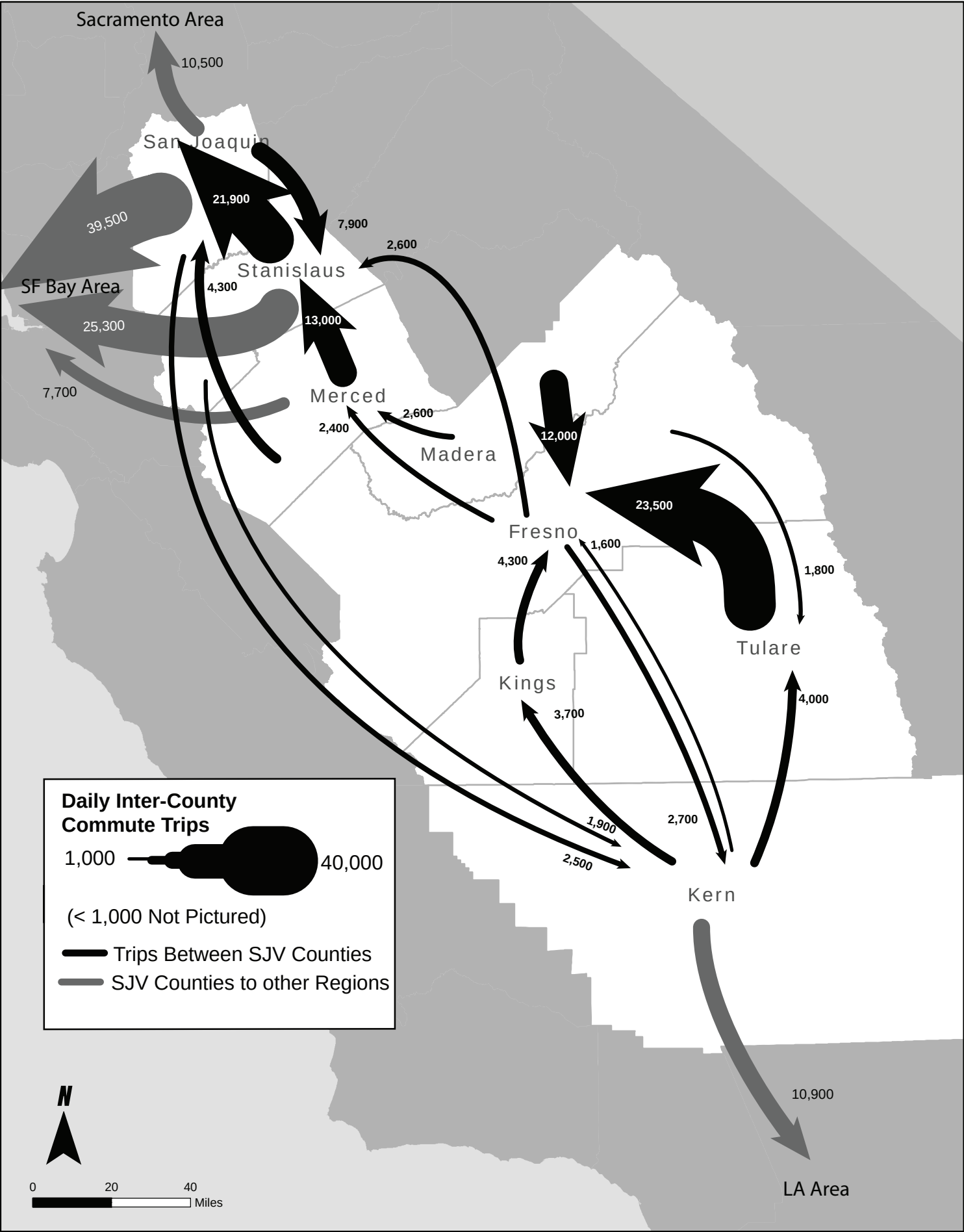


Figure 6-4 2030 Projected Inter-County Commute Trips



Inter-County Commuting Between Cities

While there are substantial commutes between counties, the counties in the San Joaquin Valley cover very large areas. Planning transit service to meet inter-county demand requires narrowing that demand down to city pairs or to smaller geographic areas. In order to understand the Valley's inter-county commute markets in more detail, the study area was further subdivided into 82 zones. These zones were made up of individual cities, and larger non-urban areas organized around freeway corridors.

The types of zones are:

1. *Urban and non-urban areas in the San Francisco Bay, Sacramento, and Greater Los Angeles regions.* For the Bay Area, Sacramento, and Los Angeles markets, this analysis considers only commuters originating in the San Joaquin Valley, rather than those living in other regions and commuting into the Valley.
2. *San Joaquin Valley urban areas of significant size (boundaries of urban areas are based on contiguous areas of significant population from employment density rather than municipal boundaries).* It should be noted that even when a strong commute market exists between cities, that market is not necessarily competitive for transit service. The following section discusses transit competitiveness in more detail.
3. *San-Joaquin Valley non-urban areas.* Zones were established by assigning non-urban areas based on proximity to a major north-south freeway (CA 99, I-5, or I-58, and the low-population eastern edge of the region), and then dividing the resulting freeway corridors by county. Residents of these zones could feasibly access express buses only using park-and-ride facilities.

Based on year 2000 data, two parts of the study area experience significant zone-to-zone commute travel. The first is the central part of the study area (Madera, Fresno, Visalia, and the surrounding areas). The second is the northern part of the study area, where significant numbers of inter-county commuters originate in the cities of Merced, Modesto, and Stockton. Figure 6-5 illustrates the zone-to-zone inter-county commute patterns for the study areas as a whole in 2000. Figure 6-6 illustrates the projected growth in these markets by 2030. Solid lines indicate trips between urban areas. Dotted lines indicate trips that begin or end in very low-density, non-urban areas.

In the central part of the study area, 1,700 commuters per day travel from Visalia to the City of Fresno, and a further 1,800 from Visalia to non-urban Fresno county (Highway 99 corridor). Non-urban Tulare county (Highway 99 corridor) sends 2,900 commuters per day to Fresno, and a further 2,400 per day to nonurban Fresno county (Highway 99 corridor). More than 2,000 commute trips occur from the city of Madera to the City of Fresno, and more than 2,500 occur from non-urban Madera County to the city of Fresno.

The commute from non-urban Tulare County (Highway 99 corridor) to both Fresno and non-urban Fresno County is projected roughly double by 2030, as are Fresno commutes from Visalia and Madera. Further significant commute markets to the city of Fresno emerge from the cities of Porterville and Tulare.

Significant zone-to-zone inter-county commute markets are concentrated in the northern part of the study area. Figure 6-7 (2000) and Figure 6-8 (2030) provide a detailed look at this part of the region. As of 2000, significant numbers of workers commuted across county lines from Stockton,

Modesto, and Merced. Stockton sent more than 1,000 commuters per day to Sacramento, and to two Bay Area zones - Walnut Creek/Pleasant Hill/Concord, and to Eastern Contra Cost County. Modesto sent more than 2,000 commuters per day to Stockton, and more than 1,000 commuters per day to the San Jose/Silicon Valley region of the Bay Area, to Manteca, and to both the I-5 and CA 99 portions of non-urban San Joaquin County. The city of Merced sent 1,400 commuters per day to Modesto, and a further 1,100 to the Highway 99 portion of non-urban Stanislaus County.

By 2030, the model projects a dramatic expansion in both the number and diversity of inter-county commute markets from Stanislaus and San Joaquin Counties to the Bay Area and Sacramento. The city of Modesto will have more new commute markets emerge than any other city, and will also see significant growth in existing markets. Markets will emerge from Modesto to a diverse range of Bay Area destinations, including Silicon Valley, the Tri-Valley, Oakland/Hayward, the San Francisco Peninsula, Walnut creek/Pleasant Hill/Concord, and Eastern Contra Costa County. Commute markets also emerge from Modesto to Manteca. From Stockton, existing markets will expand and new markets will emerge to the Tri-Valley, Oakland/Hayward and Fairfield zones. In Merced County, a market will emerge from Los Banos to San Jose/Silicon Valley.

By 2030, the projected commute from the San Joaquin Valley into the Bay Area will be spread across a large number of destinations. The largest of these are San Jose/Silicon Valley (12%), Eastern Contra Costa County (13%), the Tri-Valley (11%), and Walnut Creek/Pleasant Hill/Concord (10%).

There are far fewer strong inter-county commute markets in the southern part of the study area. There are currently no commute markets south of Tulare County with more than 1,000 daily trips. By 2030, small commute markets emerge from Bakersfield to portions of Kings and Tulare counties. A large but dispersed market emerges from non-urban Kern County to Los Angeles, San Bernardino, and Lancaster/Palmdale.

Figure 6-5 2000 Commute Trips (Location-to-Location)

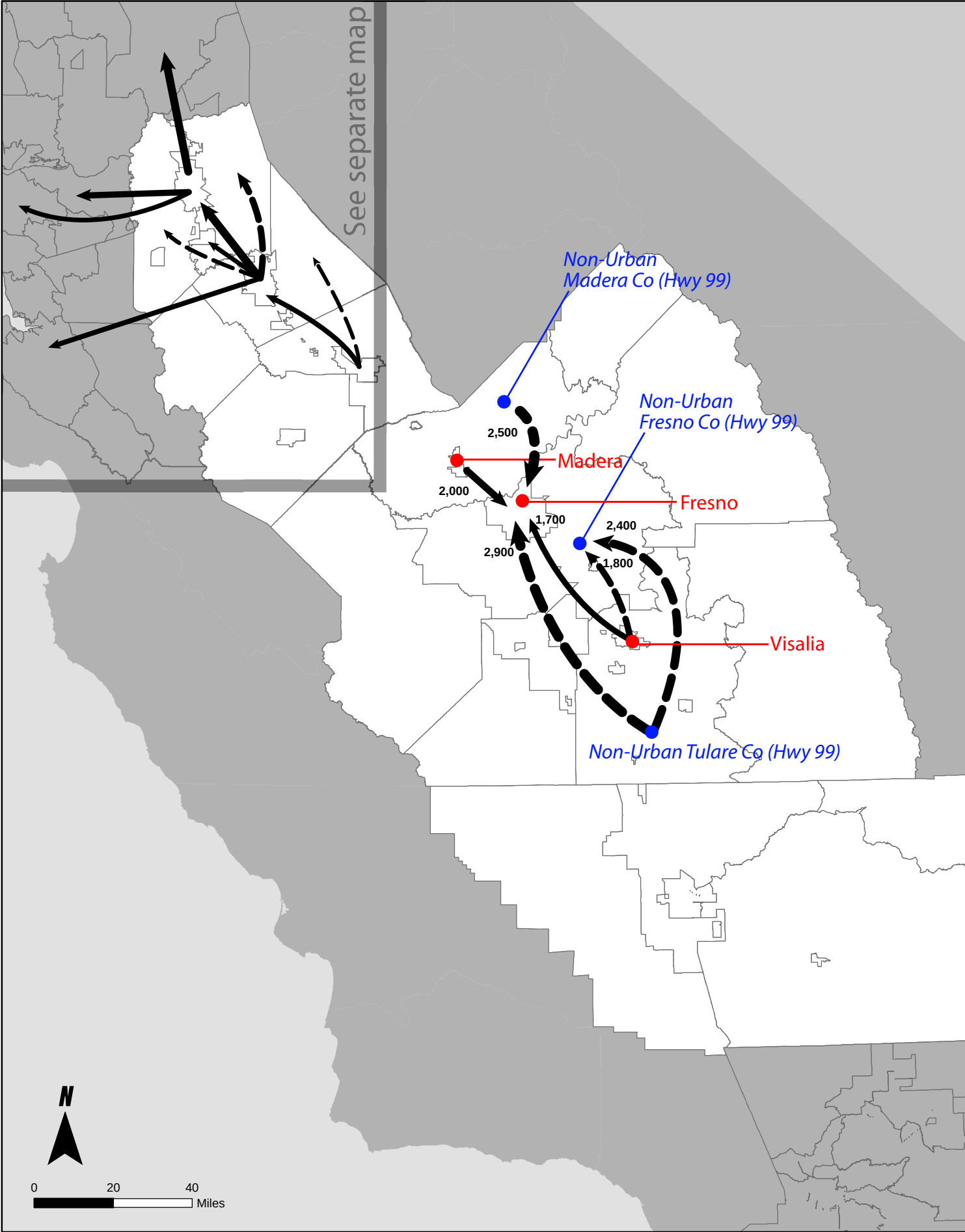


Figure 6-6 2030 Projected Inter-County Commute Trips (Location-to-Location)

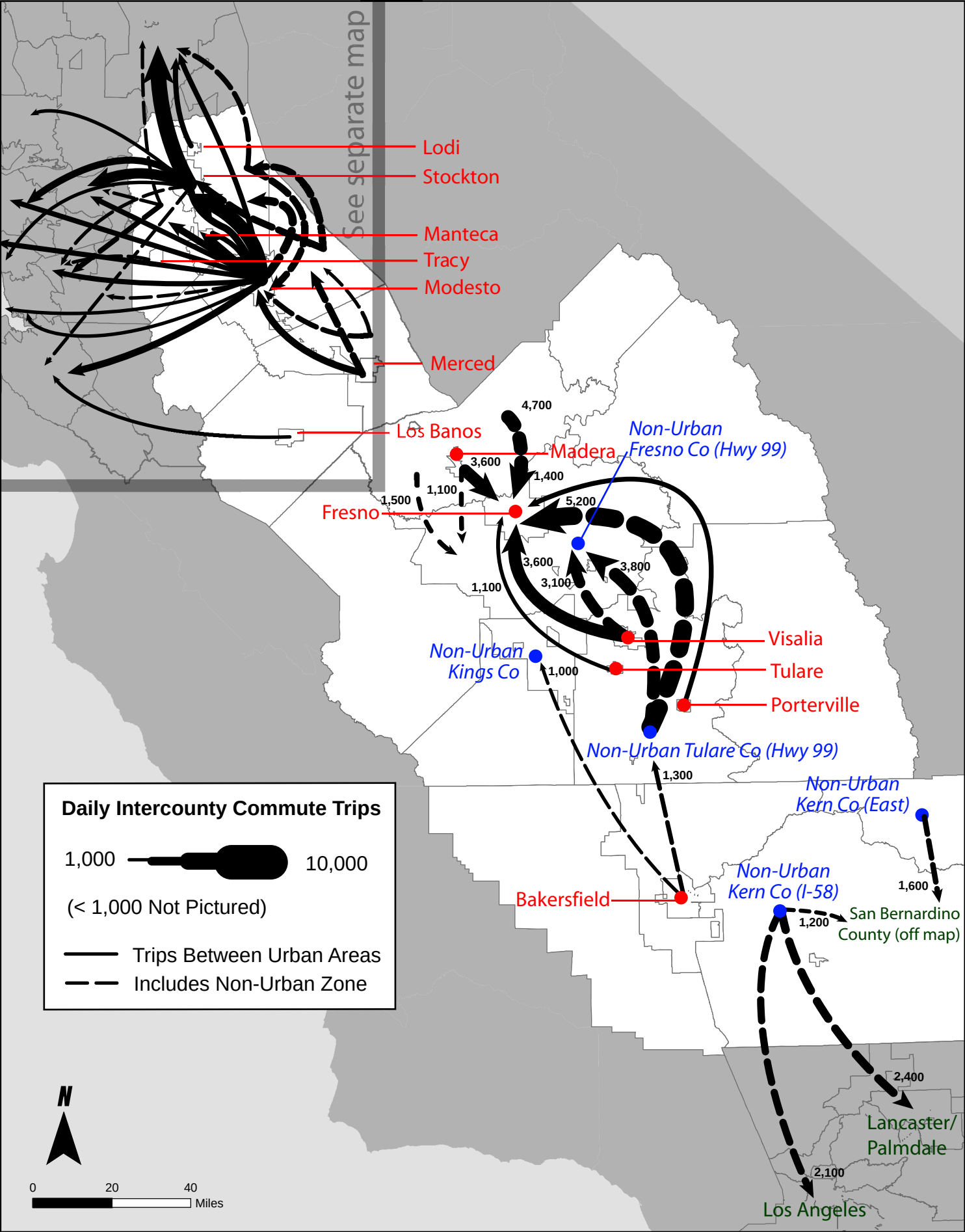


Figure 6-7 2000 Inter-County Commute Trips (Location-to-Location)

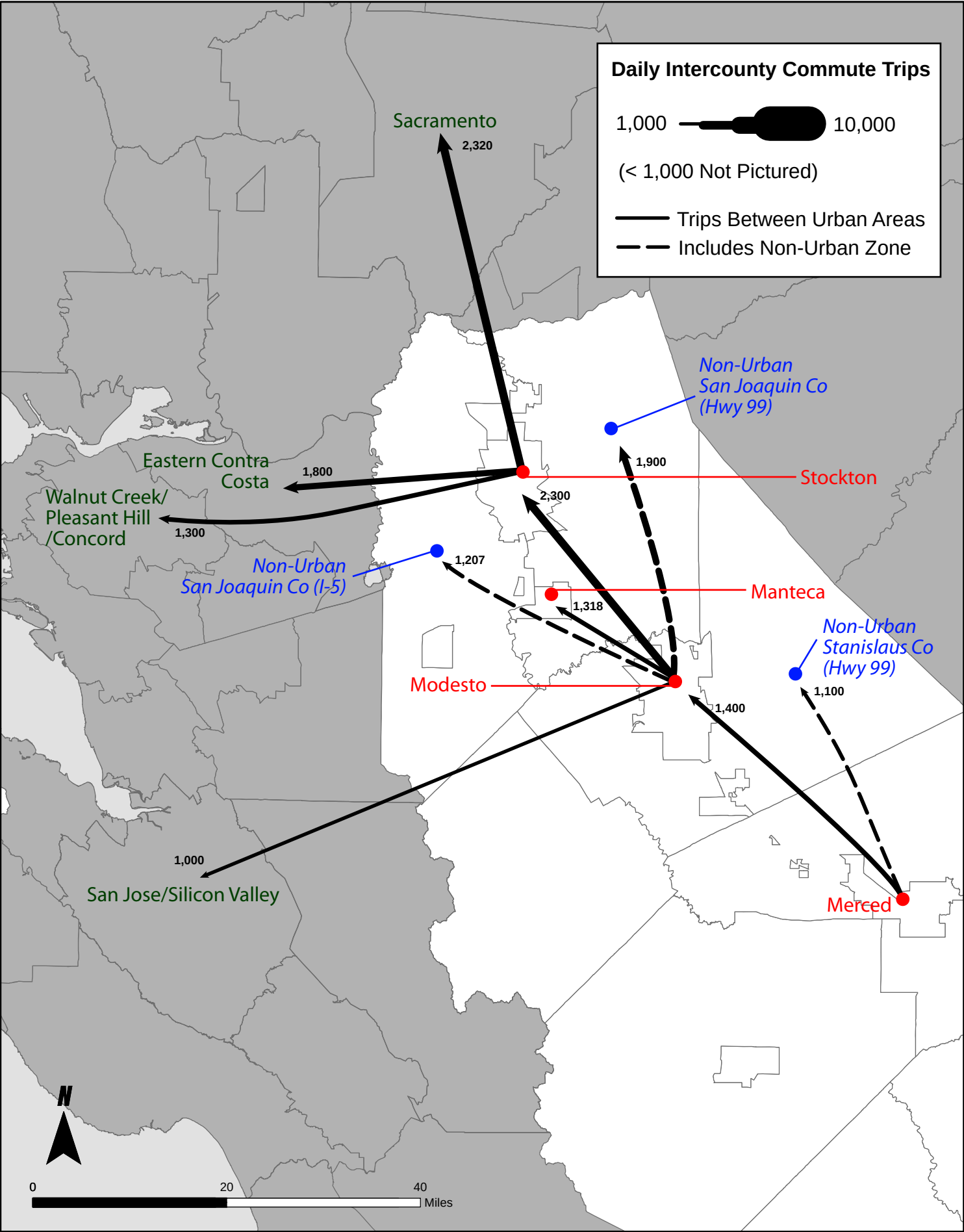
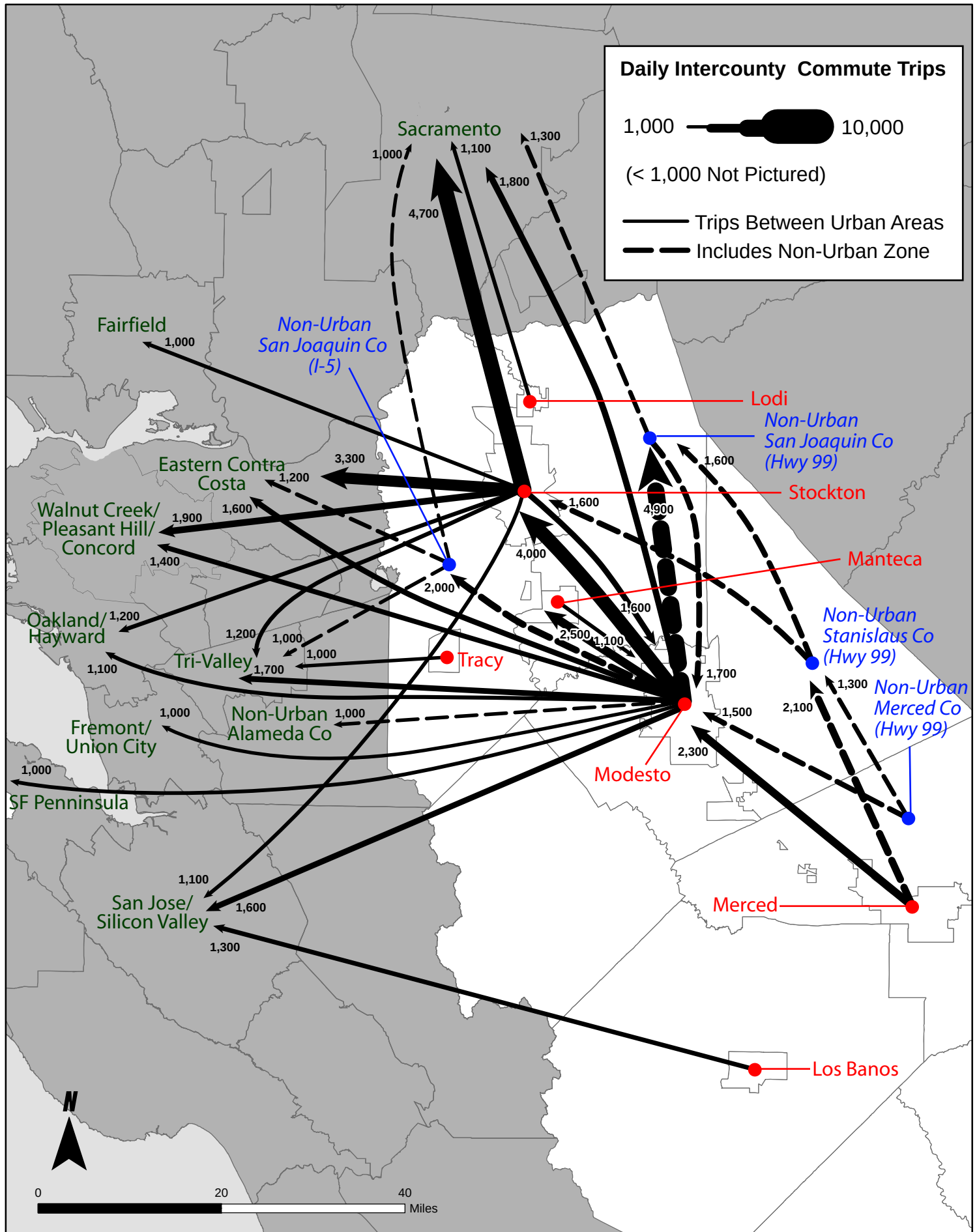


Figure 6-8 2030 Projected Inter-County Commute Trips (Location-to-Location)



Inter-County Commuting By Freeway Corridor

The preceding analysis illustrates *where* inter-county commuters travel in the study area, but not *how* they travel. Whether by single-occupancy vehicle, carpool, or bus, most commuters will rely on the region's freeway network to make their trip. A smaller share of travelers makes use of rail corridors.

Figures 6-9 through 6-14 illustrate how inter-county commuters might be distributed along the region's freeway network in areas of high demand. Commuters have been assigned to the most likely path of travel between their origin and destination zones, and corridors with more than 1,000 daily estimated trips have been illustrated with a red line. The width of each line is proportional to the number of daily inter-county commute trips that is expected to travel along that segment of the freeway network.

The illustrations demonstrate that with a limited number of possible freeway corridors to choose from, many commuters traveling to and from a diverse set of origins and destinations actually make very similar trips along the freeway network. The funneling of commuters into a few travel corridors creates both challenges and opportunities for commuter transit service.

When most motorists must use the same roads, congestion can result, slowing all traffic, including transit vehicles. However, when a large number of commuters must travel along a single corridor, transit in that corridor may have the opportunity to capture a share of the large market. By offering park-and-ride facilities, for example, an express bus service in a high-demand corridor may be able to capture a share of the travel market from diverse origins. It should be noted that such a strategy is less effective for service diverse destinations. Connections to rail service offer one opportunity to distribute passengers to a variety of destinations.

Figures 6-9 and 6-10 illustrate the likely freeway corridors for inter-county commuters in the northern part of the study area. North- and west-bound inter-county commutes originating north of Los Banos are included in the analysis, and freeway corridors with at least 1,000 daily trips are illustrated as red lines.

There is a strong northbound commute along Route 99 beginning in Merced, and adding travelers through Turlock, Modesto, Manteca, and Stockton. Nearly all commuters from the northern part of the region into the Bay Area can be expected to use I-580 over the Altamont pass, which leads to more than 28,000 daily trips in this corridor. On the west side of the Altamont Pass, some travelers reach destinations in the Tri-Valley, while others distribute themselves along the I-580 and I-680 corridors en route to diverse destinations in Santa Clara, Alameda, and Contra Costa Counties. This demand matches reasonably closely with the existing rail corridors, which provide service from Stockton over the Altamont Pass to the Tri-Valley and into Santa Clara County (ACE) and from Dublin to diverse Bay Area destinations (BART). A much smaller share of the Bay Area commute could be expected to travel from Stockton into eastern Contra Costa county via smaller roads such as State Route 4, and from Merced county into Santa Clara County via State Route 152.

2030 projects see a dramatic expansion of travel in all of these corridors. Of particular note is the expectation that demand for travel over the Altamont Pass via I-580 will nearly double by 2030.

Figures 6-11 and 6-12 illustrate the growth in commuting from the northern part of San Joaquin Valley into the Sacramento area. This market is significant, and nearly all of it will likely travel northbound along Highway 99. Transit service in the corridor would be similarly constrained by

the wide distribution of destinations in the Sacramento area. However, transit service could connect to Sacramento light rail. There have also been explorations of expanding rail service from Stockton to Sacramento.

Similarly, Figures 6-13 and 6-14 illustrate the scale of the commute into the city of Fresno. As the most significant employment destination in the central part of the study area, Fresno attracts large numbers of commuters travelling northbound from Tulare County and southbound from Madera County. While the city of Fresno's few large employers and low-density land-use patterns would create significant last-mile problems for any commuter-oriented transit service, such a service could connect to Fresno FAX's extensive network of local bus routes.

Figure 6-9 San Joaquin Valley Inter-County Commute by Freeway Corridor: Northern Highway 99 and SF Bay Area

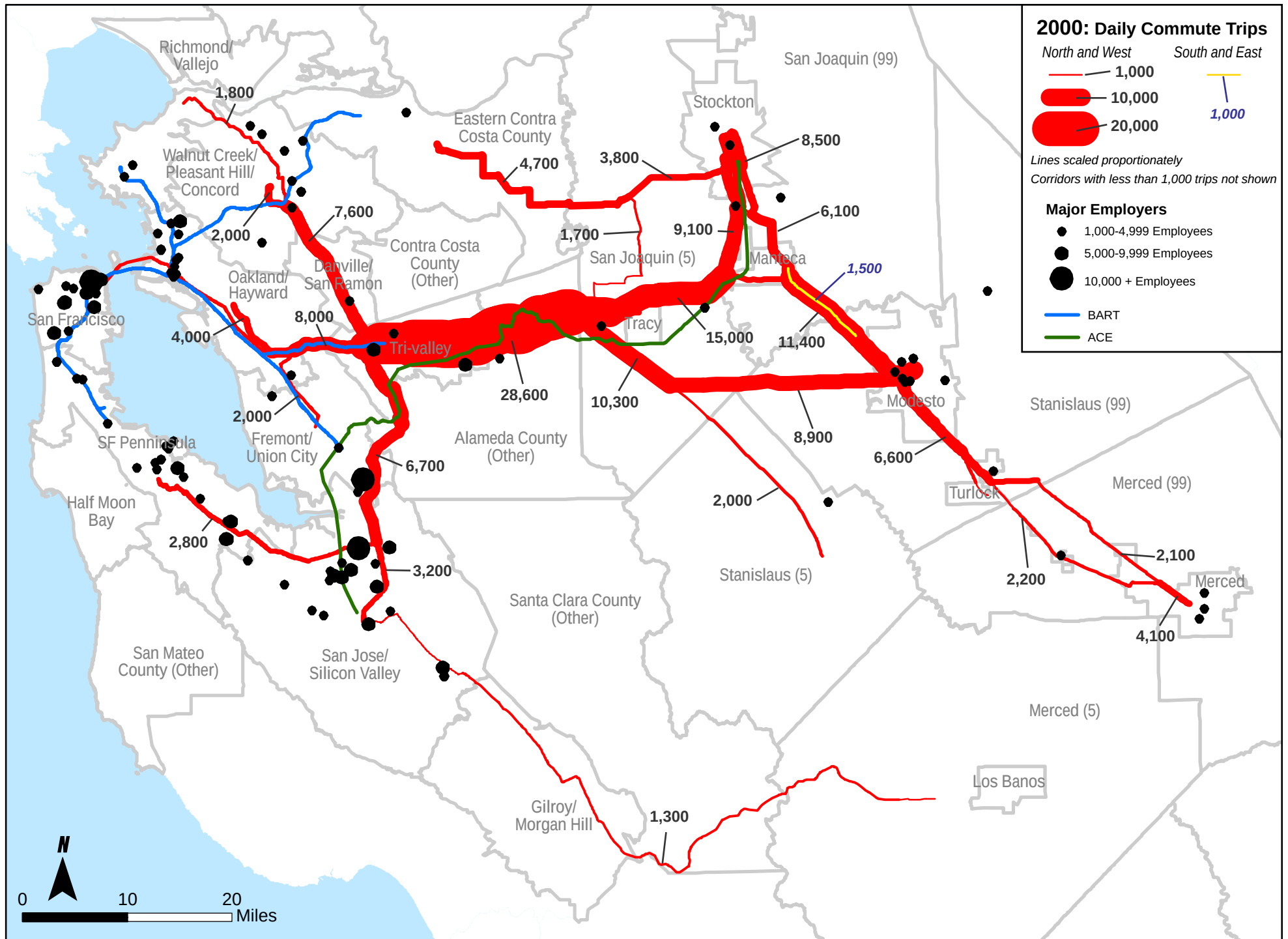


Figure 6-10 San Joaquin Valley Inter-County Commute by Freeway Corridor: Northern Highway 99 and SF Bay Area

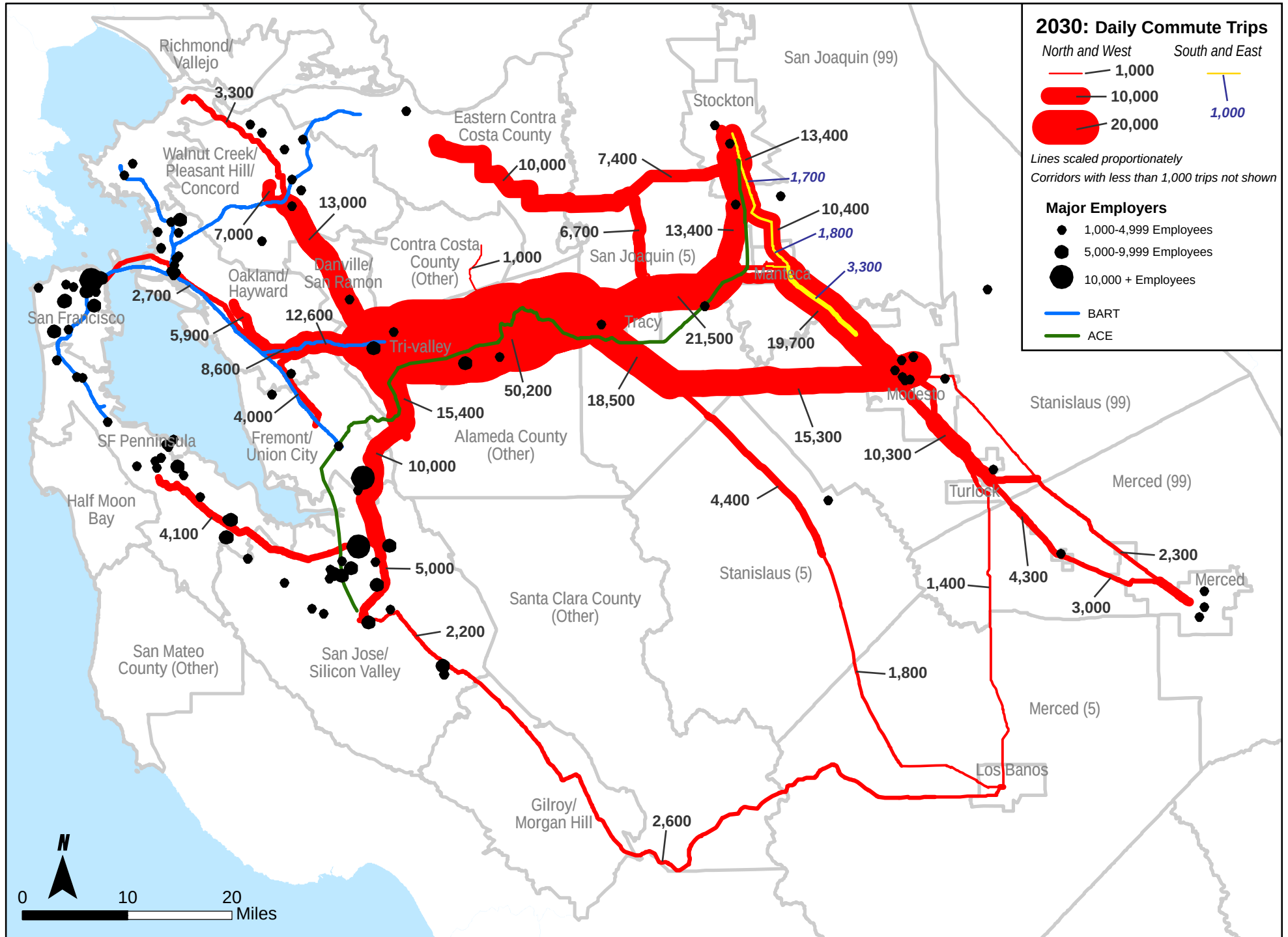


Figure 6-11 San Joaquin Valley Inter-County Commute by Freeway Corridor: Northern Highway 99 and Sacramento Area (2000)

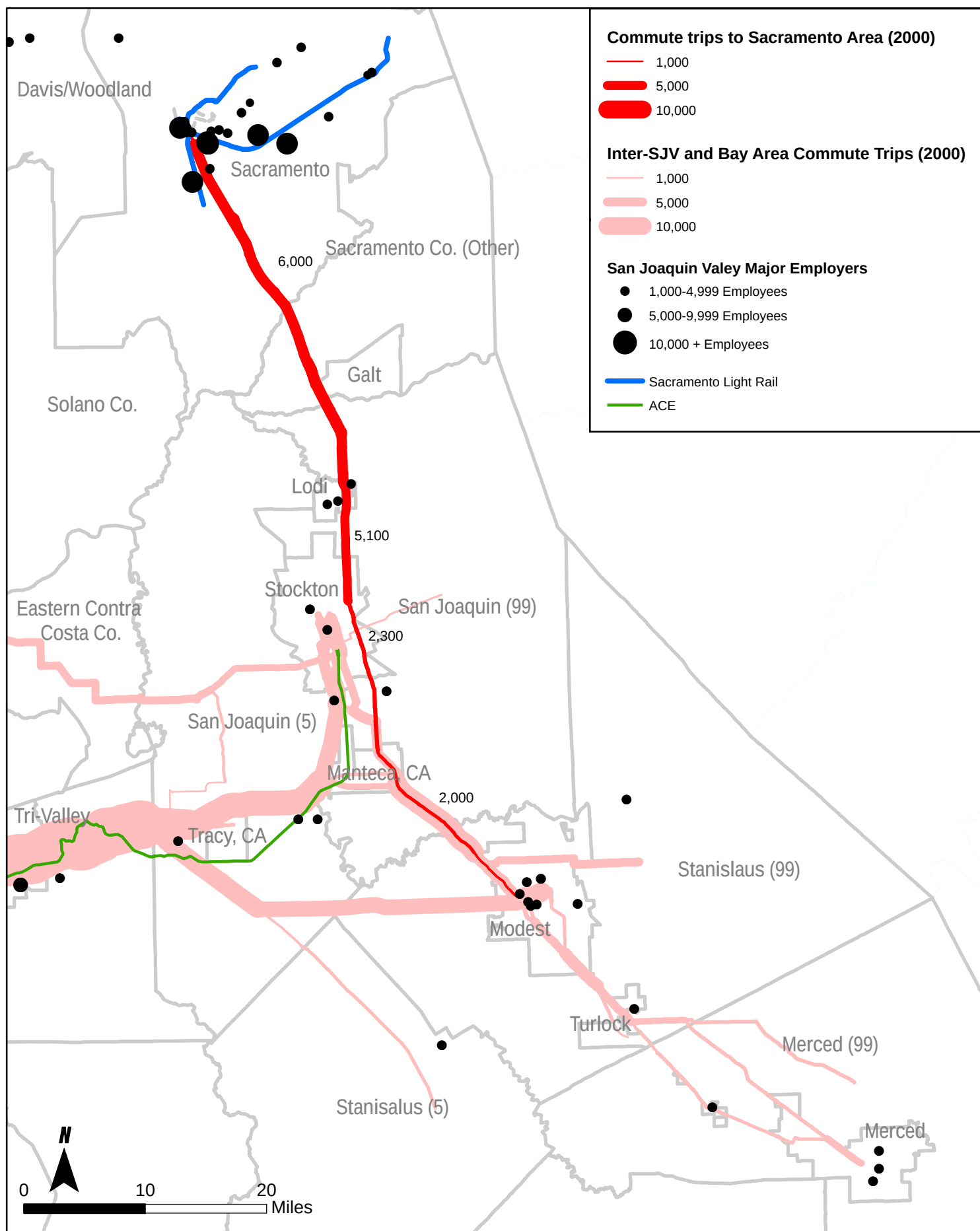


**Figure 6-12 San Joaquin Valley Inter-County Commute
by Freeway Corridor: Northern Highway 99 and Sacramento Area (2030)**

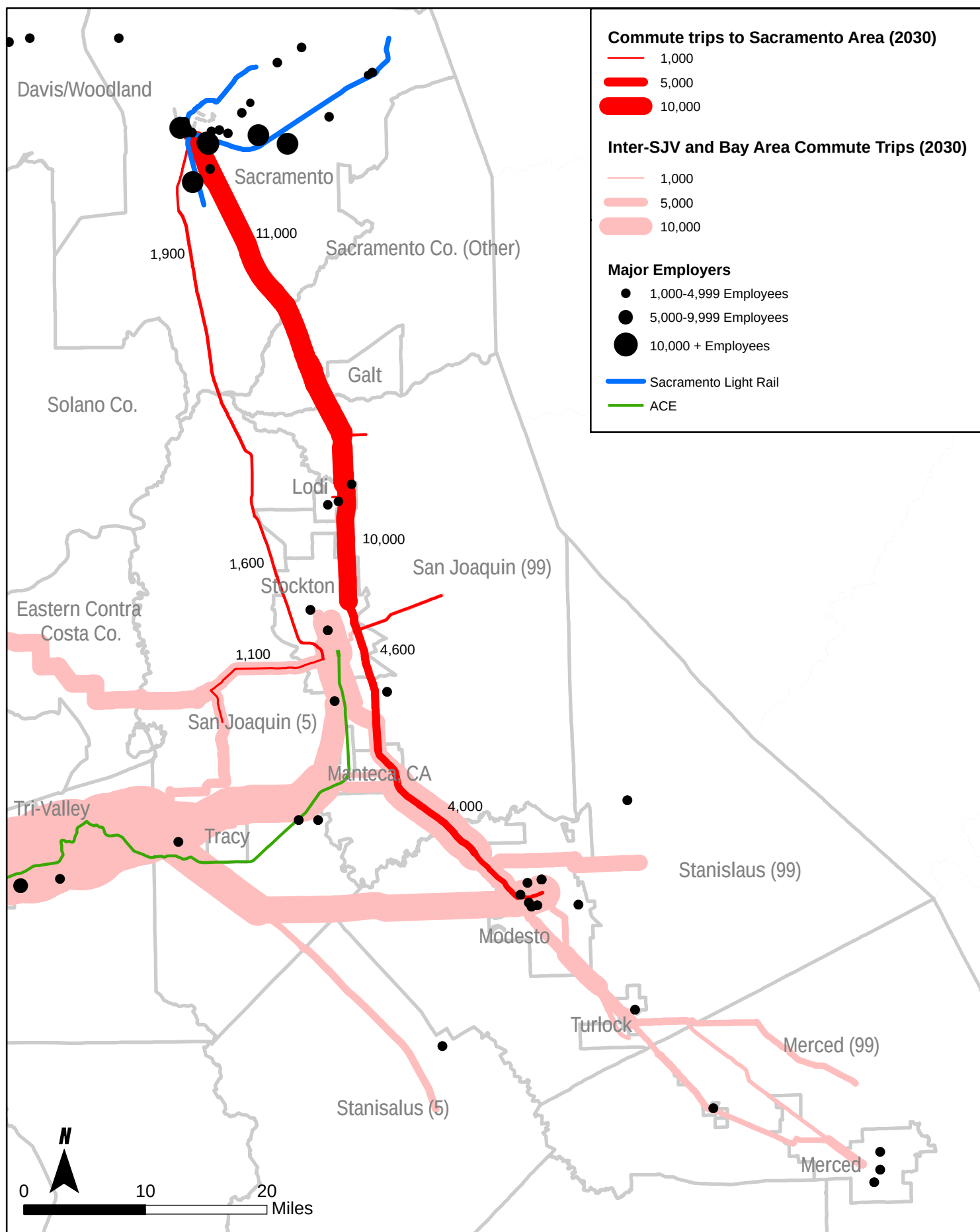


**Figure 6-13 San Joaquin Valley Inter-County Commute
by Freeway Corridor: Commute to the City of Fresno (2000)**

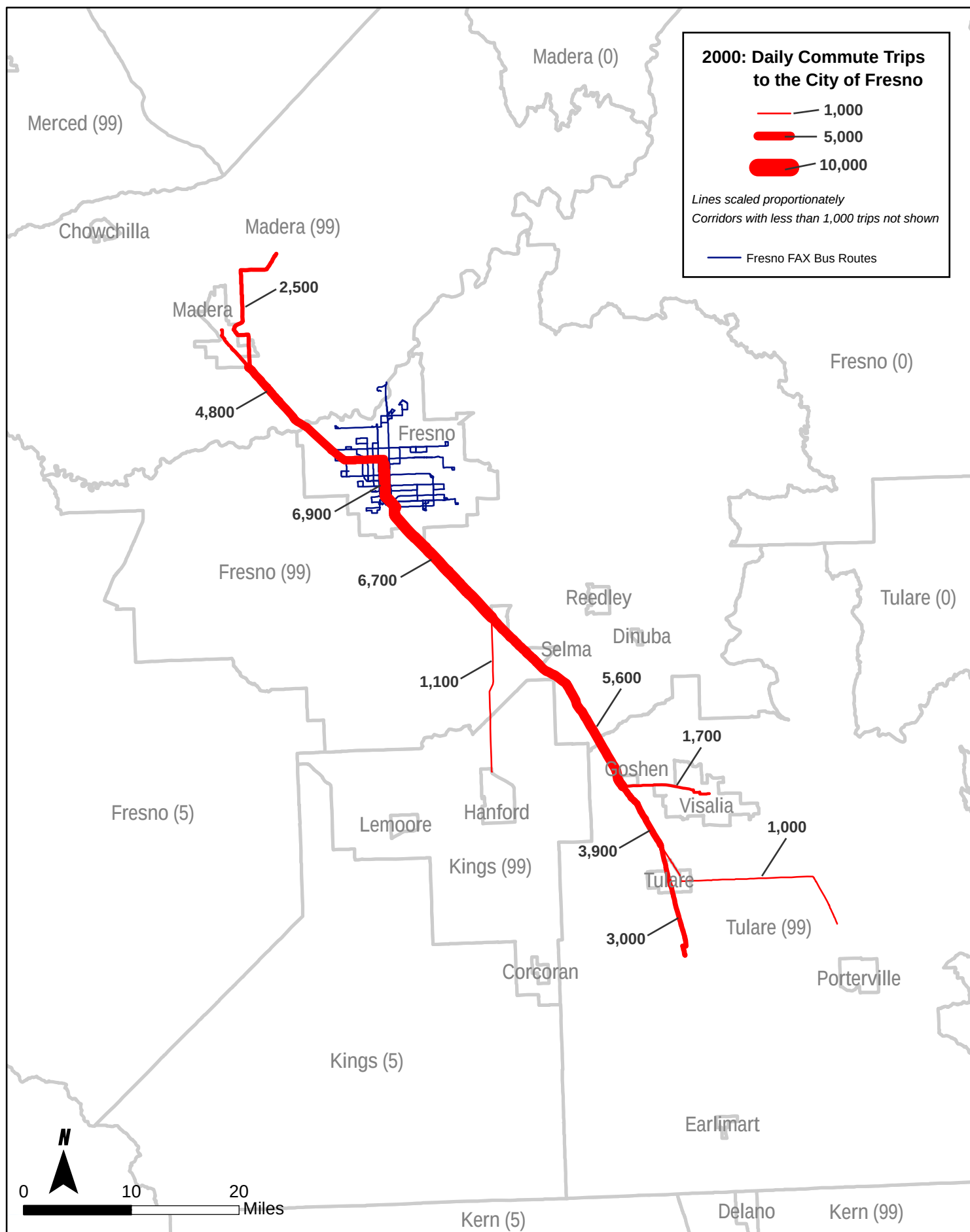
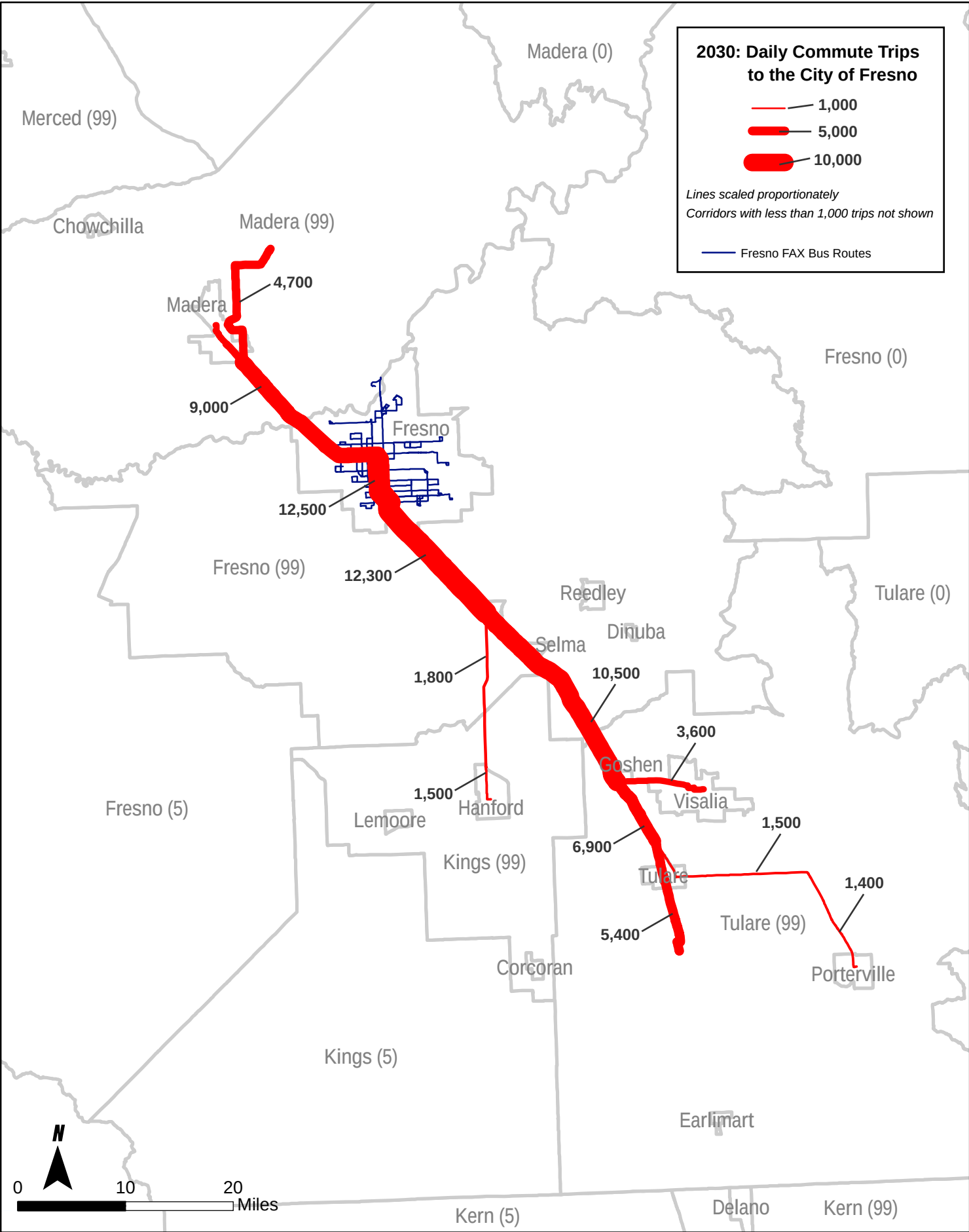


Figure 6-14 San Joaquin Valley Inter-County Commute
by Freeway Corridor: Commute to the City of Fresno (2030)



Transit Competitiveness Projections

While the travel demand model is an excellent tool for identifying corridors with commute volumes that might be large enough to be served by transit, the model alone does not provide information about which of those corridors might produce the most transit commuters. Any new commuter transit service would compete with other modes to attract a share of this market. To better understand how the travel demand patterns translate to market potential, transit competitiveness indices (TCIs) were developed for future year commute trips produced in the San Joaquin Valley.

The Transit Competitiveness Index (TCI) determines transit ridership potential by aggregating factors that make transit service successful, such as trip density, congestion, parking cost, and household characteristics. These factors are combined into a single number or “index” that determines the potential for a successful transit service. For this analysis, TCI's were calculated separately for each place as a “production” and as an “attraction.” With respect to commuter travel, a place is a competitive “production” if residents of that area are likely to choose transit. A place is a competitive “attraction” if significant numbers of workers are employed in that area and likely to choose transit.

The statewide passenger travel demand model (SPTM) developed for the California High Speed Rail Authority was used as the basis for the TCI calculations. Mode choice coefficients from the SPTM were used as the basis for the TCI formulation. Inputs to the TCI include future year 2030 model land use data, origin-destination matrices, and network skim information from the SPTM.

To better understand the market for regional express transit, TCIs were developed for future 2030 inter-county travel within the San Joaquin Valley and interregional travel to the Bay Area, Sacramento, or Southern California. Input data used in the TCI calculations were comprised of information for commute trips, which traditionally make up a large portion of regional express bus market.

To distinguish between local and regional markets, only data for inter-county commute trips produced in the eight-county San Joaquin Valley region were used. Trip attractions included the eight San Joaquin Valley region counties and select Sacramento, Southern California, and San Francisco Bay Area counties: Data associated with commute trips within a single county were not included; however, inter-county trips within the San Joaquin Valley as well as those trips from San Joaquin Valley counties to surrounding metro-areas were included in the analysis.

The TCI can be used to assess how much each independent factor contributes to the transit potential of an area. The factors included in this study are:

- Trip density at the production
- Trip density at the attraction
- Parking cost
- Congestion
- Household characteristics

For regional express bus TCIs in the San Joaquin region, this analysis found that over 95% of the transit potential of a zone is attributed to trip production and attraction density. The implication of this is that even if other parking costs, congestion, and household characteristics were to change,

these changes would have far less impact than changes in trip density. Trip density is itself a function of other factors, including residential and employment density.

Interpreting the TCI

As described earlier in this report, the San Joaquin Valley is an extremely challenging operating environment for transit service. Low population and employment densities and long distances between cities both substantially diminish the competitiveness of transit as compared to more urban areas. However, within this environment there is substantial variation in competitiveness. The TCI's provided here are relative measures – they allow the region to compare different parts of the study area and determine which are the most competitive.

Overall, production TCIs range from about 0 to 8,000, where a TCI of 0 indicates the least transit market potential and 8,000 the most transit market potential. Production TCIs have been scaled such that values greater than 100 indicate that a zone is more competitive than the average zone in the analysis region.

In order to gauge the real-world meaning of these relative measures, it is useful to examine TCI's in the region as compared to areas where commuter express transit is currently operating and attracting a significant number of passengers. Currently, the San Joaquin Regional Transit District (SJRTD) and Modesto Area Express (MAX) run regional express bus services from Stockton and Modesto, respectively. The SJRTD Interregional Commuter Service (ICS) Program provides service from Stockton and surrounding areas to downtown Sacramento, Lawrence Livermore National Laboratories, Hacienda Business Park, Silicon Valley, and the Dublin/Pleasanton BART station. These extremely narrowly targeted services yield a reasonable productive commuter express transit service: they attract about 17 boardings per service hour. Modesto MAX services provide regional express bus from Modesto to existing rail services at the Dublin/Pleasanton BART station and the Lathrop/Manteca ACE station. These services, which generally operate with full buses in the peak commute direction and mostly empty buses in the reverse-commute direction, yield 10 boardings per service hour.

In this analysis, production TCIs greater than 2,000 are more competitive than the Stockton and Modesto areas. Therefore, the areas of Stockton and Modesto that have existing regional express bus service have 20 times more potential than the average zone in the analysis region. A map of production TCIs in the San Joaquin Valley region is shown in Figure 6-15.

Attraction TCI's reflect how competitive an area is as a destination for commute travel – a high attraction TCI suggests a larger number of workers willing and able to take transit to jobs in that location. Attraction TCIs are scaled such that values greater than 100 have more transit potential than the average zone in the region and values greater than 500 are equal or have more potential than the Stockton and Modesto areas. Although Stockton and Modesto are not currently regional express bus destinations, they serve as potential connections to successful regional express bus lines and are 5 times more competitive than the average zone in the region. A map of attraction TCIs in the San Joaquin Valley region is shown in Figure 6-16.

Figure 6-15 Production TCIs in the San Joaquin Valley Region

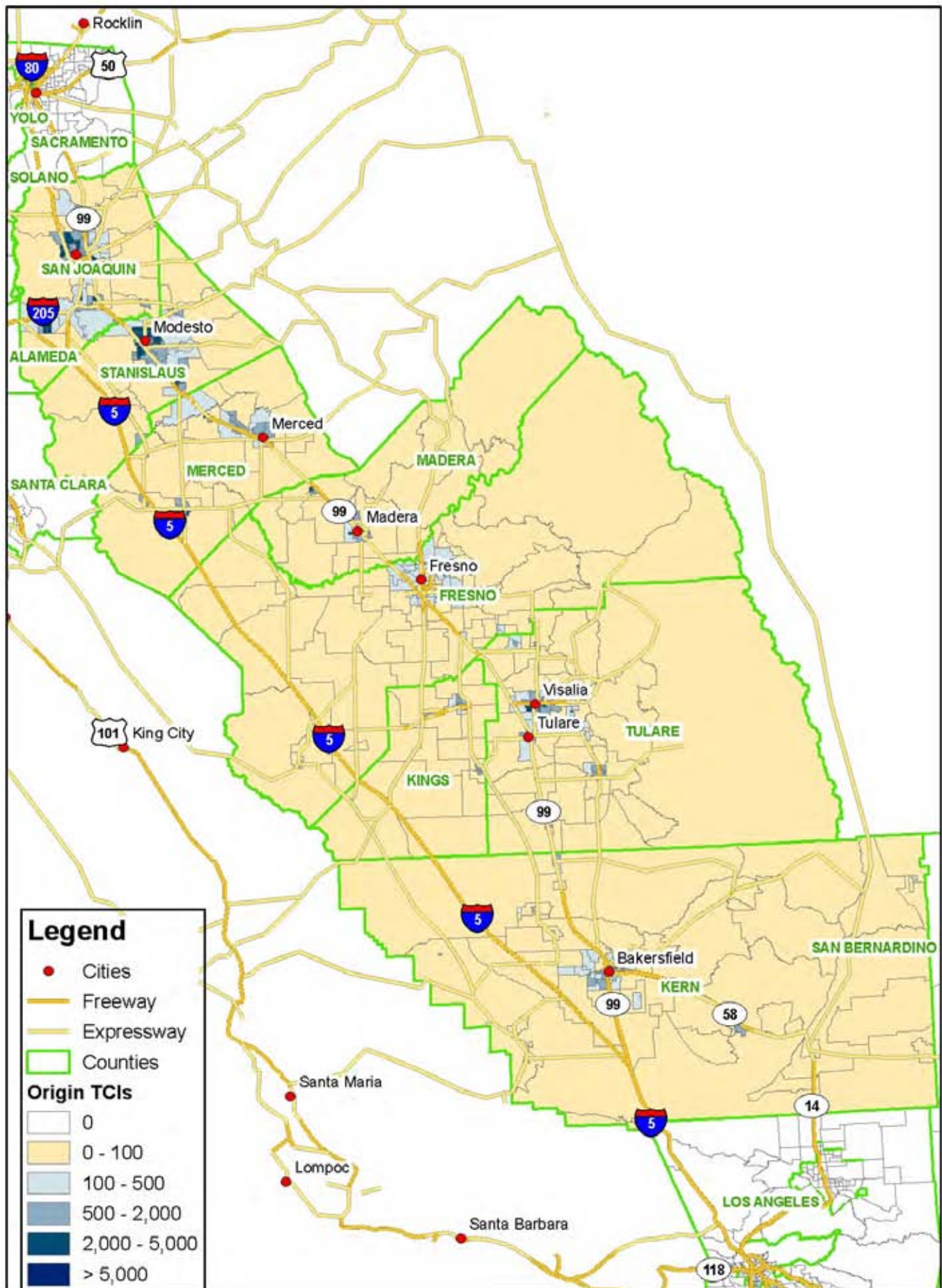
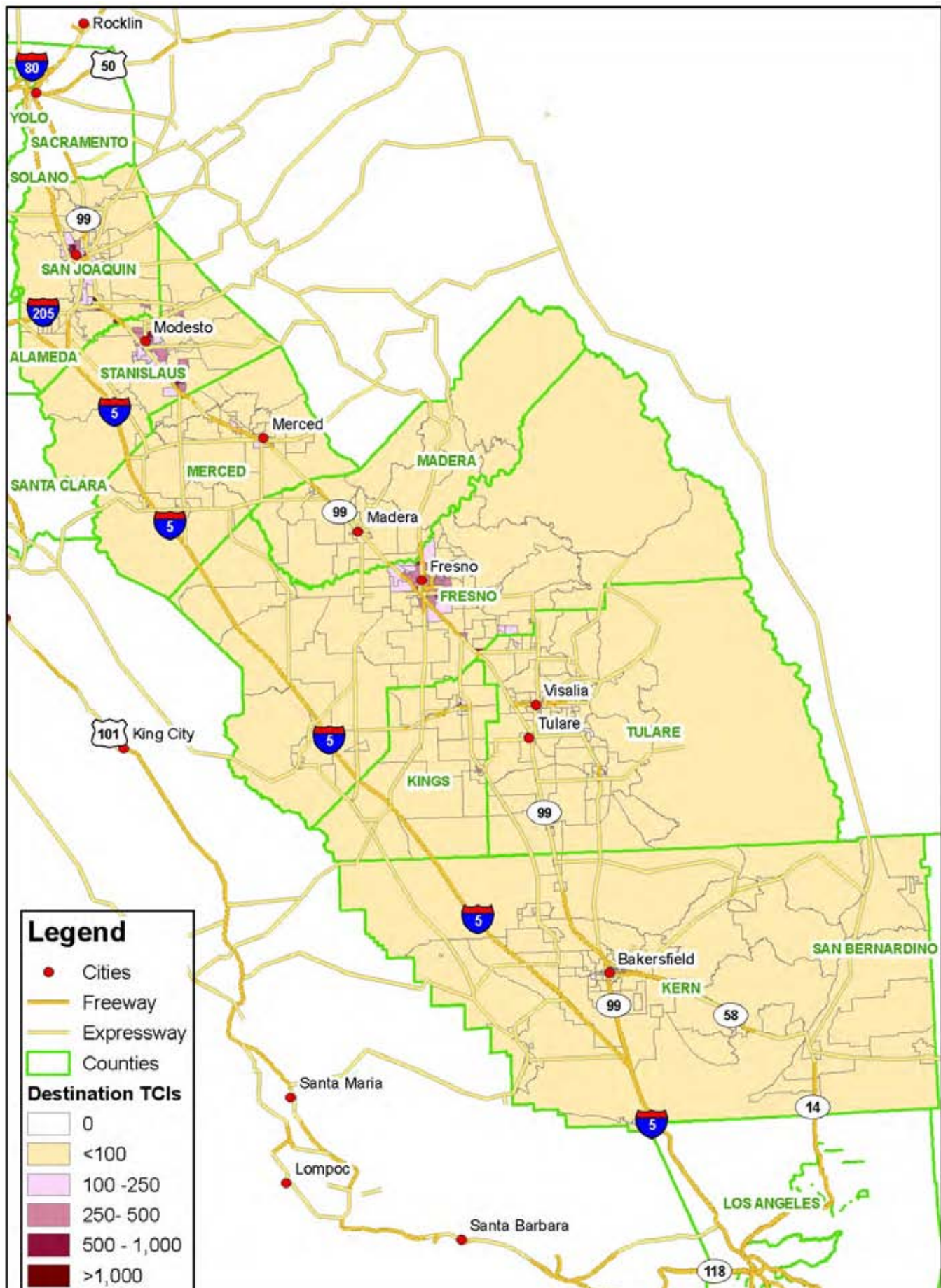


Figure 6-16 Attraction TCIs in the San Joaquin Valley Region



TCI Findings

The TCI analysis reveals that most of the inter-county commute markets to, from or within the San Joaquin Valley are not competitive to either produce or attract transit trips. Low population and employment densities yield low trip densities, making efficient transit service impossible.

However, some of the Valley's largest urban areas are expected to either attract or produce a sufficient density of inter-county commute trips so that very targeted commuter-express transit services may be possible, and enhanced ridesharing opportunities such as vanpool may be promising. The communities along the Highway 99 corridor between Merced and Stockton may be reasonable origins for transit service, and commuters from those areas may be able to travel efficiently to jobs in the San Francisco Bay Area and Sacramento. By 2030, the city of Fresno may be a reasonably competitive destination for some commuters, and the cities of Madera and Visalia may be reasonable origins. While the city of Bakersfield may a competitive origin for commute transit trips, the neighboring greater Los Angeles is not a competitive destination.

Northern Highway 99, the Bay Area, and Sacramento

The northern Highway 99 market includes Stockton and Modesto, two cities that now provide reasonably productive, if very narrowly targeted, regional express bus connections to the San Francisco Bay Area and Sacramento. Production and attraction TCI values in the northern Highway 99 market are shown in Figures 6-17 and 6-18.

As productions, parts of Lodi, Stockton, Manteca, Modesto, and Ceres have TCI values greater than 2,000. In Stockton, these areas correspond to north and northwest Stockton, which are primarily residential. As attractions, downtown Stockton near Cal State and Northwest Stockton near the University of the Pacific and San Joaquin Delta College show up as areas with high transit potential. In Modesto, major employment centers such as the Vintage Faire Mall in northwest Modesto and the Memorial Medical Center in northeast Modesto show up as transit competitive destinations. Turlock, Manteca, and Lodi also show up as high potential attractions.

The travel demand analysis indicated that trips originating from the southern part of this corridor are mostly bound for attractions in Stockton or Modesto. However, a large number of trips produced in the northern cities of Manteca, Stockton, and Lodi are destined for attractions in Sacramento or the San Francisco Bay Area. This implies that a regional express bus service originating near Modesto and linking cities along the Highway 99 corridor to the San Francisco Bay Area and/or Sacramento may hold transit potential.

The areas with high attraction TCIs are more concentrated and areas with high production TCIs more spread out. This pattern indicates that park-and-ride access would be needed on the production end to serve the entire market of transit competitive areas. On the attraction end, the most competitive destinations in Stockton and Modesto are more concentrated. Despite this, last-mile connecting services such as shuttles/and or connections to local transit might be necessary to serve the market.

Figure 6-17 Northern Highway 99 Production TCIs

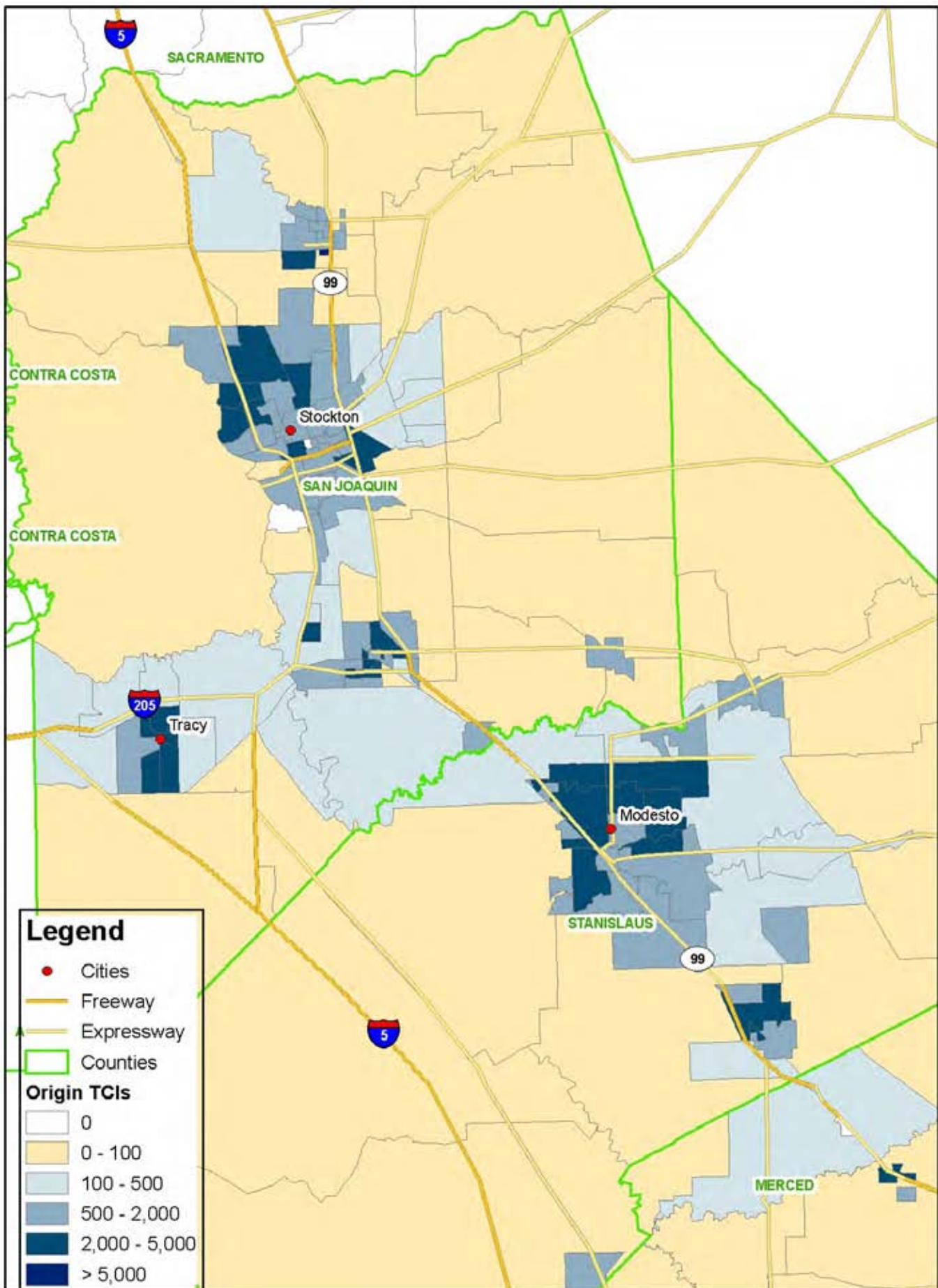
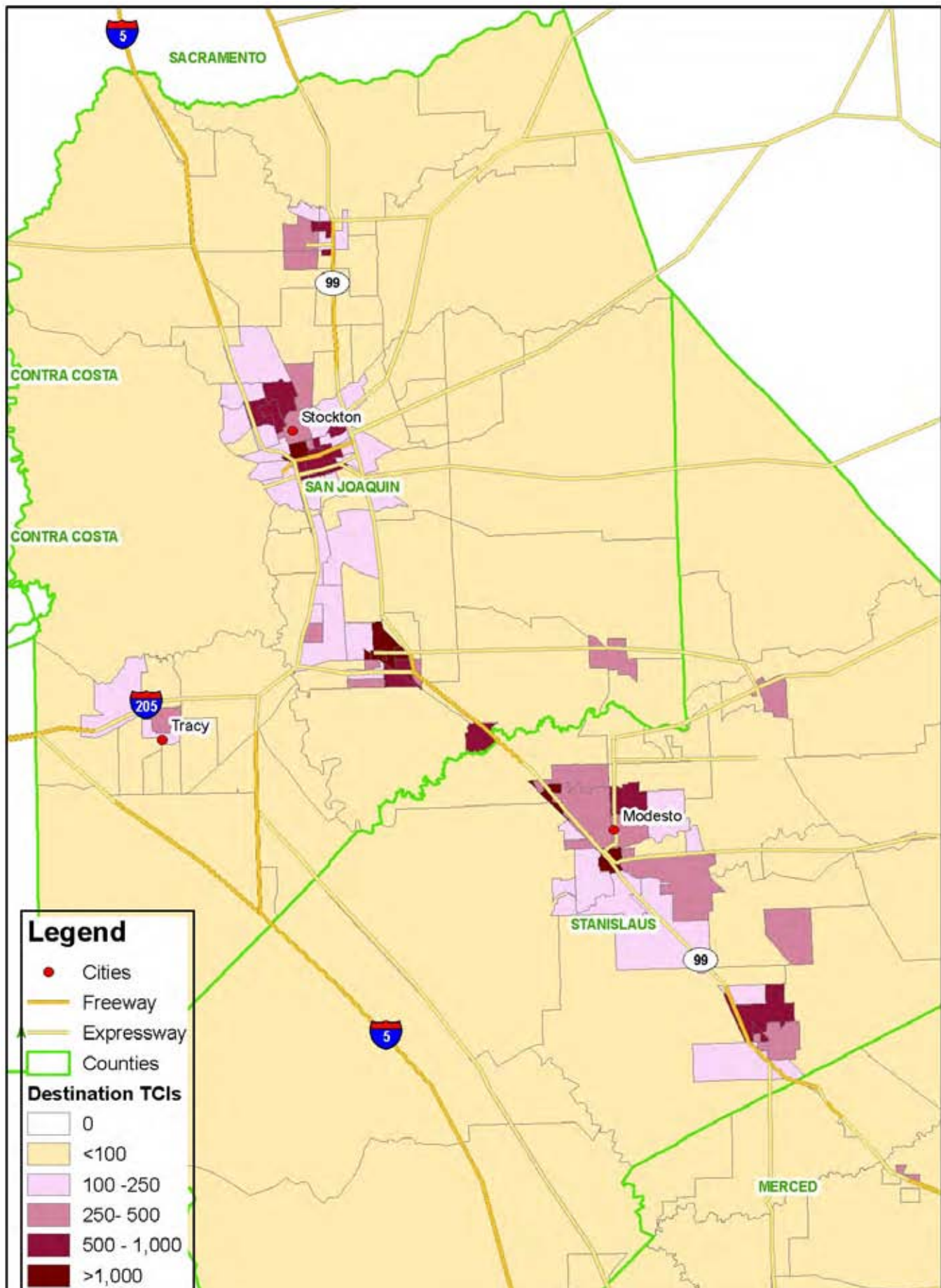


Figure 6-18 Northern Highway 99 Attraction TCIs

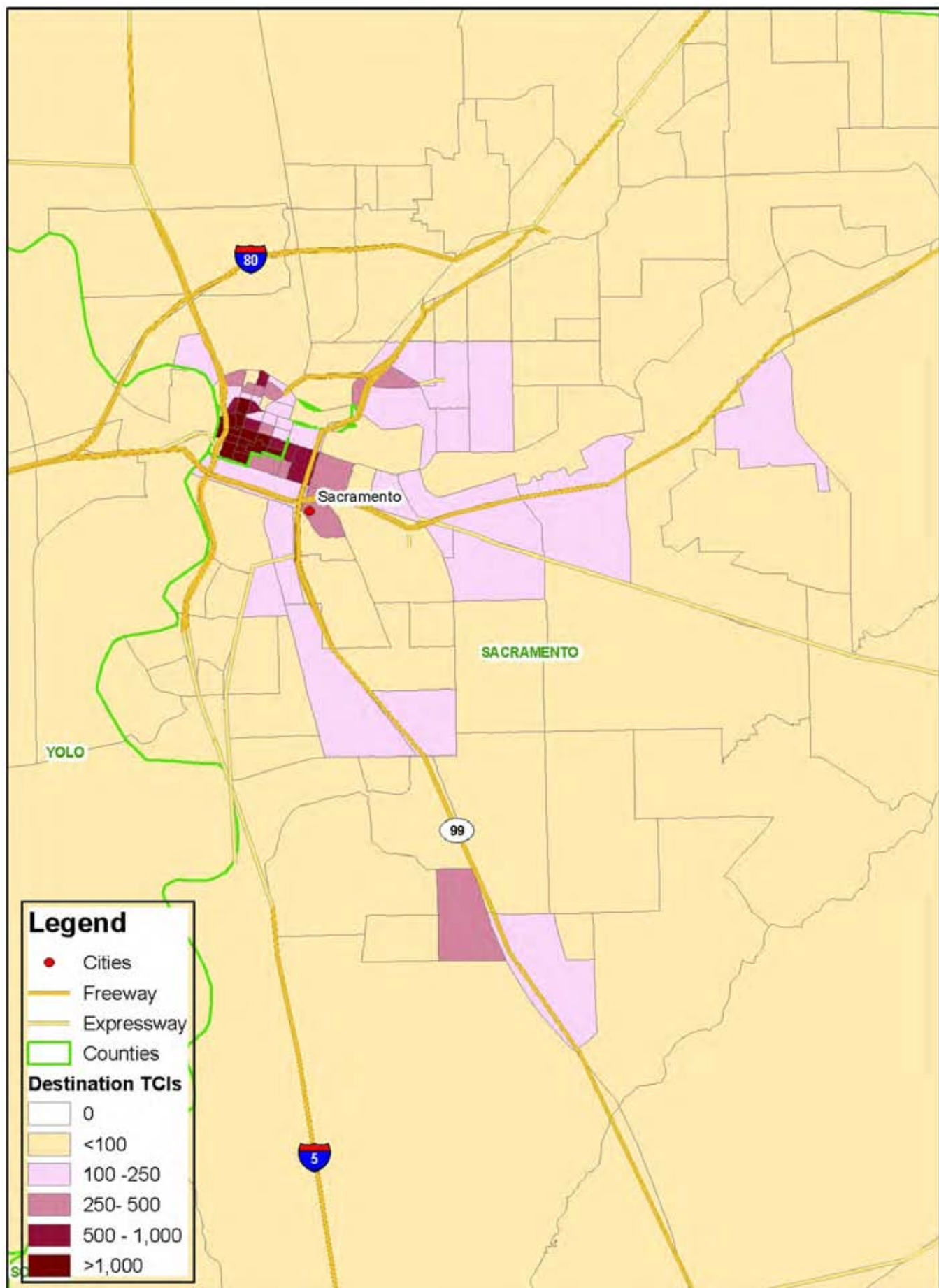


A large share of the inter-county commute market originating in the northern part of the Highway 99 corridor will be bound for the San Francisco Bay Area or the Sacramento area. The transit competitiveness of these areas is enhanced by relatively high employment densities, compared to San Joaquin Valley cities. However, transit competitiveness is diminished by the long distances San Joaquin Valley commuters must travel to reach these neighboring regions.

The attraction TCIs for the Sacramento regions and the San Francisco Bay Area are shown in Figure 6-19 and 6-20. As shown in Figure 6-19, locations in downtown Sacramento exhibit reasonably high potential for regional express bus transit trips from the San Joaquin Valley.

Figure 6-20 shows the regional express bus trip attraction potential for locations in the San Francisco Bay Area. Major employment centers in San Francisco, Oakland, Contra Costa County, the Tri-Valley, and Silicon Valley show up as potentially competitive. Many of these destinations are currently served by BART and ACE trains, indicating that express bus service to an existing BART or ACE station would serve most of the potential transit market from the San Joaquin Valley. There are, however, a few locations not near a BART or ACE station that are potentially competitive. These include Lawrence Livermore Laboratories and Bishop Ranch Business Park, both of which are currently served by San Joaquin RTD subscription routes. It is also worth noting the relative lack of transit competitive destinations in Silicon Valley, with the exception of downtown San Jose in Silicon Valley. This is primarily due to the dispersed nature of employment in Silicon Valley, as well as the long travel distances from many San Joaquin Valley origin cities.

Figure 6-19 Sacramento Region Attraction TCIs



Legend

- Cities
- Freeway
- Expressway
- Counties

Destination TCIs

- 0
- <100
- 100 - 250
- 250 - 500
- 500 - 1,000
- >1,000

Merced County and Silicon Valley

The travel demand analysis identified a 2030, commute market of reasonable size travelling in the Highway 152 corridor from Merced County to Silicon Valley. Figure 6-21 and Figure 6-22 explore the competitiveness of transit in this market.

The transit potential of Merced County as a production is depicted in Figure 6-21. The City of Merced holds about the same or somewhat more transit potential than the average zone in the region, indicating a challenging environment for transit. The densest areas of Los Banos have equal or more potential to the existing service productions in Stockton and Modesto.

The transit potential of Silicon Valley as a destination is illustrated in Figure 6-22. This analysis demonstrates that only a small area of downtown San Jose is a competitive destination for transit trips from the San Joaquin Valley. While other parts of Silicon Valley have higher than average competitiveness, they are relatively dispersed and would required connections from an express route to employer shuttles or other last-mile transit.

While the commute market travelling from Los Banos to downtown San Jose is likely to be quite small, a narrowly targeted subscription route of the type now offered by San Joaquin RTD may become competitive in the future.

Figure 6-21 Los Banos and Merced Production TCIs

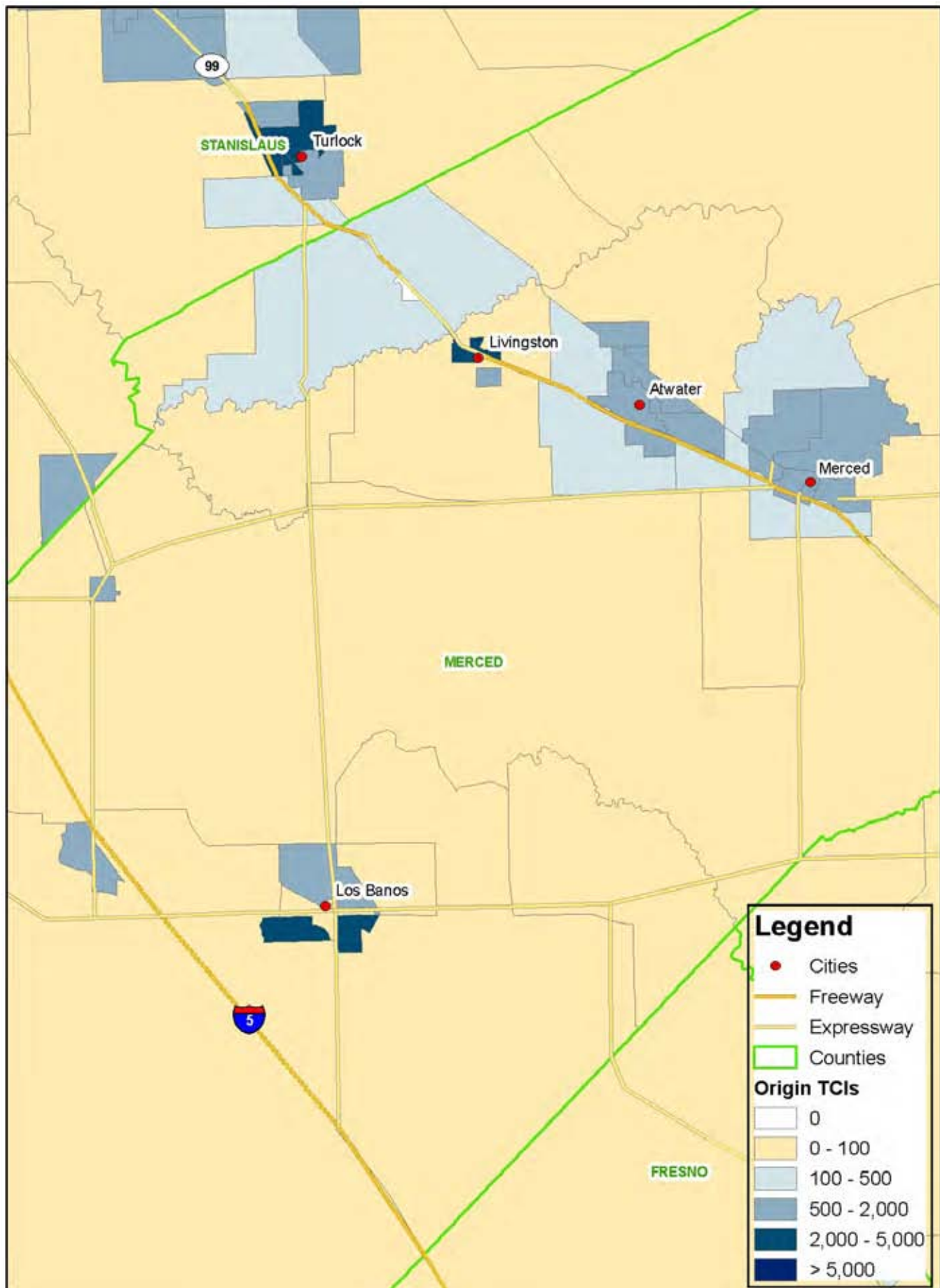
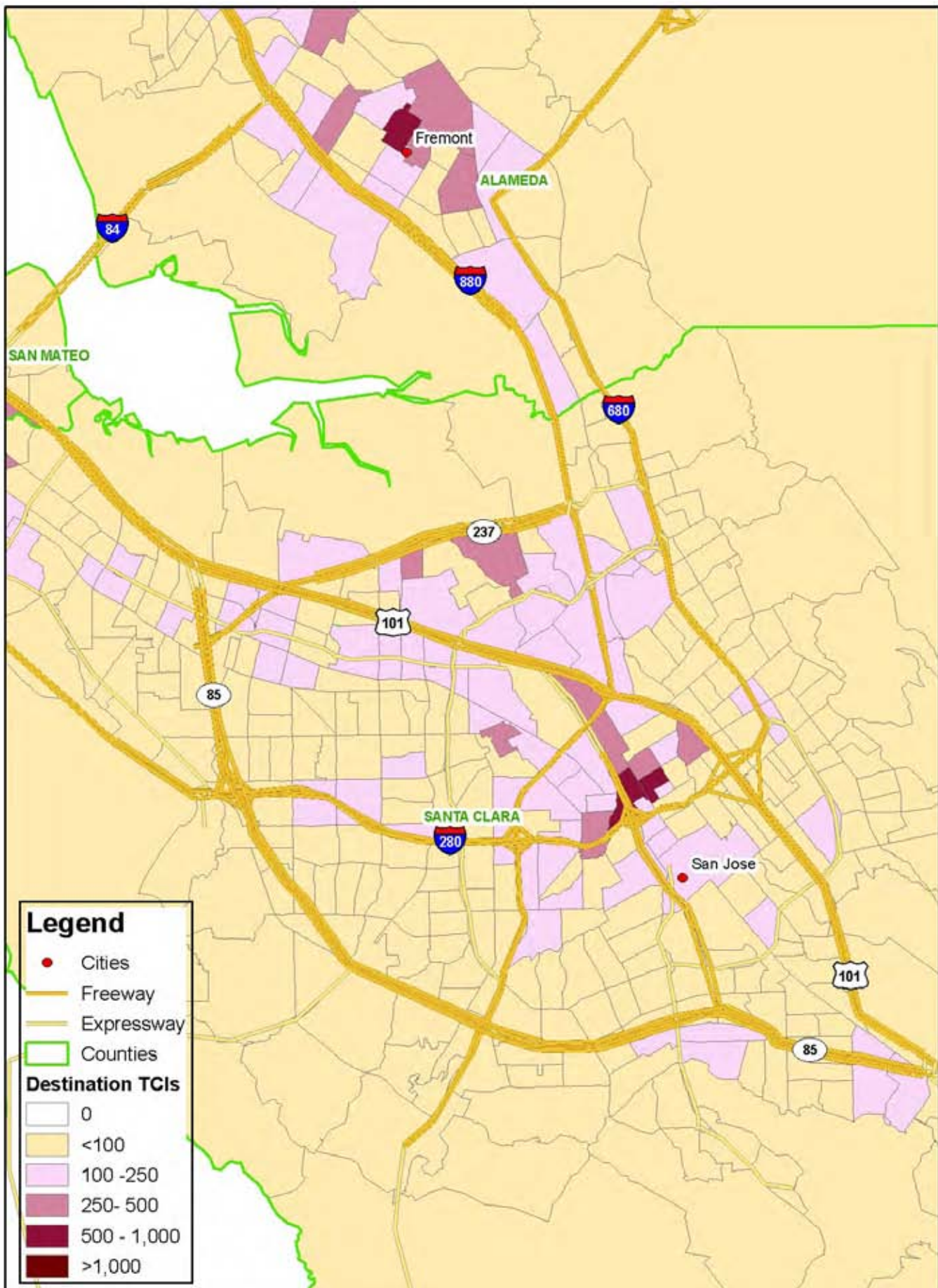


Figure 6-22 Silicon Valley Attraction TCIs



Madera, Tulare, and Fresno Counties

The travel demand analysis showed that that by 2030, there will be a significant commute market into the city of Fresno, both northbound from Tulare county and southbound from Madera County. To illustrate the potential for transit to capture parts of this market, the transit competitiveness indices for Tulare, Madera, and Fresno Counties are illustrated in Figures 6-23 through 6-26.

As productions, parts of Visalia and Madera have equal or more transit potential than Stockton and Modesto, where very targeted express bus services are acceptably productive today. As expected, the city of Fresno has low competitiveness as a production (just 8% of Fresno County residents are inter-county commuters), but higher-than-average competitiveness as an attraction. A difficulty in providing transit service to the city of Fresno is that transit competitive zones are distributed throughout the city's relatively large land area; the city has few large employers that might serve as a logical destination for targeted service. Commuter transit service from Visalia or Madera to Fresno may therefore be possible, but would probably have to rely on connections to Fresno Area Express (FAX), the city's municipal transit service.

Figure 6-23 Tulare County Production TCIs

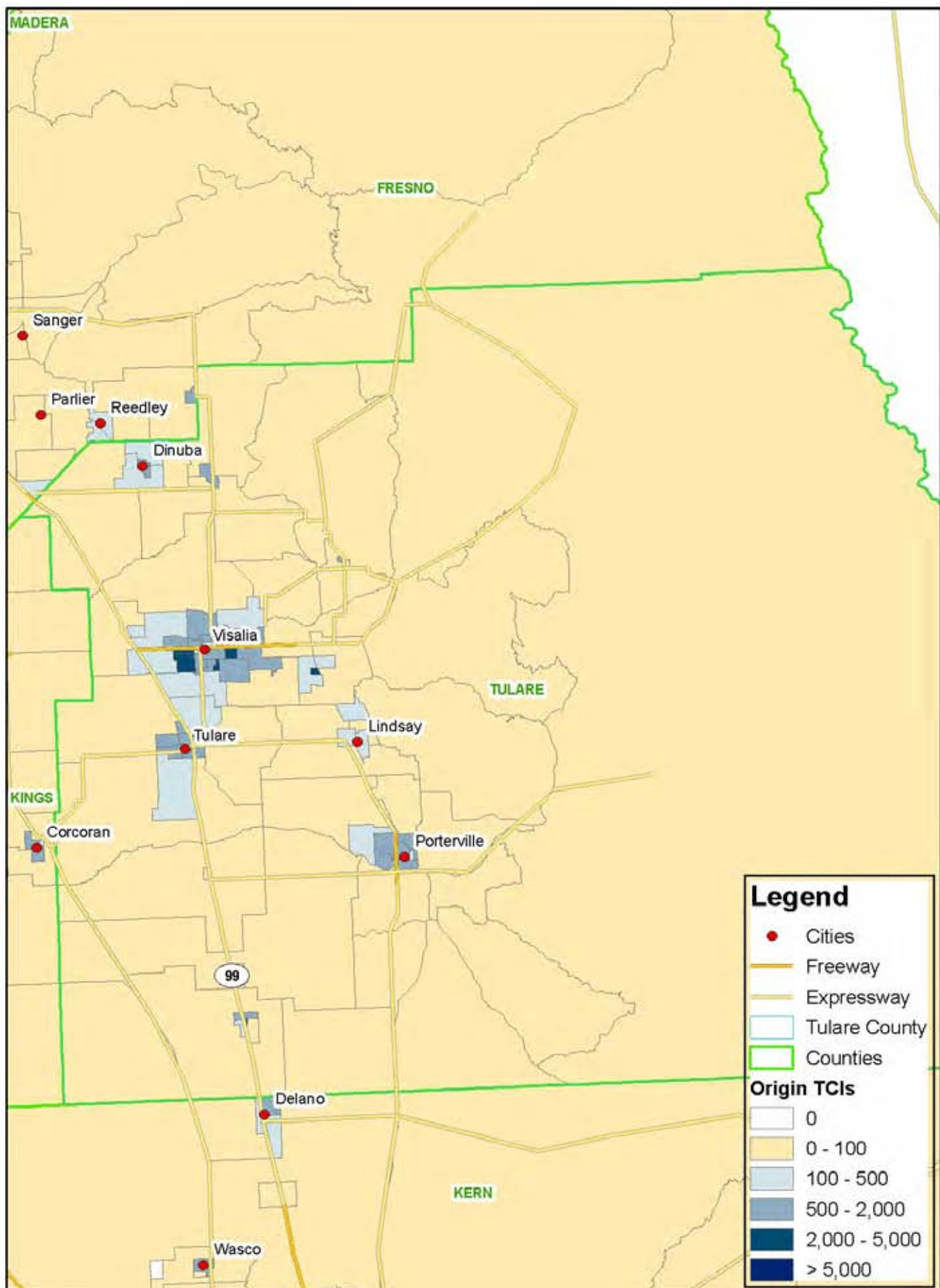


Figure 6-24 Tulare County Attraction TCIs



Figure 6-25 Madera and Fresno County Production TCIs



Figure 6-26 Madera and Fresno County Attraction TCIs



Kern County and Greater Los Angeles

The travel demand analysis showed that some commuters do travel from Kern County to greater Los Angeles, and that this market will grow in the coming decades. However, Figures 6-27 and 6-28 illustrate that there is very little potential for transit to capture a significant share of this market. The city of Bakersfield has higher-than-average competitiveness as an origin, but no part of the city reaches even the limited competitiveness that makes Modesto and Stockton acceptable origins for targeted commuter service. Perhaps more importantly, no part of greater Los Angeles is a competitive destination for San Joaquin Valley commuters. This is mostly a consequence of the extremely long distance commuters must travel to reach areas with high employment densities.

Because these indices were designed to represent transit competitiveness for commuters living in the San Joaquin Valley, they do not account for the large number of projected commuters traveling from Los Angeles County to Kern County. Given the low density of employment in most of Eastern Kern County, it is very likely that a significant share of this projected inter-county commute market will be traveling to Edwards Air Force Base. Chapter 8 discusses the Air Force Base as a possible transit commute destination.

Figure 6-27 Kern County Production TCIs

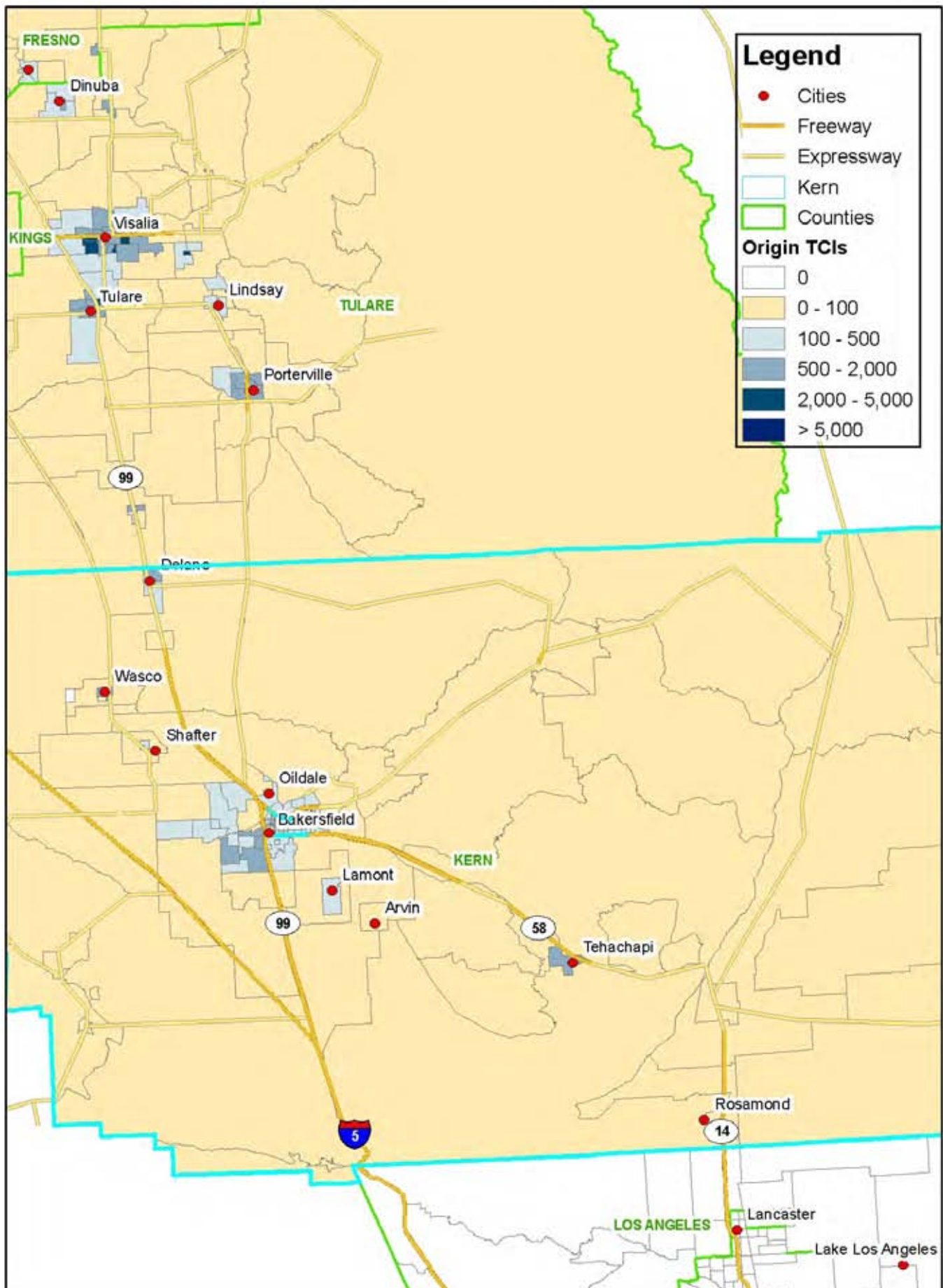


Figure 6-28 Southern California Region Attraction TCIs



Travel Demand/Transit Competitiveness Analysis Summary Conclusions

The transit competitiveness analysis confirms that the San Joaquin Valley is a challenging environment for Inter-county commuter transit. Most of the region's land area is rural or very low-density residential in character, and is expected to remain so for the foreseeable future. Even in the region's urban areas, residential and employment densities are low and too dispersed to be served by a transit service that could be competitive with the auto. Long distance travel, with dispersed origins and destinations spread over a wide geographic area, is almost never a winning proposition for a transit service. Given these constraints, for most of the region's communities, the most attractive alternative to single-occupancy vehicle travel will remain ridesharing.

However, there are a number of corridors where commuter transit service appears most promising. They are:

1. *The northern Highway 99 corridor, extending from Merced through Modesto, Manteca, Stockton, Lodi, and continuing to Sacramento.* This corridor includes a cluster of the region's most transit competitive cities, and its strongest internal travel markets. There will be nearly 10,000 daily trips on Route 99 heading towards Sacramento by 2030.
2. *The northern Highway 99 corridor to the Bay Area.* The stretch of I-580 that crosses the Altamont Pass between Tracy and Livermore is expected to carry more than 50,000 commute trips per day by 2030, with commuters on the west side of the pass dividing between a diverse set of Bay Area destinations. Service planning will focus on ways to enhance connections to ACE and BART, as well as ways to enhance service to destinations very close to the west side of the Altamont Pass.
3. *The Cities of Madera and Visalia to the City of Fresno.* Fresno attracts a large number of workers from the surrounding communities, and these commute markets are expected to grow substantially in the coming decades. The most feasible origin points for transit service into Fresno are Visalia to the south and Madera to the north.
4. *Los Angeles County to Edwards Air Force Base in Eastern Kern County.* More than 20,000 people work at Edwards Air Force Base, and it is likely that many of these employees are included in the projected flow of workers from Los Angeles to Kern County by 2030. This study considers connecting transit service from Lancaster Metrolink station to the Air Force Base.

The next step in this analysis further explores these potentially competitive corridors by developing conceptual service recommendations.

Chapter 7. Stakeholder Input

To gauge the interest and needs of key stakeholders, Nelson\Nygaard conducted interviews with a sample of transit operators, large employers, and major institutions in the region. These interviews provide important perspective on the data analysis summarized above, ensuring that the recommendations of this study reflect the real-life experience of the organizations they will directly affect. Findings are summarized below: more detail on stakeholder input is provided in the Appendices.

Employer Input

Nelson\Nygaard conducted fourteen interviews with representatives of transit operators in August and September, 2008. While this sample does not necessarily reflect the opinions of all employers or stakeholders in the Valley, it does provide a range of different types of organizations across geographic areas. Interviews included representatives of hospitals, correctional facilities, agricultural processing facilities, retail distribution sites, universities, business parks, and chambers of commerce. A list of individuals contacted and a summary of each interview can be found in Appendix A.

This diverse group of organizations offered a wide range of opinions about the feasibility of new transit service, with some enthusiastic and others skeptical or disinterested. Respondents raised several issues that suggest the opportunity for expanded commuter express transit service. These include:

- Existing difficult commute conditions and lack of choice for employees about how to get to work
- A pool of existing inter-county commuters
- Employees that struggle with the rising cost of driving
- Constrained parking conditions

Some organizations, for example, Fresno State University, already have processes underway to help develop new commute choices. Respondents also highlighted a variety of constraints to the development of new transit service. These include:

- Low-density land-use patterns throughout the region, and the lack of a “critical mass” of employees from any one origin location.
- Shift work and non-traditional hours at corrections facilities, agricultural workplaces, and hospitals.
- For some employers, the vast majority of employees live locally.
- Others have not seen significant interest among employees in these options. As one retail distribution center operator noted, “employees have not expressed concerns about transit, or talked about the need for transit. Because it has not been available, people don’t expect it and consequently do not express needs.”

Two employers in the San Francisco Bay Area (Hacienda Business Park in Pleasanton and Lawrence Livermore National Laboratories in Livermore) expressed general interest in more commute options over the Altamont Pass. However, as James Paxson of Hacienda Business Park noted, Altamont Pass bus service is currently hampered by the fact that buses must fight the same traffic as cars. He stressed the need for any short- and medium-term transit upgrades to be

consistent with the eventual upgrading of ACE rail service. Similarly, representatives from the San Jose Chamber of Commerce expressed strong interest in transit service generally, but noted that their organization's priorities lay in upgrading rail service to San Jose.

Of the roughly one quarter of respondents who left open the possibility of contributing financially to some future commuter transit service, all stated that it would depend on direct benefit to their employees or other constituents, and all stated that the decisions would have to be made at a higher level in the organization.

Transit Provider Input

In June and July, 2008 Nelson\Nygaard conducted stakeholder interviews with the region's countywide operators, and its largest municipal transit providers. These interviews suggest that while many see potential for expanded commuter express transit service to and from their service area, all have very specific, and in some cases very deep concerns about the feasibility of funding any such service. A list of individuals contacted and a detailed summary of transit provider feedback can be found in Appendix B.

Most transit operator concerns have to do with the need to establish proof of a market for ridership. However, the operators also expressed a range of concerns having to do with implementation and management; with the political challenges of negotiating equitable arrangements and establishing community consensus; with the necessity of locating and securing sustainable sources of funding; and with matters of oversight and organizational capacity. Before any new regional transit service can be proposed, these concerns will have to be satisfied. Overcoming these obstacles will require not only a thorough analysis of the market for new services, but a detailed strategy for implementation and long-term funding. About half of respondents felt that their organization may be able to serve as the lead agency for a new transit service, as long as stable funding was available and certain other qualifications were met.

Chapter 8. Service Recommendations

This section recommends investments to improve inter-county commute choices in the San Joaquin Valley. These investments aim to improve commute transportation choices in the four key corridors identified earlier in this report, within the constraints of a difficult funding environment.

As described previously, the range of options for enhancing commute services can be thought of as a continuum from very basic incentives for carpooling to higher occupancy vanpools, subscription bus services, and finally high-capacity public transit services including commuter rail. In the lowest-density environments, simple incentives to choose carpooling can help to divert a share of commuters away from single-occupancy vehicles. In the highest-density environments with the greatest concentrations of commute trips, much higher-capacity strategies have a chance to capture a significant share of the commute market, and to attract some share of non-work trips. There are transportation and land use environments in the Valley that call for implementation of each of these strategies.

The recommendations included in this chapter aim to implement each strategy in the most appropriate setting. Figure 8-1 lists the Valley's key inter-county commute corridors, and the type of service enhancement proposed for each. The sections that follow discuss specific transportation investments, along with costs and institutional arrangements, organized by service mode.

Figure 8-1 Summary of Proposed Services

Proposed Service	Key Travel Corridor			
	Northern SR 99 corridor, to Sacramento	Northern SR 99 corridor to the Bay Area.	Madera and Visalia to the City of Fresno.	Northern LA County to Eastern Kern County
Ridesharing /TDM	X	X	X	X
Vanpool	X	X	X	X
Commuter Express Bus	X	X		
Commuter Rail Improvements	X	X		

Ridesharing/Vanpool

Recognizing that low-density land use patterns will continue to prevail in most of the San Joaquin Valley for the foreseeable future, the expansion of the ridesharing and vanpool opportunities should be the primary investment to increase transportation choices for inter-county commuters in most of the region. Vanpools offer the opportunity for relatively high-capacity commute transportation service with operating costs far lower than traditional fixed-route transit. With new operating funds expected to be difficult to access, expanded vanpool access may also be the most promising avenue to improve commuter choice in the near term.

While the whole of the Valley can benefit from enhanced ridesharing opportunities, this will be the primary alternative to single-occupancy vehicle travel for most inter-county commuters travelling to employment destinations other than those along the northern SR 99 corridor, the San Francisco Bay Area, and Sacramento. Two significant ridesharing/vanpool programs now operate in the region. Combined, they have registered more than 400 commuter vans and provided several other vital ridesharing services.

Recommendations for expanding access to these services are as follows:

1. Continue with plans to form a Joint Powers Authority in the southern portion of the Valley to operate KART and AITS Vanpool.

The KCAPTA is currently investigating the creation of a separate Joint Powers Authority (JPA) to operate the KART/AITS vanpool programs. This entity would be a partnership between MPO's in Kings, Madera, Fresno, Tulare and Kern counties, and would continue to serve commuters in all five of these counties. The findings of this study demonstrate that the region should continue to pursue this strategy. A JPA to house the vanpool programs would allow the region to share the administrative burden between the participating communities as well as managing costs, and encouraging cohesive planning. It would create an entity that is accountable to all of the counties it serves, and in the process it would encourage buy-in and active participation from these counties. While the proposed JPA has not yet been named, this report will hereafter refer to the proposed entity as 'South Valley Rideshare'. This is the brand name under which the existing vanpool programs are currently marketed on the web (<http://www.southvalleyrideshare.com>).

In addition to housing the existing vanpool programs, the South Valley Rideshare JPA should also take on coordination of other ridesharing functions for the region. For example, it should continue to provide a ride-matching database; it should also administer a Guaranteed Ride Home program (described below); and it should seek to offer a comprehensive transportation demand management (TDM) program to large employers seeking to meet the requirements of the trip reduction requirements now proposed by the San Joaquin Valley Air Pollution Control District (Valley Air District).

Institutional Arrangements and Costs

In 2008, the general worker vanpool program incurred just over \$3.2 million per year in costs to provide vanpools. Of these costs, approximately \$1 million covered vehicle leasing (vehicles are acquired through a lease-to-own arrangement, whereby KCAPTA owns the vans after 5 years); and \$1.7 million covered fuel, maintenance, and insurance. The program spends a further \$200,000 per year on staff costs. The remaining \$300,000 goes toward administration, outreach, advertising, and communications.

Figure 8-2 Summary of KART Vanpool/AITS Revenues and Expenses

Expenditures	KART	AITS	Total
Salaries and employee benefits	\$232,524	\$364,987	\$597,511
Services and Supplies	\$3,000,222	\$3,212,874	\$6,213,096
Fixed Assets	\$2,000	\$0	\$2,000
Total Expenditures	\$3,234,746	\$3,577,861	\$6,812,607
Revenues			
State Grant - AWTP	\$0	\$1,872,113	\$1,872,113
Passenger Fees - AIT	\$0	\$1,510,948	\$1,510,948
Vanpool Fees - AIT	\$3,017,000	\$0	\$3,017,000
Other (CMAQ, TCAG, etc.)	\$217,746	\$194,800	\$412,546
Total Revenues	\$3,234,746	\$3,577,861	\$6,812,607

General worker vanpool participant fees cover these costs. The general worker vanpool program does draw \$217,000 per year from other public funding sources, including \$500,000 per year from Fresno COG. However, in all cases, these public funds are used to reduce participant fees, rather than to directly fund the vanpool program's operations.

Fees for general worker vanpool participants are set to cover the cost of the vehicle, and vary from van to van depending on the length of trip and the number participants. Currently, most participants in the general worker vanpool program are corrections workers who benefit from a \$65 per month vanpooling subsidy provided by the State of California. This subsidy substantially reduces the out-of-pocket costs for participants: for example, in a typical 12-person vanpool, this subsidy can reduce out-of-pocket costs from \$118 to \$53 per month.

The costs for the farm worker vanpool program are structured differently. Of the program's approximately \$3.6 million in costs during 2008, approximately \$1.9 million was covered by a grant from Agricultural Workers Transportation Program. These funds allow the program to charge farm workers a fixed fee of \$25 per month. This grant, originally for \$5.8 million, was awarded to KCAPTA in FY 2006-2007. It is set to sunset in 2010. When these grant funds are no longer available, KCAPTA plans to keep fees for farm workers low by using older vehicles purchased in full through the general worker vanpool program to supply the farm worker program.

In order to keep overhead costs low, it is recommended that the joint ridesharing entity continue to operate with current KART/AITS staff at the offices of KCAPTA. Given this arrangement, it is not anticipated that forming a JPA will increase costs above what the program currently spends.

For the new ridesharing entity to expand the general worker vanpool program substantially outside of its core market of corrections workers, it may need to seek additional subsidies to help provide incentives for other types of workers to use the program. One possible source of such funds may be contributions from large employers, who will be compelled to create trip reduction programs under proposed rulemaking from the Valley Air District (see discussion below).

2. Expand Commute Connection's service area to include Merced County, and enhance coordination between the participating MPO's.

Commute Connection is a comprehensive ridesharing program offered by the San Joaquin Council of Governments. In addition to serving to San Joaquin County, the program is under contract to provide services to Stanislaus County.

The northern Valley counties present a different commute environment than the southern part of the Valley. These counties include a greater share of urbanized land area, and the key travel corridors include both a higher density of commute trips and more congestion than any corridor in the south Valley. There are fewer large agricultural employers, and fewer corrections facilities, two markets that have available vanpool subsidies and that have formed a large portion of the southern Valley vanpool market. For these reasons, Commute Connection has taken a different emphasis in its ridesharing than KCAPTA, providing a variety of programs and services with an emphasis on carpooling. It provides subsidies for the lease of vehicles used in vanpools, and it also provides ride-matching services to encourage carpools with a database of over 8,000 commuters that can be accessed online or by phone. The program offers a \$50 gas card as an incentive to register a carpool, and carpooling has become a key trip reduction strategy for the northern part of the Valley. The program also offers Guaranteed Ride Home. Commute Connection organizes park-and-ride lots in San Joaquin County and details their availability on its website, following a comprehensive inventory and Park-and-Ride Master Plan¹ completed last year.

In addition to its substantial database of registered carpools, Commute Connection currently has 182 registered vanpools, primarily serving origins and destinations in San Joaquin and Stanislaus Counties. Unlike the KCAPTA vanpool program (described above), Commute Connection does not lease or purchase vans. Instead, it provides a \$150-per-month subsidy to each van for the first year of operation. Subsidies are paid directly to the company that leases the vehicle—either Enterprise or VPSI. Each year, a limited number of new vanpools can be subsidized. After the agency has reached this limit, new vanpool subscribers can only be offered a gas card as an incentive to register with the program. Recommended adjustments to this business model are described below. Policymakers should seek to build on the success of Commute Connection's existing package of carpool and vanpool programs. A number of adjustments to these successful programs could extend their geographic reach and their utility to commuters.

A key first step would be to extend the program's service area to include Merced County. Given the large scale of commuting between Merced, Stanislaus, and San Joaquin Counties demonstrated by this study's travel demand analysis, Merced is a natural part of the northern part of the region when it comes to ridesharing services. Merced currently does not participate in any regional ridesharing program. This three-county program would have a geographic scale similar to the program envisioned for South Valley Rideshare. Having just two regional ridesharing organizations (one in the northern part of the valley, and one in the southern part) creates an appropriate coverage area for each, and allows for easy coordination between the two parts of the Valley. The two entities could collaborate in important areas, such as a regional ride-matching database and website.

Institutional Arrangements and Costs

The MPO's from San Joaquin, Stanislaus, and Merced Counties should work together to develop a coordinated program for an optimized sub-regional ridesharing program, including considering possible adjustments to Commute Connection's governance structure. It is recommended the MPO's begin meeting immediately, and work to arrive at the optimal arrangement by the end of fiscal year 2009-2010.

¹ Although Commute Connections completed an inventory of park-and-ride facilities in both Stanislaus and San Joaquin Counties, the study, which was funded locally in San Joaquin County by Measure K sales tax, did not include Stanislaus County.

Commute Connection's 2008 budget for all of its programs was \$827,000. Of this amount, Stanislaus County contributed \$165,000. Services provided to Stanislaus County were scaled to reflect this investment. Amador County also contributed \$12,000. Vanpools are subsidized at a rate of \$150 per month for the first year, and thereafter are unsubsidized. The Vanpool program targets ten new vanpools per year, at a total cost of \$18,000 per year. A change in the Commute Connection vanpool program's business model, discussed below, may change this cost structure. Enhanced sub-regional coordination might allow for expanded funding opportunities. The three county MPO's might consider jointly pursuing grant funding opportunities. Possible sources of new funding include CMAQ, JARC, New Freedom, and the Valley Air District.

The expansion of the program's services to include Merced County would require financial contributions from the Merced Council of Governments. The exact amount of these contributions would be scaled to the scope of services to be provided in Merced County. As the three county MPO's discuss possible adjustments to the structure of the Commute Connection program, they should work to keep program overhead costs as low as possible.

3. Commute Connection should consider pilot testing lease-purchasing vanpool vehicles.

Commute Connection, serving San Joaquin, Stanislaus, and Merced Counties and governed by a JPA as described above, should consider shifting the business model of its vanpool program from one where it provides a subsidy to groups of individuals leasing a van, towards a model where the agency takes responsibility for leasing the vehicles itself. Leasing costs can be recovered by charging fares to vanpool participants.

This model, now employed successfully by KCAPTA, has a number of advantages. First, it removes a disincentive to vanpooling by eliminating the risk that commuters may feel in taking on a lease for a large and expensive vehicle. Second, the ability to lease a vehicle is not limited should participants have poor credit.

Third, and perhaps most importantly, lease-to-own arrangements can allow the agency to take full ownership of the van after it has been paid for, reducing operating costs for the remainder of the vehicle's useful life. Reduced vehicle costs can either be used to support other program costs, or to reduce passenger fees. Currently, KART vanpools that have been paid off in this way remain in service, but fees for passengers riding in the paid-off vehicles are substantially reduced.

It is recommended that Commute Connection consider implementing a similar plan as a demonstration project, purchasing a limited number of vehicles and assessing costs and benefits before seeking to expand the program. An initial pilot test of 5-10 vehicles is recommended.

Institutional Arrangements and Costs

In pursuing this strategy, Commute Connection would seek to acquire vehicles under lease-purchase terms similar to those currently available to KART Vanpool. Using a competitive bid process, vehicles may be acquired for approximately \$23,000. They can be financed at approximately 5% annual interest over a term of 5 years. The annual cost of this arrangement is approximately \$5,300 per vehicle for five years, after which time the agency owns the vehicle outright. Ten vehicles at this rate would cost approximately \$53,000 per year. In addition, Commute Connection would be responsible for insurance, which can be acquired with the vehicle or can be put under the agency's vehicle insurance, and for any administrative costs associated with the vehicle procurement. However, the goal of the program would be for user fees to recover

all leasing costs, insurance, operating expenses, and administrative overhead for the operation of the vans.

While this arrangement reduces risk for participants, it does not substantially increase agency risk. If a vanpool loses participants and is no longer viable, the agency may decide either to shift the vehicle to another group of participants, or to return the vehicle to the leasing agency for a small penalty. If the agency does retain the vehicles for a full five years, they are then owned in full, and they retain several years of useful life at low cost.

Based on the experience of KCAPTA, Commute Connection may be able to assemble a small number of vanpools where user fees are burdened with the full cost of operations. To expand to a larger operation, the program should seek other funds to reduce participant fees. Sources of funds should include the following:

- As with the KCAPTA program, state employees are eligible for a \$65-per-month subsidy. Corrections workers in San Joaquin, Stanislaus, and Merced Counties may also take advantage of the program.
- The San Joaquin Valley Air Pollution Control District (SJVAPCD) offers a \$350 Commuter Vanpool Passenger Subsidy for new vanpools for one year. Some Commute Connection vanpool program vehicles currently benefit from this subsidy, but it is currently administered separately from Commute Connection.
- The new entity should seek new funds from contributions by large employers, who will be compelled to create trip reduction programs under new Valley Air District regulation (see discussion below).
- Commute Connection may also wish to seek a grant from the Valley Air District to fund the initial pilot test of the vanpool lease-purchase arrangement.

4. Prioritize vanpooling to Fresno.

The travel demand analysis portion of this study identified the commute markets from Tulare and Madera Counties into the City of Fresno as two of the strongest future inter-county commutes in the region. Demand for trips between the city of Visalia and the City of Fresno is expected to increase from 1,700 currently to 3,800 in 2030. Even more trips to the city of Fresno originate in the surrounding non-urban areas of Tulare County.

However, even with significant growth in the coming decades, the low-density nature of employment destinations in Fresno creates a situation where there is unlikely to be a sufficient density of trips to justify new fixed-route transit service in these markets.

Instead, the region should prioritize the promotion and availability of vanpool opportunities for inter-county commuters traveling to the City of Fresno. Fresno is well suited for vanpool opportunities, particularly because it has relatively high parking costs compared to other urban areas in the region. Commutes from the City of Visalia to Fresno are relatively long (43 miles), another factor that recommends vanpooling. Currently, 19 vanpools travel between Tulare and Fresno Counties, carrying a total of 418 one-way trips per day. While trips from the City of Madera are shorter (25 miles), the large and growing market suggests that a significant number of vanpools may be possible in this corridor as well.

There are several ways that the region could seek to attract more of the Fresno commute to vanpools. First, it could seek to market the program more aggressively through employers in the

City of Fresno. The Air District's proposed trip reduction requirements for large employers (discussed below), provide an excellent opportunity for enhanced marketing to employers. The South Valley Rideshare JPA should also seek to direct a certain share of its marketing budget toward employers in the City of Fresno. Second, the region could seek to make more park-and-ride facilities available in Tulare and Madera Counties. Park-and-ride opportunities are discussed further below.

Institutional Arrangements and Costs

Fresno FAX ran a small vanpool program until July, 2008, with most trips occurring between Fresno and Madera. Because of unreimbursed costs, that program was eliminated in July 2008 with the participants being directed to join other vanpool providers in the area. Currently, Fresno COG uses Measure C funds to provide a total of \$500,000 per year to eligible Fresno County residents who wish to form or join a vanpool. The funds provide one-time support to assist in getting vanpool started. It is recommended that the COG continue to supply these funds. Similarly, the JPA agreement may also call for Madera and Tulare County COGs to provide similar vanpool subsidies in the future as the inter-county commute demand increases and funds become available.

5. Provide a single Valley-wide ride-matching and vanpool website.

There are currently several websites that offer vanpooling opportunities and ride-matching services in the San Joaquin Valley. The San Joaquin Council of Government's Commute Connection provides a comprehensive set of ridesharing resources on its website (commuteconnection.com), ranging from a ride-matching database, to information about its GRH programs, and cost calculators detailing the benefits of ridesharing. The website also markets vanpools. KCAPTA manages the South Valley Rideshare website (southvalleyrideshare.com), which also provides a ride-matching database. Two other websites promote ride-matching services and promote vanpooling in the Valley: Fresno COG also markets the Fresno Clean Air Express Vanpool program on its ValleyRides ridesharing website (valleyrides.com). Kern Commuter Connection (commutekern.org) markets vanpools to commuters in Kern County. It would simplify the process of ridesharing to have a single portal website where Valley commuters could go to seek information. Employers, counties, and council's of government throughout the Valley could link to this common website. In developing a Valley-wide ride-matching portal, the region may also wish to create a combined ride-matching database. Doing so would enhance ridesharing opportunities for commuters traveling between Valley sub-regions.

Institutional Arrangements and Costs

A regional ride-matching and vanpool website could be jointly managed by the two regional ridesharing entities. A group of San Joaquin Valley councils of government has already begun discussing the possibility of developing a region-wide 511 service. Such a project could be funded in part with District 6 funds. It is recommended that the region continue to pursue this strategy. While the ongoing operation of such a website would not require ongoing operating costs over and above the cost of existing services, development of a new database and website would require up-front investment. Development of such a database would probably cost at least \$100,000. The region may wish to pursue grant funding from the Valley Air District or CMAQ to fund such a project.

6. Invest in more vanpool marketing to choice riders.

New, targeted marketing could increase vanpool's share of the inter-county commute market. Promising avenues for targeting marketing include:

- Direct marketing to employers. Marketing material provided to human resource departments at large employers may be beneficial. Ideally, this type of marketing should be part of a coordinated effort to attract ridesharing investment from large employers that will be required to have trip reduction programs by new Air District regulations. To make information more accessible and to answer questions from potential "customers" a marketing campaign that includes transportation fairs and on-site meetings at large employers is recommended. This type of "high touch" marketing can be time consuming, but has been shown to be most effective, based on experience in the Bay Area.
- Signage at park-and-ride facilities. Many park-and-ride facilities now used in the San Joaquin Valley are surface parking lots shared with shopping malls and other businesses. Signage at these locations could alert potential riders of the existence of convenient commute services. The rights to post this type of signage could be negotiated as part of park-and-ride agreements.
- Billboard advertising on freeways. Billboard advertisements on congested commute corridors could help to alert single-occupancy drivers to other commute choices.
- Signage on vehicles. Advertisements on vans, with contact information, could also alert drivers of the opportunity to share a ride.

Institutional Arrangements and Costs

Additional marketing of vanpools should be carried by the two regional ridesharing entities. Currently, Commute Connection has a total marketing budget of \$100,000. Commute Connection should consider shifting some of these resources to the vanpool marketing strategies described above as appropriate.

During 2008, KCAPTA spent just \$10,000 on marketing and outreach for its general worker vanpool program. The program grew primarily through word of mouth. However, in order to expand outside of its core market on corrections workers, the program will have to invest further in marketing.

7. Expand park-and-ride opportunities.

Most program participants currently access vanpools by driving to a central location and parking. However, the supply of secure, well-lit parking available to commuters is limited. Vanpool opportunities could expand faster if more park-and-ride lots were available; strategically located lots could also benefit existing fixed-route transit service.

Vanpool programs should work to develop a coordinated strategy to negotiate for expanded rights to park-and-ride access to underutilized business parking lots. These agreements, if necessary, should use program funds to compensate parking lot owners for facility wear-and-tear. Agreements may be easier to negotiate during an economic downturn, when some businesses will be experiencing lower-than-normal parking demand. It may be particularly fruitful to seek shared parking agreements with businesses that have peak parking demand outside of normal commute hours, such as restaurants and movie theatres.

Local governments should also seek to use the development approval process to acquire the rights to park-and-ride facilities. In the approval process for a large new development that includes required parking, localities should require a certain percentage of the required parking to be made available for park-and-ride facilities. The ridesharing entities and/or councils of governments should facilitate this policy by developing guidelines for local legislation.

In October 2007, San Joaquin COG adopted a San Joaquin County Park-and-Ride Master Plan. This plan incorporates corridor-level park-and-ride demand estimates for the next 10 years and identifies potential lot locations for current and future development. The plan has received Caltrans' endorsement and is supported by member jurisdictions. This plan should serve as a template for other counties in the region wishing to enhance park-and-ride opportunities.

Institutional Arrangements and Costs

Currently, Commute Connection allocates \$250,000 every two years toward the lease and maintenance of park-and-ride facilities in San Joaquin County. This investment is funded solely by San Joaquin COG and is not provided in Stanislaus County. It is recommended that the county continue to invest in this way. Stanislaus and Merced County councils of government should consider making funds available to Commute Connection to secure rights to appropriately located park-and-ride facilities in those counties. KCAPTA currently negotiates access to park-and-ride lots on an informal basis, and has entered into small financial agreements to compensate property owners for use of some parking lots. To expand the program, it should consider making an ongoing investment in park-and-ride facility access, on the scale of the program now carried out by Commute Connection. This type of investment could not be covered by participant fees and would require additional investment by member COG's.

8. Offer Guaranteed Ride Home throughout the Valley.

Guaranteed Ride Home (GRH) programs complement carpool, vanpool, and transit offerings by providing a reliable ride home when an unexpected emergency arises. Enrolled participants are generally offered a limited number of free emergency rides home per year, in the case of personal emergencies or unscheduled overtime. The program can contract with private taxi companies to provide rides. While few participants ever need to rely on the service, this arrangement allows more commuters to choose vanpooling or transit with the peace of mind that comes with knowing they will never be stranded at work.

Institutional Arrangements and Costs

Commute Connection offers Guaranteed Ride Home in Stanislaus and San Joaquin County. It is recommended that this service be expanded, along with vanpool offerings, to include the large number of Merced County residents expected to commute into Stanislaus County. Kings Area Vanpool currently offers emergency rides home to vanpool participants on an information basis, but has no formal GRH program.

It is recommended that Guaranteed Ride Home be added as a service of the regional Vanpool entity being created in the southern counties of the region. This service should be marketed through the regional rideshare portal website. GRH should be packaged as part of the trip reduction program offered to large employers as a means of satisfying the Air District's proposed trip reduction rule. Resources supplied through this arrangement could partially fund the program.

Commute Connection does not currently separate out the costs of its GRH program from other budgeted marketing costs. However, costs for Alameda County's GRH program provide a useful

guide to potential costs. Currently, Alameda County's GRH program has 188 registered employers and 4,327 registered employee participants. Because the program is designed as insurance and is not intended to be used frequently, it provides an average of just 9.9 trips per month. The total cost of providing trips was just \$6,400 in FY 2008; additional direct costs and materials bring the cost of the program to \$12,820 per year, or about \$3 per enrolled participant. The costs of providing rides in the San Joaquin Valley might be somewhat higher, as commute distances are longer. The ridesharing organizations should also budget for administration and evaluation time, up to one-half time for a full time employee.

It should be noted that the expense of a Guaranteed Ride Home program need not be included in the costs that the vanpool programs pass along to riders as fares. The region may seek other funds to pay for GRH, including employer contributions and air district funds.

9. Seek to influence the development of the new Air District trip reduction rule, so that it can fund and promote ridesharing to large employers.

The San Joaquin Valley Air Pollution Control District is in the process of recommending regulations (Rule 9410) that will require large employers (those with 100 or more workers) to establish an employee trip reduction program. The goal will be to reduce vehicle miles travelled from employee commutes, along with associated emissions.

The air district may establish one or more of the following: Menu option-based trip reduction program implementation; Tiered mitigation measures based on employer size; Emissions or VMT reduction targets; Average Vehicle Ridership (AVR) targets; Partnership with well-established ride-share programs; Environmental Protection Agency's (EPA) "Best Workplaces for Commuters" recognition; Toolkits and/or training for employers; or periodic reporting requirements to evaluate performance. Under such a rule, possible trip reduction strategies may include carpooling, vanpooling, transit passes, flex schedules, telecommuting, ride-matching, bike racks, lockers and showers, and other strategies to encourage commuting by modes other than single-occupancy vehicle.

While individual employers could develop their own trip reduction programs, it would benefit both employers and regional agencies to create a coordinated regional program to meet these goals. Under this scenario, the regional ridesharing programs (Commute Connection and South Valley Ridesharing) would provide large employers with a coherent program of marketing, ride-matching, subsidized vanpools, and other services that would be designed specifically to meet the Air District's requirements. In exchange, large employers could provide these programs with financial support they could use to fund services. A portion of the funding could also be directed towards securing park-and-ride facilities in origin communities. Direct marketing of vanpools to employees at participating large employers may be among the most efficient ways to attract new vanpool participants, as a new vanpool requires a critical mass of participants from a single employer.

The regional ridesharing entities, and their participating MPO's, should seek to influence the development of the Air District's trip reduction rule so that it makes this arrangement possible. The MPO's should immediately begin collaborating with the Air District planners developing the rule, and should jointly provide public comment on any draft rule released. The goal should be a final rule with robust trip reduction requirements, and a rule that specifically recognizes the regional ridesharing entities and their ability to provide a package of trip reduction services to help employers meet the those requirements.

Institutional Arrangements and Costs

As of April 2009, the Air District's rule is still in development. A draft rule will be released in May 2009, at which point the public will have the opportunity to provide comment. The Air District aims for board adoption by December, 2009. It is recommended that the councils of government and the major ridesharing agencies jointly provide input during the public comment period for the draft rule, and begin to develop a specific program of services in coordination with the Air District once the rule is adopted.

The amount of revenue that could be generated through the program would depend upon the nature of the requirements and the scale of trip reduction they require from large employers.

Inter-county Express Bus

Currently, seven San Joaquin Valley transit agencies provide at least some bus service across county lines. Four agencies provide service between the San Joaquin Valley and neighboring regions. While much of the Valley has employment trip densities far too to support commuter transit service, the key corridors identified through this study (northern SR 99 corridor to Sacramento; northern SR 99 corridor to the Bay Area; Madera and Visalia to the City of Fresno; northern LA County to Edwards Air Force Base in Eastern Kern County) have the greatest potential for commuter express transit services.

Recommendations for express bus services are as follows:

10. Maintain existing inter-county commuter service.

The following services currently provide bus service between the San Joaquin Valley and neighboring regions:

- The San Joaquin Regional Transit District's "San Joaquin Commuter" subscription-only routes from San Joaquin County to the San Francisco Bay Area and Sacramento. This service makes up more than half of the inter-county bus routes in the region. It is also the most productive bus service, at 16.7 passengers per hour.
- Modesto Area Express's Altamont Commuter Express and Bay Area Rapid Transit Express services from Modesto. These services provide connections to rail service to the Bay Area.
- Kern Regional Transit's East Kern Express route provides traditional fixed-route bus service over the 90 miles from Bakersfield to Lancaster in Los Angeles County.
- YARTS provides a niche service, carrying park visitors and employees from Merced to Yosemite National Park in Mariposa County.

The existing inter-regional routes overlap in a logical way with key high-demand inter-county commute corridors identified in the travel demand analysis assembled for this study. This study has identified the northern SR 99 corridor to the San Francisco Bay Area and Sacramento as the highest-demand commute corridors: San Joaquin RTD's subscription routes to Sacramento and Bay Area commute destinations provide Stockton-area commuters access to a wide variety of important destinations. Similarly, Modesto MAX's feeder services to ACE and BART do an outstanding job of connecting Modesto-area commuters to Bay Area markets. Both sets of commuter routes are well-utilized and cost-effective. These agencies should work to maintain funding for these important services. Kern Regional Transit's East Kern Express provides the only existing transit link from Bakersfield to the Los Angeles region's Metrolink in Lancaster. YARTS

provides cost-effective transit service to both visitors and employees traveling from Merced to Yosemite National Park. The region should work to maintain funding such that the existing routes can be maintained at their present levels of service.

Institutional Arrangements and Costs

Currently, all transit providers in the Valley face reductions in operating revenue due to the State transit funding cuts, and many also face declines in local revenue. Modesto MAX recently raised fares for its ACE and BART commuter routes; San Joaquin RTD cut commuter routes 157 and 162, replacing them with adjustments to service on routes 151, 167, and 160.

In this extremely challenging funding environment, the primary goal of the region with respect to inter-county commuter express bus service should be to maintain the existing level of service, and to expand strategically as funding becomes available. This study does not recommend the creation of new institutional arrangements to provide transit in the Valley.

11. Enhance San Joaquin Regional Transit District subscription routes to Sacramento and the San Francisco Bay Area as funding becomes available.

San Joaquin RTD's 19 subscription routes to Sacramento and the Bay Area offer an efficient and well-utilized commute option for workers traveling in some of the region's highest-demand corridors. Together, these subscription routes carry more than 1,300 passengers per weekday, at a rate of 16.7 passengers per hour. Each of these routes makes a single daily round trip, and most routes are destined for the doorsteps of major employers. For employees of those companies, then, the routes essentially amount to a shuttle service—and a commute option that is significantly cheaper than driving.

There are currently three buses serving two subscription bus routes to Sacramento. Route 165 travels from west Stockton via I-5 to downtown Sacramento. It arrives in downtown Sacramento at 6:50 AM and departs at 4:47 PM. A second Route 165 bus makes the same trip arriving in Sacramento at 6:05 AM and departing at 4:35 PM. Route 163 travels to downtown Sacramento via SR 99. This bus arrives at 6:50 AM and departs at 4:29 PM. These routes are currently oversubscribed, and demand may grow with time: the travel demand analysis conducted for this study projects 4,700 daily commute trips between Stockton and Sacramento by 2030. While this study recommends that the region continue to evaluate the possibility of expanding rail service in this corridor, rail service will take years to implement. In the meantime, San Joaquin RTD should prioritize expanded subscription bus service through the corridor, should funding become available. A wider offering of departure times may help to expand ridership.

San Joaquin RTD also has 15 routes serving the employment centers of the San Francisco Bay Area, including the Tri-Valley and Silicon Valley. Six provide service from Stockton, Manteca, and Escalon to Lawrence Livermore National Laboratories and Sandia Labs, just across the Altamont Pass from San Joaquin County on the west side of Livermore. One provides service to Hacienda Business Park in Pleasanton, and one serves the Dublin/Pleasanton BART station. Nine routes serve the job centers of Silicon Valley, including Sunnyvale, Mountain View, Milpitas, Santa Clara, and San Jose. San Joaquin RTD should focus on maintaining existing service, and expanding the highest-demand routes as funding becomes available.

The agency may also wish to consider a number of technology improvements that would improve the service experience for passengers. Providing wireless internet on-board the bus would allow many commuters to begin working as soon as they board – a huge advantage in the case of long

inter-county commutes. Wireless internet has been successfully deployed both on private, employer-based bus systems (such as the Google and Microsoft shuttle systems), and public express bus systems (such as FrontRange Express in Colorado). Deploying a web-based scheduling product would allow passengers to easily make a reservation in advance, and would allow occasional riders to take advantage of excess capacity.

Institutional Arrangements and Costs

San Joaquin RTD should continue to operate its commuter routes under existing institutional arrangements. Routes should be added to serve unmet demand as funds become available.

12. Study express bus service between Lancaster Metrolink and Edwards Air Force Base.

The travel demand analysis conducted for this study identified 12,000 daily commuter trips to the San Joaquin Valley region from the Los Angeles region, expanding to 26,000 trips by 2030. It is likely that a very large share of these commute trips represent northern LA county residents bound for jobs at Edwards Air Force Base, which employs 20,000 people.² The Kern Council of Governments has proposed rail investments to serve this commute market. Service would include a 12-mile extension of the MetroLink from Lancaster to the Kern County City of Rosamond. A feeder bus service could then connect Rosamond with the Edwards Air Force Base.

A commuter rail extension to Rosamond has been discussed in Kern County for many years. This service has several advantages. It could serve a significant number of workers traveling to the air force base, who currently have no transit options, although a shuttle to the air force base would still be necessary. It makes use of the existing freight rail right-of-way between Lancaster and Rosamond. California High Speed Rail is likely to use this same right-of-way, and the service could keep the capital costs of the project low by piggybacking off of high-speed rail investments. The extension would also allow Metrolink to serve as feeder service connecting eastern Kern County to High Speed Rail, which will have no stops between Bakersfield and Palmdale. Finally, it could also serve eastern Kern County commuters traveling the Los Angeles area; while this study did not identify this southbound commute as competitive for transit, the additional train service would benefit some Kern County commuters.

However, the proposal also has several weaknesses in the near term. As the terminus of the proposed rail extension, the town of Rosamond has just 14,000 residents and few jobs. Nearly all potential northbound passengers of the service would be those traveling to the air force base, and every one of these passengers would then be required to transfer to a separate bus service traveling a further 15 miles to Edwards. In addition to the transfer penalty imposed on passengers, this situation poses a difficult operational issue for transit service: if the service attracted enough passengers to justify the high capacity of commuter rail, it would then require enough shuttle buses waiting at the Rosamond rail station to carry a full load of train passengers at the same time.³

² It should be noted that this study has evaluated only the demand for commute trips between counties. As a result, it does not speak to the very long commutes undertaken by some residents of Kern County, which is more than 8,200 square miles and comprises one-third of the 8-county region's area. There may be the potential for expanded commuter express transit, including commuter rail, entirely within Kern County.

³ In the past, Edwards Air Force Base has not been receptive to proposals to extend bus service onto its grounds. Either an extension of Metrolink with a shuttle connection to the base, or a direct express bus connection, would require the support and participation of Edwards Air Force Base.

An appropriate near-term step would be to study the implementation of one-way, peak-oriented express bus service between Lancaster Metrolink Station and Edwards Air Force Base. Express bus could provide a standard of service similar to rail in this uncongested corridor, and it could also be implemented faster, without the transfer penalty of switching from rail to bus in Rosamond.

Institutional Arrangements and Costs

Kern County should conduct a corridor-specific study to assess one-way, peak-oriented express bus service between Lancaster Metrolink Station and Edwards Air Force Base. The cost of the new route would depend on the level of service required. It is likely that the unit cost of providing the service would be similar on a per-hour basis to the cost of the existing East Kern Express between Bakersfield and Lancaster. A partnership between Kern County, Los Angeles County, and the air force base could provide funding. Should there be a very high level of demand; the operator could then study the feasibility of adding rail service in part of the corridor. Investments could then be planned in coordination with the implementation of High Speed Rail.

Commuter Rail

Nearly half of the San Joaquin Valley's inter-county commuters travel not between Valley counties but between the Valley and the neighboring San Francisco Bay Area and Sacramento areas. Most commuters must travel along the extremely congested Interstate 580, while Sacramento drivers must choose either SR 99 or Interstate 5. These congested freeways are likely to become increasingly congested in the coming decades. High trip densities, congested roads, and the opportunity to connect to dense downtowns and high quality local rail service on the destination end make these corridors good candidates for commuter rail service.

The Altamont Corridor is already served by the region's only existing commuter railroad, the San Joaquin Regional Rail Commission's Altamont Commuter Express (ACE). It provides cost-effective service through the high demand travel corridor from Stockton into the Tri-Valley and Silicon Valley job markets. While there is no commuter-oriented rail service between San Joaquin County and Sacramento County, Amtrak operates four daily San Joaquin trains from Sacramento to Stockton, using the UP/SP route out of Sacramento. South of Stockton, these trains continue to Bakersfield using the BNSF right-of-way.

Expanding and improving passenger rail service in these corridors may be the best way to serve San Joaquin Valley commuters in the coming decades. For San Joaquin Valley commuters, the advantages of rail over bus service are clear: efficient rail service can help commuters avoid delays due to freeway congestion. The most practical way to enhance commute options for these commuters may be for the Valley to advocate for regional, state, and federal investments in rail service improvements. It should be noted that while rail improvements are critical to serving some of the key corridors for inter-county and interregional commutes, effective rail service requires reasonable frequencies and travel times, and detailed planning for "first mile and last mile" connecting service.

Recommendations for commuter rail are as follows:

- 13. Develop a coordinated regional advocacy plan for enhanced state and federal investments in commuter rail.**

All of the rail upgrades recommended by this study will require new state and federal funding commitments. The communities of the San Joaquin Valley should develop a coordinated program

of proposed rail improvements, and should work in a coordinated fashion to lobby for funding to carry out these improvements. With a coordinated vision of the rail improvements necessary for the future of the region, the San Joaquin Valley will be better positioned to lobby for funding as opportunities arise. With a renewed federal commitment to inter-city rail investments, including significant new resources made available through the American Reinvestment and Recovery Act, coordinated action may prove particularly fruitful in the near term.

The Valley has a history of such coordinated lobbying. In 2008, after environmental review selected the Pacheco Pass as the preferred alternative for California High Speed Rail to enter the San Francisco Bay Area, the San Joaquin Valley Councils of Governments worked with communities in the Tri-Valley to form the Altamont Partnership. This group successfully lobbied the California Assembly to pass AB 3034, legislation that made the Altamont Pass an eligible corridor to receive funds from California High Speed Rail bond funds. After California voters approved \$9.95 billion for California High Speed Rail through proposition 1A, high speed train-compatible upgrades to the Altamont Corridor became eligible for a portion of those expenditures. The region should consider the success of the Altamont Partnership as a model for future coordinated action.

Institutional Arrangements and Costs

It is recommended that the Valley form positions on proposed rail improvements through the existing San Joaquin Valley Policy Council, a body made up of the region's councils of government. Once policy positions have been taken, the Council should designate specific organizations or individuals to speak on its behalf in the appropriate forum.

14. Work as a unified Valley to upgrade ACE.

With more than 25,000 commute trips per day traveling from the San Joaquin Valley over the Altamont Pass to jobs in the San Francisco Bay Area, and more than 50,000 daily trips expected by 2030, ACE train service is a critical resource for the region's inter-county commuters. The region should work to ensure that the system's capacity increases along with demand. In 2008, the Altamont Partnership created a prioritized list of possible capital improvements that could benefit ACE service. They are:

Short Range ACE Corridor Improvements:

- Increase service to at least 12 trains (from current 8)
- Upgraded signaling
- Dispatching Improvements
- Altamont Slide Repairs
- Niles Canyon Drainage Improvements
- BNSF Crossing Improvements
- Increase Speed in curves as possible
- Additional sidings/passing tracks to speed operations and allow increase in service
- Purchase rolling stock to support expanded service

Mid Range ACE Corridor Improvements

- Purchase new rolling stock to support expanded and higher speed service
- Provide additional dedicated ACE track on Fresno Subdivision and purchase Tracy Subdivision to create a dedicated corridor from Stockton to Lathrop
- Double-track existing ROW where possible to separate freight and passenger rail service including operating on ACE owned track parallel to UP track from East Livermore to Hearst
- Construct track in former SP Right-of-way owned by Alameda County between Midway and East Livermore, and relocate service to that trackway
- Grade separations
- Station Improvements to support increased service frequency

Longer Range ACE Corridor Improvements

- Increase service to 20 minute bi-directional peak hour service, plus regular midday service up to every half hour
- Operate a dedicated ACE/Regional Rail corridor throughout the length of ACE service through additional right-of-way acquisitions and new trackage
- Evaluate options including purchase of right-of-way/tunneling, and signalization as necessary to create a more direct, level alignment through Niles Canyon to support increased service
- Evaluate options including purchase of right-of-way/tunneling, and signalization as necessary to create a more direct, level alignment through Altamont Pass to support increased service
- Evaluate options including purchase of UP Warm Springs Subdivision to support increased service from Niles to Diridon Station
- Complete other improvements as necessary to support high speed equipment operating on regional rail corridor, including electrification
- Purchase additional rolling stock compatible with high speed service
- Make additional station improvements as needed to support higher frequency higher speed service

Institutional Arrangements and Costs

The region should continue to lobby for state and federal funding to help accomplish each of these improvements. Recent voter approval of \$9.95 billion in bond funding for California High Speed Rail increases the likelihood of significant upgrades to this corridor. However, the total package of improvements will require far more investment than the High Speed Rail project will make available. The Altamont Corridor may also be eligible for federal funds made available through the American Reinvestment and Recovery Act.

The Altamont Partnership continues to function, and collaborates regularly with the California High Speed Rail Authority. The San Joaquin Council of Governments sits on this working group. A further statement of support for ACE corridor upgrades from the San Joaquin Valley Policy

Council, representing the entire Valley including areas not directly served, would give weight to the Valley's interests.

15. Work as a unified Valley for a direct ACE/BART connection.

The travel demand analysis completed for this study shows that while many San Joaquin Valley commuters to the Bay Area have destinations in the Tri-Valley and Silicon Valley, a significant share also travel to destinations along the Bay Area Rapid Transit (BART) network. However, there is currently a one-mile gap between the terminal BART station in Dublin Pleasanton and the ACE station in Livermore. A seamless connection between ACE and BART would provide not only a fast rail trip to many destinations, but a distribution network on the BART system that is well matched to the destinations of San Joaquin Valley travelers. A direct ACE/BART connection was also identified as needing improvement by the Bay Area's Regional Rail Plan.

Institutional Arrangements and Costs

BART is currently nearing completion of a draft environmental review document for an extension to Livermore. It is likely to cost more the \$1 billion, and would require both regional and local investments. The alternatives under consideration would all create an ACE/BART connection. However, some allow for more convenient connection than others, and alternatives that allow for an easy intermodal transfer would best serve the interests of Valley commuters.

Representatives from ACE and the San Joaquin Council of Governments have participated in the regional Policy Advisory Committee helping to guide decision-making for this project. They should continue to do so. The San Joaquin Valley Policy Council should deputize the San Joaquin COG to speak on its behalf on this committee, and provide a letter of support expressing a clear position on the draft EIR when it becomes available.

16. Work toward expansion of commuter rail service between Merced and Sacramento.

The travel demand analysis carried out for this report shows that the cities on the northern SR 99 corridor between Merced and Sacramento include several of the strongest travel demand markets in the study area, and will see some of the greatest growth in the coming decades. By 2030, there will be 2,300 commuter trips between Merced and Modesto, 4,000 between Modesto and Stockton, and 4,700 commute trips between Stockton and Sacramento. While Amtrak currently provides passenger train service north and south throughout the whole Valley, its schedules and its fares are not oriented towards daily commuters.

To best serve this market and to capitalize on existing rail infrastructure, the San Joaquin Valley should continue to explore the possibility of implementing commuter rail levels of service between Merced and Sacramento. Like ACE service in the Altamont Corridor, high quality commuter rail in this corridor has the potential to capture a significant share of the market. Merced to Sacramento train service could also be scheduled to allow connections to existing ACE service, to allow travel from Merced and Stanislaus communities to the Bay Area as well as Stockton and Sacramento.

The full length of this corridor is over 100 miles, representing nearly two hours of drive time under uncongested conditions. The most efficient near-term strategy may include only service between Stockton and Sacramento. Thereafter, expansion to Modesto and Merced may be implemented as growth justifies. Initial service offerings, like ACE, should aim to provide at least three peak-direction, peak-period round trips and one mid-day trip.

Institutional Arrangements and Costs

The San Joaquin Regional Rail Commissions (the operator of ACE) is currently studying the implementation of rail service in this corridor (among others) in the region in its “SJRRRC Service Expansion Analysis”. This study will include the evaluation of several rail service alternatives, including service between Merced, Modesto, Stockton, and Sacramento, using either the Union Pacific (UP) right-of-way, or a combination of the UP and Burlington Northern Santa Fe (BNSF) right-of-way.

Unlike expansion of bus service, commuter rail service implementation would require significant up-front capital investment as well as ongoing operating expense. Detailed cost estimates will be prepared as part of SJRRRC’s study and are not yet available. However, the region could expect that capital investments in right-of-way and rolling stock would exceed \$75 million between Stockton and Sacramento and could range as high as \$200 million from Merced to Stockton. Such high capital costs certainly require the participation of state and federal funding. Following the completion of the study, the San Joaquin Valley Policy Council should take a position on the direction of this project, and inform the SJRRRC of its intention to lobby in support of proposed rail improvements.

17. Invest in great station area planning.

Some commuter rail passengers access train stations using park-and-ride facilities, while others walk, bike, or ride transit to access stations from surrounding communities. As they add new passenger rail services and upgrades existing services, San Joaquin Valley communities should invest in comprehensive station area planning to achieve a balance of station access modes, and to ensure the maximum benefit for local communities.

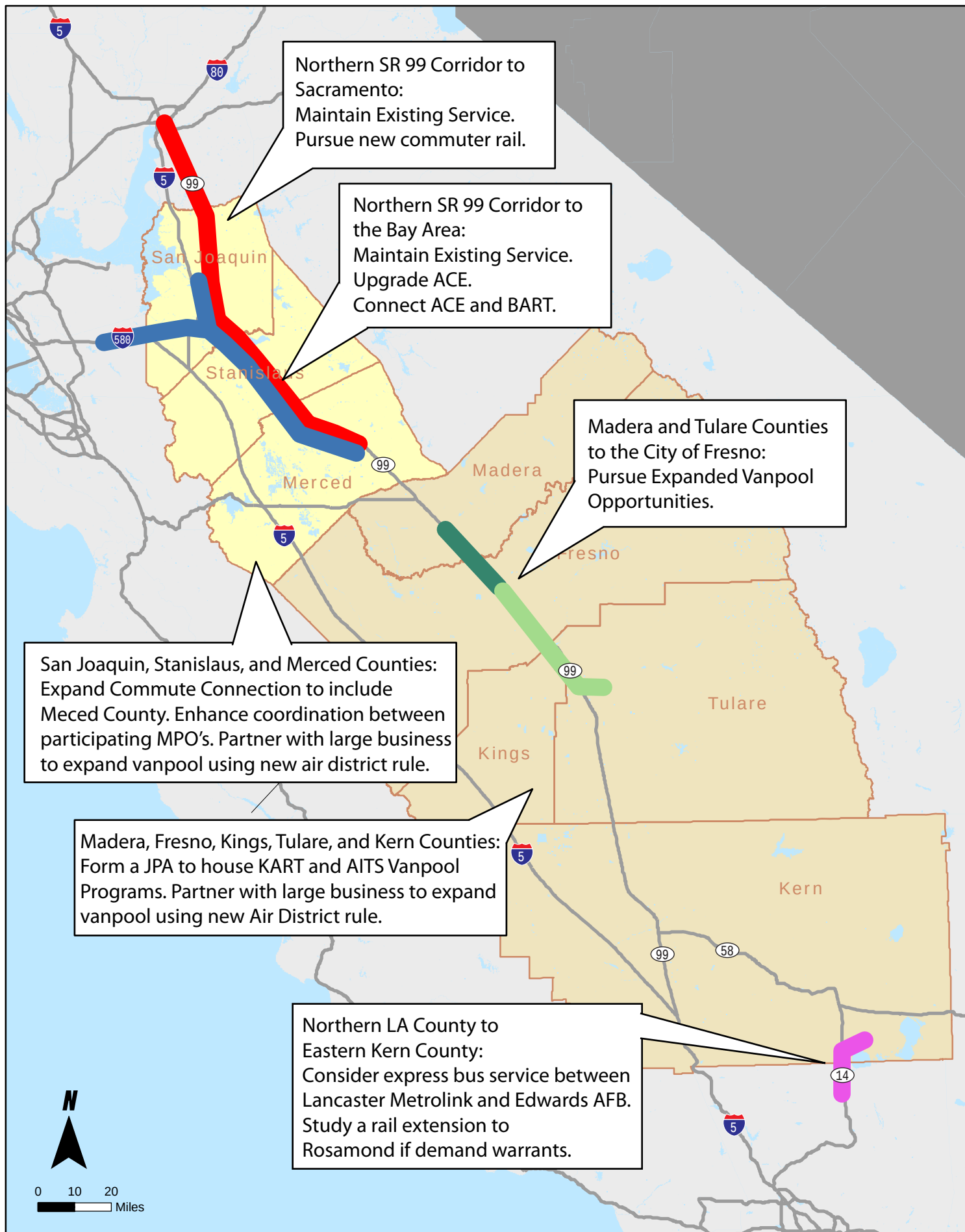
Train stations can anchor vibrant, walkable urban neighborhoods consistent with the character of the San Joaquin Valley’s historic downtowns. Well-planned stations can set aside some land for park-and-ride lots while ensuring priority for pedestrian access. Land-use regulations for the surrounding one-half and one-mile walk sheds can be tailored to allow moderate residential density and a mix of uses. Finally, transit agencies should ensure sufficient feeder transit service connectivity to rail stations.

By adding and upgrading passenger rail service in the densest cluster of urban areas in the region, along with this kind of station area planning, the region can foster more compact and pedestrian-oriented land uses, further reducing vehicle miles travelled and vehicle emissions. This course of action would maximize the value of rail infrastructure investments, and would be consistent with the region’s air quality goals, its recently adopted Blueprint plan, and its obligations under SB 375.

Institutional Arrangements and Costs

MPO’s in the region should dedicate funds to ensure adequate resources for comprehensive station area plans, and local governments should follow through on tailoring appropriate land-use regulations to new station sites. An example of such a program can be found in the San Francisco Bay Area, where the Metropolitan Transportation Commission (MTC) established a station area planning grant program as part of the implementation of its Resolution 3434 Transit Oriented Development Policy. This policy required minimum residential densities in the station areas surrounding major new transit investments. The program made station area planning funds available to localities. The grants ranged in value from \$115 to \$600,000 per station, with the typical grant about \$450,000.

Figure 8-3 Summary of Recommended Services



Summary of Policy Recommendations

The San Joaquin Valley is a large region made up of a diverse group of communities. Regional policymakers should seek to tailor transportation investments based on the specific land use, population, and employment context in each community.

For a majority of the region, investments in ridesharing are the most cost-effective strategy. The region's focus should be on expanding vanpool offerings in both the northern and southern parts of the Valley. The new Air District rule requiring trip reduction programs from large employers offers the opportunity both for a new funding stream, and an effective marketing strategy for expanded vanpool offerings.

The region's existing inter-regional bus offerings match the highest demand corridors. In an extremely difficult funding environment for transit, the region's first priority should be to maintain these services to the extent possible. As funding becomes available, it should consider expanding subscription bus service from Stockton to Sacramento and the Bay Area. The region should also consider implementing bus service between Lancaster Metrolink station and Edwards Air Force Base in Eastern Kern County.

Finally, the region's long-term vision for its highest demand corridors should include significant upgrades to commuter rail service. The region should lobby for state and federal funds to upgrade the speed, capacity, and reliability of ACE, and to add a similar service between Sacramento and Stockton (and perhaps as far south as Merced). If demand warrants, the region should also consider extending LA Metrolink into eastern Kern County. To the extent possible, all passenger rail investments should seek to capitalize on California High Speed Rail investment.

Figure 8-4 Summary of Policy Recommendations

Recommendation	Next Steps	Who's responsible?
Ridesharing/Vanpool		
1. Continue with plans to form a Joint Powers Authority in the southern portion of the Valley to operate KART and AITS Vanpool.	Review and comment on draft JPA agreement.	KCAPTA; Kings, Madera, Fresno, Tulare and Kern COGs.
2. Expand Commute Connection's service area to include Merced County, and enhance coordination between the participating MPO's.	Meet to discuss adjustments to program structure and governance.	San Joaquin, Stanislaus, and Merced County COGs.
3. Commute Connection should consider a pilot test lease-purchasing vanpool vehicles.	Pilot test would follow any adjustments to program governance. Put out bid for lease-purchase of vehicles. Investigate Air District grant funding for pilot test.	Commute Connection.
4. Prioritize vanpooling to Fresno.	Adjust marketing program, increase funding for park-and-ride lot access.	South Valley Rideshare JPA.
5. Provide a single Valley-wide ride-matching and vanpool website.	Following the creation of two regional ridesharing JPA's, coordinate on the creation of a combined ride-matching database.	Commute Connection, South Valley Rideshare JPA.
6. Invest in more vanpool marketing to choice riders.	Consider revising marketing programs. South Valley Rideshare JPA should increase general worker vanpool program marketing budget.	Commute Connection, South Valley Rideshare JPA
7. Expand park-and-ride opportunities.	Consider increasing park-and-ride investments; draft conceptual guidelines for local park-and-ride ordinance.	Commute Connection; South Valley Rideshare JPA; All councils of government
8. Offer Guaranteed Ride Home throughout the Valley.	South Valley Rideshare JPA should seek funds to start a GRH program following creation of JPA.	South Valley Rideshare JPA
9. Seek to influence the development of the new Air District trip reduction rule, so that it can fund and promote ridesharing to large employers.	Jointly submit comments on draft Air District Rule 9401 in May 2009.	Commute Connection; KCAPTA; San Joaquin Valley Policy Council
Inter-county Express Bus		
10. Maintain existing inter-county commuter service	Maintain existing service during budget cuts.	Modest Max; San Joaquin RTD; YARTS; Kern Regional Transit.
11. Enhance San Joaquin Regional Transit District subscription routes to Sacramento and the San Francisco Bay Area as funding becomes available.	Evaluate funding availability and commuter transit demand in next budget cycle.	San Joaquin RTD
12. Study express bus service between Lancaster Metrolink and Edwards Air Force Base.	Contact Edwards AFB about openness to project; design study.	Kern COG
Commuter Rail		
13. Develop a coordinated regional advocacy plan for enhanced state and federal investments in commuter rail.	Prioritize rail projects for advocacy purposes.	San Joaquin Valley Policy Council
14. Work as a unified Valley to upgrade ACE.	Formally adopt position of support for ACE upgrades; draft letter of support.	San Joaquin Valley Policy Council; San Joaquin COG
15. Work as a unified Valley for a direct ACE/BART connection.	Following release of drafter EIR, adopt position and draft letter of support for preferred alternative.	San Joaquin Valley Policy Council; San Joaquin COG; San Joaquin Regional Rail Commission
16. Work toward expansion of commuter rail service between Merced and Sacramento.	Following completion of SJRRC study, adopt position and draft letter of support for preferred alternative.	San Joaquin Valley Policy Council; San Joaquin COG; San Joaquin Regional Rail Commission
17. Invest in great station area planning.	Consider investing in station area planning grant program.	All COGs

APPENDIX A

SUMMARY OF STAKEHOLDER INTERVIEWS WITH EMPLOYERS AND BUSINESS ORGANIZATIONS

Appendix A. Summary of Stakeholder Interviews with Employers and Business Organizations

The following individuals were interviewed:

- Jennifer Krumm and Mark Melville, Merced Chamber of Commerce (Merced)
- Joy Madison, Modesto Chamber of Commerce (Modesto)
- Sister Abby Newton, St. Joseph's Medical Center (Stockton)
- Greg Greenwood, San Joaquin Delta College (Stockton)
- Gloria Montes de Oca, Deuel Vocational Institute (Tracy)
- Abby Rivera, Del Monte Processing Plant (Modesto)
- Amy Thomas, California State University, Stanislaus (Turlock)
- Amy Armstrong, Fresno State University (Fresno)
- Lauren Daly, Foster Farms (Fresno)
- Don Champ, Avenal State Prison (Avenal)
- Kent Delpe, General Manager, Wal-Mart Distribution Center (Porterville)
- Jame Parish and Dan Fadness, San Jose Chamber of Commerce (San Jose)
- James Paxson, Hacienda Business Park (Pleasanton)
- Susan Houghton and Kirsten Sprott, Lawrence Livermore National Laboratories (Livermore)

Summary of Responses by Respondent San Joaquin County

Sister Abby Newton, VP for Mission Integration, St. Joseph's Medical Center, Stockton

We spoke with Sister Abby Newton, Vice President for Mission Integration at St Joseph's Medical Center in central Stockton. The facility employs approximately 2,400 people. She described transit service to the facility as "paltry," and said the 2-3 bus routes "don't go where our employees live." There is some nearby express transit service from North Stockton, but it does not stop at St. Joseph's. She notes that "I think if it did, our employees would use it, especially in bad weather."

She notes that it is "very difficult to get people to carpool. The hospital has 8, 10, 12 hour shifts – to get a critical mass from one area and also the same time is very difficult." However, carpooling has tripled in the last 18 months. There is a large off-site parking lot that was built while they were undergoing construction. There had been "lots of resistance to parking there at first, but now 'it's a cult'. People actually enjoy the interaction with others in the shuttle to the hospital." There is an Amtrak bus that goes to Sacramento, but riders need a train ticket to get on the bus. Currently, the hospital provides employees with free bus passes and allows for pre-tax deductions for

carpooling and vanpooling. She says that she “doesn’t know if we would fund” new transit service.

Greg Greenwood, Public Information Office, San Joaquin Delta College, Stockton

We spoke with Greg Greenwood, Public Information Officer for San Joaquin Delta College in Stockton. The college employs roughly 1,200 people, and has roughly 22,300 students. Approximately 20% commute from outside the county. Most employees work between 8 AM and 5 PM. The student load is primarily between these hours as well.

San Joaquin RTD currently offers bus service to the campus. The school offers discounts on RTD passes, but has no carpooling or ridesharing incentives. About 900 students arrive by bus each day during the fall and spring semesters. The school’s major transportation concern has to do with parking, which is “very impacted.” The campus has 4,500 parking spaces and 22,300 students.

About 80% of students live inside the county. There is also a significant population of students from Lodi, which already has transit service to the college. He stated, however, that “any service from the outlying areas of our district would be a benefit.” He is not sure whether the college could contribute to new transit service.

Gloria Montes de Oca, Deuel Vocational Institute (Correctional Institution), Tracy

We spoke with Gloria Montes de Oca, Human Resources, at Deuel Vocational Institute, a large correctional institution in Tracy. She stated that the facility has 1,300 employees, including 800 guards and 500 support staff. Guards work 6AM to 2 PM, 2 PM to 10 PM, and 10 PM to 6AM. Support staff works 8AM to 4:30 PM.

About 25% commute from outside the county. Major origin locations are Sacramento, Modesto, Stockton, and many live locally in Tracy. A large number of employees live in either Sacramento or Modesto, with some also coming from the Bay Area.

There is no mass transit at all to this location. There is some rail service that goes right by the facility but it does not stop there. The facility itself does not have formal ridesharing programs, but many employees participate in the state’s \$65 per month subsidy for vanpooling for corrections workers. Many other workers rideshare in carpools that are established through word of mouth and through flyers posted in employee areas of the facility asking for riders from various locations.

She stated that “everyone is concerned about gas prices and the expense of commuting long distances.” She was enthusiastic that commuter express transit service would be of benefit to employees. She suggested service from Sacramento through Rancho Cordova and Stockton; and from Modesto through Manteca to Tracy. She doubts that the institution would contribute toward funding new transit service.

Stanislaus County

Abby Rivera, Personnel Manager, for the Del Monte Processing Plant in Modesto

We spoke with Abby Rivera, Personnel Manager, for the Del Monte Processing Plant in Modesto. The facility currently employs 1,450 people, of which approximately 20% commute from outside Stanislaus County. A significant portion of these are seasonal employees. There are three shifts: 6AM to 2 PM, 2 PM to 10 PM, and 10 PM to 6AM. The facility itself is 84 acres. Del Monte does not offer carpooling programs, but a lot of employees do carpool, particularly from San Jose and Stockton. The carpools are arranged by word of mouth through friends, relatives, and co-workers. She notes that employees occasionally miss work because of transportation problems. These cases mostly involve employees coming from San Jose.

There is currently no transit service to the facility, although Amtrak passes the site and there is some freight service. She believes that commuter express transit service would be of help to their employees, particularly those coming from San Jose and Stockton. Asked whether the company would consider contributing toward transit service for employees she stated that she “doesn’t see why not, but this would have to be approached at a higher level in the company.”

Amy Thomas, Asst. Director of Environmental Health, Safety and Emergency Management at Cal State University, Stanislaus

We spoke with Amy Thomas, Asst. Director of Environmental Health, Safety and Emergency Management at Cal State University, Stanislaus in Turlock. The University has approximately 1,000 employees and 8,000 students. Of these, approximately 30% of employees commute more than 10 miles, and 40% of students live outside the county. Typical work hours for employees are 8 AM -5 PM, Monday through Friday. The student population is generally on site 8 AM to 10 PM, Monday through Thursday.

Most employees arrive at work by driving alone. Primary transportation concerns have to do with “flexibility, independence, money savings, and convenience.” She notes that while there is existing transit service to the campus, few students use it. She feels that “there needs to be more options (more routes, more buses, extended hours).” The University population would benefit from inter-county commute service from Merced, Atwater, Modesto, Stockton, Lodi, and Los Banos.

She stated that the University is “unlikely” to participate in funding new commuter express transit service, because “we are a publicly funded state agency. We cannot use public funds for personal benefit of employees.” Her questions included whether the study would result in providing new commute options. She also asked what service we could offer to motivate employees to consider new commute and/or ridesharing options.

Joy Madison, Executive Director of the Modesto Chamber of Commerce.

We spoke with Joy Madison, Executive Director of the Modesto Chamber of Commerce. Joy noted that most of the organization's members are small companies. Large companies such as

Del Monte, Frito Lay, and Kraft Foods are not involved with the Chamber's activities. The organization's priorities currently are focused on the local water system, which needs \$490 million in capital improvements. Modesto has had to turn down companies looking to invest because no water was available.

Currently, there is significant unemployment in Modesto. The problems in the housing industry have meant loss of construction jobs. She notes that the chamber does not currently run ridesharing or carpooling programs. She notes that Modesto is a "sprawling town," and difficult to serve with transit. She is concerned about infill, because there is "no available land" in Modesto. Ms. Madison did not offer an opinion on the feasibility of commuter express transit for Modesto.

Merced County

Jennifer Krumm, Chief Operating Officer, and Mark Melville, Chair of the Government Review Council, Merced Chamber of Commerce

We spoke to two representatives of the Merced Chamber of Commerce: Jennifer Krumm, Chief Operating Officer, and Mark Melville, Chair of the Government Review Council. The organization represents approximately 650 businesses. Most employees of these businesses drive to work. Mr. Melville stated that ridersharing programs are "something we talk about, but we do not have any formal ridesharing programs." Jennifer stated that "It would be great to have some new (commuter transportation) service to the Bay Area. Right now it is a very long process to get there by public transportation."

A major constraint in the area in San Joaquin Valley as a whole is that people are spread out, and single-county transit services do not "overlap" or cross county lines. Mr. Melville stated awareness of existing SMART service to Merced, as well as SMART service to Dublin/Pleasanton BART. He was not aware of such services from Merced County Transit. He stated that "these kinds of things [here] would definitely be helpful."

Mr. Melville also stated that there is a lot of demand for travel on the west side of the county. For example, there is demand from Los Banos to San Jose/Silicon Valley, and over the Altamont Pass to Livermore and Pleasanton. He noted that "there are a lot of people tired of driving that way." He also stated that west-bound service would have to begin as early as 5 AM in order for people to get to jobs in the Bay Area. He believes that that 50-60% of west valley residents commute to jobs in the Bay Area.

Mr. Melville stated that the Merced business community would consider contributing to new commuter transit service if member businesses could "see, touch and feel the benefit – I think they would support it [contributing towards the funding of new intercounty services]." He went on to describe that one of the major problems faced by Valley employers is a drain of well-educated professionals to jobs in the Bay Area. "We need to do what we can to help keep smart folks in the Valley."

Fresno County

Amy Armstrong, Fresno State University

We spoke to Amy Armstrong of Fresno State University in the city of Fresno. The University currently has a combined 2,355 students, staff, and managers. Typical work hours for the majority of employees are 8 AM to 5 PM (office hours). But they do have classes that go from 6 AM to 10 PM. The University has bus service provided by Fresno FAX. It also provides a ridersharing or carpooling incentive—the university pays \$0.50 per day on the day that an employee chooses not to drive to campus, which is usable at campus eateries, bookstore, and farmer's market.

Funds are redeemed at the end of the calendar month. Currently, about 270 employees participate in the program. Amy believes that the best option is “probably ridesharing to accommodate employees who live further away.” Her interest is to “see fewer cars on the road. So finding ways to match up our employees with a carpool or rideshare partner is a major need.”

She states that primary transportation concerns for students and staff have to do with the rising cost of gas and looking for solutions to cut back on driving. As a result, the University is looking at ways to promote vanpooling and bike riding among the staff. They are also looking at ways to give incentives to reward those people who are taking steps to go alternative.

One of the University's current priorities is promoting alternative transportation so that it can encourage wellness and healthier air at FSU. Beginning in mid-September a group of FSU employees will begin meeting on a weekly basis to discuss alternative transportation. This group includes members of the FSU Police Department, interested staff members, the Department of Risk Management and Sustainability and the Vice President's Office.

The University would consider contributing towards funding of appropriate commuter express transit service.

Lauren Daly, Foster Farms (Fresno County)

We spoke to Lauren Daly, a representative of Foster Farms at its facilities in Fresno County, Foster Farms employs 10,500 people nationally and 3,134 in Fresno County at several locations. The two largest are on Belgravia Avenue (1,020 employees) and Cherry Street (1,865) in the city of Fresno. The facilities have three shifts, beginning at 9 AM , 4 PM, and Midnight. The rest are located in rural areas. The company has a record of just 136 employees who commute from outside the county.

Lauren was not familiar with the existing transit serving the facilities. She said that Foster Farms does not keep commuting data for employees and does not hear about employee's transportation-related concerns. She expressed no opinion about the feasibility of commuter express transit service in Fresno.

Kings County

Don Champ, Institutional Personnel Officer, Avenal State Prison

We spoke to Don Champ, Institutional Personnel Officer, Avenal State Prison in Avenal. The institution has approximately 1,700 full-time employees. The prison is a 24-hour facility, but the shift with the largest number of employees is 6:30 AM to 2:30 PM. There are concentrations of employees coming from Fresno, Bakersfield, Porterville, and Atascadero.

There is currently no transit service to the prison, but 400-500 employees do take advantage of the \$65 per month state subsidy and participate in the KART vanpool program. 11-14 KART vanpool vehicles are parked in the facility's parking lot during a peak shift. An important improvement would be the addition of a guaranteed ride home program for commuters who use carpools and vanpools.

He notes that an important constraint to further ridersharing and transit is that some employees can't share rides by carpool or vanpool because they work odd shifts. Any new transportation services must account for the unique schedule of prison employees.

He further states that inter-county transit service would mainly benefit prison visitors. The prison gets 200-300 visitors per day on Friday, Saturday, and Sunday. Visitors would benefit from transit service connections between Avenal and Hanford, Tulare, and cities served by Amtrak and Greyhound.

Decisions about contributing toward expanded transit service would be made by the State Department of Corrections.

Tulare County

Kent Delp, General Manager, Wal-Mart Distribution Center, Porterville

We spoke with Kent Delp, General Manager of the Wal-Mart Distribution Center in Porterville (Tulare County). The distribution center has approximately 1,250 full-time employees, approximately 85% of which work from 5 AM to 3:30 PM or 5:30 AM to 4 PM. It is located on the southeastern edge of the town of Porterville. He is not sure how many employees commute from outside of the county. There are concentrations of employees who originate in Porterville, Delano, Strathmore, Lindsay, Springville, and Tarrabella. He notes that TCaT does not serve the facility directly, and does not begin serving the town of Porterville early enough to be of use to employees. To be useful to employees, transit would have to begin serving the distribution center during the morning and afternoon peak commute periods. Employees would need service from their home residences, tailored to the distribution center schedule.

He notes that "employees have not expressed concerns about transit, or talked about the need for transit. Because it has not been available, people don't expect it and consequently do not express concerns." He notes that decisions about contributions toward transit service funding would have to be made by the Wal-Mart Corporate Headquarters in Arkansas. The Distribution Center management might advocate for funding if new commuter express transit services met the

needs of their employees. Mr Delpé notes “I think it would be fantastic if we actually had a service that saves the Associates from driving and spending money on gas.”

San Francisco Bay Area

James Parish (Public Policy Manager) and Dan Fadness (Member, Infrastructure Committee), San Jose Chamber of Commerce

We spoke with James Parish (Public Policy Manager) and Dan Fadness (Member, Infrastructure Committee) for the San Jose Chamber of Commerce.

The organization represents 2,000 member companies employing approximately 250,000 people. Information about how many of these employees commute from the San Joaquin Valley is not available, but Mr Parish believes it is a relatively low percentage. Both respondents believe that new transit service to San Jose is essential to mitigate the transportation impacts of all of the new growth and high density development that is happening in San Jose. As Mr. Fadness noted, “the fact is that cities have Level of Service requirements and transit is necessary to help make new development meet standards.”

The chamber supports transit investments not only because they help move people, but also because they create good jobs (in constructing and operating the service, and indirectly in the new development that is spurred by transit accessibility). Increasingly, Chamber members ask whether a transport investment is going to ‘make us a greener area,’ ‘will it be cost-effective,’ and is it ‘economically sound.’ Members are concerned about the price of transport – particularly with escalation of fuel prices recently. Both also noted that transport investments need to be cost-effective. Valley Transportation Authority (VTA) is a member of the Chamber, and is in need of funding for operations and system expansion.

Both noted that the extension of BART to San Jose is the top transportation priority of the chamber (“BART is the 900 lb. gorilla!”). They believe that there are a large number of commuters coming into San Jose on the ‘East Bay Corridor’ (essentially the BART to San Jose corridor between San Leandro/Fremont and San Jose). This corridor was projected for growth in transit demand as far back as the 1970’s, and it has materialized today. Commuter express transit services from the Central Valley would serve some of the demand that will not be met by the BART to San Jose project. Mr. Parish can’t say for sure whether or not the Chamber would directly provide funding (that’s not a staff decision). He did say that the Chamber Board usually is very supportive of ‘public-private partnerships.’ He states that “I know that our Infrastructure Committee would support it (implementation of new commuter express transit services from the Central Valley to San Jose employers)...not sure if the Chamber itself has the wherewithal to fund a transit service...I can’t see why the Chamber wouldn’t do everything it can to make such a service work (including helping find funding).”

James Paxson, General Manager, Hacienda Business Park (Pleasanton)

We spoke to James Paxson, General Manager of Hacienda Business Park in Pleasanton. James has a long history of involvement with transportation planning in the area. He current sits on the

Citizens Advisory Committee for ACTIA, and he's involved in the Pleasanton Chamber of Commerce. Overall, James is positive about adding new transit service, and eager to contribute.

There are currently 17,500 employees working at Hacienda. This is low for the Park, as the weak economy has affected employment in the last year. Buildout is about 21,000 employees. Employment schedules are "all over the map." Because of congestion, the peak is "spread pretty wide."

Hacienda helps employees figure out their best transportation option given existing resources. Mr. Paxson notes in particular that Western Contra Costa and San Joaquin Valley commuters are looking for choices. There are issues with housing affordability and long commutes, which affects employment stability. James believes that a majority of employees come to the park from the east. Modesto MAX provides commuter service to the nearby BART station. San Joaquin RTD also provides commuter subscription service from Stockton, but has cut service recently. There are fewer buses, and it is less convenient. LAVTA buses serving ACE are currently full.

Generally, in thinking about transit service, the following things are important to James:

- The system must be robust enough to attract ridership
- More connectivity is better.
- Planning must consider last-mile distribution—there and away.
- Need to coordinate planning with ACE.

Hacienda does not run a ridersharing program but provides "supportive infrastructure" that mostly serves to direct people to 511 ridesharing. Trend for ridersharing is upward.

He believes that providing alternatives that don't "take hours and hours" is "absolutely critical." He believes that HOV network expansion will make a difference, but right now there are no dedicated lanes for buses over the Altamont Pass. They are "stuck in the same traffic" as cars.

The park might consider contributing to transit service, but it would depend on the nature of the service and how much of their own employee population it would serve. James suggested considering LAVTA as operator. LAVTA currently operates service along I-580 corridor. Hacienda has a contract in place with them, with a built-in financing mechanism.

Susan Houghton and Kirsten Sprott, Lawrence Livermore National Laboratories, Livermore

Nelson\Nygaard discussed Altamont Corridor employee transportation issues with Susan Houghton of Lawrence Livermore Labs in April, 2008. While Ms. Houghton has left LLNL and public relations staff is currently in transition, the project team is currently seeking further input from the Labs.

LLNL has 7,400 employees. Employment will be dropping by about 10% this year, but is expected to remain stable after that. Many people do commute to the Labs from Tracy and the Central Valley. The employee base for both labs is expanding east. Parking is not currently constrained. There are employees on-site 24 hours per day, but the majority work regular business hours.

There are currently about 1,000 individual bus rides (individual boardings) per month on Tri-Delta Transit to LLNL. Tri-Delta's service area includes eastern Contra Costa County. San Joaquin Regional Transit District currently provides a subscription bus service to the Labs, which currently has 144 registered passengers.

LLNL currently has 164 vanpool commuters and 213 carpool commuters. Currently, approximately 81 commuters travel from the San Joaquin Valley in vanpools, of which 64 come from Modesto. 94 commuters come to LLNL in carpools from the San Joaquin Valley, of which 58 come from Tracy and 16 come from Modesto. Ms. Houghton believes that transit connections to Tracy would be helpful to LLNL commuters.

APPENDIX B

SAN JOAQUIN VALLEY EXPRESS TRANSIT STUDY: SUMMARY OF STAKEHOLDER INTERVIEWS WITH TRANSIT OPERATORS

Appendix B. San Joaquin Valley Express Transit Study: Summary of Stakeholder Interviews with Transit Operators

The interviews were conducted by Nelson\Nygaard in June and July, 2008.

The following transit agency representatives were interviewed:

1. Nathan Atherstone, San Joaquin Regional Transit District (RTD)
2. Fred Cavanaugh, Modesto Area Express (MAX)
3. Brad Christian, Stanislaus Regional Transit (StaRT)
4. Dan Fox, Tulare County Area Transit (TCaT)
5. Kenneth Hamm, Fresno Area Express (FAX)
6. Ron Hughes, Kings Area Regional Transit (KART)
7. Ellen Moy, Madera County Connection (MCC)
8. Emily Rendes, Golden Empire Transit (GET)
9. Billy Roberts, Kern Regional Transit (KRT)
10. Larry Shankland, Merced County Transit (THE BUS)
11. Jeffrey Webster, Fresno County Rural Transit Agency (FCRTA)

Summary of Responses by Question

1. **Based on your experience as a transit operator, are there any destinations outside of your county to which residents of your service area would use commuter express transit service? If yes, what are they?**
2. **Are there any destinations inside of your service area to which commuters need express transit service from other counties? If yes, what are they?**

The following corridors that might serve as potential markets for new or expanded express transit service were identified by transit operators:

- San Joaquin County-Sacramento
- Los Banos-Silicon Valley
- Modesto-Sacramento
- Modesto-Stockton
- Modesto-Tracy (Defense Depot)
- Stanislaus County-Bay Area
- Modesto-Livermore (Lawrence Livermore Labs)
- Merced-Turlock (CSU-Stanislaus)

- Madera-Merced
- Madera-Fresno
- Visalia-Fresno
- Hanford-Visalia
- Tulare County-Kern County
- Kern County-Los Angeles area (expanded service to Antelope Valley and/or direct service to Santa Clarita and San Fernando Valley)

Additionally, the following possible destinations were identified:

- Salida park-and-ride
- Keystone Pacific Business Park, Patterson
- Modesto industrial parks
- Modesto Junior College
- Foster Farms, Livingston
- Joseph Gallo Farms, Atwater
- Merced County Administration Building
- UC-Merced
- Downtown Merced
- Sequoia National Park

One operator added that increased service to and between regional train stations (he identified the Altamont Commuter Express) would be worth exploring.

Generally, transit operators were more focused on identifying destinations outside their counties than within their service areas. Several mentioned their own obligation to focus on serving residents of their own service areas.

3. Do you have any plans to expand commuter express transit service across county lines?

While several operators identified demand for new service, no formal plans were noted, largely due to a lack of available funding. The following markets, however, were identified as potential areas for expansion:

- San Joaquin County-Sacramento
- Modesto-Dublin/Pleasanton BART Station
- Merced County Transit's "Carless Commute" subscription service (to various locations)
- Kern County-Northern Los Angeles County

4. Has your organization ever used or studied alternative service models such as vanpools or subscription-based bus services? If yes, could you provide us with copies of any studies or service evaluations?

Three transit agencies operate subscription-based bus services:

- Modesto MAX operates a subscription-based bus service to BART and ACE.
- San Joaquin RTD operates 19 Inter-county Commuter Service (ICS) routes to a variety of employment destinations in Sacramento and the Bay Area.
- Merced Transit operates a subscription service called Carless Commute, which currently makes 18 separate runs to employers in Merced County.

A number of vanpool or other rideshare programs already exist within the San Joaquin Valley:

- The largest is operated by KART of Kings County in partnership with Fresno, Kern, Madera, and Tulare Counties.
- San Joaquin COG operates Commute Connection, which registers and subsidizes vanpools in San Joaquin County and (under the terms of a contract with Stanislaus COG) Stanislaus County.
- Using recently approved sales tax funding, the Fresno Council of Governments has initiated its own vanpool program (vanpool services were previously provided by FRCTA).
- The Kern Council of Governments operates a rideshare program.

A few vanpools operate from the Costco store in Merced to the Dublin/Pleasanton BART Station in the Bay Area.

Additionally, new ridesharing efforts are underway, or have been considered:

- Madera County Connection has met with Enterprise Car Rental representatives to gauge the feasibility of a program.
- KART sought to replace fixed-route service to Corcoran State Prison with a vanpool program, but its board elected to maintain regular service.

5. What do you see as the major constraints in enhancing local and regional transit connections? Do you have suggestions for sharing the cost of these services?

Despite the relatively large number of potential markets for new or expanded transit service that were identified, operators see the potential for new or expanded inter-county service constrained in important ways. Some operators were very skeptical about the feasibility of new services. Others were more optimistic that obstacles could be overcome. Concerns typically fell under a few key categories:

- Ridership potential. There was broad skepticism that so-called “choice” transit riders (as opposed to transit-dependent populations) could be attracted to new transit services. One operator noted that one recently established route that had appeared especially promising had severely underperformed and was now being discontinued. Several noted that their existing farebox recovery ratios are low.
- Funding, especially as it relates to use of scarce resources for services that might generate greater benefits for residents outside of an operator’s service area. A related issue is the difficulty of agreeing on an equitable funding formula when negotiating a multi-

party arrangement. Concern was also expressed about the sustainability of services, of securing a permanent source of ongoing operational funding, and about rising fuel costs.

- Procurement processes, such as grant restrictions on purchase of equipment that can result in up to a one-year wait for delivery of new vehicles.
- A lack of major employment nodes with regular employee shifts.
- Secure parking facilities and marketing budgets for vanpools.
- Inadequate resources for marketing and outreach.

6. Do you have a current cost sharing arrangement with another transit agency? If yes, do you think it is fair and equitable?

About half of Valley operators have some sort of cost-sharing arrangement with another transit agency. The cost-sharing arrangements take several forms:

- Parceling out of grant money, including state Transportation Development Act and federal 5307 funding.
- Memorandums of understanding (MOUs) based on flat fee arrangements, such as payments based on revenue service hours, population or ridership.
- Facility use, such as CNG fueling facilities that are used by other operators.
- Several transit agencies have services that cross county lines without seeking a contribution from the destination county.

7. If funding were available, would you be willing to be the “lead” agency for administering a new commuter express service? If not, which agency do you think should serve as the lead or do you think a new agency should be formed?

Representatives of a number of existing operators expressed willingness to serve as the “lead” agency for a new service or services, given appropriate funding. These included:

- StaRT (if ridership forecasts were robust)
- MCC (possibly, although it was noted that a larger agency might be more appropriate)
- San Joaquin RTD
- Modesto MAX
- KART
- FAX (although participation would be dependent on several qualifying factors)

A number of concerns were expressed:

- One operator stated that any lead agency should be a county government.
- Another operator stated that an existing agency should take the lead, and that a new body should not be formed because of added administrative costs.

8. What elements of a commuter express transit plan would be necessary for you to support it?

Transit operators raised a number of concerns that would have to be addressed before they would feel comfortable participating in any new regional transit service. These included:

- Sustainable, reliable, permanent sources of funding.
- Equitable allocation of responsibility for both funding and service provision.
- Thorough and careful analysis of demand (or as one respondent put it, “documented identification of need”).
- Strong community support.
- Adequate budgets for marketing and vehicles with state-of-the-art amenities.
- A detailed implementation plan addressing to the fullest possible extent not only resource allocation but procedures for governance and policy-making.

9. What haven't we covered that's important to you?

Operators offered a number of potentially valuable insights that were not addressed by the prepared questions. These included:

- Strongly mixed opinions about ridership potential. While some respondents repeatedly expressed skepticism, others noted that rising fuel prices might help to grow the market for high-quality transit service.
- One respondent, while expressing skepticism about the potential of new fixed-route services, observed that vanpool services require little public subsidy, and with adequate investment in marketing can serve large numbers of users.
- Potential conflicts with private bus operators, in particular Greyhound. One interviewee raised the issue of federal regulations on charter bus service, and potential restrictions they might place on private sources of funding.
- Several respondents raised the concern that, even if funding for new transit can be identified, that funding may not be stable or permanent.

One operator pointed to a perceived lack of outreach in the initial stages of the Express Transit Study, and believed the process would be more likely to achieve “buy-in” if it were more closely coordinated with the San Joaquin Valley Blueprint Planning Process.