

*Chapter 3*  
**FUTURE  
CONDITIONS**

## ABOUT THIS CHAPTER

This chapter presents an analysis of **demand** for infill development along the SR 108 Corridor (Corridor). The chapter builds a case for the land uses that should be considered along the Corridor, based on present availability and potential market demand. Following the discussion of the potential future land use scenarios, the chapter provides an overview of the **future transportation demand** (VMT) associated with these land use scenarios, along with changes in the amount of greenhouse gas (GHG) emissions associated with each scenario. Finally, this chapter presents a vision of the evolving role of SR 108 and how this relates to future infill development opportunities along the Corridor.

# DEMAND FOR INFILL DEVELOPMENT

## NEAR-TERM DEMAND FOR OFFICE, LARGE-SCALE RETAIL

Current office fundamentals do not warrant substantial new development in Modesto, Riverbank, or Oakdale. While each of the cities may be experiencing some retail sales leakage in certain categories, there are not strong enough rent levels to justify substantial new development. New large-scale commercial and office development may be successful in the short-term, supplanting demand served by existing development. Future housing development along the Corridor, however, could help to generate demand for neighborhood-oriented retail and commercial service development.

In order to support new commercial retail development through 2030, the cities could examine opportunities to add housing in infill locations. The additional disposable income from new households along the SR 108 Corridor, for example, could help to support existing businesses and facilitate new retail development. Looking only at basic relationships between the number of future households and average retail space required to serve each household, Oakdale would be able to accommodate approximately 400,000 square feet and Riverbank would be able to accommodate approximately 600,000 square feet without expansion of City limits. However, existing vacant land may not be in the ideal location, may not have the appropriate parcel size or shape, or may have other shortcomings. For this Plan and zoning changes made in response to recommendations in this Plan, it will be helpful to focus on the balance of different land uses in specific neighborhoods and commercial districts rather than the balance across the entire of the cities.

## SOME DEMAND FOR NEIGHBORHOOD-ORIENTED RETAIL

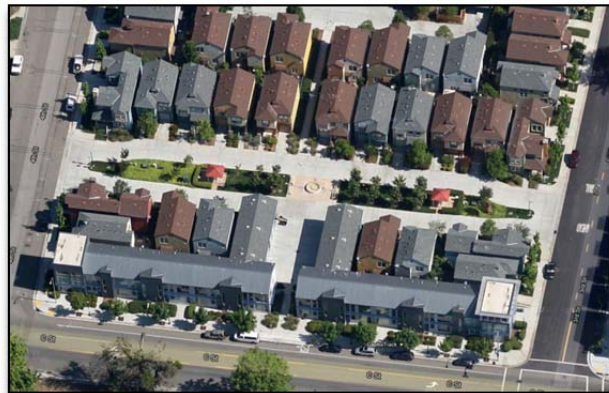
There appears to be some opportunity for limited neighborhood-oriented retail positioned to satisfy new demand from future residential development around infill opportunity sites. This could either be stand-alone commercial development, or could also occur in a horizontal mixed-use format.

These retail developments could come in the form of smaller-scale projects that complement existing development along SR 108 and surrounding neighborhoods. New neighborhood-oriented retail centers could be developed within walking distance of housing along the Corridor in a number of different configurations (see also Chapter 5, which illustrates different viable urban design approaches for sites along the Corridor). Retail and services could include food and beverage (grocery, restaurant, coffee shop, etc.) or personal service (salon, bank, dry cleaning, fitness, etc.).

One development strategy that has been successful is to provide commercial along the street frontage and compact residential and/or office uses at the back of the property. This approach could increase the development yield, buffer noise-sensitive uses from vehicular traffic, offer housing with immediate access to commercial amenities, and create a more pedestrian-friendly environment. Vertical mixed-use



involving housing would be most appropriate in areas with significant existing or planned amenities and where a safe pedestrian environment would encourage walking and patronage of nearby businesses and services.



Examples of compact mixed-use development with high-density housing being fronted by commercial development along a major street corridor.

## ONGOING DEMAND FOR HOUSING

Additional development capacity will be required for housing. In order to provide for residential demand through 2030, the cities will require either additional land outside the existing City limits, rezoning to residential from non-residential in the City limits, or increased densities on residentially zoned lands within the existing City limits, or a combination of these strategies. Obviously, a strategy that involved rezoning from non-residential to residential use would take into account not only the overall amount of land but also appropriate locations and parcel sizes that can meet the cities' future housing needs.

Housing could be captured along SR 108 around transit-served infill opportunity sites to take advantage of shifts in household composition and buying preferences. Infill housing provides opportunities necessary to accommodate projected growth at various price points, product types, and market segments. The ongoing demographic trend towards smaller households favoring infill housing and the growing number of either single or elderly "empty nest" households whom prefer the lower cost and lower maintenance of an apartment, condominium, or smaller home are all positives for marketability.

According to a recent valley-wide market study, the San Joaquin Valley region has historically under-delivered higher-density housing, particularly for renters. Rental housing is anticipated to account for 47% of market demand for housing through 2050. Compact housing (townhomes, condominiums, apartments, etc.) will account for approximately 42% of aggregate demand.<sup>1</sup> The percentage of demand for compact housing is substantially greater than what is provided in the three cities today.

<sup>1</sup> Concord Group. 2012 (June 22). Market Demand Analysis for Higher Density Housing in the San Joaquin Valley.

In Modesto, Riverbank, and Oakdale, the majority of residents today live in single-family homes. Countywide, approximately 16% of housing units are in multi-family structures. This is approximately half the statewide average. In Modesto, approximately 21% of units are in multi-family structures. In Oakdale, these units account for 16% of the total. In Riverbank, just 7% of housing is in multi-family units. Over the last decade, the vast majority of residential construction has been single-family detached homes. At the County level, approximately 89% of the residential building permits have been for single-family detached product. In comparison, the cities of Modesto, Oakdale, and Riverbank, approximately 79%, 95%, and 93% of building permits were for single-family, detached homes. To the extent that compact housing options have not kept up with demand, this could present opportunities along certain portions of SR 108.

Transportation mode choice is also related to housing choice. Currently, most people drive to work. In the County and the three cities, approximately 80% of individuals 16 years or older drive to work alone, with only 1% using public transit. The location of residents' place of work can present challenges to future infill development aligned to transit opportunities. However, nationwide trends suggest that future households may drive less. For example, about 87% of 19-year-olds in 1983 had their licenses. By 2010, this had dropped to 70%. For 18-year-olds, the percentage with a license dropped from 80 to 65 percent between 1983 and 2008. Drivers in their 20s and 30s had similar reductions.

According to the 2010 Census, 36% of Modesto residents live and work within the city. This compares to 20% of Oakdale residents and 7% of Riverbank residents. For the County as a whole, 43% of residents work outside the County. In 1990, just 17% of the County workforce worked outside the County. Existing vehicle travel patterns might present obstacles for infill housing oriented around transit that serves the County, but does not serve job centers outside the County to which residents are commuting.

Beyond the demand requirements for infill housing, there are a number of near-term issues that can hinder the private sector development along SR 108. The key requirement for development of infill housing is a level of profitability that is acceptable to the participants. Developers have multiple options for the use of resources and therefore development decisions are normally made based on the ability to realize a competitive rate of return on investment.

Multi-family housing or townhomes, either rental or ownership, of wood frame construction of two to four stories appear to be more feasible because of their lower development costs relative to their market value and compared to higher-density residential housing types that require concrete or steel construction and/or structured parking. Multi-family housing with the associated expensive structured parking arrangements are unlikely in the near term. Prices and lease values indicate demand will need to experience significant growth before such development can be justified.

## SUMMARY OF FINDINGS

Table 3-1 summarizes anticipated "demand at the City level for market-rate housing, neighborhood retail, and office uses from 2010 to 2030 (mid-growth scenario). As noted, Modesto could capture approximately 13,300 housing units between 2010 and 2030, while Oakdale and Riverbank could anticipate roughly 3,400 and 4,000 housing units, respectively. Neighborhood retail (smaller-scale retail



oriented to a local population base) could account a significant net gain, depending on the location. Along the Corridor, there may be significant exiting retail supply, while other locations may benefit from additional retail. Oakdale and Riverbank could anticipate a net gain of approximately 52,500 and 61,000 square feet, respectively.<sup>2</sup> It is possible that there could be demand for additional larger-scale retail development that draws from a larger (non-local) area beyond the figures presented here. More detailed analysis is provided in the Appendix.

<b>Table 3-1 Summary of Demand for Housing, Retail, and Office Development</b>			
<b>Citywide Demand (2010 – 2030)</b>	<b>Modesto</b>	<b>Oakdale</b>	<b>Riverbank</b>
<b>Market Rate Housing (Units)</b>	13,300	3,400	4,000
<b>Neighborhood Retail (SF)</b>	Depends on Location	52,000	61,000
<b>Commercial Office (SF)</b>	1,065,400	64,800	12,100

Source: DOF; DOT; AECOM

Note: Neighborhood retail (smaller-scale retail oriented to a local population base) could account a significant net gain, depending on the location. Along the Corridor, there may be significant exiting retail supply, while other locations may benefit from additional retail.

## LAND USE SCENARIOS

Land use scenarios are used for a variety of purposes. Each of the cities prepares an estimate of existing and future land use as a part of their General Plans. Land use forecasts are used to decide how many parks are needed and where they should be located, where roads should go and how many travel lanes they should have, what sort of capacity should be provided at the wastewater treatment plant, how infrastructure and public services should be financed, and many other critical topics. Scenario planning is also used to show what the future would look like without a policy response, understand the repercussions of that future, and then design policy, regulations, incentives, and investments to produce a different future scenario.

More recently, regional governments (also known as councils of governments or metropolitan planning organizations) have started to use land use forecasts to estimate vehicle miles traveled (VMT) and GHG emissions associated with passenger vehicles. Metropolitan Planning Organizations (MPOs) in California prepare different land use and transportation scenarios as a part of what is called a “Sustainable Communities Strategy” (SCS) to address GHG reduction targets from passenger vehicles as a part of that MPO’s Regional Transportation Plan (RTP). Stanislaus Council of Governments is charged with preparing the SCS for this region. The Air Resources Board set the per-capita GHG emissions targets for passenger

<sup>2</sup> While the figures for neighborhood retail appear low, this is the approximate level of additional square footage that would be required to serve local demand. The actual development of retail square footage could exceed this amount, supplanting existing retail establishments or increasing the local capture of non-local demand. If economic conditions change substantially, the amount of development could change, as well.

vehicles in the San Joaquin Valley region at 5% below 2005 per-capita emissions levels by 2020 and 10% below 2005 per-capita emissions levels by 2035.<sup>3</sup>

## LAND USE ALONG THE CORRIDOR

Three future land use scenarios were examined by the Planning Team for the SR 108 Reinvestment Plan. First, the Planning Team collected detailed existing land use data and made various adjustments for accuracy. Existing land use data was compared to that produced to support StanCOG's 2014 Regional Transportation Plan/SCS to ensure a good match.<sup>4</sup> Then, three future land use scenarios were developed, focusing on different mixes of land use for the Corridor in the three cities. The overall study area includes all of the traffic analysis zones (TAZs) within the planning areas of the cities of Modesto, Riverbank, and Oakdale. Each scenario has a different land use mix for TAZs located within ½ mile of SR 108 within City limits (keeping the same land use mix for TAZs outside this ½-mile buffer area).

## ANALYSIS SCENARIOS

One existing baseline and three development scenarios are evaluated. Land use mixes for the existing baseline conditions and all three development scenarios for the three cities are summarized in Table 3-2. For Scenario 1 and 2, the Planning Team focused on future land use on vacant and underutilized properties along the Corridor, assuming that stable residential areas and business districts would not experience substantial land use change. Future residential densities and non-residential development intensities were assumed to be similar to existing conditions, but in some cases, slightly more land-efficient to reflect local, regional, and state policy related to fiscal sustainability, economic development, air quality, and mobility. Scenario 3 includes the same set of land use change examined in the StanCOG SCS, for comparative purposes. The total population and employees in Scenario 3 was used as a "cap" for Scenarios 1 and 2 to ensure the same total amount of development among the scenarios.

As shown, each of the scenarios has a greater proportion of multi-family development compared to existing conditions. Scenario 1 has a slightly higher percentage than Scenario 3. Scenario 2 assumes the highest percentage for multi-family development, although the difference among the scenarios is subtle. Each of the scenarios has a higher proportion of office development compared to existing conditions and a lower proportion of retail development. Scenario 2 has the highest relative share for office, followed by Scenario 1, then Scenario 3.

<sup>3</sup> Stanislaus Council of Governments (StanCOG). 2014. Regional Transportation Plan Sustainable Communities.

<sup>4</sup> Population-related inputs include total population and numbers of households stratified by structure type (single-family or multi-family). Employment-related inputs include square footage of employment land use stratified by type (office, retail, public / civic / service). Note that land use inputs for some non-residential land uses, including industrial and agricultural, are not accounted for in this analysis.



**Table 3-2  
Land Use Scenarios along the SR 108 Corridor**

Land Use	Existing	Scenario 1	Scenario 2	Scenario 3
<b>Residential</b>				
Single-Family Residential	65%	61%	60%	64%
Multi-Family Residential	35%	39%	40%	36%
<b>Non-Residential</b>				
Public / Civic / Service	7%	6%	5%	8%
Commercial – Office	30%	35%	40%	33%
Commercial – Retail	63%	59%	55%	59%

Source: StanCOG SCS, 2010. AECOM, 2014

Notes: Land use mix is calculated separately for residential and non-residential land uses, as the proportion of total dwelling units for residential land uses and as the proportion of gross square footage for non-residential land uses. Industrial and agricultural land uses were excluded from the analysis. SR 108 Corridor includes TAZs with at least one point located within 0.5 mile of State Route 108 and located within the planning areas of the cities of Modesto, Riverbank, and Oakdale. Entire Study Area includes all TAZs within the planning areas of the cities of Modesto, Riverbank, and Oakdale.

# TRAVEL DEMAND

The three land use scenarios were used to forecast travel demand within the planning areas of the three cities. Travel demand can be represented by vehicle miles traveled (VMT). The Planning Team developed a comprehensive VMT forecasting tool to examine the marginal effects of land use mix on VMT. Results were calculated using empirical data and the latest research on the role of land use and transportation systems on motorized and non-motorized travel. The tool uses a full range of inputs, from demographic and travel behavior projections to technical factors to calculate output metrics that demonstrate the relative effects of different land use mix alternatives. Data sources for socioeconomic and travel data include, but are not limited to, U.S. Census, American Community Survey, National Household Travel Survey (NHTS), U.S. Department of Transportation (DOT) Bureau of Transportation Statistics (BTS), Census Transportation Planning Package (CTPP), Metropolitan Planning Organization (MPO) travel demand models, data collection/observation. Verification and validation of the tool was conducted by testing several scenarios and comparing outputs. The output metrics (i.e., vehicle trips and vehicle miles traveled) were compared to information available in studies and research to determine the reasonableness and accuracy of the results. Please refer to the Appendix for more detail.

Land use mix has been correlated with travel behavior. This is true at the macro-scale (e.g., jobs/housing balance), and the micro-scale (e.g., the availability of services within walking distance). In single-use environments, such as office parks, automobiles become indispensable for circulation and access to restaurants, banks, and other consumer services that are located off-site. By co-locating residential, commercial, and recreational uses, alternatives to driving, such as walking or biking, become more viable options, and trips that might otherwise be made on adjacent roads could be internalized within individual buildings or between groups of buildings in a mixed-use environment.

# TRAVEL DEMAND RESULTS

Scenario 2 could result in the smallest increase in daily vehicle trips (58,600 daily trips) and VMT (4,803,100 miles) over existing conditions (Table 3-3). Considering all three cities' planning areas together, Scenario 2 has the smallest increase in VMT, followed by Scenario 1, and then Scenario 3.

<b>Table 3-3 Increase in VMT over Existing Conditions (%)</b>			
<b>City</b>	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>
<b>Modesto</b>	11%	11.5%	12%
<b>Riverbank</b>	2.1%	1.6%	21.1%
<b>Oakdale</b>	11.3%	6.6%	10.2%
<b>Total (3 Cities' Planning Areas)</b>	10.3%	9.6%	11.5%

Source: AECOM 2014

Examining just the planning areas of Modesto, Riverbank, and Oakdale, the existing travel demand is approximately 19 VMT per capita, per day (Table 3-4).

<b>Table 3-4 Travel Demand under Existing and Future Conditions</b>				
<b>Land Use</b>	<b>Existing</b>	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>
<b>Modesto</b>				
VMT per Capita	18.35	17.69	17.64	17.65
VMT per Service Population	14.59	13.83	13.80	13.81
<b>Riverbank</b>				
VMT per Capita	18.32	13.83	13.77	16.41
VMT per Service Population	16.34	12.27	12.01	14.55
<b>Oakdale</b>				
VMT per Capita	21.19	17.84	17.08	17.66
VMT per Service Population	16.91	14.05	13.19	14.19
<b>All 3 Cities' Planning Areas</b>				
VMT per Capita	18.59	17.36	17.24	17.54
VMT per Service Population	14.91	13.73	13.59	13.90

Source: AECOM, 2014

With the land use under Scenario 2, VMT could be reduced by approximately 7.2% per capita compared to existing conditions (Table 3-5). Considering the land use mix along the Corridor under Scenario 1, VMT could be reduced by approximately 6.6% per capita, compared to existing (2014) conditions. Under



Scenario 3, VMT could be reduced by approximately 5.6% per capita compared to existing conditions. These estimates do not take into account the transportation investments, economic changes, demographic changes, or policy changes that were factored into StanCOG’s SCS. These results are much more pronounced in Riverbank and Oakdale, where for Scenarios 1 and 2, the per-capita VMT reductions are between approximately 16% and 25%.

Since both residential and non-residential land uses are associated with travel demand, it may be more useful to consider differences in VMT per service population. Service population is the sum of residential population and local employees. Compared to existing conditions, simply by slightly changing the land use mix, Scenario 2 could reduce VMT in the three cities’ planning areas by approximately 8.8% per service population. Scenario 1 could reduce VMT by approximately 7.9% per service population and Scenario 3 could reduce VMT by approximately 6.8% per service population.

As with the per-capita comparisons, the travel demand reductions associated with different land use mixes in Riverbank and Oakdale make substantial citywide differences. For these cities, the VMT reductions compared to existing conditions range from 17% to 27% per service population. The greater difference in these two cities is partly because of the relatively greater amount of vacant and underutilized land within City limits along the Corridor (where land use mix was varied) and the relatively greater amount of total development that is within TAZs that are ½ mile or less from SR 108.

**Table 3-5  
Future Travel Demand Compared to Existing Conditions**

City	Scenario 1	Scenario 2	Scenario 3
<b>Modesto</b>			
VMT per Capita	-3.6%	-3.9%	-3.8%
VMT per Service Population	-5.2%	-5.5%	-5.4%
<b>Riverbank</b>			
VMT per Capita	-24.5%	-24.8%	-10.4%
VMT per Service Population	-24.9%	-26.5%	-10.9%
<b>Oakdale</b>			
VMT per Capita	-15.8%	-19.4%	-16.7%
VMT per Service Population	-16.9%	-22.0%	-16.1%
<b>Total (3 Cities’ Planning Areas)</b>			
VMT per Capita	-6.6%	-7.2%	-5.6%
VMT per Service Population	-7.9%	-8.8%	-6.8%

Source: AECOM 2014

# THE EVOLVING ROLE OF SR 108

With the potential relinquishment of SR 108, the cities have an opportunity to consider, with more independence, the desired future role of this important thoroughfare. During outreach conducted to support this Plan, there was extensive discussion of safety, design, economic development, multi-modal mobility, peak-hour traffic versus daily traffic, ongoing costs of roadway maintenance, and related issues. Community members were surveyed on several relevant topics, including a visual survey that, in part, asked respondents to identify preferred streetscape design approaches. In this process, respondents showed a strong preference for a more pedestrian- and bicycle-friendly streetscape environment. The community preferred streetscapes with places for outdoor dining, streets with buildings brought toward the front property line, safe places to cross the street, clearly identified lanes for bikes, places to sit and gather, and wide sidewalks. The lowest vote getter of all the images shown depicts a streetscape environment with commercial uses set back from the property frontage and parking in the front, which is an environment that is typical today to the commercial districts in the cities along SR 108.

## THE FUTURE OF SR 108

SR 108 serves both local and regional needs and accommodates commute traffic during peak-demand periods, as well as daily needs. In some locations, the Corridor has street trees, wide sidewalks, on-street parking, and otherwise presents a pleasant visual environment that is also attractive to pedestrians. In other locations, the roadway is very wide, lacks landscaping, is lined with surface parking, and is otherwise promotes high-speed and high-volume commute traffic over pedestrian and bicycle comfort, safety, aesthetics, and other sometimes-competing needs.

However, the cities are using this planning process to help identify priorities that can be used in making streetscape improvements in the future that will promote infill development, while helping to create a Corridor that is better aligned with the local vision and policies. Please see Chapter 4, which presents streetscape design alternatives that were developed to respond to community priorities, and that were developed with consideration of on-the-ground opportunities and constraints.

## THE VISUAL ENVIRONMENT

Changes over time to the Corridor can help to promote existing and future businesses that would enjoy the catalytic effects of improvements to the streetscape that would, for example, enhance the “retail experience” and help to draw destination businesses, which would, in turn, attract additional foot traffic for adjacent businesses. With online retail assuming a larger share of overall activity, this sector is becoming more competitive. A more visually interesting streetscape and built environment in key commercial districts can contribute to the success of existing and future businesses. The communities can help their partners in the business community along SR 108 by directing investment into strategic



streetscape enhancements, as funding is available. This Plan helps to establish the framework for such future investment.

## SAFETY AND MOBILITY

Slowing traffic and improving perceived safety along the Corridor, along with adding landscaping and other amenities would help to improve the attractiveness for compact housing development. The households living along the Corridor would help to support existing and new businesses, as well as transit. As noted elsewhere in this Plan, an important trend has to do with the shifting preferences of younger generations. This group “lives, works, and plays in different ways than previous generations. The impact will be felt by all real estate sectors. This generation will be more urban and less suburban; they won’t want to drive as much but will want to be mobile.”<sup>5</sup> Improvements along SR 108 can help create more competitive environments for housing investment, while also helping expand the array of practical travel options for residents.

## SUPPORT FOR TRANSIT

Implementation of streetscape and transit improvements that work in combination with land use strategies may further reduce vehicle trips and VMT (and reduce household travel costs, improve air quality, and reduce congestion). Transit improvements can range from relatively low cost options, such as marketing and enhanced public awareness programs, to major investments, like bus rapid transit right-of-way and station infrastructure, and transit signal priority improvements. Fare policies and transit system/network integration are equally as important as physical and service improvements to maximize ridership and revenue.<sup>6</sup> The Environmental Protection Agency identifies three broad categories of transit improvements – system/service expansion, system/service operations, and marketing strategies.<sup>7</sup> System/service expansion improvements include increasing service routes, frequency, and operating hours. System/service operations improvements include improved on-time performance, reduced dwell times, improved coordination among modes, transit priority improvements (bus lanes, bus priority traffic signals), stop and station improvements. Marketing strategies include wayfinding and signage improvements and real-time information on transit vehicle arrival. Improvements and incentives that increase transit load and attract travelers who would otherwise drive tend to provide large benefits. The elasticity of transit use with respect to transit service frequency averages 0.5, meaning that each 1.0% increase in service (measured by transit vehicle mileage or operating hours) increases average ridership by 0.5%.<sup>8</sup> When combined with development along the SR 108 Corridor, transit improvements may result in further reductions in vehicle trips and VMT.

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<sup>5</sup> Urban Land Institute (ULI). 2014. Emerging Trends in Real Estate.

<sup>6</sup> University of California, Los Angeles. Transit-Oriented Development and Households Travel: A Study of California Cities. Prepared for the California Department of Transportation. August 2006.

<sup>7</sup> Environmental Protection Agency. Transportation Control Measure, Improved Public Transit. March 1992.

<sup>8</sup> Pratt, Richard. Travel Response to Transportation System Changes. Transit Cooperative Research Program Report 95. Transportation Research Board. 2007.