FINAL PLAN
February 2008

STA
Solano Transportation Authority

alta
PLANNING + DESIGN

Acknowledgments

Solano Transportation Authority
Board of Directors
Ed Woodruff, Chair, City of Rio Vista
Jim Spering, Vice Chair, County of Solano
Elizabeth Patterson, City of Benicia
Mary Ann Courville, City of Dixon
Harry Price, City of Fairfield
Pete Sanchez, City of Suisun City
Len Augustine, City of Vacaville
Osby Davis, City of Vallejo

Technical Advisory Committee members
Dan Schiada, City of Benicia
Royce Cunningham, City of Dixon
Gene Cortright, City of Fairfield
Brent Salmi, City of Rio Vista
Fernando Bravo, City of Suisun City
Dale Pfeiffer, City of Vacaville
Gary Leach, City of Vallejo
Paul Wiese, County of Solano

Bicycle Advisory Committee members
Barbara Wood, Chair, Member-at-large
Larry Mork, Vice Chair, City of Rio Vista
J.B. Davis, City of Benicia
Jim Fisk, City of Dixon
Randy Carlson, City of Fairfield
Michael Segala, City of Suisun City
Ray Posey, City of Vacaville
Mick Weninger, City of Vallejo
Glen Grant, County of Solano

Pedestrian Advisory Committee members
Lynne Williams, Chair, City of Vallejo
Pat Moran, Vice Chair, City of Fairfield
J.B. Davis, City of Benicia
Michael Smith, City of Dixon
Larry Mork, City of Rio Vista
Michael Hudson, City of Suisun City
Todd Rewick, City of Vacaville
Linda Williams, County of Solano
Brian Travis, Tri-City & County Coop
Frank Morris, Solano Land Trust
Maureen Gaffney, SF Bay Trail Program

Safe Routes to School Steering Committee
Gary Leach, Vallejo Public Works Director
Dan Schiada, Benicia Public Works Director
Mike Segala, Bicycle Advisory Committee
Eva Laevastu, Pedestrian Advisory Committee
Dee Alarcon, Solano County Superintendent of Schools
John Aycock, Vacaville USD Superintendent
Bill Bowen, Rio Vista Chief of Police
Ken Davena, Benicia Police, Captain
Jim Antone, Yolo-Solano Air Quality Management District
Robin Cox, Solano County Public Health

Benicia SR2S Representatives:
City Council & School Board Liaison Committee:
Alan Schwartzman, Vice Mayor
Bill Whitney, Councilmember
Dirk Fulton, School Board member
Shirin Samiljan, School Board member
Jim Erickson, City Manager
Janice Adams, School Superintendent
City Traffic Pedestrian & Bicycle Safety Committee:
Elizabeth Patterson, Mayor
Mark Huges, Councilmember
Jim Trimble, Police Chief
Dan Schiada, Public Works Director
Mike Roberts, Public Works

Dixon SR2S Task Force
Mary Ann Courville, Mayor
Tony Welch, Dixon Police
Chad Koopmeiners, Dixon USD Rep.
Royce Cunningham, Public Works Director
James Fisk, Bicycle Advisory member
Michael Smith, Pedestrian Advisory member

Fairfield SR2S Task Force
Gian Aggerwal, Planning Commissioner
Mark Schraer, Fairfield Police
Kathy Marianno, Fairfield-Suisun USD School Board member
Wanona Ireland, Travis USD School Board President
James Leitner, Fairfield Public Works
Randy Carlson, Bicycle Advisory member
Pat Moran, Pedestrian Advisory member

Rio Vista SR2S Representatives:
Rio Vista Joint Use Ad-hoc committee
Ed Woodruff, Mayor
Cherie Cabral, councilmember
Hector De La Rosa, City Manager
Brent Salmi, Public Works Director
Tom Bland, Community Development Director
Bill Bowen, Police Chief
Mark Nelson, Fire Chief
Marilyn Riley, River Delta USD School Board member
Alan Newell, River Delta USD Superintendent
Wayne Rebstock, River Delta USD Director of Maintenance and Operations

Suisun City SR2S Task Force
Mike Husdon, councilmember
Ed Dadishio, Police Chief
Bob Szmurlo, Police Department
Kathy Marianno, Fairfield-Suisun USD School Board member
Fernando Bravo, Public Works Director
Nick Lozano, Public Works
Michael Segala, Bicycle/Pedestrian Advisory member

Vacaville SR2S Task Force
Brett Johnson, Vice Chair, Planning Commissioner
Terry Cates, Vacaville Police
Larry Mazzuca, Vacaville USD School Board member
Jeff Knowles, Deputy Director of Public Works
Ray Posey, Bicycle Advisory member
Todd Rewick, Pedestrian Advisory member

Vallejo SR2S Task Force
Hermie Sunga, councilmember
Joel Salinas, Vallejo Police
Daniel Glaze, Vallejo USD School Board Vice President
Gary Leach, Public Works Director
Mick Weninger, Bicycle Advisory member
Lynn Williams, Pedestrian Advisory member

Solano Transportation Authority Staff
Daryl Halls, Executive Director
Janet Adams, Director of Projects
Sam Shelton, Assistant Project Manager
Robert Guerrero, Senior Planner
Sara Woo, Planning Assistant
Karen Koelling, Administrative Assistant
Mia Delos Reyes, Marketing Intern

Alta Planning + Design consultants
Michael Jones, Principal
Brett Hondorp, Principal
Michael Vecchio, staff Engineer
Matt Lasky, staff Planner

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY I
I.1. WHY CREATE A SAFE ROUTES TO SCHOOL PLAN? I-1
I.2. BENEFITS OF THE SAFE ROUTES TO SCHOOL PROGRAM I-2
I.3. HOW WE CREATED THE PLAN I-2
I.4. COUTYWIDE PRIORITIES I-4

1. INTRODUCTION 1-1
1.1. POLICY BACKGROUND 1-1
1.2. BENEFITS OF THE SAFE ROUTES TO SCHOOL PROGRAM 1-1
1.3. ENGINEERING, EDUCATION, ENFORCEMENT, AND ENCOURAGEMENT 1-2
1.4. REPORT CONTENTS 1-2

2. WHY A SAFE ROUTES TO SCHOOL PLAN 2-1
2.1. SCHOOLS AND STUDENTS BENEFIT 2-1
2.2. DEVELOP SR2S IMPROVEMENTS AND PROGRAMS 2-3

3. COUNTYWIDE PLANNING 3-1
3.1. SCHOOL TRAVEL MODE SPLIT 3-1
3.2. STA SAFE ROUTES TO SCHOOL GOALS & OBJECTIVES 3-2
3.3. PLANNING PROCESS 3-3
3.4. WALKABOUTS 3-6

4. COUNTYWIDE PRIORITY PROJECTS & PROGRAMS 4-1
4.1. PROGRAM & PROJECT PRIORITIES' PROCESS 4-1
4.2. SAFE ROUTES TO SCHOOL COST ESTIMATES 4-3

5. LOCAL PLANNING 5-1
5.1. BENICIA 5-3
5.2. BENICIA AUDIT SCHOOL WALKABOUT – BENICIA HIGH SCHOOL 5-5
5.3. BENICIA PRIORITY PROJECTS 5-8
5.4. DIXON 5-17
5.5. DIXON SCHOOL WALKABOUT – LINFORD ANDERSON ELEMENTARY SCHOOL 5-19
5.6. DIXON PRIORITY PROJECTS 5-22
5.7. FAIRFIELD 5-25
5.8. FAIRFIELD SCHOOL WALKABOUT – ANNA KYLE ELEMENTARY SCHOOL 5-27
5.9. FAIRFIELD SCHOOL DISTRICT PRIORITIES 5-32
5.10. RIO VISTA 5-40
5.11. RIO VISTA SCHOOL WALKABOUT – RIVERVIEW MIDDLE SCHOOL 5-42
5.12. RIO VISTA PRIORITY PROJECTS 5-45
5.13. SUISUN CITY 5-49
5.14. SUISUN CITY SCHOOL WALKABOUT – SUISUN ELEMENTARY SCHOOL 5-50
5.15. SUISUN CITY PRIORITY PROJECTS 5-53
5.16. VACAVILLE 5-57
5.17. VACAVILLE WALKABOUT – WILL C. WOOD HIGH SCHOOL 5-59
5.18. VACAVILLE PRIORITY PROJECTS 5-64
5.19. VALLEJO 5-72
5.20. VALLEJO AUDIT SCHOOL WALKABOUT –STEFFAN MANOR SCHOOL 5-74
5.21. VALLEJO'S SCHOOL DISTRICT PRIORITIES 5-80

6. FUNDING 6-1
6.1. CAPITAL FUNDING 6-1
6.2. NON-TRADITIONAL PROGRAM FUNDING 6-7

TABLES

TABLE 3-1 STA SR2S COUNTYWIDE STEERING COMMITTEE 3-4
TABLE 3-2 WALKABOUT SCHOOLS AND DATES 3-6
TABLE 4-1 COUNTYWIDE SR2S PROGRAM'S INITIAL COSTS 4-4
TABLE 4-2 COUNTYWIDE SR2S PROGRAMS' COSTS 4-5
TABLE 4-3 COUNTYWIDE SR2S ENGINEERING PROJECTS 4-7
TABLE 4-4 BICYCLE DETECTION ESTIMATED COSTS 4-8
TABLE 5-1 BENICIA TRAFFIC PEDESTRIAN AND BICYCLE SAFETY COMMITTEE 5-3
TABLE 5-2 BENICIA SR2S PRIORITIES 5-13
TABLE 5-3 DIXON SR2S TASK FORCE 5-17
TABLE 5-4 DIXON SR2S PRIORITIES 5-24
TABLE 5-5 FAIRFIELD SR2S TASK FORCE 5-25
TABLE 5-6 FAIRFIELD SR2S PRIORITIES 5-35
TABLE 5-7 RIO VISTA SR2S TASK FORCE 5-40
TABLE 5-8 RIO VISTA SR2S PRIORITIES 5-47
TABLE 5-9 SUISUN CITY SR2S TASK FORCE 5-49
TABLE 5-10 SUISUN CITY SR2S PRIORITIES 5-55
TABLE 5-11 VACAVILLE SR2S TASK FORCE 5-57
TABLE 5-12 VACAVILLE SR2S PRIORITIES 5-67
TABLE 5-13 VALLEJO SR2S TASK FORCE 5-72
TABLE 5-14 VALLEJO SR2S PRIORITIES 5-82
TABLE 6-1 PREVIOUS SOLANO COUNTY SR2S FUNDS RECIPIENTS 6-3
TABLE 6-2 FUNDING MATRIX 6-8

FIGURES

FIGURE 3-1 REPORTED MODE SPLIT FROM IN-CLASS SURVEYS 3-1
FIGURE 3-2 STA SAFE ROUTES TO SCHOOL FLOWCHART 3-4
FIGURE 5-1 CITY BOUNDARIES 5-2
FIGURE 5-2 BENICIA SCHOOLS 5-4
FIGURE 5-3 BENICIA HIGH SCHOOL IMPROVEMENT PLAN 5-9
FIGURE 5-4 BENICIA HIGH SCHOOL INTERSECTION IMPROVEMENT 5-11
FIGURE 5-5 DIXON SCHOOLS 5-18
FIGURE 5-6 ANDERSON SCHOOL IMPROVEMENT PLAN 5-23
FIGURE 5-7 FAIRFIELD SCHOOLS 5-26
FIGURE 5-8 ANNA KYLE SCHOOL IMPROVEMENT PLAN 5-33
FIGURE 5-9 KIDDER AVENUE/SAN MATEO IMPROVEMENTS 5-34
FIGURE 5-10 RIO VISTA SCHOOLS 5-41
FIGURE 5-11 RIVERVIEW MIDDLE SCHOOL IMPROVEMENT PLAN 5-46
FIGURE 5-12 SUISUN CITY ELEMENTARY IMPROVEMENT PLAN 5-54
FIGURE 5-13 VACAVILLE SCHOOLS 5-58
FIGURE 5-14 SCIENCE BUILDING SITE PLAN 5-62
FIGURE 5-15 MARSHALL ROAD/BURLINGTON DRIVE IMPROVEMENT 5-62
FIGURE 5-16 WILL C WOOD HIGH SCHOOL IMPROVEMENT PLAN 5-66
FIGURE 5-17 VALLEJO SCHOOLS 5-73
FIGURE 5-18 STEFFAN MANOR ELEMENTARY SCHOOL IMPROVEMENT PLAN 5-81

APPENDIX A – SAFE ROUTES TO SCHOOL TOOLKIT
APPENDIX B – IN-CLASS SURVEY
APPENDIX C – ENGINEERING IMPROVEMENTS' PLANNING LEVEL COST ESTIMATES

I. EXECUTIVE SUMMARY

Safe Routes to School (SR2S) refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, incentives, increased law enforcement, and engineering measures. Safe Routes to School programs typically involve partnerships among municipalities, school districts, community and parent volunteers, and law enforcement agencies.

The Solano Transportation Authority (STA) began the development of its Safe Routes to School program in 2005. The program is designed to decrease the number of driving trips to schools and increase the number of safe and healthy (walking and bicycling) trips to schools in Solano County. In order to increase the number of walking and bicycling trips to and from schools in the County, the STA SR2S Program was developed to formulate a list of **engineering** projects near schools to make walking and bicycling easier and safer for students. The SR2S Program was also developed to formulate a list of programs to **encourage** and **educate** students about walking and bicycling, and to **enforce** students and parents to abide by traffic safety laws near schools.

I.1. WHY CREATE A SAFE ROUTES TO SCHOOL PLAN?

SR2S addresses a number of issues at and around schools including traffic, safety, children's health, education, and funding. The two largest reasons why parents 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". Too much traffic near schools contributes to dangerous parent vehicle vs. student safety problems and high levels of air pollution near large numbers of children, whose lungs are still developing and has been shown to increase the likelihood of asthma and other respiratory ailments.

In Solano County, 78 percent of children get less than the recommended minimum weekly physical activity, contributing to a gross statistic of 38 percent of Solano County children between 5-20 years old being overweight. This lack of physical activity before and after school has been shown to affect concentration and energy levels during class and while studying at home. Without an adopted vision to improve these problems, obtaining funding from a variety of competitive funding sources for improvement projects and programs is difficult at best.

Education; Educational programs that teach students bicycle, pedestrian and traffic safety skills, and teach drivers how to share the road safely

Encouragement; Special events, clubs, contests and ongoing activities at schools that encourage more walking, bicycling, or carpooling through fun and incentives

Enforcement; Strategies to deter unsafe behavior of drivers, bicyclists and pedestrians and encouraging all road users to obey traffic safety laws and to share the road.

Engineering; Design, implementation and maintenance of signing, striping, and traffic calming infrastructure improvements

I.2. BENEFITS OF THE SAFE ROUTES TO SCHOOL PROGRAM

There are many benefits to a SR2S Program including less traffic, healthier, safer and more independent children, reduced air pollution, and potentially increased scholastic performance.

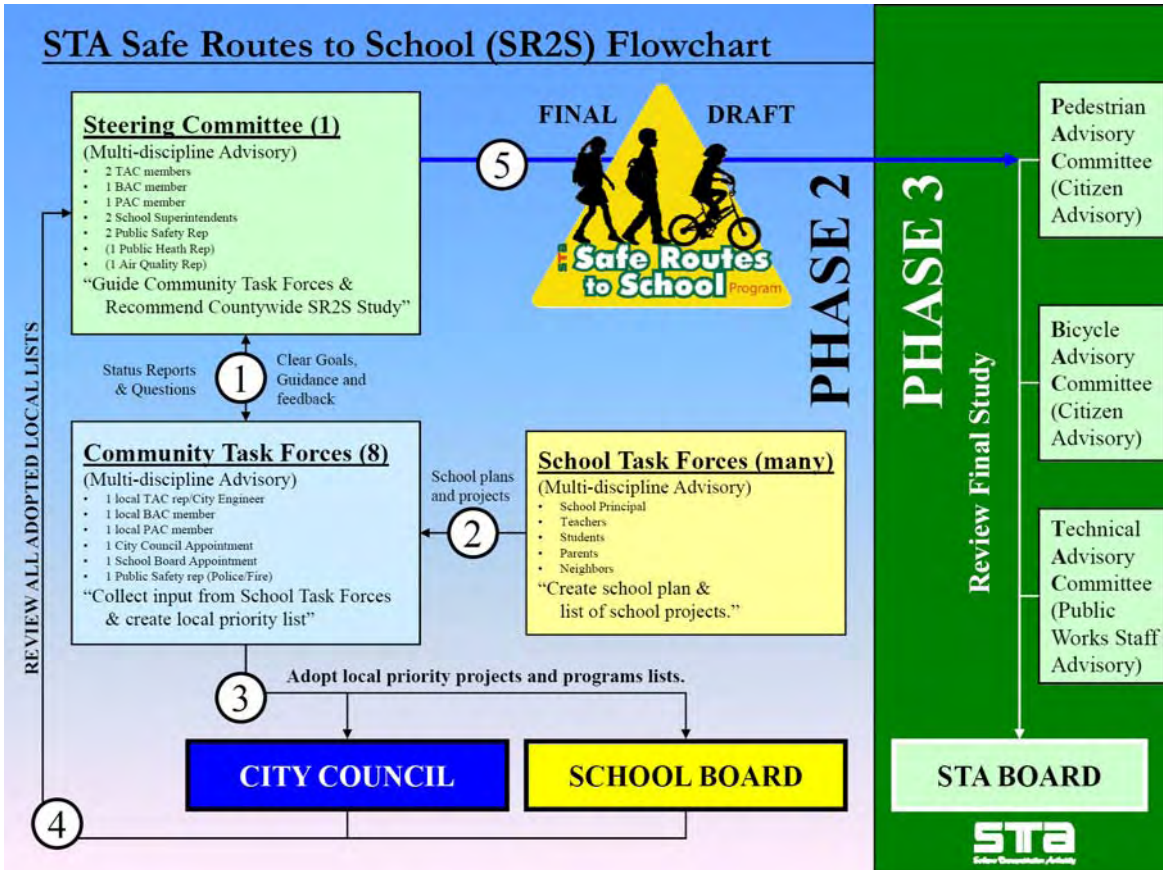
SR2S programs directly benefit school children, parents and teachers by creating a safer travel environment near schools and by reducing motor vehicle congestion at school drop-off and pick-up zones. Students that choose to bike or walk to school are rewarded with the health benefits of a more active lifestyle, with the responsibility and independence that comes from being in charge of the way they travel, and learn at an early age that biking and walking can be safe, enjoyable and good for the environment.

Safe Routes to School programs offer ancillary benefits to neighborhoods by helping to slow traffic and by providing infrastructure improvements that facilitate biking and walking for everyone. Identifying and improving routes for children to safely walk and bicycle to school is also one of the most cost-effective means of reducing weekday morning traffic congestion and can help reduce auto-related pollution.

I.3. HOW WE CREATED THE PLAN

The STA Safe Routes to School Plan process included multiple rounds of public input in each of Solano County's seven cities and at individual schools (See Figure i-1).

Figure i-1: Safe Routes to School Planning Process



i.3.1. Phase 1: SR2S Steering Committee & Introductory Presentations

The STA began this countywide planning process by creating a countywide SR2S Steering Committee, composed of two public works directors, two bicycle and pedestrian advocates, two school superintendents, two police representatives, an air district representative, and a health department representative. This steering committee helped draft the goals and design of the planning process to work best in Solano County and reviewed the plan's progress before recommending it to the STA Board for adoption. To make sure each of the cities were prepared for this upcoming planning process, the STA provided presentations to each city council and school board in the county.

STA Staff introduced SR2S concepts to city councils and school boards countywide.

i.3.2. Phase 2: Create Local City SR2S Task Forces and Hold Walking Audits and Public Planning Events

To create local SR2S plans, the STA created multi-disciplinary local task forces composed of a combination of a City Engineer, Bicycle/Pedestrian Advisory Committee members, City Council appointee, School Board appointee, and a police department representative. Seven Local SR2S Task Forces were formed in the cities of Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, and Vallejo.

Multi-disciplinary local task forces helped conduct walking audit and planning events and drafted local city SR2S plans.

Each local task force met three times to develop community based local plans in each city. At their first meeting, they were introduced to SR2S concepts and chose a pilot school to hold a walking audit and public planning event. The pilot school served as an example for other schools within that community/school district to develop their own school plans. At their second meeting, the task forces reviewed a draft plan of recommendations from the pilot school walking audit and other school planning events held after the pilot school event. A total of 29 schools participated in walking audits and planning events involving not only local task force members but an estimated 450 teachers, parents, students, and neighbors. At their third meeting, the task forces made recommendations for their city councils and school boards to adopt their local plans and continue planning and implementing SR2S projects and programs.

Walking audits and public planning events involving over 450 teachers, students, and neighbors helped to create school SR2S plans for incorporation into the local city plans.

i.3.3. Phase 3: Reviewing and Adopting Local Plans and the Countywide Plan

Between October 2007 and February 2008, all city councils and school boards adopted their local plans and appointed either their task forces or existing committees to continue to plan and implement SR2S projects and programs within their community. The Countywide SR2S Plan was reviewed by the SR2S Steering Committee, and by STA advisory committees composed of public works directors, and bicycle & pedestrian advocates. The STA Board adopted the Countywide SR2S Plan on February 13, 2008.

I.4. COUNTYWIDE PRIORITIES

By creating local plans in each city based on school walking audits and public meetings, common projects and programs between the local plans were combined into countywide priorities in the STA's Countywide SR2S Plan. Below is a table of the additional countywide planning costs and the estimated project and program costs for Education, Encouragement, Enforcement, and Engineering.

Countywide SR2S Program's Initial Costs

Project	Cost Per School	Remaining Schools	Cost for County
Planning Events	$5,000	80	$400,000
Safe Routes to School Coordinator*	-	-	$60,000
		Total Cost	**$460,000**

*Annual Cost for full-time SR2S Coordinator

Countywide SR2S Programs' Costs

SHORT-TERM		
"E"	**Program**	**Cost**
Education*	Crossing Guard Training –Develop a training program that establishes guards' duties, responsibilities, and priorities	$110,000
	Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year	$150,000
	Where not existing, develop Safety Patrols where older students team with crossing guards	$45,000
	Subtotal	**$305,000**
Enforcement**	With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety	$210,000
	Increase police patrol of the area during drop-off and pick-up hours	
	Involve Multi-jurisdiction police department task force in school enforcement	
	Help police departments conduct bicycle rodeos and other safety events	
	Subtotal	**$210,000**
Encouragement*	Participate/Market in Bike to School Day and International Walk to School Day activities	$40,000
	Work with the "student council" to engage students in bicycling and walking safely to school	-
	Work with students and parents to develop a map with the safest walking/bicycling routes to school	$100,000
	Implement Frequent Walk & Roll Cards with incentives	$75,000
	Work with schools to implement competitive bicycle clubs	$40,000
	Subtotal	**$215,000**
	Short-Term Total	**$730,000**

*Estimates are for the first year of implementation.
**Part-time officer hours for each city = $30,000 x 7 cities = $210,000

Countywide SR2S Programs' Costs, continued

LONG-TERM		
"E"	Program	Cost
Education*	Develop programs to incorporate health, science, and math aspects of safe routes to school information in school with a SR2S curriculum	$200,000
	Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school	$45,000
	Subtotal	$245,000
Enforcement	-	-
	Subtotal	$0
Encouragement*	Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School	-
	Create Transit/School partnerships to increase transit use. This can include including, advertising, promotions, and fare reductions. Start with a survey of students to understand why they are not using the bus	$75,000
	Subtotal	$75,000
	Long-Term Total	$320,000
	TOTAL COST	1,050,000

*Estimates are for the first year of implementation.
**Part-time officer hours for each city = $30,000 x 7 cities = $210,000

Countywide SR2S Engineering Projects

Project	Cost Per School		Cost for County
General Engineering Improvements	$275,000		$30,250,000
Project	**Cost Per Item**	**Number Per School**	**Cost for County**
Updated MUTCD Signs	$200	10	$220,00
Roadway stencils	$300	2	$66,000
High Visibility Crosswalk	$1,200	4	$528,000
Bike Detection near Schools	$100/ $300	4	$88,000
Project	**Cost Per Item**	**Number Per City**	**Cost for County**
Speed Feedback Signs Near Schools	$8,000	6	$336,000
		Total Cost	$31,268,000

To implement all projects and programs recommended as part of this plan, a total of $32,778,000 will need to be secured. In order to implement the recommendations of this plan, the STA will work with funding partners to identify federal, state, regional, and local funding.

This Page is Intentionally Left Blank

1. INTRODUCTION

Safe Routes to School (SR2S) refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, incentives, increased law enforcement, and engineering measures. Safe Routes to School programs typically involve partnerships among municipalities, school districts, community and parent volunteers, and law enforcement agencies.

The Solano Transportation Authority (STA) began its Safe Routes to School program in 2005. The program is designed to decrease the number of driving trips to schools and increase the number of safe and healthy (walking and bicycling) trips to schools in Solano County. In order to increase the number of walking and bicycling trips to and from schools in the County, the STA SR2S Program was developed to formulate a list of infrastructure projects near schools to make walking and bicycling easier and safer for students. The SR2S Program was also developed to formulate a list of programs to encourage and educate students about walking and bicycling, and to enforce students and parents to abide by traffic safety laws near schools.

1.1. POLICY BACKGROUND

The Solano SR2S Program is Phase II of the Solano Travel Safety Plan. Phase I of the Travel Safety Plan was completed in 2005 and the 2005 Plan was an update to the plan developed in 1998. The Travel Safety Plan identifies vehicle accident rates at major intersections and on highway segments in Solano County. Phase I of the Travel Safety Plan also identifies pedestrian and bicycle accident rates in the County's jurisdictions. Phase II of the Travel Safety Plan (this Report) expands on the findings from Phase I by identifying and prioritizing a list of potential bicycle/pedestrian improvements and safety projects that are eligible for the State Safe Routes to Schools Program. The State Safe Routes to School Program was first established in 1999 and California State bill AB 57, introduced in December 2006, passed the State Legislature and extended the program through January 1, 2013.

1.2. BENEFITS OF THE SAFE ROUTES TO SCHOOL PROGRAM

SR2S programs directly benefit school children, parents and teachers by creating a safer travel environment near schools and by reducing motor vehicle congestion at school drop-off and pick-up zones. Students that choose to bike or walk to school are rewarded with the health benefits of a more active lifestyle, with the responsibility and independence that comes from being in charge of the way they travel, and learn at an early age that biking and walking can be safe, enjoyable and good for the environment. Safe Routes to School programs offer ancillary benefits to neighborhoods by helping to slow traffic and by providing infrastructure improvements that facilitate biking and walking for everyone. Identifying and improving routes for children to safely walk and bicycle to school is also one of the most cost-effective means of reducing weekday morning traffic congestion and can help reduce auto-related pollution.

1.3. ENGINEERING, EDUCATION, ENFORCEMENT, AND ENCOURAGEMENT

Comprehensive Safe Routes to Schools programs are developed using four complementary strategies, referred to as the "4 Es". These are defined below and are referred to continuously throughout this Report.

Engineering

Enforcement

Education

Encouragement

Engineering – Design, implementation and maintenance of signing, striping, and infrastructure improvements designed to improve the safety of pedestrians, bicyclists, and motorists along school commute routes.

Education – Educational programs that teach students bicycle, pedestrian and traffic safety skills, and teach drivers how to share the road safely.

Enforcement – Strategies to deter unsafe behavior of drivers, bicyclists and pedestrians and encouraging all road users to obey traffic safety laws and to share the road.

Encouragement – Special events, clubs, contests and ongoing activities at schools that encourage more walking, bicycling, or carpooling through fun and incentives.

A fifth "E", Evaluation, is sometimes included in Safe Routes to Schools programs. Evaluating the success of a program helps to determine which programs are most effective and helps to identify ways to improve programs. Evaluation occurs subsequently to the 4Es.

1.4. REPORT CONTENTS

The Solano Safe Routes to School Report highlights the process to develop the County's Program and improvements and SR2S programs for the seven school districts (Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, and Vallejo) in Solano County.

Chapter 2 - Why a Safe Routes to School Plan
This Chapter describes the importance of a SR2S Plan and provides information about SR2S infrastructure improvements and programs that are integral parts of this Plan.

Chapter 3 - Countywide Planning
Included in this Chapter are STA's Goals and Objectives for the SR2S Plan and the planning process to meet these goals.

Chapter 4 - Countywide Priority Projects & Programs
Chapter 4 lists SR2S projects and programs that are relevant to all schools and cities in the County and are given cost estimates.

Chapter 5 – Local Planning
This Chapter outlines the cities' schools and Community Task Forces as well as information about the existing safe routes to school projects and programs that are ongoing in these cities. This Chapter also provides summaries of the audit walkabout schools and prioritized projects for each city.

Chapter 6 –Funding
Chapter 6 includes federal, state, regional and local sources of SR2S funding, as well as some non-traditional funding sources that have been used by local agencies to fund SR2S infrastructure and programs. A matrix summarizing funding sources is provided at the end of the chapter.

This Page is Intentionally Left Blank

2. WHY A SAFE ROUTES TO SCHOOL PLAN?

As mentioned in Chapter 1, SR2S addresses a number of issues at and around schools. These include traffic issues, children's health issues, and safety issues. A SR2S Plan also provides valuable educational opportunities for students, opportunities to increase funding for bicycle and pedestrian facilities, and programs that increase the numbers of students bicycling and walking to school. This Chapter describes the importance of a SR2S Plan and provides some information about SR2S infrastructure improvements and programs that are integral parts of this Plan.

2.1. SCHOOLS AND STUDENTS BENEFIT

2.1.1. Alleviates Traffic Issues

Before the 1980s, most children in the US walked or bicycled to school. Since then, this number has sharply declined. This decline is due to a number of factors, including urban growth patterns and school siting requirements that encourage school development in outlying areas. This has increased the amount of traffic at schools during drop-off and pick-up times because parents are concerned about their children's safety. The situation is self-perpetuating: as more parents drive their children to school, there is increased traffic at the school site, resulting in more parental concern about traffic and as a result drive their children to school.

According to a 2005 survey by the Center for Disease Control, parents whose children did not walk or bike to school cited the following barriers[1]:

- Distance to school 61.5%
- Traffic-related danger 30.4%
- Weather: 18.6%
- Crime danger 11.7 %
- Opposing school policy 6.0%
- Other reasons (not identified) 15.0%

A comprehensive Safe Routes to Schools program addresses the reasons for reductions in biking and walking through a multi-pronged approach that uses the 4E's or education, encouragement, engineering and enforcement efforts, to develop attitudes, behaviors and physical infrastructure that improve the walking and biking environment for students.

2.1.2. Children's Health Improvements

In recent years, the media has reported an increase in child obesity. As reported at the Solano County, February 2006 Youth Obesity Summit:

[1] U.S. Centers for Disease Control and Prevention. Barriers to Children Walking to or from School United States 2004, Morbidity and Mortality Weekly Report September 30, 2005. Available: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5438a2.htm Accessed: August 3, 2007.

- 16% of children and teens (aged 6-19) in the US are overweight – triple the proportion than in 1980; another 15% are considered at risk for becoming overweight
- Over 31% of children 2-5 years old are overweight.
- Over 38% of children 5-20 years old are overweight.
- 78% of children get less than the recommended minimum weekly physical activity

In 2004, the Children and Weight Coalition of Solano County developed an action plan that establishes steps to combat childhood obesity. The SR2S program can help address these obesity issues by increasing the number of students walking and bicycling to school and as a result exercising more on a daily basis. The 4Es approach can integrate the obesity, health, and nutrition issues to make a strong case for walking and bicycling to school.

2.1.3. Air Quality Improvements

Safe Routes to School can help alleviate traffic on the roadway and as a result improve air quality. Studies show that 20-25% of morning commute traffic is from parents driving children to school. With more students walking and bicycling to school and less traffic on the roads, tailpipe emissions are reduced. This creates healthier air for students near schools.

2.1.4. Better Safety around Schools

As described in the *Alleviates Traffic Issues* section of this Chapter, schools today have constant flows of traffic at drop-off and pick-up times. Currently, adjacent to many schools, there are poor pedestrian crossings, fast moving vehicles, low motorist awareness of schools, and a lack of compliance with traffic laws in school zones. All of these environmental factors are attributable to the collisions between students and vehicles near schools (as reported in Phase I of the Travel Safety Plan).

The SR2S Plan hopes to improve these safety issues by increasing safe bicycle and pedestrian crossings at school, slow vehicle traffic where bicyclists and pedestrians are present, increase awareness of walking and bicycling students to motorists, increase compliance with traffic safety laws around schools, and reduce the overall amount of vehicle congestion at schools. The SR2S Plan also hopes to increase student awareness of proper places to walk and ride their bike as well as where to look for oncoming traffic. As a result, collisions involving students should decrease.

There are many benefits to a SR2S Plan

2.1.5. Educational Benefits

Student activity can improve performance. Studies have shown that a lack of moderate physical activity can affect children's concentration, memory and learning, mood and alertness, and problem-solving ability. Moderate activity, such as walking or bicycling to school, can help alleviate these affects. Students that walk or bike to school have more activity in their day and as a result this may improve their ability to concentrate, learn, as well as better their mood and problem-solving abilities.

2.1.6. Funding Availability

A SR2S Plan with a prioritized list of projects and programs entitles a jurisdiction to funding specifically earmarked for safe routes to

school. A Plan like the STA SR2S Plan, with proposed improvements and programs to help increase the number of students walking and bicycling to school, allows jurisdictions to apply for specific SR2S funds at the regional, state, and federal level. A list of funding sources is included as part of this Plan in Chapter 6 and it includes federal and state safe routes to schools funding sources, STA's Alternative Modes Strategy SR2S Funds, and STA's Bicycle and Pedestrian Program funds.

2.2. DEVELOP SR2S IMPROVEMENTS AND PROGRAMS

A successful SR2S Plan includes recommendations for schools in each of the 4E categories. A more detailed description of the 4Es follows with some example projects and programs. An unabridged description and list is included in Appendix A's STA Safe Routes to School Toolkit.

Curb extensions and a zebra crosswalk

2.2.1. Engineering Improvements

Engineering or infrastructure improvements are the most commonly recognized safe routes to school enhancement. These types of facilities are changes to the physical environment and can include a wide variety of facilities for bicycles, pedestrians, and vehicles. These improvements can have a wide range of costs, from implementing new signs (lower cost) to adding curb extensions (higher cost). Other examples of engineering improvements are:

- Pavement markings
- High-visibility signage
- Sidewalks
- Trails and pathways
- Pedestrian crossings
- High-visibility crosswalks
- Advance stop bars
- Countdown signals

2.2.2. Educational Programs

The second of the four Es is Education. Education programs are an integral aspect of SR2S planning. These programs can vary and are geared for both students and parents. For students, educational programs help build their knowledge of traffic safety rules. For parents, education programs can help them understand the appropriate traffic patterns around schools. Education programs come in different formats including flyers, brochures, and student activity books. Teachers can incorporate SR2S in classroom lessons and activities. The local police department can also offer programs such as after-school bicycle rodeos teaching students road safety. SR2S can be a fun and interesting learning exercise for all participants!

An example SR2S educational program

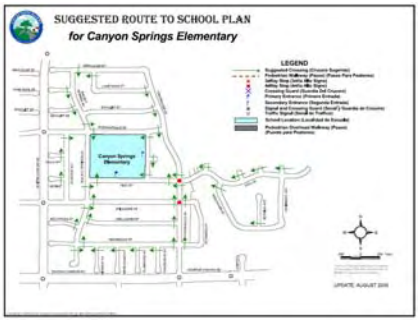
A police offer checks in with a parent at pick-up time

2.2.3. Enforcement Programs

Enforcement programs are a way to ensure that students and parents are abiding by the rules of the road and helps reduce the threats of vehicles to students walking and bicycling. Most enforcement is targeted by police officers at vehicles that speed,

fail to yield to pedestrians, make illegal turns, and park illegally. Examples of police enforcement programs are crosswalk stings, where police cite vehicles not stopping for pedestrians at crosswalks, and normal enforcement that occurs near schools at school start and stop times.

Enforcement programs are also applicable to pedestrians and bicyclists. Crossing guards can help enforce the appropriate rules of the road to pedestrians and bicyclists. Police can also target students not following proper road safety while walking or bicycling and give them "warning" citations.



An example suggested route map

2.2.4. Encouragement Programs

The final of the 4Es are encouragement programs. Encouragement programs promote walking and bicycling to and from school, for example, tools that help students find the best route or contests and prizes for the school or individual classes with the most pedestrians and bicyclists. There are encouragement programs that all schools can participate in, including Bike to School day and International Walk to School Day. If schools cannot participate in these national and international efforts, they can have their own bike and walk to school days. Encouragement programs should be fun!

3. COUNTYWIDE PLANNING

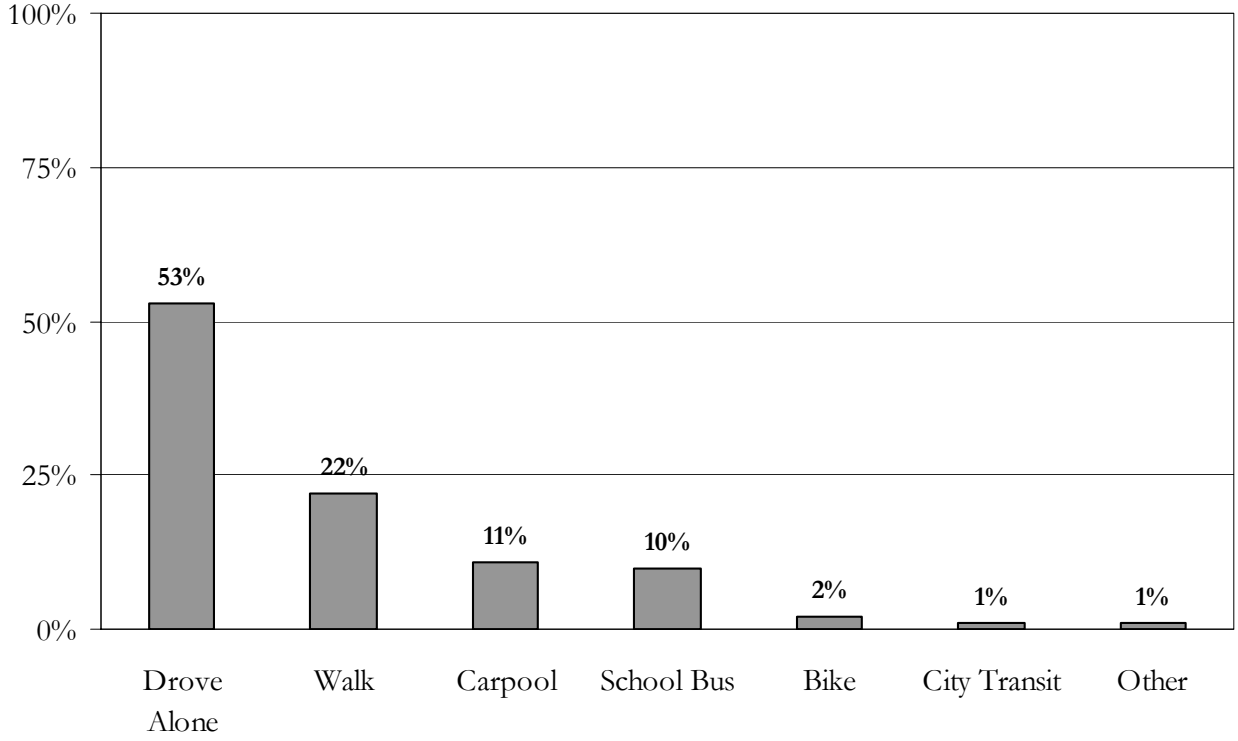
The Solano Safe Routes to School Plan process included multiple rounds of public input at multiple levels of Committees and at individual schools. The public input process and the intent of this Plan is to meet STA's goals and objectives for the SR2S program. Included in this Chapter are a description of a countywide effort to measure transportation mode split to schools, STA's Goals and Objectives for the SR2S Plan, and the planning process to meet these goals.

3.1. SCHOOL TRAVEL MODE SPLIT

Over the course of the project, STA asked Solano County school teachers s 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 B**.

Of the approximate 110 schools in Solano County, 23 participated in the in-class surveys or almost 25 percent. This included over 11,550 students at 18 elementary schools, 2 middle schools, and 3 high schools. **Figure 3-1** shows the mode splits reported 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 County could benefit from an increase in bicycling students.

Figure 3-1: Reported Mode Split from In-Class Surveys



3.2. STA SAFE ROUTES TO SCHOOL GOALS & OBJECTIVES

At the outset of the SR2S program, the STA Board adopted a series of Goals and Objectives to strive for in the planning process. These Goals and Objectives are listed below and were met through the public input process and the SR2S planning results outlined in this Plan.

3.2.1. Goals, Policy Actions, & Measurable Objectives

GOALS 1A & 1B

1A Increase healthy and safe alternatives to driving alone/chauffeured trips to school

1B Reduce number of driving alone/chauffeured trips and the number of student vs. vehicle accidents along routes to schools

Policy Actions:

- Identify, prioritize, implement, and review Education, Encouragement, Enforcement and Engineering (4Es) projects and programs countywide.

Measurable Objectives:

Safety and Security

- Decrease the number of severe accidents involving children along routes to school.
- Decrease speed of vehicles along routes to school.
- Decrease the number of criminal incidents involving students along routes to school.

Health & Air Quality

- Increase the number of children walking and bicycling to school.
- Increase the fitness level of students as measured by the California Fitness Test.
- Reach emission reduction goals (to be established by Bay Area and Yolo Solano Air Quality Management Districts) by measuring the reduction of vehicle miles traveled as a result of SR2S projects and programs.

Traffic Congestion

- Decrease the number of driving alone/chauffeured trips to school.

Evaluation

- Deliver annual performance reports for the SR2S Program to the STA Board.

GOAL 2

Maximize interagency cooperation in all SR2S efforts.

Policy Action:

- Establish interagency cooperative working groups of agencies responsible for implementing SR2S 4Es projects and programs.

Measurable Objectives:

Committees & Reports

- Hold quarterly SR2S Steering Committees with status reports from SR2S Community Task Forces.
- Produce quarterly status reports of SR2S Program for the STA Board.

Policy Action:

- Strategically fund 4Es projects and programs through a coordinated effort with all implementing agencies.

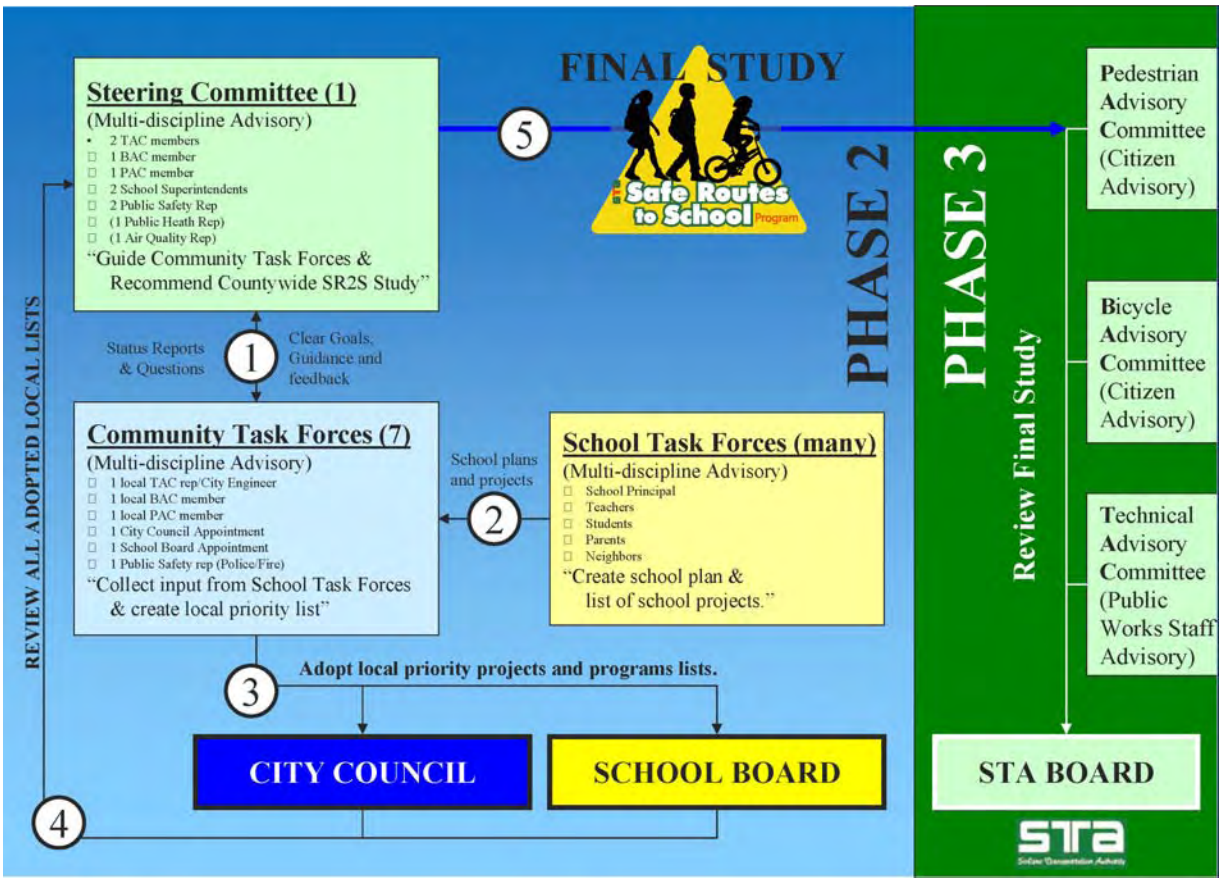
Measurable Objective:

- Review various funding sources to implement priority SR2S projects and programs.

3.3. PLANNING PROCESS

To achieve the goals, policy actions, and measurable objectives a thorough planning process was developed for the STA SR2S Plan. There were many committees, parents, faculty, staff, police officers, and members of the public involved in the STA SR2S planning process. A flowchart of the process is shown in **Figure 3-2 STA Safe Routes to School Flowchart** and this section reviews the planning process.

Figure 3-2: STA Safe Routes to School Flowchart



3.3.1. STA SR2S Steering Committee

Appointed by the STA Board, the Steering Committee was instrumental in the planning process, mostly in the beginning and at end of the process. Members of the Steering Committee are listed in **Table 3-1 STA SR2S Countywide Steering Committee**. To set the Plan in motion, the Steering Committee drafted the goals and objectives of the SR2S Plan and helped with the development of the planning process.

Table 3-1: STA SR2S Countywide Steering Committee

Position	Name	Title
TAC Member	Gary Leach	Public Works Director
TAC Member	Dan Schiada	Public Works Director
BAC Member	Mike Segala	BAC Representative
PAC Member	Eva Laevastu	PAC Representative
Solano County Office of Education	Dee Alarcon	County Superintendent of Schools
School District Superintendent	John Aycock	Vacaville USD Superintendent
Public Safety Rep	Bill Bowen	Rio Vista Chief of Police
Public Safety Rep	Ken Davena	Benicia Police Department Captain
Air Quality Rep	Jim Antone	Yolo-Solano Air District Rep
Public Health Rep	Robin Cox	Solano County Public Health Rep

Towards the end of the process, the Steering Committee reviewed the SR2S projects and programs approved by each City Council and School Board in Solano County. With an adopted set of criteria and the project and program lists from the seven City Councils and School Boards, the Committee established priority projects and programs for future funding. The Steering Committees final recommendations were then sent to the STA Board for approval in February of 2008.

3.3.2. Community Task Forces

At the city and school district level, the first step for the STA was giving introductory presentations to all of Solano County's school boards and city councils regarding the program and STA SR2S Plan. These presentations were to gather support for the project in cities and schools and to help facilitate the planning process. These introductory presentations were also intended to help these school boards and city councils develop Community Task Forces and an audit school for a walkabout.

With direction from the STA SR2S Steering Committee, the Plan goals and policies, and the various city councils and school boards - seven Community Task Forces were formed in the cities of Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, and Vallejo. These cities and The Task Forces were multi-disciplinary advisory groups that included a combination of:

- City Engineer
- Bicycle/Pedestrian Advisory Committee member
- City Council appointee
- School Board appointee
- Public safety representative (police or fire department).

Complete listings of these Community Task Forces for each community are in Chapter 4 of this Plan. STA met with each Task Force three times throughout the SR2S planning process.

The first meetings were held in 2006 and the beginning of 2007 to discuss the SR2S Plan process and to help determine the audit walkabout school. To determine the audit school, the Task Forces decided the area within their city with the most difficult bicycle and pedestrian access issues. The STA then brought this area to the school district superintendents and principles to determine the school in the 'difficult access' area for the audit walkabout school. A more in-depth discussion of the walkabouts is in Section 3.3.

The second round of Community Task Force Meetings was held in August and September of 2007. At these seven meetings (one per city), Task Force members discussed the results of an audit walkabout in their community and the improvement plan for the audit walkabout school as developed by STA. In addition, the Task Forces discussed the problem areas and issues at other schools and incorporating them into the Plan..

At the third Community Task Force meetings, the list of projects and programs in each city were finalized. Theses lists were than evaluated using criteria to prioritize the projects and programs. The Community Task Forces approved these lists to be sent to their City Council and School Board. Once

the City Councils and School Boards approved the Community Task Forces lists, they were sent to the Steering Committee for final review and County prioritization.

3.3.3. School Task Forces

Under each of the Community Task Forces were School Task Forces at the schools. School Task Forces were made up of the Principle, teachers, students, parents, and school neighbors. The role of the School Task Forces was to perform a walking audit and develop a list of school projects and programs. These lists were sent to the Community Task Forces for review and prioritization.

3.4. WALKABOUTS

3.4.1. Audit Schools

With the aid of each Community Task Force and their superintendents and principles, one audit walkabout school was chosen per city. Once the audit schools were chosen, walkabouts were held to see how the schools could benefit from the SR2S program. **Table 3-2** includes the school districts, the schools chosen by the committees for the audit walkabout, and the dates of the walkabouts.

Table 3-2: Walkabout Schools and Dates

School District	City	Walkabout School	Walkabout Date
Benicia School District	Benicia	Benicia High School	November 28th, 2006
Dixon School District	Dixon	Lindford Anderson Elementary School	April 18th, 2007
Fairfield-Suisun School District	Fairfield	Anna Kyle Elementary School	April 26th, 2007
Fairfield-Suisun School District	Suisun	Suisun Elementary School	June 7th, 2007
River Delta School District	Rio Vista	Riverview Middle School	September 23rd, 2007
Vacaville School District	Vacaville	Will C. Wood High School	May 16th, 2007
Vallejo School District	Vallejo	Steffan Manor Elementary School	April 19th, 2007

The walkabouts were held at school dismissal times to determine how students left the campus, to note potential transportation conflict points, and to develop infrastructure improvements that would encourage more bicycle and pedestrian use to and from school. All members of the City's Community Task Force and School's Task Force were invited to the walkabout. Participants included city staff, school administrators, city officials, teachers, parents, and students. Also at the audit walkabouts were STA representatives.

A walkabout hits the street at Anderson Elementary in Dixon

Invitees provided valuable insight about the school commute and the problem areas. Members of the School Task Force collected SR2S information such as travel patterns, bicycle parking availability, bus operations, and walking and bicycling facilities near the school. Pictures were also taken with digital cameras.

Students provide SR2S input at Steffan Manor Elementary in Vallejo

The pictures and information gathered at the walkabouts were then shared at evening meetings. After the walkabouts, Community and School Task Force members were invited back to evening presentations held by STA . The presentations described examples of the 4Es as well as information collected at the day's walkabout, including a photo essay of the day's commuting events at the school. After the presentations, attendees marked on aerial maps that showed the school and its neighboring area, providing additional input and other suggestions for improvements and programs.

3.4.2. Other School Walkabouts

Members of other School Task Forces attended the audit walkabouts. For example, the walkabout at Will C. Wood High School in Vacaville was attended by officials and staff from other Vacaville schools. These individuals participated in the walkabout at the audit school (Will C. Wood) and then brought what they learned back to their own school. These School Task Force participants then lead walkabouts of their own at their schools.

The non-audit school walkabouts were similar to the audit schools' walkabouts. STA provided the walkabout materials presented at the audit schools. These included a marketing flyer in English and Spanish, the Safe Routes to School Toolkit (See Appendix A), the SR2S Walking Audit Checklist (see Appendix A), and an outline for the Safe Routes to School PowerPoint presentation. Results of all these walkabouts were sent to the Community Task Forces for prioritization within the cities. The specific walkabouts and suggested projects and programs are discussed in Chapter 4.

This Page is Intentionally Left Blank

4. COUNTYWIDE PRIORITY PROGRAMS & PROJECTS

Throughout the planning process, a variety of common elements were raised by Solano County's cities, Community Task Forces, and School Boards. These items are listed in this section as countywide projects and programs. These are relevant to all schools and cities in the County. These projects and programs are described in this Chapter as well as given cost estimates.

4.1. PROGRAM & PROJECT PRIORITIES' PROCESS

The Countywide projects and programs were recommended by the County's Bicycle Advisory Committee, Pedestrian Advisory, SR2S Technical Advisory Committee, SR2S Steering Committee, the Solano County Board of Supervisors, and Solano County Health and Human Services. This section includes their recommendations as well as the prioritization for these projects and programs as established by the SR2S Task Force.

4.1.1. Program Recommendations

Implementation of many of the programs that fall under the three Es of Education, Enforcement, and Encouragement -can occur at the countywide level. These programs are suited for all schools, districts, and cities in the County. Below is a list of these programs.

EDUCATION

- Crossing Guard Training –Develop a training program that establishes guards' duties, responsibilities, and priorities
- Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year
- Where not existing, develop Safety Patrols where older students team with crossing guards
- Develop programs to incorporate health, science, and math aspects of safe routes to school information in school with a SR2S curriculum
- Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school

ENFORCEMENT

- With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety
- Increase police patrol of the area during drop-off and pick-up hours
- Involve Multi-jurisdiction police department task force in school enforcement
- Help police departments conduct bicycle rodeos and other safety events

ENCOURAGEMENT

- Participate/Market in Bike to School Day and International Walk to School Day activities
- Work with the "student council" to engage students in bicycling and walking safely to school
- Work with students and parents to develop a map with the safest walking/bicycling routes to school
- Implement Frequent Walk & Roll Cards with incentives.
- Work with schools to implement competitive bicycle clubs
- Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School
- Create Transit/School partnerships to increase transit use. This can include including, advertising, promotions, and fare reductions. Start with a survey of students to understand why they are not using the bus

4.1.2. Engineering Recommendations

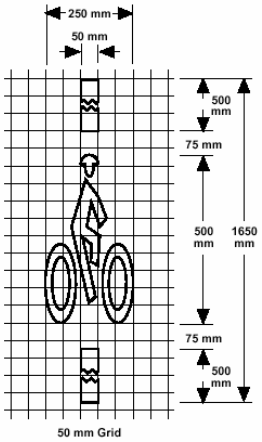
This section includes engineering recommendations for Solano County. These are projects that require infrastructure or on-the-ground improvements. These are intended for implementation at and around Solano County schools.

4.1.2.1. Updating Signing Around Schools to Meet Current MUTCD Standards

The Manual on Uniform Traffic Control Devices (MUTCD) and the California supplement provide guidance on the use of school area signs and markings. The latest MUTCD was released in 2003 and the latest California supplement was released in 2004. Surrounding most areas around schools, signage, striping, and roadway stencils are not up to the current standards. These signs, striping, and stencils must be replaced by a specific date. This program, at the county level, would fund the replacement of the non-conforming signs, striping, and stencils to be replaced with the up-to-date standards.

4.1.2.2. Bike Detection near Schools

Bicycle detection at signalized intersections can provide a substantial safety improvement for both cyclists and motorists. This is particularly true in areas where there are few signalized intersections but signals are found at crossings of major roads. There are two improvement types for bike detection. First are typical induction loop detection devices should be installed along designated routes and at key intersections by providing calibration of existing detectors, installation of new detectors and installation of stencils. The other method is by placing a push-button directed toward where a bicyclist would stand at an intersection. These push-buttons would be place at a height convenient for bicyclists.



Caltrans Standard Plan 24C bicycle detection marking

The County should develop a policy of installing bicycle detection at intersections along designated bike routes near schools as they are repaved as well as when signals are modified and updated.

Since most cyclists, as well as motorists, do not know how pavement loop detectors work, all detector loops expected to be used by cyclists should be marked by a pavement stencil that shows cyclists where to stop to activate the loop. Educational materials distributed by the County and schools could describe how to activate bicycle loop detectors and stencils should be repainted when needed.

4.1.2.3. Speed Feedback Signs Near Schools

Speed feedback signs use radar to flash motorists' speeds if it is over the 25 mph school speed limit. Signs can be set up to only operate during the school AM and PM commute periods, thereby increasing their long-term effectiveness. These signs are expected to reduce overall speeds along school corridors during the school commute periods.

4.2. SAFE ROUTES TO SCHOOL COST ESTIMATES

This section includes cost estimates for the Safe Routes to School programs and projects outlined in this Chapter. These are cost estimates and depending on the specific project, program, or school, more detailed estimates are recommended upon implementation. The program estimates are for the initial costs for getting it up and running and as these programs mature and materials are developed, operating costs will likely decrease. Therefore, estimates presented for the SR2S programs are conservative.

This Plan recommends implementing these programs and projects in increments, as funding becomes available. The County should work as a partnering agency with the School Districts when applying for grants and available funds. Specific funding opportunities are discussed in Chapter 6.

4.2.1. Initial SR2S Costs

Several initial costs are recommended to successfully implement the countywide SR2S Plan. These include completing walking audits at schools that have not held them previously and working with dedicated staff to assist implementing the programs and projects. These are described more below.

4.2.1.1. Planning Costs

Implementation of the Solano County Safe Routes to School Plan requires funds for engineering, education, enforcement, and encouragement. Funds are also needed for future planning efforts and walkabouts at schools not included in this countywide process. STA was able to perform walkabouts at approximately 30 schools in the County and approximately 80 schools still require the first steps of the SR2S planning process, including the walkabout and an introduction to SR2S. The cost for the walkabouts and introduction to SR2S planning events includes staff time, materials, and outreach for the events.

As Error! Reference source not found. shows, an additional amount of $400,000 is needed to complete the SR2S planning at the approximately 80 schools in Solano County. This dollar amount is based on $5,000 per school per event.

4.2.1.2. Safe Routes to School Coordinator

To take full advantage of SR2S planning efforts in Solano County and to assist with implementation of the many programs and projects recommended in this plan, the County should consider hiring or designating a SR2S Coordinator. This position could be a new full or part-time staff person, or the

duties of the coordinator could be assigned to an existing staff person on a part-time basis. For example, the school wellness coordinators at each of the County's schools could take on some of these tasks. The job duties for designated staff may include monitoring the design and construction of SR2S construction projects, coordinating implementation of the recommended projects and programs listed in this plan, identifying new projects, facilitating grant applications, and coordinating the various school districts and schools. This staff person would work with the STA or Solano County.

Based on similar positions in the country, an estimated annual salary for the SR2S Coordinator is $60,000 per year. Otherwise, existing staff could coordinate these responsibilities.

Table 4-1 Countywide SR2S Program's Initial Costs

Project	Cost Per School	Remaining Schools	Cost for County
Planning Events	$5,000	80	$400,000
Safe Routes to School Coordinator*	-	-	$60,000
		Total Cost	**$460,000**

*Annual Cost for full-time SR2S Coordinator

4.2.2. Recommended Programs' Costs

Included in **Table 4-2 Countywide SR2S Programs' Costs** are estimates for the first year of programs at all 110 schools in Solano County. These programs fall under the education, enforcement, and encouragement Es of Safe Routes to School. The success of these programs depends on the involvement of students, parents, teachers, administrators, and the County's public agencies.

4.2.2.1. Education Costs

Educational programs include a SR2S curriculum for children, training of crossing guards, implementation of safety patrols, a walking school bus program, and education of parents about dropping-off and picking-up their children at school. These programs vary in scope and cost. The countywide SR2S Coordinator could work with the Solano County Department of Education, facilitating operations of a SR2S curriculum. The Coordinator, County, or STA could also work with schools developing a walking school bus program and police on a crossing guard training program. Once in place, these programs would require additional training and materials. For education of parents, this would primarily require publication of materials.

An estimated $550,000 is needed for education programs in Solano County. This is based on an estimated $5,000 for education programs at each of the 110 schools in the County. This cost is for the first year of educational programs countywide. As materials are developed, cost per schools decrease to $2,000 subsequent years.

Table 4-2 Countywide SR2S Programs' Costs

SHORT-TERM		
"E"	Program	Cost
Education*	Crossing Guard Training –Develop a training program that establishes guards' duties, responsibilities, and priorities	$110,000
	Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year	$150,000
	Where not existing, develop Safety Patrols where older students team with crossing guards	$45,000
	Subtotal	**$305,000**
Enforcement**	With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety	$210,000
	Increase police patrol of the area during drop-off and pick-up hours	
	Involve Multi-jurisdiction police department task force in school enforcement	
	Help police departments conduct bicycle rodeos and other safety events	
	Subtotal	**$210,000**
Encouragement*	Participate/Market in Bike to School Day and International Walk to School Day activities	$40,000
	Work with the "student council" to engage students in bicycling and walking safely to school	-
	Work with students and parents to develop a map with the safest walking/bicycling routes to school	$100,000
	Implement Frequent Walk & Roll Cards with incentives	$75,000
	Work with schools to implement competitive bicycle clubs	$40,000
	Subtotal	**$215,000**
	Short-Term Total	**$730,000**

LONG-TERM		
"E"	Program	Cost
Education*	Develop programs to incorporate health, science, and math aspects of safe routes to school information in school with a SR2S curriculum	$200,000
	Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school	$45,000
	Subtotal	**$245,000**
Enforcement	-	-
	Subtotal	**$0**
Encouragement*	Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School	-
	Create Transit/School partnerships to increase transit use. This can include including, advertising, promotions, and fare reductions. Start with a survey of students to understand why they are not using the bus	$75,000
	Subtotal	**$75,000**
	Long-Term Total	**$320,000**
	TOTAL COST	**1,050,000**

*Estimates are for the first year of implementation.
**Part-time officer hours for each city = $30,000 x 7 cities = $210,000

4.2.2.2. Enforcement Costs

The success of SR2S enforcement programs depend on the availability of police officers during drop-off and pick-up times at area schools. Police officer presence at schools is necessary to warn and potentially write tickets to drivers, bicyclists, and pedestrians. Officers are also needed for school rodeo programs and other education programs at schools (see the next section). Hiring police officers and purchasing equipment is an expensive undertaking. This Plan recommends hiring one part-time police officer in each of Solano County's seven cities to help facilitate SR2S enforcement programs.

An estimated $210,000 is needed for enforcement programs in Solano County. This is based on an estimated $30,000 per year for a part-time police officer in Solano County's seven cities.

4.2.2.3. Encouragement Costs

As with education programs, encouragement programs would be managed by the County SR2S Coordinator. Encouragement programs, such as Bike and Walk to School Days, developing safe route to school maps, creating transit partnerships, and developing transportation committees at schools would be organized by the SR2S Coordinator. The Coordinator would establish relationships with the school districts and school staff members and work with them to implement these programs. Other encouragement (that overlaps with education) could include a media campaign. Allocation of funds would be directed towards marketing materials and giveaways, such as prizes, stickers, pins, and keychains. Encouragement materials and coordination are the largest expenses within these costs.

An estimated $330,000 is needed for encouragement programs in Solano County. This is based on an estimated $3,000 of education programs improvements for each of the 110 schools in the County. This cost is for the first year of encouragement programs countywide. Like education materials, as encouragement materials are developed, cost per school will decrease to $2,000 in subsequent years. Of the $330,000 at the outset of the encouragement program, approximately $200,000 could be directed towards a media campaign.

4.2.3. Engineering Costs

The most costly of the four E's is engineering. Many engineering improvements require planning studies and construction. For example, installation of stop signs at an intersection requires a study warranting their need as well as the cost of the signs and installation. For the purposes of this Plan, all costs are planning level costs and in many locations, specific studies would need to occur before implementation or construction. Engineering Costs are described more in this section and shown in **Table 4-3 Countywide SR2S Engineering Projects**.

For the Countywide SR2S Plan, an evaluation of engineering costs is based on the engineering improvement costs at the seven walkabout schools. Based on these seven locations, an average cost per school was developed for Solano County. This cost per school is then multiplied by the number of schools in the County for the Solano Countywide SR2S engineering estimate. Planning level cost estimates for the walkabout schools are included in Appendix B of this Plan.

Each of Solano County's schools needs an average of $275,000 for engineering improvements. This is based on the average engineering improvement costs for the audit schools.

Table 4-3 Countywide SR2S Engineering Projects

Project	Cost Per School		Cost for County
General Engineering Improvements	$275,000		$30,250,000
Project	**Cost Per Item**	**Number Per School**	**Cost for County**
Updated MUTCD Signs	$200	10	$220,00
Roadway stencils	$300	2	$66,000
High Visibility Crosswalk	$1,200	4	$528,000
Bike Detection near Schools	$100/ $300	4	$88,000
Project	**Cost Per Item**	**Number Per City**	**Cost for County**
Speed Feedback Signs Near Schools	$8,000	6	$336,000
		Total Cost	**$31,268,000**

4.2.3.1. Updating Signing and Striping Around Schools to Meet Current MUTCD Standards

As listed earlier in the Chapter, updating signage, striping, and stencils around school to meet current standards is a countywide recommendation. The most current MUTCD signage includes fluorescent yellow-green signs. This cost estimate is not included in the engineering improvements in the previous section. It is recommended that all schools in the County update signage, striping, and stencils to meet the current standards.

An estimated $220,000 is needed for the installation for up-to-date signs in Solano County. This is based on an estimated $200 for each sign and an average of 10 new signs at each of the 110 schools.

For roadway stencils, $66,000 is needed to meet the most recent standards. This is based on an average two new stencils per school at the 110 schools and costing $300 each.

Striping of high visibility crosswalks are improvements for unsignalized crosswalks and signalized intersections with high traffic volumes. When adjacent to schools, these are striped yellow. High-visibility crosswalks cost approximately $1,200 each and based on information from the walking audits, approximately four are needed per school. Striping four high-visibility crosswalks at each of Solano County's schools will cost approximately $528,000.

4.2.3.2. Bike Detection near Schools

The installation of bike detection near schools is the third engineering improvement. Bike detection at signalized intersections can occur with in-pavement loops, video detection, or push buttons that are directed towards the street. With push-buttons, bicyclists push them while waiting at a signal for it to turn green. The type of detection installed depends on the location, the ages of bicyclists that ride in the area, and the volumes of traffic at the intersection. Cost of installation depends on what the existing signal already uses to detect vehicles. **Table 4-4 Bicycle Detection Estimated Costs** shows estimated costs for the various types of bicycle detection. Cities would need to evaluate the best improvement for individual locations.

An estimated $88,000 is need for the calibration of two existing loops and the installation of two stencils at one intersection at every school in Solano County This is based on the $300 for calibrating a loop and $100 for the installation of a stencil at each of the 110 schools.

Table 4-4 Bicycle Detection Estimated Costs

Item	Approximate Cost Per Leg of Intersection
Calibrate existing loops	*$300*
Calibrate or re-zone existing video detection	*$150*
Install new detection loops	$3,000
Install new zoned video detection	$5,000
Install stencils	$100
Install 2 Push Buttons	$1,600

Costs based on US DOT information available as of April 2007.

4.2.3.3. Speed Feedback Signs Near Schools

Speed feedback signs are improvements nears schools to help slow vehicle traffic closer to posted speed limits. Based on requests from the City during the walkabout process, an average of six feedback signs is needed per City in Solano County. Cost of the signs is approximately $8,000 therefore for six in each City, these improvements will cost approximately $336,000.

A Speed Feedback Sign

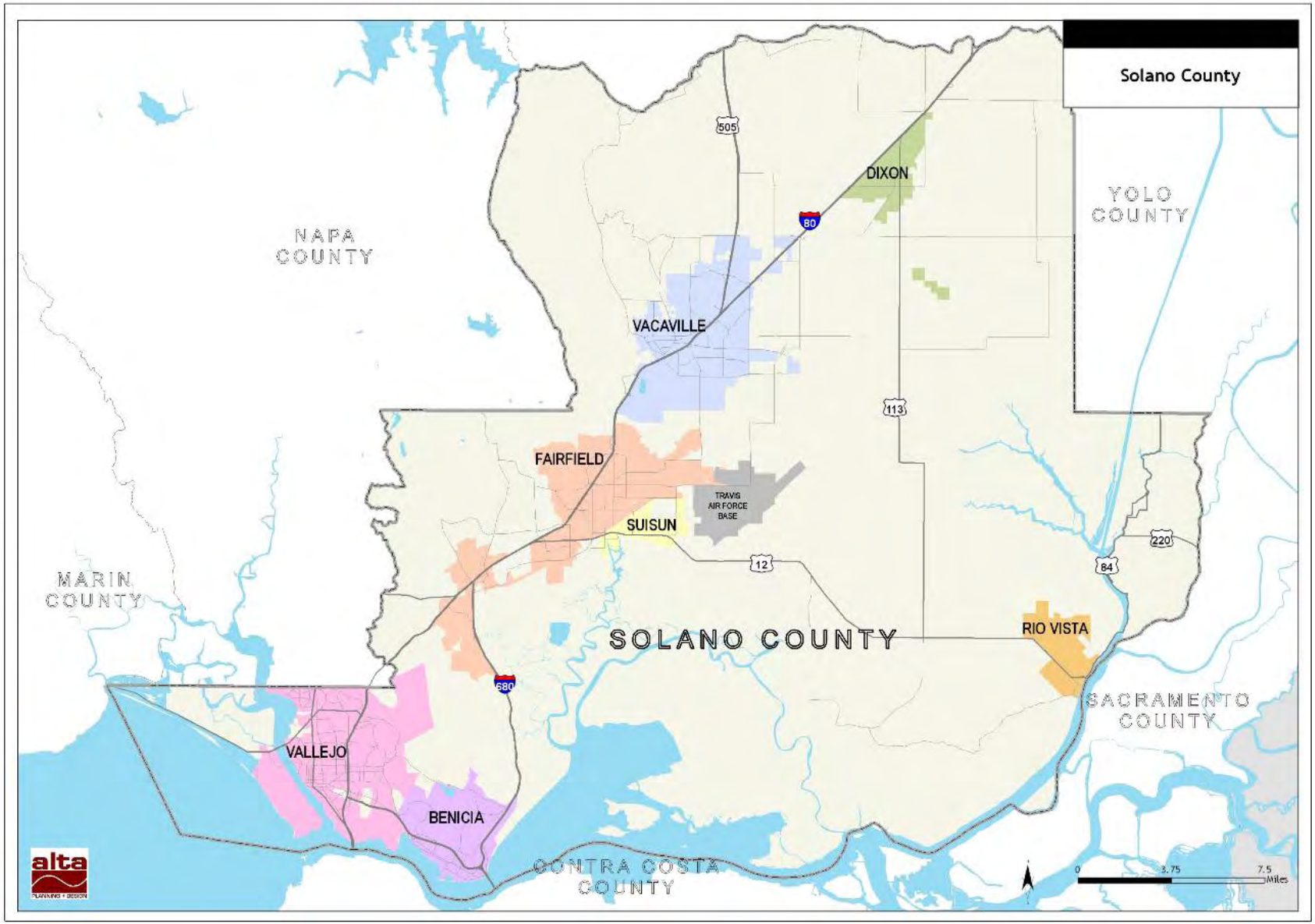
5. LOCAL PLANNING

The seven cities of Solano County conducted walkabouts and were integrally involved in the Solano SR2S Plan through their Community Task Forces, City Councils, and School Boards. Chapter 4 outlines the cities' schools and Community Task Forces as well as information about the existing safe routes to school projects and programs that are ongoing in these cities. In addition to existing SR2S projects and programs, a list of prioritized projects for each city, as developed in the SR2S Plan process and as described in Chapter 3, is included. **Figure 5-1 City Boundaries** shows the seven cities of Solano County that are all involved in the STA SR2S Plan.

The Cities of Solano County and the page number of their local plans are listed below.

City	Page Number
Benicia	5-3
Dixon	5-17
Fairfield	5-25
Rio Vista	5-40
Suisun City	5-49
Vacaville	5-57
Vallejo	5-72

Figure 5-1 City Boundaries



5.1. BENICIA

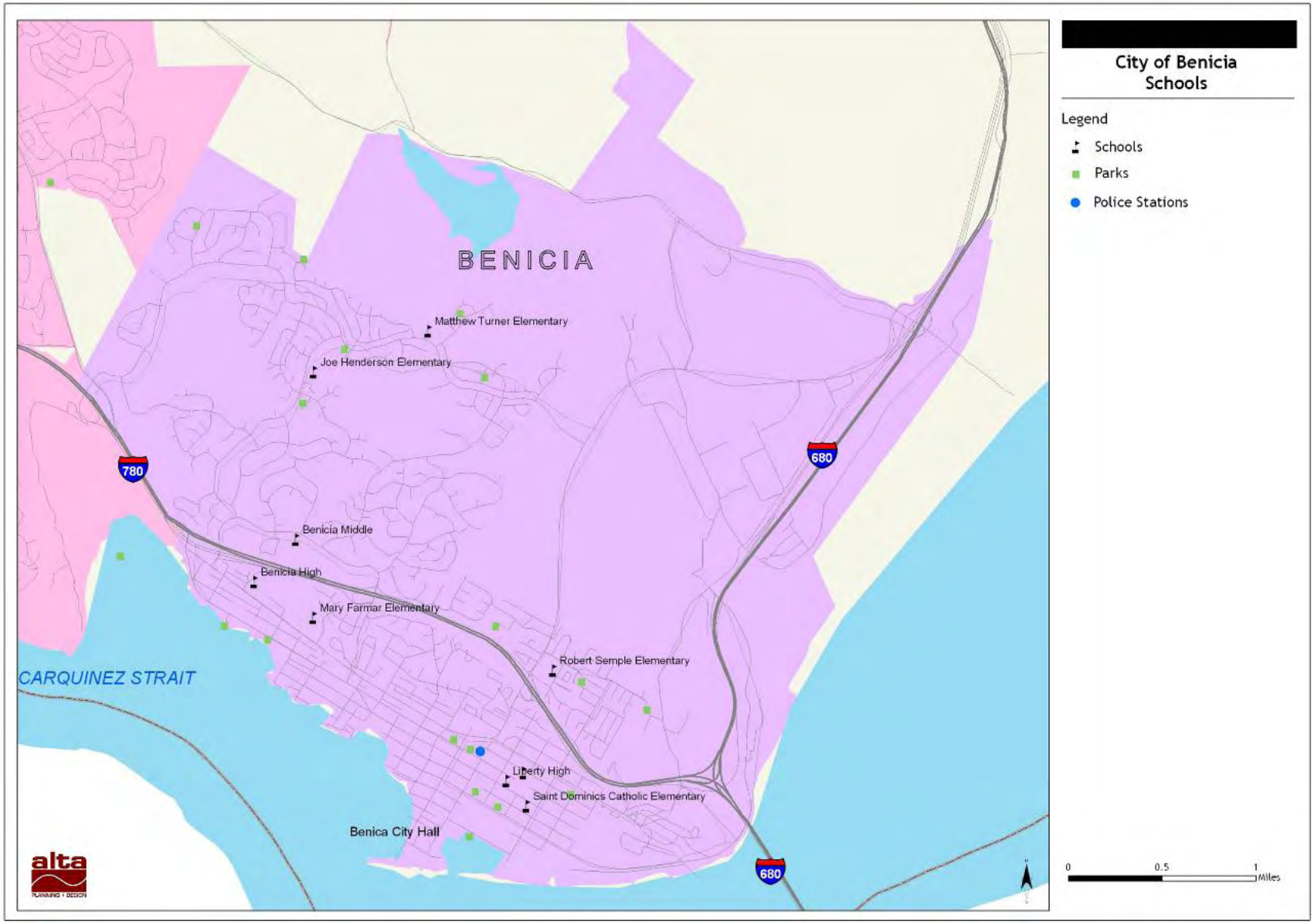
Benicia's planning process was slightly different than the other cities in Solano County. Benicia's Community Task Force responsibilities were delegated by the City and the School Board to the existing Traffic Pedestrian and Bicycle Safety Committee (TPBS) and the City Council and School Board Liaison Committee. **Table 5-1 Benicia Traffic Pedestrian and Bicycle Safety Committee** includes a list of contributors.

Table 5-1 Benicia Traffic Pedestrian and Bicycle Safety Committee

Name	Position
Elizabeth Patterson	City Councilmember
Mark Hughes	City Councilmember
Jim Trimble	Police Chief
Dan Schiada	Director of Public Works/Traffic Engineer
Michael Throne	City Engineer

As explained in Chapter 3, an extensive public process was undertaken in developing a list of safe routes to school projects and programs in Benicia. A map of the City and its schools are shown in **Figure 5-2.** Benicia's audit walkabout occurred at Benicia High School, details of the audit are explained in the next sections.

Figure 5-2 Benicia Schools

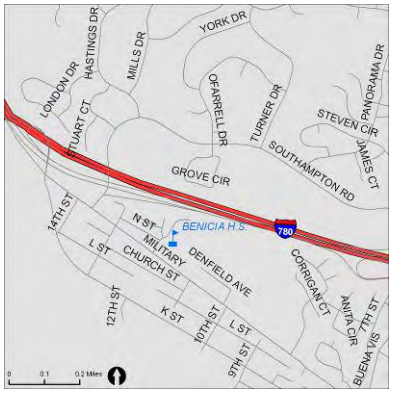


5.2. BENICIA AUDIT SCHOOL WALKABOUT – BENICIA HIGH SCHOOL

5.2.1. Existing Conditions

5.2.1.1. School Location

Benicia High School is located at 1101 Military West Street in Benicia. Benicia High School serves grades 9 through 12. For the 2006-2007 school year, Benicia High School has a total enrollment of approximately 1790 students. Benicia High School site is bound by Military West Street to the south, Plaza de Oro on the west, I-780 to the north, and residences and offices to the east. Directly north of the parking lot is I-780. Plaza de Oro, West 11th Street, and Denfield Avenue provide vehicle access to the school. Pedestrians and bicyclists can enter the school site from Military West Street.



Benicia High School Area Map

5.2.1.2. Traffic Controls

The intersection of Military West Street/Plaza de Oro is a T-intersection; stop controlled on the Plaza de Oro approach. The intersection of Military West Street/West 11th Street is a four-way intersection with the side-street stop controlled. The dog-leg intersection of Military West Street/Denfield Avenue and West 10th Street is a side-street stop controlled.

5.2.1.3. Parking

There are three parking lot locations on the Benicia High School property. The first parking area is located along the driveway loop off of West 11th Street. These parking stalls are reserved for visitors and administrators. The other two lots are behind the School, between the School and I-780, and southeast of the School, between West 11th Street and Denfield Avenue. Students use both of these lots for parking.

5.2.2. Transportation to/from School

5.2.2.1. Drop-Off and Pick-Up

Many students drive to Benicia High School. The large majority of students that arrange rides with parents are dropped-off and picked-up on Military West Street. Parents pull up on the north and south sides of the Street, south of the School's main entrance. Access to onsite drop-off and pick-up is closed off during school times.

Military West Street/West 11th Street intersection

5.2.2.2. Walking

There are existing marked crosswalks at the following locations near the school:

- Military West Street/Plaza de Oro: yellow transverse crosswalks on the north and east legs
- Military West Street/West 11th Street: yellow transverse crosswalks on the south and east legs

- Military West Street/West 11th Street: in-pavement flashers on the east leg
- Military West Street/Denfield Avenue/West 10 Street: yellow transverse crosswalks on north, south and between the dog-leg on Military West Street
- On the Benicia High School campus, north of West 11th Street: yellow transverse crosswalk on north side of driveway loop

There is one crossing guard at Benicia High School located on the east leg of the Military West Street/West 11th Street intersection.

Many of the student walk east on Military West Street to and from school as well as cross Military West Street from the residential neighborhood to the south. This creates high-volumes of pedestrians crossing Military West Street, a major four lane street.

Two buses at the stop in-front of the School

5.2.2.3. Bicycling

There are existing bicycle lanes on Military West Street in-front of the School. However, these lanes may be used as a pick-up/drop-off location during the school hours, causing potential conflicts.

5.2.2.4. Bus Service

The City of Benicia's transit provider, the Benicia Breeze provides bus service to/from Benicia High School. Five lines operate along Military West Street. These include route numbers: 15, 17, 21, 23, and 75. There is a bus stop in-front of the High School on Military West Street near the West 11th Street intersection. When buses stop at this location they block the School's eastern driveway.

Walkabout attendees watch the action as school is let out (above) and police and City staff at the evening meeting looks at problem areas near the School (below)

5.2.2.5. Benicia's Existing Safe Routes to School Projects and Programs

Benicia's Public Works Department recently constructed several SR2S projects. In 2007, the City of Benicia installed sidewalks and curb ramps near Robert Semple Elementary School, providing a route for walking students. Another project is in progress near St. Dominic's Catholic School. This is a STA Smart Growth project and includes bulb outs, high-visibility crosswalks and Class II bike lanes on East 5th Street.

5.2.3. Engineering Recommendations

5.2.3.1. Walkabout

A walkabout was held at Benicia High School on November 28, 2006. The walkabout included members of local police, the School Vice-Principal, City and STA Staff. Following the audit, STA's Safe Routes to School consultant held a presentation of potential improvements and worked with attendees on problem areas and solutions. Several locations were identified as difficult locations for pedestrians and bicyclists. **Figure 5-3** includes issue locations, the

issues, and possible improvements. Locations include the Military West Street/Plaza De Oro intersection, Military West Street, and the Military West Street/Denfield Avenue/West 10th Street intersection. Identified issues in the walking audit included illegal u-turns on Military West Street, buses blocking the West 11th Street entrance/exit to the school, and a large number of students walking on the sidewalk along Military West Street.

5.2.3.2. Design Concepts

Design Concepts are shown on Figures 5.3 & 5.4. Some of the potential improvements are described below.

Military West Street/Plaza De Oro intersection
Install bulb outs on the corners to decrease the crossing distance for pedestrians

Military West Street
Consider giving Military West Street a "road diet," decreasing the number of lanes from four to two as well as reinstalling the bicycle lanes. The likely result will be slower vehicle speeds along Military West Street. Also, consider a Class I pathway along the north side Miltary West Street

Military West Street/11th Street
Extend the center medians, making it more difficult for drivers to make u-turns on Military West Street and install additional street trees, helping to slow vehicle speeds. See **Figure 5-4** for more detail.

Military West Street/Denfield Avenue/West 10th Street intersection
Relocate the crosswalk across Military West Street, west of the intersection to decrease the number of potential vehicle-pedestrian conflicts.

On-Site Circulation
The current practice of closing off the drop-off and pick-up area on campus should be reviewed and reversing the traffic flow should be considered.

5.2.4. Education Recommendations

- Provide information as to appropriate parking and driving behavior around school for both parents and students early and several times throughout the school year.

5.2.5. Enforcement Recommendations

- In conjunction with local police officers, establish driver education programs early in the school year and follow up periodically with strong enforcement techniques to ingrain proper driver and pedestrian behavior.
- Continue police patrol of the area during drop-off and pick-up hours, encouraging drivers to obey the rules of the road.

5.2.6. Encouragement Recommendations

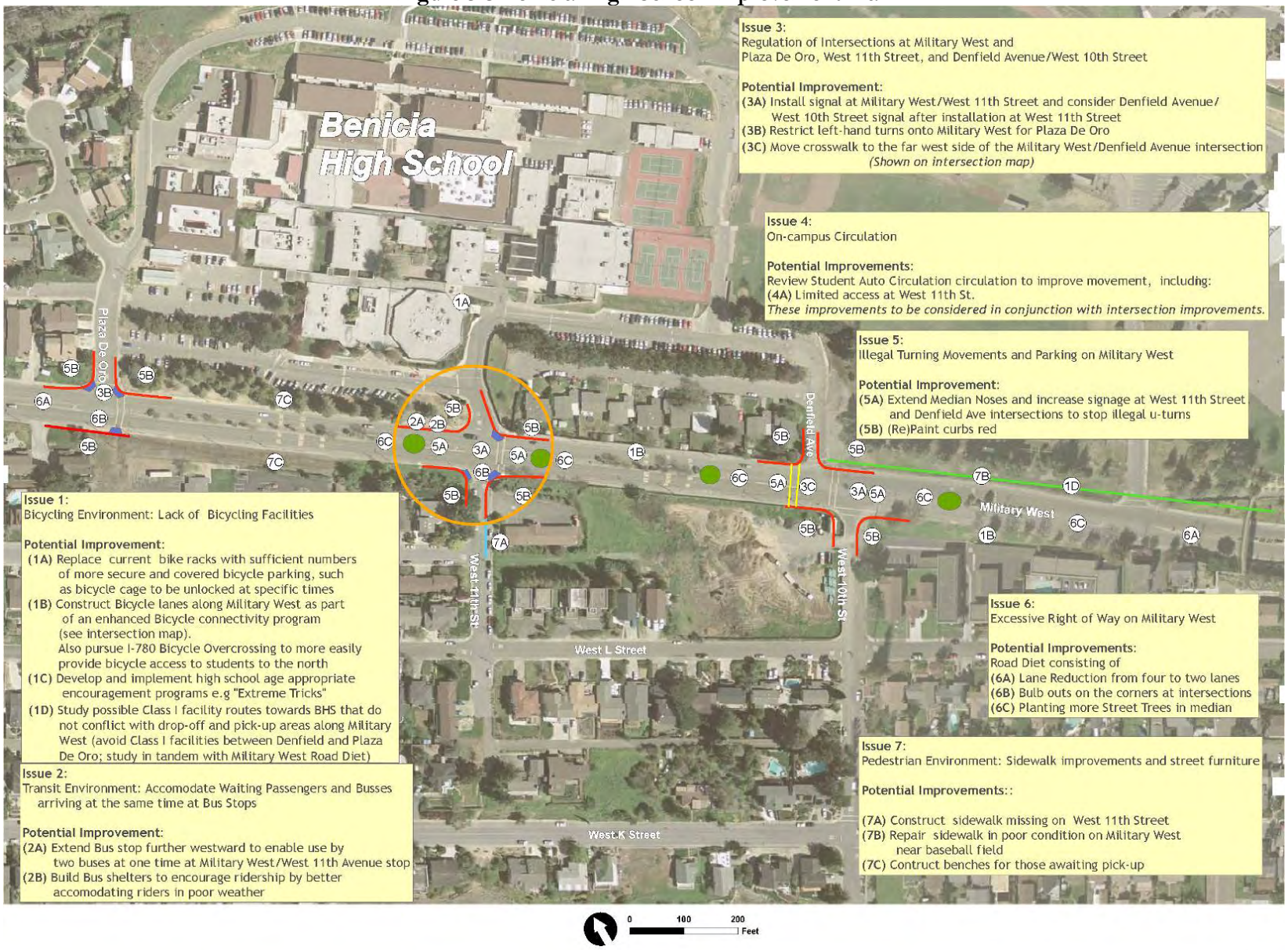
- Build on existing enthusiasm in younger age groups through education programs early in the high school experience. Work towards overcoming the bias in high school students against non-motorized transport by emphasizing the environmental benefits of walking and bicycling.
- Implement high school bicycling encouragement programs, e.g. – "Extreme Tricks"
- Work with the "student council" or student leadership group to engage students in bicycling and walking to school
- Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School

5.3. BENICIA PRIORITY PROJECTS

Six of Benicia's other schools held walking audits and developed projects and programs for SR2S. **Table 5-2 Benicia SR2S Priorities** shows the results of these audits. Listed in the table are improvements and programs that were suggested by walkabout participants. These are also the priority projects and programs for Benicia's SR2S Plan.

Benicia elected to use their Traffic Pedestrian Safety Committee (TPBS) and their City Council/School Board Liaison Committee for project implementation and future planning.

Figure 5-3 Benicia High School Improvement Plan

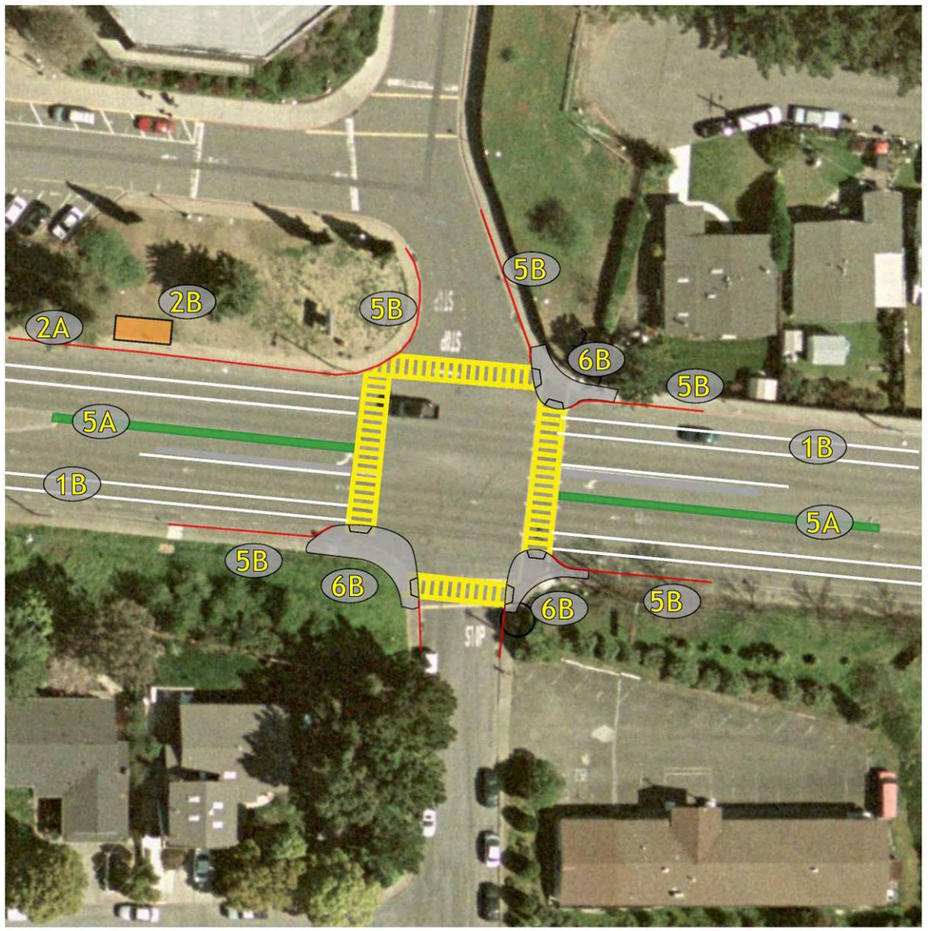


This Page is Intentionally Left Blank

Figure 5-4 Benicia High School Intersection Improvement

SAFE ROUTES TO SCHOOL BENICIA HIGH SCHOOL AUDIT/POTENTIAL IMPROVEMENTS

RECOMMENDED INTERSECTION IMPROVEMENTS: Military West and West 11th Street



Potential Recommendations Key :

- 1B Install Bicycle Lanes on Military West
- 2A Extend Bus Stop to Accommodate two Buses
- 2B Construct Bus Shelter
- 5A Extend Medians along Military West
- 5B Repaint Curbs Red
- 6B Build Bulbouts on Corners

Solano Transportation Authority
SR2S

This Page is Intentionally Left Blank

Table 5-2 Benicia SR2S Priorities

Citywide Recommendations		Engineering		Education		Enforcement		Encouragement
	1	Work with City Traffic Calming Program and its outreach/planning procedures while studying and implementing Safe Routes to School Projects		During assemblies, discuss the health, science, and math elements of the safe routes to school program		Increase police patrol of the area during drop-off and pick-up hours		Work with students to develop ways to increase bicycling and walking
	2	Consider reopening closed off "drop-off and pick-up" areas		Develop programs to incorporate health, science, and math aspects of safe routes to school information in school		With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety		Participate in Bike to School Day and International Walk to School Day activities
	3	Study hot spots of bicycle vs. car traffic at all sites		Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school				Work with the local police department to implement after school bicycle rodeos at elementary schools where students can learn bicycling rules of the road.
	4			Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year				Work with students and parents to develop a map with the safest walking/bicycling routes to school
	5			Where not existing, develop Safety Patrols where older students team with crossing guards				Work with the "student council" to engage students in bicycling and walking safely to school
	6			Crossing Guard Training – Develop a training program that establishes guards' duties, responsibilities, and priorities				Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School

School		Engineering Recommendations	Other Recommendations
Benicia Middle School	1	Improve informal trail in open space north of Southampton Road	**Education** No Additional Recommendations
	2	Install railing behind red curb on eastbound approach to Southampton Rd/Turner Dr crosswalk	**Enforcement** Installation of speed feedback signs on Southampton Rd
	3	Install a "table top" treatment at the Southampton Rd/Turner Dr intersection	**Encouragement** Review existing policy of prohibiting bicycle use on campus
	4	Widen bike path on Southampton Road	Implement school bicycling encouragement programs, e.g. – "Extreme Tricks."
	5	Install a mid block crossing at South Hampton/Grove	
	6	Connect the Middle School and High School with a bike/ped bridge over I-780 (long-term)	

Henderson Elementary School	1	On Hastings Drive north of the School, widen sidewalk and fix fence	**Education** Include educational driving safety information in the *Inside Benicia* newsletter
	2	Open gate in rear of School where Class I pathway connects to campus	Inform parents and students of protected bicycle parking near the playground
	3	Delineate lanes with pavement stencils at School entrance	**Enforcement** No Additional Recommendations
	4	Create carpool unloading/loading area	**Encouragement** No Additional Recommendations

School		Engineering Recommendations	Other Recommendations
Mary Farmar Elementary School	1	Provide ADA accessibility on the path between the driveway loop and School entrance	**Education**
			No Additional Recommendations
	2	Restripe and repaint curb on access road	**Enforcement**
	3	Pave path between the School's playground and Drolette Way	Install speed feedback signs on Military West Street in-front of the School
	4	Consider a mid-block crossing at Drolette Way	Hire a crossing guard if a mid-block crossing is installed at Drolette Way
			Encouragement
			No Additional Recommendations
Matthew Turner Elementary School	1	Install a crosswalk at the entrance of the Community Park parking lot	**Education**
			No Additional Recommendations
	2	Install a path across the Community Park between the School and Kearney Street	**Enforcement**
			Add a crossing guard on the north side of Rose Drive at Kearney Street
	3	Install sidewalks in the Community Park parking lot and lot in front of the School preventing students from walking through them during drop-off/pick-up times	Consider teachers to monitor drop-off/pick-up in addition to the Principle
			Encouragement
	4	Widen the sidewalk on the west side of Dempsey Drive	No Additional Recommendations
	5	Extend no parking zone on Rose Drive and install no parking zone on Primrose Lane	

School		Engineering Recommendations	Other Recommendations
Robert Semple Elementary School	1	Fence off some of the School's exit points to help control pedestrian flow	**Education**
			Perform outreach with students to help prevent them from running into the street
	2	Add sidewalk to missing sections on East 3rd Street	Implement a bicycle education program
	3	Maintain vegetation, sidewalks, and striping near School	Provide crossing education for existing crossing guards
	4	Consider replacing rolled curbs	**Enforcement**
	5	Add an unsignalized, high-visibility crosswalk on E 3rd Street in front of the School	Increase enforcement in tunnel under I-780
			Hire a crossing guard for the East S/East 3rd Streets intersection
	6	Keep gate open to E 2nd Street	
	7	Improve tunnel under I-780 with regular maintenance and a pubilc art mural	**Encouragement**
			Offer carpool parking

School		Engineering Recommendations	Other Recommendations
St. Dominic's Catholic School	1	Install bulb-outs at the East J Street/5th Street intersection (funded)	**Education**
			Address transportation issues in school newsletters
	2	Install high-visibility crosswalks at East J Street/5th Street intersection (funded)	Expand the Parent Handbook to include traffic safety information
	3	Repaint and extend red curb at the East J Street/5th Street intersection	**Enforcement**
			Train parent volunteers to help with the control of unloading and loading procedures during the morning and afternoon school times
	4	Study making East I Street one-way	**Encouragement**
	5	Increase parking restrictions and red curb at the East I Street/5th Street intersection	No Additional Recommendations

5.4. DIXON

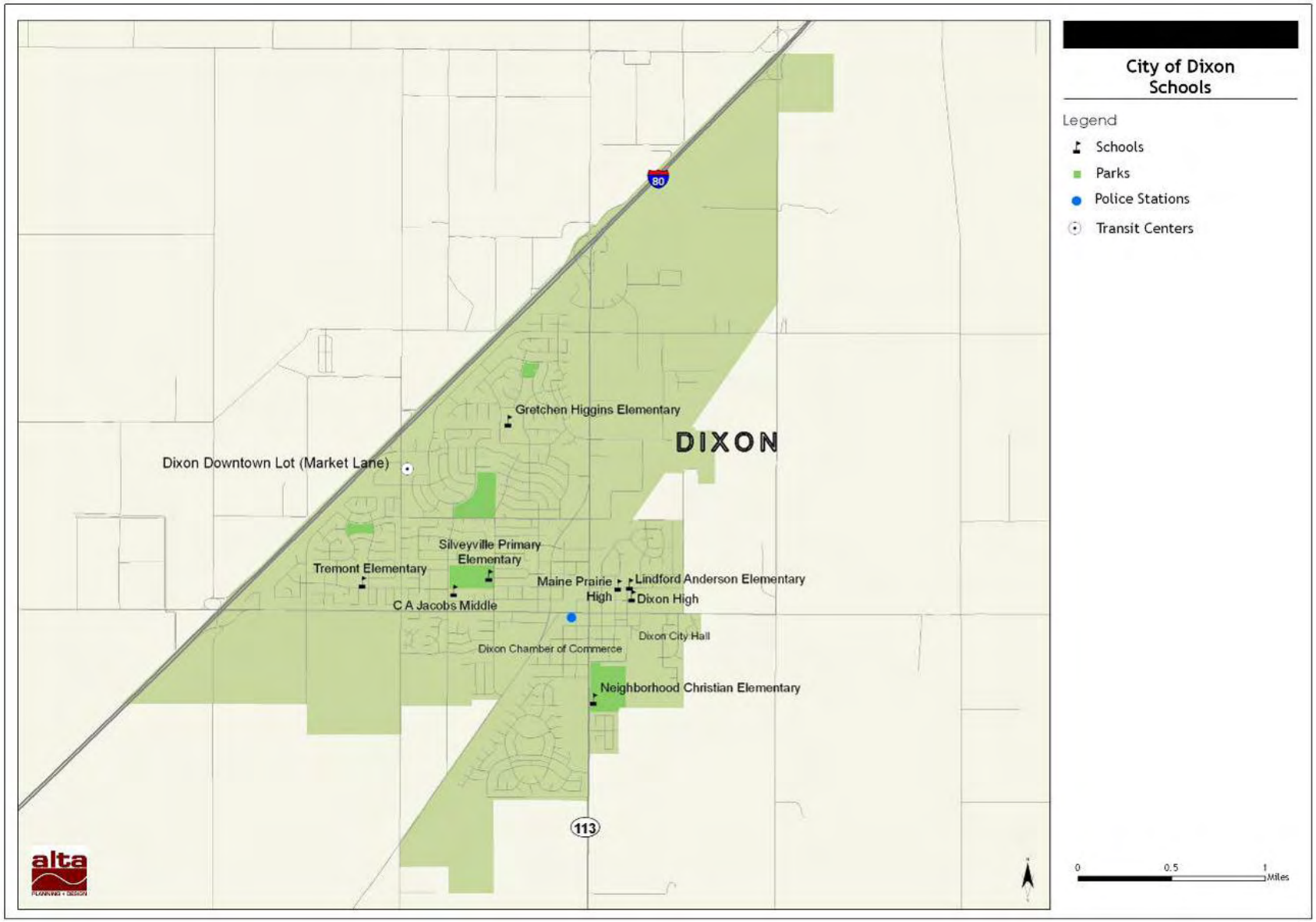
Dixon's SR2S planning process was conducted by its SR2S Community Task Force. **Table 5-3 Dixon SR2S Task Force** shows the participants.

Table 5-3 Dixon SR2S Task Force

Position	Name	Title
City Appointment	Mary Ann Courville	Mayor
Public Safety Rep	Tony Welch	Dixon Police Department
School Board Appt.	Chad Koopmeiners	Dixon Unified School District
STA TAC Rep	Royce Cunningham	Dixon City Engineer
STA BAC Rep	James Fisk	Dixon Resident
STA PAC Rep	Michael Smith	Council Member

As explained in Chapter 3, an extensive public process was undertaken to develop a list of safe routes to school projects and programs in Dixon. A map of Dixon and its seven schools are shown in **Figure 5-5.** Dixon's audit walkabout occurred at Lindford Anderson Elementary School, details of the audit are explained in the next sections.

Figure 5-5 Dixon Schools

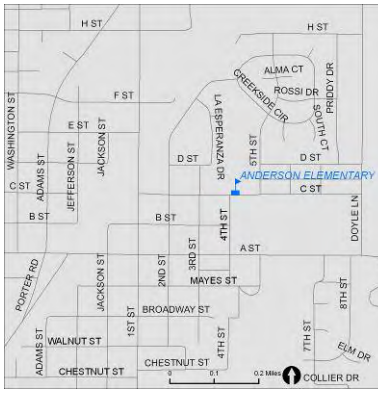


5.5. DIXON SCHOOL WALKABOUT – LINFORD ANDERSON ELEMENTARY SCHOOL

5.5.1. Existing Conditions

5.5.1.1. School Location

Linford Anderson (Anderson) Elementary School, located at 415 East C Street in Dixon, serves kindergarten through 6th grades. For the 2006-2007 school year, Anderson Elementary School had an enrollment of approximately 500 students. The School site is bound by C Street to the south, 2nd Street on the west, D Street to the north, and 5th Street to the east. C Street is a local collector street that provides primary access to the school's main entrance. D Street provides access to the back entrance – which is opened only during school bell times and is staffed at all times. 1st Street (also known as Highway 113), several block to the west, is a major north-south arterial. Pedestrians and bicyclists access the school from both C and D Streets.



Anderson Elementary School Area Map

The former Dixon High School site is located at 455 East A Street and the site backs up to C Street and Anderson Elementary School. The High School moved to a new location at 555 College Way. The former High School will become the new Dixon Middle School in 2008. In comparison to existing conditions, when the new Middle School opens, school-related traffic will likely increase.

5.5.1.2. Traffic Controls

The T-intersection of C and 4th Streets is immediately in front of the School's main entrance and is all-way stop controlled. The two intersections to the west, 3rd and 2nd, and the nearest intersection to the east, 5th Street, are side-street stop controlled. The intersection of C and 1st Streets is also a T-intersection with C Street stop controlled.

5.5.1.3. Parking

On-site parking is restricted to staff and faculty only. Therefore, all students are picked up or dropped off on-street, primarily on C Street though a few students utilize D Street.

5.5.2. Transportation to/from School

5.5.2.1. Drop-Off and Pick-Up

All students are dropped-off and picked up on-street, primarily on C Street, though a few students utilize D Street. There is significant congestion on C Street as parents jockey for position, in both directions, for a parking spot by the curb or double park while waiting for their child. Parents pick-up students while stopping in the middle of the street. Children stream across C Street at 3rd Street headed for their parent's cars or home.

Students getting picked up at School

Students crossing East C Street at 4th Street

A student and parent walking to school

5.5.2.2. Walking

There are existing marked yellow transverse crosswalks on all three legs of the C and 4th Street T-intersection. There is one crossing guard plus one school staff member who supervises the students at the main entrance. The T-intersection of C and 1st Street has yellow transverse crosswalks on all three approaches and there is no crossing guard.

A significant number of students walk on the north side of C Street on their way home. The sidewalks are a narrow, 4-feet wide, and some locations need repair. Students crossing C Street at 4th Street are bunched together and generally do not pay attention to the guard nor the traffic.

At the back of the school, by D Street, a school staff person unlocks a gate to allow students to exit to buses waiting, for parents, or to walk home. After a set period of time, the gate is again locked.

5.5.2.3. Bicycling

There were five bicycles observed using the bicycle racks during the Walking Audit (as described in Section C). There are no on-street bicycle facilities in the neighborhood. Some bicycles were observed using the sidewalk immediately in front of the school's main entrance while there were significant numbers of students walking thereby causing some conflict.

5.5.2.4. Bus Service

No Information Available (please provide)

5.5.2.5. Dixon's Existing Safe Routes to School Projects and Programs

Currently in Dixon, there are some safe routes to school projects and programs underway. In terms of engineering, recently, a flashing crosswalk was installed on Pitt School Road. Police are involved with the city's schools, offering traffic safety assemblies and providing citation forms to crossing guards. For repeat offenders of crossing regulations, letters and visits by are made by police officers. To encourage students to walk and bicycle to school, schools have begun creating suggested routes to school maps.

5.5.3. Engineering Recommendations

5.5.3.1. Walkabout

A walkabout was held at Anderson School on Wednesday, April 18th 2007. The walkabout included members of local police, the school Administrators, City and STA Staff. Following the audit, STA's Safe Routes to School consultant held a presentation of potential improvements and worked with attendees on problem areas and solutions. Several locations were identified as difficult locations for pedestrians and bicyclists. **Figure 5-6** – Anderson School Improvement Plan includes issue locations, the issues, and potential capital improvements. Locations include the intersection of C and 4th Streets, C Street and the

C Street sidewalk, and the intersection of C and 1st Street. There were many issues identified during the walking audit, including traffic congestion on C Street, students mixing with motor vehicle traffic on C Street, and narrow sidewalks, queuing on C Street at 1st Street.

5.5.3.2. Design Concepts

The following design concepts were developed as improvements for the issues and are shown on Figure 5-6. Many of the potential improvements are described below.

Pedestrian Safety on East C Street at 1st Street

The installation of curb extensions ("bulbouts") would shorten the walking distance to cross 1st Street and improve the sight distance of pedestrians. If warranted, the installation of a traffic signal or time-operated flashing beacons could better alert motorists of pedestrian activity. Prohibition of left turns could also reduce driver frustration from waiting in long queues on eastbound East C Street.

Congestion on East C Street

The lengthening and clarification of the student pick up and drop off areas would help ease congestion on East C Street. A traffic circle at East C Street at 5th Street should be considered, to allow and control the U-turns required for parents to pick-up their students on the north side of East C Street. Also, utilization of the parking lot for the remodeled Dixon High School could be an opportunity for both schools to coordinate efforts to encourage this lot as an off-street drop-off and pick-up area. With the existing crossing guard at East C Street and 4th Street, a safe and assisted crossing would be possible. Future plans for the remodeled High School is to become a Middle School. The High School is moving to a new campus in southern Dixon. It is suggested that the Middle School move forward with its own Safe Routes to School planning.

Students begin to cross East C Street

Pedestrian Safety

Install curb extensions or visual striping on East C Street at 3rd and 4th Streets to shorten pedestrians crossing distances, improve visibility of pedestrians and motorists, and to prevent vehicles from parking there during drop-off and pick-up. This improvement would have to be coupled with appropriate signing that directs parents to the proper pick-up areas.

5.5.4. Education Recommendations

- Provide information as to appropriate parking and driving behavior around the School for both parents and students early in the school year and several times throughout the school year.
- Develop programs to incorporate health, science, and math aspects of safe routes to school information in school classes, for science fairs, extra credit, and homework assignments.
- During assemblies held during the school year, discuss the health, science, and math elements of the safe routes to school program.

5.5.5. Enforcement Recommendations

- In conjunction with local police officers, establish driver education programs early in the school year and follow up periodically with strong enforcement techniques to ingrain proper driver and pedestrian behavior.
- Increase police patrol of the area during drop-off and pick-up hours, encouraging drivers to obey the rules of the road.
- Place a speed radar trailer on East C Street several times throughout the school year.

5.5.6. Encouragement Recommendations

- Build enthusiasm in younger age groups through education and inventive programs so that when students and parents "graduate" to junior high or high school they are already familiar with the concepts of safe routes to school and its many benefits. This would work towards overcoming the bias in high school students against non-motorized transport by emphasizing the environmental benefits of walking and bicycling.
- Work with the "student council" or student leadership group to engage students in bicycling and walking safely to school.
- Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School.

5.6. DIXON PRIORITY PROJECTS

At the time of this planning effort, Dixon School District held one additional walking audit at Tremont Elementary School. Resulting from this walking audit was a series of proposed projects and programs for implementation. The Tables at the end of this Plan includes Dixon's SR2S Priorities, showing the results.

Dixon's Task Force decided that the most important projects and programs for the earliest implementation are:

- Engineering: *Improvement 3B* at Lindford Anderson
- Education: Providing information as to appropriate parking and driving behavior around the School for both parents and students early in the school year and several times throughout the school year.
- Encouragement: providing incentives such as punch cards that get stamped when a student bikes or walks to school and when they achieve a certain level of use they receive a prize.

Dixon elected to use their existing Transportation Advisory Committee (http://www.ci.dixon.ca.us/cityclerk/transportationadvisorycommission_list.html) for project implementation and future planning.

Figure 5-6 Anderson School Improvement Plan

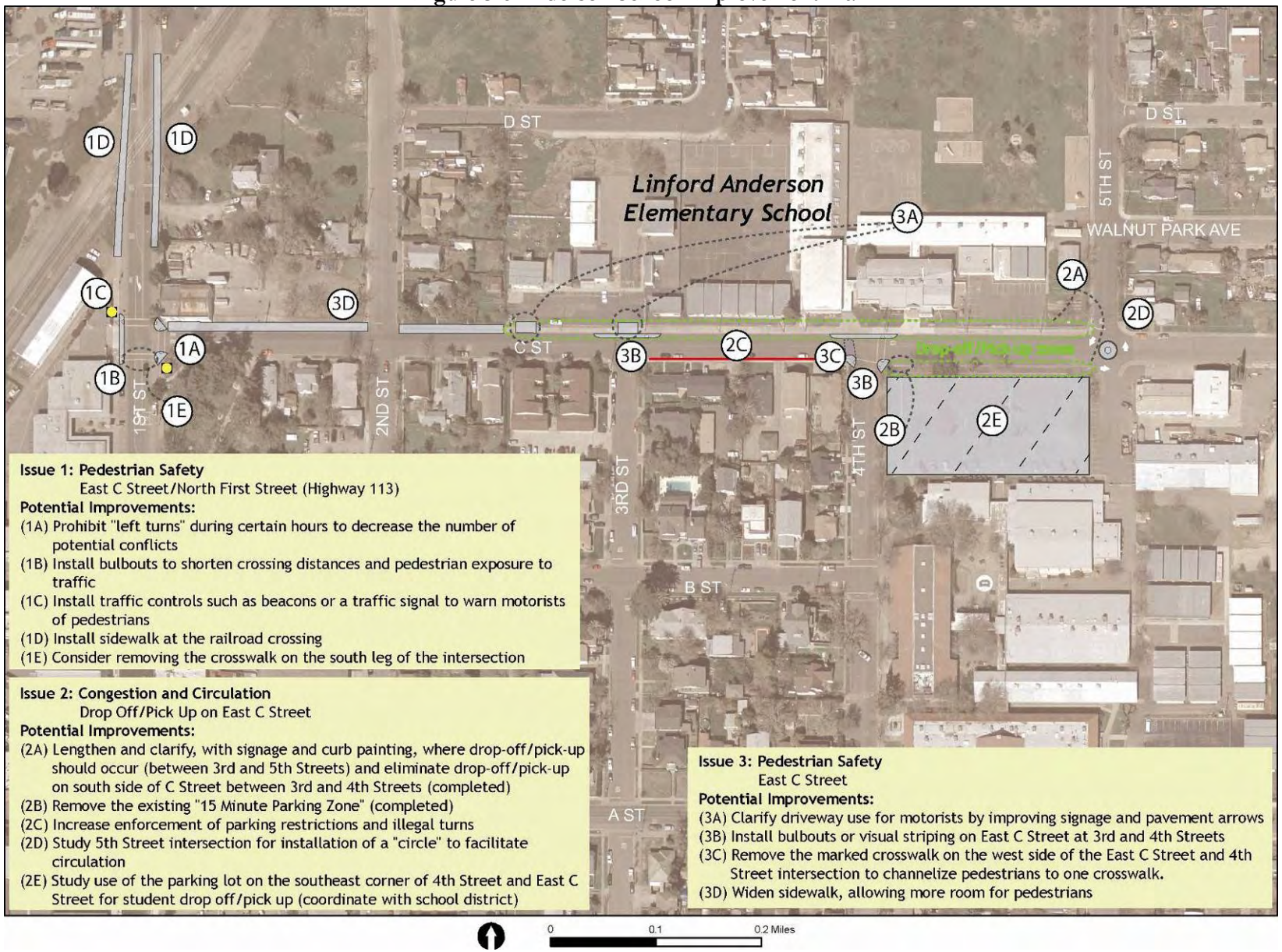


Table 5-4 Dixon SR2S Priorities

School		Engineering Recommendations	Other Recommendations
Tremont Elementary School	1	Review all-way stop warrant at the Pitt School Road/Rehrmann Drive intersection	**Education** Continue articles in parent newsletters about safety issues, road safety, and school regulations
	2	Consider controls at the Brians Way/Sequoia Way and Manning Way/Brians Way intersections with crosswalks	**Enforcement** Increase regular police presence during pick-up/drop-off times
	3	Install a high-visibility crosswalk across Rehrmann Drive at Carpenter Court	**Encouragement** No Recommendations

5.7. FAIRFIELD

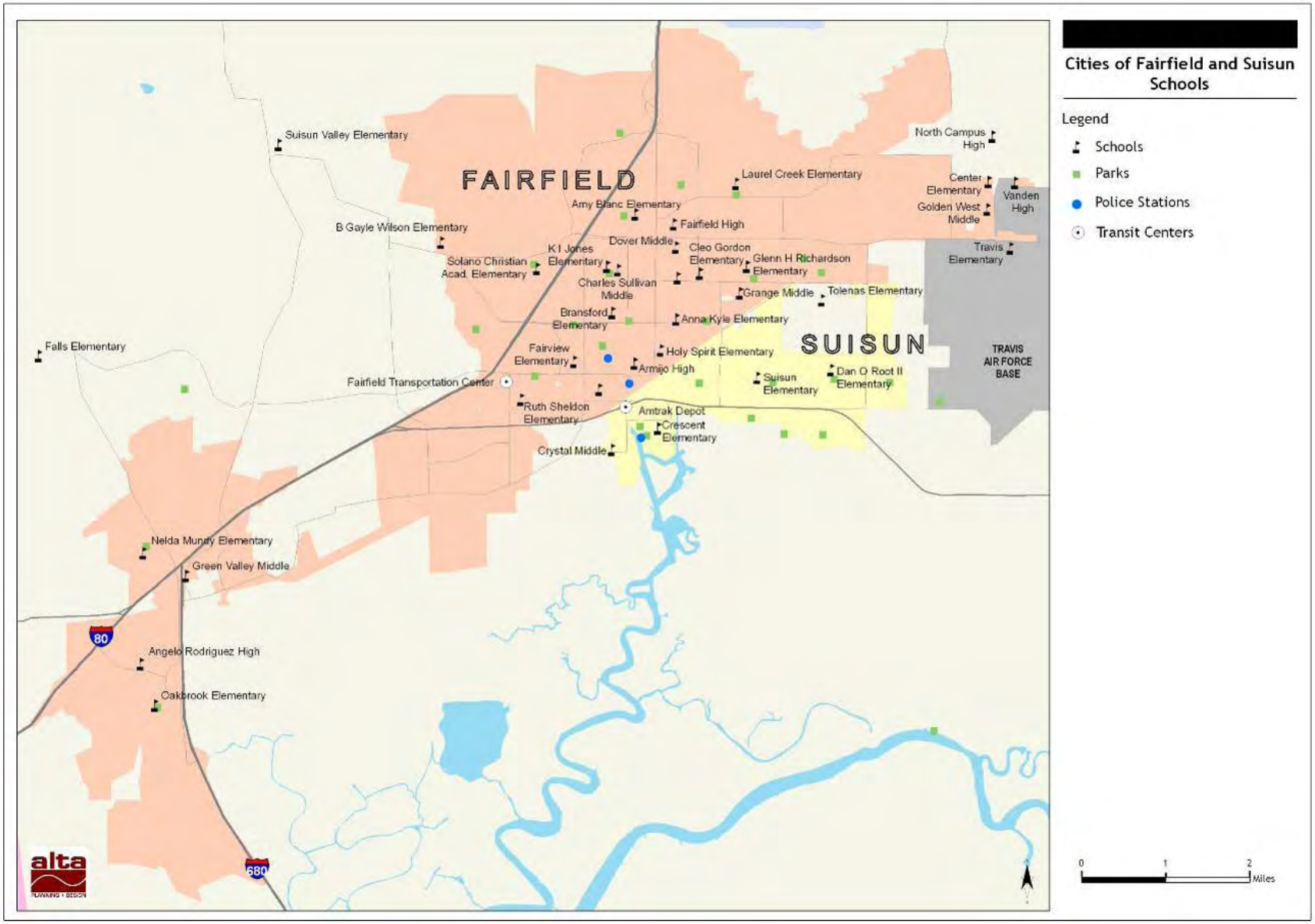
Fairfield's SR2S planning process was conducted by its SR2S Community Task Force. **Table 5-5 Fairfield SR2S Task Force** shows the participants.

Table 5-5 Fairfield SR2S Task Force

Position	Name	Title
City Appointment	Gian Aggerwal	Planning Commissioner
Public Safety Rep	Fred Wold	Retired-Part time PD
Fairfield/Suisun Rep	Kathy Marianno	Fairfield/Suisun School Board member
Travis USD Rep	Wanona Ireland	Vice President
STA TAC Rep	Jim Leitner	City of Fairfield Traffic Engineer
STA BAC Rep	Randy Carlson	Fairfield Resident
STA PAC Rep	Pat Moran	Fairfield Resident

As explained in Chapter 3, an extensive public process was undertaken in developing a list of safe routes to school projects and programs in Fairfield. A map of Fairfield and Suisun is shown in **Figure 5-7.** Fairfield's audit walkabout occurred at Anna Kyle Elementary School, details of the audit are explained in the next sections.

Figure 5-7 Fairfield Schools

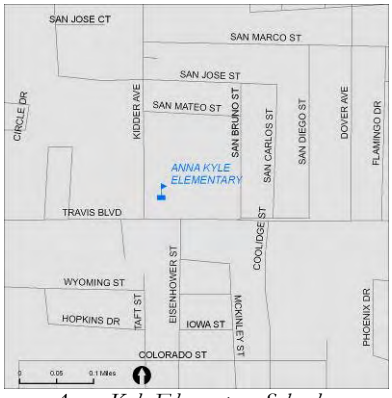


5.8. FAIRFIELD SCHOOL WALKABOUT – ANNA KYLE ELEMENTARY SCHOOL

5.8.1. Existing Conditions

5.8.1.1. School Location

Anna Kyle Elementary School is located at 1600 Kidder Avenue in Fairfield. The School serves grades Kindergarten through 6 and for the 2006-2007 school year, had an enrollment of approximately 765 students. The Anna Kyle School site is bound by East Travis Boulevard to the south, Kidder Avenue to the west, houses and San Mateo Street to the north, and houses and San Bruno Street to the east. East Travis Boulevard is a major arterial and provides walking access to the School. Kidder Avenue is a neighborhood collector that provides access to the School's parking lot and a drive-through loop. San Mateo and San Bruno Street are neighborhood roads. Other than from East Travis Boulevard, pedestrians and bicyclists access the School from Kidder Avenue, through the school's parking lot and driveway loop area.



Anna Kyle Elementary School – Fairfield, CA

5.8.1.2. Traffic Controls

The intersection of Kidder Avenue/San Mateo Street is a side street stop intersection. The San Bruno Street/San Mateo Street does not have any controls. The San Bruno Street/East Travis Boulevard and Kidder Avenue/East Travis Boulevard intersections are side street stop. Eisenhower Street/East Travis Boulevard is a three-legged signal controlled intersection. Crossing guards are discussed in the Walking sub-section.

5.8.1.3. Parking

There is one parking lot at Anna Kyle School that is located on the northwest corner of the grounds, off of Kidder Avenue. This area is reserved for faculty – visitors are to park on the street.

5.8.2. Transportation to/from School

5.8.2.1. Drop-Off and Pick-Up

A designated drop-off and pick-up area is located in the School's parking lot. During the afternoon pick-up times, a faculty member supervises the lot where parents are to pull in the northwest driveway, circulate counterclockwise, and exit the same driveway. There is a sign at the driveway for exiting vehicles to turn right only onto Kidder Avenue. However, many vehicles that exit the parking lot during drop-off and pick-up times turn left onto Kidder Avenue. The southern driveway is closed (with construction cones) to inbound and outbound traffic

A vehicle turns left out of the right turn only driveway

Circulation through the parking lot for drop-off and pick-up appears to be substantially underutilized. Currently, many parents pick up students along Kidder Avenue and East Travis Boulevard. Parents were observed stopping in the middle of the street to unload or load students. Parents were also observed

stopping on East Travis Boulevard at the Eisenhower Street intersection - when the light is red, parents use the waiting time for unloading and loading passengers.

A parents stops on Kidder Avenue to pick-up a student

During drop-off and pick-up hours, students also cross Kidder Avenue at various, uncontrolled mid-block locations. Some parents pick up their students in the street along Kidder Avenue southbound, while others use the parking area in the apartment complex directly across from the school. Since there are no designated crossing locations, students cross Kidder Avenue at multiple locations in front of the school.

5.8.2.2. Walking

There are two existing yellow transverse crosswalks at the Kidder Avenue/San Mateo Street intersection on the south and east legs, with limit lines on all three legs. The limit line on the southern leg is approximately 20 feet from the crosswalk. The intersection of San Bruno Street/San Mateo Street, northeast of Anna Kyle School, has no crosswalks. Both the San Bruno Street/East Travis Boulevard and Kidder Avenue/East Travis Boulevard intersections have one transverse yellow crosswalk on the northern legs. The Eisenhower Street/East Travis Boulevard intersection has transverse yellow crosswalks on all three legs.

Students walking along East Travis Boulevard where there is an existing radar speed sign

There are two crossing guards assisting pedestrians near the Anna Kyle campus. One is located at the Kidder Avenue/East Travis Boulevard intersection, assisting students crossing Kidder Avenue. The other location is at the Eisenhower Street/East Travis Boulevard intersection. There is also a faculty member that supervises the East Travis Boulevard school exit in the afternoon.

The majority of students walking to and from school travel on Kidder Avenue north of the School or East Travis Boulevard east of the School. Kidder Avenue has adequate sidewalks on both sides of the street and with the low volumes and speeds of vehicles and on-street parking serving as a buffer, it is a comfortable walking experience. The crosswalks at the intersections of Kidder Avenue and San Mateo Street have high demand for pedestrians accessing the west side of Kidder Avenue.

A bicyclist traveling in the wrong direction along East Travis Boulevard

East Travis Boulevard has high speeds and volumes of vehicles. These aspects, accompanied with 4.5 foot sidewalks with no planting strip or buffer, makes for an uncomfortable and unpleasant walking environment. Adding sidewalk width to the existing infrastructure, such as the existing radar speed signs, will improve the area for students.

5.8.2.3. Bicycling

There are currently no existing on-street bicycle facilities near the School. During the walking audit (described more in Section C), numerous bicyclists were seen riding on the sidewalks and in the wrong directions on the street Bicyclists were also seen riding on

sidewalks with pedestrians. During the walking audit, as described in Section C, approximately 10 bicycles were parked at the racks.

5.8.2.4. Bus Service

Fairfield-Suison School District provides bus service for students. The Bus Fee Schedule is below and shows the costs for students to take the bus to school. The City of Fairfield also operates three bus lines (1, 2 & 6) along East Travis Boulevard.

Type of Pass	Price*
Full Year Pass	$275
One-Way All Year Pass A.M.	$138
One-Way All Year Pass P.M.	$138
Semester Pass	$138
Semester Pass A.M. Only	$69

*Prices as of 2006/07

5.8.2.5. Fairfield's Existing Safe Routes to School Projects and Programs

In 2006, the Fairfield-Suisun City School District was awarded $150,000 from the Federal Transportation Improvement Program for education, enforcement, and encouragement programs specifically for safe routes to school. More specifically, the funds were allocated for educating students and families, incorporating all aspects of safety into school education, including components of "Street Smarts" into schools, creating brochures, holding safety assemblies, and establishing school safe traffic zones.

A group shares their potential improvements at the SR2S presentation

The City of Fairfield is constructing a sidewalk where there is currently a gap near E. Ruth Sheldon Elementary School and TC McDaniels School. The sidewalk is along Woolner Avenue and is part of the City's and Fairfield-Suisun School District's "Safe Passage" program. The project will be completed in 2007-2008.

Example Signs

5.8.3. Engineering Recommendations

5.8.3.1. Current Improvements

The Fairfield School District is remodeling the School and parking lot this summer. The area of the School in the southeast corner of the existing parking lot will become the main school entrance and will also operate as the primary drop-off and pick-up area at the School. The existing main entrance on the driveway loop will be changed to an emergency exit only.

5.8.3.2. Walkabout (Audit)

A walkabout was held at Anna Kyle Elementary School on Thursday, April 26, 2007. The walkabout included members of local police, school Administrators, City and STA Staff. Following the audit, STA's Safe Routes to School consultant held a presentation of

potential improvements and worked with attendees on problem areas and potential solutions. Several locations were identified as difficult locations for pedestrians and bicyclists. **Figure 5-8 –Anna Kyle Elementary School Improvement Plan** includes issue locations, the issues, and potential capital improvements. Locations include pedestrian safety at the Kidder Avenue/San Mateo Street and San Bruno Street/San Mateo Street intersections, traffic and pedestrian circulation on Kidder Avenue and in the Anna Kyle School parking lot, pedestrian crossing safety at the East Travis Boulevard/Eisenhower Street intersection, and the narrow sidewalk conditions for students traveling along East Travis Boulevard. There were many issues identified during the walking audit, including vehicles not stopping for pedestrians at crosswalks, parents picking-up students in the middle of the street or undesignated locations, and difficult and uncomfortable walking and bicycling conditions.

5.8.3.3. Design Concepts

The following design concepts were developed as improvements for the identified issues. These concepts are shown in Figure 5-8. Most of the potential improvements are described below.

Pedestrian Crossing at Kidder Avenue/San Mateo Street

To improve safety for pedestrians crossing at Kidder Avenue/ San Mateo Street, this intersection should be studied for all-way stop control warrants. If warrants are not met for all-way stop controls, to improve visibility of pedestrians at the crossing, bulb outs should be installed, the stop bar on the southern leg should be moved north so it is closer to the crossing, and red curbs should be installed on the northeast side of the intersection on Kidder Avenue. Bulb outs would not only increase visibility of pedestrians but decrease pedestrian crossing distance. **Figure 5-9 –Kidder Avenue/San Mateo Improvements** show existing conditions and the stop signs with curb extensions, and the moved stop bar improvements.

Pedestrian Crossing at San Bruno Street/San Mateo Street

Currently, there are no marked crosswalks or stop signs at this intersection. Transverse style crosswalks should be placed on the south and west legs for pedestrians walking in the neighborhood adjacent to the School.

School Site Pedestrian Circulation

As previously described, a significant number of students are being picked up mid-block on Kidder Avenue. Improvements are suggested to help mitigate this pattern and improve pedestrian and vehicle circulation.

Physically channelizing the bus loop exit and requiring right turns only, will provide a location for students to exit and wait for rides on Kidder Avenue in front of the parking lot. Signs should be installed alerting drivers that they can drop-off and pick-up adjacent to the parking lot along Kidder Avenue but may not unload or load adjacent to the bus loop. The goal is to focus the short-term parking, with its high turnover and student activity, further north away from motorists turning from East Travis Boulevard.

In addition to the modifications at the southern portion of Kidder Avenue, the northern exit driveway should also be modified. It is signed for right turn only but many vehicles still turn left. The exit should be physically channelized, forcing vehicles to turn right and then use San Mateo Street to return to East Travis Boulevard. In addition, the right-turn only signage should be changed to a universal-style sign for better understanding by non-English speaking parents.

Another option is to close the parking lot completely to drop-off and pick-up traffic. This would force parents to use the street for drop-off and pick-up. Also, this would possibly decrease the number of vehicles wanting to contend with the school traffic and make students use other modes of transportation.

Also, on-site circulation should be improved with the utilization of additional staff or parent volunteers (possibly some older students with specific roles) to monitor and regulate the pick-up and drop-off activity, institution of two lanes (one always moving and one permitted to stop and wait), use of temporary signs reminding motorists of the rules, and information provided to parents that this on-site location is the preferred pick up and drop off location. This program would require a consistent effort to effectively work and could offer some rewards by reducing on-street congestion and students crossing the streets.

Pedestrian Crossing at East Travis Boulevard/Eisenhower Street
On the western leg of the intersection, a median island on East Travis Boulevard should be installed, providing a "slowing" effect to motorists.

East Travis Boulevard Sidewalks
The northeast corner of the East Travis Boulevard/Kidder Avenue intersection has no school site lighting for pedestrians. This makes for a difficult walking environment when there are evening school activities. Therefore, lighting should be placed on the corner to increase visibility of and for pedestrians.

Along East Travis Boulevard, narrow sidewalks and no existing buffer between pedestrians and traffic makes for an uncomfortable walking experience. If right-of-way allows, sidewalks should be widened, allowing more room for pedestrians.

5.8.4. Education Recommendations

- The School's Traffic and Safety Committee should develop a "Walking School Bus" program, where parents take turns walking a group of students in their neighborhood to school.
- Develop a Safety Patrol program where older students team with crossing guards and share their experiences with other students.
- Provide information in English and in Spanish pamphlets informing parents of proper circulation patterns for drop-off and pick-up times at the beginning and middle of the school year. School staff and police can also provide these to parents that are not abiding by the correct traffic movements to drop-off and pick-up times.
- Crossing Guard Training – Continue providing an annual training program to ensure guards clearly understand their priorities and clearly and uniformly establish their duties and responsibilities.

A police officer discusses proper pick-up procedures with a parent at Anna Kyle School

5.8.5. Enforcement Recommendations

- In conjunction with local police officers, establish driver education programs early in the school year and follow up

periodically with strong enforcement techniques to ingrain proper driver and pedestrian behavior.

- Work with and train parent volunteers to help with the control of unloading and loading procedures during the morning and afternoon school times.

A walking school bus on the way to school

- Implement regular speed enforcement on East Travis Boulevard and Kidder Avenue.

5.8.6. Encouragement Recommendations

- Work with the local police department to implement after school bicycle rodeos where students can learn proper bicycling rules of the road.
- Work with local bicycle retailers and community health organizations to donate or provide subsidized bicycle helmets and bicycles to students.
- Work with students and parents to develop a map with the safest bicycle routes to school. This can incorporated into a classroom activity teaching kids map usage, and scale and distance measurement.
- Participate in Bike to School Day and International Walk to School Day activities.
- Develop a "Walk & Roll" program where students receive stamps on a card for walking or bicycling to school. After a certain number of non-motorized trips, students receive prizes or incentives to continue using these modes of transportation.

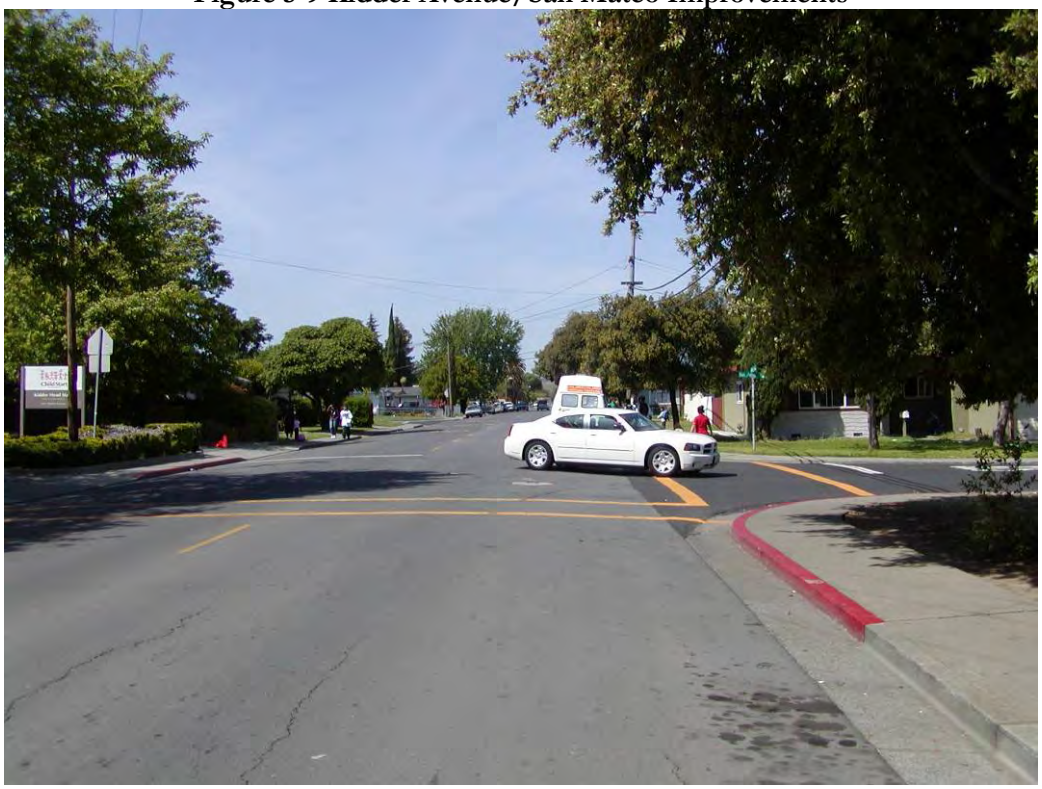
5.9. FAIRFIELD SCHOOL DISTRICT PRIORITIES

At the time of this planning effort, Fairfield-Suisun School District held five additional walking audits. Resulting from these walking audits was a series of proposed projects and programs for implementation. **Figure 5-6** includes Farifield's SR2S Priorities. These are priority projects and programs for Farifield's SR2S Plan.

Fairfield chose to use their "School District Facilities/City Public Works Staff" meetings in coordination with "City Staff 3E's committee" for project implementation and future planning.

Figure 5-8 Anna Kyle School Improvement Plan

Figure 5-9 Kidder Avenue/San Mateo Improvements



Without Improvements

With Improvements

Table 5-6 Fairfield SR2S Priorities

Fairfield Citywide Safe Routes to School Recommendations (All Fairfield Schools)							
	Engineering		Education		Enforcement		Encouragement
1		1	Develop programs to incorporate health, science, and math aspects of safe routes to school information in school	1	With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety	1	Work with students to develop ways to increase bicycling and walking
		2	Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school	2	Work with police to perform specific enforcement before school begins and after school dismisses.	2	Start a "Frequent Walk/Ride Card" program with bicycle helmets and other travel related prizes (umbrellas, bicycle raffles, etc).
		3	Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year			3	Participate in Bike to School Day and International Walk to School Day activities
		4	Where not existing, develop Safety Patrols where older students team with crossing guards			4	Work with the local police department to implement after school bicycle rodeos at elementary schools where students can learn bicycling rules of the road.
		5	Crossing Guard Training –Continue providing a training program that establishes guards' duties, responsibilities, and priorities			5	Work with students and parents to develop a map with the safest walking/bicycling routes to school
						6	Work with the "student council" to engage students in bicycling and walking safely to school
						7	Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School
						8	Boost outreach for Fairfield's "Parent Patrol" Program.

School	Responsible Agency	Engineering Recommendations	Other Recommendations
David Weir Elementary School	SD	Use sheltered parking lot entrance gate for parking lot pick-up and drop-off to relieve significant amounts of vehicle and student congestion near the entrance to the parking lot and the intersection of Tabor and Pennsylvania.	**Education** Create Safe Routes to School pamphlets for students and parents describing circulation patterns and safety tips, for use at assemblies, in-class demonstrations, and for police to give to parents after school and during open houses and back to school nights. Hold safety training for students coordinated with the police department. Retrain crossing guards to safely block traffic before allowing students to cross.
	C	Install high visibility warning devices (e.g., radar speed feedback signs, flashing beacons) along Pennsylvania to better alert speeding motorists of the 25mph school zone.	**Enforcement** No Additional recommendations.
	SD	Paint a "wait here" pedestrian limit line before the sidewalk on the west side of the Tabor/Pennsylvania intersection to deter students from waiting in the street before crossing Pennsylvania.	**Encouragement** Create a student safety patrol to help queue students crossing at cross walks, ensure that the parking lot entrance at Tabor remains closed to parents, and enhance the visibility of students crossing at Tabor/Pennsylvania intersection.
	C	Paint an advanced stop bar at the intersection of Tabor/Pennsylvania to increase the distance between where cars stop and the crosswalk.	Promote walk to school day.

*Responsible Agency – C=City, SD=School District

School	Responsible Agency	Engineering Recommendations	Other Recommendations
E. Ruth Sheldon Elementary	C	Install curb extensions at the southeast corner of Beck and Woolner to slow NB to EB right turn traffic and to add space for students to wait to cross Beck.	**Education**
			Invite police officers/mascot to deliver presentations in classrooms on safety.
	C	Consider the relocation of the crosswalk at Vine and Woolner about 130 feet to the east, closer to the school gate, to help prevent mid-block crossings and help prevent parent U-turns & red zone violations.	Distribute school arrival and dismissal times to neighbors and local businesses to increase their awareness of when additional students are walking and bicycling to school.
	C	Study the installation of Safe Routes to School improvements along Woolner Ave. as part of future Allan Witt Park development plans (e.g., median barrier improvements, crosswalk locations, pedestrian islands, etc).	**Enforcement**
			No Additional recommendations.
	C	Improve/clean up the area near the corner of Gregory and Woolner where homeless people, drug abusers and older students are known to loiter, preventing students from walking on the sidewalk safely.	**Encouragement**
			Hold bicycle rodeos to educate and encourage kids to bicycle to school safely.
	C	Install Sidewalk on southside of Woolner between Midway Ct. and Serrano Dr.	Create a safety patrol program.
			Start a "Frequent Walk/Ride Card" program with bicycle helmet and other travel related prizes.
	C	Consider prohibiting westbound left turns into T.C McD. Driveway.	
			Work with PE teachers to chart walking distance to school for "Walk Across America/Golden Sneaker Award" program.

*Responsible Agency – C=City, SD=School District

School	Responsible Agency	Engineering Recommendations		Other Recommendations
Laurel Creek Elementary	C	Work with Fairfield Dept of Community Services to create paved pathways through Laurel Creek Park to the school for bicycles and pedestrians.		**Education** Promote environmental benefits and health benefits of walking and bicycling to school.
	C	Work with Fairfield Dept of Community Services to expand the parking lot in conjunction with designing safer pick-up and drop-off areas for students who walk or bike to avoid.		**Enforcement** No Additional Recommendations
	C	Relocate the City of Fairfield bus stop along west of the school along Gulf Drive and paint additional loading zones on the south side of Gulf Dr.		**Encouragement** No Additional Recommendations
	C	Increase the visibility of crosswalks at "Cement Hill Road & Gulf Drive" and "Cement Hill Road & Peppertree Dr."		
	C	Add crosswalks at Gulf Dr. and Peppertree Dr.		
Nelda Mundy Elementary	C	Study the best way to install ADA compliant access at the pedestrian crossing on the south end of Vintage Valley Dr.		**Education** No Additional Recommendations
				Enforcement Study the need for a crossing guard at Mangels Blvd and Green Valley Road to assist students with crossing over 140' of a 4-lane arterial.
				Encouragement No Additional Recommendations

*Responsible Agency – C=City, SD=School District

School	Responsible Agency	Engineering Recommendations	Other Recommendations
Vanden High School	C	Carryout currently planned City of Fairfield & Travis USD engineering projects: • (C) Install traffic signal at Peabody and Dobe • (C) Install temporary median barrier extension at Peabody and Markley, making this a right-turn in & out only intersection. • (C) Build a new road near the football field linking Whitney to Markley. • (SD) Build a new student parking lot east of campus, across DeRonde.	**Education** Enhance Drivers Education courses with more complete "Mobility Training" to encourage walking, bicycling, transit, and carpooling.
	C	Install radar speed feedback signs along DeRonde and Markley to deter student/parent speeding.	**Enforcement** No Additional Recommendations
		Study the installation of traffic calming devices near parking lot ramps to deter high-speed student vehicle entrances (e.g., additional speed bumps in parking lot near parking lot ramps (SD), chicanes before parking lot entrances (C), etc.).	**Encouragement** Start a carpool matching board to organize carpools for students (with education regarding state probationary rider periods)
	C/SD	While installing the new student parking lot east of campus, consider parent drop off and pick up circulation patterns as well as increased pedestrian activity across DeRonde (possible location of a speed table on DeRonde between the new parking lot and campus).	Create preferred carpool parking spaces.
	SD/Travis AFB	If a frontage road to Center Elementary School is approved by Travis AFB, consider studying a new bicycle/pedestrian only entrance, similar to how gate access currently operates at Forbes, to allow direct and safe access for students walking and bicycling from homes on the north side of Travis AFB. (Joint SD/AFB).	Start a frequent carpool cards program with gas card rewards, similar to Solano Napa Commuter Information vanpool incentive programs.

*Responsible Agency – C=City, SD=School District

5.10. RIO VISTA

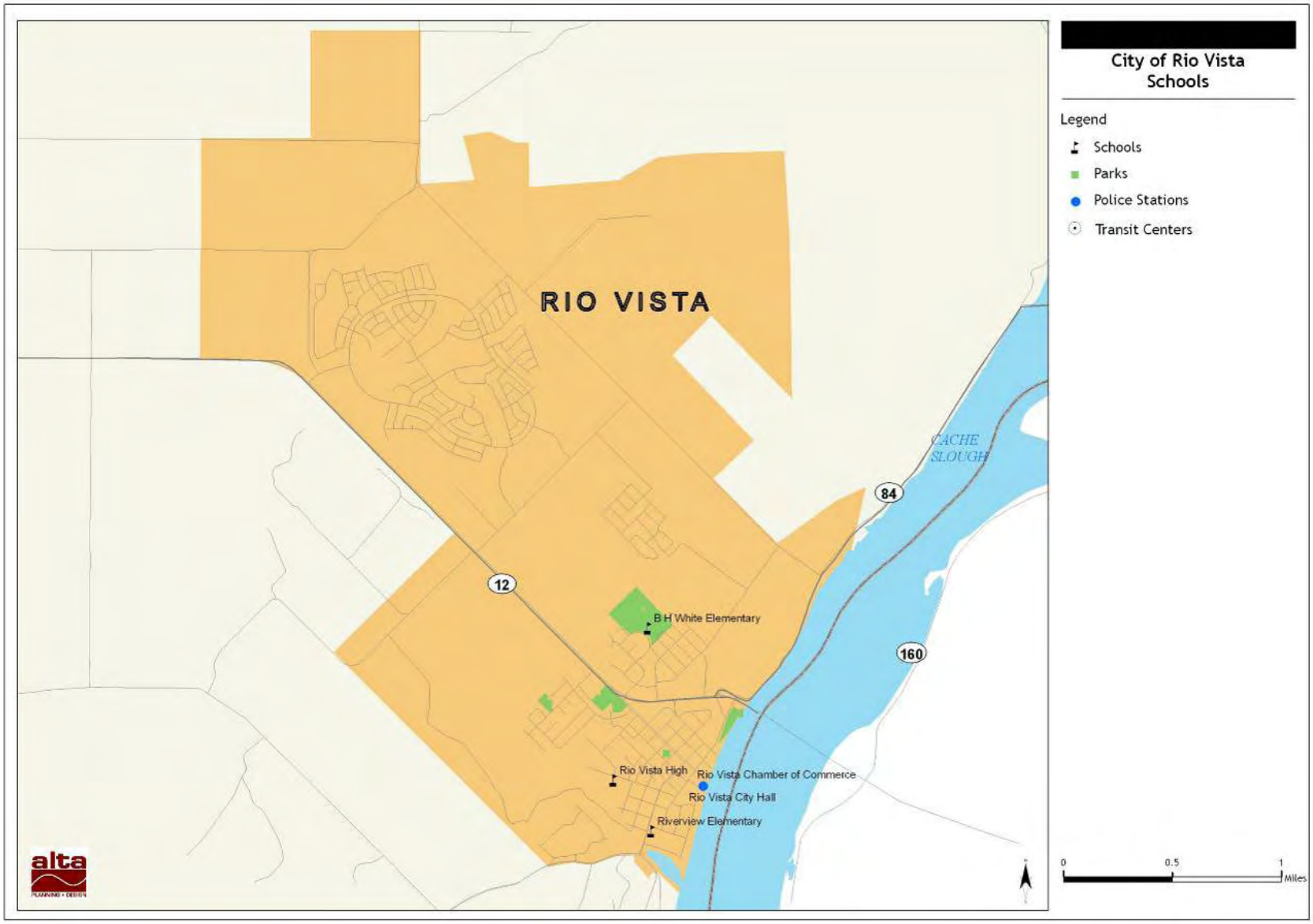
Rio Vista's SR2S planning process was conducted by its SR2S Community Task Force. **Table 5-7 Rio Vista's SR2S Task Force** shows the participants.

Table 5-7 Rio Vista SR2S Task Force

Position	Name	Title
City Council Rep	Eddie Woodruff	Mayor of Rio Vista
City Council Rep	Cherie Cabral	Councilmember
City Dept Rep	Hector De La Rosa	City Manager
Public Works Rep	Brent Salmi	Public Works Director/City Engineer
Planning Dept Rep	Tom Bland	Community Development Director
Police Rep	Bill Bowen	Police Chief
Fire Rep	Mark Nelson	Fire Chief
School Board Rep	Marilyn Riley	School Board member
School Board Rep	Lee Williams	School Board member
School Superintendent	Alan Newell	School District Superintendent
School Facilities Rep	Wayne Rebstock	Director of Maintenance and Operations

As explained in Chapter 3, a public process was undertaken in developing a list of safe routes to school projects and programs in Rio Vista. **Figure 5-10** is a map of Rio Vista and its three schools. Rio Vista's audit walkabout occurred at River View Elementary School.

Figure 5-10 Rio Vista Schools

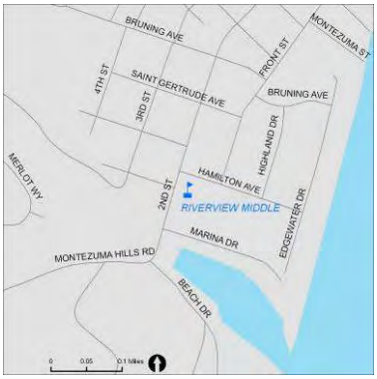


5.11. RIO VISTA SCHOOL WALKABOUT – RIVERVIEW MIDDLE SCHOOL

5.11.1. Existing Conditions

5.11.1.1. School Location

Riverview Middle School is located at 525 S. 2nd Street in Rio Vista and is part of the River Delta Unified School District. The School serves 5th grade through 8th grade and, for the 2006-2007 school year, had an enrollment of approximately 330 students. The Riverview School site is bound by Marina Drive to the south, S. 2nd Street to the west, Hamilton Avenue to the north, and Edgewater Drive to the east.



Riverview Middle School – Rio Vista, CA

5.11.1.2. Traffic Controls

The three-legged intersection of Beach Drive, Montezuma Hills Road and 2nd Street is a stop controlled at Beach Drive. 2nd Street and Hamilton Avenue is stop controlled at Hamilton Avenue. The intersections of Front Street and Highland Drive with Hamilton Avenue have no control.

5.11.1.3. Parking

There is no parking lot at Riverview School. All staff and faculty park in front of the School on 2nd Street and visitors park on-street around the School.

5.11.2. Transportation to/from School

5.11.2.1. Drop-Off and Pick-Up

All student drop-off and pick-up is supposed to take place on both sides of 2nd Street in-front of the School. Some parents utilize Hamilton Avenue, where buses unload and load as well as Front Street near the intersection with Hamilton Avenue. Many motorists drop-off or pick-up their child on 2nd Street heading southbound and then make a u-turn at the parking area adjacent to Marina Drive or at the 2nd Street, Montezuma Hills Road, and Beach Drive intersection. The constant turning of vehicles makes for blind spots and potential collisions between vehicles and with pedestrians.

A student runs across 2nd Street at school pick-up time

5.11.2.2. Walking

East of the School, on 2nd Street, Hamilton Avenue, Front Street and Highland Drive there are existing sidewalks. Students use these walkways to access and to leave from school. These sidewalks provide adequate space between the students and traffic. In many areas there are planting strip buffers between the sidewalk and the street.

South of the School, on 2nd Street, Montezuma Hills Road, and Beach Drive there are no sidewalks. Few pedestrians use these streets due to the lack of walking infrastructure. Along Montezuma Hills Road there are high vehicle speeds, creating a feeling of discomfort for pedestrians as they walk along the road's shoulder.

The bike rack at Riverview Middle School

There are many yellow transverse crosswalks near Riverview School. There is a yellow transverse crosswalk that extends from the School's property to Santa Clara Avenue and there are three yellow transverse crosswalks at the intersection of 2nd Street and Hamilton Avenue. Since these crosswalks are less than six-feet wide, they do not meet current MUTCD standards. These crosswalks are also faded. There are two yellow transverse crosswalks on the west and north legs of the Hamilton Avenue and Front Street intersection and three yellow transverse crosswalks on all three legs of the Hamilton Avenue and Highland Drive intersection.

Walkabout attendees observe school dismissal

Riverview Middle School has one crossing guard. He stands at the 2nd Street and Hamilton Avenue intersection and helps students cross the south and east legs. Students do not use the crosswalk on the north leg of this intersection nor do they use the crossing at Santa Clara Avenue unless they are accompanied by a parent or adult.

5.11.2.3. Bicycling

There are no existing bicycle facilities near the School. There is an existing bicycle rack in-front of Riverview's main entrance.

5.11.2.4. Bus Service

The River Delta School District provides bus service from DH White Elementary School and the north side of Highway 12 to Riverview Middle School. This provides a safe passage for students that live on the south side of Highway 12 and attend DH White Elementary School.

Parents picking up their children and making u-turns on 2nd Street

5.11.3. Engineering Recommendations

5.11.3.1. Walkabout

A walkabout was held at Riverview Middle School on Tuesday, September 25, 2007. The walkabout included members of the local police department, fire department, school Administrators, members of the school board, and City and STA Staff. Following the audit, STA's Safe Routes to School consultant held a presentation of potential improvements and worked with attendees on problem areas and potential solutions. Several locations were identified as difficult locations for pedestrians and bicyclists. **Figure 5-11 – Riverview Middle School Improvement Plan** includes issue locations and potential capital improvements. The first location is 2nd Street where there are high vehicle speeds and a lack of adequate pedestrian facilities. Another location is Hamilton Avenue, where there are several areas where vehicles and pedestrians could conflict.

5.11.3.2. Design Concepts

The following design concepts were developed as improvements for the identified issues. These concepts are shown in Figure 5-11. Most of the potential improvements are described below.

Vehicle Roadway Improvements on 2nd Street

Especially during the morning commute time and school start time, there are high traffic speeds of cars traveling from Montezuma Hills Road to 2nd Street in front of Riverview Middle School To help alleviate this, as well as to help alleviate the vehicles making u-turns at the 2nd Street, Montezuma Hills Road, and Beach Drive intersection, a traffic circle and/or a traffic control are suggested. A warrant study is necessary for any type of control placement.

To help alleviate high traffic speeds on 2nd Street from the east side of Riverview School, a speed-feedback sign is suggested. With the sign, motorists would see the speed that they are traveling and likely slow down if it above the posted speed limit. If the speed registers at above the posted speed limit the sign would flash, alerting motorists that they are traveling faster than the speed limit.

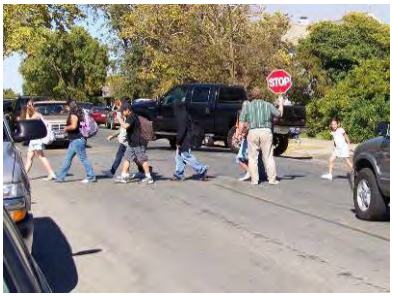
There is also a shortage of school and school crossing signs at Riverview Middle School. Proper MUTCD signage should be installed as well as proper legends on the pavement alerting motorists that it is a school zone. Recommended signage includes fluorescent school crossing signs.

Pedestrian Safety on 2nd Street

South of Riverview Middle School, along 2nd Street, there are no existing sidewalks. To increase the numbers of students walking and bicycling to school that live south of the campus off of Montezuma Hills Road and Beach Road sidewalks should extend to these areas. Currently, the few students that walk use the shoulders and the grassy areas that run parallel to the streets. An alternative an option for study is a Class I – multi-use path connection from the residential neighborhood off of Montezuma Hills Road to Santa Clara Avenue or 2nd Street and the School.

Pedestrians walk along Beach Road

There are many existing crosswalks surrounding the School's campus. Two of these crosswalks that cross 2nd Street are not supposed to be used by students. Therefore, the crosswalks that are not to be used should be removed. For the crosswalks that are used, they should be updated with current curb ramps that meet American Disability Act guidelines.



Pedestrians walk across 2nd Street

At the walkabout, it was apparent that motorists park their vehicles on the west side of 2nd Street at the intersection with Hamilton Avenue. Motorists also park immediately adjacent to the crosswalks. This makes sight distances short for crossing pedestrians and makes pedestrians difficult to see by passing motorists. To improve this, red curb should be painted in these areas. This will improve pedestrian sight distance and the ability of passing motorists to see crossing pedestrians and improve overall pedestrian safety in the area.

Pedestrian/Vehicle Safety on Hamilton Avenue

The intersection of Front Street and Highland Drive and Hamilton Avenue are uncontrolled. These intersections should be studied for stop-warrants. As side-street stops, vehicles would slow down as they enter the school zone area.

5.11.4. Education Recommendations

- Provide information as to appropriate parking and driving behavior around school for both parents and students early and several times throughout the school year.
- Develop programs to incorporate health, science, and math aspects of safe routes to school information in school classes, for science fairs, extra credit, and homework assignments.
- During assemblies held during the school year, discuss the health, science, and math elements of the safe routes to school program.

5.11.5. Enforcement Recommendations

- Increase police patrol of the area during drop-off and pick-up hours, encouraging drivers to obey the rules of the road.
- Place a speed radar trailer on Montezuma Hills Road several times throughout the school year.

5.11.6. Encouragement Recommendations

- Work with the "student council" or student leadership group to engage students in bicycling and walking safely to school.
- Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School.

5.12. RIO VISTA PRIORITY PROJECTS

At the time of this planning effort, Rio Vista School District held one additional walking audit at DH Elementary School. Resulting from this walking audit was a series of proposed projects and programs for implementation. **Table 5-8 Rio Vista SR2S Priorities** shows the results.

Rio Vista will use the existing Joint Use Ad-hoc Committee (or "2 by 2 Committee") for project implementation and future planning.

Figure 5-11 Riverview Middle School Improvement Plan

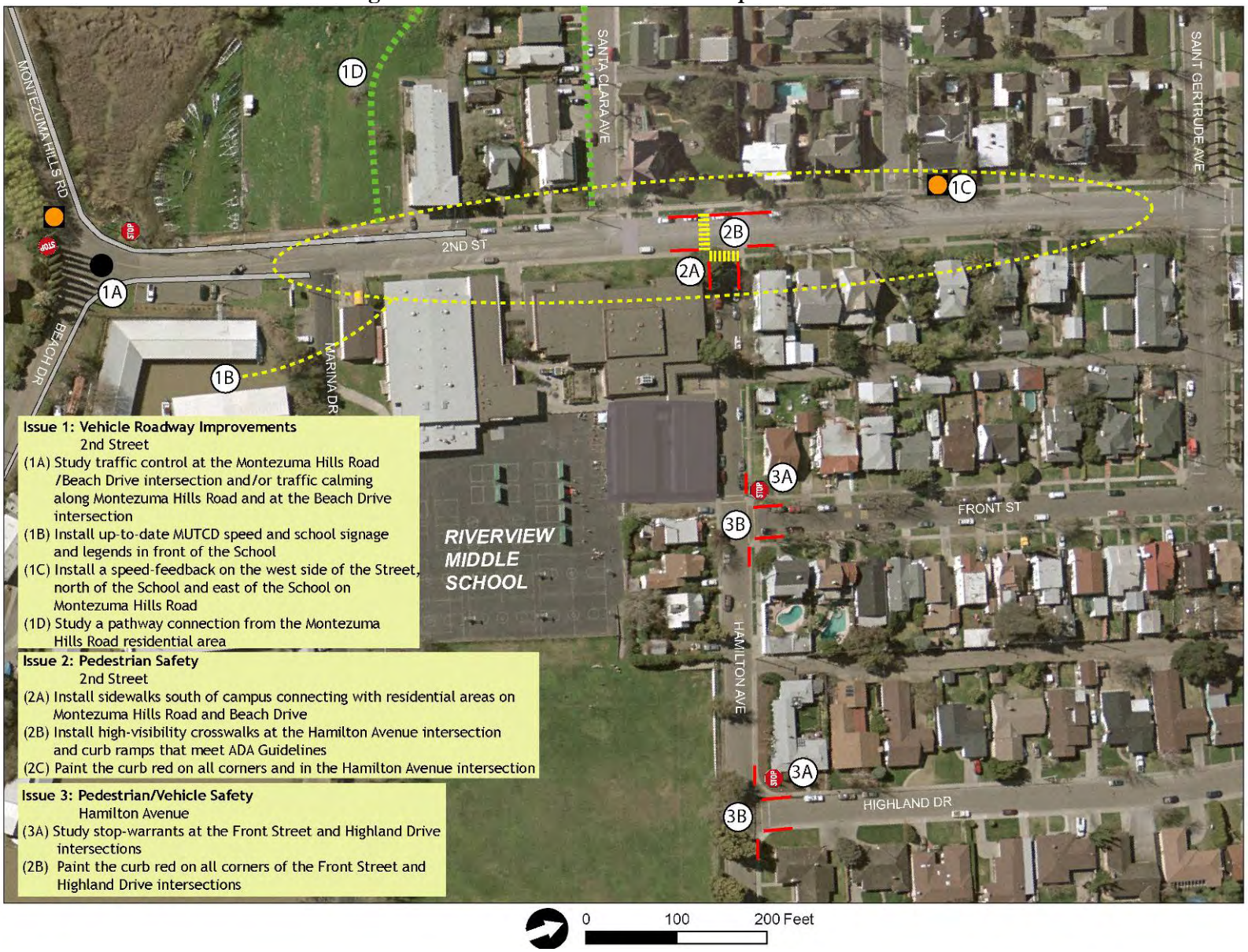


Table 5-8 Rio Vista SR2S Priorities

Rio Vista Citywide Safe Routes to School Recommendations							
	Engineering		Education		Enforcement		Encouragement
1	Review school loading zones for clarity.	1	Develop programs to incorporate health, science, and math aspects of safe routes to school information in school	1	With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety	1	Work with students to develop ways to increase bicycling and walking
2	Review signage and pavement markers for latest MUTCD standards.	2	Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school	2	Work with police to perform specific enforcement before school begins and after school dismisses.	2	Start a "Frequent Walk/Ride Card" program with bicycle helmets and other travel related prizes (umbrellas, bicycle raffles, etc).
		3	Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year	3	Continue to promote Rio Vista Safety Fair.	3	Participate in Bike to School Day and International Walk to School Day activities
		4	Where not existing, develop Safety Patrols where older students team with crossing guards			4	Work with the local police department to implement after school bicycle rodeos at elementary schools where students can learn bicycling rules of the road.
		5	Crossing Guard Training –Develop a training program that establishes guards' duties, responsibilities, and priorities			5	Work with students and parents to develop a map with the safest walking/bicycling routes to school
						6	Work with the "student council" to engage students in bicycling and walking safely to school
						7	Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School

School		Responsible Agency*	Engineering Recommendations	Other Recommendations
D.H. White Elementary	1	C	Study clarifying loading zones along Elm Street between Laurel and Virginia with signage and curb paint.	**Education** No Additional recommendations.
	2	C	Study potential for northbound pedestrian and bicycle facilities to northern neighborhoods (e.g., connections to Anderson Way or future planned neighborhoods).	**Enforcement** No Additional recommendations.
	3	C/SD	Consider vertical curb sidewalk rehabilitation in front of the school to deter vehicles from blocking the sidewalk on the current rolled curb sidewalk.	**Encouragement** No Additional recommendations.
	4	C	Study intersection improvements at Elm St and Linda Vista to provide increased pedestrian visibility at crosswalks.	

*Responsible Agency – C=City, SD=School District

5.13. SUISUN CITY

Suisun City's SR2S planning process was conducted by its SR2S Community Task Force. **Table 5-9 Suisun City SR2S Task Force** shows the participants.

Table 5-9 Suisun City SR2S Task Force

Position	Name	Title
City Appointment	Mike Hudson	Councilmember
Public Safety Rep	Bob Szmurlo	Suisun City Police Department
Fairfield/Suisun Rep	Kathy Marianno	Fairfield/Suisun School Board member
STA TAC Rep	Lee Evans	Interim Public Works Director
STA BAC Rep	Mike Segala	Councilmember

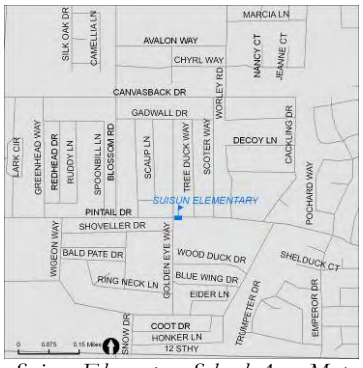
An extensive public process was undertaken in developing a list of safe routes to school projects and programs in Suisun City. **Figure 5-7** shows a map of schools in Suisun City and Fairfield**.** Suisun City's audit walkabout occurred at Suisun Elementary School, a map of improvements is shown in **Figure 5-12**.

5.14. SUISUN CITY SCHOOL WALKABOUT – SUISUN ELEMENTARY SCHOOL

5.14.1. Existing Conditions

5.14.1.1. School Location

Suisun Elementary School, located at 725 Golden Eye Way in Suisun City, serves kindergarten through 5th grades. For the 2006-2007 school year, Suisun Elementary School had an enrollment of approximately 400 students. The School site is bound by Wood Duck Drive to the south, Golden Eye Way on the west, and Pintail Drive to the north. Pintail Drive is a neighborhood collector street that provides access to the school's main entrance Golden Eye Way. There is also a gate to the school along Pintail Drive. West of the School is a new library that is currently under construction and just to the west of that, on Pintail Drive, is a YMCA. Pedestrians and bicyclists access the school from all the neighboring streets.



Suisun Elementary School Area Map

5.14.1.2. Traffic Controls

The four-way intersection of Pintail Drive and Golden Eye Way is immediately in front of the School's main entrance and is all-way stop controlled. Where Tree Duck Way, Scoter Way, and White Wing Lane intersect with Pintail Drive, they are all side-street stop controlled. Shoveler Drive and Wood Duck Drive intersect Golden Eye Way with side-street stops.

5.14.1.3. Parking

On-site parking is restricted to staff and faculty only. Therefore, all students are picked up or dropped off on-street off of campus.

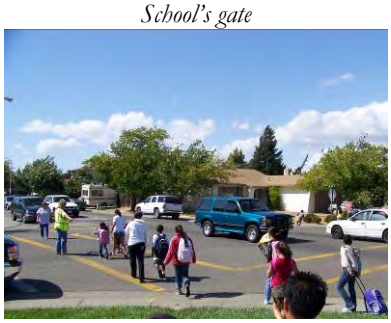
5.14.2. Transportation to/from School

5.14.2.1. Drop-Off and Pick-Up

All students are supposed to be dropped-off and picked-up on-street, along Pintail Drive and Golden Eye Way. School staff place orange cones at the school driveway entrance to prevent parents from unloading and loading in the parking lot. However, some parents get to school before the cones are put out and use this area. Other than the few using this location, there is congestion on Pintail Drive and Golden Eye Way during school bell times for pick-up. Many parents park along the curb and wait by the gate for the child to be dismissed from school. Parking along these streets is legal, except where there is red curb. Parents also double park while waiting for their child and pick-up their children while stopping in the middle of the street. Children stream across Pintail Drive and Golden Eye Way headed for their parent's cars or home.

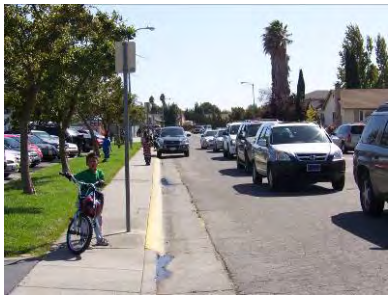
Students getting picked up at School

A parent and child j-walk across from the School's gate



Students and parents walking at the Pintail Drive/Golden Eye Way intersection

Vehicles cram the sidewalk parking on the rolled curb



A bicyclist considers his route options

5.14.2.2. Walking

There are existing marked yellow transverse crosswalks on all four legs of the Pintail Drive and Golden Eye Way intersection. There is also a marked yellow transverse crosswalk on the east side of the Scoter Way and Pintail Drive intersection. This crosswalk has in-pavement flashers that are activated by a push-button located adjacent to the sidewalk. The push-button is currently on the wrong side of a chain-linked fence that blocks pedestrians from the library construction. Golden Eye Way also has two yellow transverse crosswalks at Shoveller Drive.

There are three crossing guards as well as faculty and student volunteers that help at the crosswalks. There are two crossing guards at the Pintail Drive and Golden Eye Way intersection, one crossing guard at the Pintail Drive and Scoter Way intersection, and a faculty member with student volunteers at the Golden Eye Way and Shoveller Drive intersection.

Students walk in all directions to and from Suisun Elementary School. There are many pedestrians that j-walk across Pintail Drive, across from the school's gate. On the streets next to the school the sidewalks are relatively narrow, approximately 4.5-feet wide, and in most location there is a rolled curb. Rolled curbs allow vehicles to pull up onto the sidewalk and decrease the walking space for pedestrians.

5.14.2.3. Bicycling

There are no existing bicycle facilities on the roads adjacent to the School. There is bike parking near the main entrance on Golden Eye Way. The bicycle parking includes a fenced area for extra security.

5.14.2.4. Bus Service

The only bus service at Suisun Elementary School is provided by the Fairfield/Suisun Transit System; Route 6 stops along Pintail Drive. A Youth Monthly Pass for the bus is $40.

5.14.3. Suisun's Existing Safe Routes to School Projects and Programs

As stated in the Fairfield section of this Chapter, in 2006, the Fairfield-Suisun City School District was awarded $150,000 from the Federal Transportation Improvement Program for education, enforcement, and encouragement programs specifically for safe routes to school. More specifically, the funds were allocated for educating students and families, incorporating all aspects of safety into school education, including components of "Street Smarts" into schools, creating brochures, holding safety assemblies, and establishing school safe traffic zone.

Currently, Suisun City police attend schools' open houses at the beginning of the school year to inform parents of proper unloading and unloading procedures at schools. The police department also trains school crossing guards on an annual basis.

5.14.4. Engineering Recommendations

5.14.4.1. Walkabout

A walkabout was held at Suisun School on Thursday, June 7th, 2007. The walkabout included members of local police, the school Administrators, City and STA Staff. During the walkabout, several locations were identified as difficult locations for pedestrians and bicyclists. **Figure 5-12 – Suisun Elementary School Improvement Plan** includes issue locations and potential capital improvements to help alleviate these issues. Locations include Pintail Drive, the school campus circulation, and Golden Eye Way. There were many issues identified during the walking audit, including pedestrians j-walking on Pintail Drive and vehicles conflicting with pedestrians.

5.14.4.2. Design Concepts

The following design concepts were developed as improvements for the issues and are shown on Figure 5-12. Many of the potential improvements are described below.

<u>Pedestrian Safety on Pintail Drive</u>
The installation of crosswalks on the north side of Pintail Drive will alert motorists of pedestrians crossing the side streets. To help eliminate j-walking of Pintail Drive, as previously described, it is suggested that the exit gate from the School move to the east, closer to the library and the Scoter Way intersection. With the gate moving, improvements, such as a curb extension is suggested for this intersection to shorten the crossing distance for pedestrians.

<u>School Circulation</u>
Adjacent to Suisun School, the existing curbs are rolled. Rolled curbs allow parking vehicles to pull up into the sidewalk area. This squeezes pedestrians and decreases their walking area. Therefore, on Golden Eye Way and Pintail Drive, right-angle curb should be installed, delineating the parking area from the walking area. This will also help pedestrians feel less crowded on the sidewalk.

Now, students can exit the School west of the building and east of the parking lot

A fence or landscaping should be placed on the perimeter of the parking lot along Golden Eye Way. This will decrease the number of pedestrians crossing through the parking lot to access Golden Eye Way. A fend or landscaping should also be installed at the northern edge of the parking lot and extend to the school wall. There is an existing gap here where students funnel out of school and j-walk across Pintail Drive.

<u>Pedestrian Safety on Golden Eye Way</u>
Install curb extensions on Golden Eye Way and Shoveler Drive to shorten pedestrians crossing distances, improve visibility of pedestrians and motorists, and to prevent vehicles from parking there during drop-off and pick-up. Also, installing a crosswalk Wood Duck Drive at Golden Eye Way will help alert motorists of crossing students.

5.14.5. Education Recommendations

- Provide information as to appropriate parking and driving behavior around the School for both parents and students early in the school year and several times throughout the school year.
- Develop programs to incorporate health, science, and math aspects of safe routes to school information in school classes, for science fairs, extra credit, and homework assignments.
- During assemblies held during the school year, discuss the health, science, and math elements of the safe routes to school program.

5.14.6. Enforcement Recommendations

- In conjunction with local police officers, establish driver education programs early in the school year and follow up periodically with strong enforcement techniques to ingrain proper driver and pedestrian behavior.
- Target police patrol of the area during drop-off and pick-up hours, encouraging drivers to obey the rules of the road.

5.14.7. Encouragement Recommendations

- Build enthusiasm in younger age groups through education programs so that when students and parents "graduate" to junior high or high school they are already familiar with the concepts of safe routes to school and its many benefits. This would work towards overcoming the bias in high school students against non-motorized transport by emphasizing the environmental benefits of walking and bicycling.
- Work with the "student council" or student leadership group to engage students in bicycling and walking safely to school.
- Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School.
- Develop a "Walk & Roll" program where students receive stamps on a card for walking or bicycling to school. After a certain number of non-motorized trips, students receive prizes or incentives to continue using these modes of transportation.

5.15. SUISUN CITY PRIORITY PROJECTS

At the time of this planning effort, Suisun held one additional walking audit. Resulting from this walking audit was a series of proposed projects and programs for implementation. **Table 5-10 Suisun City SR2S Priorities** shows the results.

Figure 5-12 Suisun City Elementary Improvement Plan

Table 5-10 Suisun City SR2S Priorities

Suisun Citywide Safe Routes to School Recommendations							
	Engineering		Education		Enforcement		Encouragement
1	Continue to review street signs and markings for current MUTCD standards.	1	Develop programs to incorporate health, science, and math aspects of safe routes to school information in school	1	With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety	1	Work with students to develop ways to increase bicycling and walking
		2	Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school	2	Work with police to perform specific enforcement before school begins and after school dismisses.	2	Start a "Frequent Walk/Ride Card" program with bicycle helmets and other travel related prizes (umbrellas, bicycle raffles, etc).
		3	Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year			3	Participate in Bike to School Day and International Walk to School Day activities
		4	Where not existing, develop Safety Patrols where older students team with crossing guards			4	Work with the local police department to implement after school bicycle rodeos at elementary schools where students can learn bicycling rules of the road.
		5	Crossing Guard Training –Develop a training program that establishes guards' duties, responsibilities, and priorities			5	Work with students and parents to develop a map with the safest walking/bicycling routes to school
						6	Work with the "student council" to engage students in bicycling and walking safely to school
						7	Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School

School	Responsible Agency	Engineering Recommendations		Other Recommendations
Dan O Root Elementary	C	Install flashing crosswalk and ramps on Harrier Dr in front of the school to add visibility to students crossing Harrier Dr. before and after school when crossing guards are not present.		**Education**
				Invite police officers to school assemblies, back to school nights, and open houses, to educate students and parents about Safe Routes to School concepts.
	C	Install high visibility crosswalks at Pintail & Harrier, if not in conflict with city crosswalk practices.		Create pamphlets to educate parents and students about the variety of benefits of walking and bicycling to school in coordination with Solano County Public Health.
	C	Install crosswalks at Kimberly Ct & Harrier Dr. to add visibility to students travelling north from the school.		Educate parents about walking in the rain, in coordination with Solano County Public Health (e.g., "Rain doesn't make kids sick; Kids make other kids sick.).
	SD	Install a stop sign and paint a stop bar at the south exit of the school parking lot before the sidewalk to help prevent student vs. vehicle accidents.		Continue to survey parents about SR2S issues to address in the future.
	C	Realign the park playground path southbound to Pintail closer to the intersection of Pintail & Harrier to help prevent midblock crossings.		Ask safety patrol students to educate kindergarteners about using crosswalks.
				Enforcement
				Follow up education assemblies with targeted enforcement during school arrival and dismissal for speeding along Pintail and Harrier.
				Add students to safety patrol at the intersection of Pintail and Harrier.
				Encouragement
				In addition to citywide encouragement activities, make sure prizes are geared towards walking and bicycling in the rain (e.g., high visibility rain coats/ponchos/umbrellas, etc.).

*Responsible Agency – C=City, SD=School District

5.16. VACAVILLE

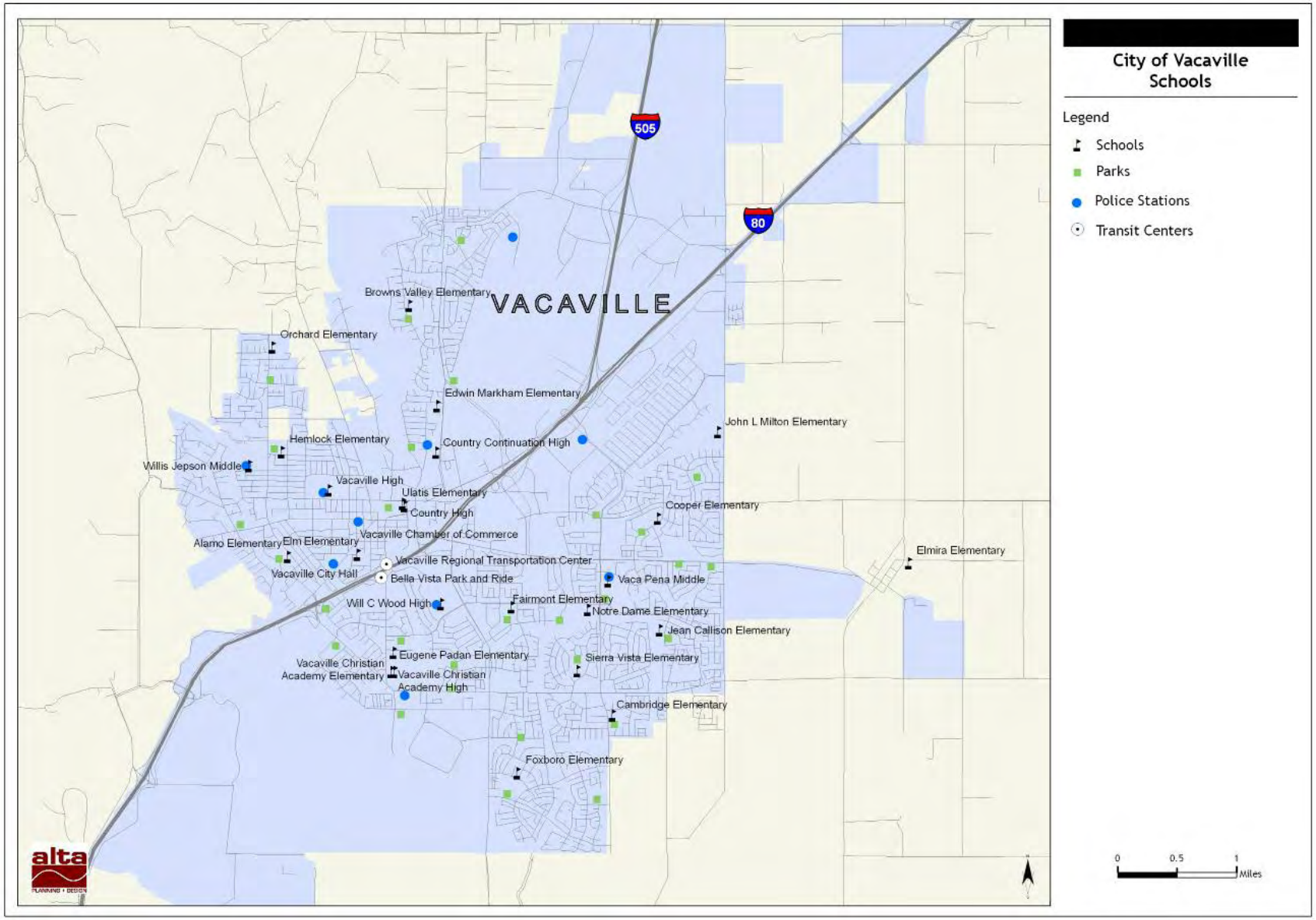
Vacaville's SR2S planning process was conducted by its SR2S Community Task Force. **Table 5-11 Vacaville SR2S Task Force** shows the participants.

Table 5-11 Vacaville SR2S Task Force

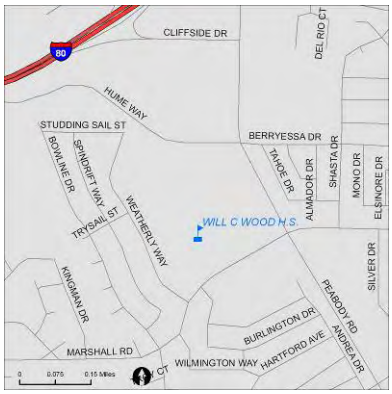
Position	Name	Title
City Appointment	Brett Johnson	Planning Commission Vice Chair
Public Safety Rep	Terry Cates	Vacaville Police Department
School Board Appt.	Larry Mazzuca	VUSD Board Member
STA TAC Rep	Dale Pfeiffer	Public Works Director
STA BAC Rep	Ray Posey	Vacaville Resident
STA PAC Rep	Carol Renwick	Vacaville Resident

An extensive public process was undertaken in developing a list of safe routes to school projects and programs in Vacaville. **Figure 5-13** shows a map of Vacaville's 16 schools**.** Vacaville's audit walkabout occurred at Will C. Wood High School.

Figure 5-13 Vacaville Schools



5.17. VACAVILLE WALKABOUT – WILL C. WOOD HIGH SCHOOL



Will C. Wood High School - Vacaville, CA

5.17.1. Existing Conditions

5.17.1.1. School Location

Will C. Wood (Wood) High School is located at 998 Marshall Road in Vacaville. The High School serves grades 9 through 12 and, for the 2006-2007 school year, had an enrollment of approximately 1900 students. The Wood High School site is bound by Marshall Road to the south, Weatherly Way on the west, Hume Way to the north, and Peabody Road to the east. Marshall Road is a collector road and via three driveways, provides the only direct access to Wood High School from the neighboring streets. Peabody Road is a major arterial that carries high volumes of traffic, Hume Way is a collector street that is fenced-off from the back of the school, and Weatherly Way is a neighborhood street. Pedestrians and bicyclists access the school from Marshall Road, through the school's parking lot.

5.17.1.2. Traffic Controls

The intersection of Marshall Road/Burlington Drive is slightly offset with the western-most driveway of the school. Burlington Drive is a side-street stop controlled intersection. The major intersection adjacent to the school, at Marshall Road/Peabody Road, is signal controlled. The southbound right turn has a slip-lane onto Marshall Road.

5.17.1.3. Parking

There are three connected parking lot locations on the Wood High School property. The largest of the three areas is between the school building and Marshall Road. Mostly students use this area for parking. Students and faculty use the other two areas. One is west of the large lot and the other is to the west of the school building. All parking lots are accessible from the Marshall Road driveways.

The parking lot is patrolled by a Wood High School faculty member who has authority to write parking tickets. He also encourages drivers to obey the parking lot's circulation patterns.

5.17.2. Transportation to/from School

Students leaving School

5.17.2.1. Drop-Off and Pick-Up

Many students drive to Wood High School and park in the parking lot. For the younger students that arrange rides with parents, they are dropped-off and picked-up from the loading area directly in-front of the school's main entrance. In this area, there are two lanes for loading, the lane closer to the school and adjacent to the curb is for buses and the outside lane is for parent drop-off and pick-up. During the peak time periods, the queue of traffic is known to back-up through the parking lot, driveway, Marshall Road and to the Marshall Road/Peabody Road intersection.

Students accessing their vehicles in the parking lot must walk through these two lanes of slow moving or stopped vehicles in front of the school. During the walking audit (as described in section C) parents were also seen picking students up on Marshall Road, south of the school's parking lot, in the bicycle lane.

Students walking on Marshall Road (above) and at the Marshall Road/Peabody Road intersection (below)

Students walking/riding in the driveway that exits to Marshall Road (above) and crossing Marshall Road (below)

5.17.2.2. Walking

There are existing marked crosswalks at the Marshall Road/ Peabody Road intersection near the school. The intersection consists of five yellow transverse crosswalks, one on each leg plus a crosswalk on the southbound right slip-lane. There are no crossing guards near the school.

Many of the students walk through the parking lot to Marshall Road. Students walking eastbound, down the hill to Peabody Road, walk along the perimeter of the parking lot where there is no sidewalk to Marshall Road. On Marshall Road, due to high volumes of pedestrians, they spill into the bike lane and at the intersection with Peabody Road, they spill into the travel lanes. At the intersection there is an existing 300 square-foot "pork chop" island that cannot accommodate the volume of pedestrians.

Students walking towards Marshall Road westbound walk along the driveway in the parking lot. There is no sidewalk in this location, so students either walk along the driveway or on a dirt path that is adjacent to the driveway. Once at Marshall Road, students cross at non-crosswalk locations.

5.17.2.3. Bicycling

There are existing bicycle lanes on Marshall Road in-front of the school. These lanes are sometimes used as loading zones for parents dropping-off or picking-up students. There also bicycle lanes on Peabody Road and Hume Way. There are existing bicycle parking facilities to the west of the main entrance of the school. During the walking audit, as described in Section C, 24 bicycles were parked at the racks.

5.17.2.4. Bus Service

Wood High School has bus service that the District provides to students. The Vacaville Unified School District's Bus Fee Schedule below shows the costs for students to take the bus to school. The Vacaville City Coach also has bus service that operates along Marshall Road, with eastbound and westbound stops in front of the school. Youth fares for the City Coach are $1.25.

Vacaville Unified School District's Bus Fee Schedule

Type of Pass	Price*
Full Year Pass	$276.00
One Way Pass	$138.00
Semester Bus Pass	$138.00
Reduced	$ 60.00
Youth Monthly Pass	$28.00

* Discount applies if paid in full with application.

5.17.2.5. Vacaville's Existing Safe Routes to School Projects and Programs

The City of Vacaville recently made engineering improvements to Will C. Wood. This included and is not limited to installing sidewalks adjacent to the parking lot, realigning the western driveway and installing a new crosswalk. The City has also installed speed feedback signs close to many of the schools.

The Police Department in Vacaville has also made SR2S efforts. The Department attends freshman orientations at high schools, alerting parents and students of traffic safety at school drop-off and pick-up times and locations. At five of the schools with the most problematic traffic safety situations, five officers have "adopted" the schools, patrolling regularly as well as working with school administrators on the traffic safety issues. The Police Department has a radar trailer that it uses near schools and holds bicycle rodeos at Vacaville's elementary schools.

5.17.3. Engineering Recommendations

5.17.3.1. Current Improvements

Wood High School is currently constructing a new science building in the western portion of the large parking lot. With the construction of this building, pedestrian improvements will also be made to the parking lot and western driveway to Marshall Road. As **Figure 5-14 – Science Building Site Plan** shows, a new sidewalk will be constructed on the western portion of the parking lot. This facility will provide students that currently walk along the driveway or on the dirt path adjacent to the driveway, a safer walking environment. With the construction of the Science Building, the two existing parking aisles in this area of the parking lot will be consolidated into one aisle, decreasing the number of potential vehicle/pedestrian conflict points. Where the one aisle meets the driveway, a high-visibility crosswalk will be installed. This will help alert drivers of crossing pedestrians.

As Figure 5-14 and **Figure 5-15 – Marshall Road/Burlington Drive Improvement** shows, the western driveway will also be realigned to the Marshall Road/Burlington Drive intersection. This intersection will become four-way stop controlled with three yellow, transverse style crosswalks.

In addition to the improvements on the west side of the parking lot, a new sidewalk will extend from the School's entrance east, around the parking lot, to Marshall Road. The entire sidewalk will be concrete except for the last 40 to 60 feet adjacent to Marshall Road which will be decomposed granite.

Figure 5-14 Science Building Site Plan

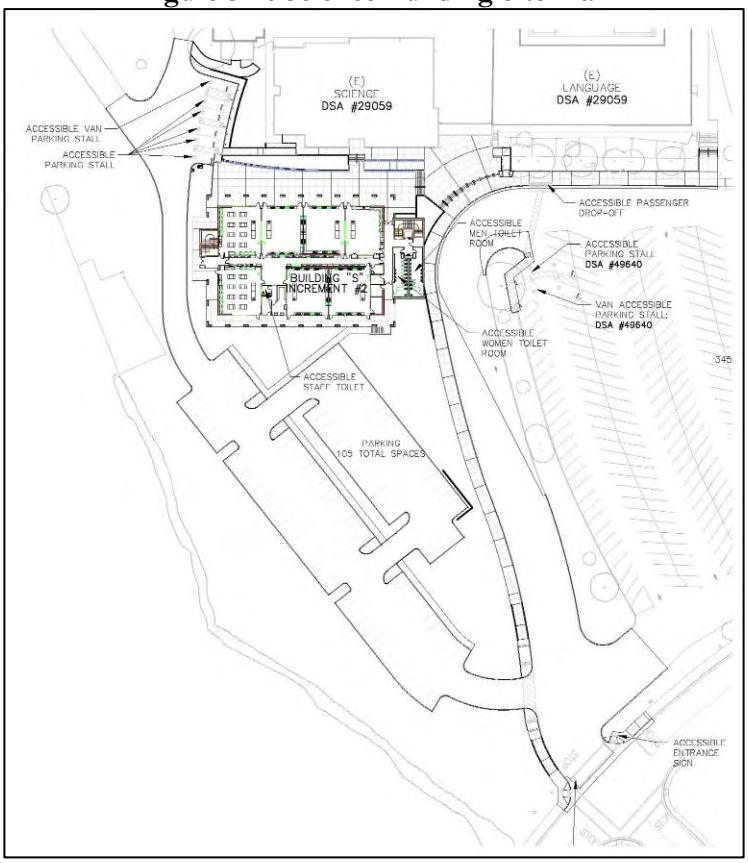
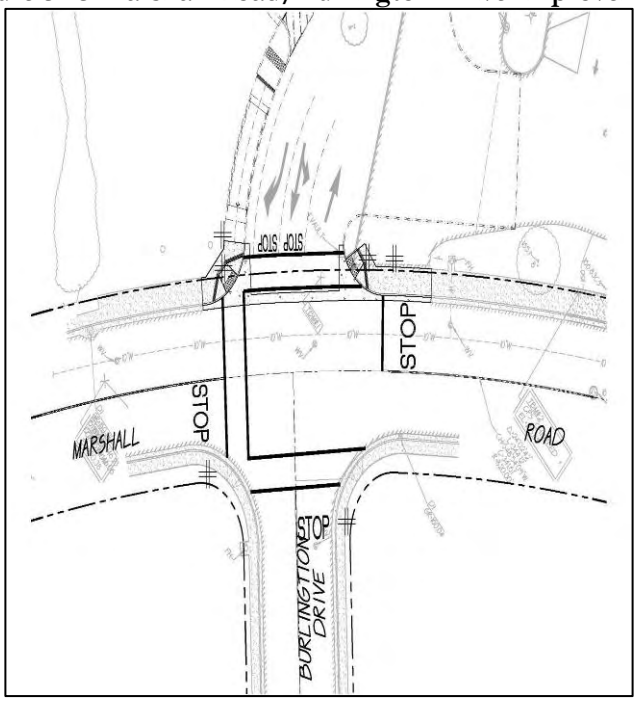


Figure 5-15 Marshall Road/Burlington Drive Improvement



One group reports back at the evening meeting

5.17.3.2. Walkabout

A walkabout was held at Wood High School on Wednesday, May 16, 2007. The walkabout included members of local police, school Administrators, City and STA Staff. Following the audit, STA's Safe Routes to School consultant held a presentation of potential improvements and worked with attendees on problem areas and potential solutions. Several locations were identified as difficult locations for pedestrians and bicyclists. **Figure 5-16 – Wood High School Improvement Plan** includes issue locations, the issues, and potential capital improvements. Locations include pedestrian circulation on the Wood High School campus, the Marshall Road/Burlington Drive intersection, bicycle facilities on and adjacent to the School, traffic safety at the Marshall Road/Peabody Road intersection, and in-front of the School on Marshall Road. There were many issues identified during the walking audit, including students walking through the school's parking lot at the same time and locations as exiting vehicles, students crossing Marshall Road at numerous locations in-front of the School, large volumes of pedestrians overflowing into the travel lanes at the Marshall Road/Peabody Road intersection, and student pick-up behavior by parents.

5.17.3.3. Design Concepts

The following design concepts were developed as improvements for the identified issues and build upon the driveway, sidewalk, and intersection work already planned and shown in Figures 5-14 and 5-15. These concepts are shown on Figure 5-16. Many of the potential improvements are described below.

<u>Pedestrian Circulation On-Campus</u>
The new sidewalk extending to the east of the School's entrance will be concrete except for the last 40 to 60 feet due to cross-slope complexities. To ensure that all pedestrians are able to use this pathway, the entire sidewalk should be concrete.

<u>Bicycle Circulation and Facilities on Campus</u>
Currently, bicycle parking usage is almost at its peak. Increasing bicycle parking and providing a secure, fenced area in which students can lock their bicycles could encourage more users. Access to this area could be limited to those with special cards.

<u>Marshall Road/Peabody Road Intersection Traffic Safety</u>
Increase the pedestrian storage area on the northwest corner of the intersection by using an area that is not used by the School's adjacent field. This will result in a substantial increase in storage area for the pedestrians at the intersection. Installing channelizers, or small concrete bumpers for the fast moving southbound right turn moving vehicles will also slow vehicles and increase comfort for waiting pedestrians.

Also, eastbound bicycle traffic does not have a way to change the signal if at the front of the line. A bicycle loop detector is recommended to help with this issue.

Marshall Road Traffic Safety
Install denser landscaping or a wrought iron fence between the parking lot and Marshall Road to discourage access to the loading and unloading that occurs in the bicycle lane. This will encourage drivers to circulate in and out of the parking lot for student loading and unloading. Landscaping will also divert students wishing to cross Marshall Road to the Marshall Road/Burlington Drive intersection where there is an improved proper crossing.

5.17.4. Education Recommendations

- Provide information as to appropriate parking and driving behavior around school for both parents and students early and several times throughout the school year.
- Develop programs to incorporate health, science, and math aspects of safe routes to school information in school classes, for science fairs, extra credit, and homework assignments.
- During assemblies held during the school year, discuss the health, science, and math elements of the safe routes to school program.

5.17.5. Enforcement Recommendations

- In conjunction with local police officers, establish driver education programs early in the school year and follow up periodically with strong enforcement techniques to ingrain proper driver and pedestrian behavior.
- Continue police patrol of the area during drop-off and pick-up hours, encouraging drivers to obey the rules of the road.
- Place a speed radar trailer on Marshall Road several times throughout the school year.

5.17.6. Encouragement Recommendations

- Build on existing enthusiasm in younger age groups through education programs early in the high school experience. Work towards overcoming the bias in high school students against non-motorized transport by emphasizing the environmental benefits of walking and bicycling.
- Implement high school bicycling encouragement programs, e.g. – "Extreme Tricks."
- Work with the "student council" or student leadership group to engage students in bicycling and walking safely to school.
- Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School.
- Install preferred vehicle parking that is closer to the School's entrance or provide other incentives to students that carpool to school.

5.18. VACAVILLE PRIORITY PROJECTS

At the time of this planning effort, Vacaville School District held five additional walking audits. Resulting from these walking audits was a series of proposed projects and programs for implementation. **Table 5-12** at the end of this Plan includes Vacaville's SR2S Priorities.

Vacaville's Task Force decided that the most important project for the earliest implementation is *3B*, improving the Marshall Road/Peabody Road intersection for pedestrians.

Vacaville chose to keep their STA Safe Routes to School Task Force and recommended that school facilities staff become permanent members.

Figure 5-16 Will C Wood High School Improvement Plan

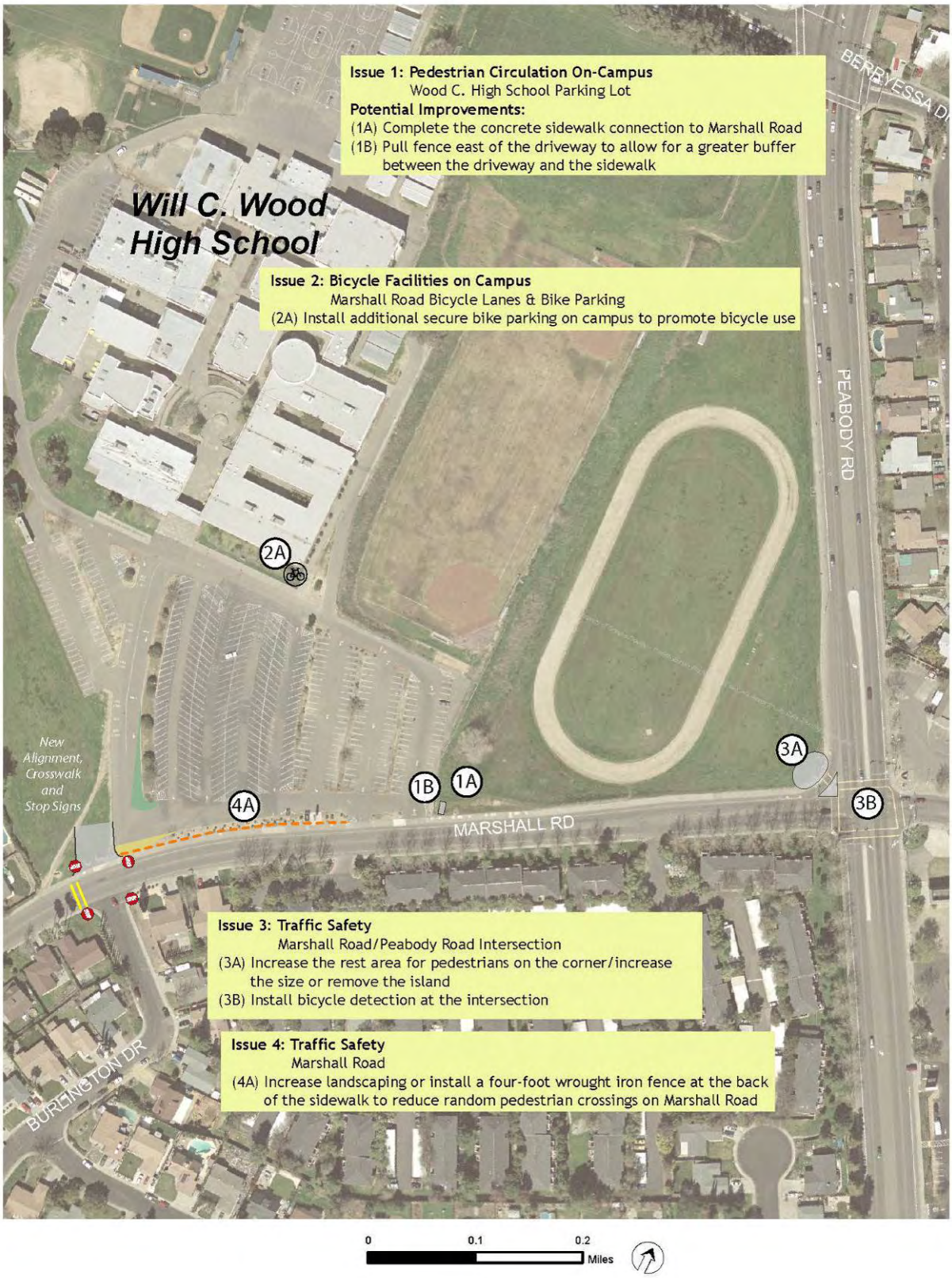


Table 5-12 Vacaville SR2S Priorities

Vacaville Citywide Safe Routes to School Recommendations							
	Engineering		Education		Enforcement		Encouragement
1		1	Develop programs to incorporate health, science, and math aspects of safe routes to school information in school	1	With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety	1	Work with students to develop ways to increase bicycling and walking
		2	Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school	2	Work with police to perform specific enforcement before school begins and after school dismisses.	2	Start a "Frequent Walk/Ride Card" program with bicycle helmets and other travel related prizes (umbrellas, bicycle raffles, etc).
		3	Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year			3	Participate in Bike to School Day and International Walk to School Day activities
		4	Where not existing, develop Safety Patrols where older students team with crossing guards			4	Work with the local police department to implement after school bicycle rodeos at elementary schools where students can learn bicycling rules of the road.
		5	Crossing Guard Training –Develop a training program that establishes guards' duties, responsibilities, and priorities			5	Work with students and parents to develop a map with the safest walking/bicycling routes to school
						6	Work with the "student council" to engage students in bicycling and walking safely to school
						7	Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School

School	Responsible Agency*	Engineering Recommendations		Other Recommendations
Alamo Elementary			1	**Education** At a PTA meeting, discuss traffic, bicycle, and pedestrian safety to help educate parents about proper procedures.
			1	**Enforcement** No Additional recommendations.
			1	**Encouragement** Next school year, student council should propose walk/bike school days.

*Responsible Agency – C=City, SD=School District

Callison Elementary	C/SD	Study the extension and widening of sidewalks, in particular those paths that connect to the Meadowlands Park path.	1	**Education** Work with a local bike store to establish a bike safety program
				Send home walk/bike safety "do's and don'ts in the Fall.
	C	Study the installation of crosswalks on Oak Brook Drive/Court at Vanden Road and Owl Drive/Court at Vanden Road.	1	**Enforcement** Continue coordination with Vacaville Police Department and Vacaville Police Department Youth Services
				Pursue advice from the Police Department regarding Sting Operations
			1	**Encouragement** Continue incentives for students walking laps during recess.
				Continue walk to school week and student wellness council meetings.

School	Responsible Agency*	Engineering Recommendations		Other Recommendations
Cambridge Elementary	C	Study installing crosswalks uniformly at street crossings near the school (e.g., along the west side of Nut Tree and at Village Ct./Cambridge north of the school) to increase visibility of students walking south on the west side of on Nut Tree.	1	**Education** No Additional recommendations.
	C	Study installing school loading zone signage and paint along Cambridge and Nut Tree to clarify drop-off and pick-up areas for parents.	1	**Enforcement** No Additional recommendations.
	C	Consider painting curbs red at crosswalks connecting to the school to avoid pedestrian visibility issues with parked cars.	1	**Encouragement** No Additional recommendations.
	SD	Study installing additional secured bicycle parking for students to prevent bicycle theft and encourage biking to school.		

*Responsible Agency – C=City, SD=School District

Foxboro Elementary	C	Study installing crosswalk at Morning Glory and Madison to increase visibility of pedestrians crossing this main route from northern neighborhoods.	1	**Education** No Additional recommendations.
	C	Study installing clearer signage for drop-off and pick-up zones along Morning Glory to help prevent students who run through traffic to load into double parked vehicles.	1	**Enforcement** No Additional recommendations.
	C	Study installing a paved path through the park and baseball diamonds towards the school to encourage walking and bicycling to school from southern neighborhoods.	1	**Encouragement** No Additional recommendations.

School	Responsible Agency*	Engineering Recommendations		Other Recommendations
Hemlock Elementary	SD	Study installing low-cost rubberized speed bumps in school parking lot to prevent speeding parents during drop-off and pick-up.	1	**Education** No Additional Recommendations
	C	Study installation of signage and curb paint to clarify drop-off and pick-up zones near the school.		**Enforcement** Discuss targeted enforcement at Hemlock and Stinson for pedestrian right-of-way.
	SD	Consider painting red curb in school parking lot to prevent parents who park their cars, congesting pick-up traffic, which backs up onto the crosswalk at Hemlock and Elderidge.		**Encouragement** No Additional Recommendations
Paden Elementary	C	Study circulation patterns for drop-off and pick-up with school staff before the Vacaville Christian High School development is complete, to prevent the potential for mid block u-turns on Paden School Road (e.g, installation or double-yellow centerline or median bumps to prevent u-turns).		**Education** No Additional Recommendations
	SD	Consider closing off west staff parking lot during school arrival and dismissal to prevent students from competing with cars entering the parking lot.		**Enforcement** Add a crossing guard at the crosswalk directly across from the school to ensure safe crossings from the school to the park.
	SD	Discontinue non-police sponsored traffic management on Paden School Road.		**Encouragement** No Additional Recommendations
	C	Install red curb at the existing crosswalk at on Paden School Road in front of the school.		

*Responsible Agency – C=City, SD=School District

School	Responsible Agency*	Engineering Recommendations		Other Recommendations
Sierra Vista Elementary	C	Study potential traffic calming measures to slow speeds on the curve of Bel Air Dr near Alamo to prevent parents speeding to drop off their students in the morning (e.g., median bumps in lieu of bots dots, radar speed feedback signs, etc.)	1	**Education** No Additional Recommendations
	C	Study installation of signage and curb paint to clarify drop-off and pick-up zones near the school along Bel Air in front of the park.		**Enforcement** No Additional Recommendations
			1	**Encouragement** Begin "Rainy Day Patrol" to encourage drop-off and pick-up north of the school by the park to decrease hazardous congestion in front of the school on Bel Air.

*Responsible Agency – C=City, SD=School District

5.19. VALLEJO

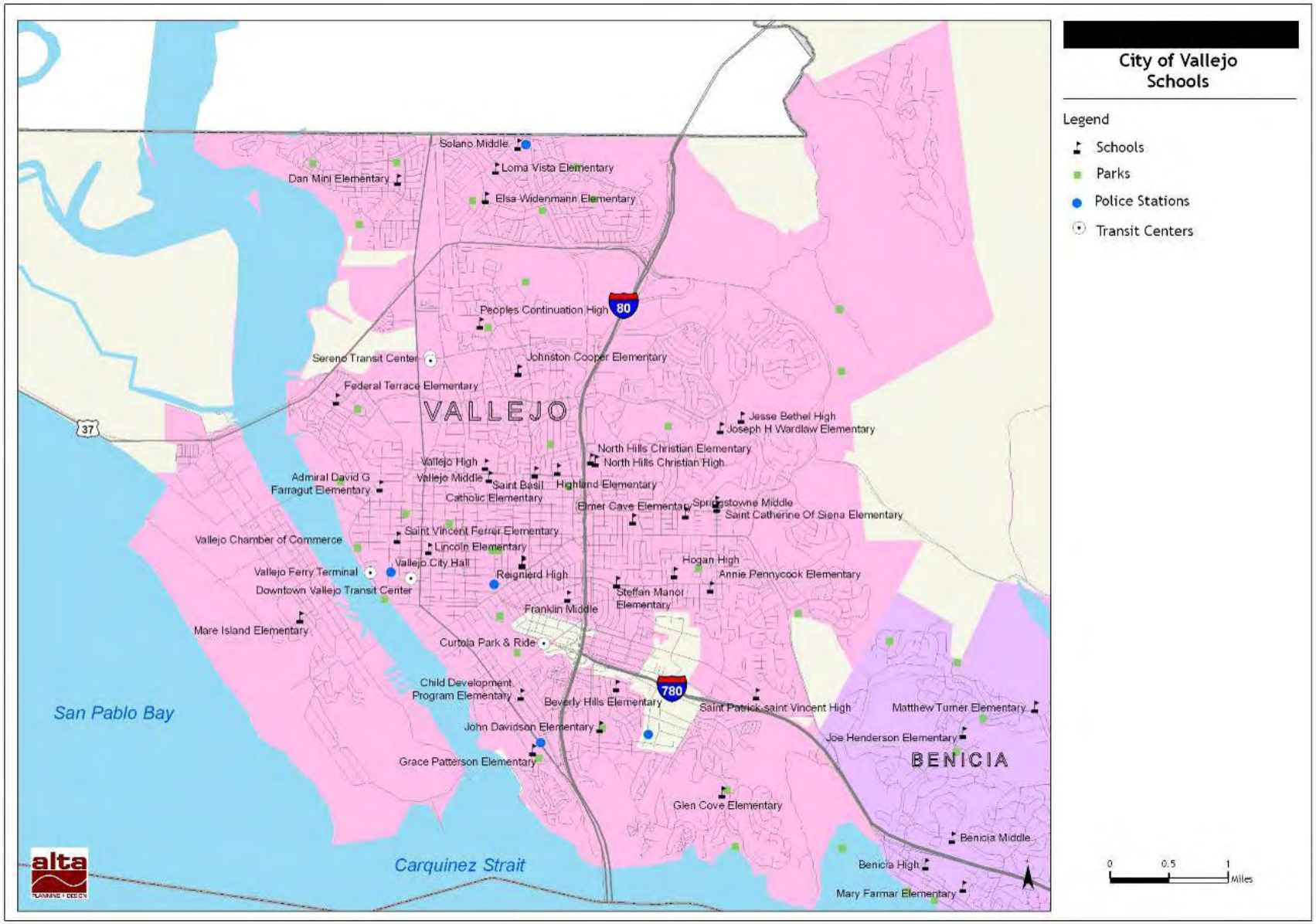
Vallejo's SR2S planning process was conducted by its SR2S Community Task Force. **Table 5-13 Vallejo SR2S Task Force** shows the participants.

Table 5-13 Vallejo SR2S Task Force

Position	Name	Title
City Appointment	Hermie Sunga	Councilmember
Public Safety Rep	Joel Salinas	Officer
School Board Appt.	Daniel Glaze	Vice President
STA TAC Rep	Gary Leach	Public Works Director
STA BAC Rep	Mick Weninger	Vallejo Resident
STA PAC Rep	Lynn Williams	Vallejo Resident

As explained in Chapter 3, a public process was undertaken in developing a list of safe routes to school projects and programs in Vallejo. **Figure 5-17** is a map of Vallejo and its 24 schools. Vallejo's audit walkabout occurred at Steffan Manor Elementary School.

Figure 5-17 Vallejo Schools



5.20. VALLEJO AUDIT SCHOOL WALKABOUT –STEFFAN MANOR SCHOOL

Steffan Manor Elementary School – Vallejo, CA

5.20.1. Existing Conditions

5.20.1.1. School Location

Steffan Manor (Manor) Elementary School is located at 815 Cedar Avenue in Vallejo. The School serves Kindergarten through 5th grade and, for the 2006-2007 school year, had an enrollment of approximately 653 students. The Manor School site is bound by Georgia Street to the south, Steffan Street to the west, houses and Webb Street to the north, and Cedar Street to the east. Georgia Street is a major arterial that connects to I-80 several blocks to the west and provides walking access to the School. Webb Street is a neighborhood collector that connects to Cedar Street. Cedar Street is also a neighborhood local street that fronts the School, connects to the small school parking lot, and to the School's main entrance. Pedestrians and bicyclists access the School from Georgia and Cedar Streets.

5.20.1.2. Traffic Controls

The T-intersection of Cedar Street/Georgia Street is traffic signal controlled, with a driveway serving retail uses forming the southern leg of the intersection. Further to the west is the signalized intersection of Georgia Street/Miller Avenue. The Cedar Street/Webb Street intersection, also a T-intersection, is stop controlled on Cedar Street only.

5.20.1.3. Parking

There is one small parking lot at Manor School located on the northeast corner of the grounds, off of Cedar Street. This area is reserved for staff and faculty and due to its small size, all visitors and many staff and faculty parks on the street.

5.20.2. Transportation to/from School

5.20.2.1. Drop-Off and Pick-Up

Students waiting for pick-up

Drop-off and pick-up of students by parents generally occurs on Cedar Street in front of the school. A significant amount of pick-up activity also occurs at the small retail center parking lot directly across Georgia Street from the school – an activity currently permitted by the business managers. A lesser amount of pick-up and drop-off activity occurs along Georgia Street in front of the school.

Cedar Street, extending north from Georgia Street, has approximately 100 feet of curb with no parking restrictions, 50 feet of red curb, 200 feet of white (passenger loading only) curb, followed by another 100 feet of red curb. There are several buses that queue on Cedar Street, at the northern end of the school grounds, for pick up. School staff and the police department have developed a program whereby staff place cones down the middle of Cedar Street to channelize southbound vehicles. This process defines a lane for cars to drive adjacent to the sidewalk to pick up students – all southbound vehicles are channeled into this lane, regardless of whether they are picking up students. A school staff member monitors the activity to keep drivers moving and assist students to quickly load. Regardless, significant congestion still occurs as the vehicles jockey for the limited space.

Students crossing Georgia Street

Students crossing Webb Street at Cedar Street

Georgia Street has approximately 225 feet of white curb, stenciled with "Loading Only" lettering. A small number of students are dropped off or picked up by their parents in this location.

5.20.2.2. Walking

Cedar Street has narrow, four foot wide sidewalks on the school side requiring many of the students to walk on the grass or close to the curb face. On the opposite side of the street, the sidewalks are narrow, with rolled curbs with numerous cars parking and encroaching onto the already narrow sidewalk.

There are two marked yellow transverse crosswalks, on the north and west sides, at the signalized T-intersection of Georgia and Cedar Streets. Two crossing guards assist the students, many of whom cross the street to meet their parents in the small retail center.

Along the Georgia Street school frontage, the sidewalk is wide, almost 16 feet, but then narrows to only four feet west of the school property. However, this narrow portion has a six foot wide planter strip and, coupled with cars parking on the street, provides a substantial buffer from the moving cars. Parents also wait on Georgia Street to pick up their students along the sidewalk area.

Also, students walk home along Georgia Street, either towards the west and crossing Miller Avenue or to the east, sometimes crossing Annette Avenue. Miller Avenue is signal controlled but the sidewalks west of Miller Avenue are narrow and students walk next to the moving lane of traffic. At Annette Avenue, there is no marked crossing.

Many students walk north and cross Webb Street at Cedar Street to access the residential neighborhood further to the north. Most of these students must traverse the very narrow, fence-enclosed pathway that crosses the water aqueduct. This path, which is completely enclosed, sides and top, provides ready access to this neighborhood.

5.20.2.3. Bicycling

There are currently no existing on-street bicycle facilities near the School and no bike parking racks provided on-site.

5.20.2.4. Bus Service

Vallejo Transit provides the only bus service near Manor School. Route 3 operates along Georgia Street. Bus fair is $1.75 for a one way, $12.00 for a 10-Ride, and $43.20 for a youth city pass.

5.20.3. Vallejo's Existing Safe Routes to School Projects and Programs

During the spring of 2007, Vallejo's Police Department offered pedestrian safety training at eight of the local elementary schools. All schools were offered this opportunity but not all of them participated. The Training consisted of a 20 minute presentation and demonstration on how to safely cross the street.

The Police Department also offers the Junior Safety Patrol program to approximately 75 percent of the local elementary schools.

Each year the Police Department also sends out a letter to all elementary school students for them to take home regarding traffic safety tips at the schools. This letter is approved by the schools and includes vehicle codes and fines associated with not adhering to these codes.

In July 2006, the University of California Berkeley Institute Of Transportation Studies released the City of Vallejo Traffic Safety Evaluation Study. This report uses historic collision data for the City to develop recommendations for improving pedestrian safety and safety in school area. Recommendations pertinent to the Safe Routes to School program suggest the City's school area signs and marketing meet the most current MUTCD standards. The Study also suggests the City study warrants for crossing guards, traffic controls, pedestrian paddles, and in-pavement flashers near schools. The final recommendation is to create a priority list of projects for grant applications.

The walking audit team (above) and students map their routes to school at the evening presentation (below)

5.20.4. Engineering Recommendations

5.20.4.1. Walkabout

A walkabout was held at Steffan Manor Elementary School on Thursday, April 19, 2007. The walkabout included members of local police, school Administrators, City and STA Staff. Following the audit, STA's Safe Routes to School consultant held a presentation of potential improvements and worked with attendees on problem areas and potential solutions. Several locations were identified as difficult locations for pedestrians and bicyclists. Several locations were identified as difficult locations for pedestrians and bicyclists. **Figure 5-18 – Steffan Manor Elementary School Improvement Plan** includes issue locations, the issues, and potential capital improvements. The first location is Cedar Street where congestion and pedestrian safety are concerns. Another location is the Cedar Street/Webb Streets intersection and the enclosed pathway that connects to the residential neighborhoods to

the north. Further to the west, concern was raised about the high vehicle speeds at the Georgia Street/Miller Avenue intersection.

5.20.4.2. Design Concepts

The following design concepts were developed as improvements for the identified issues. These concepts are shown in Figure 5-18. Most of the potential improvements are described below.

Congestion and Safety on Cedar Street

A conversion of Cedar Street to one-way, southbound only, should be studied during drop-off and pick-up times for its ability to improve circulation for the school. School staff could place cones and signage at the Street ends during these hours. Such a conversion would affect the residential neighbors across from the school and require a short detour around the block to access their homes from Georgia Street. However, the benefits to Manor School would include improved circulation and the ability to better separate queued vehicles from through vehicles along the school frontage during the pick-up / drop off periods. With a one-way configuration, there would also be increased space for buses to maneuver, fewer vehicle conflicts as there would be fewer turn and through movements to expect, and the current lane coning operation conducted by staff could possibly be eliminated. Residents on the east side of Cedar Street may also consider this configuration a benefit as it would be easier to access their homes, even during school drop-off and pick-up times.

The coning operation on Cedar Street

Sidewalk widening on the west side of Cedar Street, from the current four feet to a minimum eight feet, is recommended as it would better separate pedestrians from vehicles. Installing an even wider section (up to 15 feet) next to the school's main entrance is also recommended as it would permit better regulated student queuing while waiting to get picked up. Both recommended widenings would take place behind the existing curb.

Parking restrictions along Cedar Street currently consist of the 200 feet of white, stenciled (3 Minute) curb extending from the school's front entrance to the north. The existing stencils need repainting to improve visibility and complimentary signs, emphasizing the stenciled message, should be installed.

Georgia Street

Along the Georgia Street school frontage, the sidewalk is wide, almost 16 feet, so widening is not necessary. However, if the school buses were relocated here as is recommended, then their contribution to the Cedar Street congestion would be eliminated. Signing and education of parents would have to occur as well as coordination and discussion with the bus operators to ensure the special needs of the students utilizing their services are still met.

Signs, such as speed limit and advance school warning signs, should be made more visible by trimming tree branches and shrubs.

To reduce the speeds of turning vehicles from Georgia Street onto Russell Street, and also to shorten the crossing distance for pedestrians, it is recommended that curb extensions ("bulbouts") be installed on Georgia Street. .

Georgia Street and Miller Avenue

A large number of students walk on Georgia Street to and from points west of the freeway. This requires that they traverse the signalized intersection of Georgia Street/Miller Avenue. This intersection serves large volumes of vehicles that are exiting the freeway and are still in the "freeway" mode. They are driving and, while turning the corners, look for other autos and are not properly looking for pedestrians. Recommended improvements at this intersection consist of tightening the turn radii, thereby forcing motorists to slow when they turn, and widening the pedestrian facilities crossing the freeway to provide greater separation from vehicles. Another option is to prohibit southbound vehicles on Miller Avenue from turning right on red – this would reduce the conflicts of east-west moving pedestrians and vehicles turning right.

The narrow five feet wide sidewalks on Georgia Avenue, west of Miller Avenue, have no buffer from the moving traffic. Recommendations are to widen the sidewalks into the street or install a cross-hatched shoulder that could encourage motorists to shy away from the sidewalk and provide more of a buffer between the motorists and the pedestrians. This latter treatment would also maintain the existing curb-to-curb width without degrading the road safety for bicyclists.

Cedar Street / Webb Street Intersection

The installation of ladder-style marked crosswalks would increase the visibility of the crosswalks and better alert motorists of crossing pedestrians. Due to the drainage "dips" in the street intersections, traffic already goes relatively slow at this location. The north side sidewalk of the intersection could be widened into the street up to six feet to facilitate the design resolution of complicated issues such as maintaining adequate drainage, driveway access, and ADA compliance ramps.

Webb Street – Warford Street pathway

Pathway Connecting Webb Street to Warford Street

Currently, this pathway is narrow (5.5 feet wide) and the fencing extends overhead, making it feel enclosed and uninviting. There are bollards at both ends that are very closely spaced (as narrow as 16 inches) making it impossible for bicyclists or baby strollers to easily pass through. Two alternative recommendations are offered.

The first option would involve improving the existing pathway. Though right-of-way is very restricted, there are methods to "open" the pathway up, such as removing the bollards at each end, removing the fencing overhead, repairing the walking surface, widening the path at least at the aqueduct over crossing where right-of-way acquisition is not an issue, and improving ADA access at both ends with pedestrian ramps. Safety is a concern and the responding police units are well aware of how this pathway is used as an escape route. Overhead lighting currently exists but, though it provides better visibility for the trail users, it also intrudes into the adjacent neighbor's yards and homes

Another alternative would be to close off the existing pathway and install a modern pedestrian-only crossing of the channel at Sheldon Avenue only two blocks or 500 feet to the west. A crossing at Sheldon Avenue would permit a short (approximately 25 foot) crossing that would have maximum visibility, lighting, safety, security, and eliminate the current condition of the pathway being immediately adjacent to residential properties.

Jennings Avenue Laurel Street Pathway Improvement

This pathway could be improved similar to the first alternative discussed for the Webb to Warford Street pathway. Currently, the existing pathway is intimidating, narrow, and in need of repairs. Extra width could be obtained by combining residential fences with the pathway fences so that only one fence exists on each side. The Laurel Street crossing should be improved with a high-visibility crosswalk and better signed to alert motorists of the pathway crossing.

Miller Avenue Pathway Improvement

This pathway could be improved. Currently, the existing pathway is intimidating and exits to Miller Avenue at I-80 ramps. Consider closing this pathway or making improvements to Miller Avenue and the ramps to reduce vehicle speeds and increase awareness of bicycling and walking students. If improved, garbage cans should be installed to help reduce the amount of garbage in the area.

5.20.5. Education Recommendations

- The School's Traffic and Safety Committee should develop a "Walking School Bus" program, where parents take turns walking a group of students in their neighborhood to school.
- Provide student "valets" that assist students unloading and loading of vehicles. This will quicken the process and involve students in the process.
- Develop a Safety Patrol program where older students team with crossing guards and share their experiences with other students.
- Provide information in English and in Spanish informing parents of proper circulation patterns for drop-off and pick-up times at the beginning and middle of the school year.
- Periodically survey parents to better understand their patterns, their trip-making rationale as well as what could better work for them, and, simultaneously, better inform them about school programs and policies.
- Crossing Guard Training – Continue the training program to ensure guards clearly understand their priorities and clearly and uniformly establish their duties and responsibilities.

5.20.6. Enforcement Recommendations

- In conjunction with local police officers, establish driver education programs early in the school year and follow up periodically with strong enforcement techniques to ingrain proper driver and pedestrian behavior.
- Train parent volunteers to help with the control of unloading and loading procedures during the morning and afternoon school times.

Students excited by a policeman's presence after school

5.20.7. Encouragement Recommendations

- Work with the local police department to implement after school bicycle rodeos where students can learn proper bicycling rules of the road.
- Work with local bicycle retailers and community health organizations to donate or provide subsidized bicycle helmets and bicycles to students.

- Participate in bike to School Day and International Walk to School day activities.
- Install bicycle racks to encourage students to ride their bicycles.
- Develop a map with Safe Routes to School routes.

5.21. VALLEJO'S SCHOOL DISTRICT PRIORITIES

One of Vallejo's other schools held a walking audit and developed projects and programs for the SR2S program. **Table 5-14 Vallejo SR2S Priorities** shows the results of this audit. Listed in the table are improvements and programs that were suggested by walkabout participants. These are also the priority projects and programs for Vallejo's SR2S Plan. Vallejo's Task Force decided that the most important project for the earliest implementation is *4*, improving the Cedar Street/Webb Street intersection.

Vallejo chose to keep their STA Safe Routes to School Task Force on the condition that the STA continue to assist Vallejo with project implementation and future planning.

Figure 5-18 Steffan Manor Elementary School Improvement Plan

Table 5-14 Vallejo SR2S Priorities

Vallejo Citywide Safe Routes to School Recommendations							
	Engineering		Education		Enforcement		Encouragement
1		1	Develop programs to incorporate health, science, and math aspects of safe routes to school information in school	1	With local police, distribute materials early in the year describing drop-off/pick-up locations and driving safety	1	Work with students to develop ways to increase bicycling and walking
		2	Develop a "Walking School Bus" program at elementary schools, where parents take turns walking students in their neighborhood to school	2	Work with police to perform specific enforcement before school begins and after school dismisses.	2	Start a "Frequent Walk/Ride Card" program with bicycle helmets and other travel related prizes (umbrellas, bicycle raffles, etc).
		3	Provide appropriate parking information for driving behavior around the School for parents early in the school year and several times during the year			3	Participate in Bike to School Day and International Walk to School Day activities
		4	Where not existing, develop Safety Patrols where older students team with crossing guards			4	Work with the local police department to implement after school bicycle rodeos at elementary schools where students can learn bicycling rules of the road.
		5	Crossing Guard Training –Develop a training program that establishes guards' duties, responsibilities, and priorities			5	Work with students and parents to develop a map with the safest walking/bicycling routes to school
						6	Work with the "student council" to engage students in bicycling and walking safely to school
						7	Develop a school based committee with students, parents, and staff to formulate ideas, assemblies, and participation efforts for Safe Routes to School
						8	Boost outreach for Fairfield's "Parent Patrol" Program.

School	Responsible Agency	Engineering Recommendations		Other Recommendations
Widenmann Elementary School	C	Study, sign, and paint clear student drop-off and pick-up zones along Mini Dr. and Whitney Dr. to help reduce the number of cars congesting the student crosswalk at Whitney Dr.	1	**Education** No additional suggestions.
	C	Install Radar Speed feedback signs at Mini Dr. and Whitney Dr. to deter speeding in the morning drop-off periods.	1	**Enforcement** Warn and ticket ice cream trucks about school zone distances to keep students from blocking sidewalks and loitering in heavy traffic areas near the school (calculate commercially legal zone based on new 1000' school zone laws).
	C	Install high visibility crosswalk markings at existing crosswalks adjacent from the school on Mini Dr. and Whitney Dr to assist in pedestrian visibility.	1	**Encouragement** No Additional suggestions.

*Responsible Agency – C=City, SD=School District

This Page is Intentionally Left Blank

6. FUNDING

While some of the SR2S programs can be conducted by volunteers from cities and schools, funding is needed to plan and implement physical improvements, hold events, and develop and implement educational programs and materials. In addition to resources committed by STA for programmatic and capital improvements, funding should be pursued from a variety of sources. This Chapter includes a description and a matrix (**Table 6-2**), summarizing these sources.

6.1. CAPITAL FUNDING

Capital funding for infrastructure improvements is available from a variety of sources. Usually, public agencies must initiate changes in the public right-of-way. The SR2S task force should work with the STA to ensure that all potential funding sources are pursued. In addition to funding projects as part of the Capital Improvements Programs, Solano County's cities and the County are able to pursue funds at the federal level including the Transportation Enhancements portion of the Federal Transportation funding program (SAFETEA-LU), and the Congestion Mitigation and Air Quality (CMAQ) funds also available through SAFETEA-LU. These funding sources as well as others are described in this section.

6.1.1. Federal Funding Sources

The primary federal source for SR2S facilities is SAFETEA-LU, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. SAFETEA-LU is the fourth in a series of Federal transportation funding bills. The $286.5 billion SAFETEA-LU bill, passed in 2005, authorizes federal surface transportation programs for the five-year period between 2005 and 2009.

SAFETEA-LU funding is administered through the State (Caltrans and Resources Agency) and regional planning agencies. Most, but not all, of these funding programs are oriented toward transportation rather than recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Specific funding programs under SAFETEA-LU include:

Safe Routes to School Program — SR2S is funded by a $612 million Federal aid fund to State Transportation Departments over the fiscal years of 2005-2009. The State of California is apportioned nearly $15 million for the FY 2007, which is the most of any state. Projected apportionment for the FY 2008 is over $18 million and nearly $23 million for the FY 2009.

Federal Lands Highway Funds — Federal Lands Highway funds may be used to build pedestrian facilities in conjunction with roads and parkways at the discretion of the department charged with administration of the funds. The projects must be transportation-related and tied to a plan adopted by the State and MPO. Approximately $1 billion is available nationally through 2009.

Recreational Trails Program — $370 million nationally through 2009 for non-motorized trail projects.

Transportation, Community and System Preservation Program — $270 million nationally over five years (2006-2011) reserved for transit oriented development, traffic calming and other projects that

improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services and trade centers.

SAFETEA-LU www.fhwa.dot.gov/safetealu/index.htm

Walkinginfo.org - A listing of project types and corresponding potential funding sources is available from the Pedestrian and Bicycle Information Center. The matrix lists 35 different types of pedestrian and bicycle projects and identifies the federal funds that are most appropriate for each type of project.

Walkinfo Federal Funding Matrix: http://www.walkinginfo.org/pp/funding/gov/popups/matrix.htm

6.1.2. Statewide Funding Sources

The State of California uses both federal sources (such as the Recreational Trails Program) and its own budget to fund pedestrian projects and programs. In some cases, such as with Safe Routes to School, and the Office of Traffic Safety project sponsors apply directly to the State for funding. In others, such as Bay Trail grants, sponsors apply to a regional agency.

6.1.2.1. Safe Routes to School (SR2S)

In September 2004, with the passage of SB 1087 (Soto), the State extended Safe Routes to School legislation for three additional years. The bill is scheduled to end on January 1, 2008. A new bill was introduced in December 2006 and passed with most recent budget extending the program until January 1, 2013. This program is intended to improve the safety of walking and bicycling to school as well as encourage students to walk and bicycle to school by identifying existing and new routes to school and implementing pedestrian and bicycle safety and traffic calming projects. California apportionment is $28.8 million for FY 2006-2007 and $25.5 million for FY 2007-2008. **Table 6-1** shows past Solano County SR2S recipients and projects.

Caltrans, SR2S Program http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/sr2s.htm

Table 6-1 Previous Solano County SR2S Funds Recipients

Funding Cycles	Agency	School Name(s)	Project Location	Project Description	Total Project Cost	Federal Funds	Funding Cycles
2004/2005	Fairfield	E. Ruth Sheldon ES and T. C. McDaniels School	South side of Woolner Ave. between the two schools.	Construct sidewalk improvements, curb cuts and crossing improvements	$59,000	$53,100	2004/2005
2002/2003	Vacaville	15 ES's; 3 Jr. HS's, 3 HS's, 1 Charter school	Various locations in the vicinity of the schools	Install active school zone radar signs and other school crossing signs	$198,000	$178,200	2002/2003
2002/2003	Solano County	Benjamin Franklin MS	Lemon St. between Benicia Rd. and Curtola Pkwy.	Construct curb, gutter, sidewalks and curb ramps	$123,000	$81,000	2002/2003
2001/2002	Solano	Benjamin Franklin Middle School	Lemon St. between Thomas Ave. and Curtola Pkwy.	Construct curb, gutter, sidewalks and curb ramps	$66,000	$59,400	2001/2002
2001/2002	Benicia	Robert Semple Elementary School	Hillcrest Ave. between East Second and East Fifth St.; all of Linda Vista and Vista Grande Ave.	Construct sidewalks and curb ramps; Install crosswalk pavement markings and traffic signs	$160,000	$144,000	2001/2002
2001/2002	Vacaville	Eugene Padan Elementary School	Along Davis St., Alonzo Rd. and Marshall Rd.	Construct curb, gutter and sidewalk	$211,828	$190,645	2001/2002

6.1.2.2. Land and Water Conservation Fund

The Land and Water Conservation Fund is a federal program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. The Fund is administered by the California State Parks Department and has been reauthorized until 2015.

Cities, counties and districts authorized to acquire, develop, operate and maintain park and recreation facilities are eligible to apply. Applicants must fund the entire project, and will be reimbursed for 50 percent of costs. Property acquired or developed under the program must be retained in perpetuity for public recreational use. The grant process for local agencies is competitive, and forty percent of grants are reserved for Northern California.

In 2006, approximately $480,000 was available for projects in Northern California.

California State Parks Department, Land and Water Conservation Fund Guide
www.parks.ca.gov/?page_id=21360

6.1.2.3. Environmental Justice: Context Sensitive Planning Grants

The Caltrans-administered Environmental Justice: Context Sensitive Planning Grants Program funds planning activities that assist low-income, minority, and Native American communities in becoming active participants in transportation planning and project development. Grants are available to transit districts, cities, counties, and tribal governments. This grant is funded by the State Highway Account at $1.5 million annually statewide. Grants are capped at $250,000.

Caltrans, Environmental Justice Program www.dot.ca.gov/hq/tpp/offices/opar/titleVIand%20EJ.htm

6.1.2.4. Office of Traffic Safety (OTS) Grants

The California Office of Traffic Safety distributes federal funding apportioned to California under the National Highway Safety Act and SAFETEA-LU. Grants are used to establish new traffic safety programs, expand ongoing programs to address deficiencies in current programs. Pedestrian safety is included in the list of traffic safety priority areas. Eligible grantees include governmental agencies, state colleges and state universities, local city and county government agencies, school districts, fire departments, and public emergency services providers. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Grants are awarded on a competitive basis, and priority is given to agencies with the greatest need. Evaluation criteria to assess need include: potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants. OTS expects to have $56 million in funding available statewide for FY 2006/07.

California Office of Traffic Safety, Grants Program www.ots.ca.gov/grants/default.asp

6.1.2.5. California Center for Physical Activity Grant Program

The California Center for Physical Activity runs several programs related to walking and offers small grants to public health departments. Grants are in the amount of $4,999 dollars or less and are offered intermittently.

California Center for Physical Activity
www.caphysicalactivity.org/our_projects.html

6.1.3. Regional Funding Sources

Regional SR2S grant programs come from a variety of sources, including SAFETEA-LU, the State budget, vehicle registration fees and bridge tolls. Although most regional funds are allocated by regional agencies such as the Metropolitan Transportation Commission (MTC), the Bay Area Air Quality Management District (BAAQMD) and the Association of Bay Area Governments (ABAG), some (such as a portion of the regional Bicycle and Pedestrian Program) flow to county congestion management agencies, such as the STA which allocate funds to project sponsors.

6.1.3.1. Safe Routes to Transit (SR2T)

Regional Measure 2 (RM2), approved in March 2004, raised the toll on seven state-owned Bay Area bridges by one dollar for 20 years. This fee increase funds various operational improvements and capital projects, which reduce congestion or improve travel in the toll bridge corridors.

Twenty million dollars of RM2 funding is allocated to the Safe Routes to Transit Program, which provides competitive grant funding for capital and planning projects that improve bicycle and pedestrian access to transit facilities. Eligible projects must be shown to reduce congestion on one or more of the Bay Area's toll bridges. The competitive grant process is administered by the Transportation and Land Use Coalition and the East Bay Bicycle Coalition. Competitive funding is awarded in five $4 million grant cycles. The first round of funding was awarded in December 2005. Future funding cycles will be in 2007, 2009, 2011 and 2013.

Transportation and Land Use Coalition, SR2T Program
www.transcoalition.org/c/bikeped/bikeped_saferoutes.html

6.1.3.2. Regional Bicycle and Pedestrian Program (RBPP)

The RBPP was created in 2003 as part of the long range Transportation 2030 Plan developed by the Bay Area Metropolitan Transportation Commission. The program—currently funded with Congestion Mitigation and Air Quality funds—funds regionally significant bicycle and pedestrian projects, and bicycle and pedestrian projects serving **schools** or transit. $200 million is committed to this program over the 25-year period. Seventy-five percent of the total funds is allocated to the county congestion management agencies based on population. The remaining 25 percent of funds is regionally competitive, with the county CMAs recommending the projects to be submitted to MTC for funding consideration.

Metropolitan Transportation Commission, RBPP Program
www.mtc.ca.gov/planning/bicyclespedestrians/regional.htm#bikepedprog

6.1.3.3. Transportation For Clean Air (TFCA) Program

The Solano County 40% Program Manager TFCA Funds is provided by a $4 surcharge on motor vehicles in the Bay Area. The Bay Area Air Quality Management District (BAAQMD) is responsible for administering the Bay Area Regional TFCA program and partners with the STA to administer the 40% Program Manager TFCA Funds.

For more information about the Regional TFCA program, visit the BAAQMD's webpage at http://www.baaqmd.gov/

6.1.3.4. Clean Air Funds (CAF)

The Yolo-Solano Air Quality Management District (YSAQMD) manages the Clean Air Funds, designed to reduce motor vehicle emissions. In CAF there is $500,000 available for a variety of programs including bicycle and pedestrian programs. Individuals, businesses, public agencies, or non-profit organizations are all eligible to apply for the funds that come from an annual Department of Motor Vehicles registration fee of $4 and from AB 8 property tax proceeds for Solano County projects.

For more information about the Regional CAF program, visit the YSAQMD webpage at http://www.ysaqmd.org/incentive-caf.php

6.1.3.5. Transportation for Livable Communities (TLC)

MTC offers two kinds of assistance through the TLC program: capital and planning. TLC funds small-scale transportation improvements that are designed to make a big difference in a community's vitality. Eligible projects include streetscape improvements, and transit/pedestrian-oriented developments. Successful projects bring new vibrancy to downtown areas, commercial cores, and neighborhoods, making them places where people want to live, work and visit. Within the TLC funds is the Housing Incentive Program (HIP), these funds are allocated to capital transportation projects that support increasing the housing supply in the Bay Area where there is existing infrastructure, locating new housing near non-automotive transportation options, and establishing residential density near public transportation to support the service.

$27 million is the annual allocation to the TLC Program.

Metropolitan Transportation Commission, TLC Grant Program
www.mtc.ca.gov/planning/smart_growth/tlc_grants.htm

6.1.4. STA Funding Program

6.1.4.1. Solano Bicycle and/Pedestrian Program

The Solano Bicycle and Pedestrian Program (SBPP) funds bicycle and pedestrian projects through three funding sources: Transportation Development Act (TDA) Article-3 funds, Countywide Bicycle and Pedestrian funds through MTC's Regional Bicycle and Pedestrian Program (RBPP), and Eastern Solano Congestion Mitigation and Air Quality (CMAQ) funds.

Staff Contact: Sam Shelton, STA 707.424.6075 sshelton@sta-snci.com

6.1.4.2. Countywide Transportation for Livable Communities (TLC) Program

The Solano Transportation Authority Transportation For Livable Communities Program (TLC) is part of a Bay Area region wide effort to promote projects that encourage pedestrian, bicycle and transit trips.

This is accomplished by providing funds to projects that support a community's larger infill development or revitalization effort; and provide for a wider range of transportation choices, connectivity, improved

internal mobility, and stronger sense of place. Typical TLC capital projects include new or improved pedestrian facilities, bicycle facilities, transit access improvements, pedestrian plazas, traffic calming and streetscapes.

Staff Contact: Robert Guerrero, STA 707.424.6014 rguerrero@sta-snci.com

6.2. NON-TRADITIONAL PROGRAM FUNDING

As the STA's Safe Routes to School program develops, funding is needed to support the overall program, this can include a paid staff coordinator, purchasing incentives, printing newsletters, staffing events, and developing educational materials. Both school-based and program-based funding will be essential for success. When program funding is pursued, it should be emphasized that a SR2S program improves the entire community by relieving traffic congestion, contributing to cleaner air, creating alternative transportation routes, and improving the health and safety of children and the entire community. In order to maintain and expand the program, new sources of funding need to be obtained. Possible funding sources include:

- ***Corporations and Businesses.*** Local corporations and businesses may be able to provide cash, prizes, and/or donations, such as printing services, through community giving or other programs. Parents or other members of stakeholder teams may be a good source for contacting companies.

- ***Foundations.*** There are institutions throughout the country that provide funding to non-profit organizations. The Foundation Center is a national organization dedicated to collecting and communicating information about philanthropy in the U.S., and is an excellent source for researching potential foundation funding sources. Potential foundation funding sources can be searched by geographic region and by category. Some categories that may be applicable include transportation, health, environment, and community building.

- ***Individuals.*** Statistically, individuals give more money than corporations and foundations combined. A local fund drive can quickly reach a large number of people if outreach is conducted by stakeholder team members.

- ***Events.*** Many SR2S programs have raised funds by holding special events, often using a related themed event such as a walkathon or a bicycling event. More traditional fundraising efforts, such as bake sales, concerts, talent shows, etc., can also help raise funds.

- ***Parent Teacher Associations (PTAs) and School Districts.*** Many PTAs have funds to distribute to school programs, and often schools have their own safety funding sources. Stakeholder teams should continue working with local PTAs and school districts to see if there are grant opportunities.

- ***Public Funds***. STA, Regional, State, and Federal funds are reviewed in the next section. There are a variety of funds available for different SR2S projects and programs.

Table 6-2 Funding Matrix

Acronyms:
AQMD - Air Quality Management District
Caltrans - California Department of Transportation
CMAQ - Congestion Management and Air Quality
CTC - California Transportation Commission
FHWA - Federal Highway Administration
RTPA - Regional Transportation Planning Agency
State DPR - California Department of Parks and Recreation (under the State Resources Agency)
SAFETEA-LU - Safe, Accountable, Flexible, Efficient Transportation Equity Act

Grant Source	Application Deadline	Agency	Program Funds Available	Matching Requirement	Eligible Applicants	Comments/Contact Information
Federal Funding						
Safe Routes to School (SR2S)	January	FHWA	2007 - $125 million ($14.8 to California) 2008 - $150 million	None	State, local, regional agencies, and nonprofit organizations	Federal Safe Routes to School program: http://safety.fhwa.dot.gov/index.htm
Federal Lands Highway Funds		FHWA	$1 billion total nationwide through 2009	None	State	Project must appear in STIP. Contact California Division, FHWA http://www.fhwa.dot.gov/cadiv/directory.htm
Recreational Trails Program (RTP)	October 1	FHWA	($5.5 to California)	At least 12%	State, local, regional agencies, and nonprofit organizations	Administered by California State Parks: Jean Lacher, Manager, Office of Grants and Local Services 1416 Ninth St, Room 918 Sacramento CA 94814 Mail: PO Box 942896 Sacramento CA 94296-0001 916-653-6160; Fax 916-653-6511

Grant Source	Application Deadline	Agency	Program Funds Available	Matching Requirement	Eligible Applicants	Comments/Contact Information
Transportation and Community and System Preservation Program (TCSP)	Varies	FHWA	$61.25 million annually nationwide through 2008/09	20% local match	state, local, MPOs	Projects that improve system efficiency, reduce environmental impacts of transportation, etc. Contact Kenneth Petty TCSP Program Officer, Office of Planning phone: (202) 366-6654 http://www.fhwa.dot.gov/tcsp/pi_tcsp.html
State Funding						
Safe Routes to School (AB 1475/SB1087)	May 31	Caltrans	Statewide amount unclear as of mid-2006	11.5% min.	city, county	Primarily construction program to enhance safety of pedestrian and bicycle facilities. Contact. Caltrans District 4, (510) 286-5598
Recreational Trails Program (RTP)	Oct. 1	State DPR	$3.3 million statewide (FY 2006)	20% match	jurisdictions special districts, non profits with mngmt responsibil-ities over land	For recreational trails to benefit bicyclists, pedestrians, and other users; contact State Dept. of Parks & Rec. , Statewide Trails Coordinator, (916) 653-8803
Land & Water Conservation Fund (LCWF)	May 1	California DPR	$480,000 in Northern California (2006)	50% match	Cities, counties, park districts	Recreational trails are eligible for funding. Applicants must fund the entire project, and will be reimbursed for 50% of costs.
Environmental Justice Grants: Context Sensitive Planning	October 14	Caltrans	$1.5 million statewide	10% local	MPA, RPTA, city, county, tribal govmts, transit districts	Funds activities that include low-income and minority communities in transportation planning and project development. Contact Norman Dong at norman_dong@dot.ca.gov or (916) 651-6889.
Office of	Jan. 31	Office of	$56	None	Govmtal agencies, state colleges, and	Grants are used to mitigate traffic safety program

Grant Source	Application Deadline	Agency	Program Funds Available	Matching Requirement	Eligible Applicants	Comments/Contact Information
Traffic Safety Grants		Traffic Safety	million statewide (FY 2006/07)		universities, local city and county government agencies, school districts, fire depts, and public emergency services providers	deficiencies, expand ongoing activity, or develop a new program. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Contact OTS Regional Coordinator Lisa Dixon at, (916) 262-0978 or ldixon@ots.ca.gov
California Center for Physical Activity Grant Program	Ongoing	Department of Health Services	Up to $4,999 per grantee	None	Public Health Departments	For pedestrian encouragement programs Contact: Lisa Cirill, Acting Chief lcirill@dhs.ca.gov 916.552-9943
Regional Funding						
Regional Bicycle and Pedestrian Program (RBPP) – Local Pass-Through	Varies	STA, MTC	$6 million annually region-wide	11.5%	Cities, school districts, transit districts	Constructing regionally significant pedestrian projects and bicycle/pedestrian projects serving schools or transit.
Regional Bicycle and Pedestrian Program (RBPP) –	Varies	STA, MTC	$2 million annually region-wide	11.5%	Cities, school districts, transit districts	Constructing regionally significant pedestrian projects and bicycle/pedestrian projects serving schools or transit.
Safe Routes to Transit	Varies	MTC, Administered by TALC	$4 million annually region-wide	None required, but scoring preference given to projects with outside match	Public agencies in all 9 Bay Area counties. Non-profits must partner with a public agency	Applications must demonstrate bridge congestion reduction on at least one state-owned Bay Area bridge. Contact the Transportation and Land Use Coalition or Dave Campbell (East Bay Bicycle Coalition) sr2t@transcoalition.org dcampbel@lmi.net

Grant Source	Application Deadline	Agency	Program Funds Available	Matching Requirement	Eligible Applicants	Comments/Contact Information
Transportation for Livable Communities Program	June	MTC	$27 million annually region-wide	Local match of 11.5% is required	Public Agencies. Non-profits and other CBOs may partner with public agencies	Funds for transportation projects that revitalize downtown areas, commercial cores, neighborhoods, and transit corridors. www.mtc.ca.gov/planning/smart_growth/tlc_grants.htm
STA Funding						
Solano Bicycle and/Pedestrian Program	January	STA		--	Solano County cities	Sam Shelton, STA 707.424.6075 sshelton@sta-snci.com
Countywide Transportation for Livable Communities (TLC) Program	January	STA		--	Solano County cities	Robert Guerrero, STA 707.424.6014 rguerrero@sta-snci.com

This Page is Intentionally Left Blank

Appendix A

SAFE ROUTES TO SCHOOL TOOLKIT

Solano Countywide Safe Routes to School Program

October 2006

STA
Solano Transportation Authority

alta
PLANNING + DESIGN

TABLE OF CONTENTS

INTRODUCTION **1**

WHAT IS SAFE ROUTES TO SCHOOL? 1
BENEFITS OF A SR2S PROGRAM 1

THE SCHOOL SITE AUDIT **2**

ENGINEERING TOOLS: IMPROVEMENTS TO THE PHYSICAL ENVIRONMENT **2**

THE SCHOOL ZONE 3
SCHOOL AREA SIGNAGE 3
PAVEMENT MARKINGS 3
HIGH-VISIBILITY SIGNAGE 4
SIDEWALKS 4
TRAILS AND PATHWAYS 4
CROSSINGS 5
INCREASING THE VISIBILITY OF PEDESTRIANS AT CROSSINGS 5
MID-BLOCK CROSSINGS 7
ADVANCE STOP AND YIELD LINES 7
TRAFFIC SIGNALS AND PEDESTRIANS 7
CURB EXTENSIONS 8
GRADE-SEPARATED CROSSINGS 9
TRAFFIC CALMING 9
LIGHTING 9
ON-STREET BICYCLE FACILITIES 10
BICYCLE PARKING 10

OPERATIONAL TOOLS: IMPROVING DROP-OFF / PICK-UP AND THE SCHOOL COMMUTE **10**

CROSSING GUARDS 11
SCHOOL SAFETY PATROL 11
DROP-OFF / PICK-UP INSTRUCTION FLYER 12
DEDICATED BUS ZONES 12
PARENT DROP-OFF / PICK-UP OPERATIONS 12
WALKING SCHOOL BUS / BIKE TRAIN 13
PARK AND WALK 14
SCHOOL BUSING 14
ALTERNATE TRAFFIC PATTERNS 14
STAGGERED BELL TIMES 14

Table of Contents

EDUCATION AND ENCOURAGEMENT TOOLS: TEACHING SAFETY AND PROMOTING AWARENESS . 15

SUGGESTED ROUTE TO SCHOOI MAPS 15
WALK AND BIKE TO SCHOOL DAYS 16
CLASSROOM LESSONS AND ACTIVITIES 16
CONTESTS 17
SAFETY EDUCATION 17
BANNERS AND SIGNS 18

ENFORCEMENT TOOLS: ENSURING COMPLIANCE WITH TRAFFIC LAWS 18

TARGETED ENFORCEMENT 18
CROSSWALK STING 18
SCHOOL PARKING LOT "CITATIONS" 19
NEIGHBORHOOD SPEED WATCH 19
RADAR TRAILER 19
SPEED FEEDBACK SIGN 20

RESOURCES: LINKS TO OTHER SR2S TOOLKITS AND GUIDEBOOKS 20

SCHOOL SITE AUDIT CHECKLIST FORM 21

INTRODUCTION

This toolkit was developed by the Solano Transportation Authority (STA) as part of their Countywide Safe Routes to School Program. The purpose of this toolkit is to provide an overview of tools and strategies to improve safety and accessibility for bicyclists and pedestrians around school zones.

WHAT IS SAFE ROUTES TO SCHOOL?

Safe Routes to School (SR2S) refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, incentives, law enforcement, and engineering measures. Walking and biking to school are healthy alternatives to being driven and can provide a sense of independence for children who may otherwise be restricted by school buses or parents' schedules. Safe Routes to School programs typically involve partnerships among municipalities, school districts, community and parent volunteers, and law enforcement agencies. Among the goals of SR2S programs is improved safety for children, establishing good health and fitness habits in children, and decreased traffic and air pollution. SR2S programs help integrate physical activity into the everyday routine of school children. SR2S programs also address the safety concerns of parents by encouraging greater enforcement of traffic laws, educating the public, and exploring ways to create safer streets.

BENEFITS OF A SR2S PROGRAM

The primary benefit of implementing a SR2S program is the resulting increase in safety for children walking and riding bicycles to school. A comprehensive strategy based on a cooperative effort between school officials, parents, residents, and city staff will ensure that specific traffic, pedestrian, and bicycle improvements will become priority projects eligible for State, Federal or other grant funding. The involvement of various stakeholders throughout the Safe Routes process increases the likelihood for implementation of needed safety improvements. While the primary focus of a SR2S program is improving safety for children walking and biking to school, the safety benefits from the infrastructure improvements often extend to all pedestrians in the vicinity of schools.

In addition to safety enhancements, a SR2S program helps integrate physical activity into the everyday routine of school children. Health concerns related to sedentary lifestyles have become the focus of statewide and national efforts to reduce health risks associated with being overweight. Identifying and improving routes for children to safely walk and bicycle to school is one of the most cost-effective means of reducing weekday morning traffic congestion and can help reduce auto-related pollution.

Safe Routes to School improvements are often discussed in terms of the Four E's: Education, Encouragement, Enforcement and Engineering.

Engineering — Signing, striping, and infrastructure improvements are implemented along school commute routes.

Education — Students are taught bicycle, pedestrian and traffic safety skills, and educational campaigns aimed at drivers are developed.

Encouragement — Events and contests such as walk-to-school days are used to encourage more walking, bicycling, or carpooling through fun and incentives.

Enforcement — Various techniques are used by law enforcement to ensure that traffic laws are obeyed, such as traffic stings targeted at pedestrian safety and speed feedback trailers.

This toolbox is organized according to the Four E's, with Education and Encouragement grouped together since many educational programs are intended to be fun and motivating, and many encouragement programs include an educational component. In addition to the Four E's, this toolbox also includes section discussing Operational Tools that can improve safety during the drop-off/pick-up and school commute period.

There are numerous other excellent SR2S toolkits and guidebooks available, many of which are listed at the end of this document in the Resources

section. This toolkit is not intended to supplant the information in those other guidebooks, but should instead be viewed as focused guidebook for describing tools and programs that may be appropriate to implement as part of the STA's Countywide SR2S effort. For a more comprehensive overview of SR2S programs, including more details on specific educational and encouragement activities and tips for parents and teachers for starting a successful SR2S program, it recommended that readers refer to one of the other guides such as the NHTSA Safe Routes to School guide or the Florida Safe Ways to School Toolkit.

THE SCHOOL SITE AUDIT

One primary purpose of this toolkit is to provide a resource for local groups to conduct a "school site audit" of their school. A school site audit, sometimes called a walking audit or walkabout, is an assessment of the pedestrian and bicycling conditions around the school area. Typically school site audits are conducted by the local school group or task force on foot, by walking the routes that the students use to get to school. A site audit could also be conducted on bicycle in order to better evaluate bicycling conditions.

The goal of a site audit is to document conditions that may discourage walking and bicycling to school, and to identify solutions to improve those conditions. The audit should involve identification of the built environment around a school (e.g., streets, sidewalks, pathways, crosswalks and intersections, bike routes, traffic controls), the drop-off and pick-up operations (e.g. presence of designated loading areas), as well as behaviors of students, parents, and motorists that could contribute to unsafe conditions for bicyclists or pedestrians (e.g. speeding, jaywalking, failure to yield to pedestrians).

A School Site Audit checklist form has been provided at the end of this toolkit that asks for detailed information related to: 1) Student Drop-Off and Pick-Up Areas; 2) Bus Loading Zones; 3) Sidewalks and Bicycle Routes; 4) Intersections Near the School Property; 5) Sight Distance; and 6) Traffic Signs, Speed Controls and Pavement Markings. The local school task force should use the School Site Audit checklist as a basis for conducting their walkabout.

Along with the checklist, an aerial map of the school area is an essential part of the site audit. Each school group will be provided with an aerial map of their school area that should be marked up with identified issues and suggested improvements. The marked-up aerials, along with the information from the checklist form, will be forwarded to the Community Task Force and used to helping to pinpoint and prioritize improvements in the school area.

The toolkit provides some of the most common measures from the "4 E's" – Engineering, Education, Encouragement, and Enforcement that can be implemented to improve school area safety. The most successful SR2S programs will not focus on just one type of solution, but will involve the implementation of a combination of measures from all 4 E's. Many problems can be solved through relatively low-cost educational and enforcement activities. However, some problems do require more expensive engineering or design solutions.

It is important to note that not all tools in this toolkit will be applicable or appropriate for a given school. Many of the engineering tools have specific warrants for their installation and will require evaluation by a local traffic engineer to determine if they are feasible for a particular location. For this reason, it is strongly recommended that a local traffic engineer be invited along on all school site audits to provide guidance on the applicability of specific engineering improvements.

ENGINEERING TOOLS: IMPROVEMENTS TO THE PHYSICAL ENVIRONMENT

Engineering tools focus on the design of transportation facilities that provide safe and functional accommodation for bicyclists, pedestrians, and motorists. Engineering measures can help to improve pedestrian and bicyclist safety and access, reduce traffic volumes, and decrease vehicle speeds. These measures may include

signage, markings, signals, pathways, and other traffic calming improvements that enhance safety and mobility. Although some engineering solutions are higher-cost infrastructure improvements, many engineering tools can be implemented without large expenditures, such as posting signs, modifying signal timings, or painting crosswalks or bike lanes.

THE SCHOOL ZONE

In California, school zones can be designated on all roadways contiguous to a school serving K through 12th grade. School zone signage should be posted at the school boundary, but can be posted up to 500 feet in advance. Regardless of the posted speed limit on the roadway, the speed limit is 25 mph in designated school zones when children are present. With School Zones signed and delineated, focused traffic enforcement can occur to target speeding and other moving violations.

SCHOOL AREA SIGNAGE

The 2003 Manual on Uniform Traffic Control Devices (MUTCD) and California Supplement provide guidance on the use of school area signs and markings. Key signs include the School Warning, School Crosswalk Warning, School Speed Limit, and School Advance Warning. The use of other signs are described in the 2003 MUTCD and the California Supplement as well, including "END SCHOOL ZONE."

Most school area signing used in California does not currently conform to the recently adopted standards. Non-conforming signs and pavement markings must be replaced by specific dates to meet the new standards. The California Supplement provides guidance on the phase-out periods. For example, most of the previously used school crosswalk warning signs (e.g., those with two horizontal lines) must be replaced by 2011.

PAVEMENT MARKINGS

Pavement markings have definite and important functions in a proper scheme of school area traffic control. In some cases, they are used to supplement the regulations or warnings provided by devices such as traffic signs or signals. In other instances, they are used alone and produce results that cannot be obtained by the use of any other device, and can serve as an effective means of conveying certain regulations, guidance, and warnings that could not otherwise be made clearly understandable. Pavement markings have limitations – they might not be clearly visible when wet, and might not be durable when subjected to heavy traffic. The "SLOW SCHOOL XING" marking, used in advance of uncontrolled crosswalks, is the most important school-specific pavement marking. The 2003 MUTCD and California Supplement also provide guidance on the use of stop lines, yield lines, curb markings, and other symbol markings.

HIGH-VISIBILITY SIGNAGE

One way of increasing the visibility of school area signage is through the use of Fluourescent Yellow-Green signs. When the fluourescent yellow-green background is used for school signing, a systematic approach should be used, so that the mixing of standard yellow and fluourescent yellow-green is avoided.

SIDEWALKS

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel that is separated from vehicle traffic. Sidewalks are typically constructed out of concrete and separated from the roadway by a curb/gutter and sometimes a landscaped buffer area. Sidewalks are a common application in urban and suburban environments, but are less common in rural and environments where objections to the "urban" aesthetic of sidewalks often arise. In rural areas, pedestrian travel commonly occurs along the shoulder of the roadway, areas that are often unpaved.

One of the first elements to observe when evaluating at the walking environment around the school zone is the sidewalk network. Is a continuous network of sidewalks or pathways provided to access the school site from surrounding neighborhoods? Are there any gaps? What is the condition of the walkways?

Installing new sidewalks can be costly, particularly if drainage improvements such as undergrounding of roadside culverts and installation of curb/gutter is part of the design. However, fixing short gaps in an existing sidewalk network is important to ensure the continuity of the system and can be a relatively low-cost fix.

TRAILS AND PATHWAYS

Trails and pathways are often viewed as recreational facilities, but can also serve an important function as a walking and bicycling corridor to school. Multi-use pathways are designed to serve both bicyclists and pedestrians, and provide additional width over a standard sidewalk. Pathways may be constructed adjacent to roads, through parks or open space areas, along creeks, or along linear corridors such as abandoned railroad lines. In rural areas, pathways can serve as an alternative to formal curb, gutter and sidewalks; if an asphalt hardscape is not desired, pathways can be constructed with decomposed granite or another aggregate material to better fit in with the

rural environment. Regardless of the type, pathways constructed next to the road must have some type of vertical (e.g. curb or barrier) or horizontal (e.g. landscaped strip) buffer to separate the path area from the adjacent travel lane.

CROSSINGS

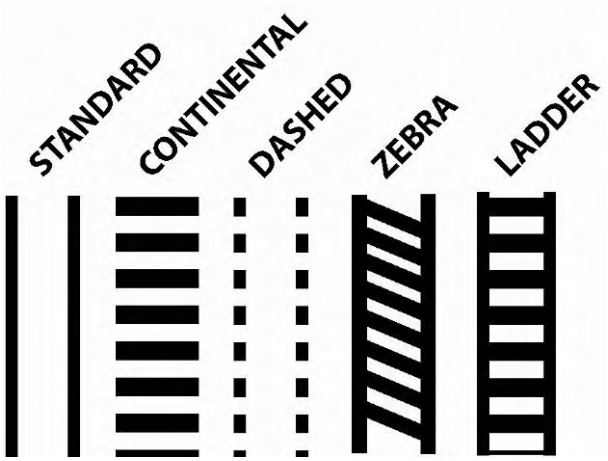
School crosswalks denote the preferred location for children to cross the street. In California, yellow crosswalks are used whenever a marked pedestrian crosswalk has been established in a roadway contiguous to a school building or school grounds. A marked pedestrian crosswalk may be yellow if the nearest point of the crosswalk is not more than 600 feet from the school building or school grounds. The SLOW SCHOOL XING marking is used in advance of uncontrolled school crosswalks. The 2003 MUTCD and California Supplement also provide guidance on the use of stop lines, yield lines, curb markings, and other symbol markings.

INCREASING THE VISIBILITY OF PEDESTRIANS AT CROSSINGS

A number of treatments can be used to increase the visibility of crossing locations, helping to enhance the safety of school children crossing the street and to warn motorists to expect children to cross the street at a specific location.

High-Visibility Crosswalk Striping

As noted above, crosswalks located on roads contiguous or within a certain distance of a school should be painted yellow. Several different crosswalk striping patterns can be used – the most common types of crosswalk striping are shown in the diagram below. The standard crosswalk striping pattern consists of two parallel lines, called the "transverse" pattern. A number of "high visibility" patterns are also in use, such as the ladder, zebra and continental patterns, which add bars for increased visibility.



Application of these high visibility patterns varies widely from jurisdiction to jurisdiction; in some cities they are not used at all, while in other cities high-visibility crosswalks are installed regularly. High visibility markings should be considered for all high volume crossings near schools, and where the conditions warrant an increased visibility marking (e.g. a mid-block location).

Even within a jurisdiction, there may not be consistent application of high-visibility patterns, with a mix of ladder, zebra or continental patterns sometimes seen applied throughout a city. It is recommended that jurisdictions choosing to install high visibility crosswalks adopt a single pattern and apply it consistently across the jurisdiction. Standardizing crosswalk markings helps both motorists and pedestrians recognize designated crossings.

Other Crosswalk Surface Treatments

Aside from the striping pattern, other crosswalk surface treatments can include textured surfaces or colored pavement. While such treatment may provide aesthetic benefits, they can be expensive to implement and often require additional maintenance. In particular textured surfaces such as concrete or brick pavers are generally not recommended for use as a crossing treatment due to accessibility (may be difficult for wheelchair users), long-term maintenance issues, and low visibility to drivers.

In-Street Yield to Pedestrian Signs

In-Street Yield to Pedestrian Signs are flexible plastic signs installed in the median to enhance a crosswalk at uncontrolled crossing locations. These signs communicate variations of the basic message 'State Law: Yield to Pedestrians'. At school crosswalks, these signs are sometimes installed on a portable base and brought out in the morning and back in at the end of each day by school staff, which may reduce the chance that the sign will become invisible to motorists by being left out all the time. For permanently installed signs, maintenance can be an issue as the signs may be run over by vehicles and need to be replaced occasionally. Installing the signs in a raised median can help extend their lifetime.

Overhead Flashers

Overhead flashers can be used at uncontrolled crossing locations with high vehicle volumes or speeds, or where other conditions require a more intense treatment than a high-visibility crosswalk. There are several types of overhead flashers including both standard yellow, fluorescent yellow-green, and LED displays. These hang from a mast arm that extends over the street. Some applications use flashing red or yellow beacons to enhance overhead signs, while at others, it is the pedestrian crossing sign itself that flashes. They can utilize passive or active actuation. Drawbacks of overhead flashers include high-cost and the fact that they may not be immediately understandable by drivers.

In-Pavement Crosswalk Lights

Another crossing treatment that is increasingly being utilized is in-pavement crosswalk lighting, which consists of flashers mounted in the street pavement adjacent to the outside of the crosswalk markings, positioned so as to be seen by oncoming

traffic. The lights are actuated, either through a push-button or a motion sensor, to flash while the pedestrian crossing is in use. Several studies, including one based on the installation of in-pavement crosswalk lights in the City of Santa Rosa, have found that flashing lights embedded in the pavement at uncontrolled crosswalks have a positive effect in enhancing a driver's awareness of crosswalks and modifying driver habits to be more favorable to pedestrians.

MID-BLOCK CROSSINGS

Because pedestrians tend to take the most direct route to their destination, there is significant demand for mid-block crossings when the nearest crosswalk is too far to expect pedestrians to walk (greater than 500 feet between intersections). By channeling pedestrians to a preferred mid-block crossing location, mid-block crosswalks can increase pedestrian safety where blocks are too long to expect all crossings to occur at intersections and in places where large numbers of people are crossing mid-block.

Selection of appropriate locations should be undertaken carefully, especially on multi-lane (four or more lanes) roads with heavy traffic volumes (greater than 12,000 ADT). As part of the review process for crosswalk installation, an engineering study should be used to analyze factors including (but not limited to) gaps in traffic, approach speed, sight distances, illumination, the needs of special populations, and the distance to the nearest traffic signal. Uncontrolled crosswalks should not be installed near traffic signals, since pedestrians should be encouraged to cross at the signal in most situations. Mid-block crossings may be coupled with medians or pedestrian refuges to shorten crossing distances, especially in multi-lane locations with high volume and high-speed vehicular traffic.

ADVANCE STOP AND YIELD LINES

Stop lines consist of solid white lines extending across approach lanes to indicate the point at which the stop is intended or required to be made, in compliance with a STOP sign or traffic signal. The MUTCD requires that stop lines be placed a minimum of 4 feet in advance of the crosswalk line at controlled intersections. However, studies have shown that moving the stop line farther back from the pedestrian crosswalk can provide an improved factor of safety and for improved visibility of pedestrians. In some places, the stop line has been moved back by 15 to 30 feet relative to the marked crosswalk with considerable safety benefits for pedestrians.

At uncontrolled crosswalk locations in California, "yield" lines must be used instead of stop lines (California State law requires motorists to yield to pedestrians in a crosswalk). The yield lines consist of a row of solid white isosceles triangles pointing toward approaching vehicles, and are often referred to as "shark's teeth." As with stop lines, moving the yield lines farther back from the crosswalk can help to improve sight distance. This is especially important at mid-block crossings, where drivers who yield too close to crosswalks on multi-lane approaches place pedestrians at risk by blocking other drivers' views of pedestrians, and pedestrians' views of other vehicles.

TRAFFIC SIGNALS AND PEDESTRIANS

Traffic control signals generally operate in one of three modes: fixed-time signals, which have a regular cycle of phases; fully-actuated signals, which use detection of vehicles and pedestrians to actuate all movements through the intersection; and semi-actuated signals which have vehicle and pedestrian detection only on one of the streets being controlled. In both actuated signal situations, the pedestrian waiting to cross must be detected, typically by pushing a button to get a WALK phase. The MUTCD states that the pedestrian clearance time should be sufficient to allow a pedestrian who leaves the curb or shoulder during the WALK signal indication to travel at a walking speed of 4.0 feet per second, to reach the far side of the traveled way or at least a median of sufficient width for pedestrians to wait. The 4.0 feet per second "normal" walking rate has been greatly debated by transportation professionals, as many feel that it does not adequately take into account users who may walk slower, such as children or senior citizens. Many transportation engineers working on pedestrian issues recommend using a walking speed of 3.0 or 3.5 feet per second in areas with high concentrations of schoolchildren or senior citizens.

Leading Pedestrian Interval

One innovative pedestrian signal timing option is the Leading Pedestrian Interval (LPI). An LPI gives pedestrians an advance walk signal before the motorists get a green light, which makes pedestrians more visible to motorists and therefore motorists more likely to yield to them.

In addition to pedestrian signals at intersections, pedestrian-only traffic signals can be used at mid-block locations, where pedestrian volumes meet the warrants established in the MUTCD.

Countdown Signals

Countdown signals device consists of a pedestrian signal with standard shapes and color and an added display that shows the countdown of the remaining crossing time. The countdown timer starts either at the beginning of the pedestrian phase or at the onset of the pedestrian clearance interval. The timer continues counting down through the pedestrian clearance interval. At the end of the pedestrian clearance interval, the countdown device displays a zero and the DON'T WALK indication appears.

CURB EXTENSIONS

Curb extensions (sometimes called curb bulbs or bulb-outs) have many benefits for pedestrians. They shorten the street crossing distance, provide additional space at corners, allow pedestrians to see and be seen before entering the crosswalk, and simplify the placement of elements like curb ramps. Curb extensions may be used at any corner or mid-block location where there is a marked crosswalk and a parking lane that can absorb the extension of the curb. Curb extensions are often effective at locations with crossing distances of greater than 40 feet; locations adjacent to high-intensity pick-up/drop-off activity; or at locations with sight distance or visibility issues.

Curb extensions have the potential to conflict with bicycle travel if not designed properly. Curb extensions should never extend into a bike lane, and should generally align with the edge of the parking lane.

Although curb extensions have many benefits, there are several issues associated with the design of curb extensions and they are not appropriate for all corners. Curb extensions can create drainage problems or trash accumulation, and may be expensive to install due to utility and drainage relocation. While one of their main advantages is that they reduce turning radii for vehicles, they can have an impact on the turning ability of trucks and other large vehicles.

GRADE-SEPARATED CROSSINGS

Occasionally, it may be necessary to raise or lower a pedestrian crossing above or below the existing grade, using a pedestrian bridge or underpass. Due to their high cost, grade-separated crossings should only be considered when there are no safe and convenient alternative routes; such as when needed to cross a freeway, major highway, rail line or waterway. Even in these cases, pedestrian-only grade-separated crossings should be built only after careful consideration. Those that require significant elevation change, such as to cross over a freeway, can be infrequently used by pedestrians. Grade-separated crossings can feel unsafe because pedestrians are isolated from others. For this reason, pedestrian facilities should be incorporated into existing and new vehicle crossings where feasible. The design of pedestrian grade-separated crossings should be consistent with guidelines for Caltrans multi-use pathways, in terms of width, grade, lighting, surfaces, and other characteristics.

TRAFFIC CALMING

Traffic calming is a traffic engineering technique that prioritizes people over motor vehicles in the design of neighborhood streets. Traffic calming measures are intended to enhance pedestrian safety and encourage safe driving by slowing vehicles and reducing cut-through traffic on local neighborhood streets. Potential traffic calming tools include raised crosswalks, curb extensions, chicanes, chokers, pedestrian refuge islands, medians, traffic circles and roundabouts, speed humps, and radar speed displays. Traffic calming may also involve total reconfiguration of roadway lanes, such as four-lane to three-lane conversions (or "road diets") that also provide opportunities to add bike lanes and median refuge islands along a corridor.

There are pros and cons to each traffic calming tool. For instance, speed humps may slow vehicle speeds at that location, but may contribute to people speeding between humps and may increase emergency vehicle response times. Chicanes and chokers may slow traffic and provide reduced crossing distances for pedestrians, but may present obstacles to cyclists if not properly designed.

LIGHTING

Safe sidewalks are a primary component of good pedestrian environments, and well lit environments convey a feeling of comfort and safety, particularly at night. Lighting should be located in the furnishings and/or frontage zones of the sidewalk, and at all roadway crossings to increase pedestrian visibility. Lighting is also an important element for multi-use pathways, at underpasses and other isolated locations. Lighting should be scaled for pedestrians.

ON-STREET BICYCLE FACILITIES

Although it may be appropriate for younger children to bicycle on the sidewalk, designated on-street bicycle facilities can provide a space for older or more experienced children to bicycle on-street. Particularly for older grade levels, as children become more confident in their cycling skills and ride at faster speeds, designated on-street facilities may help to reduce bicycle/pedestrian conflicts on congested walkways near schools. Use of on-street facilities is more appropriate for children with better bike handling skills, as they need to be aware to stay within the bike lane (if striped) or to the right of traffic (on signed routes), obey stop signs and other traffic signals, and watch for traffic pulling out of side streets or driveways. Bike Lanes provide a striped and stenciled lane for one-way travel on the roadway. Bike Routes provide for shared use of the roadway lane with motor vehicle traffic and are identified only by signing.

BICYCLE PARKING

Providing a secure and convenient location for bicycle parking is one way to help encourage more children to bicycle to school. Components of good bike parking include:

- Protection from vandalism/theft
- Protection from damage to the bicycle
- Protection from weather
- Convenient to destination

Several factors need to be considered when determining bicycle-parking needs:

Amount: Sufficient amount of parking must be made available so that bicycles are not crowded.

Location: The location must be convenient to the end destination. An appropriate location for the parking site needs to be identified. It may be possible to use a location near the schools back gate, where the parking location is adjacent to school property.

Type of device: Many schools use "wheel holder" type racks which only support the bicycle by the wheel and can damage the bicycle, and also do not allow the bike to be locked up by the frame with a U-lock. The preferred bike rack design should keep the bike upright by supporting the frame, allow the bike to be locked by the frame, and allow one or both wheels to be secured.

Monitoring: At the upper grade levels, where bicycles are likely to be more expensive, a monitor could provide an additional level of security at the bike parking area. Placement of the bike parking in a visible location near the school administrative offices or other location where a school staff member is present, is another option. Constructing a bike cage, where the bike racks are placed inside a locked corral-type facility, can provide for electronic monitoring, as only students with a key card or code can enter the cage.

OPERATIONAL TOOLS: IMPROVING DROP-OFF / PICK-UP AND THE SCHOOL COMMUTE

Operational tools focus on methods to ensure that vehicle traffic, busing and transit, and walking and bicycling to school is conducted in the safest and most efficient way possible. Many of the identified

operational tools focus on vehicle pick-up and drop-off activities, ensuring adherence to established procedures, developing specific systems to move vehicles through the loading zone, and use of monitors to expedite the process. Other operational tools focus on ways to incorporate walking and bicycling into the school commute, while ensuring that children are kept safe along the way. Operational tools can often be very low cost and easy to implement, although they may involve a greater outlay of staff resources, and new operational methods may take some time to gain acceptance.

CROSSING GUARDS

Adult crossing guards are used to help create gaps in traffic at uncontrolled intersections, and to "platoon" children across the street at controlled intersections. The presence of a crossing guard in the roadway serves as an easily recognized indication to drivers that pedestrians are about to use the crosswalk and that all traffic must stop. When all traffic has stopped, the adult guard can allow the children to cross.

Adult crossing guards are normally assigned where official supervision of elementary school pedestrians is desirable while they cross a street on the suggested route to school. The MUTCD 2003 California Supplement provides specific conditions as to when adult crossing guards may be used. At uncontrolled crossings adult crossing guards are recommended where there is no alternate controlled crossing within 600 feet, and where traffic volumes exceed 350 vehicles (urban areas) or 300 vehicles (rural areas) during the two-hour school commute period. At stop sign-controlled crossings, adult crossing guards are recommended where traffic volumes exceed 500 vehicles during any hour of the school commute period. At traffic signal-controlled crossings, adult crossing guards are recommended where the number of vehicular turning movements through the school crosswalk exceeds 300 per hour while school pedestrians are going to or from school.

SCHOOL SAFETY PATROL

School Safety Patrols are comprised of students that have been trained to guide school pedestrians and assist existing traffic control devices, police officers, or adult crossing guards. School Safety Patrols may be used to direct and control children at crossings near schools where there is no need to create adequate gaps in traffic. They may also be used where adequate crossing gaps exist in vehicular flow at uncontrolled crossings where it is desirable to guide school pedestrians.

School safety patrols control children, not vehicles. Safety Patrols stop children behind the curb or edge of the roadway and allow them to cross only when there is an adequate gap in traffic. Safety Patrols should be established only by agreement between the governing board of the school district and local traffic law enforcement agencies. The MUTCD 2003 California Supplement provides specific guidance on when School Safety Patrols should be considered, which include an existing traffic control device, police officer or adult crossing guard in operation; or when there are adequate crossing gaps in vehicular flow at an uncontrolled crossing and it is desirable to use student patrols to guide the school pedestrians.

DROP-OFF / PICK-UP INSTRUCTION FLYER

At the beginning of the school year, the school should send home a flyer clearly identifying the "do's" and "don'ts" of the drop-off and pick-up procedure. The flyer should include a map map of the school site and surrouding streets identifying the direction of travel, loading zones, parking locations, and parking restrictions to inform parents of proper procedures. These flyers should be re-sent to parents occasionally throughout the school year to remind them of these procedures.

DEDICATED BUS ZONES

Establishing separate areas for vehicular and bus traffic can help improve traffic flows in the pick-up/ drop-off area. Conflicts often occur when private vehicles and buses arrive at the same time and in the same location. Separating traffic often necessitates establishing an off-street bus zone, dedicated solely to buses. Private vehicles should not be allowed to load/unload in the bus zone. Bus zones need to be large enough to accommodate all the buses that might be parking there at one time. Sometimes it is possible to stagger the arrival times of the buses, thus requiring less space. The zones must be clearly marked and there should be adequate sidewalk space for students to wait for the bus.

PARENT DROP-OFF / PICK-UP OPERATIONS

Creation of a parent drop-off/pick-up "loop" can help maximize capacity and safety and minimize delay in drop-off and pick-up operations. The loop can be either a dedicated lane just for pick-up/drop-off, or a portion of the larger parking lot that has been marked with cones to serve as the pick-up/drop-off loop. Regardless of the design, having staff or volunteers available to supervise the drop-off/pick-up will often play a large part in making the procedures successful. Having supervisors present can help to ensure that loading/unloading moves forward smoothly and efficiently, maximizing the space available with no bottlenecks.

Valet Drop-Off

Valet drop-off is a technique to improve traffic flow within the drop-off and pick-up loop by assisting students into and out of vehicles. A "valet" is present at the pick-up/drop-off area to open car doors and assist students into and out of arriving vehicles, improving the traffic flow. The valet system eliminates the need for parents to get out of the vehicle to open the door for a child and remove bags or other items. The valet system is typically staffed by school staff or parent volunteers, who can quickly and efficiently move children into and out of vehicles and hold onto backpacks, umbrellas and other items. Some schools use older grade students as valets, for example 5th or 6th graders help younger students. However, student volunteers must get out of class early to prepare for pickup.

A supplement to the valet system is a nameplate in the vehicle window that identifies what student needs to be picked up. This allows the valet to find an inattentive student and bring them to the vehicle as the vehicle arrives.

Platooning Drop-Off/Pick-Up System

In a platooning system, all vehicles are unloaded/loaded simultaneously, then proceed to the exit. If a vehicle unloads or loads more efficiently than the vehicle in front of it, the rear vehicle must wait for the lead vehicle to finish the unloading/loading then follow it out of the loop. This tool is best used to control the parent inclination to always drop-off and pick-up the student directly in front of the school. Often times additional curb loading is available downstream of the school and is severely underutilized, creating excess congestion and delay prior to entering the lot. At least two monitors are needed to effectively operate the vehicle platoon – one at the loop entrance to direct the maximum number of vehicles into the lot for a single cycle, and a second to ensure that the lead vehicle proceeds to the front most loading stall.

WALKING SCHOOL BUS / BIKE TRAIN

If parents are uncomfortable allowing their children to walk or bicycle alone to or from school, parent or neighborhood volunteers can escort a group of children walking or bicycling to school together in a "Walking School Bus" or "Bike Train." Children can be picked up at home along the route, or at designated staging areas. The parents offer a level of supervision and protection and the larger numbers allow the children to be more visible to traffic. Usually, one parent acts as the organizer, recruiting other parents, neighbors, seniors or community volunteers to walk or bicycle with the children. As in a carpool, the participants need to work out schedules and meeting places. Adults and children can wear safety vests or use other means to enhance visibility. Sometimes the adult pulls a wagon to carry the children's books and projects.

PARK AND WALK

In a Park and Walk system, parents are encouraged to park their vehicles, and then walk the remaining distance to school with their children, or drop-off and pick-up their children who then walk by themselves or with other children to and from school. Park and Walk locations are typically established two to four blocks from the school site. This approach helps to alleviate some of the traffic congestion in the immediate school zone, and also allows children to get a bit of exercise in on their way to school. As a first step, an appropriate location for the parking site needs to be identified. It may be possible to use a location on the schools back gate, where the park location is adjacent to school property.

SCHOOL BUSING

School busing has been used for generations to safely and reliably deliver students to school who are outside of a reasonable walking distance. School busing can be very effective in reducing single-child vehicle trips and decreasing traffic around school sites. The benefits of longer-distance school busing should not be confused with short-distance "hazard" busing, where students who live very close to school (in some cases less than ½ mile) are bused because the walking route is considered unsafe.

School districts are required to provide special education transportation, but regular home-to-school busing is optional. A major challenge of implementing home-to-school busing is the cost, which can vary greatly depending on route distances, and whether parents are required to pay for the service.

When school buses are not available, public transit can be a good option for school transportation. Transit operators are usually open to providing some special school runs, provided that arrival/departure times can be coordinated with bell times and that there is a safe place for students to wait for the bus. The Federal Transit Act prohibits transit agencies from providing routes exclusively for school use, so the bus must be available to the general public as well as school children. Thus, commuters and students may ride the bus together.

The use of public transit is not without its challenges. Some parents have security concerns about mixing students and adults on the bus. Also, public transit drivers are not responsible for monitoring students, and students may disembark at any location. In addition, the routes are "fixed," meaning that the bus stops are not flexible, and parents may find that the stops are located too far from home.

ALTERNATE TRAFFIC PATTERNS

In some cases, implementing "alternate" traffic patterns near schools can improve traffic, pedestrian and bicycle circulation adjacent to the school by maximizing the use of the existing roadway capacity. Some potential solutions for improving off-site traffic circulation may include establishing permanent or temporary one-way circulation on streets adjacent to the school, or using temporary cones to separate travel lanes or delineate on-street loading zones. Implementation of these tools should be undertaken only after review by a local traffic engineer.

STAGGERED BELL TIMES

Staggered bell times can help to disperse the traffic peak at schools with a large student population or when two or more schools are in close proximity to one another. Staggering school bell times creates a "spreading of the traffic peak" by breaking up the start and/or release time of students into groups of two or more. For a single school application,

students' start and end time should be grouped by grade levels. The start times of these groups should be at least 15 minutes apart. This allows the vehicles from the first group to leave the school or be completely out of the area by the time the second group arrives. With multiple schools, staggering the bell times can be coordinated among two or more schools to ensure that significant levels of vehicles do not use competing transportation facilities simultaneously.

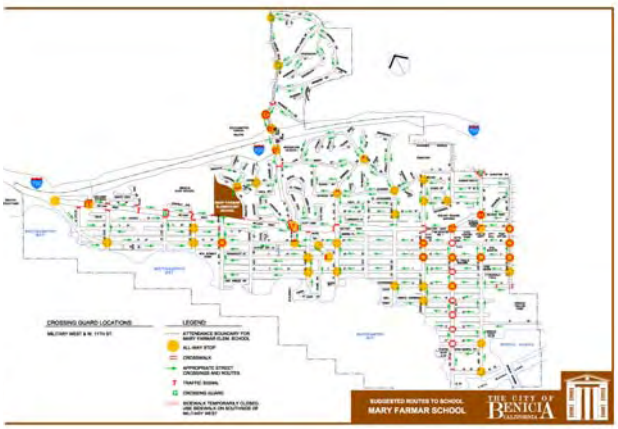
EDUCATION AND ENCOURAGEMENT TOOLS: TEACHING SAFETY AND PROMOTING AWARENESS

Education and Encouragement tools focus on teaching traffic, pedestrian and bicycle safety to parents and students, increasing public awareness of Safe Routes to School goals and benefits, and promoting changes in behavior to increase walking and bicycling. Educational activities teach children age-appropriate skills related to bicycling and walking, familiarizing students with the positive benefits of bicycling and walking, and foster greater attention by the community in general to the need to operate motor vehicles more safely, especially in school zones. Encouragement activities include a variety of special events and contests, outreach campaigns, presentations to school and community groups, and surveys of current practices and attitudes related to the school commute. A major objective of educational and encouragement tools is to increase the understanding by parents, school personnel, students, and the community of the health and safety concerns that can be addressed by successful SR2S programs.

SUGGESTED ROUTE TO SCHOOL MAPS

Suggested Route to School maps are one of the most cost-effective and tangible means available for encouraging school children to walk or bike to school. The purpose of the maps is to provide school officials, parents, and students with a tool to help plan the best walking and bicycling routes to and from school. The maps help to illustrate the safest walking, bicycling, and crossing locations by identifying traffic controls, crossing guard locations, and the presence of sidewalks, pathways, or bicycle facilities along routes leading to a given school. In addition to being used as a resource for parents and school staff in planning and encouraging walking and bicycling to school, Suggested Route to School maps can serve as a tool for city staff to identify the location of needed transportation infrastructure improvements in school areas.

Local jurisdictions should consider assisting their school districts in developing and distributing suggested route to school maps to local schools. Maps can be handed out to parents at the beginning of each school year, posted prominently at each school in a location, and made available on the school's website. Other locations for posting or distributing the maps might include local libraries and neighborhood community centers.



As part of the development of Suggested Routes maps, city staff should conduct field visits to inventory traffic controls, signage, crosswalks, and

other physical conditions on streets surrounding the school. Factors that contribute to designating the "best" routes to a school include the presence of traffic controls, crosswalks, and or crossing guards at key crossing locations, and presence of sidewalks or bike lanes along street segments. In some cases, roadside paths or known off-street cut-throughs (such as a path leading to the back of a school) are noted as suggested routes. The suggested routes usually extend about one-half mile for elementary schools, and about one mile for junior high and high schools.

Liability concerns are sometimes cited by cities or school districts as reasons not to publish walking route maps. While no walking route will ever be completely free of pedestrian safety concerns, a well-defined walking route should provide the greatest physical separation between walking children and traffic, expose children to the lowest traffic speeds, and have the fewest roadway crossings. Local jurisdictions should follow these basic guidelines when identifying routes, should regularly review walking routes to ensure that traffic conditions have not changed, and should make engineering improvements as appropriate to improve safety along routes. These steps should ensure that local jurisdictions or schools do not have increased liability as a result of publishing walking routes.

WALK AND BIKE TO SCHOOL DAYS

Walk and Bike to School Days are special events intended to encourage children to try walking or bicycling to school. The most well-known of these is International Walk to School Day, a major annual event that attracts millions of participants in over 30 countries each October. Additional walk and bike to school days can be held yearly, monthly, or even weekly, depending on the level of support and participation from children, parents, and school and local officials. Some schools organize more frequent days – such as weekly Walking/Wheeling Wednesdays or Walk and Roll Fridays – to give people an opportunity to enjoy the event on a regular basis. Parents and other volunteers accompany the children, and often there are designated staging areas along the route to school where different groups can gather and walk or bike together. The events should be promoted through press releases for the media, articles in the school newsletters, and posters and flyers for children to take home.

CLASSROOM LESSONS AND ACTIVITIES

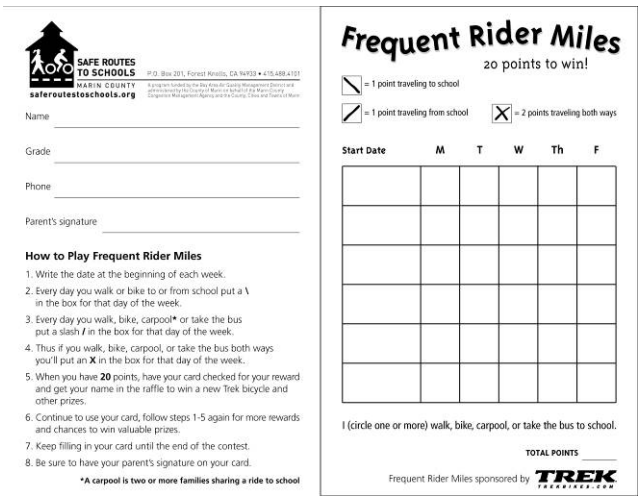
A variety of curricula and classroom activities are available to help teach children about walking, bicycling, health and traffic safety. These may include lessons given by a law enforcement officer or other trained professional, or simply as a lesson plan developed by teachers. Examples of topics that lessons could cover might include: Safe Street Crossing; Helmet Safety; Rules of the Road for bicycles; Health and Environmental Benefits of Walking and Biking, and Stranger Safety. Getting class time is difficult – and there is a growing movement to develop SR2S curricula that can be incorporated into regular math and problem solving lesson plans so that these activities do not take away from regular teaching time.

One example of this is the "Walk and Bike Across America" project, in which the students track the number of miles they each travel (walking or biking) to and from school on a daily basis and add the class miles together weekly to travel across a map of the United States. The students can conduct the activity as a class, or gather miles from the entire school (thus increasing the number of miles that they can travel). Along the way students "visit" locations such as national parks and historical monuments, learning lessons on history, culture and geography as they go.

CONTESTS

Contests are activities that reward children by keeping track of the number of times they walk, bike, carpool, or take transit to school. Contests can be individual, classroom competition, or interschool competitions. Local businesses will often provide incentives and prizes. Two examples of contests include:

Frequent Rider Miles – Children are issued tally cards to keep track of "points" for the each time they walk, bike, bus or carpool to or from school. When they earn a specified number of points they get a small prize and are entered in a raffle for a larger prize. At the end of the school year, there is a drawing for major prizes.


SAFE ROUTES TO SCHOOLS
MARIN COUNTY
saferoutestoschools.org
P.O. Box 201, Forest Knolls, CA 94933 • 415.488.4101
A program funded by the Bay Area Air Quality Management District and administered by the County of Marin on behalf of the Marin County Congestion Management Agency and the County, Cities and Towns of Marin

Name
Grade
Phone
Parent's signature

How to Play Frequent Rider Miles

1. Write the date at the beginning of each week.
2. Every day you walk or bike to or from school put a \ in the box for that day of the week.
3. Every day you walk, bike, carpool* or take the bus put a slash / in the box for that day of the week.
4. Thus if you walk, bike, carpool, or take the bus both ways you'll put an **X** in the box for that day of the week.
5. When you have **20** points, have your card checked for your reward and get your name in the raffle to win a new Trek bicycle and other prizes.
6. Continue to use your card, follow steps 1-5 again for more rewards and chances to win valuable prizes.
7. Keep filling in your card until the end of the contest.
8. Be sure to have your parent's signature on your card.

***A carpool is two or more families sharing a ride to school**

Frequent Rider Miles

20 points to win!

\ = 1 point traveling to school
/ = 1 point traveling from school
X = 2 points traveling both ways

Start Date	M	T	W	Th	F

I (circle one or more) walk, bike, carpool, or take the bus to school.

TOTAL POINTS _____

Frequent Rider Miles sponsored by TREK

Golden Sneaker Award – Each class keeps track of the number of times the students walk, bike, carpool or take the bus to school and compiles these figures monthly. The class that has the most participation gets the Golden Sneaker Award. (The award is created by taking a sneaker and spray painting it gold.) The winning class usually gets an added treat like a pizza or ice cream party.

SAFETY EDUCATION

Pedestrian and bicycle safety education helps to ensure that each child has a knowledge of basic traffic safety rules. Pedestrian training is typically recommended for first- and second-graders, and teaches basic lessons such as "look left, right, and left again," "never walk with strangers," and "never run into the street to chase a ball or toy."

Bicycle safety training is normally appropriate beginning in third grade, and helps children understand that they have the same responsibilities as motorists to obey traffic laws. Child bicycle safety education is often conducted in the "bicycle rodeo" format, using various stations to teach children traffic safety and bicycle control. Most rodeos include a stop sign course which teaches children how to stop and look for oncoming traffic. Other stations teach balance, stopping, turning, and control. Rodeos also provide an opportunity to check children's bikes and instruct them on proper helmet use.

Although not a substitute for safety lessons conducted by trained instructors, many agencies including AAA, the National Highway Traffic Safety Administration, and private companies produce informational brochures, flyers and activity books designed to teach students, parents, and drivers about safe walking, bicycling and traffic behavior. These books can be distributed with the weekly "backpack mail", or be handed out as part

of a safety lesson. Schools or PTAs can also create original flyers unique to the school.

BANNERS AND SIGNS

Banners and signs can be effective tools to remind motorists about traffic safety in school zones. Large banners can be hung over or along roadways near schools with readable letters cautioning traffic to slow down, stop at stop signs, or watch for children in crosswalks, using catchy phrases such as:

- Drive 25, Keep Kids Alive
- Give Our Kids a Brake

If there are active local residents, lawn signs can be placed on private property near schools and along the routes with similar messages. Signs and banners should be rotated or moved frequently so that they do not risk becoming "invisible" to motorists.

ENFORCEMENT TOOLS: ENSURING COMPLIANCE WITH TRAFFIC LAWS

Enforcement tools are aimed at ensuring compliance with traffic and parking laws in school zones. Through a variety of active and passive methods, enforcement activities help to reduce the threats to the health and safety of children associated with activities such as speeding, failing to yield to pedestrians, illegal turns, illegal parking, and other violations. Enforcement strategies, in conjunction with education efforts, are intended to clearly demonstrate what is expected of motor vehicle operators and to make them accountable for the consequences of their actions. While enforcement tools logically center on police and other law enforcement, they also entail working with school officials, crossing guards, parents and volunteers. In addition to motor vehicle enforcement, these activities also focus on ensuring that students walking and bicycling to school are complying with traffic laws.

TARGETED ENFORCEMENT

Law enforcement agencies can increase the presence of police near schools or high-conflict areas in order to curb unlawful behavior. People tend to slow down and improve their driving behavior if they expect law enforcment to be present. These targeted enforcement activities can be effective but are labor intensive in that they require dedication of police officer resources in a single location. In addition, once the targeted enforcement period has ended and motorists realize that the police presence is gone, they may revert to speeding or driving unsafely.

CROSSWALK STING

In a crosswalk sting operation, the local police department targets motorists who fail to yield to pedestrians in school crosswalk. A plain-clothes "decoy" police officer ventures into a crosswalk or crossing guard-monitored location, and motorists who do not yield are given a citation by a second officer stationed nearby. Typically a motorcycle officer issues the citations, hidden between nearby parked vehicles. The police department or school district may alert the media to crosswalk stings to increase public awareness of the issue of crosswalk safety, and news cameras may accompany the police officers to report on the sting.

SCHOOL PARKING LOT "CITATIONS"

If on-site parking problems exist at a school, such as parents leaving vehicles unattended in loading zones, school staff may issue parking lot "citations" to educate parents about appropriate parking locations. These "citations" are actually warnings designed to look like actual police tickets, intended to educate parents about how parking in improper zones can create safety hazards or disrupt traffic flow for other parents during the pick-up/drop-off period.

NEIGHBORHOOD SPEED WATCH

In areas where potential speeding problems have been identified by residents, a Neighborhood Speed Watch can be used to warn motorists that they are exceeding the speed limit. A radar unit is loaned out to a designated neighborhood representative to record speed information about vehicles. The person operating the radar unit must record information, such as make, model, and license number of offending vehicles. This information is sent to the local law enforcement agency having jurisdiction at the location of the violations, and the department then sends a letter to the registered vehicle owner, informing them that the vehicle was seen on a specific street exceeding the legal speed limit. Letters are typically sent out to those driving at least 5 mph over the speed limit. Although not a formal citation, the letter explains that local residents are concerned about safety for their families and encourages the motorist to drive within the speed limit.

RADAR TRAILER

Speed Radar Trailers can be used to reduce speeds and enforce speed limit violations in known speeding problem areas. In areas with speeding problems, police set up an unmanned trailer that displays the speed of approaching motorists along with a speed limit sign.

Can be used as both an educational and enforcement tool. By itself, the unmanned trailer serves as effective education to motorists about their current speed in relation to the speed limit. As an alternative enforcement measure, the police department may choose to station an officer near the trailer to issue citations to motorists exceeding the speed limit. Because they can be easily moved, radar trailers are often brought to streets where local residents have complained about speeding

problems. If frequently left in the same location without officer presence, motorists may learn that speeding in that location will not result in a citation and increase their speeds.

SPEED FEEDBACK SIGN

A permanent speed radar sign can be used to display approaching vehicle speeds and speed limits on roadways approaching the school site. The unit is a fixed speed limit sign with built-in radar display unit, that operates similar to a Radar Trailer. In order to maximize effectiveness for school settings, the radar display unit should be set to only activate during school commute hours.

Roadways approaching the school site are the most appropriate location to display speeds, as opposed to streets along the school frontage that will likely have lower speeds due to pick-up/drop-off traffic.

RESOURCES: LINKS TO OTHER SR2S TOOLKITS AND GUIDEBOOKS

National Center for Safe Routes to School

The National Center for Safe Routes to School assists communities in enabling and encouraging children to safely walk and bike to school. The Center strives to equip Safe Routes to School programs with the knowledge and technical information to implement safe and successful strategies. The website includes links to an academy of National SR2S Instructors who lead trainings and provide assistance to local jurisdictions wishing to develop a SR2S program.

Web site:
www.saferoutesinfo.org

KidsWalk-to-School: A Guide to Promote Walking to School

This guide by the Centers for Disease Control and Prevention is a tool to help you develop a walk-to-school program that is appropriate for your neighborhood. It includes a checklist and step-by-step guidelines for creating a KidsWalk-to-School program such as a "walking school bus." Sample letters, surveys, forms, and an extensive list of resources are included.

Web site:
www.cdc.gov/nccdphp/dnpa/kidswalk.htm

Pedestrian Safety Toolkit

This toolkit includes resource materials that states and communities can use to implement their pedestrian safety programs and achieve their goals. It contains a compilation of federal agency pedestrian safety videos; an interactive CD-ROM of pedestrian resources with subject-to-subject cross referencing; a user manual that explains how to create effective pedestrian safety programs; a resource manual that references NHTSA, Federal Highway Administration and Federal Railroad Administration materials; and sample materials and information that cover the basics for all who want to do pedestrian safety and advocacy.

Web site: www.nhtsa.dot.gov

Safe Routes To Schools Toolkit

This toolkit, developed by the Marin County Safe Routes To Schools project in California — in partnership with NHTSA and the California Department of Health Services — is designed to be used in initiating and implementing a Safe Routes To Schools program. It includes examples of classroom activities, ideas for promotions, information on safe streets, resources, and forms to assist you along the way.

Web site:
www.nhtsa.dot.gov/people/injury/pedbimot/ped/saferouteshtml

Safe Ways To School Toolkit

This toolkit details systematically how to create a Safe Ways To School program for your community. It provides an overview of the implementation process, and includes sample tools such as a student travel survey, parent survey, neighborhood site assessment, and implementation ideas. It also contains a video and sample materials, including handouts for students, parents, and schools.

Web site:
http://www.dcp.ufl.edu/centers/trafficsafetyed/safeways.htm

Way to Go! Manual and Resource Kit

The "Way to Go! Manual and Resource Kit" can help parents, teachers, and student groups design and implement school-based, traffic-reduction programs in their communities. It includes ideas, strategies, information, and educational and curriculum resources. Other manuals available include: "Bike Smarts: A Handbook;" "RoadSenseKids: Passport to Safety (Teaching Guide for K-3);" and "Walking/Wheeling Challenge Map."

Web site: www.waytogo.icbc.bc.ca

National Strategies for Advancing Child Pedestrian Safety and National Strategies for Advancing Bicycle Safety

"National Strategies for Advancing Child Pedestrian Safety" details six strategies and action steps readily implemented by anyone interested in reducing pedestrian injuries among children, all while encouraging them to become more active and explore their environment on foot. "National Strategies for Advancing Bicycle Safety" is designed to be a roadmap for policy makers, safety specialists, educators, and the bicycling community to follow as they promote national, state and local efforts to increase safe bicycling. It includes goals, strategies, short- and long-term actions that can reduce injuries associated with bicycle riding.

Web site:
http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/bicycle_safety/

SCHOOL SITE AUDIT CHECKLIST FORM

The following pages provde a School Site Audit Checklist form that should be used as the basis for the walking/bicycling audits conducted by local school task forces. This form was modified from the Florida Safe Ways to School Toolkit, which is listed as a resource in the previous section.

This page intentionally left blank

Solano Transportation Authority

Safe Routes to School Program

SCHOOL SITE AUDIT CHECKLIST

SCHOOL NAME:_____

SCHOOL DISTRICT:_____

INSTRUCTIONS

The following site audit should be conducted to help determine walking and bicycling conditions on/adjacent to school property. This audit will help the school to discover potential areas for design improvements and increased safety. Members of the School SR2S Task Force, the School Principal, and a traffic engineer from the local jurisdiction should observe conditions during the drop-off and pick-up periods, and fill out the following audit form in order to see how students get to and from school. Audits should be conducted during periods of good weather if possible. Please take a map of school neighborhood with you on the audit for orientation and note taking. Aerial photo maps can be helpful for identifying specific detailed locations, and can be downloaded from internet sources such as Google Earth (http://earth.google.com). Please take digital photos of any identified problem areas to accompany your notes.

Audit Date:_____**Day:**_____**Time:**_____

Weather Conditions:_____

ADDITIONAL NOTES ABOUT AUDIT CONDITIONS:

This Checklist Form was modified from the Florida Safe Ways to School Toolkit

1. Student Drop-Off and Pick-Up Areas

	YES	NO	N/A
a. Is an on-site parent drop-off/pick-up area provided?	☐	☐	☐
b. If the drop-off/pick-up area is on-site, is this loading area separated from the rest of the school parking lot?			
c. If pick-up/drop-off occurs on-street, is a marked loading zone provided along the curb?	☐	☐	☐
d. Do drop-off/pick-up areas, either on-site or on-street, provide sufficient space for vehicles to line up?	☐	☐	☐
e. Is a school staff person or other monitor present and visible during the drop-off/pick-up period to assist with loading/unloading?	☐	☐	☐
f. Does morning drop-off traffic move in an orderly fashion without congestion and backup?	☐	☐	☐
g. Does the afternoon pick-up line form in an orderly fashion, with vehicles waiting in designated areas, not double-parking, not blocking nearby residential driveways, etc.?	☐	☐	☐
h. Are drop-off/pick-up areas situated so that students exiting or entering cars have a designated pathway to/from school buildings (e.g. do not walk between parked vehicles)?	☐	☐	☐
i. Does drop-off/pick up occur along a raised curb, so that pedestrians unload onto a sidewalk or walkway separate from vehicle traffic?	☐	☐	☐
j. Are there accessible curb ramps for wheelchair access?	☐	☐	☐
k. Are there posted vehicular signs (e.g. "No Parking", "Bus Only", etc)?	☐	☐	☐
l. Is the area adequately lighted?	☐	☐	☐
m. Is there excessive idling of vehicles and buses while they wait to pick up children?	☐	☐	☐

n. Please describe additional problems within the student drop-off area in the space provided below. Remember to take photos.

2. Bus Loading Zones

	YES	NO	N/A
a. Are bus driveways physically separated from pedestrian and bicycling routes by raised curbs or bollards	☐	☐	☐
b. Are bus driveways physically separated from parent pick-up/drop-off areas?	☐	☐	☐
c. Are measures taken for safety of students needing to cross in front or behind the bus?	☐	☐	☐
d. Is traffic in the bus loading zone one-way?	☐	☐	☐
e. Does the bus zone meet the minimum width of 24' for drop-off/pull-out lanes?	☐	☐	☐
f. Is there a continuous curb and sidewalk adjacent to the drop-off/ loading area leading into the school site?	☐	☐	☐
g. Is the bus loading/unloading zone lighted?	☐	☐	☐

h. Please describe additional problem areas regarding the bus loading zone in the space provided below. Remember to take photos.

3. Sidewalks and Bicycle Routes

	YES	NO	N/A
a. Are current pedestrian and bicycle routes separated from motor vehicles by the use of sidewalks or separated pathways?	☐	☐	☐
b. Are the bicycle routes designated by signage?	☐	☐	☐
c. Are marked bicycle lanes present?	☐	☐	☐
d. Is the bicycle lane network continuous and without gaps?	☐	☐	☐
e. Are children wearing bicycle helmets?	☐	☐	☐
f. Are sidewalks and bicycle paths regularly maintained (free of debris, cracks and holes)?	☐	☐	☐
g. Are the sidewalks continuous and without gaps?	☐	☐	☐
h. Are there accessible ramps for wheelchair access?	☐	☐	☐
i. Do the ramps have tactile warning strips or textured concrete?	☐	☐	☐
j. Are the sidewalks lighted?	☐	☐	☐
k. Are the sidewalks used regularly?	☐	☐	☐

l. Please describe additional problem areas regarding the school's sidewalk system and existing bicycle routes in the space provided below. Remember to take photos.

4. Adjacent Intersections (intersections near school property)

	YES	NO	N/A
a. Are there high volumes of automobile traffic?	☐	☐	☐
b. Are there high volumes of pedestrian traffic?	☐	☐	☐
c. Are there painted crosswalks for all crossing directions?	☐	☐	☐
d. Are there curb ramps located at all adjacent intersections?	☐	☐	☐
e. Is there appropriate vehicle signage?	☐	☐	☐
f. Is there traffic control, such as a stoplight or stop signs?	☐	☐	☐
g. Are there pedestrian walk signals?	☐	☐	☐
h. For midblock crossing locations, are there adequate gaps in traffic to allow pedestrians to cross?	☐	☐	☐
i. Are pedestrians crossing in marked crosswalks, or are they using unmarked locations or jaywalking?	☐	☐	☐

j. Please describe additional problem areas regarding these intersections in the space provided below. Please identify specific intersections, and any problems associated with each. Remember to take photos.

5. Sight Distance (clear views between motorists and pedestrians)

	YES	NO	N/A
a. Are desirable sight distances (visibility is free of obstructions) provided at all intersections within the walking zone?	☐	☐	☐
b. Do cars park or wait blocking the vision of other motorists, bicyclists and pedestrians?	☐	☐	☐
c. Have the placement of fences, walls, dumpsters and the location of parking areas for service vehicles been carefully considered in view of sight distance requirements on the school site?	☐	☐	☐
d. Are there any barriers present that block the viewing of pedestrians and bicyclists (i.e. dumpsters, utility boxes, parking areas, ground mounted signage, building walls)?	☐	☐	☐
e. Is landscaping and vegetation trimmed clear of sidewalks and pathways, and not obstructing sight distance.	☐	☐	☐

f. Please describe additional problem areas that have sight distance obstructions in the space provided below. Remember to take photos.

6. Traffic Signs, Speed Control, Signals and Pavement Markings

	YES	NO	N/A
a. Are there School Zone signs, School Crossing signs, School Speed Limit signs, flashing beacons, and No Parking or No Standing signs?	☐	☐	☐
b. Are any high visibility (fluorescent yellow-green) signs used in the school zone?	☐	☐	☐
c. Is there an effective school targeted program of traffic enforcement?	☐	☐	☐
d. Are there any school pavement markings located on roadways adjacent to or in the vicinity of the school grounds (e.g. "SLOW SCHOOL XING")?	☐	☐	☐
e. Are there currently traffic/speed control measures used in the area, such as speed humps?	☐	☐	☐

f. Please describe additional information regarding adjacent traffic signs, speed control, signals and pavement markings in the space provided below. Remember to take photos.

7. Other Barriers to Walking and Bicycling

Please use the space below to describe any additional problems or issues not identified in the checklist above. These may include policy barriers as well as infrastructure barriers. Be as specific as possible when describing a particular issue or location.

Appendix B

Safe Routes to School
Student Arrival and Departure Tally Sheet

School Name: _____ Grade: _____ # of students enrolled in class _____

Teacher: _____ Monday's Date: _____

School's Zip Code _____ (used to identify weather conditions)

Teachers, here are simple instructions for using this form:

- Please conduct these counts **each of the five days of the assigned week.**
- Before asking your students to raise their hands to indicate the *one answer* that is correct for them, read through all potential answers so they will know what the choices are.
- Ask your students as a group the question "**How did you arrive at school today?**"
- Read each answer and record the number of students that raised their hands for each.
- Follow the same procedure for the question "**How do you plan to leave for home after school?**"
- Please conduct this count regardless of weather conditions (i.e., ask these questions on rainy days, too).

Step 1. Fill in the weather conditions and number of students in class each day			**Step 2**. Ask students "**How did you arrive at school today?**" and "**How do you plan to leave for home after school?**" (*record number of hands for each answer*)							
	Weather S= sunny R= rainy C= cloudy Sn= snow	**Number of Students** (in class when count made)	**Walk**	**Bike**	**School Bus**	**Family Vehicle** (only with children from your family)	**Carpool** (riding with children from other families)	**Transit** (city bus, subway, etc.)	**Other** (skate-board, scooter, inline skates, etc.)	
Mon AM										
Mon PM										
Tues AM										
Tues PM										
Wed AM										
Wed PM										
Thur AM										
Thur PM										
Fri AM										
Fri PM										

Comments *(Please list any disruptions to these counts or any unusual travel conditions to/from the school on the days of the tally)*:

_____

_____

Thank you for helping gather this information!

Appendix C

Walk Audit Schools' - Engineering Improvements Planning Level Cost Estimates

School	Cross Street	Cost Estimate	Bicycle Cage	Sidewalk - 5' Wide	5' Sidewalk Widening (Includes curb & gutter)	Curb Ramp Retrofit (Perpendicular, per corner)	Curb Extension - Major, with Drainage	Curb Extension - Minor, no Drainage	Parking Restrictions -- Red Curb	Crosswalk - High Visibility	Crosswalk - Tranverse	Remove Striping	Add Striping	Signs	Signs, Speed Feedback	Flashing School Crossing Beacons	Signs, Overhead Beacon	Class I Path Construction	Pedestrian Median Refuge Island	Bench	Bus Shelter	Trees	Pedestrian-scale Lighting	Traffic Circle	Pavement Legend
			Space	LF	LF	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	EA	EA	LF	EA	EA	EA	EA	LF	EA	EA
			$450	$30	$46	$5,000	$50,000	$25,000	$20	$1,200	$500	$1	$2	$200	$8,000	$10,000	$50,000	$100	$30,000	$2,000	$15,000	$800	$250	$50,000	$300
Benicia High School	Bicycling Environment: Lack of Bicycling Facilities	$197,000	60															1700							
	Transit Environment:	$15,000																			1				
	Regulation of Intersections at Military West and Plaza De Oro, West 11th Street, and Denfield Avenue/West 10th Street	$620									1	120													
	On-campus Circulation																								
	Illegal Turning Movements and Parking on Military West	$25,000						1																	
	Excessive Right of Way on Military West	$250,000					5																		
	Pedestrian Environment: Sidewalk improvements and street furniture	$4,000																		2					
	SUM=	**$491,620**																							
Lindford Anderson, Dixon	East C Street/North First Street	$206,060		200			3					60				2	1								
	Drop Off/Pick Up on East C Street	$50,000																						1	
	East C Street	$222,230			460		4					70		2											2
	SUM=	**$478,290**																							
Anna Kyle, Fairfield	Kidder Avenue/San Mateo Street	$150,420					3		1					2											
	San Bruno Street/San Mateo Street	$1,000									2														
	Anna Kyle Parking Lot Traffic Pattern and Pedestrian Movements	$50,400						2						2											
	Eisenhower Street/EastTravis Boulevard	$30,000																	1						
	East Travis Boulevard	$124,700			2700																		2		
	San Mateo Street Pathway																								
	SUM=	**$205,100**																							
Riverview Middle School, Rio Vista	2nd Street - Vehicle	$58,000													1									1	
	2nd Street - Pedestrian	$88,100		2750					160	2															
	Hamilton Avenue	$3,600							160					2											
	SUM=	**$149,700**																							
Will C Wood High, Vacaville	Wood C. High School Parking Lot	$38,750	75			1																			
	Marshall Road Bicycle Lanes & Bike Parking																								
	Marshall Road/Peabody Road Intersection	$50,000					1																		
	Marshall Road	$40,000																				50			
	SUM=	**$128,750**																							
Steffan Manor Elementary, Vallejo	Cedar Street	$11,900			250									2											
	Georgia Street	$62,000			1000										2										
	Georgia Street/Miller Avenue	$25,270						1					180												
	Cedar Street/Webb Street	$96,400				4	1			2								240							
	Jennings Avenue/Russel Street/Miller Avenue	$69,900						1		2								425							
	SUM=	**$265,470**																							

AVERAGE=	**$286,488**
MIN=	**$128,750**
MAX=	**$491,620**
MEDIAN=	**$235,285**