

4

Future Conditions



4. FUTURE CONDITIONS

Stanislaus County is forecast to grow at a faster pace than the coastal urban centers over the next few decades as lower housing costs and increased job opportunities attract new residents seeking a more balanced cost of living. The scenarios developed for the 2022 RTP/SCS reflect that forecast growth and were used as the basis of developing and to evaluating the transportation system improvements necessary to accommodate both the needs of existing and future residents of the Stanislaus region.

This section highlights the future of the Stanislaus region with regard to population, employment, commute patterns, mobility options, and the resulting growth in travel. The 2022 RTP/SCS reflects a shift in regional priorities as more focus and resources are being allocated to transportation technologies such as electric and autonomous vehicles and intelligent transportation systems. It also provides support for travel demand management strategies and includes a significant increase in investment for active transportation infrastructure. The plan also continues to identify and accommodate needed improvements to the roadway system.

Demographic Forecasts

Effective planning requires an understanding of both existing conditions and how the region is expected to change over time. To support these planning efforts, StanCOG is responsible for forecasting the region's demographic trends to inform and guide transportation investments and policy decisions.

These forecasts, including population, household, and employment, form the basis for developing the regional land use plan and transportation investment strategy. The remainder of this chapter explains the process used to develop the demographic forecasts and provides an overview of each of the results.

Forecasting Process

In 2021, StanCOG developed a countywide demographic forecast based on the latest federal, state, and local data.

The countywide forecast was published in 2021 and was prepared by the Center for Business and Policy Research at the University of the Pacific (UOP). The Stanislaus County Demographic and Employment Forecast considered local conditions and trends, including the COVID-19 pandemic, state and national trends, and local investments such as ACE rail.

It should be noted that employment estimates were originally provided by University of the Pacific forecasters using the Bureau of Economic Analysis (BEA) as the source for base year assumptions. This was adjusted for the purposes of the RTP/SCS to conform to Bureau of Labor Statistics (BLS) data which does not consider self-employment. The forecast is presented in greater detail in **Appendix J**.

StanCOG has subsequently worked with local agencies within the region to break down the countywide forecasts. In addition to the RTP/SCS component, StanCOG and local agency staff will use this forecast as a basis for other future planning efforts.

Forecasts

The countywide forecast totals were used as inputs to establish future year baselines for anticipated growth in each jurisdiction within the region. **Table 4.1** presents these forecasts. These totals suggest degrees of growth, in terms of population, employment, and housing units, but not the types of growth (e.g., household density, commute patterns, etc.). While the scenarios presented in the 2022 RTP/SCS represent different growth patterns for the region, each scenario remains consistent with the future baseline totals presented in the 2021 Stanislaus County Demographic and Employment Forecast .

Table 4.1 – Stanislaus Regional Growth Forecast

Year	Population	Households	Employees
2019*	543,194	173,898	183,030
2020	560,582	179,276	201,680
2025	592,113	190,782	226,059
2030	609,576	200,258	229,751
2035	625,215	208,137	234,246
2040	644,296	215,916	240,669
2045	665,867	222,845	247,796
2046*	670,411	224,290	249,452

Source: *Stanislaus County Demographic and Employment Forecast* , University of the Pacific, 2021. *Year 2019 and 2046 estimates were interpolated.

Although the growth rates were reduced relative to the forecast produced in 2016 for the 2018 RTP/SCS, the Stanislaus region has continued to experience growth rates that outpace other areas in the state. By 2046, the county is projected to add approximately 127,217 people, increasing the total population from 543,194 in 2019 to 670,411 in 2046. This represents an anticipated increase of 23 percent. The total number of households is also anticipated to increase at a similar rate, growing by approximately 50,400 from 173,898 households in 2019 to 224,290 (an increase of approximately 29 percent) in 2046. The employment growth rate is expected to exceed that of population, especially in the later years of the Plan. The region is expected to add over 66,421 jobs by 2046, increasing the total number of jobs from 183,030 in 2019 to 249,452. This represents an increase of 36 percent, growing at a faster rate than the county’s population.

Population

From 2010 to 2020, Stanislaus County’s population grew by approximately 38,000 (or approximately 7 percent over a period of 10 years) to 552,878. This growth outpaces the growth of the State of California, which grew by approximately 6 percent from 2010

to 2020. **Table 4.2** shows the population distribution within Stanislaus County for 2020 compared to 2010.

The majority of the population in the Stanislaus region is concentrated along the major highway corridors. The three largest cities in the region—Modesto, Turlock, and Ceres—are located along SR 99 and comprise over 60 percent of the County’s population.

The Cities of Patterson and Newman are located along I-5 and comprise just over 6 percent of the region’s population. The remaining unincorporated areas account for just over 20 percent of the County’s total population.

Although the City of Modesto maintains the largest population share of the county, that share is forecasted to decrease from 40 percent of the County’s population in 2020 to 38 percent by 2046. Riverbank and Patterson will see the largest increase in population share, rising from 4.5 and 4.3 percent of the County’s population, respectively in 2020 to 5.4 and 5.1 percent, respectively by 2046. As shown in **Table 4.2**, the populations of both Riverbank and Patterson are expected to increase by over 10,000 residents each by 2046.

Population Age Dichotomy

The county’s traditional small-town atmosphere, availability of affordable housing options, and lower cost of living attracts both seniors and young families, who are also brought in by the high quality of local schools.

Table 4.2 - Stanislaus County Demographic Forecasts

City	Current Trend			Future Trend	
	2010*	2020**	2010-2020 Change	2046***	2020-2046 Change
Modesto	201,165	218,464	9%	255,540	17%
Turlock	68,549	72,740	6%	93,571	29%
Ceres	45,417	49,302	9%	60,314	22%
Riverbank	22,678	24,865	10%	36,409	46%
Patterson	20,413	23,781	16%	34,168	44%
Oakdale	20,675	23,181	12%	28,185	22%
Newman	10,224	12,351	21%	14,686	19%
Waterford	8,456	9,120	8%	10,962	20%
Hughson	6,640	7,481	13%	10,260	37%
Unincorporated	110,236	111,593	1%	126,316	13%
Stanislaus County Total	514,453	552,878	7%	670,411	21%
San Joaquin County	685,306	779,233	14%	Estimates not available.	
Merced County	256,800	281,202	10%		
California	37,253,956	39,538,223	6%		

*Source: 2010 Decennial Census

***Source: 2020 Decennial Census*

****Source: Stanislaus County Demographic and Employment Forecast , University of the Pacific, 2021*

As presented in the 2021 Stanislaus County Demographic and Employment Forecast, the number of individuals in all age groups is expected to grow, but at the same time, the population is expected to age. The senior population is projected to increase from roughly 14 percent of the total population in 2020 to over 21 percent of the population by 2050. In contrast, the population

group aged 0 to 14 is expected to decrease from just over 22 percent of the total population in 2020 to 18 percent by 2050. This trend towards an aging population was identified in the 2018 RTP/SCS and is likely to continue for the foreseeable future. As a result, it is expected that this will cause shifts in the labor force, the types of housing required, and transportation needs.

Shifting Racial and Ethnic Diversity

The county's population was 560,582 in 2020 and is expected to reach 670,411 by 2046. While over 40% of the county's population was white non-Hispanic in 2020, a significant portion of the County's growth is projected to occur within the Hispanic population. The Hispanic population is projected to increase from 48% in 2020 to 58% in 2050.

Natural Increases

Stanislaus County has a high natural growth rate, defined as total births minus deaths, as the result of a relatively young population and family sizes that are higher than both the state and national average. According to Centers for Disease Control and Prevention (CDC), Stanislaus County has a birthrate

of 66.4 per 1,000 women ages 15-44 in 2017, which was higher than the California State birthrate of 58.7. Factors that attract young families to the area include quality of schools, nearby parks and open space, and relatively affordable, diverse housing options.

Employment

As stated earlier, employment within Stanislaus County is estimated to increase by 66,421 jobs by 2046. Agriculture plays a prominent role in the

Stanislaus region and San Joaquin Valley economy. While only approximately 6.6 percent (Longitudinal Employer-Household Dynamics [LEHD], 2019) of the countywide workforce is directly employed in farming operations, a much larger percentage of the workforce is directly tied to the agricultural sector (e.g., those employed in the food manufacturing, transportation, and warehousing industries). Twelve of the 25 largest

employers in the region are directly related to the agricultural/manufacturing industry (Employment Development Department, 2018). Given the need to transport products from Valley farms to markets and ports in other parts of the state, agriculture-related industries depend on a transportation network that provides for the efficient movement of goods.

The role of agriculture is still a key component of employment for the region, but job diversification has been increasing as the population has also diversified. Stanislaus County’s role as a source of workers for the Bay Area who live in the region has increased the need for retail jobs to support growing housing numbers.

Other sectors are starting to make gains based on priorities developed in the region to diversify employment and develop jobs that complement the agriculture industry. Successful examples of employment diversification in Stanislaus County can be seen in the development of the City of Patterson as a key warehousing and distribution center. Continued local growth in the transportation, warehousing, and utilities sectors points to the increasing importance of the region as a distribution hub. As a result, the transportation system is expected to play a key role in maintaining the growth and viability of the Stanislaus region’s economy. **Table 4.3** presents the employment change by industry between 2015 and 2019.

Table 4.3 - Employment Change by Industry in Stanislaus County

Industry Title	Employment Change, 2015-2019	
	Number	Percent
Total Employment	13,457	8%
Goods Producing - Agriculture	-438	-3%
Goods Producing - Other	3,332	11%
Service Providing	10,245	8%
Public Administration	318	7%

Source: US Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (2015 - 2019).

Commuters

Located within the Sacramento and Bay Area (Alameda County, Santa Clara County, Contra Costa County, and San Francisco County) commute shed (approximately 75 miles south of Sacramento and 80 miles east of San Francisco), the Stanislaus region tends to attract retirees, families, and commuters.

With two of the largest employment areas in California within commute distance, the region has become a “bedroom community” for those working in these employment areas.

The cost of commuting, however, has a profound impact on the region in the form of traffic congestion, increased air pollution, and deteriorating roadways. Moreover, the commute results in increased actual and indirect costs to individual commuters,

including fuel, automobile upkeep, bridge tolls, time away from family, and higher levels of stress.

Like many Valley communities, the Stanislaus region has most of its trips completed via single-occupancy vehicles. According to the 2020 American Community Survey (ACS), over 80 percent of workers in Stanislaus County

drove alone to their jobs. According to 2019 Longitudinal Employer-Household Dynamics (LEHD) data, approximately 51 percent of the population commutes to jobs located outside of Stanislaus County and 43% of jobs in Stanislaus County are filled by people who commute in from neighboring counties, as shown in **Table 4.4** and **Figure 4.1**. In total, 86,199 Stanislaus County residents are employed outside the county and 63,037 people living outside the County have jobs within it.

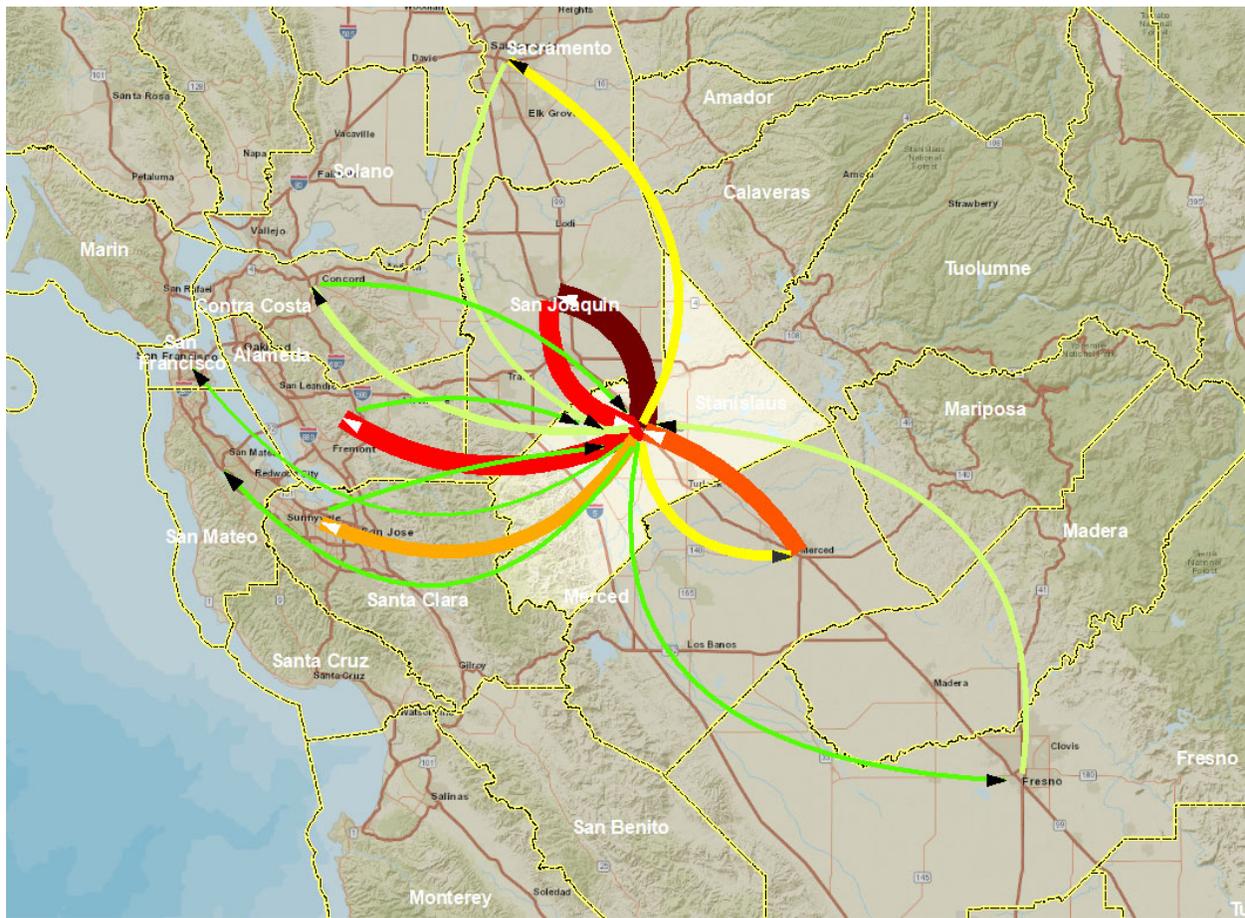
In 2017, 4.6% of county workers telecommuted for work. In 2020, the number of county workers who commute has increased to 5.6%. The increase in telecommuting opportunities in response to the COVID-19 pandemic and more reliable communications technologies is easing some of the burden off of regional transportation systems, but not enough to keep pace with the growth of the commute market. The Stanislaus region is still economically dependent on convenient and efficient transportation options to the neighboring counties, Bay Area, and Sacramento.

Table 4.4 - Stanislaus County Commuting Patterns

County of Employment	County of Residence	Number of Commuters
Stanislaus	Stanislaus	83,845
San Joaquin	Stanislaus	18,077
Stanislaus	San Joaquin	13,532
Alameda	Stanislaus	12,817
Stanislaus	Merced	11,942
Santa Clara	Stanislaus	9,500
Merced	Stanislaus	6,688
Sacramento	Stanislaus	5,996
Contra Costa	Stanislaus	4,609
Stanislaus	Sacramento	4,445
Stanislaus	Fresno	3,544
Stanislaus	Alameda	3,202
Stanislaus	Santa Clara	3,091
Fresno	Stanislaus	2,891
Stanislaus	Contra Costa	2,751
San Mateo	Stanislaus	2,567
San Francisco	Stanislaus	2,448

Source: US Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (2019).

Figure 4.1 - Stanislaus Out-of-County Commute Patterns



Housing

The housing stock in Stanislaus County increased by 3,637 units between 2010 and 2020, or just over 2 percent. There were approximately 179,500 units in 2010 (2010 Decennial Census), which reached 181,140 units by 2020 (2020 Decennial Census). This increase is attributed to the County's affordable housing selection and its proximity to employment opportunities in the Sacramento and Bay Area. The number of households is expected to increase by approximately 45,000 by 2046 (University of the Pacific, 2021).

Much of the County's total land area of 1,521 square miles is readily available for development, resulting in significantly lower housing and land prices as compared to Sacramento and the Bay Area.

As shown in **Table 4.5**, median home sale prices in Stanislaus County are significantly lower than prices in many other parts of California. The region also provides a different mix of housing options than Sacramento and the Bay Area. Currently, according to the American Community Survey (ACS, 2020), 76 percent of the county's housing stock consists of single-family units, 19 percent consists of multi-family units, and 4 percent consists of mobile homes. Under Scenario D (Preferred Scenario/Neighborhood Infill),

19 percent of the county’s new housing stock is projected to consist of single-family units (11 percent on a small lot; 8 percent on a medium or large lot), and 81 percent will consist of multifamily units.

Table 4.5 - Median Home Sales Prices in California

County	Median Home Sales Price	Percent Difference from Stanislaus
Stanislaus	\$314,100	-
San Joaquin	\$367,900	17%
Alameda	\$825,300	163%
Santa Clara	\$1,061,900	238%
Merced	\$268,800	-14%
Sacramento	\$373,000	19%
Contra Costa	\$655,500	109%
Fresno	\$271,000	-14%
San Mateo	\$1,163,100	270%
San Francisco	\$1,152,300	267%

Source: US Census Bureau, ACS 5-Year Estimate, 2020.

Jobs-Housing Balance

The ongoing trend of commuters migrating to the Valley for housing while continuing to work in other markets have historically led to a jobs-housing imbalance in Stanislaus County.

Jobs-housing balance is typically achieved when both the quality and quantity of housing opportunities match the job opportunities within an area, with a resulting ratio of approximately .8 - 1.2. With increases in employment opportunities as of 2019, Stanislaus County had approximately 191,825 jobs and 174,698 households, resulting in a balanced jobs-housing ratio of approximately 1.1 jobs per household.

By 2046, Stanislaus County is forecasted to have approximately 249,452 jobs and 224,290 households, resulting in a balanced jobs-housing ratio of approximately 1.1.

To ensure that this balanced relationship between jobs and housing is maintained within the Stanislaus region, the region must go beyond attempting to simply improve commuter travel times and develop policies to encourage, attract, and retain quality, higher-wage jobs through land use and fiscal decisions that develop Stanislaus County as a desirable location for employers and employees. Strategies to attract a mix of high-tech and industrial manufacturing jobs will rely heavily on providing high-quality transportation infrastructure and more viable transportation options to make businesses more efficient, as well as providing community amenities that attract new businesses and a highly qualified workforce. Because StanCOG does not have land use authority, member jurisdictions will be responsible for making investments for these community amenities, such as downtown development projects, performing arts centers, and

community parks, to improve their attractiveness to future employers. These efforts will take time to take root and produce meaningful results.

Farmland Conservation

Agriculture plays a significant role in the regional economy. As such, the preservation of agricultural land is also of key concern to the region, and balancing land conversion to accommodate growth with the preservation of farmland is particularly important.

Preserving farmland within Stanislaus County is therefore a guiding factor for regional transportation and land use planning within the 2022 RTP/SCS and is critical to selecting an appropriate vision for the future of the region. Stanislaus County is approximately 956,600 acres (about 1,500 square miles) in size and has more than 250,420 acres of prime farmland (Farmland Mapping and Monitoring Program, 2018). As regional growth occurs, some of this land is converted to other agricultural purposes, including grazing land, and other lower classifications of farmland. Some agricultural land is also converted to other uses, such as residential, commercial, industrial, office, or university land uses. Under Scenario D (Neighborhood Infill), approximately 1,000 acres are converted to these other uses, which is 2,000 acres less than Scenario A (Stay the Course).

Travel Growth

With increases in population and employment within the region, and the potential for increased commuting between adjacent counties, the amount of vehicular travel is expected to increase. By 2046, Scenario D (Neighborhood Infill) will result in an increase of approximately 2,284,228 vehicle miles traveled (VMT) daily. This is lower than Scenario A (Stay the Course), which would result in an increase of 2,564,737 VMT daily by 2046.

The average trip length in 2046 under Scenario D is forecasted to be 9.29 miles (13.60 miles for commute trips). In addition, approximately 37.0 percent of all trips will be made in single-occupancy vehicles (i.e., individuals driving alone in their personal car). By year 2046, pedestrian and bicycle trips are forecasted to account for 5.4 percent of all trips within the County under Scenario D. This is an increase from the 2019 base year scenario of 5.1 percent, and is due, in part, to the bicycle and pedestrian improvements included in the 2022 RTP/ SCS project list.

Technology Trends

There are several technology trends that have the potential to influence mobility options and transportation infrastructure over the coming decades, several of which are summarized in **Table 4.6**. Phone applications to plan and guide trips, online shopping, on-demand transportation, and the continued roll-out of an increasing number of electric vehicles are just some of the trends influencing transportation today. In the future, more significant changes are likely to occur as self-driving cars begin to transport passengers and goods and as big data is harnessed to help manage the transportation system. Over time these transportation trends will not only change the way individuals make trips, but will also drive land use decisions and policy, have a profound economic

impact, and even influence the way residents in the region socialize and interact with each other.

Table 4.6 - Technology Trends Influencing Transportation

Technology Trends	
Electric Vehicles	Electric vehicles use electricity as a source of fuel instead of fossil fuels. Similarly, hybrid vehicles use both electricity and fossil fuel. are two types of EVs: Plug-in Hybrid Electric Vehicles (PHEVs) and Battery-Electric Vehicles (BEVs). In recent years, the State of California has set goals to support the deployment of Electric vehicles, including the goal that all new passenger vehicles sold should be zero emissions by 2035.
Transportation Network Carrier (TNC)	Better known as Uber and Lyft, these companies are already disrupting the Taxi and Transit Industry. Among other effects, they have the potential to address the long-standing challenge of “the last transit mile service”.
Emergence of Tech Companies as Transportation Leaders	Tech Companies have emerged as both significant partners and competitors to public agencies. Areas that Tech Companies are emerging as leaders in include Traveler Information Systems (Google Maps, Apple Maps, etc.), routing and logistics (such as Amazon).
Sharing economy	Although there is debate over the right name for this phenomenon, its primary transportation influence has been for consumers to access someone else’s goods or services. With the advent of car sharing companies like Zipcar and GIG Car Share and the influence of Uber and Lyft, it is clear that the idea of sharing cars is one that is gaining popularity and will start to influence the number of individually owned vehicles in the future.
Internet of Things (IOT)	Often referred to as “connected devices”, items are embedded with technology that allows objects to exchange and collect data. With the ever-expanding range of items that join the Internet of Things (IOT), the opportunity to collect data expands. From a traffic light bulb that notifies that it needs changing, to the multitude of roadway sensors that can count and or measure traffic, the opportunities to advance data streams are nearly boundless.
Big Data	While often confused to just mean “a lot of data” (which it can be), the real power behind Big Data is predictive analytics, or, simply put, better forecasts.

Although the timing, extent, and impact of emerging transportation technologies are debatable, notable change is starting to occur. As such, Stanislaus County is beginning to think about how transportation plans and programs may be affected. The following

sections include discussion on several of these transportation technologies and their potential influence on the county.

Electric Vehicles

On January 26, 2018, Governor Brown signed Executive Order B-48-18, which called for local agencies and private companies to place at least five million zero-emission vehicles on California roads by 2030. The executive order also established a statewide goal for the construction and installation of 200 hydrogen fueling stations and 250,000 vehicle charging stations, including 10,000 direct current fast chargers, by 2025.

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, which further supports electric vehicle deployment by requiring all new passenger vehicles sold to be zero-emission vehicles by 2035 and all commercial trucks sold to be zero-emission vehicles by 2045.

In the next 15 years, the number of electric vehicles in the Stanislaus region is expected to increase from 2,600 EVs in 2020 to at least 60,000 electric vehicles in 2035. To support 60,000 EV drivers, nearly 8,500 chargers will be needed.

In March of 2022, StanCOG adopted an Electric Vehicle Infrastructure Study to build upon statewide efforts related to EV infrastructure and provide

guidance for EV infrastructure installation in the Stanislaus region. Through this study, 21 high-priority sites in each city were identified for public charging infrastructure. Each location included maps, a recommended type of charger, installation and equipment cost estimates, and information on the utility service for the location.

Transportation-as-a-Service

One of the more significant trends in transportation today is the increasing importance of mobility solutions that are not based upon personally-owned vehicles. Some of the better-known examples of these are Transportation Network Carriers (TNCs) such as Uber and Lyft, which provide transportation-as-a-service. While TNCs have primarily been operated

by private firms to date, increasingly transit providers are considering how to integrate and/or provide on-demand transportation services to augment existing public systems and extend the reach of their systems to riders that might otherwise be too far from existing transportation hubs.

Transportation-as-a-service also extends to the sharing economy. With the advent of Zipcar, GIG Car Share, and several major car manufacturers openly planning to move into this market in the future (either in

conjunction with autonomous car rollouts or through more conventional options), it is clear that there will be more options for using cars on an as-needed basis (i.e., renting a car by the hour or by the day for individual trips).

One of the primary benefits of transportation- as-a-service is the expectation that it will reduce transportation costs for most individuals while increasing the number and availability of transportation options. Depending on how appealing this is to consumers, it could ultimately influence transportation mode selection and reduce the total fleet size of personal vehicles as individual car ownership may become less desirable or essential. In turn, this could have an impact on land use and parking requirements as fewer vehicles may be owned by individuals to meet their transportation needs.

Autonomous Vehicles

While only a few years ago Autonomous Vehicles (AV) were still largely considered to be part of a distant future, considerable effort is now being expended across the US to establish regulations for their testing and operation. There is considerable investment being made in AV technology, and, in some places such as San Francisco and Arizona, a limited rollout of autonomous taxis is already happening. In addition, while varying levels of autonomy already exist, several major car manufacturers have indicated they will bring near fully autonomous vehicles to market in the next five to ten years.

As adoption increases, system-wide AV transportation impacts will become more significant and noticeable. While we do not have absolute certainty as to what those will be, increasingly the consensus among experts suggests that:

1. Assuming the regulatory environment does not change, automated vehicles will likely cause overall Vehicles Miles Traveled (VMT) to increase in response to (1) reducing the “cost” of driving (time can be dedicated to non-driving tasks); (2) the movement of vehicles with zero occupants between pick-ups; and (3) the ability of some populations who cannot drive to travel more easily by themselves (e.g., the elderly, young, disabled, etc.).
2. New regulations and/or incentives may be necessary to manage congestion if a considerable number of new trips are induced by the introduction of AVs.
3. Curbside and right-of-way management will likely be necessary near major pick-up and drop-off locations to maintain safe and orderly traffic operations.

Big Data

While often thought of as simply meaning new or increased data availability, the real power behind Big Data is predictive analytics, or, simply put, the ability to provide better forecasts and information. Newly available data relating to trip origins and destinations, speeds and travel time reliability, and other operational considerations from Global Positioning Systems (GPS) or smartphone apps are changing our knowledge base regarding existing system operations. In conjunction with the availability of this data, analysis is also increasingly being automated, resulting in the ability of agencies to garner a more timely and complete understanding of their transportation systems.

Big Data also has the potential to greatly improve traffic count and travel time reliability data, which in turn can be used to monitor the Congestion Management Process in the region. Some other performance metrics that can be gleaned from Big Data include

duration of congestion for peak hours, total delay for all vehicles, and origins and destinations of traffic flows within Stanislaus County.

At the same time as significant advances in Big Data for transportation are being made, the range of Internet of Things (IOT) devices (items embedded with technology that allows objects to exchange and collect data) are also expanding. From a traffic light bulb that notifies that it needs changing to the multitude of roadway sensors that can count or measure traffic, the opportunities to use data to more efficiently manage the transportation system are significant. Big Data and IOT are expected to have a multitude of positive impacts on the ability to maintain and manage the transportation system.