

CHAPTER 5

Performance of the Sustainable Communities Strategy



FIVE

Performance of the 2022 RTP/SCS reflects a horizon year 2046 in comparison to the 2018 plan. This comparison effectively examines how the plan measures up against previous plans, which were ambitious in their own right. These comparisons will show whether the plan's strategies and investments continue to successfully reduce greenhouse gas emissions, decrease potential impacts on the environment, facilitate efficient public investments, and improve residents' ability to reach the places they want and need to go through even bolder transportation and land use planning strategies.



Performance — How does the Plan Measure up?

Performance indicators, or metrics, are qualitative or quantitative measures of progress toward the plan's overall goals, objectives, and policies. They contribute to the decision-making process by providing a basis for determining whether a decision advances the transportation objectives that are valued and held as priorities by the region. In some cases, the plan is making solid progress toward the goals and objectives. In other instances, the plan is slowing the progress of undesirable outcomes or resisting worsening outcomes in the face of rapid population growth. The plan's progress is discussed in the following sections.

Performance indicators are used as one tool to help evaluate how this plan contributes to the quality of

life in the San Joaquin region. Many of these indicators have been carried over from the 2018 RTP/SCS.

The performance indicators were utilized during the public outreach process to help interested citizens, stakeholder groups and advisory committees in understanding the policy choices and tradeoffs inherent in the alternative land use and transportation scenarios that could form the foundation of the plan.

A summary of all performance outcomes can be found in Figure 5.1. The following pages highlight plan performance across a variety of critical focus areas. In addition to this RTP/SCS, there is a Regional Progress Report that discusses historical trends to put the performance of the plan in context. Some indicators and trends are highlighted in the chapter with a full report included as Appendix M.



Figure 5.1

The 2022 RTP/SCS Story

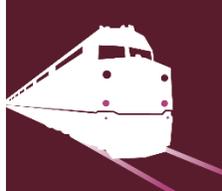


Enhance the Environment for Existing & Future Generations

Prime Farmland Developed: 3,762 fewer acres of Prime Farmland developed over the 2018 Plan

Energy & Water Consumption: Average residential household use decreases 7.6% and 50 gallons of water per household saved daily by 2046 over the 2018 Plan

Reducing Green House Gases: The plan meets and exceeds greenhouse gas reduction targets



Maximize Mobility & Accessibility

Improvements to mobility: Fewer minutes of delay due to congested roadways

Increased Investment in Transit: \$4.73 billion in transit investments, 32.5% increase over the 2018 Plan

Transit Routes: Supports improvements to transit routes and improves frequency and efficiency on intercity and intracity routes with increased investment in transit



Preserve the Efficiency of the Existing Transportation System

Acres of Land Consumed: Urban Footprint decreases by over 5,100 acres over the 2018 Plan

High Quality Transit Areas/TOD: 19% of employment and 10% of housing in High Quality Transit Areas by 2046

Investments on Mainline Highway Systems: I-5 and I-205 carpool lanes, SR 99/120 connector project

Maintenance & Operation Improvements for the Existing Transportation System: Investments increased by 4.3% over the 2018 Plan



Support Economic Vitality

Creation of Jobs: Average of 6,277 Full Time Equivalent jobs created by RTP projects annually

Supporting Goods Movement & Economic Centers: Infrastructure improvements to streamline goods movement



Increase Safety & Security

Transportation System Management Improvements: Freeway auxiliary lanes, modified interchanges, improved shoulders, intersection improvements

Grade Separation Projects: \$197 million for railroad grade separations

Intelligent Transportation Systems: CCTV, changeable message signs, traffic detection equipment



Improve Public Health

Residential Density: Average housing net density increases from 8.0 to 9.9 units per acre over the 2018 Plan

Public Health - Emissions Budgets: Meets Clean Air Act emissions standards



Building on Active Transportation

Active Transportation Investments (bike lanes, ancillary projects): \$384 million, a 20% increase over the 2018 plan

Trip Mode Share: Substantial increase in bike and walk trips, decrease in single-occupancy vehicle trips



Ensuring Social Equity

Housing Mix: Increased diversity of housing options over the 2018 Plan

Transit Accessibility: Communities of concern have higher access to high quality transit than the county as a whole

Enhance the Environment for Existing and Future Generations and Conserve Energy

Reducing Impacts through Environmentally Sustaining Practices

The plan encourages efficient development that maintains agricultural viability and natural resources and enhances the connection between land use and transportation choices through projects supporting energy and water efficiency. The following indicators highlight the plan's aggressive pursuit of environmental preservation and enhancement.

Acres of Prime Farmland Consumed

While a similar measure to the total acres of land consumed, this indicator has its basis in Senate Bill 375's requirement that the metropolitan planning organization consider the best available scientific data on the impacts to resource and agricultural lands. The plan's more compact development footprint encroaches less on prime agricultural land vital to the San Joaquin County economy than the 2018 plan.



Energy Usage and Water Consumption per Household

Energy and water efficiency described here represents a co-benefit of the future resulting from the more compact urban form envisioned and modeled for San Joaquin County household growth. Decreases in energy and water use are both an environmental and a financial benefit through reductions in overall housing costs.

Average new household residential energy use is 7.6% lower in the plan when compared to the 2018 plan. **This is the equivalent of powering an additional 9,000 households. Water saved is 50 gallons per new household per day.**



Photo Credit: San Joaquin Regional Transit District

Improve Air Quality and Reduce Greenhouse Gases

Greenhouse Gas Emissions per Capita

The Plan meets and exceeds the greenhouse gas targets as set by the California Air Resources Board (CARB) of 12 percent in 2020 and 16 percent in 2035. The 12 percent and 16 percent reductions are from cars and light duty trucks and are measured against a 2005 baseline on a per capita basis.

This performance indicator was developed in direct response to the requirements of SB 375. A full discussion of the greenhouse gas targets and SJCOG's analysis is included in the technical appendix. For consistency with the other measures in this section, 2046 indicators are included here as part of the plan performance discussion. The performance targets for

this measure will be under review by CARB.

Vehicle Miles of Travel per Capita

As the name implies, a vehicle mile is one vehicle traveling one mile on the roadway network, regardless of how many people are occupying the vehicle. Vehicle miles traveled (VMT) for decades has been a consistent measurement of travel efficiencies for both transportation planners and policymakers. It is an important predictor in SB 375's principal target — greenhouse gas reductions from cars and light duty trucks, and other measured vehicle emissions. The unadjusted total daily VMT per capita is 23.63 for the plan in 2046, compared to 23.24 in the baseline condition of 2016. Thus, modeled per capita VMT remains relatively constant. When adjusted for potential induced demand, 2046 VMT shows a slight increase to 25.53 per capita.

Maximize Mobility and Accessibility

This plan has a true multimodal approach in its investment strategies. The plan continues its commitment to increased investment in bus and rail transit, and active transportation projects such as bikeways or streetscape features to facilitate public health through active communities. The targets in this section are reflective of the plan's achievements in providing easier and more convenient access to the places to which people need and want to travel. Existing programs supporting demand strategies such as ridesharing also play a significant role, as do investments in "place-making" such as mixed-use areas where destinations are closer to home. The following indicators highlight some of the transportation system efficiencies improved through this investment strategy.

Transit Ridership

Increases in transit ridership can be attributed to improvements in service through direct investments in transit-related capital and operations and increased

ridership attributable to supportive land use patterns. For example, studies indicate that residential densities of approximately seven to eight dwelling units per acre are required to support efficient transit operations.

Transit ridership increases by more than 35% because of the plan's direct and indirect investments in improving transit accessibility and efficiency.

Bike and Walk Trips

Trips made in the active transportation category, either by walking or biking, show a substantial increase over base conditions (+35%) due to plan investments. Strides are being made both at the local land use level and with the percentage of plan



investments dedicated to active transportation supportive projects.

Increase Safety and Security

Investments that Help to Reduce the Number and Severity of Traffic Incidents

The plan has many targeted investments to improve safety and security. The plan invests in advanced technology applications, often referred to as intelligent transportation systems (ITS). These include closed circuit televisions to monitor and convey real-time travel conditions, changeable message signs, traffic detection equipment, and traveler information systems. These high-tech applications allow motorists to choose the most efficient travel options and allow local and state agencies to respond to incidents more quickly on the roadway. As with other MPOs in the state, SJCOG recognizes the use of performance-based planning targets for safety and supports the state targets for this measure. Additional information on performance-based planning can be found in Appendix N.

The plan increases bike and walk trips from 9.01% in 2016 to 9.08% in 2046 with the plan as a percent of all daily trips. Countywide, this results in over 100,000 more active transportation trips daily.





Support Economic Vitality

Transportation infrastructure construction results in many jobs per dollar of investment for the local economy. This indicator gives a snapshot of potential job creation, including direct construction-related employment and indirect jobs created to somehow support the direct jobs, such as employees hired by suppliers and vendors. Induced jobs are created when direct and indirect employees spend their incomes on consumer goods and services. The calculations are based on an analysis completed for SJCOG by the University of the Pacific Center for Business and Policy Research.

Construction of the projects outlined in the RTP investment strategy and project lists will support an

annual average of 6,277 direct, indirect and induced full-time jobs in San Joaquin County over the life of the plan. The full economic output benefit to the local economy is estimated at \$14.2 billion. An in-depth discussion of job creation potential can be found in Chapter 6 and the full economic analysis report in Appendix R.

Over 125,000 new jobs will be created through the RTP/SCS.



Improve Public Health and Build on Active Transportation

Promoting Active Lifestyles through Improved Linkages between Transportation and Land Use

Now more than ever, the plan with its visionary SCS component concentrates on the ways the future built environment can be enhanced with focused, innovative transportation investments. The plan strives to enhance public health through improving public spaces to provide more opportunities to bike and walk to destinations for work, play or other necessary travel.

For the 2022 RTP/SCS cycle, SJCOG used a methodology that was introduced in the 2018 plan to measure health indicators. Investments in land use and transportation that improve features for pedestrians and cyclists, including transit infrastructure, have been shown to increase the physical activities of walking and biking. SJCOG adopted the National Public Health Assessment Model (NPHAM) to predict travel and land use-related behaviors – such as walking for commuting purposes, leisure walking and recreation – and health outcomes such as body-mass index (BMI) and the percent of population reporting poor health. NPHAM is well integrated with the Envision Tomorrow scenario planning tool already used by SJCOG, controls for

demographics, and provides estimates at the U.S. Census block-group level.

SJCOG used NPHAM to compare the health effects of the current plan with the 2018 Plan, and to establish a baseline. This included a spatially-based equity analysis that focuses on disadvantaged areas in the region. The findings showed that the plan supports modest increases in healthy behaviors, reductions in BMI, and decreases in poor health over the baseline and 2018 plan. The full health indicators report can be found in Section 5.2.1 of Appendix S.

Active Transportation Investments

This indicator shines a light on the plan's commitment to build on recent successes attributable to the level of Measure K bicycle and pedestrian funding and the increasing funding to the Active Transportation category first envisioned in the 2014 plan. In the 2022 plan, funding for active transportation is \$384 million, which represents a 20 percent increase over the 2018 plan. The percent of total investments also increased over the previous plan from 2.9 percent to 3.1 percent. This commitment is enhanced by SB 1 funding for active transportation. The plan assumes the full implementation of the bikeway projects included in the 2012 Regional Bike, Pedestrian, and Safe Routes to School Master Plan, and recognizes that many new projects have been proposed since that master plan was completed.

EQUITY AND ACCESS

A Plan for Everybody

Included in this section are performance indicators that specifically identify the equitability of plan investments across all income and minority groups in San Joaquin County. These indicators compare identified communities of concern with the remainder of the region. The indicators include access to high-quality transit, households within 500 feet of a major transportation facility, housing type mix, roadway expenditure benefits, and health outcomes. The full Title VI and Environmental Justice analyses are included in Appendix P.

Adequate Provision of Housing for a Diverse Population

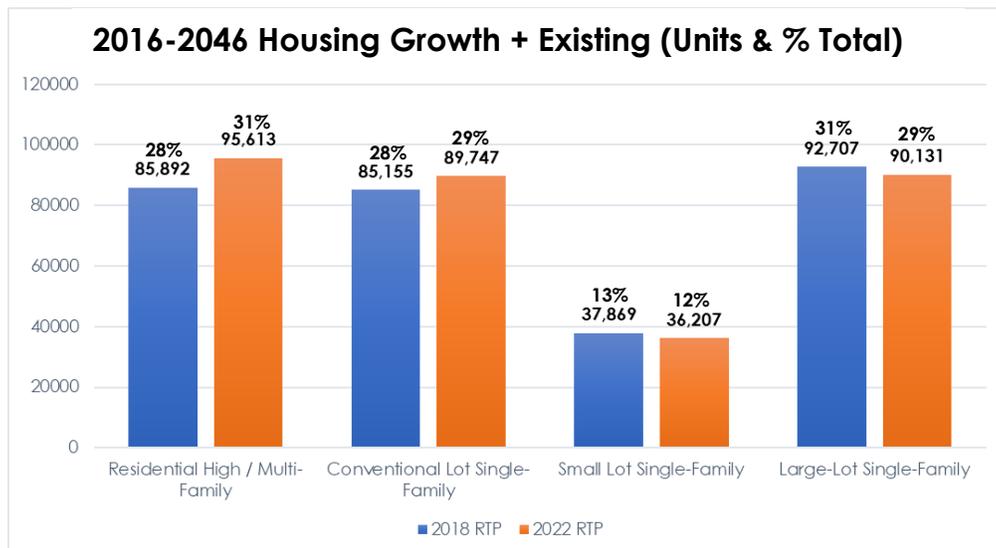
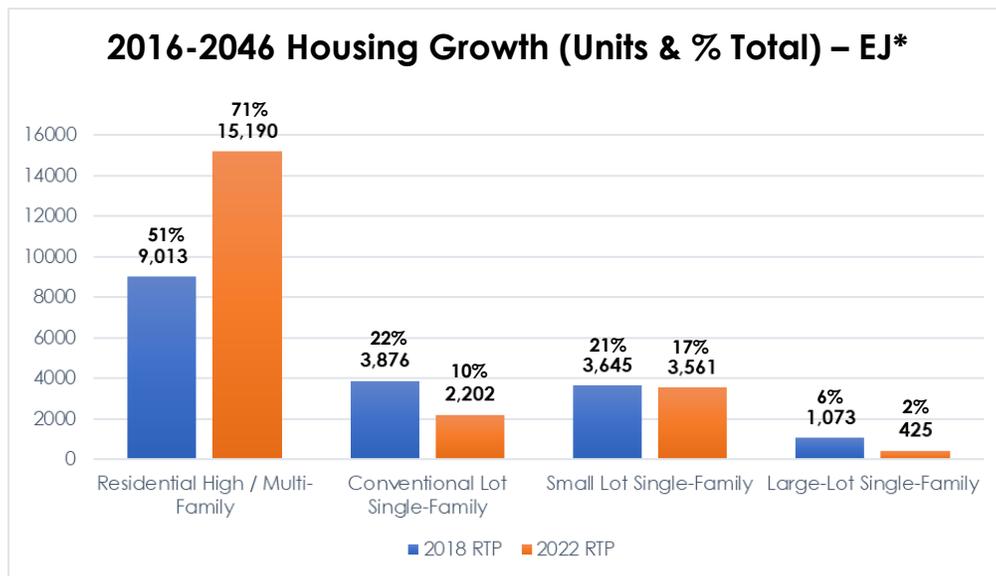
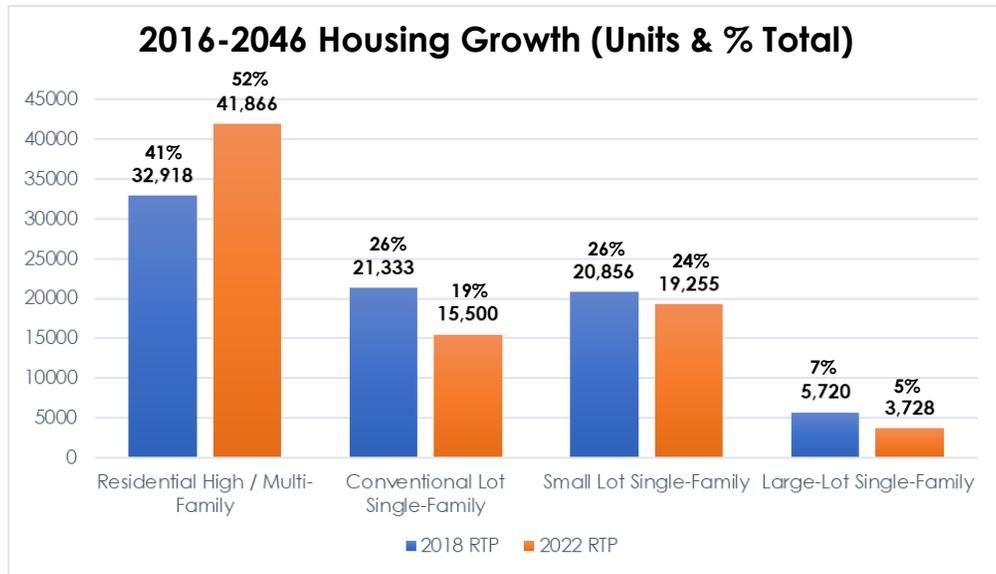
Housing type is a complementary measure to density and an indicator of housing affordability and

availability for all income groups. The projected change in the housing mix demand is related to housing availability for all income groups, demographic changes, and economic realities. The housing mix indicator is supported by a study for San Joaquin Valley counties titled Market Demand Analysis for Higher Density Housing in the San Joaquin Valley. Among the study's findings were that appropriate densities need to be provided to ensure adequate rental housing availability and that higher-density housing has been historically underdelivered, particularly for renters. There will be an increase in housing choices for everyone in San Joaquin County when comparing the projected housing mix from the 2018 and 2022 plans (Figure 5.2). The diversity of housing is higher in identified environmental justice communities.

Photo Credit: Captivating Photos



Figure 5.2



*Environmental Justice Communities (Communities of Concern)

Health Equity Metrics

SJCOG partnered with Urban Design for Health (UD4H) to incorporate the NPHAM health model in its scenario evaluation process, during which the 2022 plan was evaluated based on minority and poverty status. The equity analysis clearly demonstrated that the health gains observed would generally increase most in areas with relatively high proportions of low-income and minority households. Details on the analysis can be found in Section 5.2.1 of Appendix S.

Photo Credit: Captivating Photos



Communities of Concern (Environmental Justice) Discussion and Indicators:

The following criteria were used to identify environmental justice communities.

Minority

For purposes of the environmental justice analysis for the plan, SJCOG utilized the U.S. Census Bureau definitions of different racial and ethnic populations to identify minority status among people living in San Joaquin County. Minority people are those who identify as Black or African American, Native American, Asian, Native Hawaiian or Other Pacific Islander, Hispanic/Latino, or a multiple of races.

Low Income

SJCOG defines people as low-income if they are living at or below 150 percent of the federal poverty level

as defined by the Census Bureau. The 150 percent standard was used instead of the 100 percent standard to account for the higher cost of living in California.

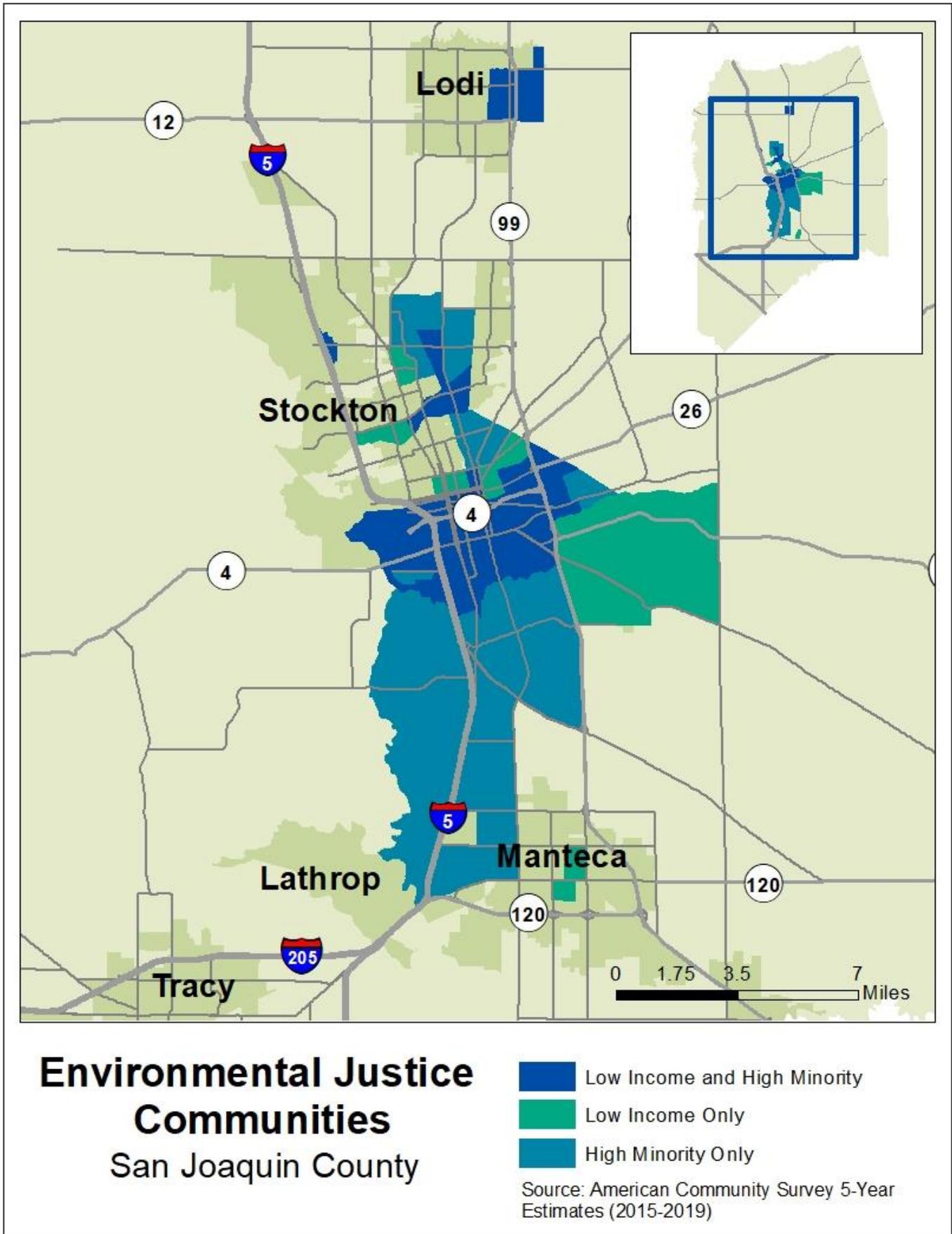


Defined Environmental Justice Areas

To examine the degree to which minority and low-income (i.e., environment justice) groups benefit from the transportation investments and policies being carried out as part of the plan, environmental justice communities must first be defined and mapped.

The census tract is the smallest level of geography for which both income and racial/ethnic data is reliable. Census tracts and the most recently available American Community Survey 5-Year Estimates (2015-2019) have been used to identify areas of specific concern in San Joaquin County. Census tracts that had at least 80 percent of its residents being minority or had at least 40 percent of its residents living at or below 150 percent of the federal poverty level were considered communities of concern or environmental justice communities. This process identified 51 out of a total 139 census tracts that met one or both criteria. A map of the areas is shown in Figure 5.3.

Figure 5.3



Transit Accessibility

An equity analysis of the plan's bus transit investments as defined by SB 375 was performed comparing new household and employment access to high quality transit areas in environmental justice communities with those in non-environmental justice communities.

The results indicated that people in environmental justice communities, both in terms of households and employment within walking distance of transit, will have significantly better access compared to people in non-environmental justice communities. In the plan, 23.9 percent of households located in environmental justice communities will have access to high-quality transit compared to only 4.2 percent for non-environmental justice communities. These findings are similar for employment access to high-quality transit in environmental justice communities versus non-environmental justice communities, with 30.1 percent of jobs in environmental justice communities being in proximity to high-quality transit versus 11.1 percent for non-environmental justice communities.

Based on these results, equitable if not more favorable benefits resulting from transit investments can be inferred for environmental justice communities. This can be attributed to environmental justice communities being more geographically concentrated in developed areas of the county where transit service provision is the greatest.

Households Within 500 Feet of A Major Transportation Facility

Living nearby major transportation facilities can increase population exposure to health-based emissions and particulate matter from vehicles. An equity analysis was performed on the plan to compare the number and percentage of new households in environmental justice communities that will be located within 500 feet of a major transportation facility with those in non-environmental justice communities. Major transportation facilities included Interstates 5, 205 and 580, and State Routes 4, 99 and 120. Considering environmental justice communities, 6.1

percent of households will be within 500 feet of any major facility versus 5.7 percent for households in non-environmental justice communities. This is due to many environmental justice communities located near or within the urban core where there is a higher density of major transportation facilities.

Roadway Expenditure Benefits

To gauge the extent to which environmental justice communities proportionately benefit from roadway improvement investment compared to the general population, an equity analysis was performed. Using the SJCOG travel demand model, a select link analysis was performed on regionally significant roadways identified for capacity improvements in the plan. Select link analysis provides information on where traffic comes from and goes to on selected roadways. The analysis yielded the percentage of vehicle demand whose origin is in an environmental justice community versus a non-environmental justice community. Results indicated that approximately 40.8 percent of daily vehicle trips utilizing these improved roadways originate from environmental justice communities. This indicates that a significant proportion of environmental justice communities will benefit from future roadway investments resulting from the plan – substantially more than the share of EJ households countywide of 28.8%.





Photo Credit: Wayne Giles

Conclusion

These indicators demonstrate that the plan performs better overall than the 2018 plan and improves current conditions. The performance indicators show real improvements in meeting sustainability. It is also recognized that with some indicators, the plan performance benefit is incremental despite a different approach in both the investment strategy and in the conceptual land use patterns. This is due in large part

to an already well-established built environment. Over time, these incremental improvements will become a substantial part of San Joaquin County's urban environment with increasing benefits. The performance measures included in this plan demonstrate a change for the region that meets the needs of our communities and provides a responsible set of metrics for meeting sustainability objectives.