

PROJECT SUMMARY

Project Title	Marconi Avenue Bicycle/Pedestrian Improvement Project, Phase II, Walnut Avenue to Garfield Avenue
SACOG ID number (if available)	07-04-11
PPNO and/or EA number (if applicable)	N/A
Project Location (Also attach a map)	Marconi Avenue is in unincorporated Sacramento County, and extends from the Capitol City Freeway at the western end, to Fair Oaks Boulevard to the east (Thomas Guide page 298.) This phase of the project extends from Walnut Avenue to Garfield Avenue (see attached map.)
Project Scope	<p>This is primarily a sidewalk construction project to fill in gaps within the project limits. Street lights will be added, and pedestrian safety improvements at intersections will be designed and constructed. There are existing bike lanes, with a few gaps and non-conforming, narrow sections where the sidewalk gaps are. Bike lanes will be re-striped to meet County standards to extend the entire length of the project.</p> <p>The County has conducted extensive community outreach, obtained environmental clearance, and the preliminary design is nearly completed (see plan sheet in application.) All the right-of-way issues have been resolved to make this project close to shovel ready. The County is confident that the Marconi project will be deliverable well within the proposed schedule.</p>
Project Schedule (estimated month & year): 1. Start environmental/preliminary engineering 2. Final ED approved - Start engineering/design 3. Start R/W acquisition & utilities 4. Complete plans, R/W, & permits – Ready to advertise for construction/procurement	1. Fall 2009, preliminary engineering has started, environmental complete 2. Winter 2009, start engineering design 3. Spring 2010 4. Spring 2011

Total Cost Estimate (by phase) 1. Environmental/preliminary engineering 2. Engineering/design 3. R/W acquisition & utilities 4. <u>Construction/procurement</u> TOTAL	1. completed 2. \$319,000.00 3. \$323,500.00 4. <u>\$1,441,500.00</u> \$1,993,000.00
Funding committed from other sources 1. Environmental/preliminary engineering 2. Engineering/design 3. R/W acquisition & utilities 4. <u>Construction/procurement</u> TOTAL	1. 0 2. 0 3. 0 4. <u>\$250,000.00</u> \$250,000.00 (12.5%)
Funding requested from this application 1. Environmental/preliminary engineering 2. Engineering/design 3. R/W acquisition & utilities 4. <u>Construction</u> TOTAL	1. completed 2. \$319,000.00 3. \$232,500.00 4. <u>\$1,191,500.00</u> \$1,743,000.00
Preferred Funding Type(s) <ul style="list-style-type: none"> • RSTP (federal) • CMAQ¹ (federal) • STIP TE (enhancements) (federal) • STIP (non-federal) 	Preferred in this order: <ul style="list-style-type: none"> • RSTP (federal) • CMAQ (federal) • STIP (enhancements) (federal)
Project Title	Marconi Avenue Bicycle/Pedestrian Improvement Project, Phase II, Walnut Avenue to Garfield Avenue
Responsible Project Manager/Contact Name: Position: Address: Phone: E-mail:	Ron Vicari II, P. E. Principal Civil Engineer 906 G Street, Suite 510 Sacramento, CA 95814 (916) 874-5164 desk, (916) 591-2257 cell vicarir@SacCounty.net
Co-sponsor/partner agencies	N/A
Itemize committed funding and sources:	County of Sacramento Measure A

	\$250,000.00
Can you build a usable partial stage of this project? If so, describe scope and cost.	No. This project has already been broken into phases. This is Phase II of the Community Design Marconi Avenue Project.
Have you identified any significant and reasonably likely risks to the project? Describe: <ul style="list-style-type: none"> • Risks that would change scope • Risks that would change schedule • Risks that would change cost 	No. <ul style="list-style-type: none"> • Scope is complete and unlikely to change due to the extensive community outreach the County conducted with the community during Phase I to set project priorities and define the scope • Schedule unlikely to change • Cost estimate allows for a ten percent contingency. Material cost could increase.

Note:

If STIP or STIP-TE funding is being requested, then a Project Study Report (PSR) or PSR equivalent must be completed. Has a PSR or PSR equivalent been completed? If not, when is it expected to be complete?

No formal PSR has been completed. If STIP-TE funding becomes available, a PSR or PSR equivalent will be completed by the County.

¹ *If Congestion Mitigation and Air Quality (CMAQ), emission reduction calculation is required. Methodology available online at www.arb.ca.gov/planning/tsaq/eval/eval.htm*

corridor. The timing of this project is critical since the corridor has a number of parcels that are ripe for redevelopment. Design and construction of these transportation improvements before redevelopment occurs will provide the right message to developers and builders that the County is serious about the type of development that will be encouraged on Marconi.

The County conducted extensive community outreach, obtained environmental clearance, and the preliminary design is nearly completed. All the right-of-way issues have been resolved to make this project close to shovel ready. The County is confident that the Marconi project will be deliverable well within the proposed schedule.

COST ESTIMATE SUMMARY

Please address all applicable tasks as completely as possible.

Funding Categories	Task	Cost Estimate
Environmental	Environmental Studies	completed
Engineering	Engineering & Design	\$319,000.00
Right-of-Way*	Right-of-Way acquisition	\$75,000.00
	Utility relocation & lighting	\$157,500.00
Construction*	Environmental mitigation	0
	Grading	\$123,250.00
	Foundation & Pavement	\$595,600.00
	Bridges &/or tunnels	0
	Drainage, curb/gutter, street furniture, planting & irrigation	\$260,055.00
	Signage, signals, & striping	\$14,090.00
	Bicycle storage/parking	0
	Buildings/structures	0
	Non-capital staff activities	0
	Non-capital materials (maps, brochures, manuals, printing, etc)	0
Misc.*	Other project components	\$448,505.00

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

- Right of Way Support: _____
- Construction Support: _____

PROJECT BENEFIT ESTIMATE

Quantifiable Benefits Methodology

Estimate of Existing Usage = x (Can be zero)

Estimate of Increase in Usage = y (Can be zero)

Length of Project (miles) = a

Quantifiable Benefits = $(x (a/10 \text{ mph}) (\$5/\text{hr})) + (y(a/10 \text{ mph}) (\$10/\text{hr}))$
= \$ benefits

Assume x = 1.7 percent of total vehicle counts times number of motor vehicles (US Census 2000 for bicycle trips in Sacramento County)

Total vehicle from 2003 count on Marconi east of Watt Avenue = 26,307

$x = (0.017)(26,307) = 447$ bicycle trips

Assume y = 3.4 percent (that bicycle usage will double with continuous bike lanes along the corridor)

y = 894 bicycle trips

Length a = 0.5 miles

$QB = (447(0.5/10 \text{ mph})(\$5/\text{hr})) + (894(0.5/10 \text{ mph})(\$10/\text{hr})) = \underline{\$558.75 \text{ for bicycles}}$

For pedestrians: Assume that all transit riders begin trip from residence to a bus stop on Marconi Avenue, or the light rail station at the west end of the Marconi corridor. Regional Transit (RT) reports a daily ridership of buses at 58,000 trips per day, and 51,000 trips per day for light rail. The population served by RT is approximately 2.1 million residents. Using these figures, and rounding all transit use per day to 100,000, indicates a transit share of approximately 5 percent.

$x = (0.05)(26,307) = 1,315$ pedestrian trips

With the sidewalk in-fill and improvements, residents will be able to walk to transit connections, and do shopping along the Marconi Avenue corridor more safely.

y = 2,630 pedestrian trips

Length a = 0.5 miles

$QB = (1,315(0.5/10 \text{ mph})(\$5/\text{hr})) + (2,630(0.5/10 \text{ mph})(\$10/\text{hr})) = \underline{\$1,643.75 \text{ for pedestrians}}$

Total QB = \$558.75 + \$1,643.75 = \$2,202.50
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Qualitative Benefits Methodology

The Marconi Avenue project was funded in 2007 as a Community Design grant. The Marconi corridor is an ideal candidate for smart growth. The pedestrian and bicycle improvements will increase pedestrian and bicycle travel to local businesses along the Marconi corridor, and improve access to transit.

EMISSIONS BENEFIT CALCULATIONS FOR CMAQ FUNDING

Class 2 Bikeway Facility

Improved Marconi bike lanes provide continuous standard width bike lanes where gaps exist, to increase safety for bicyclists. Currently, the existing bike lanes are underutilized due to the perceived safety risk presented by gaps where bike lanes narrow to non-standard widths.

Inputs to Calculate Cost-Effectiveness:

Funding Dollars (Funding): \$1,993,000

Effectiveness Period (Life): 15 years

Days (D): 365

Average Length (L) of bicycle trips: 0.5 miles

Annual Average Daily Traffic (ADT): 26,307

Adjustment (A) on ADT for auto trips replaced by bike trips from the bike facility: 0.0052

Credit (C) for Activity Centers near the project: 0.003

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:

$$\begin{aligned}\text{Annual Auto Trip Reduced} &= (D) * (ADT) * (A + C) \\ &= (365) * (26,307) * (0.0052 + 0.003) \\ &= \underline{78,700}\end{aligned}$$

$$\begin{aligned}\text{Annual Auto VMT Reduced} &= (\text{Auto Trips}) * (L) \\ &= (78,700) * (0.5) \\ &= \underline{39,400}\end{aligned}$$

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

$$= [(Annual\ Auto\ Trips\ Reduced) * (Auto\ Trips\ End\ Factor) + (Annual\ Auto\ VMT\ Reduced) * (Auto\ VMT\ Factor)] / 454$$

ROG: $[(78,700 * 1.020) + (39,400 * 0.266)] / 454 = \underline{200\ lbs.\ per\ year}$

NOx: $[(78,700 * 0.458) + (39,400 * 0.319)] / 454 = \underline{107\ lbs.\ per\ year}$

PM10: $[(78,700 * 0.016) + (39,400 * 0.219)] / 454 = \underline{22\ lbs.\ per\ year}$

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: $(CRF * Funding) / (ROG + NOx + PM10)$
 $= [.08 * 1,993,000] / [327]$
 $= \underline{\$485\ per\ lb.}$

FOR CMAQ PROJECTS ONLY:

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

$\frac{\text{lbs. reduced per year}}{2.2\ \text{lbs./kg} * 365\ \text{days/year}}$	=	$\frac{200}{2.2 * 365}$	=	$\underline{0.25\ \text{kg/day ROG}}$
$\frac{\text{lbs. reduced per year}}{2.2\ \text{lbs./kg} * 365\ \text{days/year}}$	=	$\frac{107}{2.2 * 365}$	=	$\underline{0.13\ \text{kg/day NOx}}$
$\frac{\text{lbs. reduced per year}}{2.2\ \text{lbs./kg} * 365\ \text{days/year}}$	=	$\frac{22}{2.2 * 365}$	=	$\underline{0.03\ \text{kg/day PM10}}$

ENVIRONMENTAL JUSTICE

Marconi Avenue is substantially built with older properties in various states of repair, and because Marconi is heavily populated with apartment rental complexes, the County has partnered with RHA. RHA will continue its work with multi-family complex owners to upgrade their property, support on-going information sharing with developers and realtors about the potential benefits of smart growth at the corridor intersections, and coordinate with the County Municipal Services Agency. RHA has included low income and minority members of the community in the outreach efforts, many of whom are transit dependent. These improvements will benefit both business owners and low income and/or minority residents

The Marconi corridor is the ideal candidate for smart growth. It is the most densely developed arterial in the County in terms of residences. It houses 9,331 single and multifamily dwelling units of which 4,000 are apartment units located in 64 complexes. In addition, there is a variety of retail, commercial, and community land uses. Nearly all of the corridor's parcels are built, but are in a wide range of condition due to the age of the corridor. Many are ripe for redevelopment and upgrading from traditional suburban uses to smart growth. It is the intent of this project to provide an impetus for developers and builders to think about smart growth projects when proposing future projects along Marconi Avenue.

The proposed improvements will provide better walking, bicycling and transit access to existing commercial and retail services at the intersections Marconi and Garfield Avenue and Marconi and Walnut Avenue. In addition, it will provide safer and improved access to the Carmichael Regional Library and transit.

Within the project area, there are 46 apartment complexes within walking distance of Marconi Avenue. These are located on approximately 27 acres. This results in 59 dwelling units per acre excluding commercial and retail acreage along the project area. This information was developed through field review by RHA.

MISCELLANEOUS

The County conducted extensive community outreach during Phase I of the Marconi Avenue project. The County sent out over 1,000 invitations to a workshop to residents and businesses within a 250' radius of Marconi Avenue. The workshop was held on May 14, 2007 at the Carmichael Library on Marconi Avenue. Some 74 residents, business owners, and concerned citizens were in attendance. The participants were split up into six groups to come up with recommendations for community priorities. The results from the workshop yielded extensive public comment supporting complete streets. The workshop participants overwhelmingly recommended continuous sidewalks, bike lanes, lighting, bus stop improvements, and intersection modifications along the Marconi Avenue corridor. The scope of the project was based on these results.

In addition to the Phase I County workshop, a three year study was completed in June 2005 by Parsons Brinkerhoff Quade & Douglas, Inc. The study project, entitled, “Reinventing Marconi Avenue”, was initiated and managed by the Rental Housing Association of Sacramento Valley with funding by Sacramento County. Extensive outreach to the business community, including apartment owners, along the Marconi Avenue corridor was performed.