



Solano Transportation Authority

## SOLANO TRANSPORTATION AUTHORITY

Member Agencies:

Benicia ♦ Dixon ♦ Fairfield ♦ Rio Vista ♦ Suisun City ♦ Vacaville ♦ Vallejo ♦ Solano County

*... working for you!*

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August 13, 2010

Ashley Nguyen  
Project Manager  
Metropolitan Transportation Commission  
101 Eight Street, Oakland, CA 94607

### **RE: Formal Application for “Solano Transportation Authority’s (STA) Safe Routes to School (SR2S) Education and Encouragement School Route Maps”**

Dear Ms. Nguyen:

The Solano Transportation Authority (STA) is please to submit this formal application for the Metropolitan Transportation Commission’s (MTC) Safe Routes to School Creative Grant for the STA’s “Safe Routes to School (SR2S) Education and Encouragement School Route Maps” project. This project will develop over 80 Recommended Route to School Maps and develop online map update and distribution tools.

This project meets all of the goals and objectives of MTC’s SR2S Creative Grant Program, by:

1. Measurably reducing GHG emissions and criteria pollutants by surveying how students travel to school before and after the project,
2. Develop tools for other local agencies to replicate the mapping process,
3. Pilot new and innovative GIS-Based SR2S maps and online distribution applications, and
4. Remove substantial barriers to SR2S planning and project design by creating a baseline of route safety data.

The STA has been a leader in SR2S Programs in the Bay Area by building a countywide program in partnership with every school district and city in Solano County. In 2008, the STA’s SR2S Plan received a Northern California American Planning Association (NCAPA) Grassroots Initiative Award for our efforts to involve people from all levels of SR2S issues, including City Engineers, STA Bicycle & Pedestrian Advisory Committee members, City Council appointees, School Board appointees, and police department representatives. Walking audits and public planning meetings helped define 29 school specific plans and countywide problems and solutions. Since the plan’s adoption in February 2008, the STA has helped leverage local funding to obtain a total of \$2.28 M in air district and federal funding grants for a variety of education, encouragement, enforcement, and engineering projects and activities.

Sustainable behavior change is the overarching goal of this mostly grant-funded SR2S Program. After Fiscal Year (FY) 2011-12, the STA has not identified additional sources of funding other than continuing to apply for additional state and federal grants. To make sure that our current efforts and benefits do not disappear with our grant funding, the STA is dedicated to giving schools, local agencies, and volunteers the tools to continue providing SR2S Program resources after FY 2011-12.



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Email: [staplan@sta-snci.com](mailto:staplan@sta-snci.com) ♦ Website: [solanolinks.com](http://solanolinks.com)

If you have any questions regarding this application, please contact Sam Shelton at (707) 399-3211 or at [sshelton@sta-snci.com](mailto:sshelton@sta-snci.com).

Sincerely,

A handwritten signature in blue ink that reads 'Janet Adams'.

Janet Adams  
Deputy Executive Director  
Solano Transportation Authority

Attachments:

- A. Formal Application for "Solano Transportation Authority's (STA) Safe Routes to School (SR2S) Education and Encouragement School Route Maps" (7 pages)
- B. Draft SR2S Parent Brochure to incorporate a SR2S Map once completed (2 pages)
- C. Draft SR2S Map Training Manual & Sample Maps (38 pages)
- D. 2008 BAAQMD Regional TFCA emission reduction analysis for STA SR2S Program (4 pages)



**Formal Application for “Solano Transportation Authority’s (STA) Safe Routes to School (SR2S) Education and Encouragement School Route Maps”**

Project Description

Project Title: Safe Routes to School (SR2S) Education and Encouragement School Route Maps

Name of Applicant: Solano Transportation Authority

Project Manager: Samuel Shelton

Contact Information: Solano Transportation Authority, 1 Harbor Center, #130, Suisun City, CA 94585;

Ph (707) 399-3211, Fx (707) 424-6074, [sshelton@sta-snci.com](mailto:sshelton@sta-snci.com)

Purpose and Need:

*Project Purpose and Need*

As described in the 2008 STA Countywide Safe Routes to School Plan, the top reasons discussed by Solano County parents during the planning process for not allowing or supporting their children to walk or bicycle to school were 1) Distance to school, and 2) Traffic-related danger. Currently, about 53% of students are driven to school, 22% walk, 11% carpool, 10% bus, and 2% bike (STA 2007, 2009 Surveys).

Getting to school in Solano County has gotten harder in the last few years. Two school districts have recently eliminated school bus programs. Most Solano County school districts have also closed schools and expanded school boundaries, resulting in increased travel distances to schools.

Less students walking to school creates student education and health problems too. Students who are not physically active in the morning have a harder time learning than those students who are awake and active. Solano County has a higher rate of overweight children and youth, ages 5 up to 20 years old, than the California rate. Of Solano County students 5 up to 20 years old, over 38 percent are either overweight or at risk of being overweight (2003 Pediatric Nutrition Surveillance data). More idling cars and increasing traffic congestion in front of schools pollutes the air increasing the risk of asthma and increases the likelihood of a student being hit by a busy parent.

*STA SR2S Goal: Sustainable Behavior Change from Driving Alone to Walking & Bicycling to School*

Sustainable behavior change is the overarching goal of this mostly grant-funded SR2S Program. After fiscal year 2011-12, the STA has not identified additional sources of funding other than continuing to apply for additional state and federal grants. To make sure that our current efforts and benefits do not disappear with our grant funding, the STA is dedicated to giving schools, local agencies, and volunteers the tools to continue providing SR2S Program resources after FY 2011-12.

*Objective: Alleviate Travel Security & Distance Issues with Innovative Maps (Phase 1)*

This project focuses on the Education and Encouragement E's of the SR2S framework. Using cutting-edge GIS modeling, streets coded for student walking and bicycle safety will help create the basis of Suggested Route to School Maps for over 80 schools in Solano County. To alleviate the travel security and distance concerns of parents, these maps will elegantly display suggested routes to school, accurate to the side of the sidewalk and along specific crosswalks, noting specific hazards, locations of crossing guards & traffic signals, and the walking time from potential walking school bus meeting points.

The back of the maps will be a sign-up sheet for walking school buses and bicycle trains. Student groups forming busses will sign the sheet and get their parents to sign the sheet, providing contact information and if the parent plans to join the bus. These maps will record walking school bus routes and be on file at the school in case of emergencies (see attachment B for a draft parent brochure that will contain Attachment C's sample future school route map)

Registered walking school buses will be able to compete for larger prizes, should the bus be seen walking to school on contest event days, which will be randomly organized throughout the school year. This makes everyday a potential walk and bike to school prize day.

*Objective: Transition from Paper Map Products to Online Updates and Distribution (Phase 2)*

Once GIS methods of map production and paper circulation of maps have been accepted by multiple partner agencies and students, STA staff will develop online map updates and distribution tools to further automate the map production and distribution process. Data to create maps is only as good as the frequency in which it is updated. This will encourage a minimum of an annual review of school route data and map updates.

*Collaboration & Actions*

In addition to continuing the STA's collaboration with cities and school districts, the STA will also work with Solano County GIS staff and MTC's 511 GIS staff to ensure that the data collected for these maps will be standardized and flexible for other planning purposes and applications, such as MTC's 511 Bike Mapper program and School Pool Program.

A majority of the work will be completed by consultants, which will be hired through an RFP process. Interview panel participants will include city staff, school district staff, and GIS staff from Solano County and MTC.

*Achieving MTC's Air Emission Reductions Goal: More Students Walking & Bicycling to School*

Through a combination of all four E's (Education, Encouragement, Enforcement, and Engineering) being advanced by the STA's SR2S Program and the addition of this mapping project, the STA anticipates shifting travel mode splits from drive-alone trips at levels that either meet or exceed those achieved by Marin County's first 2-years of their SR2S Program in 2003 (see "Approach to Project Evaluation: Cost Effectiveness Data" for more details).

*Achieving MTC's Removal of Substantial Barriers Goal: SR2S Planning & 511 Bike Mapper Resources*  
Since "project concept planning" is not eligible for Congestion Mitigation and Air Quality (CMAQ) program funding, walking audits and planning events are not part of this application. However, the data collected as part of the mapping project can help build a countywide baseline of safety information to assist local agencies and schools with future project concept planning and holding future walking audits that can target safety issues revealed during the mapping process. This street safety data can also supplement 511 Bike Mapper data (e.g., Class I, II, III routes). This will help remove a substantial barrier to identifying future student travel safety issues and assist future SR2S audits.

*Achieving MTC's Innovative SR2S strategies Goal: Cutting-edge GIS mapping*  
Safe Routes to School maps have never been produced in such a rigorous manner. Common suggested route to school maps created by public works engineers show all streets as being safe with multiple arrows pointing in all potentially safe walking directions. This project will further safe routes to school mapping practices and bring map updates and distribution online.

*Achieving MTC's Large Scale Replication Potential Goal: Manuals and Sample Agreements*  
To replicate the STA's efforts on a larger scale, the STA will provide GIS map training manuals, GIS mapping templates, sample RFPs and funding agreements to help other agencies extend their current grant funding by leveraging existing public agency GIS technology and partner agencies with similar missions.

The STA has been a leader in the SR2S field with regards to replication. In 2007, the STA was a presenter at the 1st National SRTS Conference at Dearborn, Michigan, sharing how the STA began and will sustain a countywide SR2S program with multiple partner agencies and stakeholders. Recently, Sonoma County Transportation Authority contacted the STA requesting the RFP used to solicit consultants for the 2008 STA SR2S Plan.

The STA has produced a draft SR2S GIS Mapping & Analysis Training Manual to help other agencies reproduce our street safety coding and mapping process (attachment B). With MTC's SR2S Creative Grant funding, this manual will be extended to contain sample school map templates and outreach materials for use by local agencies. With the success of Phase 2, online mapping update tools and distribution applications can help accelerate the use of these school route maps.

Copies of Requests for Proposals and Funding agreements between partner agencies and non-profits will also be made available as resources for other agencies. For example, the STA partners with the Solano County Department of Public Health for Program Coordination of SR2S Education and Encouragement events, such as safety assemblies, bicycle rodeos, and walk n' roll contests.

### Scope of Work and Schedule

The STA is requesting \$500,000 to develop a Safe Routes to School Map Program in two phases.

#### *Phase 1*

- Develop GIS-based suggested route to school maps by coding all streets for student bicycle and pedestrian safety features (\$175,000);
- Develop a Training Manual for other agency GIS staff to reproduce GIS-based SR2S maps using this technique (\$15,000);
- Publish and circulate these suggested route to school maps as part of the STA SR2S Program's marketing and safety education campaign to register students for walking school buses and bicycle trains, with MTC's 511 School Pool program when available (\$60,000);

#### *Phase 2*

- Create an online school route data update webtool for school district and city staff to update school route data and incorporate data into MTC's 511 Bike Mapper program (\$150,000); and
- Create an online school route map distribution & walking school bus coordination web application, once cities and school districts begin updating information annually through the webtool (\$100,000).

#### *Estimated Completion Dates*

This project's scope of work will be tailored to currently funded SR2S efforts in Solano County, such as FY 2010-11 and 2011-12 SR2S Education and Encouragement campaigns. The STA plans to spend a total of \$1.4M over the next two years on education and encouragement events and activities at over 80 schools in Solano County. The STA is targeting July 2011 to complete Phase 1 & 2 to prepare maps for the 2011-12 school year for over 80 schools in Solano County. The STA is targeting July 2012 to complete Phases 3 & 4 to introduce online distribution and coordination for the 2012-13 school year.

#### *Key Partners*

In addition to continuing the STA's collaboration with cities and school districts, the STA will also work with Solano County GIS staff and MTC's 511 GIS staff to ensure that the data collected for these maps will be standardized and flexible for other planning purposes and applications, such as MTC's 511 Bike Mapper program and School Pool Program.

A majority of the work will be completed by consultants, which will be hired through an RFP process. Interview panel participants will include city staff, school district staff, and GIS staff from Solano County and MTC.

### Response to Questions from Evaluation

On July 7, 2010, MTC staff requested a response to the following comments and questions as part of this application.

1. Please restructure this proposal to focus only on the development of the GIS-based route to school maps and its use in schools. The route maps strongly meets the goals and objectives of this program.

2. Are there opportunities to coordinate this program with 511's Bikemapper?
3. If this project receives funding, what is the most effective way to coordinate with 511? One example is that walking and biking "buses" sign up sheets could be entered into 511 ridematching system school pool module.

#### *Response to comments and questions*

1. This proposal has focused on the mapping project.
2. To coordinate with the 511 Bike Mapper program, during Phase 1, a checkbox on the rear-map sign-in sheet can ask parents if they would like their information added to the school pool system and if they would like to be notified of school pool matches. Bike and pedestrian route safety data from the mapping process will be developed in coordination with MTC staff to ensure that it can be used with the 511 Bike Mapper program.
3. The most effective way to coordinate with 511 would be to involve 511 staff in the development of the RFP for consultants and project development team meetings during both phases of the project. 511 GIS staff can help ensure that online applications and data produced by the consultants will benefit future versions of MTC's 511 Bike Mapper program and School Pool Program.

#### Approach to Project Evaluation

##### *Pre-test/ Post-test Evaluation & Controlling for Typical SR2S Education & Encouragement Activities*

The STA is proposing the use of a pre-test / post-test method for understanding the specific effect of both phases of the project. Pre-test data has already been collected for school mode splits before SR2S activities in Solano County (2007, 2009, 2010). Additional pre-test evaluations will be conducted during typical SR2S Education & Encouragement activities in FY 2010-11 (Oct 2010, May 2011) to control for SR2S activities without maps. Post tests will be measured four times, twice during Phase 1 of the project (Paper map tests during Oct 2011, May 2012), and twice during Phase 2 of the project (internet maps during Oct 2012, May 2013).

##### *Pre-test Data Background*

In 2007 and 2009, the STA collected "National Safe Routes to School Student Arrival and Departure Tally Sheets" for schools participating in the STA's SR2S planning process and subsequent programs. Currently, about 53% of students are driven to school, 22% walk, 11% carpool, 10% bus, and 2% bike. Not only has the STA established a baseline for comparison of our future SR2S program work, but there is also much more room for improvement through the combination of all four SR2S E's and room for reducing GHG and criteria pollutant emissions. The STA recently collected surveys conducted on May 25, 26, and 27 2010 and plans to survey students in October 2010 near the beginning of the next school year.

##### *Target Population*

Prior to receiving Bay Area Air Quality Management District (BAAQMD) Transportation for Clean Air (TFCA) grant funding, the STA performed an analysis of the number of students within a 1-mile radius of their schools. Using FY 2008-09 student enrollment addresses from the Solano County Office of Education, the STA was able to show that almost all elementary students in Solano County lived within one mile of their schools, making even the longest walking distance about 20 minutes.

However, since that analysis, several school districts in Solano County have closed schools and eliminated school bus programs, in some instances, tripling the distance to walk or bicycle to school. For example, the Vallejo City Unified School District has closed and consolidated multiple elementary schools, middle schools, and high schools, effectively creating a situation where areas east of I-80 are now served by one middle school and one high school. Dixon and Vacaville’s school districts have eliminated school bus programs while Fairfield and Vallejo districts are considering additional cuts. Priority schools for the mapping project will be these expanded school boundary areas and areas without school bus programs to achieve the maximum amount of emission reductions.

*Cost Effectiveness Data*

As part of an application for a BAAQMD 2008 Regional Transportation for Clean Air grant, STA made several assumptions regarding the number of students affected, trip length, and program effectiveness to create projected air emission benefits (Tons of emissions reduced) and grant funding cost effectiveness (see attachment C). This project would increase the program effectiveness beyond what is currently discussed in the 2008 BAAQMD grant analysis. The analysis conservatively assumed that the Solano County SR2S program would only be 75% as successful as the first two years of the Marin County program, which reduced drive-alone trips by 39%, meaning the Solano County SR2S Program could potentially reduce trips by 29.25%. Using BAAQMD emission reduction models, the TFCA cost effectiveness of the SR2S program was about \$70,655/Ton. If the effectiveness of the program increases due to the map project, this cost per ton could be reduced.

Project Cost and Funding

*Major Resources Needed*

A majority of the resources needed for the project would be for consultant contracts (safety data development, product design, online application development), while other resources needed would be for the production of paper map materials and staff resources for agency coordination, meeting facilitation, and administration as it relates to the development of this project’s deliverables.

<b>Cost</b>	<b>Task Description</b>
\$125,000	Data Collection & Street Safety Coding via GIS
\$50,000	Map Design & Stakeholder Review
\$15,000	Training Manual for other agency GIS staff to reproduce GIS-based SR2S maps
\$60,000	Paper Map Publishing, Marketing, & Circulation
<b>\$250,000</b>	<b>Phase 1 Subtotal</b>
\$150,000	Online school route data update webtool for school district and city staff to update school route data and incorporate data into MTC’s 511 Bike Mapper program
\$100,000	Online school route map distribution & walking school bus coordination web application
<b>\$250,000</b>	<b>Phase 2 Subtotal</b>
<b>\$500,000</b>	<b>TOTAL</b>

*Local Match and Project Budget*

About \$65,000 is required to match \$500,000 in federal funds. Existing and pending local and state grants identified for the STA's SR2S program will provide \$66,700 in local match funds from the following sources:

<b>Revenues</b>	<b>Grant Source (Agreement Budget Item)</b>
\$6,400	BAAQMD Regional TFCA Grant (SR2S Maps & Marketing Materials)
\$50,800	TDA Article 3, (Bicycle Safety Education for SR2S Program)
\$9,500	YSAQMD Clean Air Funds, (SR2S Maps & Marketing Materials)

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**\$66,700 TOTAL Local Match, 11.77%**

Although, not specifically a local match for this project, the STA's SR2S Program has budgeted expenditures of about \$1.4M over the next two years for education and encouragement activities that will act in concert with the mapping project, composed mainly of MTC SR2S CMAQ funds and BAAQMD Regional TFCA grant funds.