CHAPTER 5

PERFORMANCE OF THE SUSTAINABLE COMMUNITIES STRATEGY
CHAPTER 5
PERFORMANCE OF THE SUSTAINABLE COMMUNITIES STRATEGY

INTRODUCTION

The previous chapter identifies the transportation projects that make up the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Are these wise investments? How does the Plan perform in advancing the sustainability goals such as reducing greenhouse gas emissions, increasing resident access to transit and active transportation, and improving public health and economic vitality?
This chapter summarizes the performance outcomes of the long-term investments in programs and infrastructure representing the shifting needs and priorities in the San Joaquin County region. The chapter also describes how the Plan addresses the needs of communities of concern in the county. The technical analyses supporting the narrative are contained in the Performance Measures and Environmental Justice Appendices.

Because the Plan horizon year is 2040, performance results reflect year 2040 performance in comparison to year 2040 “business as usual” conditions. This comparison effectively examines how the Plan measures up against an alternative future where the land use trends of the recent past continue and the mix of investments is more auto-centric to match the larger, less compact urban footprint. This comparison will demonstrate whether the Plan is successful in addressing climate change, reducing potential impact on the environment, facilitating efficient public investments, and improving residents’ ability to reach the places they desire through bolder transportation and land use planning strategies.


Performance — How does the Plan measure up?

Performance indicators have been used as a tool to help evaluate how this Plan contributes to the quality of life in the San Joaquin region. These indicators were largely developed through work with the RTP/SCS Advisory Committee and informed along the way through the public listening sessions, online web survey feedback, and individual stakeholder group meetings. The measures were utilized during the public outreach process to aid interested citizens, stakeholder groups, and advisory committees in understanding the policy choices and tradeoffs inherent in the alternative land use and transportation scenarios that would 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.
The SCS Story

Enhance the Environment for Existing & Future Generations
- **Prime Farmland Preserved**: 10,707 fewer acres of Prime Farmland developed
- **Energy & Water Consumption**: Average residential household use decreases 45% and 193 gallons of water per household saved daily
- **Reducing Green House Gases**: Per capita emissions decline 24.4% by 2020 and 23.7% by 2035
- **Improving Air Quality through VMT Reduction**: Per capita VMT declines 2.63% from 27.15 to 26.71

Maximize Mobility & Accessibility
- **Improvements to mobility**: Reduction in 473,000 vehicle miles traveled daily
- **Increased Investment in Transit**: $3.52 billion in transit investment, 2011 RTP
- **BRT Routes**: New routes on Martin Luther King Jr., West Lane, and March Lane corridors and improved frequency on intercity routes

Preserve the Efficiency of the Existing Transportation System
- **Acres of Land Consumed**: Urban Footprint decreases by over 17,000 acres
- **High Quality Transit Areas/TOD**: 39.02% of employment and 23.86% of housing in High Quality Transit Areas by 2040
- **Investments on Mainline Highway Systems**: I-5 and I-205 carpool lanes, SR 4 Crosstown Freeway extension
- **Preventative Maintenance**: Approximately 73% of roadway operations, maintenance and safety funds for local streets and roads maintenance
- **Maintenance & Operation Improvements for the Existing Transportation System**: Approximately 10% of roadway operations, maintenance and safety funds for state highway system maintenance

Support Economic Vitality
- **Creation of Jobs**: Average of 4,883 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**: $190 million for railroad grade separations
- **Intelligent Transportation Systems**: CCTV, changeable message signs, traffic detection equipment

Improve Public Health
- **Residential Density**: Average housing density increases from 4.5 to 9 units per acre
- **Community Enhancements and Place Making**: Over $115 million for sidewalks, pedestrian streetlights, landscaping, and traffic calming
- **Public Health: Emissions Budgets**: 2.29% decrease in Pollutants per Capita

Building on Active Transportation
- **Active Transportation Investments (bike lanes, ancillary projects)**: 822 miles of new bike lanes
- **Trip Mode Share**: 45,000 fewer automobile trips daily

Ensuring Social Equity
- **Housing Mix**: Increase diversity of housing options
- **Transportation Costs**: 0.26% decrease of average household income spent on transit
- **Transit Accessibility**: 6.5% higher accessibility to transit with at least 2 buses per hour for communities of concern
Enhance the Environment for Existing and Future Generations and Conserve Energy

Reducing Impacts through Environmentally Sustaining Practices

The Plan seeks to encourage efficient development patterns that maintain agricultural viability and natural resources and enhance 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 economy in San Joaquin County.

Energy Usage and Water Consumption per Household

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

A Plan that Exceeds Air Quality Requirements

**Greenhouse Gas Emissions per Capita**

The Plan meets and exceeds the greenhouse gas (GHG) targets as set by the California Air Resources Board (CARB) of 5 percent in 2020 and 10 percent in 2035. The 5 percent and 10 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. Further discussion of the GHG targets and SJCOG’s analysis is included in the Environmental Impact Report, Appendix N. For consistency with the other measures in this section, 2040 indicators are included here as part of the performance discussion.

**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) has been a consistent measurement of travel efficiencies by both transportation planners and policy-makers for decades. It is an important predictor in SB 375’s principal target—GHG reductions from cars and light duty trucks, as well as other measured vehicle emissions. The total daily VMT is 28,592,732 for the Plan and 29,065,851 for business as usual conditions. This means that the Plan reduces over 473,000 daily VMT. Per capita, that reduction is .44 mile per day.
Maximize Mobility and Accessibility

Getting Where We Need and Want to Go

This Plan has a true multimodal approach in its investment strategies. The Plan increases 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 achievements of the Plan in providing easier and more convenient access to the places citizens need and desire to travel. Existing programs supporting demand strategies such as ride-sharing also play a significant role, as do investments supporting “place-making” such as more 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 both 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 7 to 8 dwelling units per acre are required to support efficient transit operations.

**Bike and Walk Trips**

Trips made in the active transportation category, either by walking or biking, show a modest increase 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**

**Let’s Be Careful Out There!**

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

The Plan has many areas of investments targeted 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 travel options and allow local and state agencies to more quickly respond to incidents on the roadway.
Support Economic Vitality

Transportation infrastructure construction results in a large number of jobs per dollar of investment for the local economy. This indicator gives a snapshot of potential job creation (both direct or construction-related employment), and indirect or additional jobs created due to spending from those receiving income from direct jobs. The calculations are based on an analysis completed for SJCOG by the University of the Pacific Business Forecasting Center.

Construction of the projects outlined in the RTP investment strategy and project lists will support an annual average of 4,833 direct, indirect, and induced full-time jobs in San Joaquin County over the 27-year life of the Plan.

Over 130,000 new jobs will be created during the 27 year period of the RTP/SCS.

Preserve the Efficiency of the Existing Transportation System

Taking Care of What We’ve Got

Location Efficiency: Housing and Employment near Major Transit Routes and Stations

SB 375 defines high quality transit areas (HQTA) as areas within a half-mile of routes with 15-minute or better frequencies during peak travel times and areas within a half-mile of existing train stations or bus transfer stations meeting number and frequency requirements. These areas qualify for environmental document streamlining under the California Environmental Quality Act (CEQA) when developers propose buildings that meet other requirements in SB 375. San Joaquin County has areas meeting these definitions, primarily within the population center of the City of Stockton, along bus rapid transit routes. SJCOG is also reporting the percentage of new development near other existing transit routes with definition under SB 375. Locating development potential for increased services under the Plan, even though they do not currently meet the HQTA within these areas furthers the intent of SB 375 and contributes to improvement in the overall goals and objectives of the Plan.

Housing and employment located within these HQTAs increase the potential for transit usage, as well as walking and biking opportunities, through more convenient access and co-location of jobs and services. Increases in jobs and households close to existing transit may have a synergistic effect. The Plan’s foundational land use assumptions support transit and walk/bike projects that can greatly increase the attractiveness of these identified corridors and hubs for additional private investment.
CHAPTER 5: PERFORMANCE OF THE SUSTAINABLE COMMUNITIES STRATEGY

Improve Public Health and Build on Active Transportation

Promoting Active Lifestyles through Improved Linkages between Transportation and Land Use

Now more than ever, the RTP, with its embedded SCS, 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 as a way to provide more opportunities to bike and walk to destinations, for work, play, or other necessary travel.

Active Transportation Investments

This indicator shines a light on the Plan’s focused commitment to build upon the recent successes attributable to the existing commitment of the bicycle/pedestrian funding pool within the Measure K renewal program and the increased portion of revenues assigned to the Active Transportation category. As a percentage of total funding, the category increased from 1.5 percent of total revenues to 2.6 percent, representing a 78 percent increase over the 2011 RTP. The additional bikeways added assume full implementation of the bikeway projects included in 2012 Regional Bike Pedestrian Safe Routes to School Master Plan.
Equity and Access

A Plan for Everybody

Included in this section are performance indicators specific to identifying the equitability of Plan investments across all income and minority groups in San Joaquin County. Two performance indicators relative to the entire population are considered: housing type mix and percent of household income spent on transportation. Three additional measures are considered for identified communities of concern only versus the region in the aggregate: transit accessibility, households within 500 feet of a major transportation facility, and roadway expenditure benefits. Tables and the full environmental justice analysis are included in the Environmental Justice Appendix.

Region-Wide Indicators:

Adequate Provision of Housing for a Diverse Population

Housing type is a complementary measure to density—and is also an indicator of housing affordability and availability for all income groups. The projected change in the housing mix demand is both a function of demographic changes and economic realities. The goal for the housing mix indicator has its basis in a study completed for San Joaquin Valley counties entitled Market Demand Analysis for Higher Density Housing in the San Joaquin Valley. Among the findings in the study were that appropriate densities need to be provided to ensure adequate provision of rental housing and that higher-density housing has been historically under-delivered, particularly for renter households. Differences in the projected housing mix between the business as usual condition (based on historical trends) and the Plan provides for increased housing choices for all populations in San Joaquin County as shown in the pie charts (Figures 5.2 and 5.3).
Figure 5.2: Housing Choices in the “Business As Usual” Scenario

Figure 5.3: Housing Choices in the Plan (RTP/SCS)

Percent of Household Income Spent on Transportation

As this indicator is based on expenditures for auto-related transportation costs, it decreases relative to the shift in mode share from auto-based trips to non-auto-based trips such as biking and walking. As with the mode share shift, this indicator shows a light improvement based on changing transportation investments and land use assumptions attributable to the Plan’s strategies. The decrease is from 15.76 percent to 15.50 percent of countywide average household income.

Communities of Concern (Environmental Justice) Discussion and Indicators:

Identification of Environmental Justice Communities:
Minority

For purposes of the Environmental Justice analysis for the Plan, SJC OG has utilized the US Census Bureau definitions of different racial and ethnic populations to identify minority status among persons living in San Joaquin County. Minority persons are those who identify as Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, some other race, multiple races, or Hispanic/Latino of any race.

Low Income

Defining “low-income” populations uses the poverty threshold as defined by the US Census. This poverty threshold definition identifies the population in San Joaquin County that falls below a nationally defined basic standard of living.

Defined Environmental Justice Areas

In order to examine the degree to which minority and low-income (i.e., environment justice or EJ) groups benefit from the transportation investments and policies being carried out as part of the RTP/SCS, EJ communities must first be defined and mapped.

The Census Block Group is the smallest level of geography for which both income and racial/ethnic data is available, and has been utilized to identify areas of specific concern within San Joaquin County using the most recent available American Community Survey 5-Year Estimates (2007–2011). The Census Block Groups that contained 60 percent or more minority populations or 20 percent or more low-income populations were called out as communities of concern/EJ communities. These percentages conform roughly to current county averages for these definitions. This process identified a total of 228 block groups with 104 block groups meeting the threshold for both criteria. A map of the areas is shown in Figure 5.4. Appendix P contains additional information / mapping and identifies a sub-set of these areas (areas of greater concern) for future consideration.
Figure 5.4

Potential Communities of Concern Map

Potential Communities of Concern for San Joaquin County

Legend
- 20% Poverty Criteria Met
- 60% Minority Criteria Met
- Both Criteria Met

Freeways
Major Roadways
City Limits
**Transit Accessibility**

An equity analysis of the Plan’s bus transit investments was performed for EJ vs. non-EJ communities for both households and employment relative to service transit service frequency. The percentage of the total EJ population within a half-mile walking distance of a transit stop, relative to the percentage of households and employment for the entire county, was calculated. The results indicated that the EJ community percentages, both in terms of households, total employment, and low-income jobs, within walking distance of transit, are significantly higher than the countywide percentages.

Nearly two-thirds (62.4 percent) of the households in EJ communities have access to transit compared to only 55.1 percent of the general population. Additionally, across all levels of transit service frequency, a greater percentage of EJ households are within walking distance (i.e., a half-mile distance) to transit than the general population, with the proportional difference ranging from 4.4 percent more to 7.5 percent more EJ households with access to transit than the general population. These findings are similar for employment access to transit in the EJ communities with the proportional differences ranging from 6.9 percent to 9.1 percent more jobs in EJ communities having walking access to transit than the general population.

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

**Households Within 500 Feet Of A Major Transportation Facility**

Given that the proximity to major transportation facilities can increase population exposure to health-based emissions and particulate matter from vehicles, an equity analysis was performed to compare the number and percentage of general population households relative to EJ households located within 500 feet of a major transportation facility. Considering total countywide households, 5.6 percent of the households within 500 feet of any major facility are EJ households versus 5.0 percent of the general population. EJ households represent all of the households near the Crosstown Freeway (State Route 4), and approximately 80 percent of the households near Interstate 5 and Interstate 205. EJ households make up much lower numbers of households near State Route 120, Interstate 580, and State Route 99 due to these facilities being located primarily in outlying parts of the county and the concentration of the EJ communities in the urban areas of the county. Additionally, SJCOG recognizes the inherent trade-off between health benefits and exposure risk of locating new residential development in infill areas near transit. See Appendix P for additional discussion.

**Roadway Expenditure Benefits**

To gauge the extent to which EJ communities proportionately benefit from roadway improvement expenditures compared to the general population, an equity analysis was performed. Using the SJCOG Model Improvement Plan travel demand model, a select link analysis was performed on nine regionally significant roadways identified for capacity improvements in the Plan. The analysis yields the percentage of vehicle demand whose origin is an EJ community versus non-EJ community. Results indicate that approximately 39 percent of daily vehicle trips utilizing these improved roadways originate from EJ communities. This indicates that a significant proportion of EJ communities will benefit from future roadway investments resulting from the Plan. However, this share is proportionally less than the countywide percentage of the population within Traffic Analysis Zones identified as EJ zones (57%). The full EJ analysis in Appendix P provides additional discussion of this indicator.
CONCLUSION

These indicators demonstrate that the Plan, overall, performs better than the “Business as Usual” scenario. The performance indicators show real improvements in meeting sustainability. It is also recognized that in 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 the urban environment of San Joaquin County with a resulting increase in beneficial results across all communities in San Joaquin County. The performance measures included in this plan demonstrate a change for the region that meets the needs of our communities and provide a responsible set of metrics for meeting sustainability objectives.