Chapter 5 – Cost Analysis and Implementation Strategy

This Chapter includes the following sections:

5.1 Cost Estimates: Capital, Operating, and Maintenance

The Solano Countywide Pedestrian Network consists of 80 projects. The cost to implement the capital projects identified to complete the pedestrian network is approximately $78 million. Information regarding the proposed Countywide Pedestrian Network's costs, funding, and project implementation strategies can be found in this chapter. This chapter is designed to be used as an on-going resource for the County and cities, helping to develop a consistent set of implementation tools and strategies. A primary goal of developing a consistent implementation system is to leverage outside funding. The projects identified in the Plan are under the administration authority of the local jurisdictions which would be the lead agency responsible for implementing the capital projects, including securing funding. The implementation strategies described herein are recommendations for STA staff and local jurisdictions to identify and secure funding and for completing projects.

Pedestrian Improvement Costs

One of the objectives of this Pedestrian Plan is to estimate the cost of the complete future pedestrian transportation system as part of STA's overall Comprehensive Transportation Plan (CTP). A figure of $25 million has been identified as a working budget for future pedestrian improvements, based on a relative proportion to the CTP's budget allocations for other transportation modes. The costs for many of the current pedestrian-supportive projects are already accounted for in the Countywide Pedestrian Plan, the Countywide TLC Program, or other components of the CTP. Table 2.1 identifies the project costs that are included in other CTP elements, and in a separate column, the cost for projects that are not included in other CTP

elements, or pedestrian enhancements to projects that are in other elements. These costs are based on other similar types of projects, but both the concepts and the costs have not been through the stages of internal and public review that will be required to clearly define and confirm the scope of the project, which would then allow a more realistic estimate of its costs.

Capital Projects and Maintenance Cost Estimates

Approximately 140 miles of the county's regional roadway contains over 16 miles of off-street multi-use paths have been developed. The estimated cost of implementing the proposed capital network is approximately $78 million. The estimated available funding for the next 25 years is $25-37.5 million. Since this amount is less than the full $78 million required to construct the entire network and support facilities, a Priority Pedestrian Projects list (Tier 1) was developed. The costs estimates discussed in this section apply to this priority pedestrian projects list.

The projects identified in the Tier 1 pedestrian projects list vary in progress, from concept to shelf-ready. Since a concept project is less defined than a shelf-ready project, the cost associated with a concept project is also less defined. Based on a simple calculation used in the cost estimating, Total Project Cost can be calculated as follows:

Total Project Cost = Construction Cost + PE/ENV/PSE/CM[4]; [Construction Cost*1.40]

Based on this, the total cost to construct the Tier 1 priority bicycle projects network is $13 million.

The planning cost estimates for each priority pedestrian project can be found in Table 5.1B, which includes an additional 40 percent to account for other aspects of the project delivery process. The makeup of the 40 percent estimation factor is as follows:

- Follow-up planning and preliminary engineering, including right-of-way work (*5% of the total construction cost*)
- Environmental Review (CEQA/NEPA), Habitat Mitigation Plan and project permitting (*5% of the total construction cost*)
- Design level engineering, including geotechnical engineering, structural, and hydrology/hydraulics analysis (*10% of the total construction cost*)
- Biological Monitoring and Construction Management, including construction site inspection (*20% of the total construction cost*)

To develop a uniform cost estimate as a baseline for planning purposes, some cost assumptions shown in Table 5.1A were used to determine Construction Cost. The remaining costs to implementing the project were calculated as a percentage of the Construction Cost. In this case, 40 percent was used.

The cost assumptions are based on a unit cost data reviewed by the Solano County Public Works Department and data compiled from the Alameda Countywide Bicycle Plan and City of Santa Rosa Bicycle and Pedestrian Master Plan. These assumptions represent only construction costs in 2010 dollars.

[4] PE = preliminary engineering; ENV = environmental review; PSE = plans, specs, estimates, design level engineering; CM = construction management

Table 5-1A: Bikeway Network Cost Assumptions

Pedestrian Capital Improvement Type	Unit Construction Cost
Class I Path: Construct new off-street multi-use bicycle and pedestrian facility	$720,000/mile
Class I Path: Improve/maintain existing multi-use bicycle and pedestrian facility	$145,000/mile
New Sidewalk	$300,000/linear foot
Replace Sidewalk	$180,000/linear foot
Arterial Improvements	$290,000/mile
Traffic Signal	$230,000/each
Construct Pedestrian/Bicycle Overpass	$300,000/sq. ft.
Improve freeway interchange to accommodate bicycle and pedestrian crossing	$430,000/per interchange improvement

Note: estimates are rounded to the nearest ten thousand

The above unit assumptions are constructions costs only. The assumptions do not include administrative costs, deflation/inflation considerations, contingencies, design, or right-of-way acquisition. Costs can vary depending on terrain, drainage needs, right-of-way, and design of the facility.

Other types of factors may additionally affect cost, which include the following categories:

- Move Traffic/Parking Lanes: restripe existing traffic and parking lanes in order to provide bike lanes.
- Move Utility Poles: relocated utility poles in some areas as part of a street widening effort to provide bike lanes.
- Fill Drainage Ditches: install storm drain system along road as part of street widening effort, which includes bike lanes. This item, along with moving utility poles, are accomplished for traffic reasons rather than the need for bike lanes.
- Add pavement: indicates the need for new or expanded shoulders, usually where there are no existing gutters or curbs.
- Cut/Retaining Walls: indicates the need for retaining walls to hold back cut-and-fill areas as part of street widening efforts, which include the provision of bike lanes.
- Land Acquisition: indicates the probable need for acquiring private property as part of a street-widening project or new bike path alignment.
- Separated paths: indicates new bicycle-pedestrian paths separated from vehicular traffic.
- Lighting/Fencing: indicates the need for lighting and/or fencing along a proposed bike path alignment.

Implementation Costs can further be broken down between land acquisition (or lease) and construction costs. Land acquisition may be through purchase, easement, long-term lease, property exchange, or other means. Routes that probably will require right of way acquisition

contain cost estimates based on local property values. More specific information must be developed as the actual parcels are identified and negotiations with the owners are conducted. A total of $2.4 million is identified as required to acquire right of way for future Class I bike paths in Phase I along the various waterway, railroad, and highway corridors. The actual amount will depend on localized property values and overall economic conditions at the time of purchase.

Construction Costs may include bridges, underpasses, pathways, landscaping, drainage, grading, demolition, lighting, fencing and other expensive features associated with a Class I routes.

The priority pedestrian projects total an estimated $78 million. These projects will be the focus of STA funding and implementation efforts until the next update of the Plan in approximately four years. Costs to implement the priority regional pedestrian projects are presented in Table 5.1B.

The Solano Countywide Pedestrian Network has two (2) levels of investment. They are the Priority Pedestrian Network (Tier 1) and Complete Network (Tier 2).

Based on these figures, the total estimated cost to implement the 80 projects planned in the short-, mid-, and long-term phases of the Solano Countywide Pedestrian Plan is approximately $78 million, the majority of which is related to Class I paths and improvements within downtown areas. Of that $78 million, an estimated $13 million makes up the Tier 1 priority pedestrian projects.

Tier 1 priority pedestrian projects are listed in the following table:

Table 5-1B: Priority Pedestrian Network Project Cost Estimates (2010 $'s)

Agency	Project Name	Env/ Design Cost*	ROW/ Construction Cost*	Total Cost*
Benicia	Park Road Pedestrian Improvements	$250,000	$0	$350,000
Dixon	West B Street Bicycle-Pedestrian Undercrossing (0.1 mi)	Fully Funded	$6,100,000	$6,100,000
Rio Vista	Waterfront Improvement Project	$290,000	$720,000	$1,010,000
Solano County	Tri-City and County Regional Trail Connections	TBD	TBD	TBD
Suisun City	Grizzly Island Trail (CI) - Grizzly Island Rd to Marina Blvd	Fully Funded	Fully Funded	$2,100,000
Vacaville	Ulatis Creek Bicycle/Pedestrian Path (CI, Phase I) - Ulatis Drive to Leisure Town Road	$61,000	$854,000	$915,000
Vallejo	Downtown Streetscape Improvements	$650,000	$1,600,000	$2,250,000
STA	Solano County Wayfinding Sign Plan and Program	N/A	N/A	$40,000
*All cost estimates rounded to the nearest ten thousand.			Total Cost:	$12,800,000*

These estimates are for planning purposes and more refined cost estimates should be developed in the design development process, especially for engineered portions of a pedestrian project.

Maintenance Cost Estimates
The annual maintenance cost for the primary system is projected to be approximately $480,000 (2010 dollars) when the Solano Countywide Pedestrian Network is fully implemented. All maintenance costs are associated with bicycle paths, as the sidewalks will be maintained as part of the regular roadway maintenance.

Class I bike path maintenance includes cleaning, resurfacing and restriping the asphalt path, repairs to bridges and other structures, cleaning drainage system, trash removal, and landscaping (see checklist below). While this maintenance effort may not be major compared to roadway or park maintenance it does have the potential to develop heavy expenses. For example, bikeways along waterways may experience damage from flooding and the use of tractors to clear waterways, requiring extensive rebuilding.

For purposes of estimating maintenance expenses for Class I bike paths, $10,200 per mile per year is used based on information received from other bike path facilities in northern California. This cost covers all expenses, including labor, supplies, and amortized equipment costs, for weekly trash removal, monthly sweeping (with a mechanized sweeper), and biannual resurfacing/repair patrols. Underbrush and weeds should be cut once in the late spring and again in mid-summer.

Many of these maintenance items are dependent on the type and amount of landscaping and supporting infrastructure that is developed along the trail. It is recommended that a consistent maintenance procedure be developed to ensure, at a minimum, that the facility is safe for trail users. There should be a mechanism to identify, record, and respond to maintenance problems, and to keep written records of such actions.

Expenses for maintaining sidewalks have not been separated from roadway maintenance such as sweeping and minor repairs provided as part of routine roadway maintenance. Additional costs should be minimal because, in most locations, the roadway surface area to be maintained. Timing for maintenance varies depending on project type and environmental conditions throughout the year. Table 5.1C provides a schedule for path maintenance as a reference.

Table 5.1C – Maintenance Schedule

Maintenance Type	Frequency
Sign replacement/repair	1 – 3 years
Pavement marking replacement	1 – 3 years
Tree, shrub, and grass trimming/fertilizing	5 months – 1 year
Pavement sealing/potholes	5 – 15 years
Clean drainage system	1 year
Pavement sweeping	Weekly-monthly/as needed
Shoulder and grass mowing	Weekly/as needed
Trash disposal	Weekly/as needed
Lighting replacement/repair	1 year
Graffiti removal	Weekly-monthly/as needed
Maintain furniture	1 year
Fountain/restroom cleaning/repair	1 year
Pruning	1 – 4 years
Bridge/tunnel inspection	1 year
Remove fallen trees	As needed
Weed control	Monthly/as needed
Maintain emergency telephones, CCTV	1 year
Maintain irrigation lines	1 year
Irrigate/water plans	Weekly-monthly/as needed

Security

As a component of maintenance, enforcement and security on the Solano County Class I system will be provided by the local police departments.

Class I bike-pedestrian paths require special enforcement because in many cases they are not visible or accessible from streets, and they often directly abut private residences. One key aspect of enforcement is the hours of operation for Class I bicycle-pedestrian paths. It may be preferable to close some paths at night so that enforcement levels may be lowered.

Bicycle-pedestrian under-crossings require special attention because they can be perceived as unsafe areas by some bicyclists and pedestrians, particularly after dark. It is recommended that any under-crossing over 50 feet in length be lighted, that all approaches to the undercrossing provide the bicyclist or pedestrian with a clear view all the way through the under-crossing, and that under-crossings be designated to eliminate blind spots or areas where people may sit off the bike path.

It is anticipated that the local city Police Department will have to be provided with special vehicles (such as trail bikes) for patrolling the bike paths. It is estimated that one (1) hour of additional police manpower is required for each 5 miles of pathway. Using this formula, the Class I bicycle-pedestrian proposed will eventually require 20 man-hours per day from the local Police Department. At this juncture, the Police Department may wish to recruit a bikeway specialist whose sole responsibility is patrolling the class I bicycle-pedestrian system.

5.2 Funding Availability

FUNDING FOR PEDESTRIAN PROJECTS

This Pedestrian Plan is intended to be a useful tool to help planners, decision-makers and advocates get pedestrian-friendly concepts and projects "off the ground". Simply having a Countywide Pedestrian Plan and showing funding agencies that a project or program is incorporated in or consistent with that Plan will distinguish Solano County projects from many others. In addition, this Plan offers useful resources for identifying, refining, documenting, and funding pedestrian-related projects:

- The background information on benefits, government policy, and current conditions contained in Section 3 may be useful for specific project proposals and general discussions.
- In Section 4 the Plan includes a useful summary of policy documents of each agency and the region that generally or specifically support pedestrian transportation and activity.
- The Principles and Guidelines contained in Section 5 can be incorporated directly into projects and proposals. These tips have technical merit to make pedestrian routes and places successful, and they are consistent with the criteria and priorities of many funding programs that will support such projects.
- The maps and description of local conditions, current projects, and opportunities in Section 6 show the framework of key pedestrian routes and destinations for each agency, and the relationships between cities. The maps would need to be edited and updated to highlight specific project proposals or evaluate issues or opportunities. This is enabled because they are prepared in ArcGIS, and are available to the participating agencies and can easily be adapted for other projects and purposes.
- The overall vision of Countywide pedestrian projects and costs provided in
- An overview of funding programs available to support pedestrian-friendly projects is contained in Section 7.4, and detailed information, including, criteria, amounts, limitations, contacts, deadlines, etc. is contained in Appendix A. Grant programs often change, and this information should always be verified before proceeding with a specific grant proposal, but this information provides a head start for identifying and strategizing opportunities, and matching projects to funding sources.
- The reference information contained in Section 8 provides links to boundless data and ideas to support the conception, planning, design, and implementation of pedestrian-oriented projects.

In the past, many funding sources have been identified and utilized to implement priority pedestrian projects. This section provides an overview of the primary sources anticipated to be available over the next 25 years. Solano County has historically invested approximately $1.6 million annually in pedestrian facilities. This money is derived from a variety of sources including funding from the Federal Transportation Bill (TEA-21, SAFETEA-LU) programs, competitive source funding, sales tax revenue, etc.

There are a variety of potential funding sources including local, state, regional, and federal funding programs that can be used to construct the proposed pedestrian improvements indentified in this plan. Most federal, state, and regional programs are competitive and involve the completion of extensive applications with clear documentation of the project need, costs, and benefits. Several funding sources available for bicycle projects are described in this section.

More information regarding the various types of funding utilized to fully fund current projects in progress is explained below. Under each funding source is a list of projects that have been programmed for funding to illustrate the funding committed in Fiscal Year (FY) 2010/11.

Local Funding

*Transportation Development Act (TDA) Article 3 – (**$195,000** total in FY 2010/11)*

TDA Article 3 funds are awarded annually to local jurisdictions for bicycle and pedestrian projects in California. These funds originate from the state gasoline tax (Senate Bill 821) and are distributed according to population to local agencies. The STA Bicycle Advisory Committee (BAC) and Pedestrian Advisory Committee (PAC) play an active role in project selection and the distribution of TDA funds in Solano County.

Solano County does not currently have a local sales tax measure. Seven of the nine San Francisco Bay Area counties have a transportation sales tax that dedicates a portion of their revenue to bicycle and/or pedestrian related improvements. Its primary source of local discretionary funding is from Transportation Development Act (TDA) Article 3 funds.

Federal Funding

*Regional Bicycle Program (RBP) – (**$1,035,000 total** in FY 2010-11)*

Regional Bicycle Program (RBP) funds administered by MTC are provided to each Bay Area County through the Congestion Mitigation and Air Quality (CMAQ) program. These funds are dedicated to the implementation of bicycle facilities.

- City of Suisun City Grizzly Island Bicycle-Pedestrian – Class I ($814,000)
- City of Fairfield Linear Park Alternate Route: Nightingale Drive – Class III ($221,000)

*Eastern Solano Congestion Mitigation for Air Quality (ECMAQ) – (**$1,060,000 total** in FY 2010-11)*

The Eastern CMAQ is administered by the Solano Transportation Authority. Since Solano County falls between the Bay Area and the Sacramento air basins, Eastern CMAQ funds are dedicated to projects in the eastern portion of the County. Eastern CMAQ funds are only eligible to the cities of Dixon, Rio Vista, Vacaville, and the eastern portion of Solano County.

- Solano County Vaca-Dixon Bike Route – Class II ($250,000)
- City of Vacaville Ulatis Creek Bicycle-Pedestrian Path: Leisure Town Road and Ulatis Drive – Class I ($810,000)

Cumulatively, with the exception of the Regional Bicycle Program, these funding sources provide for approximately $1.-1.2 million per year. Over the next 25 years, this can be estimated to be $25-30 million.

Detailed explanation of each of these sources can be found in Chapter 4 Section 2.

See Appendix _ for additional competitive funding sources and Grant Application Tips

5.3 Implementation Strategy

This Chapter includes the following sections:

5.1 Cost Estimates: Capital and Maintenance/Security
- Table 5.1A – capital project cost assumptions
- Table 5.1B – cost estimates
- Table 5.1C – maintenance schedule

5.2 Funding Availability
- TDA Article 3
- CMAQ
- ECMAQ

5.3 Implementation Strategy
- Planning/Goal Setting (see Chapter 2)
- Funding Strategy Development
- Project Delivery
- Performance Measures and Evaluation
- Planning and Support Facility Recommendations

The Solano Countywide Pedestrian Network is made up of 80 projects. The cost to implement the capital projects identified to complete the pedestrian network is approximately $78 million. Information regarding the proposed Countywide Pedestrian Network's costs, funding, and project implementation strategies can be found in this chapter. This chapter is designed to be used as an on-going resource for the County and cities, helping to develop a consistent set of implementation tools and strategies. A primary goal of developing a consistent implementation system is to leverage outside funding. The projects identified in the Plan are under the administration authority of the local jurisdictions, which are also the lead agency responsible for implementing the capital projects, including securing funding. The implementation strategies described herein are recommendations for STA staff and local jurisdictions to identify and secure funding and for completing projects.

Most people do not plan to fail, they fail to plan. In other words, the appropriate planning not only includes the identification of projects and accomplishments a community sets out to be completed, but the methodology to fund and deliver results-producing actions as well.

This chapter breaks down the Implementation Strategy of the Pedestrian Transportation Plan into five (5) categories: Planning/Goal Setting (see Chapter 2), Funding Strategy Development, Project Delivery, Performance Measures/Evaluation, and Planning/Program Recommendations.

Planning/Goal Setting

Chapter 2 identifies the process for planning and developing a set of goals that each community in Solano County has built a consensus to achieve. Achievement of these goals will be monitored through implementation of the progress tracking identified in Chapter 7 – Performance Measures and Evaluation.

Funding Strategy Development

As described in Chapter 4 – Policies and Programs, under the Solano Pedestrian Program (SPP), funding strategies for projects should be developed by STA staff and sponsoring agencies based on Tier and order of priority as identified by STA staff, through guidance from the STA PAC and STA TAC. With a process-oriented approach, Tier 1 projects should have priority for development of a funding strategy in the short to mid-term for delivery. Tier 2 projects should be preparing for delivery at the local level with assistance from STA as needed. The current priority pedestrian projects list is identified in Chapter 3, page 22

Projects identified for Tier 1 primarily focus on project readiness, impact on safety, and improvement of regional connectivity. Based on the varying funding sources available depending on community and project scope, it is the responsibility of the Strategic Planning and Project Delivery Departments at STA to work together to keep the priority project lists up to date. With interagency coordination, the funding strategy can consist of federal aid, local sponsorship, public-private partnerships, etc. Below is a listing of known funding sources available.

TABLE 5-3A – Summary of Funding Sources

Name of Funding*	Fund Source/Type	Used For	Amount per Year (estimates)
Transportation Development Act (TDA) Article 3	Local (1/4¢ of state sales tax)	Bicycle and Pedestrian Projects	Approximately $260,000 to $350,000
Congestion Mitigation & Air Quality Improvement Program (CMAQ)	Federal (fuel tax)	Projects to reduce vehicle emissions and traffic congestion	Varies
Transportation for Livable Communities (TLC)	Federal (CMAQ funds)	Bicycle, pedestrian, transit or other projects that enhance community vitality	$1 million
Surface Transportation Program (STP)[5]	Federal (fuel tax)	Capital projects including highways, bus/rail transit, local streets, port facilities, bicycle and pedestrian projects, etc.	Varies
Eastern Solano CMAQ	Federal	Projects to reduce vehicle emissions (i.e. clean vehicle technologies, alternative modes of transportation and public education)	$250,000
Yolo-Solano Air Quality Management District (YSAQMD) Clean Air Funds (CAF)	Local ($4 vehicle registration fee and AB 8 property tax)	Clean technologies/low emission vehicles, alternative transportation, transit services, public education	
Transportation Fund for Clean Air (TFCA)	Local ($4 vehicle registration fee)	Transportation programs/projects that improve air quality	$100-150,000

[5] Also see http://www.mtc.ca.gov/funding/STPCMAQ/

TABLE 5-3A – Summary of Funding Sources (cont.)			
State Transportation Improvement Program (STIP)	State and Federal (fuel tax funds)	Projects may include, but not limited to, improving State highways, local roads, public transit (including buses), intercity rail, pedestrian and bicycle facilities, grade separations, transportation system management, transportation demand management, soundwalls, intermodal facilities, and safety.	Varies
Transportation Enhancements (TE)	Federal	For scenic beautification, bicycle and pedestrian facilities, historic rail depot upgrades, bus shelter, access for disabled persons, etc.	Discretionary varies annually
Local Funding	Local	TBD by local sponsoring agencies and stakeholders	Varies
Private Sponsorships	Local	TBD by local sponsoring agencies and stakeholders	Varies
Fundraising	Local	TBD by local sponsoring agencies and stakeholders	Varies
Public-Private Partnerships	Local/State/Federal	TBD by local sponsoring agencies and stakeholders	Varies

*PDF version includes a hyperlink to the resource page for the grants information (see Appendix F for list of hyperlinks to this table)

This table represents an overview of deadlines for each of the funding sources with the exception of local funding, private sponsorships, fundraising, and public-private partnerships as these sources are generally more flexible or hold deadlines specific to the administrators of the funding.

TABLE 5-3B – Funding Source Deadlines and Requirements				
Name of Fund Source	Application/Funding Availability*	Application Deadline*	Comments	Deadline to spend funding**
Transportation Development Act (TDA) Article 3	Estimates provided in February of Calendar Year	Varies	Request for Resolution of Support to be submitted to STA for submission to MTC	Two years from date approved by MTC
Congestion Mitigation & Air Quality Improvement Program (CMAQ)	Available every 3-4 years, pending Federal Transportation Bill	Varies based on FHWA guidelines	If selected for funding by STA, resolution needed[6]	Two years from award date
Surface Transportation Program (STP)	Available every 3-4 years, pending Federal Transportation Bill	Varies based on Caltrans guidelines	If selected for funding by STA, resolution needed[3]	" "
Eastern Solano CMAQ	Varies, every 2-4 years	Varies	If selected for funding by STA, resolution needed[3]	" "
Yolo-Solano Air Quality Management District (YSAQMD) Clean Air Funds (CAF)	January/February	March; Steering Committee review April; awards announced May	See application guidelines and eligibility requirements	" "
Transportation Fund for Clean Air (TFCA)	February/March	April	See program guidelines and eligibility requirements (see http://www.ysaqmd.org/Incentives10.php)	" "

* Dates are approximations and listed in month of Calendar Year
** By request, some funding deadlines for spending can be extended a limited time due to timing with specific project needs requested of grant administrators

Project Delivery

Project delivery is focused on administering and monitoring various stages of project development, *while meeting funding deadlines required by the project funding source(s)*. It is often the case that projects are funded through a variety of sources, including, but not limited to grants, federal and state funding, local discretionary funds, etc. Primary sources traditionally used to fund pedestrian projects in Solano County include TDA Article 3, CMAQ, and Eastern Solano CMAQ. The order of project development is as follows:

[6] Download sample CMAQ/STP resolution in Microsoft Word format from http://www.mtc.ca.gov/funding/STPCMAQ/, see "Project Sponsor's Resolution of Local Support" at bottom of page

Planning/Conceptual Design/Public Outreach

This is the initial step in beginning a project. This usually costs approximately $100,000 to $150,000.

Preliminary Engineering
Preliminary engineering is the conceptual development of a project with approximately 30% design of a project incorporated. This is usually estimated as 10% of Construction Cost.

Environmental Clearance
With federally funded projects, project sponsoring agency staff is precluded from pursuit of right-of-way acquisition or negotiation of corridor preservation unless the project has been environmentally cleared. This is usually estimated as 20% of Construction Cost. The types of environmental clearance based on funding type are as follows:

Federally Funded Projects (NEPA)	Locally and State Funded Projects (CEQA)
The analysis of a project required by CEQA usually takes the form of:	**The analysis of a project required by CEQA usually takes the form of:**
NEPA Environmental Impact Statement (EIS) – 3-24 months	CEQA Environmental Impact Report (EIR) – within 24 months*
NEPA Environmental Assessment (EA) – 2-3 weeks	CEQA Environmental Assessment (EA) – 2-3 weeks
NEPA Finding of No Significant Impact (FONSI) is issued by FHWA when environmental analysis and interagency review during EA process finds a project to have no significant impact on quality of environment	Negative Declaration – due 180 days from date application completed
NEPA Categorical Exclusion (CE) – 8 weeks	Categorical Exemption (CE) – 8 weeks

Note: NEPA is required only when federal funding is used, CEQA compliance is mandatory of all projects[7]
*Time limit may be extended under certain circumstances, such as a delay by the applicant, joint NEPA/CEQA document preparation, or need for additional studies

An environmental impact report (EIR) is a detailed report written by the lead agency describing and analyzing the significant environmental effects of a proposed project, identifying alternatives and discussing methods to reduce or avoid the possible environmental damage. An EIR is prepared when the lead agency finds substantial evidence that the project may have a significant effect on the environment. An environmental assessment (EA) is a substitute for the EIR under the Certified Regulatory Program. An environmental impact statement (EIS) is an environmental impact document prepared pursuant to NEPA, in place of the term EIR which is used in CEQA.

To find more information about the NEPA environmental review and assessment process, visit the following site:
http://www.environment.fhwa.dot.gov/projdev/index.asp

To find more information about the CEQA environmental review and assessment process, visit the following sites:

[7] A project is a discretionary proposal (or any part of a proposal) which might result in physical changes to the environment. Examples of projects are applications to change adopted plans, road development projects, use permit requests, and subdivisions of property. Examples of proposals not subject to CEQA review include emergency repairs, school closings, studies, water hook-ups in existing neighborhoods, and remodeling of existing buildings.

http://ceres.ca.gov/ceqa/guidelines/
http://www.dera.saccounty.net/FAQs/tabid/88/Default.aspx

The greatest challenge identified by STA staff is that number of requirements that apply to environmental approvals for transportation projects.

ROW Acquisition/Negotiations
As stated in the previous section, discussions regarding ROW are prohibited unless environmental clearance has been achieved. This phase of the project can be accomplished through purchase of necessary land or discussions with interested parties to obtain easement rights. ROW Acquisition/Negotiations is estimated as 10% of Construction Cost.

Construction
While Federal and State laws and requirements are essential to protecting the environment and facilitate a thorough planning process, these requirements also pose a significant challenge to timely project delivery. Challenges include the exceptional number of Federal laws, often inflexibility of many individual laws, inconsistencies with local or Federal laws, multiple agencies being charged with carrying out the requirements of the laws, detailed field review/hands-on oversight of Federal agencies for each project, and changing interpretations of the laws over time.[8] Construction cost estimates can be found in Table 5-1A: Bikeway Project Cost Assumptions.

Performance Measures and Evaluation
Chapter 7 – Performance Measures and Evaluation provide an overview of each goal identified in the Pedestrian Plan.

Planning and Support Facility Recommendations
The general recommendations in this section have been identified by comments made by members of the PAC and TAC. These recommendations may be adopted by local jurisdictions in tandem with policies and objectives.

Recommendation #1: Install new pedestrian signals at locations where school children must cross arterials to access the school grounds. These signals may be activated by loop detectors or operate only in the morning and afternoon. In conjunction with these improvements or as an alternative, crosswalks should be enhanced by having a crossing guard present before and after school hours, reconstructing crosswalk with different paving material (such as brick), adding rippled warning pavement 100 feet from crosswalk, installing adequate overhead light standards, and providing warning signs and flashing yellow lights. Locations and types of signals and other improvements should be accomplished by the Public Works department in conjunction with their respective school districts.

Recommendation #2: Establish a volunteer maintenance program where the city organizes regular work parties and provides support. Bicycle-Pedestrian paths may be "adopted" by corporations or clubs and maintained by them in exchange for a public acknowledgment.

[8] AASHTO

Recommendation #3: Develop an inventory of PCI for bicycle-pedestrian routes in Solano County. Use current Pavement Condition Index (PCI) information for roads to develop an inventory for existing bikeways in Solano County. Estimated annual maintenance costs for bike lanes and bike paths are included in Section 5.1 (table 5.1C). These costs cover a level of maintenance to ensure that existing and future bikeways are safe for bicyclists to use. An inventory of pavement condition for the routes included in the Solano Countywide Bikeway Network is anticipated for development in follow up to this plan. Recommendation #'s 5-6 are related.

Recommendation #4: Distribute Maps and Brochures
Solano County has produced and distributed over 30,000 Solano-Yolo BikeLinks Maps. This map is available for download and viewing online through the STA website (www.sta.ca.gov). This map also features class I bicycle-pedestrian paths accessible to pedestrians. The maps should continue to be distributed to all local bike shops, libraries, schools, and major employers.

Recommendation #5: Develop a Pedestrian Brochure Similar to the Solano BikeLinks Map
Brochures on walk improvements and requirements are also effective education and marketing strategies. For example, this specialty brochures might cover steps neighborhoods and elementary schools can take to improve walking conditions (i.e., Safe Routes to School), or types of incentive programs employers can offer to encourage employees to walk and use public transportation.

Recommendation #6: Expand Education Programs
Programs such as Safe Routes to School provide beneficial information to school children at a young age. A Joint City/School District Safety Committee could be formed consisting of appointed parents, teachers, administrators, police, and public works staff whose task it is to identify problems and solutions, ensure implementation, and submit recommendations to the School Board or City Council.

A standard safety handbook format should be developed incorporating the best elements of those currently in use, and made available to each school on disk so they may be customized as needed. Each school should develop a circulation map of the campus and immediate environs to include in the handbooks, clearly showing the preferred circulation and parking patterns and explaining in text the reason behind the recommendations. This circulation map should also be a permanent feature in all school newsletters.

Recommendation #7: Educate Motorists
Educate motorists about the rights and characteristics of bicyclists and pedestrians through a variety of means including: (a) making bicycle and pedestrian safety a part of traffic school curriculum, (b) producing a brochure on bicycle and pedestrian safety and laws for public distribution, (c) enforcing existing traffic laws for both motorists and pedestrians, and (d) sending an official letter to the Department of Motor Vehicles recommending the inclusion of pedestrian laws in the drivers license exam.

Recommendation #8: Walkway/Bicycle-Pedestrian Pathway Identity/Wayfinding Signs
A logo for the proposed pedestrian system has not yet been developed. This is recommended and could be placed relatively inexpensively on existing and new segments to raise the visibility of the effort. This identity should be used on all pedestrian path signs, brochures, maps, and other materials. The logo will help define the walkway routes as a cohesive system rather than a series of disconnected routes. Directional, informational, and warning signs should conform to the Caltrans Chapter 1000 and the Manual of Uniform Traffic Control Devices (MUTCD) unless superseded by City Guidelines. The cost to produce a 18"x24" sign is approximately $300. Further development of a countywide wayfinding signage plan is needed.

Recommendation #9: Provide Improvements to Major Intersections on Countywide Pedestrian Network
These improvements should be targeted for all major intersections on the proposed pedestrian network, and at locations where school children cross a busy street to gain access to their school.

Recommendation #10: Provide Crossing Protection Resources
Resources for crossing safety should be encouraged. Another type of crossing includes that of pedestrian facilities or routes that traverse a railroad crossing. The Solano Rail Inventory Study provides and inventory of all such crossings.

See Appendix _ for Tips for Planning and Building Public Support for Projects.

Chapter 6 – Data Collection

6.1 Bicycle 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. In 2011, the Metropolitan Transportation Commission (MTC) will be initiating a countywide collection process that STA staff will assist conducting. The following table shows the most recent counts:

Table 6-1: Bicycle and Pedestrian Counts (2002)

Agency	Location	AM Ped	AM Bike	PM Ped	PM Bike
Benicia	Military East @ 2nd 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
Total:		**451**	**116**	**551**	**135**

The counts were conducted through a Data Collection and Analysis Project prepared for the Metropolitan Transportation Commission (MTC) by Wilbur Smith Associates in association with Traffic Research & Analysis, Inc. Approximately 100 locations throughout the San Francisco Bay Area's nine (9) counties were selected for counts. The five (5) criteria used to select the count locations were:

1. High bicycle collision rates
2. On the local or regional bicycle network (existing or proposed)
3. Proximity to major transit facilities
4. Proximity to school and colleges/universities
5. Proximity to local or regional attractions/destinations

Counts were conducted throughout September and October of 2002. School districts and institutions were contacted for their start date to ensure that counts were conducted after the school year had begun. In addition, it was necessary for counts to be completed before the end of daylight savings time (October 27, 2002) to ensure that the evening count duration would be during sunlight.

Counts were conducted on Tuesdays, Wednesdays and Thursdays only, for both the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods, which represent the standard peak commute hours (and are consistent with most intersection turning movement count time periods). In addition, the evening counts were expanded by an additional two hours (2:00 to 4:00 PM) at select locations near schools to capture the school-related activity (i.e., students leaving school at the end of the day).

Based on the results of the count effort, it was found that one count technician was able to accurately count both bicyclists and pedestrians at one time, except at the high volume locations.

Collision rates were developed for each of the locations where bicyclist counts were conducted, and were based on the counted volumes and average SWITRS accident information. In comparing the collision rates, it was found that locations in urban environments and locations with high volumes of bicycle traffic tended to have the lowest collision rates, whereas rural environments and locations with low volumes of bicycle traffic tended to have the highest collision rates.

6.2 Commute Data

Mode Split

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 shown in Figure 6.2A.

Figure 6.2A – Multimodal Split in Solano County

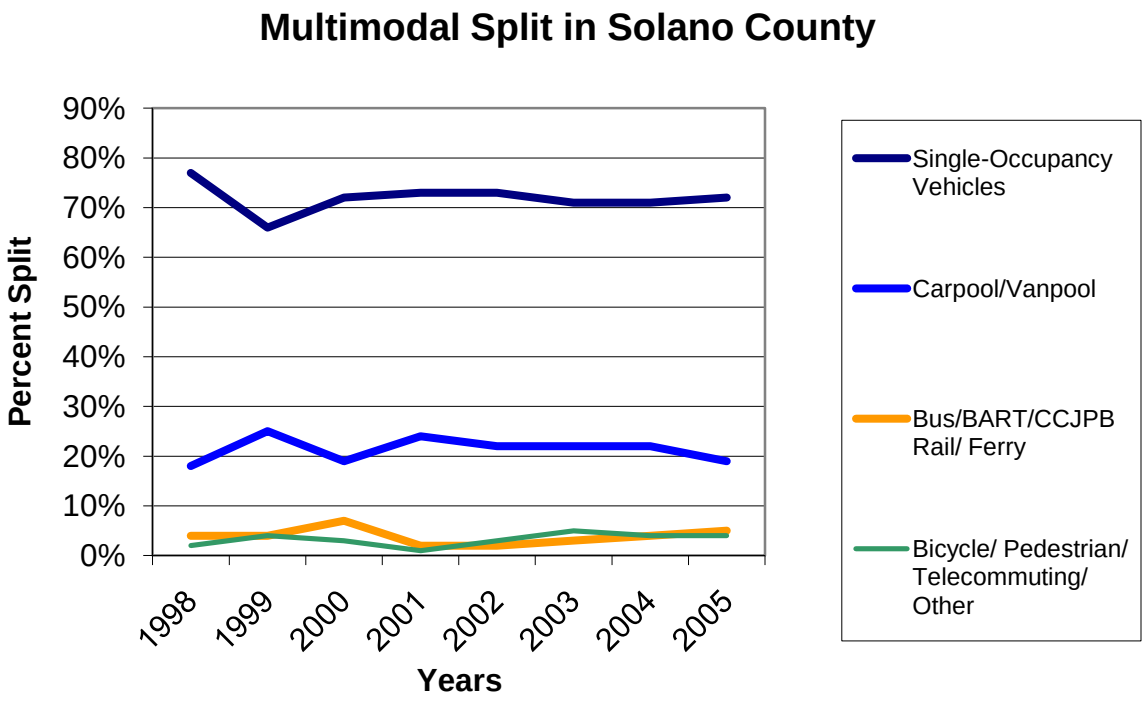


Table 6.2A – Multimodal Split in Solano County

	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%

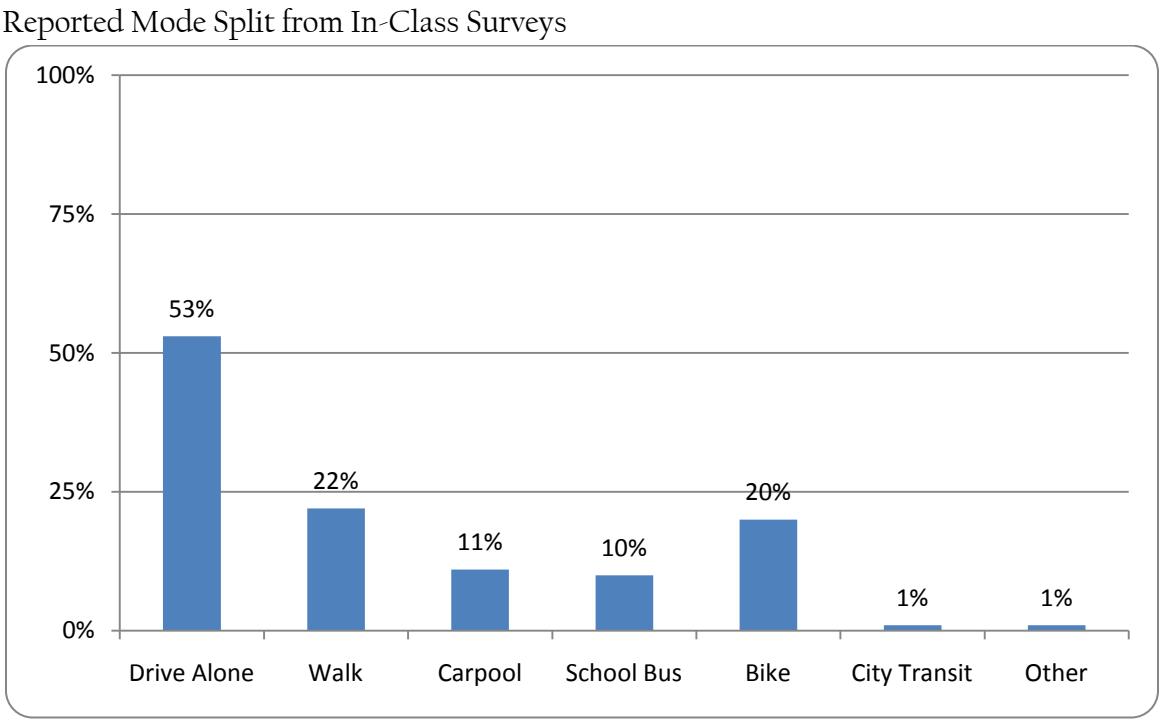
As recommended by the Solano Countywide Pedestrian Transportation Plan and Countywide Bicycle Transportation Plan, pedestrian and bicycle improvements should be included as part of all new roadway widening and improvement projects. Although the majority of bicycle/pedestrian users/telecommuting/other category is less than that of carpooling/vanpooling, it is comparative to that of taking public transportation.

Percent of School Children walk/bike (see SR2S plan)

Over the planning process for the SR2S Plan, STA asked Solano County school teachers to ask students how they traveled to school. These surveys consisted of simple in-class surveys, where teachers ask students how they got to school on that particular day. Survey tally sheets from the National Center for Safe Routes to School were used and an example is included in Appendix _.

Based on in-class surveys completed at a quarter of the 110 schools in Solano County, 22 percent of school children walk to get to school. This included over 11,550 students at 18 elementary schools, 2 middle schools, and 3 high schools. Figure 6.2B shows the mode splits from these surveys. As shown, there is already a strong base of pedestrians (22 percent) to build upon with the Safe Routes to School program where as the County could benefit from an increase in bicycling students.

Figure 6.2B – SR2S Mode Split Surveys (source: STA SR2S Plan, page 3-1)



Transit riders who access public transit via walking or biking (multi mode trips) (Source: Commute Profile 2010)

Secondary and Connecting Modes are also a dynamic part of commuting and getting to transit. As part of the 2010 Solano County Commute Profile, a survey of commuting behavior was conducted throughout Solano County. The Commute Profile was based on data collected from telephone interviews with residents in Solano County.

According to the study, more than one in ten respondents said that they use another type of transportation in addition to their primary mode. A connecting mode would include walking to a train station, or driving to a carpool pick-up point. The top connecting mode is driving alone.

Table 6.2B: Connecting Modes

Connecting Mode	Percentage of Respondents
Drive Alone	4%
Carpool	3%
BART	2%
Bus	2%
Walk	1%
Bicycle	1%
Train (Capitol Corridor)	1%
Ferry	1%
Motorcycle	1%
	n=405

People who use transit as their primary mode travel an average of 11 miles from their home to the transit station or stop. The distance ranges from 0-40 miles.

Table 6.2C – Trip to Transit Station

Mode to Transit Station	Transit Users
Drive Alone	46%
Walk	26%
Dropped off	17%
Carpool	3%
Bicycle	3%
Other	3%
	n=35

6.3 Collision Data

Table 6.3A – Pedestrian/Vehicle Collisions in Solano County

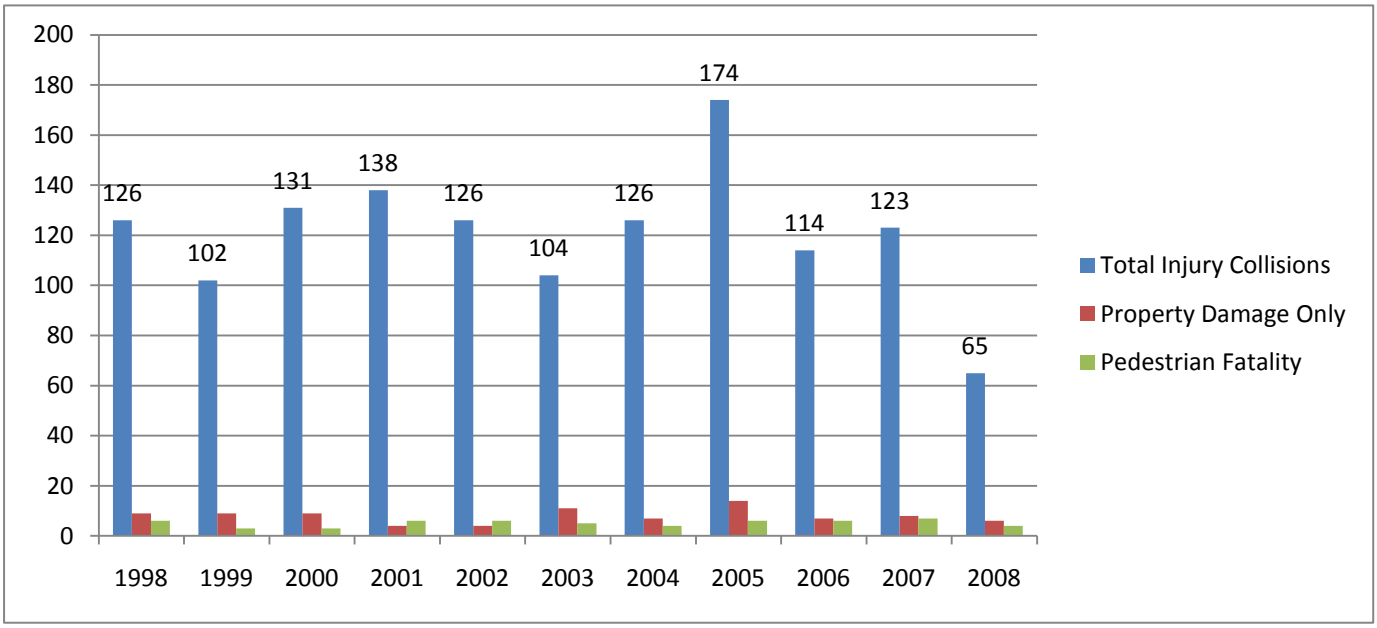
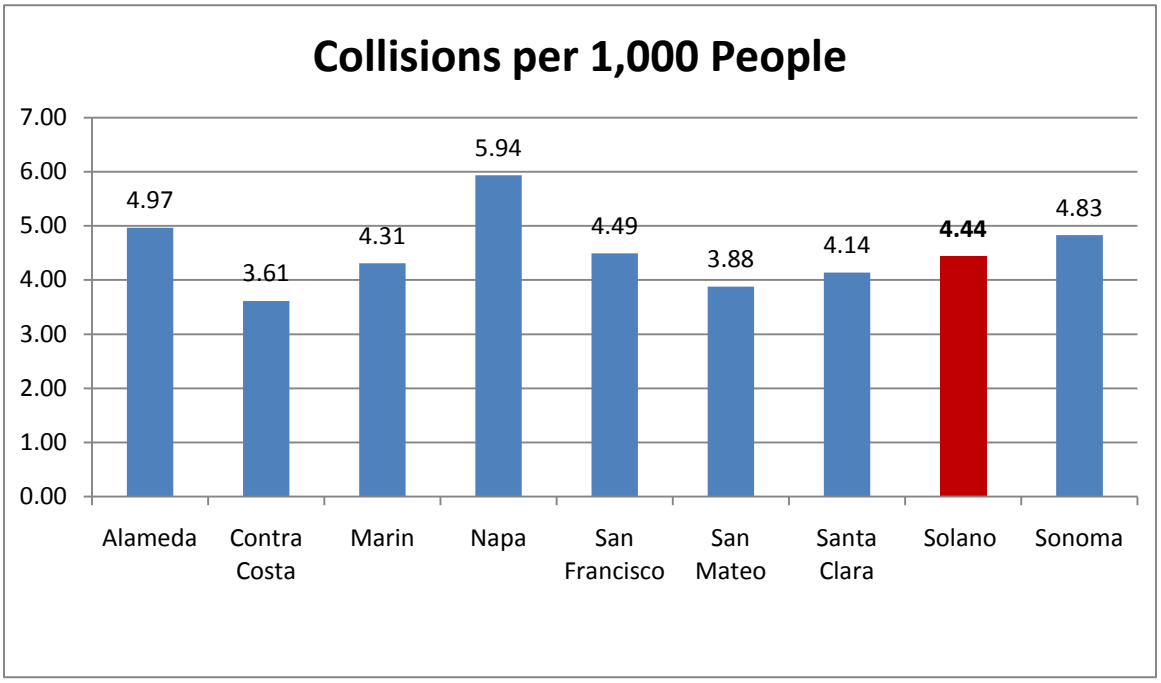


Table 6.3A: SWITRS Collision Data 1998 – 2008

	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

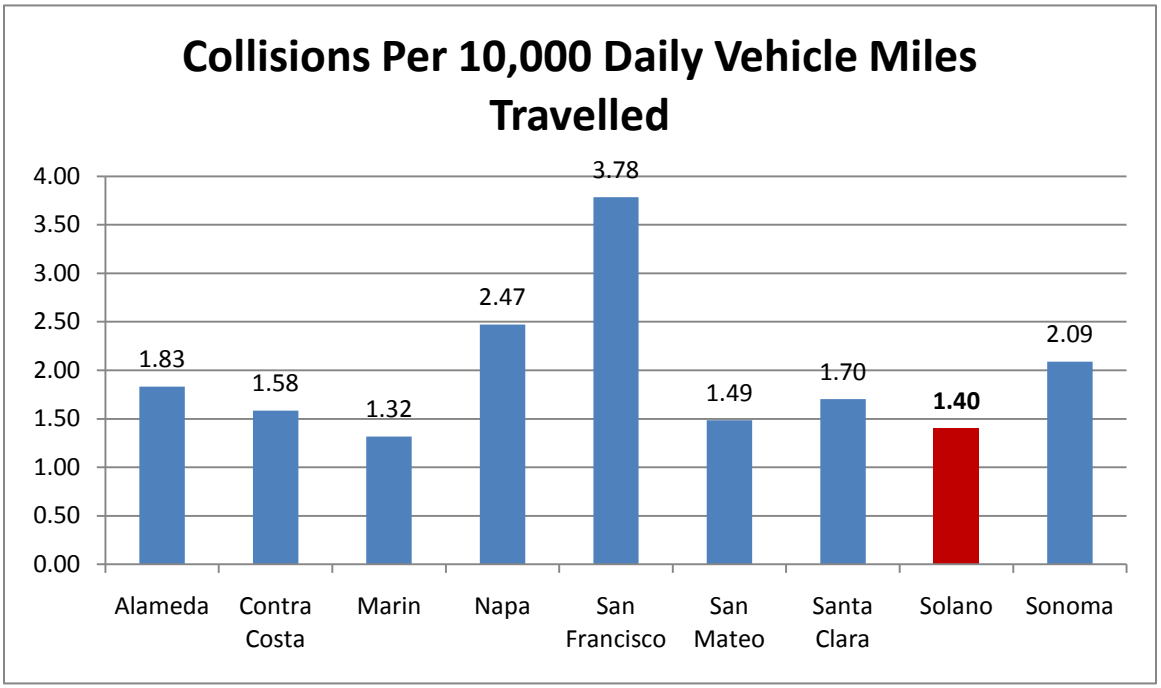
The California Highway Patrol (CHP) submits data each year regarding traffic collisions in the form of the Statewide Integrated Traffic Records System (SWITRS). The charts above show collision information through 2008. The information available online through SWITRS is currently undergoing an update process to make current information more available to the public. At present, however; public users of the SWITRS data experience a delay of a few years while data is processed through the existing system. Over the 10-year period between 1998 and 2008, on average, approximately 3% of collisions has resulted in a fatality, with 5% being Property Damage Only collision.

Figure 6.3B – Combined Bicyclist and Pedestrian/Vehicle Collisions* Per 1,000 People



*Total fatalities plus injuries in 2008; from Solano County CHP
*Total fatalities plus injuries in 2001; from Statewide Integrated Traffic Records System (SWITRS)

Figure 6.3C – 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

Train Collision Info (see rail safety plan)

AM/ PM	YEAR	CITY	CROSSING; MILEPOST	STREET	FATALITY
PM	2001	DIXON	SR 113/First St; 67.60	N 1st St.	0
Unknown	2009	DIXON	SR113/First St; 67.60	N 1st St.	1
PM	2006	DIXON	Pedestrian Crossing; 67.5	W B st. Ped Xing	1
PM	2009	SUISUN	NA; 51.4	E. Tabor	1
PM	2009	SUISUN	NA; 48.0	Railroad Ave	1
AM	2007	DIXON	NA; 65.00	Midway Road	1
AM	2009	DIXON	NA; 73.0	Old Davis Rd.	1
AM	2010	DAVIS	NA; 75.0	Old Davis Rd.	1
				Total:	7

The train data was taken from the 2009 Solano County Rail Crossing Inventory and Improvement Plan. Eight (8) crossings in the Cities of Davis, Dixon, and Suisun City were identified to have a record of a collision incident involving a pedestrian between 2001 and 2010. Of these 8 incident reports, 7 were fatalities.

Chapter 7 – Performance Measures

This chapter covers the following components of the Solano County Pedestrian Transportation Plan:

7.1 RECOMMENDED PERFORMANCE MEASURES
7.2 EVALUATION

7.1 Recommended Performance Measures

Successful implementation of pedestrian planning, principles, and design can be measured in many ways. Overall, successful pedestrian-friendly communities are vibrant, economically viable, and aesthetically pleasing places. Underlying these general surface qualities are some specific key measures of success that reflect how these places are planned, how they are used, and how they function. These Success Targets can also be used as objectives for planning policies and standards, and design guidelines:

Allied Public Support. The first step towards success is for local governments to gain public support and partnership. Such a partnership fosters understanding and mutual goal-building toward creating a successful community that everyone will like.

Connectivity. Local, easily accessible connections are provided to and from homes, work, retail, and civic services such as schools and libraries.

Diversity of People and Activity. Pedestrian-friendly communities contain a wide range of users at all times – from young to old, and rich to poor. Activity in these areas is diverse and occurs throughout most hours of the day – with people walking, sitting in cafes, waiting for buses, and stopping to talk on sidewalks. An increased presence of people creates a sense of security with more 'eyes' on the street.

Creating A Civic Stage. The end result of a successful pedestrian principles community is a community that has a rich sense of place. In these communities, the public arena is no longer an area to drive through quickly, but a place to stop and participate in an unfolding civic 'drama'.

Performance measures have been identified as part of the 2011 Solano Countywide Pedestrian Transportation Plan to assist staff and implementing agencies monitor the progress being made toward achieving the goals and objectives of the Plan. The significance of performance measures is to quantify the goals and objectives of the Plan described in Chapter 2. By introducing performance measures to the 2011 Plan, STA staff and partnering project sponsors will have a better ability to track the progress of the development of the Solano Countywide Pedestrian Network. Performance monitoring will be led by the STA Planning and Projects departments, with support from the Bicycle and Pedestrian Advisory Committees.

The STA performance measures for achieving the Plan's Goals are represented in eight (8) categories:

a. Availability of Information (see Chapter 6, Data Collection)
b. Pedestrian Network Development
c. Education
d. Environmental Assessment Process
e. Funding
f. Safety
g. Surface Condition
h. Wayfinding Signage

Table 6-3 has been adapted based on the *City of Seattle Bicycle Master Plan Performance Measures*. It is intended to outline the goals and specific performance measures to quantify the achievement of each. Following Table 6-3, descriptions of each are listed by Performance Measure. Each item listed in the "Performance Measure" column is either an outcome or an output. Performance measures often measure outputs, which are *quantitative* analyses (i.e. # of miles of sidewalks or # of wayfinding signs installed). Due to the nature of walking activity and the limited ability to accurately track and forecast usage, it is more challenging to identify measures to assess outcomes. Outcomes are used in a *qualitative* manner of analysis (i.e. percent of population who are "very satisfied" with the pedestrian network in their community). To address this situation, many options were considered. In conclusion, it was decided by STA staff that a balance of both outcome and output oriented performance measures could be achieved rationally and logically by splitting them into separate Performance Measure Sets for each Goal, Set 1 and Set 2. They are defined as follows:

- Performance Measures (PM) Set 1 (Quantitative) – Measures the physical development of the system and to some extent staff administration of this process. Since the countywide pedestrian network is still under development and moving its focus toward implementation of many overall transportation connectivity/support aspects (i.e. community information for public and amenities at key business/service centers, etc.), a measure of physical development of the system is necessary to track the long-term progress (20+ years) of project delivery. Over time, STA staff and project sponsors can have a standard resource to look to when evaluating the progress they are making and planning for what they would like to accomplish.
- Performance Measures (PM) Set 2 (Qualitative) – This set aims to measure the satisfaction and benefits bestowed to the public as a result of development of the pedestrian network as defined by this Plan. This performance measure set is twofold: a) Public Opinion Survey and b) Outcomes of Physical System Development; these are quantitative measures from which qualitative conclusions can be drawn (i.e. # of pedestrian rest areas connected by major paths or activity areas).
    - For PM Set 2a (Public Opinion Survey), a public opinion survey can identify perceived system usage and aspects to quality of life for residents in each community in Solano County.
    - For PM Set 2b (Outcomes of Physical System Development), the example of # of pedestrian rest areas in major paths or activity areas appears quantitative in

nature. On the other hand, it can help the ability to draw a correlation for bicycle ridership/increase or decrease in users over time (output) based on installed rest stops (output). This also assumes that higher #s of pedestrians suggests a higher quality of life due to increased physical activity and lesser vehicle emission from each pedestrian. With report development, it is necessary that all assumptions are detailed in conjunction with correlations drawn from the measures of Outcomes of Physical System Development.

Each goal in Table 6-3 on the following page provides Performance Measures categorized by Performance Measures Set as appropriate.

Table 6-3 – Performance Measures					
Bicycle Transportation Plan Goal	Performance Measure*	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Goal 1 – Plan and maintain a current Countywide Pedestrian Network	Set 1: # of times countywide pedestrian network projects is reviewed by Pedestrian Advisory Committee (PAC) # of times priority pedestrian projects are reviewed by STA staff with project sponsors Set 2a: Survey Questions: • what improvements would convince you to walk or walk more often? (comprehensive network, showers/lockers at work, etc.) • is the walkway system in your community comprehensive? (not comprehensive to extremely comprehensive) Set 2b: # of STA partner agencies that have adopted Solano Countywide Pedestrian Transportation Plan # of times Solano Countywide Pedestrian Transportation Plan is updated	To be collected in 2011 Every Year	Committee review two times per year One time per year	Every Year Every Year	STA staff STA staff

Table 6-3 – Performance Measures (Continued)					
Bicycle Transportation Plan Goal	Performance Measure*	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Goal 2 – Develop the Countywide Pedestrian Transportation Plan to serve as a pedestrian master plan or a foundation for local agencies to use in the development of a local plan	Set 1: # of agencies that have adopted the Pedestrian Plan # of agencies with citywide pedestrian plan	To be collected in 2011 To be collected 2011	All member agencies have adopted the Pedestrian Plan Support all member agencies with desire to further develop plans	Every Two Years Every Year	STA Staff STA Staff
Goal 3 – Build the pedestrian transportation network by planning, designing, constructing and managing transportation facilities that will meet the needs of the walking public	Set 1: Percentage of Pedestrian Network Completed # of completed projects that were identified by Plan # of miles of existing facilities # of grant applications applied for and obtained for pedestrian projects/programs Amount of funding programmed for pedestrian projects per year Percentage of targeted STA staff who participate in training on pedestrian issues # of STA staff involved w/review of initial study for Tier1 and Tier 2 Priority Pedestrian Projects Set 2a: • Does the ped network meet your expectations? • Does the ped network meet your needs?	To be collected in 2011 To be collected in 2011 To be collected To be collected 2011 Approximately $2 million (FY2010-11) TBD 0-2	Complete 130 miles of proposed facilities by 2025 (includes existing) Complete at least 10 miles by 2025 TBD TBD At least 50% All	Every Year Years Every Year Every Two Years Every Year Every Year Every Two Years Every Year	STA staff in collaboration with local agencies “ ” “ ” “ ” STA staff STA staff STA staff STA staff

Table 6-3 – Performance Measures (Continued)					
Bicycle Transportation Plan Goal	Performance Measure*	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Goal 4 – Improve pedestrian safety in Solano County	Set 1: Surface Condition • Alternative Modes PCI Lighting • # of routes w/ lighting Set 2a: • What are factors for not walking or not walking more often? • Do you feel walking in your community? • Is walking in your community safe? • Are outdoor shops or convenience stores accessible to you for purchase of safety equipment? • Do you wear bright and reflective gear when walking Set 2b: Public ability to contact public works departments regarding safety concerns	To be collected in 2011 To be collected in 2011	• Achieve _ PCI for Class I paths • Provide _ Alt. Modes PCI for Class I paths	Every Two Years Every Two Years	STA staff in collaboration with local agencies

Table 6-3 – Performance Measures (Continued)					
Bicycle Transportation Plan Goal	Performance Measure*	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Goal 5 – Increase the use of walking as a viable alternative to the automobile	Availability of BikeLinks Map/ # of maps printed/distributed	# of BikeLinks Maps Printed and distributed 2009-2010	All Bicycle Shops in Solano County have the BikeLinks Maps	Every Year	STA staff
	Website pedestrian-related Clicks/Searches/Site visits	To be collected 2011	TBD	Every Year	STA staff
	# of BikeLinks Map Updates	To be collected 2011	TBD	Every Year	STA staff
	# of employers w/ alternative commute incentives or participate	To be collected 2011	Review every year, update every two years	Every Two Years	STA staff
	<u>Set 2a</u>: Survey questions: • How often do you walk to an activity center? • How often do you walk to get to work?	To be collected 2011	TBD	Every Two Years	STA staff and SNCI staff

Table 6-3 – Performance Measures (Continued)					
Bicycle Transportation Plan Goal	Performance Measure*	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Goal 6 – Develop an integrated and coordinated transportation system that connects walking with other modes of transportation, which includes, but is not limited to, driving, biking, and taking public transportation	Set 1: # of Complete Streets Checklists submitted for priority pedestrian projects	To be collected in 2011	All projects submitted in Transportation Improvement Program (TIP) and all priority bicycle projects identified in Tier 1 must submit complete streets checklist	Every Year	STA Staff
	# of priority project tours hosted	Every two years	Every Two Years	Every Two Years	STA Staff
	Inventory of amenities at transit stations, onboard transit, and/or park-and-ride destinations	To be collected in 2011 (Capitol Corridor, SolanoExpress, Vallejo Ferry ridership data)	TBD	Every Two Years	STA staff in collaboration with local agencies
	Set 2a: • How long is your one-way walking commute? • What other forms of transportation do you use? (bicycling, train, bus, ferry, etc.) • Is the pedestrian system connected to other modes of transportation in your community?				
	Set 2b: # of transit facilities of regional significance with at least one pedestrian route leading to it				

Table 6-3 – Performance Measures (Continued)					
Bicycle Transportation Plan Goal	Performance Measure*	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Goal 7 – Provide safe access for pedestrians to all points in Solano County	Set 1: # of reported pedestrian crashes per total number of pedestrian counted & annual traffic volumes • SWITRS data # of bicycle counts conducted Inventory of hours of operation and security for multi-use trails # of methods for public to provide comment regarding the pedestrian network Set 2a: • Are you able to get to the places you would like to by walking? Set 2b: # pedestrians counted at key intersections identified by staff	1998-2008 SWITRS data 2002 MTC Counts To be collected in 2011 3 (website, PAC, email)	Less than 100 total collisions per year (# taken from average of total collision between 2006-2008) Conduct counts every two years TBD 5+	Every Two Years Every Two Years Every Two Years Every Two Years	STA Staff via CHP SWITRS data STA Staff STA Staff STA Staff
Goal 8 – Develop a pedestrian network that connects to northern California's alternative modes system	Set 1: # of routes that connect to regional trails and pedestrian networks	To be collected in 2011	TBD	Every Two Years	STA Staff

Table 6-3 – Performance Measures (Continued)					
Bicycle Transportation Plan Goal	Performance Measure*	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Goal 9 – Develop a standard countywide wayfinding signage system to regionally direct pedestrians that can be adopted by local agencies	# of routes that have the Solano Bikeway Sign # of routes with wayfinding signage in addition to bike route signs Inventory of candidate routes for first phase of sign implementation <u>Set 2a</u>: Survey questions: • Is the Solano-Yolo BikeLinks Map useful to you? (not useful to extremely useful) • Do you recognize the pedestrian wayfinding system in Solano County? • Is the pedestrian wayfinding system clear? • Is the pedestrian wayfinding system useful to you?	To be collected in 2011 To be collected in 2011 To be collected in 2011	Complete Wayfinding Signage Plan by 2012 All routes funded by STA by 2015 TBD	Every Year Every Two Years Every Two Years	STA Staff STA Staff STA Staff

* Performance measures set 2a survey questions are recommendations and can be adjusted based on needs of each community

This section provides a listing of each quantitative- performance category with a description of the measure listed in bullet points underneath.

Availability of Information (***Goal 4***)
- Number of BikeLinks Maps printed and distributed
- Website Clicks/Searches/Site visits

Bikeway Network Development (***All Goals***)
- # of projects completed
- Miles to be completed by 2025: TBD
- Number of employers w/ alternative commute incentives or participate in the Solano Commute Challenge

Education (***Goal 5***)
- Percentage of targeted STA staff who participate in training on pedestrian issues

Environmental Assessment Process (Goal 2)
- Completion of project information sheets for projects recommended for funding prior to commitment
- STA staff involvement with review of Initial Study for Tier 1 and Tier 2 Priority Pedestrian Projects

Funding (***Goal 2***)
- number of pedestrian project grant applications applied for and obtained for pedestrian programs
- amount of funding programmed for pedestrian projects per year

Safety (***Goals 3 and 6***)
- Inventory of hours of operation and security for multi-use trails
- # of pedestrians counts conducted

Surface Condition (***Goal 3***)
- PCI for completed pedestrian network routes
- Reporting process for public in need of expressing concern

Wayfinding Signage (***Goal 9***)
- Inventory of candidate routes for first phase of sign implementation
- # signs for complete wayfinding signage network

7.2 Evaluation

Evaluation of change should be focused on review of performance measures and discussion through a diverse group of committees, such as the Alternative Modes Committee (AMC), Pedestrian Advisory Committee (PAC), and the Solano Transportation Authority Technical Advisory Committee (TAC). Data collected locally should be provided to STA staff to ensure that data used by STA at the regional capacity is consistent with local findings.

Each year in November, through the PAC, Project Delivery Working Group (PDWG), and TAC, STA staff will present a summary of successful processes based on project implementation, data collection, and general overall administering of funding for projects. The summary report will also provide information regarding challenging processes that could be noted and improved upon in the future.

The information provided through the recommended performance measures regarding the progress being made on projects will assist in understanding the overall progress of the system and the ability for STA staff and project sponsors to accomplish the Goals set forth in this Plan.