

CHAPTER 4

VISION FOR THE FUTURE**TRANSPORTATION PLAN GOALS**

The four goals of the 2009 CTP are

- Maintain the System
- Relieve Congestion
- Reduce Emissions
- Plan for Safety & Health

The 2009 CTP has four overarching goals. The first two, Maintain the System and Relieve Congestion have been in previous Comprehensive Transportation Plans and continue to pose challenges and opportunities.

The last two goals, Plan for Safety and Health and Reduce Emissions are new to this plan. The issue of personal and public safety and health as it relates to transportation planning arose during the public outreach as an area of significant concern in Sonoma County. These have always been important issues in the development of transportation plans and projects, but now, especially as they intersect with other goals such as preserving air quality, maintaining a safe and efficient transportation system and reducing congestion, health and safety require special attention in transportation planning.

Addressing emissions from transportation projects has historically been done

via air quality analysis on a project level basis, but with new State law and local expectations about reducing greenhouse gas emissions the 2009 CTP has a greater focus on the problem of climate change, a look at the connection to transportation and analysis of strategies to address the problem here in Sonoma County. This is set forth in the new policy goal to Reduce Emissions.

In support of the CTP update, six transportation scenarios, representing sets, or programs, of transportation improvement solutions, were tested using SCTA's travel demand model. The Sonoma County Travel Model (SCTM 07) uses land use, population, and employment data for

CTP TRANSPORTATION SCENARIOS

- No Action/No Build
- Projects with Likely Sources of Funding
- Projects with Unknown Sources of Funding
- Smart Growth Land Use with Supportive Transit Expansion
- Innovative Congestion Pricing Strategies
- Comprehensive-Projects, Smart Growth Land Use/Transit, and Pricing

Important transportation strategy categories are shown below with more detailed strategies included in the discussion of each CTP goal and objective (See Appendix A-i–Strategies Matrix for more detail):

- Improve Bicycle and Pedestrian Facilities and Safety
- Improve Transit Service and Facilities
- Land Use Improvements
- Promote Ride Sharing and more efficient use of existing travel system
- Implement Travel Demand Management
- Implement Transportation Pricing Policy
- Implement Traffic Flow Improvements
- Encourage Transportation Technology Improvements
- Maintain the System
- Expand the System

Sonoma County to estimate trips, travel patterns, traffic volumes, congestion, and travel mode for the current and future (2035) countywide transportation system.

The six scenarios representing different future transportation improvement alternatives were evaluated based on a set of scenario performance measures. Performance measures can be used to quantify how well the goals and objectives of the plan are being met. Performance measures analyzed include greenhouse gas emissions, vehicle miles traveled, and congestion (See Appendix C-vi for more information on SCTM 07 and a detailed summary of scenario analysis results).

The results of the scenario analysis support the policies and projects contained in this plan. Model output, CTP project lists, and the transportation strategies matrix serve as decision support tools to aid decision makers in the prioritization of transportation projects and policies, and provide guidance on which types of projects and policies will allow SCTA to meet its goals and objectives.

There are a few specific cases where the solutions proposed here seem to contradict (for example roadways that are safer often carry more traffic and lead to more driving), but the overarching solution to transportation problems is to drive less. This is only possible when viable options are available to the

public—be it transit, bike routes, land use planning, housing, school and job linkages, pedestrian amenities, car share and ride share programs, ability to make shorter trips or avoid trips altogether, etc. Mobility relies on options and the 2009 CTP is aimed at addressing how those options can best meet the needs of our community and address the plan goals.

Implementing the necessary options requires two basic ingredients: funding and a shift in personal transportation habits. Aside from being inadequate to meet the needs of transportation, funding is funneled through dozens of special programs, at various levels of government, with specific goals and eligibility that do not always fit well with the goals of the local community. Funding will be addressed in greater detail as a separate chapter in the plan. The issue of modifying personal transportation habits is reliant on the availability of reliable options to driving and is linked to pricing, land use and technology.

The 2009 CTP is structured to place general policy and planning information in this chapter and provide a higher level of detail as appendices to cover key information such as project lists, a list of innovative transportation improvements (or Transportation Strategies Matrix), transportation’s role in the production of GHG emissions and more detailed reports.

PERFORMANCE MEASURES

REDUCE GHG EMISSIONS TO 25% BELOW 1990 LEVELS BY 2015, AND 40% BELOW 1990 LEVELS BY 2035.

REDUCE VMT PER CAPITA BY 10% BELOW CURRENT LEVELS (2005) BY 2035.

REDUCE PERSON HOURS OF DELAY 20% BELOW TODAY’S LEVELS (2005) BY 2035.

IMPROVE COUNTYWIDE PCI TO 80 BY 2035, WITH A MINIMUM ROAD PCI OF 70 BY 2035.

GOAL 1. MAINTAIN THE SYSTEM

Objective: Protect the investment in public transportation infrastructure.

Maintaining transportation infrastructure covers many activities from keeping ditches clear so they drain properly to purchasing new buses to keeping bike lanes free of debris and sealing cracked pavement on a local roadway. The transportation infrastructure is the most expensive asset owned by local governments and is also the most expensive to maintain.

No one likes potholes, but it is a fact of life that many jurisdictions respond to funding shortages by deferring preventative maintenance for roads, which has drastic consequences on the condition of pavement. The 25 year planning horizon must also account for replacement of the bus fleet—large fixed route vehicles as well as paratransit buses, vans and cars. This, in addition to important routine maintenance, is protection of a significant investment.

Policy 1A:

Pavement Management: Maintain streets and roads at a standard within the range of 70-80 Pavement Condition Index (PCI)—the equivalent of good to excellent on the PCI scale. Include the maintenance of bicycle routes along roadways as part of this measure.

Transportation Strategies:

- Maintain State Highway System
- Improve Local Streets/Roads PCI
- Improve Conditions/Maintenance Of Bike/Ped Facilities

Policy 1B:

Bus Fleet Management: Ensure that all revenue vehicles and all bus stop facilities and transfer stations are properly maintained and all maintenance personnel are properly trained.

Transportation Strategies:

- Maintain Transit System



GOAL 2. RELIEVE TRAFFIC CONGESTION

Objective: Reduce person hours of delay 20% below 2005 levels by 2035 through strategic improvements, technology and changes in driving habits.

Freeway congestion monitoring data for 2006 indicates that freeway congestion, measured in vehicle hours of delay, increased 75% between 2002 and 2006 in Sonoma County, and 45% between 2004 and 2006. In 2007 it increased another three percent, to 7,900 vehicle hours of delay. By way of contrast, the remainder of the Bay Area (eight counties) had less than a 15% increase in delay between 2004 and 2006. It is also noteworthy that the duration of congestion—from the time it starts until the time it ends—has also increased dramatically. Some segments of US 101 now begin experiencing congestion in the early- to mid-afternoon. Southbound Highway 101 in south Petaluma becomes congested by 5:30 AM.

State Highway 12 links Sebastopol, Santa Rosa, the Sonoma Valley, and Napa County. It also provides an important connection to the Interstate 80 corridor, for interstate trucks, commuters and recreational trips. Within Santa Rosa, between Fulton Road on the west to Farmers Lane on the east, State Highway 12 is developed to freeway standards.

The two lane sections in Sebastopol and in the Sonoma Valley are severely congested on both weekdays and weekends

Arterials are also showing signs of strain. Main Street (Penngrove) suffers considerable peak period weekday traffic congestion due to drivers avoiding congestion on U.S. 101, and new development in northeast Petaluma and east Rohnert Park. Arnold Drive, River Road, Old Redwood Highway, Bodega Highway, Lakeville Highway, and Petaluma Hill Road have heavy weekday traffic. Todd Road, Llano Road, Crane Canyon Road have congested conditions on weekdays and many roads within incorporated cities have severe congestion.

Future travel demand analysis shows that congestion could continue to worsen (roughly 6 times more congestion than current levels) given our current course. Currently congested locations are expected to experience increased back-ups, with local arterials absorbing the bulk of future traffic and becoming more and more congested.

Adding additional roadway and transit capacity, implementing smart growth land use policies, and implementing transportation pricing policies, were all shown to provide significant congestion relief in future model output.

Travel Demand Management programs and new technologies are promising methods for reducing traffic delay. Shifting travelers to different travel modes (transit, car/vanpools, bicycles, walking and car-sharing), different times to avoid peak congested periods (flextime, compressed work week), and avoiding trips altogether (telecommuting, etc) also have great potential for reducing traffic congestion.

Increases to transit service, adding rail service in Sonoma and Marin, and decreased transit headways require strategic expansion as well in terms of both capital expenses to purchase rolling stock (buses and trains), and operating and maintenance needs.

Policy 2A:

Implement strategic transit and roadway capacity expansion to meet current and future needs

There are critical roadway projects that have been planned for decades that still need to be completed—Highway 101 HOV lanes, Penngrove area improvements, certain interchange and intersection configurations and other projects identified in Appendix A-ii.

Additionally, expansion of transit service is needed both with the initiation of passenger rail service via SMART and with increased bus service from all of our local and regional operators. Providing individuals with convenient, safe and easy alternatives to their car expands the capacity of the roadways.

Adding additional roadway and transit capacity was shown to provide one of the biggest congestion relief benefits in future model runs. Roadway expansion, beyond the completion of the HOV system, may create immediate congestion relief, however long term consequences include increased VMT and GHG emissions.

Transportation Strategies:

- Expand Local Streets/Roads Capacity
- Expand Transit Capacity
- Complete HOV system

Policy 2B:

Expand rideshare, carpool, van pool, travel demand management, and telecommute programs.

There are innovative programs in place that reduce the vehicle miles traveled of individuals in single occupant vehicles. Santa Rosa CityBus and Sonoma County Transit work with local employers to provide incentives to ride the bus instead of drive. Regionally, 511.org offers ride share programs. Car-sharing is a new option that is in preliminary development in Sonoma County but is in effect in the urban centers in the Bay Area. Travel demand management and telecommute programs can be effective

at reducing countywide travel or shifting trips to less congested periods.

Transportation Strategies:

- Increase Ridematching Services
- Increase the number and capacity of park and ride facilities
- Telecommuting
- Travel Demand Management

Policy 2C:

Implement new technologies to monitor and control traffic flow.

Moving traffic smoothly will help relieve congestion on major roads by reducing the stop and go and increasing awareness of conditions with changeable message signs. Signals at freeway on ramps helps control the number of vehicles attempting to merge at one time and allows the flow of traffic to absorb more vehicles without a significant slowdown. Real-time information about traffic conditions enables drivers to make choices about what route or what mode will serve them best.

Transportation Strategies:

- Incident Management
- Traveler Information Programs
- Signalization Improvements/ Intelligent Transportation Systems
- Traffic Circles/Traffic Calming
- Turn Restrictions at Intersections
- Goods Movement Improvements

Policy 2D:

Implement pricing strategies to help relieve congestion and make progress in attaining goals related to reducing GHG and maintaining the transportation system.

User based pricing strategies have demonstrated the ability to reduce congestion, reduce the number of solo drivers, shift vehicle trips from peak hours, decrease vehicle emissions, and improve safety. Successful implementations such as London and Singapore congestion pricing

systems, San Diego's I-15 HOT Lane implementation, and Trondheim, Norway's 'toll ring', suggest that these types of strategies may be successful in Sonoma County.

Transportation pricing policy measures are shown to have significant congestion and travel reduction benefits in future year analysis.

Transportation Strategies:

- Increase Gas Tax or User Fees
- Congestion Pricing
- High Occupancy Toll Lanes
- Increased Parking Charges
- Carbon Offsets

GOAL 3. REDUCE GREENHOUSE GAS EMISSIONS

Objective: Meet the targets to reduce GHG emissions 25% below 1990 levels by 2015, and 40% below 1990 levels by 2035 by working with government agencies and the public.

In Sonoma County the transportation sector contributes roughly 60% of all county greenhouse gas (GHG) emissions. This is a new issue to the field of transportation planning which requires research, analysis and aggressive strategies to ensure success in meeting greenhouse gas reduction targets. Included as Appendix C-i is the SCTA Greenhouse Gas Emissions Reduction White Paper that was written specifically to inform policy makers and the community about the connection between transportation and climate change.

In 2007, transportation GHG production represented a roughly 34% increase from 1990 levels of GHG production.¹ The California Global Warming Solutions Act (AB32) mandates that CO₂ and other GHG emissions be reduced to 1990 levels by the year 2020. All Sonoma County Jurisdictions have set a more ambi-

¹ Data from the Climate Protection Campaign 2005 May 2008 Status Report, HPMS (Highway Performance Management System) Annual VMT data, and GHG eCO₂ productions based on output from CACP software.

tious goal of reducing GHG emissions to 25% below 1990 levels by 2015. The Bay Area region has set a longer term goal of reducing regional GHG emissions to 40% below 1990 levels by 2035.

A number of broad approaches can be taken to meet these goals. CTP model analysis shows that increasing fuel efficiencies and vehicle occupancies, implementing transportation pricing policies aimed at reducing VMT, and encouraging transit oriented development are effective at reducing future GHG emissions.

The policy solutions that reduce GHG emissions, and will allow SCTA and local jurisdictions to meet county and regional GHG reduction targets, rely upon a variety of approaches and require a concerted and sustained effort at varying levels of government. See Appendix C-i for a more detailed look at GHG Reduction strategies.

Policy 3A:

Reduce vehicle miles of travel (VMT) per capita by 10% below 2005 levels by 2035.

Land use planning for concentrated, contiguous and balanced development provides opportunities to meet daily needs with shorter car trips or by walking, bicycling, or taking transit. This will reduce overall VMT and efforts to manage congestion, reduce energy vulnerability, and achieve air quality health standards. These land use changes in conjunction with expansion of the transit system and transportation pricing measures are shown to have the greatest impact on reducing future VMT in CTP model analysis.

The VMT reduction benchmark may seem quite conservative when compared to the GHG reduction benchmark. This represents the difficulty in actually reducing the number and length of trips people are making. GHG reduction includes reducing VMT, but can also be addressed by shifting travel modes, using more efficient vehicles, and by using cleaner fuels, and achieving more aggressive reductions in GHG emissions should be easier due to the breadth of possible reduction methods.

Transportation Strategies:

- Transit Oriented Development
- 4-d Transportation Investment (density, diversity, design, destinations)
- Infill Development and Carbon Efficient Design
- Address Jobs-Housing imbalance
- Encourage smaller neighborhood locations for daily goods and services
- Housing Assistance
- Travel Demand Management (TDM)
- Public Education/Travel Choice Programs
- Promote Telecommuting
- Promote school based TDM
- Implement Carsharing Programs

Policy 3B:

Increase transit use and productivity.

Clustering and intensification of residential and commercial development along transit lines and around transit facilities increases the number of jobs, services, and recreation opportunities that can conveniently be reached by transit. These increased opportunities to use non-automobile travel modes lead to higher levels of transit ridership, cost effectiveness, and potential for even higher transit service levels.

Expansion of the countywide transit system, in conjunction with supportive land use policy, is shown to have a positive impact on reducing future congestion, VMT, and emissions in the future based on CTP modeling.

Transportation Strategies:

- Implement Rail Transit Service (SMART)
- Transit Marketing
- Increase and Improve Bus Transit Service
- Improve Transit Amenities

- Implement Bus Rapid Transit (BRT) and Express Bus Service
- Transit Priority Measures
- Lower fares
- Implement Ferry Service

Policy 3C:

Improve accessibility and safety for pedestrians at and around activity centers.

Concentrated, mixed land uses coupled with pedestrian friendly site design not only facilitate non-motorized and other non-auto driver travel by residents, but also by commuters, students and commercial visitors. Knowledge that most activities within a center can be reached on foot or via local transit diminishes perceived need to drive to a center, enhancing choice of transit and carpooling.

Transportation Strategies:

- Improve Pedestrian Facilities
- Promote and Seek Funding for Safe Routes to Schools

Policy 3D:

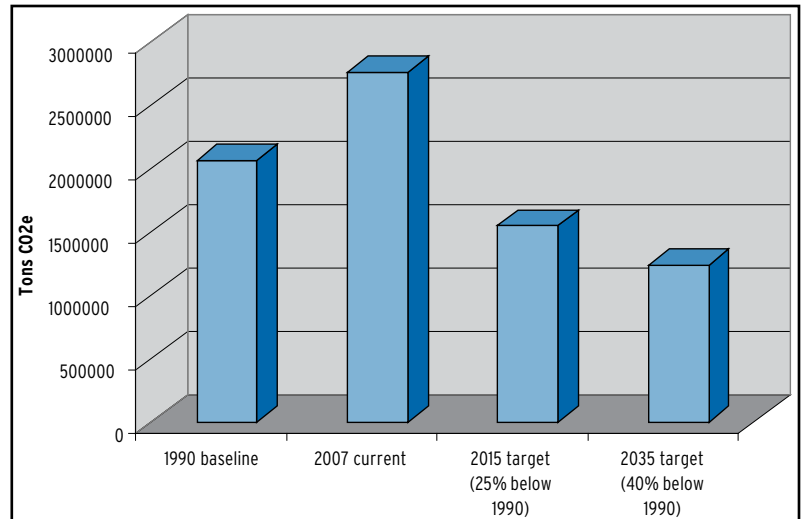
Implement 2008 Countywide Bicycle and Pedestrian Master Plan

Providing a safe, attractive, and effective bicycle and pedestrian network that includes bicycle parking is an important step in encouraging increased bicycle and pedestrian travel.

Transportation Strategies:

- Improve Roadway Bicycle Facilities and Bike Paths
- Improve Transit and Bicycle Integration
- Require Bicycle Lockers/ Racks at Park and Ride Lots
- Require Bicycle Facilities and Showers at new Developments

SONOMA COUNTY GHG EMISSIONS AND TARGETS



Policy 3E:

Support development and deployment of new technologies to reduce transportation emissions.

Transportation improvements such as increase vehicle fuel economies are shown to have great potential for reducing future GHG emissions in future years. Other emerging or yet to be developed technological transportation improvements will provide additional benefits.

Transportation Strategies:

- Increase Fuel Efficiencies
- Improve Fuels/Biofuels
- Accelerate School Bus Replacement
- Provide Fuel at Stabilized Cost

GOAL 4. PLANNING FOR SAFETY AND HEALTH

Objective: Increase safety and emphasize health aspects of transportation planning strategies

There is a growing trend among transportation planners and health professionals to focus on the link between a healthy community and safe transportation options as a means to improving public health. Transportation is intimately related to public health issues on a variety of fronts, be it that traffic accidents are



the leading cause of death for teenagers or that fatality and injury accidents impact everyone in the community or that air quality effects asthma sufferers, or that safe bicycle and pedestrian routes can benefit transportation and health. This chapter discusses safety and health issues in the transportation context. Appendix C-iv provides more detailed information that helps define strategic safety planning. Appendix C-ii, Transportation & the Built Environment, provides background about the health problem and healthy transportation options.

Policy 4A:

Planning for Transportation Safety—Adopt State of California goals to minimize traffic related fatalities.

Strategic safety planning, which has also been called “safety conscious planning,” is done to assure that road safety becomes an explicit priority in land use and transportation planning, thus establishing a safer transportation network.

The fundamental approach is to do whatever possible at each stage of planning and design of transportation infrastructure to promote safety. This includes:

- Reducing exposure and the amount of travel
- Reducing the risk associated with travel that does take place
- Reducing the consequences of crashes that do occur

Policy 4B:

Planning for Public Health—Plan neighborhoods that encourage walking, biking and physical activity, and connect residential areas, workplaces, schools, commercial centers and community facilities

There is mounting evidence that land use planning, urban design, and transportation systems have a powerful effect on health issues.

Chronic disease, including cancer, heart disease, stroke, chronic lung disease and diabetes, accounts for the majority of deaths in Sonoma County. Many chronic diseases, some of which are linked to obesity and lack of exercise, are considered preventable.² Reduced reliance on the automobile is central to healthier transportation.

Transportation Strategies:

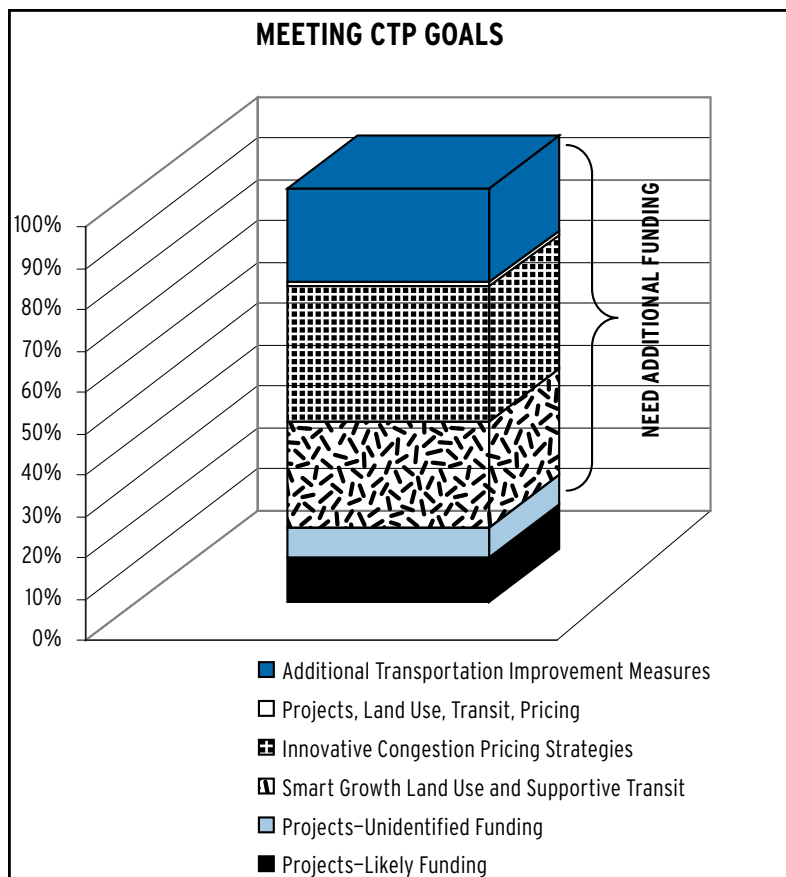
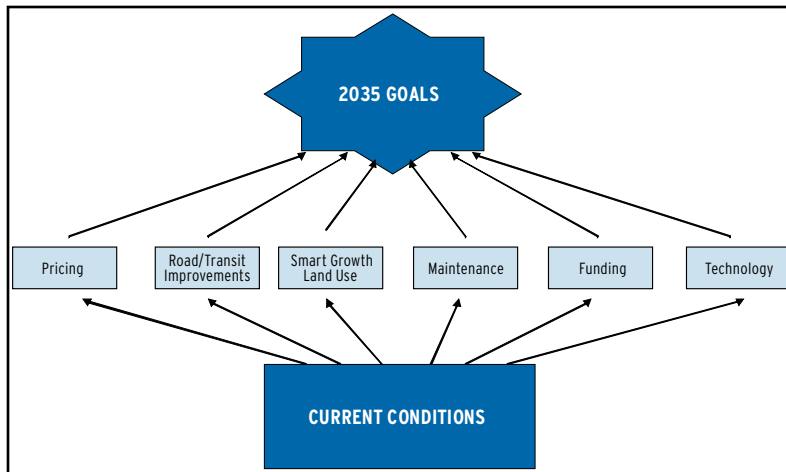
- Transit Oriented Development
- 4-d Transportation Investment (density, diversity, design, destinations)
- Infill Development and Carbon Efficient Design
- Address Jobs-Housing imbalance
- Encourage smaller and more frequent service centers
- Housing Assistance
- Improve Roadway Bicycle Facilities and Bike Paths
- Improve Transit and Bicycle Integration
- Require Bicycle Lockers/Racks at Park and Ride Lots
- Require Bicycle Facilities and Showers at new Developments
- Improve Pedestrian Facilities
- Promote and Seek Funding for Safe Routes to Schools

² Sonoma County Department of Prevention & Planning

IMPLEMENTATION

A combination of capital improvements (transit and selected expansion of the highway/roadway system), land use improvements, transportation technology improvement, and the introduction of transportation pricing policy, has been demonstrated in CTP model analysis to come closest to meeting CTP benchmarks. Future year model analysis demonstrates that SCTA will only be able to make it roughly 1/10 of the way to meeting CTP benchmarks assuming only projects with likely funding are implemented in the future. Considering approaches that do not have identified funding such as smart growth land use development and supportive transit, implementing innovative congestion pricing strategies, and funding additional transit and roadway projects have the potential to get SCTA about 70% of the way to meeting CTP benchmarks. Additional transportation improvement measures identified in this policy chapter and the transportation strategies matrix, along with emerging and currently unidentified transportation improvement strategies can help close the gap and allow these benchmarks to be met.

A balanced approach, focused on pricing, road and transit improvements, smart growth land use policy, system maintenance, maximizing and seeking new funding, and encouraging and implementing transportation technology improvements have the potential to provide the greatest level of VMT reduction, congestion, and GHG emissions reduction benefits. Many of the strategies identified in this plan are currently unfunded, making the identification and procurement of additional future transportation funding a critical component to supporting this approach and will be necessary to allow SCTA to meet CTP goals.



- #### WHAT DO WE NEED TO DO NOW?
- Maximize and Find New Sources of Funding
 - Change Travel Behavior
 - Improve Transit Capacity
 - Support Improvement of the Highway and Local Streets and Roads System
 - Support Smart Growth Land Use
 - Support Alternative Transportation
 - Maintain Existing Infrastructure
 - Advocate State and Federal Legislative Change
 - Gather Public and Private Support
 - Support Technological Innovation and Deployment