



**Municipal Services Agency**

Terry Schutten, County Executive  
Paul J. Hahn, Agency Administrator

**Department of Transportation**

Tom Zlotkowski, Director

## County of Sacramento

December 3, 2007

José Luis Cáceres, Associate Planner  
Sacramento Area Council of Governments  
1415 L Street Suite 300  
Sacramento, CA 95814

**Subject: 2008 Bicycle & Pedestrian Funding Program Application  
Arden Way Improvement Project, Eastern Avenue to Fair Oaks Blvd.**

Dear Mr. Cáceres:

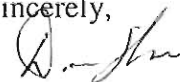
The County of Sacramento is pleased to submit the Arden Way Improvement Project for Bicycle and Pedestrian funding. This project will extend from Eastern Avenue to Fair Oaks Boulevard.

The Arden Way Improvement project offers a great opportunity to address the integration of pedestrian and bicycle improvements that improve air quality, access to transit, and healthy transportation alternatives for the residents who live along this older developed suburban corridor. Arden Way is identified in the new County Pedestrian & ADA Master Plans, and in the County Bicycle Master Plan. These improvements will help complete the streets and provide greater connectivity to existing pedestrian and bicycle facilities.

The Arden Way Improvement Project was ranked number one in the High Priority Pedestrian Upgrade category for pedestrian improvements in the *Regional Bicycle, Pedestrian and Trails Master Plan (Plan)*. This project will be the first phase of pedestrian and bicycle improvements for the entire length of the corridor as identified in the *Plan*. The funding will be used primarily for pedestrian improvements. Minor bicycle improvements have been added to take advantage of opportunities to improve safety by filling in remaining gaps along the Class II Bicycle facility.

I strongly encourage you to support Sacramento County in becoming a regional leader in alternative modes of transportation. Please feel free to contact me with any questions. Thank you in advance for consideration of our grant application.

Sincerely,

  
Per Thomas J. Zlotkowski, Director  
Department of Transportation

REV:kg



*"Leading the Way to Greater Mobility"*

Design & Planning: 906 G Street, Suite 510, Sacramento, CA 95814 . Phone: 916-874-6291 . Fax: 916-874-7831  
Operations & Maintenance: 4100 Traffic Way, Sacramento, CA 95827 . Phone: 916-875-5123 . Fax: 916-875-5363  
www.sacdot.com

## PROJECT SUMMARY

Project Title	Arden Way Improvement Project(Eastern Avenue to Fair Oaks Boulevard)
Local agency contact information	Ron Vicari, Senior Civil Engineer County of Sacramento DOT (916)874-5164
Partners	Gethsemane Lutheran Social Ministry (Neighborhood outreach for signal at Mission Avenue gathered 238 signatures in support)
Project Number in SACOG Master Plan	07-04-01 – High Priority Pedestrian Upgrade
Scope of project & location (not to exceed 150 words) Include aspects of project/program that contribute to Blueprint implementation and other goals of the Funding Program	<p><b>This phase of the Arden Way improvements stretches from Eastern Avenue to Fair Oaks Boulevard. The project will include: new sidewalks, Class II bike lane improvements, planter strips, shade trees, and a traffic signal with bicycle and pedestrian detectors and intersection improvements at the offset intersection at Mission Avenue.</b></p> <p><b>Class II bike lanes are being added due to the opportunity to fill gaps in the existing Class II bicycle facility.</b></p> <p><b>The project will provide connectivity to existing sidewalks and Class II bike lanes, and is the first phase along the Arden Way corridor. These facilities will allow residents to access shopping centers at both ends of the corridor without using motor vehicles. The project will also provide improved access to transit.</b></p> <p><b>The highest priority needs are being addressed first.</b></p>
Project Schedule & Milestones:	<ul style="list-style-type: none"> <li>• Start Work: April 2008</li> <li>• Final ED approved: May 2008</li> <li>• R/W approved: November 2008</li> <li>• Final plans approved: December 2008</li> <li>• Env. Permits secured: February 2009</li> <li>• Award const. Contract: May 2009</li> <li>• Work completed: September 2009</li> </ul>
Overall Total Cost Estimate	\$1,800,000
Total funding sought and funding committed from other sources	\$1,530,000, no funds committed yet. Local Measure A funding will be available for matching funds
Local funding commitment	Local match is \$270,000, which equates to 15.00%
Risks to Schedule or Cost	Minimal ROW required for sidewalks and traffic signal.
Phases/divisibility	This is the first phase of the Arden Way improvements and is the minimum project. The traffic signal at Mission Avenue and the pedestrian and bikeway improvements are all of the highest priority. Currently, there are no signalized crossings between Eastern Avenue and Fair Oaks Boulevard, and there are gaps in sidewalks and bike lanes along the heavily traveled, high speed, Arden Way corridor

## COST ESTIMATE

Funding Categories	Task	Cost Estimate
Environmental	Environmental Studies	\$25,000
Engineering	Engineering & Design	\$200,000
Right-of-Way*	Right-of-Way acquisition	\$100,000
	Utility relocation & lighting	\$100,000
Construction*	Environmental mitigation	N/A
	Grading	N/A
	Foundation & Pavement	\$300,000
	Bridges &/or tunnels	N/A
	Drainage, curb/gutter, street furniture, planting & irrigation	\$375,000
	Signage, signals, & striping	\$600,000
	Bicycle storage/parking	N/A
	Buildings/structures	N/A
	Non-capital staff activities	\$10,000
	Non-capital materials (maps, brochures, manuals, printing, etc)	N/A
Misc.*	Other project components	\$90,000

\*If project applicant is Caltrans, please provide cost estimate for the following additional two components:

- Right-Of-Way Support: N/A
- Construction Support: N/A

## PROJECT BENEFIT ESTIMATE

### Quantifiable Benefits Methodology

Estimate of Existing Usage	= x (Can be zero) = 59
Estimate of Increase in Usage	= y (Can be zero) = 590
Length of Project (miles)	= a = 1 mile
Quantifiable Benefits	= (x (a/10 mph) (\$5/hr)) + (y(a/10 mph) (\$10/hr)) = \$ benefits

There is no data for pedestrian and bicycle travel along the corridor; therefore x is given a value equal to 2% for pedestrians and bicyclists combined in relation to the current ADT. Assuming that pedestrian and bicycle travel will increase by a factor of 10:

$$X = 0.02 * 2955 = 59, y = 10 * 59 = 590$$

$$\text{Benefits (\$)} = (59(1/10 \text{ mph})(\$5/\text{hr})) + (590(1/10 \text{ mph})(10/\text{hr})) = \$29.5 + \$590 = \$629.50$$

$$\text{\$629.50 per day benefit over 15 year lifespan of project} = \$629.50 * 365 * 15 = \sim \$3.450\text{M}$$

### Qualitative Benefits Methodology

The quality of life benefits of a walking and bicycling for the residents goes beyond monetary and air quality benefits. Currently, walking and bicycling on Arden Way is undesirable and does not provide the desired safety, due to gaps in sidewalks and bike lanes. Arden Way is difficult to cross by foot, bicycle, and motor vehicle between the one mile stretch from Eastern Avenue to Fair Oaks Boulevard. The traffic signal for the intersection at Mission Avenue is the midway point along the project corridor, which will allow for safe crossing and turning movements for all modes of travel.

The project will include: landscaped medians, bifurcated sidewalks (where possible), shade trees within planter strips between sidewalks and curb. These improvements will increase safety and aesthetically enhance the Arden Way corridor. The Arden Way corridor is in the County of Sacramento Pedestrian & Americans with Disabilities Act Master Plans and the Bicycle Master Plan. These enhancements will also allow greater access to Regional Transit bus stops.

## Bicycle Facilities

### Class 2 Bikeway Facility

The Project will eliminate gaps along the Arden Way corridor with Class 2 bike lanes that meet County standards. Continuous class II bike lanes are a critical link in the County of Sacramento bike system, allowing residents bicycle access to employment, shopping, and transit. Within one-quarter mile of the project, there is a shopping center, several bus stops, and an office building. The project includes installation of new pavement, signage, and Class 2 bike lane striping along both sides of 1.0 miles of arterials. The project will provide better access to the American River Bike Trail, an important bicycle commuter route.

#### Inputs to Calculate Cost-Effectiveness:

Funding Dollars (Funding): \$100,000 (bike facilities within project)

Effectiveness Period (Life): 15 years

Days (D): 365

Average Length (L) of bicycle trips: 1.0 miles

Annual Average Daily Traffic (ADT): 14,631

Adjustment (A) on ADT for auto trips replaced by bike trips from the bike facility: 0.0109 (close to CSUS)

Credit (C) for Activity Centers near the project: 0.002

#### Emissions Factors (From Table 3, for a 15-year Life):

	Auto Trip End Factor	Auto VMT Factor
ROG Factor	1.020 grams/trip	0.266 grams/ mile
NOx Factor	0.458	0.319
PM10 Factor	0.016	0.219

#### Calculations:

$$\begin{aligned}\text{Annual Auto Trip Reduced} &= (D) * (ADT) * (A + C) \\ &= (365) * (14631) * (0.0109 + 0.002) \\ &= 68,890\end{aligned}$$

$$\begin{aligned}\text{Annual Auto VMT Reduced} &= (\text{Auto Trips}) * (L) \\ &= (51,600) * (1.0) \\ &= 68,890\end{aligned}$$

#### Annual Emission Reductions (ROG, NOx and PM10) in lbs. per year

$$\begin{aligned}&= [(\text{Annual Auto Trips Reduced}) * (\text{Auto Trips End Factor}) \\ &\quad + (\text{Annual Auto VMT Reduced}) * (\text{Auto VMT Factor})] / 454 \\ \text{ROG:} &\quad [(68,890 * 1.020) + (68,890 * 0.266)] / 454 = 195 \text{ lbs. per year} \\ \text{NOx:} &\quad [(68,890 * 0.458) + (68,890 * 0.319)] / 454 = 118 \text{ lbs. per year} \\ \text{PM10:} &\quad [(68,890 * 0.016) + (68,890 * 0.219)] / 454 = 36 \text{ lbs. per year}\end{aligned}$$

**Bicycle Facilities, continued**

Capital Recovery Factor (CRF):  $\frac{(1 + i)^n(i)}{(1 + i)^n - 1} = 0.08$  Where n = project life (15 years)  
 (From Table 8) and i = discount rate (3%)

**Cost-Effectiveness of Funding Dollars:**  $(CRF * Funding) / (ROG + NOx + PM10)$   
 $= [0.08 * 100,000] / [349]$   
**= \$22.92 per lb.**

**FOR CMAQ PROJECTS ONLY:**

Once emissions reductions have been calculated, for each pollutant convert lbs. of emissions reductions per year to kg/day:

$\frac{\text{lbs. reduced per year}}{2.2 \text{ lbs./kg} * 365 \text{ days/year}}$	=	$\frac{195}{2.2 * 365}$	=	<b>0.2 kg/day ROG</b>
$\frac{\text{lbs. reduced per year}}{2.2 \text{ lbs./kg} * 365 \text{ days/year}}$	=	$\frac{118}{2.2 * 365}$	=	<b>0.1 kg/day NOx</b>
$\frac{\text{lbs. reduced per year}}{2.2 \text{ lbs./kg} * 365 \text{ days/year}}$	=	$\frac{36}{2.2 * 365}$	=	<b>5*10<sup>-2</sup> kg/day PM10</b>

**Environmental Justice**

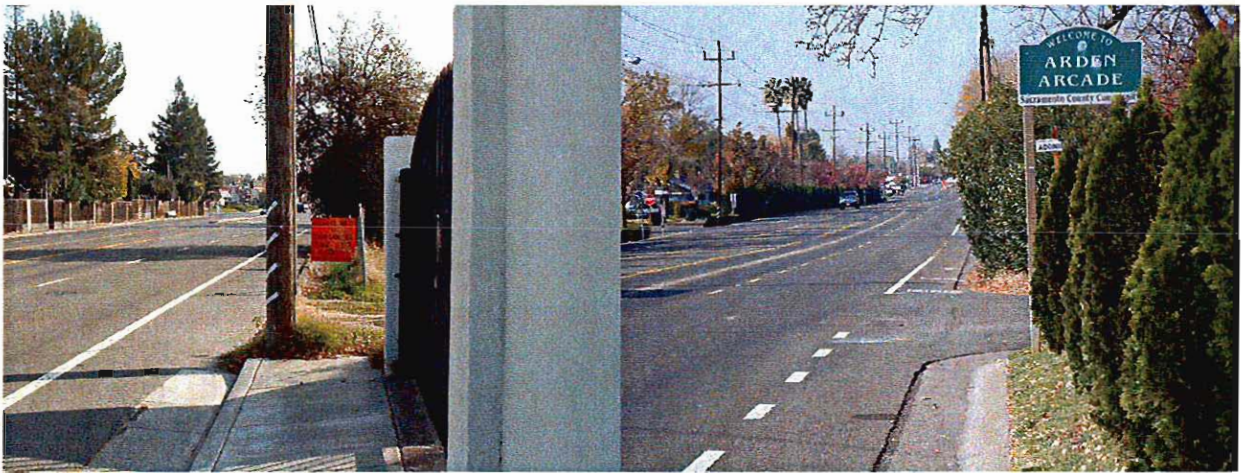
Outreach to the community and other stakeholders will consist of mailings of fliers and public notices published in the local newspapers containing project information and schedules of public workshops. Fliers will also be distributed to the dozens of businesses on the corner of Eastern Avenue and at the corner of Fair Oaks Boulevard. Many of these businesses employees depend on mass transportation, walking, and bicycling to access their jobs.

Community organizations such as WalkSacramento and the Sacramento Area Bicycle Advocates will be supplied with fliers to distribute.

At least two public workshops will be held in the community to solicit participation from the stakeholders. The public will have the opportunity to voice their concerns as well as have input on where the greatest needs are along the corridor.

There will not be undue burdens to low income and minority residents as a result of this project. No homes or businesses will be eliminated to make way for the improvements.

**Exhibits: Examples of missing sidewalks**



**These photos were taken at locations where there are no frontage roads to bypass these conditions. The Class II bike lanes in these photos offer inadequate space for pedestrians to share with bicyclists. In many cases, the Class II bike lanes are substandard to the County of Sacramento standard of 5' width of asphalt.**

**Exhibits: Offset intersection at Mission Avenue and Arden Way – Proposed Traffic Signal**



**There are no sidewalks on the north side of Mission Avenue at the intersection of Arden Way. A Class II bike lane serves as a pedestrian walkway on Mission Avenue north of the intersection. An ADA compliant sidewalk with curb ramps will be constructed at the northwest corner of the intersection (bottom two photographs.) The south side of the intersection has sidewalks on Arden Way and Mission Avenue and ADA compliant curb ramps (top left photo.)**

**There will be push bottom activated, ADA compliant, audible, countdown pedestrian crossings at this traffic signal. Bicyclists will be accommodated with detector loops on Mission Avenue and in the left turn lanes on Arden Way.**

**A traffic signal for this intersection has widespread neighborhood support (see attached letter, seven additional letters available upon request.) Gethsemane Lutheran Social Ministry (on the southeast corner) gathered 238 signatures in support of the traffic signal. The traffic signal for Arden Way at Mission Avenue is ranked number 27 on the County of Sacramento 2007 Project Priority List for Traffic Signals.**

**Exhibits: Example of Class II bike lane gaps**



**At this location, the Class II bike lane and the sidewalk end. The sidewalk continues at a 90° angle onto the frontage road (shown on right hand photo.) There is no such accommodation for bicyclists who may not recognize the alternative of the frontage road to taking the right hand traffic lane or straddling the edge of pavement.**

**Exhibits: Examples of pedestrian and bicycle Improvements at Bus stops**



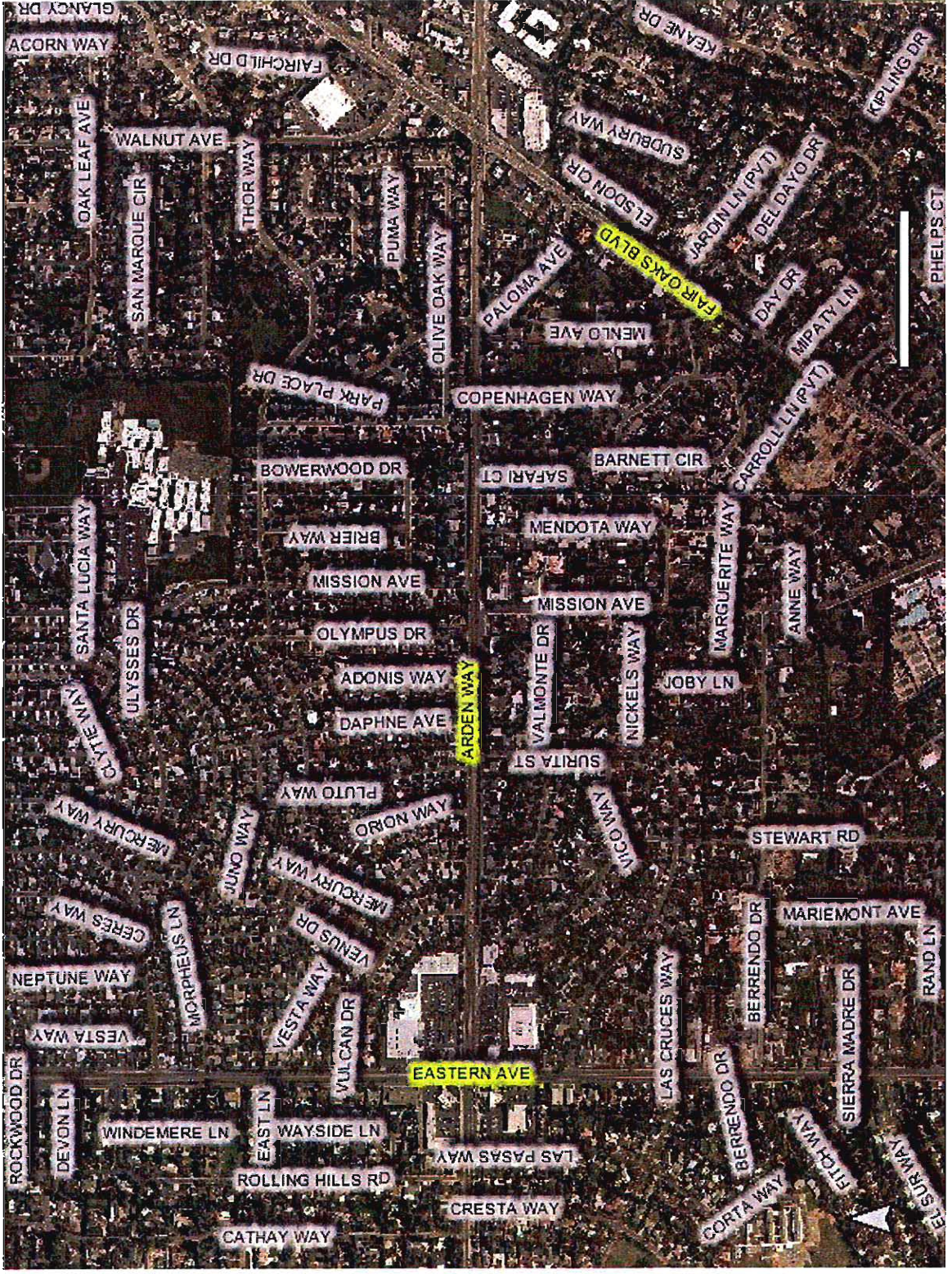
**The photo on the left shows an unimproved bus stop with no sidewalks, while the photo on the right shows a bus stop with bifurcated sidewalk that is littered with trash and leaves. Both conditions can be improved with new and wider sidewalks, bike parking amenities, and allotted space for Regional Transit to install shelters. Note on the left how the grassy area looks virtually undisturbed by foot traffic, possibly due to the inaccessibility of the bus stop for pedestrians.**



County of Sacramento  
Parcel Viewer



County of Sacramento



Note: This map was prepared for assessment purpose only and does not represent a survey

Home  
(916) 486-1882

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**Fred W. Kaiser**  
1451 Mission Avenue  
Carmichael, California 95608  
fwkaiser@surrewest.net

Facsimile  
(916) 924-0883

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October 31, 2007

Mr. Steve Stosich  
Traffic Engineering  
County of Sacramento  
Department of Transportation  
4135 Traffic Way  
Sacramento, CA 95827

**Re: *Intersection of Mission Avenue and Arden Way***  
Request for Signal Controlled Intersection

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Dear Mr. Stosich:

For many years my home has been located at 1451 Mission Avenue, south of the intersection of Mission Avenue and Arden Way. My family includes my six year old son, Matthew. Matthew and I enjoy the Maddox Ranch Park which is located on the north side of Arden Way. Unfortunately, there is no safe crossing of Arden Way between Eastern Avenue and Fair Oaks Boulevard. Arden Way consists of four lanes of traffic as a main arterial with a posted forty miles an hour speed limit. Further the center turn lane adds greater uncertainty to our efforts to cross Arden Way because traffic may proceed straight or may enter the center lane in preparation for a turn.

My son and I cannot safely cross Arden Way by bicycle or as pedestrians. It has also been previously expressed at public meetings that this intersection is dangerous for vehicles as well. The traffic on Arden Way has reached a large volume and with traffic speeds which regularly exceed the posted speed limit. A reasonable and safety promoting measure would be to install signal controls at the intersection of Mission Avenue and Arden Way. The signal control would provide a method for safe crossing of Arden Way by vehicles, bicyclists, pedestrians, and provide appropriate regulation of traffic speeds on Arden Way.

Thank you for your consideration of this letter. If you have any questions, please do not hesitate to call.

Very truly yours,



FRED W. KAISER  
FWK:sbp



Monday, December 03, 2007

Jose Luis Cáceres, Associate Planner  
Sacramento Area Council of Governments  
1415 L Street  
Suite 300  
Sacramento, CA 95814

Dear Mr. Cáceres,

WALKSacramento supports the Sacramento County's application for streetscape improvements along Arden Way from Eastern Avenue to Fair Oaks Boulevard.

The project will include new sidewalks, Class II bike lane improvements, planter strips, shade trees, and a traffic signal with bicycle and pedestrian detectors and intersection improvements at the offset intersection at Mission Avenue.

Class II bike lanes were not in the original scope, but, are being added due to the opportunity presented to fill gaps in the existing Class II bicycle facility.

The project will provide connectivity to existing sidewalks and Class II bike lanes, and is the first phase along the Arden Way corridor. These facilities will allow residents to travel to commercial centers at both ends of the corridor without using motor vehicles. The project supports Blueprint goals of increasing pedestrian and bicycle traffic, as well as transit ridership, and reducing automobile trips.

Please contact me if you have any questions. Thank you for your time and attention. .

Sincerely,

Terry Preston  
Complete Streets Project Coordinator  
WALKSacramento  
909 12<sup>th</sup> Street, Suite 122  
Sacramento, CA 95814  
916-446-9255  
tpreston@walksacramento.org