

## Alternative Modes State of the System Report

### Preface

The Alternative Modes Element focuses on non-motorized travel, alternative fuel vehicles and transportation-related land use issues in Solano County. In order to properly chart a course for Solano County's many alternative modes, two things are needed: to know the status of the components of the Alternative Modes system at this time, and to describe the system as the STA wants it to be. This State of the System report for Alternative Modes examines the elements of the Alternative Modes system, and how they operate at the current time.

The elements of the Alternative Modes system are:

#### *Bicycle and Pedestrian*

Bicycle and pedestrian mobility allow people to commute to work and shopping, to recreate and to attend civic events, all without the need to drive. Recreational and civic events are frequently family affairs, while commuting to work by bicycle is more likely a solo event. Walking for employment is usually to or from a transit center, though in areas with higher-density mixed use it is reasonable to expect to be able to walk between home and work. California and the nation have seen a multi-decade trend towards reliance on personal vehicles and away from biking and walking, even for such local activities as getting children to elementary schools. There has been a corresponding reduction in physical wellness and an increase in obesity. Bicycle and pedestrian facilities provide a safe and efficient option for riders and walkers to use, while programs encourage children and adult riders to use those facilities.

#### *Alternative Fuels*

Since their inception, cars and trucks have almost exclusively been run on petroleum fuels. Now, there is a mix of economic, environmental and political factors pushing for alternative fuel sources. At the same time, there are technological breakthroughs that are allowing alternative fuel sources to be realistic choices for both individuals and vehicle fleet operators.

Alternative fuels technology is not just about the vehicle engine itself. It is also about supporting infrastructure, such as fuel storage, delivery and vehicle maintenance. It is also about invention and market choice, since there are many choices vying for legitimacy in the eyes of customers. An important aspect of an alternative fuels strategy is to not commit to a technology that may prove to not be viable.

#### *Transit Oriented Development*

The San Francisco Bay Area has been faced with two opposite trends in land use over the past few decades. The first trend is an increased suburban focus for new residences (where many new housing units are being built in small to medium cities on the periphery of the Bay Area) without a corresponding migration of well-paying jobs to those same suburban communities. The second trend is the growing pressure to reduce commute times, congestion and air pollution by increasing

the proportion of the commute carried by transit, and to have suburban residential development at a high enough density to support regional transit to central Bay Area jobs.

A series of regional proposals and land use philosophies have arisen to deal with this issue. The programs and philosophies use such names as New Urbanism, Transit-Oriented Development, Housing Incentive Programs, Sustainable Development, Bay Area FOCUS, and Transportation for Livable Communities (TLC). The Solano Transportation Authority adopted a countywide TLC plan in 2004, and has generally referred to all plans and programs that support high density development tied in to regional transit as TLC programs.

The adopted purpose statement for STA's TLC Plan is to:

“Provide a balanced transportation system to enhance the quality of life, support economic development, and improve accessibility for all members of the community by efficiently linking transportation and land uses utilizing multiple transportation modes.”

STA, the County and the seven cities have also seen TLC as a program that supports local walkable communities and neighborhoods, local and inter-county bicycle connections, and employment and retail centers that invite pedestrian and bicycle access and transit connectivity.

The State of the System – Alternative Modes report starts with identification of the physical components of the “system.” The Alternative Modes system consists of:

- The countywide bicycle system, consisting of Class 1 bike paths, Class 2 bike lanes and Class 3 bike routes. Local bikeways may connect to the countywide system, but are not part of it.
- The countywide pedestrian path system. In some areas, the pedestrian system is the same as the Class 1 bike path.
- Alternative fuel vehicles and supporting infrastructure.
- Transit-oriented development that is supported by or consistent with various land use initiatives such as Transportation for Livable Communities.
- Planning documents and programs that support the development of the components listed above.

This State of the System – Alternative Modes report will also examine operational and maintenance information for the Alternative Modes system. Operations and maintenance information is widely available for Transit and Arterials, Highways and Freeways infrastructure, but is less available for some of the Alternative Modes structures.

## **CAPITAL ASSETS**

Bikeway Network. The bicycle network consists of three classes of bikeways:

- Class 1 Bikeways (Bike Paths) are paved off-street multi-use pathways. They may be parallel to a roadway and separated by a barrier (such as on the Carqinez Bridge) or landscaping area (as planned for Jepson Parkway), or they may be on an alignment not associated with any roadway (such as Fairfield's Linear Park). Class 1 Bike Paths are typically 8 to 12 feet in width, carry 2-

way traffic, and have a mix of users (commute and/or recreational; bike, ped, skateboard and rollerblade) depending on location, topography and time of day.

- Class 2 Bikeways (Bike Lanes) are pavement striped for one-way bicycle travel on a road. Most Class 2 Bike Lanes are along the shoulder of the road, though some are located between travel lanes and on-street parking. The minimum width for a Class 2 Bike Lane is 5, with 8 feet being the maximum width feet. Class 2 Bike Lanes carry bike traffic in only one direction. Class 2 Bike Lanes are also identified by on-street painted text and logos. Class 2 Bike Lanes are almost exclusively used by bicyclists.
- Class 3 Bikeways (Bike Route) are streets that carry bicycle traffic on the edge of the travel lane, and are identified by signs along the side of the road. Class 3 Bike Routes are almost exclusively used by bicyclists. Class 3 Bike Routes carry bike traffic in only one direction.

The 2004 STA Countywide Bicycle Plan identifies the “regional” inter-city bikeway connections. The regional intra-city bikeway system is planned to consist of 181 miles of bikeways. Of that total, 129 miles exist as of January 1, 2009. The existing and planned bikeway inventory is detailed for each community and for each class of bikeway in the following tables.

*Table 1.0 – Overall Bikeway Inventory*

**SOLANO COUNTY REGIONAL BIKEWAY NETWORK (ALL)**

Agency	Existing Bikeways (miles)	Planned Bikeways (miles)	Cost for Planned Projects (millions; in 2009 \$'s)	Percentage of Network Completed*
Benicia	11.7	5.2	\$6.1	69%
Dixon	6.4	2.3	\$1.5	74%
Fairfield	27.3	19.8	\$11.9	58%
Rio Vista	?	9.8	\$9.5	?
Suisun City	13.1	3.8	\$3.6	78%
Vacaville	30	15.5	\$17.3	57%
Vallejo	24.2	23	\$8.7	51%
County	33	92.7	\$47.4	26%
Total:	129.1	181.2	\$106.0	43%

*Table 1.1 – Class I Bikeway Inventory*

**SOLANO COUNTY REGIONAL BIKEWAY NETWORK (CLASS I)**

Agency	Existing Bikeways (miles)	Planned Bikeways (miles)	Cost for Planned Projects (millions; in 2009 \$'s)	Percentage of Network Completed*
Benicia	4.4	0.2	\$0.184	0%
Dixon	1.8	0	\$0	100%
Fairfield	12.3	3.4	\$2.6	76%
Rio Vista	?	9.8	\$9.5	?
Suisun City	3.1	2.8	\$3.6	45%
Vacaville	10.4	9.9	\$9.8	54%
Vallejo	8.8	0	\$0	100%
County	0.4	15.4	\$26.5	9%
Total:	36.8	41.5	\$52.2	60%

Table 1.2 – Class II Bikeway Inventory

SOLANO COUNTY REGIONAL BIKEWAY NETWORK (CLASS II)

Agency	Existing Bikeways (miles)	Planned Bikeways (miles)	Cost for Planned Projects (millions; in 2009 \$'s)	Percentage of Network Completed*
Benicia	4.2	4.5	\$3.0	48%
Dixon	4.6	2.3	\$1.5	67%
Fairfield	15	4.9	\$5.2	75%
Rio Vista	0	0	\$0.0	100%
Suisun City	0.8	0	\$0.0	100%
Vacaville	11.1	5.6	\$7.5	66%
Vallejo	13.5	22.5	\$41.3	38%
County	32.6	66.5	\$36.6	33%
Total	81.8	106.3	\$95.1	43%

Table 1.3 – Class III Bikeway Inventory

SOLANO COUNTY BIKEWAY NETWORK (CLASS III)

Agency	Existing Bikeways (miles)	Planned Bikeways (miles)	Cost for Planned Projects (millions; in 2009 \$'s)	Percentage of Network Completed*
Benicia	3.1	0.5	\$0.2	86%
Dixon	0	0	\$0.0	100%
Fairfield	0	11.6	\$4.1	0%
Rio Vista	0	0	\$0.0	100%
Suisun City	0	1.8	\$0.2	0%
Vacaville	0	0	\$0.0	100%
Vallejo	1.9	0.5	\$0.2	79%
County	0	9.8	\$4.0	100%
Total	5	24.2	\$8.7	17%

Bicycle and pedestrian paths, like roadways, suffer wear and tear over time. There is not a current standard for a desirable Pavement Condition Index (PCI) for bicycle paths as there is for roadways, and there is no measure of PCI for Class I bike paths; for Class I bike lanes and Class III bike routes, the PCI is generally the same as for the adjoining roadway. Because of the narrow tires and inherent instability of bicycles, poor pavement condition is a particular hazard for bicyclists. This hazard is magnified where other public facilities, such as stormwater drop inlets or railroad rails cross bike paths. STA does not currently have an inventory of the PCI for any bicycle facilities.

Pedestrian Network. Pedestrian focused improvements are generally smaller in area than bicycle improvements, but are often more intense (additional landscaping and aesthetic elements that may be absent from the more utilitarian bicycle facilities). They may share space with bicycle improvements, but frequently only at a destination, where bicycle travel speeds slow down. Pedestrian facilities are also more sensitive to design and land use decisions, including scale and color.

Local pedestrian facilities are often centered around activity nodes such as the downtown, a community center or theater, or a major recreational area. Some facilities, such as plazas, can be set aside for large

gatherings or use areas, as well as functioning as walking areas during most times. Regional pedestrian facilities, for which STA is the lead agency, complement the local pedestrian facilities, and are concentrated in areas that promote connections to transit or to regional facility linkage. The 2004 STA Countywide Pedestrian Plan is the existing document that identifies the regional access points to intra-city activity.

The existing and planned pedestrian/TLC projects are based on the priorities identified in the 2004 Countywide Pedestrian Plan. The percentage of the pedestrian access connections network completed is measured by the *number of improvements* completed projects versus planned and secondarily by *cost* of completed versus planned projects. The percentage of the pedestrian network completed is calculated by dividing the cost of existing projects by the cost of existing and planned projects combined. Because it is difficult to gain a sense for the progress of the pedestrian oriented areas through an analysis of the projects only, a second method was utilized to assess the total amount of money required to complete the projects. This information is shown in Table 2.0.

Table 2.0 – Overall Walkway Inventory

SOLANO COUNTY PEDESTRIAN NETWORK

Agency	# of Pedestrian Oriented Areas*	# of Planned Pedestrian/TLC Projects	# of Pedestrian/TLC Projects Completed	% Done	Cost of Existing Projects (millions; 2004 \$'s)	Cost for Planned Projects (millions; 2009 \$'s)
Benicia	10	5	2	29%	\$4.8	\$6.4
Dixon	4	3	1	25%	\$3.0	\$3.0
Fairfield	5	5	1	17%	\$4.5	\$9.0
Rio Vista	2	3	1	25%	\$1.2	\$9.1
Suisun City	5	3	1	25%	\$0.679	\$2.7
Vacaville	4	4	2	33%	\$2.5	\$1.7
Vallejo	3	6	2	25%	\$11.0	\$13.2
County***	1	8	1	12.5%	\$0.5	\$32.1
<b>Total:</b>	<b>34</b>	<b>36</b>	<b>10</b>	<b>22%</b>	<b>\$27.6</b>	<b>\$76.7</b>

\*Pedestrian Oriented Areas are zones of interest which include civic centers, schools, and other such destinations

\*\*Rounded to the nearest tenth

\*\*\*Includes multi-agency projects

2009 costs have been escalated at 5% compounded annually (per Caltrans standard for escalating costs) based on costs identified in 2004 Solano Countywide Pedestrian Plan

Alternative Fuels. There are two major sub-areas for alternative fuels: vehicles, and supporting infrastructure.

*Vehicles.* There are two primary types of alternative fuel vehicle systems on the road today; Compressed Natural Gas (CNG) and electric. In addition, there are hybrid vehicles with a petroleum engine working in some sort of combination with an electrical engine, and vehicles with engines modified to burn a gasoline/ethanol mix (flex-fuel vehicles). There are also alternative fuels such as hydrogen and even compressed air that are being tested in large vehicle fleets (Los Angeles Airport and UPS, respectively) but are not yet available to the public.

- CNG is a high-pressure gas (primarily methane), identical to the gas used in home heating and cooking. CNG is clean burning, making it an environmentally-attractive fuel option. Currently,

only the Honda GX is sold as a CNG car available to the general public. The disadvantage of CNG as a vehicle fuel is the need for relatively large high-pressure storage tanks in a car (reducing passenger or cargo capacity), and significantly lower density of energy to volume than liquid fuels such as gas or diesel. The City of Vacaville has operated a program to assist residents of Vacaville, Dixon, Rio Vista and Eastern Solano County to purchase or lease CNG cars. As of May 2009, 125 participants have take advantage of the program.

CNG is used to power numerous small industrial vehicles such as warehouse forklifts. It is also used for on-street local service fleet vehicles, such as postal delivery trucks and parking enforcement. It is increasingly being used in local-serving transit vehicles. The City of Vacaville has 5 CNG buses serving local routes, and will replace an additional 10 diesel buses with CNG buses by the end of 2009.

- Electrical vehicles are those that operate entirely on electricity stored in an on-board battery. Hybrid electrical vehicles are not in this category. The first generation of electrical vehicles included such models as the early Honda Insight and Toyota RAV-4 EV. There were several technologies used to recharge the batteries of these vehicles. The relatively short range and long recharge time of these vehicles appears to have been a significant barrier to broad public acceptance. Most of the vehicles were leased out to fleet operators, and recalled by the manufacturers when the lease expired. Some individuals elected to keep their vehicles, as did some public fleet users such as the City of Vacaville, which still operates a fleet of 25 RAV-4 EVs. Vacaville's EV purchase assistance program helped more than 100 participants lease or purchase an EV.
- Vallejo Transit is replacing 18 diesel buses with hybrid diesel/electric vehicles in 2011, with an additional 8 diesel/electric buses by 2013. These vehicles serve local transit routes.
- Alternative fuel vehicles cost more to purchase than conventional fuel vehicles. According to MTC, the cost to purchase a 30' CNG powered transit bus is approximately 12% more than the cost for a similar diesel bus. The cost to purchase a 30' hybrid diesel/electric bus is 34% more than the cost for a similar diesel bus.

*Infrastructure.* Infrastructure for alternative fuel vehicles consists of fuel storage and delivery, and maintenance facilities. In general, maintenance facilities that service conventional vehicles can also service CNG and electric vehicles with only minor upgrades.

- CNG vehicles can be refueled at commercial stations, or by means of an at-home installation. Currently, in Solano County there is one publically-available CNG fueling station, at the PG&E corporation yard in Vacaville. There are other sites for fleet vehicles, such as the new Solano Garbage maintenance yard. Many CNG commercial fueling stations are not open 24 hours a day. Maps of commercial fueling stations are available on-line. One on-line resource, the Department of Energy's Alternative Fuel and Advanced Vehicle Data Center ([www.afdc.energy.gov/afdc/locator](http://www.afdc.energy.gov/afdc/locator)), lists 33CNG within a 50-mile radius of the STA offices, but only 2 within 15 road miles. There are other on-line CNG and electric vehicle refueling resources. There is no inventory of CNG home fueling stations. The limited number and accessibility of commercial CNG fueling stations in comparison with gasoline and diesel makes a CNG vehicle less attractive for trips out of the region.
- Electrical vehicles must have their batteries recharged. Charging stations require direct connection to the electrical grid – stand-alone solar and wind technology cannot charge an

electrical car battery at this time. Charging typically takes several hours, compared to a few minutes for a gasoline or CNG fueled vehicle. This is a significant disadvantage for electric vehicles. The STA, in conjunction with the Bay Area and Yolo Solano air districts, helped fund the installation of electric vehicle charging stations at a number of locations, including public buildings and park-and-ride lots. Some of those charging stations are now significantly under-utilized. However, they do provide an existing infrastructure “backbone” that could support an increased EV fleet if the driving public begins to acquire such vehicles in large numbers. Any major improvement in battery storage capacity or reduction in charging time would alter the balance of convenience between electric and conventional vehicles. While new technologies for electric vehicles (including Lithium Ion batteries and large capacitors) are under development, none are available to the commercial market at this time.

Transit Oriented Development. TLC projects are funded by two separate processes: MTC Regional TLC funds, and STA county-wide TLC funds. Below are current projects from both fund sources. These projects all provide for pedestrian use; many also act as links in the countywide bicycle system. In most cases, these projects are part of the bicycle and pedestrian network inventoried above.

#### *MTC Regional TLC Funded Projects*

- Suisun City’s Main Street Pedestrian and Driftwood Drive Project (\$195,000). This project consists of streetscape improvements on the west side of Main Street and along Driftwood Drive in downtown, such as new street trees, drinking fountains, special pavement treatment at crosswalks, and information kiosks. The project was completed in 2001.
- Suisun City Driftwood Drive Pedestrian Way (\$350,000). The Driftwood Drive project, approved in 2002 and completed in 2007, involves the construction of a pedestrian walkway between Main Street and Driftwood Drive linking to existing pedestrian walkways from the residential neighborhoods east of the Suisun Slough and connecting to downtown businesses and the transit center anchored by the Capitol Corridor/Amtrak train depot and the Lotz Way park-and-ride lot. Project elements include construction of walkways on both sides of the Suisun Marina, associated landscaping, and a public plaza at the waterfront. The only element remaining to be completed is the new Driftwood Drive. The pedestrian plaza is used every year for such activities as 4<sup>th</sup> of July fireworks and free out-of-doors movies.
- Suisun City Jepson Parkway Bikeway and Transit Connection Project (\$500,000). This grant helped fund the construction of a one-mile Class I multiuse path with landscape and streetscape improvements on the east side of Walters Road, between Highway 12 and Bella Vista Drive. This is the initial phase of the bikeway along the twelve-mile Jepson Parkway from Suisun City, through Fairfield, the unincorporated county, and on to Vacaville.
- Rio Vista’s Main Street Streetscape Improvement Project (\$650,000). Rio Vista provided enhanced pedestrian usability of Main Street, leading up to the Sacramento River and city hall, by installing landscaping, traffic calming corner treatments and improved sidewalks and crosswalks. The project was completed in 2000.
- Vacaville Davis Street Pedestrian and Gateway Improvements (\$482,000). This project provided for improved pedestrian streetscape through the removal of parking spaces and the installation of landscaping, and the installation of an artistic fountain and decorative paving. The project was completed in 2002.

- Vallejo Georgia Street Extension Project (\$800,000). As a part of the implementation of Vallejo's downtown revitalization efforts, this project improved the pedestrian connectivity between the Vallejo civic center complex (City Hall, library and post office) and the ferry building. Landscaping, pedestrian-scale street lighting and special pavement treatments were installed in this area as a part of the project.
- Vallejo Station (\$2,070,921). Project Description Pending.

#### *STA Countywide TLC Funded Projects*

- Vacaville Intermodal Transit Center (\$2,028,000). The Vacaville Intermodal Center was approved in 2008. The primary project feature is a central station for local and regional express bus service provided in 10 covered bus bays, with accompanying bike storage and parking for 600 vehicles. The project will ultimately include leasable space for office/retail providers. Located at the intersection of Ulatis and Allison drives near the center of Vacaville, the site is within walking distance of the Ulatis Cultural Center and a private school, several major shopping centers, and several hundred units of market-rate apartments and senior housing. The project is also connected to the cross-town bike path along Ulatis Creek. Construction of the first phase of the project is scheduled for late 2009.
- Benicia State Park Road Bike and Pedestrian Bridge (\$1,000,000). State Park Road crosses Interstate 780 in western Benicia, and provides access from the majority of Benicia's newer residential areas and a shopping center to the Benicia State Park recreation area and to surface streets and paths connected to downtown Benicia. The project will widen the existing bridge in order to provide a Class 1 bike and pedestrian crossing of I-780 (bicycle and pedestrian traffic currently uses the actual travel lane to cross the bridge, at significant personal risk). The project is fully funded, and construction is anticipated in the summer of 2009.
- Solano County Old Town Cordelia Improvement Project (\$500,000). This project consists of safety improvements and enhancements along Cordelia Road in Old Town Cordelia, between Lopes Road and Pittman Road, including a separated multi-use bicycle/pedestrian path, new crosswalks, pedestrian-scale lighting and new street landscaping. The basis of the proposed project comes from the Old Town Cordelia Improvement Project Concept Plan originally funded with the Metropolitan Transportation Commission (MTC) TLC planning funds and developed through a collaborative process with the Cordelia Area Task Force, the County of Solano, City of Fairfield and the STA. With the potential of additional TE funding in 2009, the project is ready for construction.
- Suisun City Driftwood Drive Waterfront Pedestrian Project (\$372,200). The City of Suisun City requested \$372,200 to complete the Driftwood Drive Waterfront Pedestrian Plaza. The proposed project includes pedestrian walkways and a park area that will link previously completed pedestrian walkways from the transit oriented residential and affordable neighborhoods east of the Suisun Slough to downtown businesses, the waterfront, and the Suisun/Fairfield Amtrak Train Depot. The project will also provide a focal point and activity center within the downtown waterfront area.
- Vacaville Creekwalk Extension (\$822,000). This project will extend Vacaville's Creekwalk pedestrian and bicycle path approximately 500 feet east to McClellan Street. The Creekwalk, which becomes the Ulatis Creek bicycle/pedestrian path, will eventually provide a connection

from downtown Vacaville, under Interstate 80, to the Ulatis Cultural Center and the shopping, employment and residential areas on the east side of I-80.

Planning Documents. Finally, STA has adopted several Alternative Modes-related documents, and has helped fund TLC studies for member agencies.

**STA Documents:**

Solano TLC Plan – This is STA’s overarching document for TLC, setting out broad goals and policies. Adopted in October of 2004, the Solano TLC Plan includes an inventory of TLC-type projects and funding programs that existed at that time. The Solano TLC Plan also sets out criteria for selection of project or plans for regional or local TLC funds. The local criteria for TLC planning funds are:

- The member agency has secured, or has attempted to secure, a substantial amount of the planning from city, county, regional, or impact fee funding sources, and needs some additional funding to complete project studies during the fiscal year.
- The study includes either a project listed in the above stated MTC criteria or includes a TLC Corridor or special TLC candidate project or study area identified in the Alternative Modes or TLC Element of the CTP.
- The proposed study would likely result in the project moving forward for securing a TLC, regional or countywide, capital grant during the following 3-5 years after completion of the study.
- The project study would directly implement a transit hub, intermodal center, or a new expanded transit route or service identified in the Intercity Transit Element of the CTP.

The Solano TLC Plan also included a list of 26 capital improvement projects and planning efforts that are eligible as candidate projects for TLC and related funds as they become available. Those projects are:

<b>Sponsor</b>	<b>Project Title</b>
Benicia	First Street Streetscape and Parking Enhancements
Benicia	State Park Road Bike/Pedestrian Bridge
Benicia	Intermodal Train Station
County of Solano	Old Town Cordelia TLC Improvement
Dixon	Downtown Streetscape Phase 3
Dixon	West 'B' St. Pedestrian Under Crossing
Dixon	Multi-Modal Transportation Center

Fairfield	West Texas Street Gateway Project
Fairfield	North Connector Project
Fairfield	West Texas Street Urban Village Project
Fairfield	North Texas Street Transportation Center and Community Hub
Fairfield	Downtown Fairfield Live-Work Center
Fairfield	Vacaville-Fairfield Train Station Urban Center
Fairfield/ Vacaville (Multi jurisdictional)	Fairfield/Vacaville Intermodal Train Station
Fairfield/Suisun City Multijurisdictional	Main Street and Union Avenue Streetscape and Pedestrian Enhancements
Fairfield, Solano County, Suisun City and Vacaville Multijurisdictional	Jepson Parkway Segments 2,3,4,6,7 and 8
Rio Vista	Highway 12 Corridor Planning Study
Rio Vista	Highway 12 Corridor Improvements
Rio Vista	Waterfront Improvements
Suisun City	Main Street/ Downtown Streetscape Improvement Project (Phase II)
Suisun City	Driftwood Plaza Improvements
Vacaville	Vacaville Creek Walk Extension to McClellan Street
Vallejo	Vallejo Station Pedestrian and Streetscape Enhancements
Vallejo	Downtown Vallejo Renaissance Project
Vallejo	Mare Island Bicycle and Pedestrian Access Improvements
Vallejo	Sonoma Corridor Concept Plan

Jepson Parkway Concept Plan - The Jepson Parkway Concept Plan was adopted in 2004, before the Solano TLC Plan. Its purpose is to encourage the linkage between transportation and land use along the Jepson Parkway corridor (Leisure Town Road/I-80 in Vacaville to Walters Road/SR 12 in Suisun City) by developing a multi-modal corridor that supports transit and provides guidelines so the four communities on the parkway can build in an integrated fashion. The Jepson Parkway Concept Plan includes elements on the integration of transit, bicycle and pedestrian paths, and landscaping, as well as guidelines for compatible land uses and a roadway implementation plan.

North Connector TLC Corridor Concept Plan – Adopted in 2008, this plan sets out TLC concepts regarding transit access and incorporation, bike and pedestrian access and pathways, landscaping,

and signage for the North Connector, running from SR 12/Red Top Road east through the Cordelia portion of Fairfield and Lower Suisun Valley in the unincorporated County, and ending at Abernathy Road. The North Connector, like the Jepson Parkway, will provide a non-freeway alternative for local traffic. The TLC Corridor Concept Plan can be incorporated by the City of Fairfield as it installs infrastructure in new development along the corridor, and will be included in the new roadway segments to be constructed by STA and the County.

Solano Countywide Bicycle Plan – This plan was updated in 2004, and is intended to guide the development of a unified bicycle system throughout the county. This includes the development of regional facilities that connect the communities of Solano County, as well as connecting to bicycle facilities in adjoining counties. It also promotes a unified signage and way finding system. This document, along with the Bicycle Advisory Committee, has guided the STA’s investments in bicycle facilities since its adoption.

Solano Countywide Pedestrian Plan – This plan was also updated in 2004, and serves a function similar to that of the Bicycle Plan. The goal of the Pedestrian Plan is to encourage and support walking as a means of transportation in Solano County. This includes creation and enhancement of *connections* that support pedestrian movement, and the creation or enhancement of *places* that support pedestrian travel or activity. “Walking” in this context includes accommodating people using wheelchairs and other types of mobility assistance. This plan recognizes that pedestrian facilities are location-specific, and are linked to each other by other modes of travel, be they transit, bicycle or auto.

Safe Routes to School Plan – This is the newest of the TLC-related plans, and was adopted in February of 2008. The two most common reasons cited by parents as to why they do not let their children walk or bicycle to school is that the “school is too far away” and that there is “too much traffic danger”. Safe Routes to Schools is intended to encourage and assist children to walk or ride a bike to school, thereby improving children’s health and reducing auto trips. The plan was adopted after an extensive public outreach effort, including the involvement of all seven school districts and the Solano County Office of Education. The Safe Routes to School plan identifies Education, Enforcement and Encouragement programs and Engineering projects to improve the safety of children’s home-school-home trips.

### **Member Agency Documents:**

None of the 7 cities and the county have community-wide TLC plans. However, several jurisdictions have adopted location-specific TLC plans.

Solano County Old Town Cordelia Plan – Solano County adopted a TLC Improvement Plan for Old Town Cordelia in September 2004. After a public outreach program was completed, the Plan was developed with 4 primary goals: installation of a new bike/pedestrian path, new trees and other landscaping, installation of historic markers, and installation of other bike/pedestrian-friendly amenities. Many of the elements described in the plan have subsequently been funded and installed.

Rio Vista Waterfront Plan – Rio Vista was one of 5 Bay Area communities to receive an MTC regional TLC planning grant in 2000 for its Waterfront Plan. The Plan was adopted in 2007, and served as the basis for a follow-up TLC capital grant for enhanced pedestrian crosswalks and landscaping in the downtown and riverfront areas. In a follow-up action, the City adopted a Waterfront Specific Plan, partly funded by STA-provided TLC planning funds. The Waterfront Specific Plan provides detailed land use information that can help implement a broad land use vision for the waterfront area, including TLC-supporting higher density land uses and supporting infrastructure.

Vacaville Creekwalk/Opportunity Hill Plan – The City of Vacaville received a TLC planning grant in 2005 for the extension of the Creekwalk project in downtown Vacaville and the development of a land use plan for the adjacent Opportunity Hill area. The project area is within walking distance of two transit centers in Vacaville, and will support additional residential development adjacent to the historic downtown core of the city. The plan was adopted in November of 2007.

STA Jepson Parkway Plan – see description above.

Fairfield West Texas Street and Allan Witt Park Transportation Linkage Plans – The City of Fairfield developed two TLC plans for the western end of Texas Street. The plans identify improved pedestrian linkages, including crosswalks and signage, for the Allan Witt Park area of West Texas Street. Adjoining Witt Park are the Fairfield Transportation Center, a major regional transit and park-and-drive hub, shopping and multi-family housing.

Vallejo Sereno Bus Transit Center – This project provided plans for improved pedestrian access to the Sereno bus transfer center, located next to the intersection of Sereno Avenue and SR 29/Sonoma Blvd. The Sereno Avenue bus transfer facility is one of the major transfer points for Vallejo Transit, the largest transit provider in the county. The TLC plan served as the basis for a subsequent MTC TLC capital grant.

## **OPERATIONS**

This section is divided into three parts to address the operations of both the bikeway network and pedestrian network collectively. To help measure the operations of non-motorized travel, three summary categories of data collection were considered. There are:

- Bicycle and Pedestrian Activity Data Collection (bicyclist and pedestrian counts);
- Safety (traveler-vehicle collision data); and
- Mode Share (usage statistics of all modes)

### Bicycle and Pedestrian Activity Data Collection: Bicyclist and Pedestrian Counts

In 2002, the Metropolitan Transportation Commission (MTC) reported data from their Bicyclist and Pedestrian Data Collection project, which collected bicyclist and pedestrian counts. The purpose of conducting bicyclist and pedestrian counts is to determine the current usage levels at various types of bicycle and pedestrian facilities throughout the nine-county Bay Area region (Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo and San Francisco counties). The counts alone

do not determine the need or merit for improvements to a corridor or intersection. Although the STA has not conducted a countywide data collection effort, it is consistent with MTC's efforts. The following table shows the most recent counts:

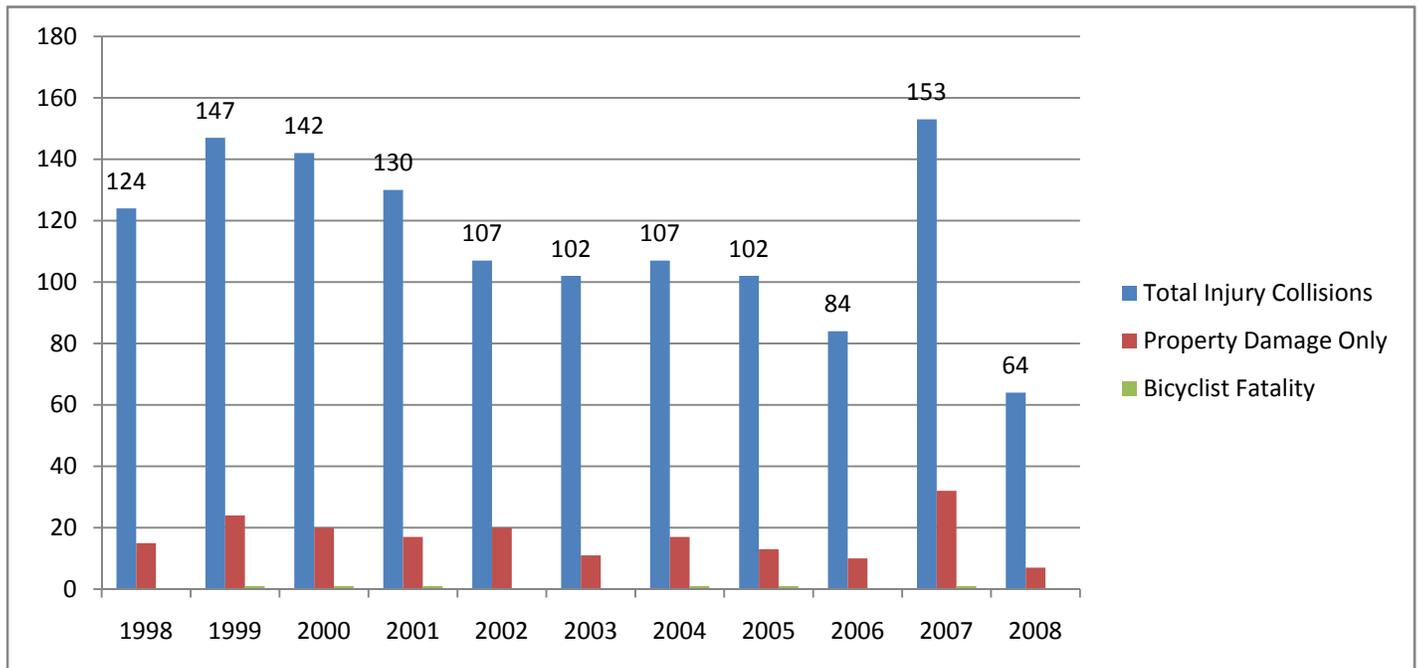
MTC BICYCLISTS AND PEDESTRIAN COUNTS (2002)

Agency	Location	AM Ped	AM Bike	PM Ped	PM Bike
Benicia	Military East @ 2 <sup>nd</sup> Street	19	3	15	0
County	Dixon-Davis Bike Route @ Vaughn	0	0	3	0
Dixon	First Street @ C Street	62	8	17	10
Fairfield	Hwy 12/Jameson Canyon Rd @ Red Top Rd	0	0	1	0
Fairfield	Travis @ Texas	94	17	95	33
Rio Vista	Downtown Waterfront Path	5	0	23	2
Suisun City	Main @ Lotz	35	3	55	1
Vacaville	Alamo @ Nut Tree	95	48	60	38
Vacaville	Downtown Creekwalk	75	37	159	47
Vallejo	Solano Bikeway @ Columbus Pkwy	2	0	0	4
Vallejo	Waterfront Path	64	0	123	0
<b>Total:</b>		<b>451</b>	<b>116</b>	<b>551</b>	<b>135</b>

Safety: Traveler-Vehicle Collision Data (1998-2008)

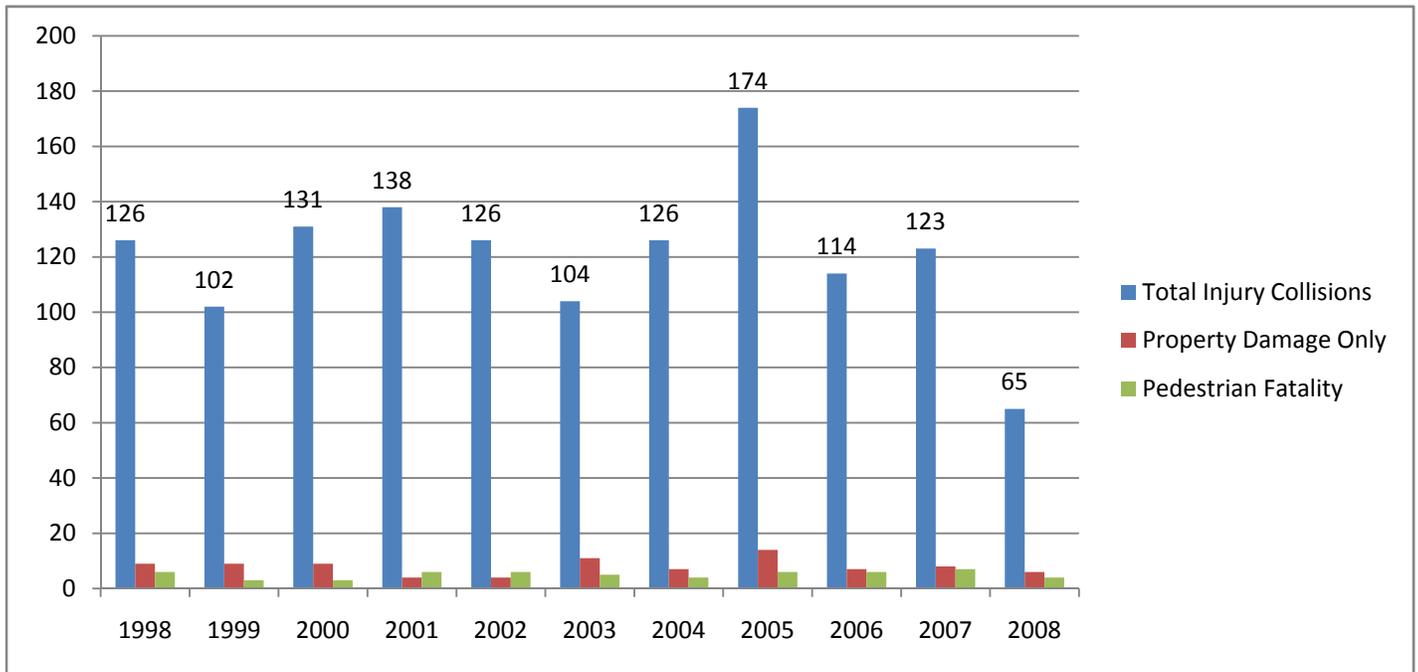
As shown in the tables below, Solano county has a relatively low number of bicycle injury and fatality accidents. The county ranked about in the middle of the 9-county Bay Area for accidents per 1,000 residents, and only Marin County had a lower accident rate when calculated by daily vehicle miles traveled. STA does not have data on bicycle accidents where motor vehicles are not involved.

BICYCLE/VEHICLE COLLISIONS IN SOLANO COUNTY



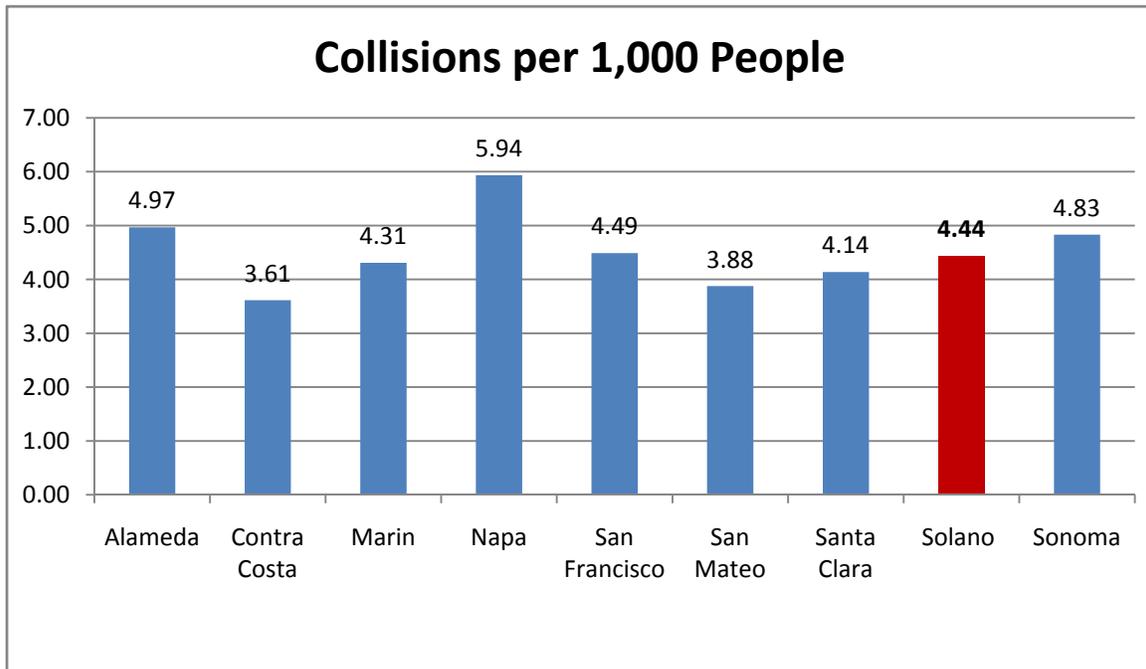
	Total Collisions	Total Injury Collisions	Property Damage Only Collisions	Fatal Collisions
1998	124	109	15	0
1999	147	122	24	1
2000	142	121	20	1
2001	130	112	17	1
2002	107	87	20	0
2003	102	91	11	0
2004	107	89	17	1
2005	102	88	13	1
2006	84	74	10	0
2007	153	120	32	1
2008	64	57	7	0

PEDESTRIAN/VEHICLE COLLISIONS IN SOLANO COUNTY



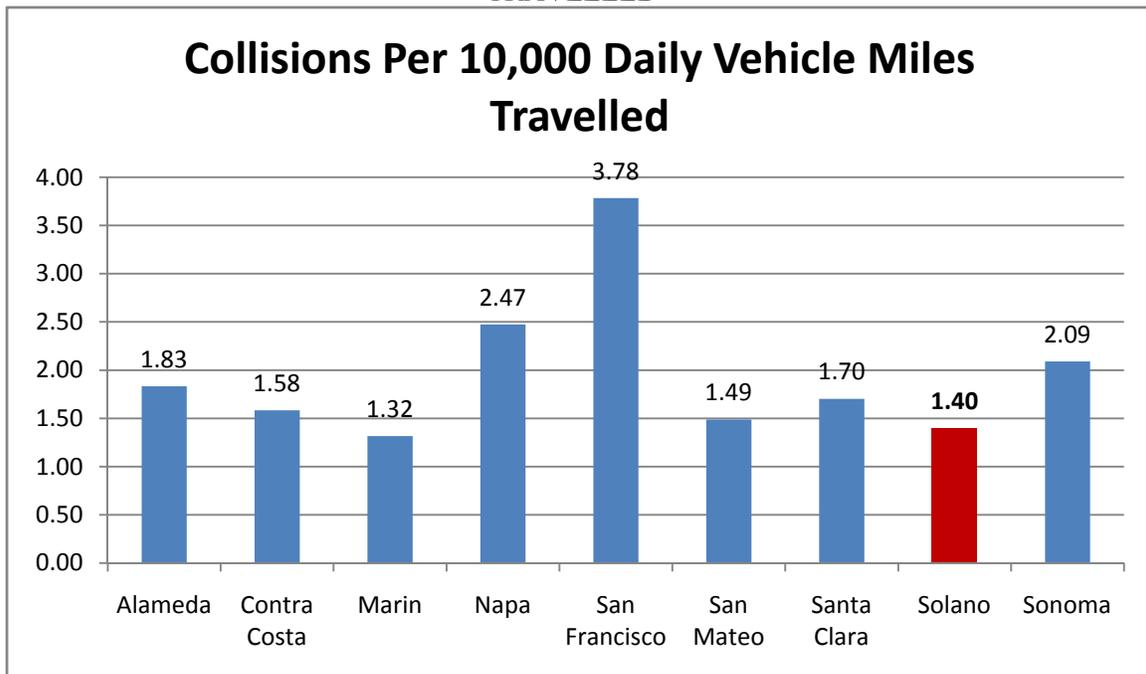
	Total Collisions	Total Injury Collisions	Property Damage Only Collisions	Fatal Collisions
1998	141	126	9	6
1999	114	102	9	3
2000	143	131	9	3
2001	148	138	4	6
2002	136	126	4	6
2003	120	104	11	5
2004	137	126	7	4
2005	194	174	14	6
2006	127	114	7	6
2007	138	123	8	7
2008	75	65	6	4

COMBINED BICYCLIST & PEDESTRIAN/VEHICLE COLLISIONS\* PER 1,000 PEOPLE



\*Total fatalities plus injuries in 2001; from Statewide Integrated Traffic Records System (SWITRS)

BICYCLIST & PEDESTRIAN/VEHICLE COLLISIONS PER 10,000 DAILY VEHICLE MILES TRAVELLED\*

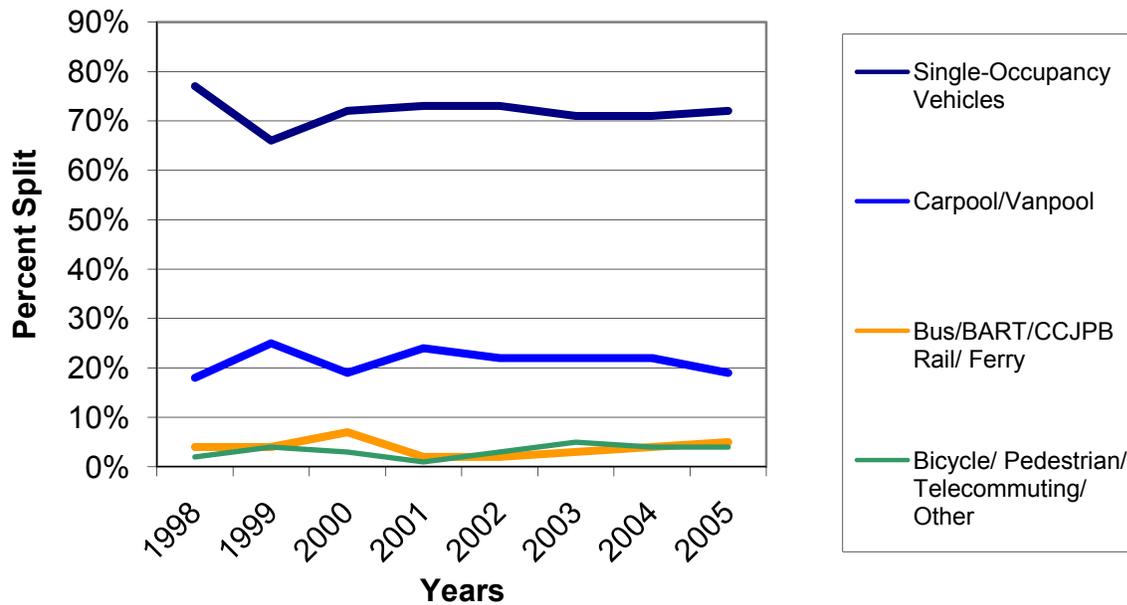


\*2008 data from Caltrans, Office of Travel Forecasting and Analysis; [www.dot.ca.gov/hq/tsip](http://www.dot.ca.gov/hq/tsip)

Mode Share: Usage Statistics of All Modes

The 2007 Solano Congestion Management Program (CMP) defines the mode share or mode split as percent of trips per mode per year. It assumes that with further efforts to enhance and promote modes such as intercity transit, ferry, rail, ridesharing, non-motor vehicle travel and telecommuting, the use of single-occupant vehicles (as a percentage of all modes) will decrease. The current estimated mode split and past mode split percentages are as follows:

**Multimodal Split in Solano County**



	Single-Occupancy Vehicles	Carpool/Vanpool	Bus/BART/Capitol Corridor Rail/ Ferry	Bicycle/ Pedestrian/ Telecommuting/ Other
2005	72%	19%	5%	4%
2004	71%	22%	4%	4%
2003	71%	22%	3%	5%
2002	73%	22%	2%	3%
2001	73%	24%	2%	1%
2000	72%	19%	7%	3%
1999	66%	25%	4%	4%
1998	77%	18%	4%	2%

## Funding

Alternative Modes transportation have several dedicated funding sources. Only the Transportation Development Act (TDA) Article 3 funds are dedicated specifically to bicycle and pedestrian facilities. (Once every 5 years, a portion of the TDA Article 3 funding can be used to update bicycle and pedestrian master plans.) Other fund sources, such as the federal Congestion Mitigation for Air Quality (CMAQ) funds, can be used for a variety of projects or programs, not all of which are covered by the Alternative Modes element.

The following table shows the cumulative funding amounts from each program over the past four (4) fiscal years (FY):

Program	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09	Total
SBPP <sup>1</sup>	\$327,256	\$302,000	\$953,098	\$2,285,000	\$3,867,354
TLC	N/A	\$125,000	\$1,400,000	\$2,262,000	\$3,787,000
CAF <sup>2</sup>	\$290,000	\$360,000	\$420,000	\$420,000	\$1,490,000
TFCA <sup>3</sup>	\$340,000	\$320,000	\$332,614	\$140 - 160,000	\$1,142,614
FY Totals:	\$957,256	\$1,107,000	\$3,105,712	\$5,117,000	\$10,286,968

1 - Solano Bicycle and Pedestrian Program (SBPP)

2 - Yolo-Solano Clean Air Fund (CAF) Program

3 - Transportation Fund for Clean Air (TFCA)

The Regional Transportation Plan (RTP) adopted by MTC in 2009 anticipates a doubling of money for TLC programs and projects. The RTP also proposes to dedicate regional bicycle and pedestrian funds specifically to bicycle projects. However, it is not certain when that money will actually be available, or in what year of the RTP it will be funded. SBPP funds are a mix of TDA and CMAQ. TDA is a relatively steady fund source, but is relatively small (average of \$375,000 per year for the last 4 years). CMAQ funds are provided through the federal transportation legislation. Because they are federal and related to air quality, there are limits on the use of the funds, and a high administrative burden. Similarly, TFCA and Clean Air funds are focused on projects or programs that have a direct impact on air quality; and, in the case of the TFCA funds, come with a substantial administrative burden.

Although the funding for Alternative Modes capital projects is relatively small and uncertain, there is almost no demand for operational funds. This is actually a benefit for Alternative Modes, since operation funds are typically the most unreliable types of funds.

## Conclusions

Alternative modes facilities and vehicles provide a small proportion of the total number of commute and shopping trips on a county-wide basis. They appear to provide a slightly larger share of the recreational trips, and are starting to provide a growing portion of the home-school trip pattern. Alternate modes can provide an important link to mass transit, such as bus, train or ferry terminals. Programs such as TOD and TLC can improve pedestrian access to mass transit by increasing the number of dwelling units near transit centers, and/or by improving the quality of the non-motorized trip from housing to transit. Given the high proportion of Solano's commute that uses carpooling, it may be appropriate to increase the emphasis on improving bicycle and pedestrian access to park and ride lots.

Alternative fuel vehicles have the potential to play an increased role in providing mobility that produces fewer air pollutants, especially from fleet vehicles such as transit buses or delivery vehicles. This addresses the issue of air quality, but not the issue of congestion.

Whether the future emphasis of alternative modes is on bicycle and pedestrian facilities, TOD, alternative fuels, or a balanced approach as is currently taken, any change is likely to be incremental. Available funding and the typically slow pace of changes in consumer spending, especially for major ticket items such as vehicles or housing, mitigates against any sudden change.