



**APPENDIX A:
PUBLIC WORKSHOP #1 EXHIBITS
SEPTEMBER 14, 2011**

FOUR TYPES OF CYCLISTS: WHICH TYPE ARE YOU?

PLACE A STICKER IN ONE OF THE BOXES BELOW.

Place
Stickers
Here



Strong & Fearless

Will ride regardless of facilities

Trip distance is not such an issue

Place
Stickers
Here

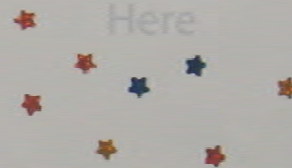


Enthusiastic & Confident

Comfortable in traffic with appropriate facilities

Prefer shorter trip distances

Place
Stickers
Here



Interested but Concerned

Not attracted by bicycle lanes

Not comfortable in traffic

Will ride on low-volume/low-speed roadways

Place
Stickers
Here

No Way No How

Not interested in using a bicycle for transportation

Source: Adapted from materials provided by Portland Department of Transportation

FEHR & PEERS



BIKEWAY TYPES

PLACE YOUR STICKER NEXT TO YOUR FEATURES OF PREFERENCE

• Class I - Bike Path

Class I Bikeways, or bike paths, are used **exclusively** by bicyclists and **pedestrians**. They are completely **separate** from roadways with motorized traffic except for where they must traverse streets or driveways.



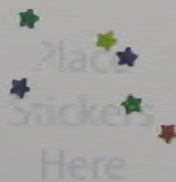
• Class II - Bike Lane

Class II Bikeways, or bike lanes, are striped lanes for one-way bike travel on a roadway.



• Class III - Bike Route

Class III Bikeways, or bike routes, are roadways that **promote shared use** by both bicyclists and motorists.

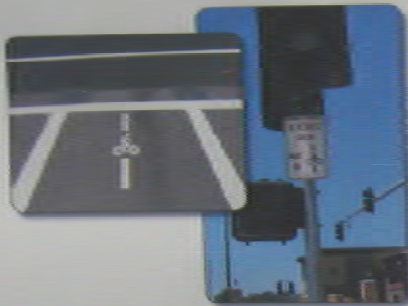


INTERSECTION TREATMENTS

INTERSECTIONS ARE OFTEN CHALLENGING FOR BICYCLISTS TO NEGOTIATE. BELOW ARE SEVERAL TREATMENTS DESIGNED TO MAKE INTERSECTIONS MORE BIKE-FRIENDLY. PLACE A STICKER NEXT TO YOUR INTERSECTION TREATMENT OF CHOICE.

• Bicycle Loop Detectors

Bicycle loop detectors allow traffic lights to detect and give green lights to bicycles.



Place
Stickers
Here

• Bicycle Push-Buttons

Bicyclists use push-buttons to request a green light.



Place
Stickers
Here

• Class I Bike Path Intersections

Where bike paths cross busy streets, a bike intersection will stop traffic so bicyclists and pedestrians can cross.



Place
Stickers
Here

• Bike Boxes

Bike boxes are clearly designated spaces for cyclists to wait for traffic lights to change. Bike boxes are best used in downtown environments.



Place
Stickers
Here

SHORT TERM BICYCLE PARKING

SHORT TERM BICYCLE PARKING INCLUDES STATIONARY RACKS THAT REQUIRE A USER-PROVIDED LOCK. THE RACKS BELOW CONFORM TO THE CURRENT INDUSTRY STANDARDS WHICH REQUIRE A RACK TO LOCK BOTH A BICYCLE'S WHEELS AND FRAME WITH A "U-LOCK". PLACE YOUR STICKER NEXT TO YOUR RACK OF PREFERENCE.



• Inverted U



Place
Stickers
Here

• Bike Hitch Rack



Place
Stickers
Here

• Swerve Rack



Place
Stickers
Here

• Lightning Rack



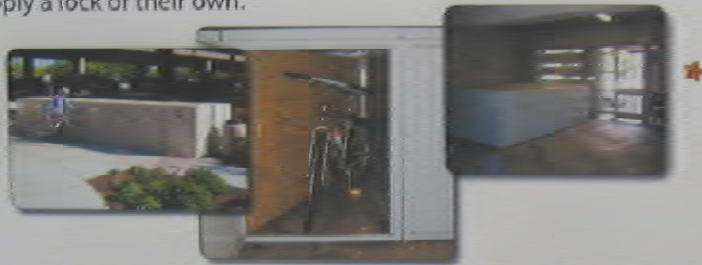
Place
Stickers
Here

LONG TERM BICYCLE PARKING

LONG TERM BICYCLE PARKING PROTECTS BOTH BICYCLES AND THEIR ATTACHED ACCESSORIES. BICYCLES CAN BE LEFT IN LONG TERM PARKING FOR DAYS AT A TIME WITH REDUCED THREAT OF THEFT AND PROTECTION FROM THE WEATHER.

• Bike Lockers

Bike lockers are fully enclosed and accessible only by the user. They are often located in parking lots, in parking garages, next to transit centers, or adjacent to buildings. Users usually lease the locker for months at a time and are either provided with a key or supply a lock of their own.



Place
Stickers
Here

• Indoor Storage

Indoor storage rooms can be incorporated into employment or residential buildings. These rooms include short term bicycle racks at a minimum and sometimes also include other amenities such as lockers for personal items.



Place
Stickers
Here

OTHER ENHANCEMENTS FOR BICYCLING

• Bicycle Boulevards

A bicycle boulevard is a shared roadway optimized for bicycle traffic through the use of traffic calming, traffic control measures, and directional signage. Motor vehicle traffic on a bicycle boulevard is usually low and primarily local.



• Road Diets

Road diets can improve conditions for bicyclists by reducing the number of travel lanes on a roadway. Road diets can lower motor vehicle speeds, improve safety, and make space for bike lanes.



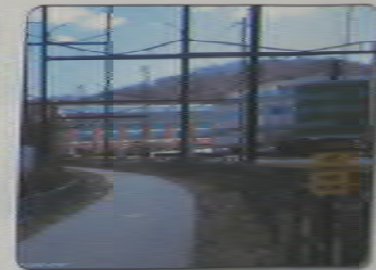
• Sharrows

Sharrows are pavement markings on shared-use roadways that inform bicyclists that they should be in the travel lane and away from parked cars. Sharrows also inform motorists to expect bicyclists to be in the travel lane.

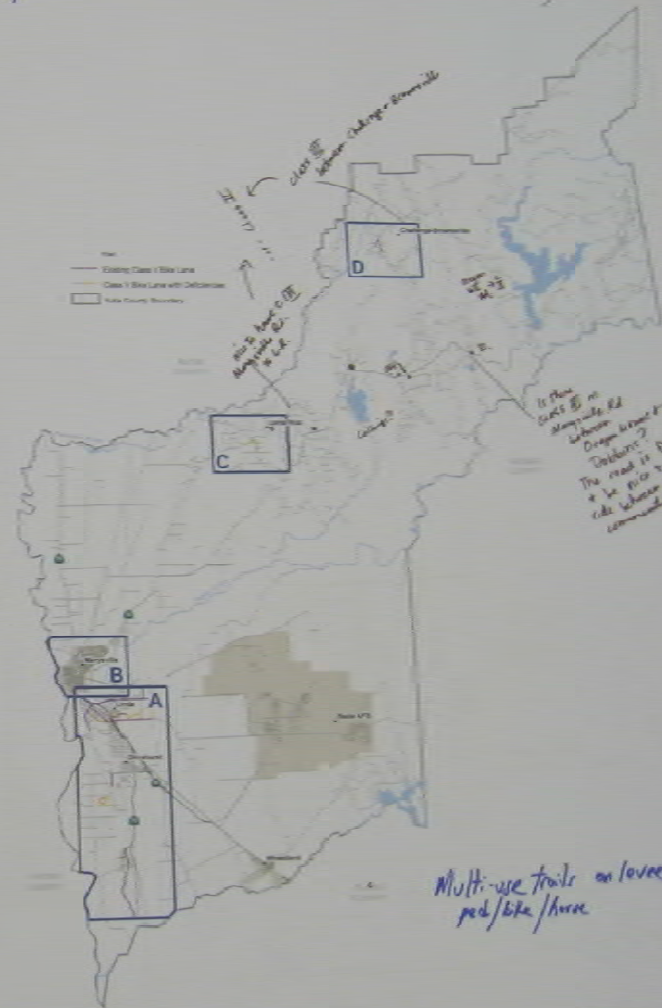
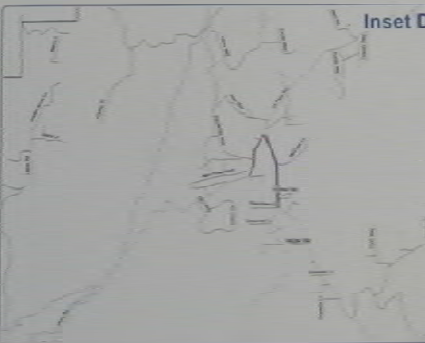
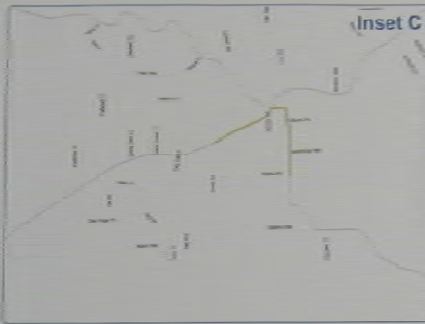
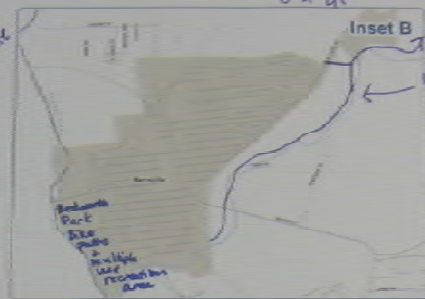


• Directional Signage

Directional signs help direct bicyclists to nearby destinations and to other bikeways. They are also useful on bike paths for informing bicyclists of their location on the path.



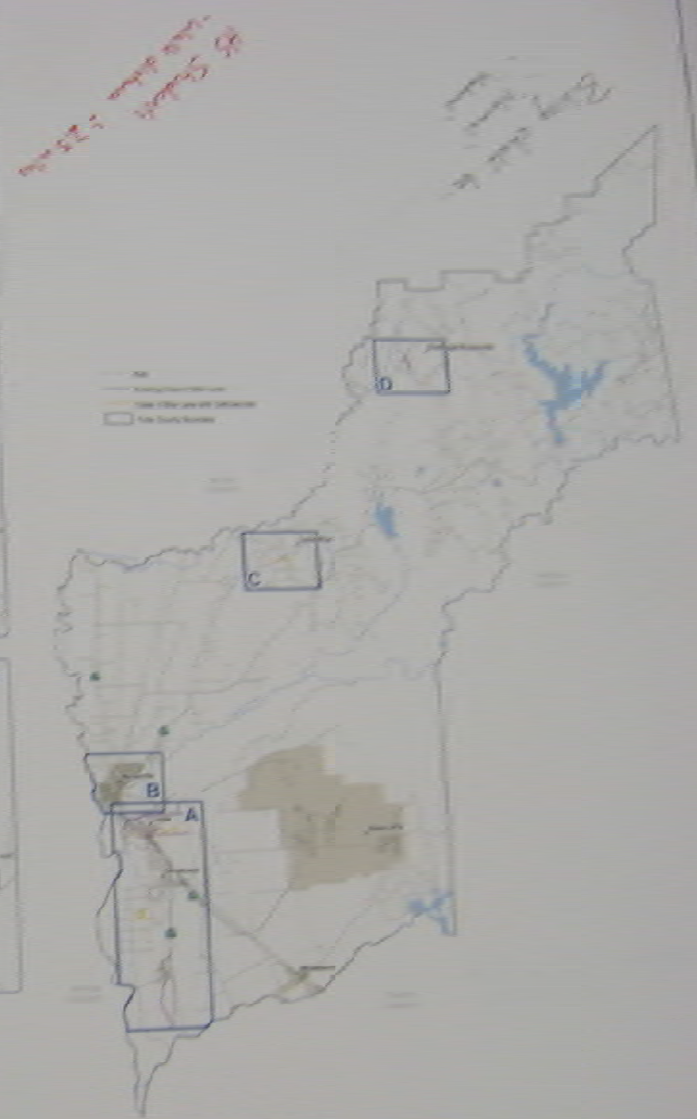
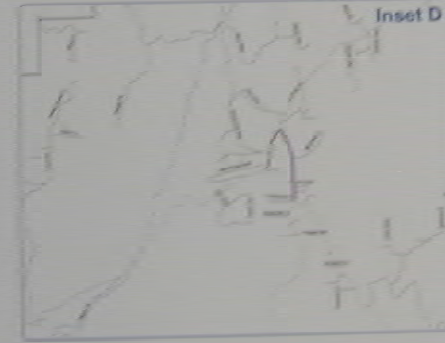
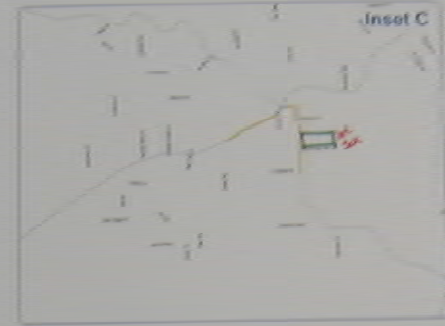
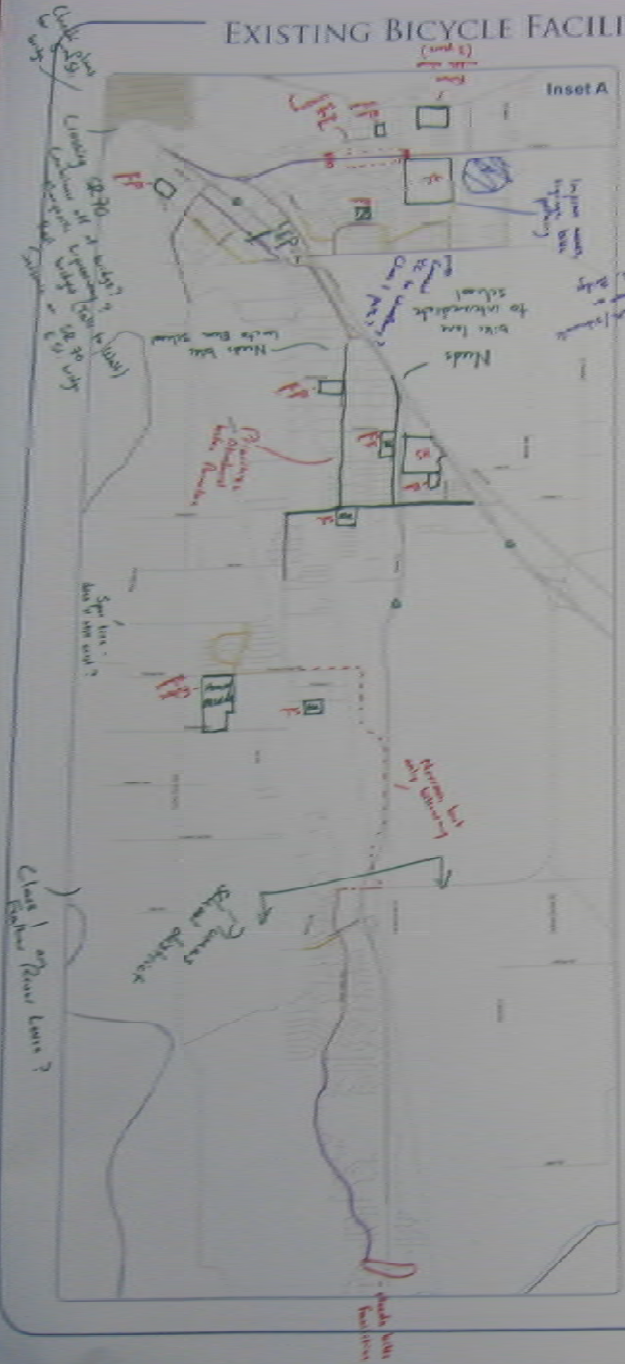
EXISTING BICYCLE FACILITIES



EXISTING BICYCLE FACILITIES

Black mean bike racks in downtown Minneapolis








85 Students
walk home : 2:30pm











APPENDIX B: RESPONSES FROM ONLINE SURVEY







1. Why do you ride a bicycle? (You may choose more than one answer)

		Response Percent	Response Count
Recreation/exercise		85.6%	83
Shopping/errands		20.6%	20
Work trips		13.4%	13
School trips		9.3%	9
To get to transit		12.4%	12
I don't		3.1%	3
I don't, but I want to		15.5%	15
answered question			97
skipped question			1




2. On average, how often do you ride a bicycle?

		Response Percent	Response Count
Daily		9.8%	9
3-5 times a week		38.0%	35
1-2 times a week		14.1%	13
1-3 times a month		18.5%	17
7-11 times a year		4.3%	4
1-6 times a year		15.2%	14
answered question			92
skipped question			6











3. How comfortable are you cycling with automobiles?

		Response Percent	Response Count
I fearlessly weave in and out of traffic		1.0%	1
I'm comfortable in traffic		9.3%	9
I prefer to stay in bike lanes		42.3%	41
I avoid roads with traffic		15.5%	15
I prefer off-street trails to on-street bike lanes		21.6%	21
Other (please specify)		10.3%	10
answered question			97
skipped question			1

4. If you have children, do they bicycle to school?

		Response Percent	Response Count
Yes		26.8%	26
No		28.9%	28
n/a		44.3%	43
answered question			97
skipped question			1

**5. What are the primary factors that prevent you from cycling more often in Yuba County?
(You may choose more than one answer)**

		Response Percent	Response Count
Destinations too far		21.6%	21
No bike routes, lanes, or paths to destination		78.4%	76
Traffic volume/traffic speed		41.2%	40
Drivers do not share road		42.3%	41
Roads in poor condition		48.5%	47
Lack of shade		8.2%	8
Lack of time		13.4%	13
Weather conditions		3.1%	3
Don't want to get sweaty or have to change clothes		1.0%	1
Other (please specify)		12.4%	12
answered question			97
skipped question			1

6. What do you like about bicycling in Yuba County?

	Response Count
	62
answered question	62
skipped question	36

7. What can the County do to improve conditions for bicyclists?

Response
Count

70

answered question

70

skipped question

28

8. What other comments do you have for the Plan?

Response
Count

42

answered question

42

skipped question

56

9. To help us track geographic diversity of survey responses, please provide your home zip code.

Response
Percent Response
Count

ZIP:



100.0%

93

answered question

93

skipped question

5

Q3. How comfortable are you cycling with automobiles?

1	dont ride enought to input but would feel uncomfortable in heavy traffic	Feb 8, 2012 5:22 PM
2	It depends upon where I ride. Some areas are scary to ride near the traffic.	Feb 8, 2012 10:06 AM
3	I don't ride a bicycle any more	Sep 19, 2011 6:47 AM
4	Perfer to stay in bike lane with my children for safety.	Sep 13, 2011 5:17 PM
5	I avoid roads with traffic and generally ride bike paths and on the levee.	Sep 13, 2011 4:03 PM
6	I prefer off-street trails, but use bike lanes when there is no other option	Sep 13, 2011 1:44 PM
7	I prefer bike lanes where cars don't park:)	Sep 7, 2011 12:02 PM
8	I ride in traffic and bike lanes bt feel more comfortable where bike lanes are designated clearly	Aug 31, 2011 9:28 PM
9	Am comfortable in traffic, but would prefer bike lanes	Aug 30, 2011 5:10 PM
10	I prefer off-street to on-street and bike lanes to no lanes.	Aug 30, 2011 4:49 PM

Q5. What are the primary factors that prevent you from cycling more often in Yuba County? (You may choose more than one answer)

1	The dogs - there are so many dogs that run out & bark at you and sometimes chase you.	Mar 5, 2012 5:38 PM
2	Too many large pockets of crime	Feb 8, 2012 6:19 PM
3	No side walk if traffic doesn't share	Feb 8, 2012 4:51 PM
4	I ride daily, but the lack of bike lanes/trails makes it difficult and dangerous to get from Point A to Point B.	Feb 8, 2012 10:12 AM
5	I don't have the time	Sep 19, 2011 6:47 AM
6	People who drive cars also need to be educated in riding with bicyclists on the road.	Sep 13, 2011 4:03 PM
7	I live in the foothills which makes riding more difficult	Sep 13, 2011 3:39 PM
8	Overall, I'd like to see more direct routes and bike lanes	Sep 13, 2011 1:44 PM
9	the Marysville levee is torn up now	Sep 10, 2011 2:19 PM
10	car/truck noise	Sep 2, 2011 2:45 PM
11	health, but that's over now	Aug 31, 2011 3:55 PM
12	I bicycle 100 miles per week, so I take a couple days off.	Aug 31, 2011 2:31 AM

Q6. What do you like about bicycling in Yuba County?

1	No parking I enjoy riding for exercise but fear cars	Apr 13, 2012 11:28 AM
2	I like it once I get to an area that has bike lanes or atleast sidewalks - its just the ride to get to that point that I don't like!	Mar 5, 2012 5:38 PM
3	The Marysville levee bike trail, although it has some rough spots near railroads.	Feb 12, 2012 4:22 PM
4	Scenery	Feb 9, 2012 9:01 AM
5	It's close to my house and work.	Feb 9, 2012 8:57 AM
6	Close to home. If there were somewhere to ride other than the streets, I would ride my bike much more.	Feb 8, 2012 11:38 PM
7	I like the outdoors and viewing wildlife, and biking in clean air locations like along the river	Feb 8, 2012 11:11 PM
8	I like biking out on Feather River Blvd	Feb 8, 2012 6:19 PM
9	It is green!	Feb 8, 2012 5:44 PM
10	it would be an excellent hobby if it was safe	Feb 8, 2012 5:22 PM
11	Nice weather most of the year	Feb 8, 2012 4:51 PM
12	The rivers and orchards .	Feb 8, 2012 4:46 PM
13	The weather.	Feb 8, 2012 4:12 PM
14	We live in God's country.....we just have the devil as our politicians in California.	Feb 8, 2012 2:00 PM
15	Getting outside, breathing fresh air with out car exhaust, enjoying a peaceful ride looking at nature and calming myself while getting a good work out for an older woman such as myself	Feb 8, 2012 10:42 AM
16	The weather is usually pretty good, so I get to ride almost daily.	Feb 8, 2012 10:12 AM
17	I enjoy the rural areas of the county and I also enjoy riding on the levees that surround Marysville.	Feb 8, 2012 10:06 AM
18	nothing	Sep 26, 2011 7:08 PM
19	It is great exercise	Sep 23, 2011 11:08 PM
20	rural landscape	Sep 20, 2011 4:13 PM
21	Bicycling provides excellent exercise and is positive mode of transportation that does not impair our environment.	Sep 20, 2011 2:42 PM
22	Great views of our great area.	Sep 20, 2011 12:51 PM
23	When I used to bicycle ride, I rode on the dirt logging roads. This was safe and provided good exercise.	Sep 19, 2011 6:47 AM

Q6. What do you like about bicycling in Yuba County?

24	Add more bike lanes and encourage people to bike more	Sep 15, 2011 3:34 PM
25	It's great to get the kids out for family biking. It's great exercise and great family time.	Sep 15, 2011 10:51 AM
26	I bike in Loma Rica where I live and the scenery is beautiful and sometimes challenging.	Sep 14, 2011 2:53 PM
27	The view	Sep 14, 2011 12:31 PM
28	I like riding in East Marysville because the traffic is low and the neighborhood is quiet, it makes for a relaxing ride at the end of the day or early morning on the weekend.	Sep 14, 2011 8:37 AM
29	Its not so great. I do it cause I love bicycling, but family doesn't come with me because of crazy drivers not sharing road	Sep 13, 2011 9:27 PM
30	I enjoy the freedom of cycling and the simplicity of it.	Sep 13, 2011 9:01 PM
31	It's Kinda of OK for bicycling	Sep 13, 2011 8:38 PM
32	The scenery and wildlife.	Sep 13, 2011 8:15 PM
33	The weather.	Sep 13, 2011 7:10 PM
34	Exercise and fresh air. Spending time with my children.	Sep 13, 2011 5:17 PM
35	low traffic farm roads and a variety of riding conditions (hills and flats)	Sep 13, 2011 4:53 PM
36	You get to see your county in a different view rather than just driving through it.	Sep 13, 2011 4:23 PM
37	exercise, fresh air	Sep 13, 2011 4:21 PM
38	The bike path that leads from Yuba City to Marysville is traffic free and offers some hills for challenge. The scenery is nice around the river as well.	Sep 13, 2011 4:03 PM
39	Yuba County has great access to natural beauty.	Sep 13, 2011 3:39 PM
40	I only do it for the exercise only. Other than that I don't think roads in Yuba County are very safe to ride bikes at all.	Sep 13, 2011 3:25 PM
41	It can be very scenic and can be quiet depending on when you're riding.	Sep 13, 2011 1:44 PM
42	When the levees are there, one can bike completely around the city.	Sep 13, 2011 11:25 AM
43	I love to ride on the levees and see Marysville from the vantage point.	Sep 10, 2011 2:19 PM
44	Biking is a great form of exercise and it is a great green activity! and of course the scenery	Sep 8, 2011 12:00 PM
45	Hills	Sep 7, 2011 4:02 PM
46	It's good exercise	Sep 7, 2011 12:02 PM

Q6. What do you like about bicycling in Yuba County?

47	Easy to get around. The area is mostly flat so cycling is enjoyable without being a huge workout. I ride every weekend with my grandkids & we tour around together.	Sep 5, 2011 2:11 PM
48	there are several route options that connect quite a few towns together.	Sep 3, 2011 3:39 PM
49	There are great places to ride, it would be nice if the roads were in better condition and wider lanes.	Sep 3, 2011 12:24 PM
50	The few times I have, I enjoy the trails in the country and by the river.	Sep 2, 2011 10:13 PM
51	increased number of bike paths	Sep 2, 2011 2:45 PM
52	open spaces	Sep 1, 2011 10:05 PM
53	Nothing, we need more bike trails!!!!	Sep 1, 2011 9:04 AM
54	I only cycle on the levees at this time because of the lack of bike paths.	Aug 31, 2011 9:31 PM
55	The terrain and the scenery in the ag areas and foothills	Aug 31, 2011 9:28 PM
56	Like to ride on levees around Marysville.	Aug 31, 2011 7:39 PM
57	flat (mostly), scenic, things close by	Aug 31, 2011 3:55 PM
58	Riding round the Sutter Buttes	Aug 31, 2011 9:03 AM
59	In the foothills, I can bike to the lake or store. I enjoy getting my exercise by riding.	Aug 31, 2011 8:53 AM
60	Most drivers are curious and give bicycles plenty of room. I also like how public transit has bike racks.	Aug 31, 2011 8:09 AM
61	No hills in Marysville.	Aug 31, 2011 2:31 AM
62	Beautiful rural roads.	Aug 30, 2011 5:10 PM

Q7. What can the County do to improve conditions for bicyclists?

1	Bike lanes are nice but they should be kept clean	Apr 13, 2012 11:28 AM
2	They need to do some code enforcement in the "historical" part of Olivehurst!	Mar 5, 2012 5:38 PM
3	Build a bypass around Marysville for Highway 70 and 20. Place them on the levees and reduce traffic in the city of Marysville. Reduce vehicle emissions in town, there are too many vehicles (especially diesels) that just sit in traffic releasing tons of emissions that no biker wants to breathe. The diesels are the worst because their emissions cause heart disease and stink like hell while riding.	Feb 12, 2012 4:22 PM
4	Maintain existing bike paths! Rices Crossing Road paths are full of debris!	Feb 9, 2012 9:01 AM
5	Build a bicycle trail so they don't have to contend with motorists and idiots. I ride on the American River Trail starting from Discovery Park, because there are no motorists on the trail. It's a 30-minute ride to Discovery Park, but it's worth it because I only have to deal with runners and other cyclists.	Feb 9, 2012 8:57 AM
6	Create a paved bike trail.	Feb 8, 2012 11:38 PM
7	Build something similar to the American River Bike trail	Feb 8, 2012 11:11 PM
8	Put in bike lanes on ALL of Feather River Blvd not just the small area near the new housing tract.	Feb 8, 2012 6:19 PM
9	Road upgrades including repave and bike lanes or paths.	Feb 8, 2012 5:30 PM
10	get schools involved in bicycle safety because it starts with our children and children always come home to tell us what they learn in school	Feb 8, 2012 5:22 PM
11	Nice river trails	Feb 8, 2012 5:14 PM
12	Sidewalks for walking/little kid bicycling to the tower mart from Plumas lake. Sidewalks in general should be added near Plumas lake.	Feb 8, 2012 4:51 PM
13	Make bike trails from Plumas Lake to Marysville/Yuba City.	Feb 8, 2012 4:46 PM
14	need designated bike paths for recreation and bike lanes to get places. Campaign of "biker awareness" might help. People in cars are insensitive to pedestrians and bikers.	Feb 8, 2012 4:12 PM
15	Construct bike trails and bike routes that are safe and will make it enjoyable to ride instead of drive if possible.	Feb 8, 2012 3:01 PM
16	Safe bike trails like maybe the levees? Just don't have any places people can hide and then attack.	Feb 8, 2012 2:00 PM
17	Another system of bridges & bike ways designed for cyclists & pedestrians.	Feb 8, 2012 11:46 AM
18	If there were more bike lanes people might start to use them to get to and from work	Feb 8, 2012 10:42 AM
19	Bike lanes and or biking trails would greatly increase ridership and promote healthy, active lifestyles. It would probably even encourage economic growth	Feb 8, 2012 10:12 AM

Q7. What can the County do to improve conditions for bicyclists?

	because it would be easier for people to get from one place to another cheaply and quickly.	
20	Marking lanes, basic upkeep, Perhaps some organized events for all levels of riders to help promote biking in the county. This could include benefits similar to the Bike Around the Buttes.	Feb 8, 2012 10:06 AM
21	make and clearly mark wider bike paths on the roads and streets.	Sep 26, 2011 7:08 PM
22	Make bike lanes so students can ride to school safely.	Sep 23, 2011 11:08 PM
23	accomidate cyclists on roadways	Sep 20, 2011 4:13 PM
24	Yuba County can add bike lanes and sidewalks in the Arboga area, so families/community members can have improved access to the community without having to use their vehicles.	Sep 20, 2011 2:42 PM
25	More sidewalk in our streets, especially around school areas for children.	Sep 20, 2011 12:51 PM
26	Put bike lanes on rural roads, and also map and publicize existing trail routs such as the trail by Bullards Bar Reservoir. Also, try to negotiate agreements with logging companies to establish bike routs through their lands. Further, promote bike events with routes through the public dirt roads in the County, and attempt to get permission to include routes through the above mentioned private logging roads.	Sep 19, 2011 6:47 AM
27	add both sidewalks and bike lanes in areas closer to newer developments and be sure to have both sidewalks and bike lanes in-route to schools from the newer developments	Sep 15, 2011 3:34 PM
28	My kids go to Arboga ele. And there are very few bike lanes to get to the school. My daughter in 5th grade would really love to ride to school but with no bike lanes on Plumas Arboga rd and Arboga rd B the parents driving fast to get their kids to school I don't feel comfortable letting her go. I rode with her this morning and it was very tight for us to ride on the road.	Sep 15, 2011 10:51 AM
29	Create bike paths, lanes that are a safe distance from traffic and dogs and that take you either from the country into Marysville or from town to the country.	Sep 14, 2011 2:53 PM
30	Make us a lane	Sep 14, 2011 12:31 PM
31	Please create/identify safe spots to rest/refresh (i.e. Porta-Potties; bike frendly stores/vendors. Maybe a bike logo in the windows that let cyclists know they are welcome to use the rest room (most likely they will purchase from such stores - so it would be a win win for all)	Sep 14, 2011 11:38 AM
32	Connect the bike lane around the levee so you don't have to come down into downtown to make the loop on the south side and on the north side you don't have to go around the railroad tracks by crossing Hwy 70 to continue the loop.	Sep 14, 2011 8:37 AM
33	More paths!	Sep 14, 2011 1:26 AM
34	Bicycle Lanes from here to Yuba City	Sep 13, 2011 9:27 PM

Q7. What can the County do to improve conditions for bicyclists?

35	More bike lanes and bicycle activities	Sep 13, 2011 9:01 PM
36	More bicycle lanes	Sep 13, 2011 8:38 PM
37	Better bike lanes and bike paths.	Sep 13, 2011 8:25 PM
38	Bike lanes and a scenic river bike trail would be great. Something like the American River Parkway but obviously on a smaller scale.	Sep 13, 2011 8:15 PM
39	Build bike paths.	Sep 13, 2011 7:10 PM
40	Repair/Improve roads and paint bike paths.	Sep 13, 2011 5:17 PM
41	1. Bike path along the levee from Plumas Lake into Linda/Marysville 2. A bike path or bike lane out of Marysville to the north (highway 70 is about the only way and it is just plain dangerous)	Sep 13, 2011 4:53 PM
42	Make levee cycling easier with more accessibility for bicyclist with child buggies attached. For instance, now there are areas where railroad tracks make it difficult to proceed with the child carts and there is not an alternative route to continue.	Sep 13, 2011 4:23 PM
43	create bike paths, depending on cost.	Sep 13, 2011 4:21 PM
44	1. Lighted bike paths 2. Not sure about the safety along the levees due to the number of homeless persons that reside along the path. Also there are a number of people that hang out on the path near the mission. 3. Bike lockers or bike racks near rest stops. 4. Traffic lights dedicated to bicyclists (like in Davis). 5. Bike clubs that ride regularly along the paths. There are a few around here--perhaps they should be included in the planning process as they would know better than most what is needed. 6. County sponsored bike tours.	Sep 13, 2011 4:03 PM
45	More bike lanes.	Sep 13, 2011 3:39 PM
46	Need to put a bike lane in on McGowan from Arboga Road to the Park next to Olivehurst Elementary. Very dangerous. Put Bike lanes in on Arboga Road. From McGowan to Earl Rd.	Sep 13, 2011 3:26 PM
47	wider bike lanes and put up signs so vehicles will share the road too.	Sep 13, 2011 3:25 PM
48	Yuba County can provide more bike lanes in urban/suburban areas and some unifying trails in rural areas.	Sep 13, 2011 1:44 PM
49	On some side streets, make bike lanes	Sep 13, 2011 11:25 AM
50	More bike lanes and easier access across the highways.	Sep 10, 2011 2:19 PM
51	Increase safe routes to schools and workplace in rural/frontier areas	Sep 8, 2011 12:00 PM
52	More share the road signs.	Sep 7, 2011 4:02 PM
53	More bike paths for recreational use like the rails to trails path in yuba city. The leve paths seem unsafe.	Sep 7, 2011 12:02 PM

Q7. What can the County do to improve conditions for bicyclists?

54	The traffic is not all that bad, but with more bike lanes it would be much safer to get around. Some or most of the areas where I bike do not have a shoulder lane to ride in, so you have to be in the traffic lanes. Helping drivers to understand the "Share the Road" concept would be a plus. I am always telling the kids I ride with - We have to look out for the cars, as they almost never look to see where we are or even expect to see bike traffic. Bike safety should be a priority, if it is safe for people to bike around, more people would do it. And bring back the bike stands! if people could secure their bikes when they get to their destination, they might bike more often for errands & such. Bike lanes to shopping hubs would be a plus. In all these new walled in developments, once you travel thru the maze of new houses & streets & hit the old roads you lose all the bike lanes? people will never opt for a bike if they have to weigh safety in traffic, against a car trip. I myself would ride much more often if it were safer to be on a bike in traffic or to local shopping hubs.	Sep 5, 2011 2:11 PM
55	better roads, roads with bike lanes, and traffic signals that are triggered by cyclists.	Sep 3, 2011 3:39 PM
56	better roads, wider lanes	Sep 3, 2011 12:24 PM
57	More trails.	Sep 2, 2011 10:13 PM
58	Ensure safe bikeways withing ALL of county. Plant shade trees. Install drinking fountains.	Sep 2, 2011 2:45 PM
59	Educate drivers to share the road	Sep 1, 2011 10:05 PM
60	Lengthen the Bike trail :)	Sep 1, 2011 9:04 AM
61	Connect levees with additional bike paths. Modify train bridge near 5th st. bridge for pedestrian and bicycles	Aug 31, 2011 9:31 PM
62	Create more designated bie lanes; educate motorists regarding sharing the road	Aug 31, 2011 9:28 PM
63	Provide safe bike access from Marysville to the foothills and Yuba College. Extend bike trail on 5th st Railroad bridge	Aug 31, 2011 7:39 PM
64	bike lanes, driver awareness campaign, bike racks in downtown areas	Aug 31, 2011 3:55 PM
65	Create for bike paths	Aug 31, 2011 9:03 AM
66	Make a bike/runners trail/lane in the foothills.	Aug 31, 2011 8:53 AM
67	Public transit needs more bike racks for foothill bus.	Aug 31, 2011 8:09 AM
68	Make a bike lane on North Beale Road all the way to Beale AFB. Send a sweeper down North Beale Road and Hammonton Smartsville Road to Beale AFB.	Aug 31, 2011 2:31 AM
69	Motorist "share the road" education, signage. More Class 2s that link schools, shopping, residential neighborhoods. A few good Class 1 that serve the population avoiding roads with traffic, or avoiding cycling at all.	Aug 30, 2011 5:10 PM
70	Plan and develop in more compact fashion.	Aug 30, 2011 4:49 PM

Q8. What other comments do you have for the Plan?

1	I do not agree with the policy that there is no money to maintain the parks in "historic" Olivehurst or even water them & yet Plumas Lake Area has 13 nice parks, sidewalks, bike trails & landscaping galore which cannot possibly be being paid for by the homeowners because half of the houses are empty & some of the streets have street lights & signs but houses were never built!	Mar 5, 2012 5:38 PM
2	We have beautiful rivers flowings in yuba county but no real access to them by bicycles. Bike paths need to be near the river, all levee roads should be paved for bikes and pedestrians. Also, we should use all the abanoned rail to provide trails (http://www.railstotrails.org/index.html) and take advantage of this organization. The railroads don't seem to have any problem going right through town and leaving diesel emissions and honking horns, the least they could do is let us use the abandon rails for bikes. I'd also like to start a bike kitchen in Marysville to help everyone keep their bikes running for little or no cost. If you need any help with the bike plan please let me know dealb1@yahoo.com.	Feb 12, 2012 4:22 PM
3	Haven't seen it, is a copy available on line?	Feb 9, 2012 9:01 AM
4	PLEASE APPROVE IT!	Feb 9, 2012 8:57 AM
5	I would love to have somewhere I can take my kids, and go bicycling as a family, and not have to worry about cars and dogs that may attack you. Bicycling should be relaxing, not stressfull.	Feb 8, 2012 11:38 PM
6	Make satety an issue	Feb 8, 2012 11:11 PM
7	More bike lanes!	Feb 8, 2012 6:19 PM
8	I would bike more if there were places to bike to. It takes me 7 miles just to get to the bus stop!	Feb 8, 2012 5:44 PM
9	havent seen it yet	Feb 8, 2012 5:22 PM
10	A nice model would be the American River bike trail.	Feb 8, 2012 5:14 PM
11	I want to have somewhere to walk to from Bamboo Street in North Plumas Lake. If there was a bike lane I could go further on the distance. It needs to be wide enough to keep kids in a trailer safe.	Feb 8, 2012 4:51 PM
12	Have not seen all of the plan yet.	Feb 8, 2012 4:46 PM
13	Ripon, Ca has some very unique, and safe bike lanes on Jack Tone Road.	Feb 8, 2012 2:23 PM
14	It is a good idea, I just not sure this is where we should be spending our money. The Yuba Sutter Healthcare Council should be involved too as they are working fora healthier community. Strength in numbers!	Feb 8, 2012 2:00 PM
15	There is much opportunity to make this beautiful & even encourage tourism in Yuba county.	Feb 8, 2012 11:46 AM
16	There is no need for a bike path in the river bottoms! There's plenty of trails down there already! Save the money for somewhere else! If one has to be built keep on or near the levee!	Feb 8, 2012 11:19 AM

Q8. What other comments do you have for the Plan?

17	Grow ...Grow ...Grow. Lets see us turn into a town we can be proud of. Bike lanes is only one idea	Feb 8, 2012 10:42 AM
18	I'd really like to see paved bike routes implemented from Olivehurst and Arboga to Plumas Lake.	Feb 8, 2012 10:12 AM
19	I have found in communities that promote their bike/walking paths, including keeping them relatively maintained, it is a huge "plus" for the community. Examples of course includes the American River as well as the trail in Klamath Falls, Or.	Feb 8, 2012 10:06 AM
20	Recognize the fact that substituting travel by bicycle vice by motor vehicle for commuting to work and shopping etc. is impracticable for most citizens. Emphasize recreation and healthy exercise. Further, proper promotion of bicycling events in rural areas using our dirt and logging roads can be an economic opportunity for local businesses and as fund raising events for local non profit community service organizations.	Sep 19, 2011 6:47 AM
21	Include skateboarding	Sep 16, 2011 10:33 AM
22	I love the idea and hope that it is put into place. I would love to be able to walk my kids to school or have all of us ride bikes but as it is now there is no area we could do it without running the risk of injury or worse.	Sep 15, 2011 3:34 PM
23	I am really happy to see the county getting motivated to improve the roads for bikers. I look forward to the improvements that will come from it. Thank you!	Sep 15, 2011 10:51 AM
24	Consider doing rails to trails.	Sep 14, 2011 2:53 PM
25	no new taxes!	Sep 14, 2011 8:24 AM
26	Please bring this plan to the Arboga/Plumas Lake corridor!	Sep 14, 2011 1:26 AM
27	We should be more like Chico. Or have incentives to ride instead of drive	Sep 13, 2011 9:01 PM
28	More Plans!	Sep 13, 2011 8:38 PM
29	Where do I sign up to help?	Sep 13, 2011 8:15 PM
30	I ride about 200 miles a week and can tell you that Yuba County is far from "bike friendly". The good news is that farm roads and many of the hill roads are great riding, but that is mostly by accident, not because efforts were or are being made to make biking workable.	Sep 13, 2011 4:53 PM
31	Great idea! Can't wait to see the end result!!	Sep 13, 2011 4:23 PM
32	Could the health aspects of bicycling generate additional funding from our defunct State or Federal budget?	Sep 13, 2011 4:03 PM
33	Please add more bike lanes in the foothills.	Sep 13, 2011 3:39 PM
34	no comments	Sep 13, 2011 3:25 PM
35	I live in Wheeler Ranch and take my children to school and the bus routes on	Sep 13, 2011 1:44 PM

Q8. What other comments do you have for the Plan?

McGowan. My options are to cut through the back field between Wheeler and Ella or take my chances with speeding cars on Arboga that has no bike lanes. Sadly, with the weather about to get cold and wet, I will be forced to ride on Arboga because the back field will be mostly submerged under water. Any improvements would be a blessing. I cannot visit Plumas Lake south of the golf course because the traffic and road conditions on Plumas/Arboga road are even worse.

- | | | |
|----|---|----------------------|
| 36 | The plan should encompass all of Yuba county especially the foothill area not connected to public transit. Please contact Cathy LeBlanc @ Camptonville Community Partnership (community based non-profit) for a copy of our Community Health Action Plan. This plan contains many resident comments/suggestions regarding increased bicycling opportunities. 530 288-9355 | Sep 8, 2011 12:00 PM |
| 37 | I think the economic environment will put more people on bikes, for errands or to work or even to the rideshare station. Many people in this area can not afford a car or do not have a drivers licence so you see adult bike riders a lot, but it is not always safe for them to get around. I believe this is an untapped area for Yuba county that they would be wise to explore. I could hardly believe it when the AMGEN came thru the eastern part of this county & I never heard a word about what a great thing this was! Other counties & cities go to great lengths to secure a showing of their areas of the state; and this county barely acknowledged that the tour passed thru several miles of it's own territory? If their were more bike lanes it puts people on the the ground - so they pass store fronts or parks, so that the may stop and take in these locations. Also it is not that far from Marysville to Yuba City or Yuba College or Plumas Lake, so with safer routes getting around would likely be easier than in a car during peak commute times. | Sep 5, 2011 2:11 PM |
| 38 | I support any bike trails, lanes! | Sep 1, 2011 9:04 AM |
| 39 | Cyclists need to be aware that the motor vehicle code applies to them, we sometimes create ill will by not stopping at stop signs or riding on the wrong side of the road | Aug 31, 2011 9:28 PM |
| 40 | Link Sutter and Yuba Counties with bike lanes. | Aug 31, 2011 7:39 PM |
| 41 | Thank You for working on this plan! | Aug 31, 2011 8:53 AM |
| 42 | Make sure Plan is seen by county staff, especially road crews that do road work and might forget to accommodate bikes during, and after, a project. | Aug 30, 2011 5:10 PM |

Q9. To help us track geographic diversity of survey responses, please provide your home zip code.

1		
ZIP:	95961	Apr 13, 2012 11:28 AM
2		
ZIP:	959861	Mar 5, 2012 5:38 PM
3		
ZIP:	95901	Feb 12, 2012 4:22 PM
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ZIP:	95962	Feb 9, 2012 9:01 AM
5		
ZIP:	95961	Feb 9, 2012 8:57 AM
6		
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7		
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8		
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9		
ZIP:	95961	Feb 8, 2012 6:28 PM
10		
ZIP:	95961	Feb 8, 2012 6:19 PM
11		
ZIP:	95961	Feb 8, 2012 6:17 PM
12		
ZIP:	95961	Feb 8, 2012 5:44 PM
13		
ZIP:	95961	Feb 8, 2012 5:34 PM
14		
ZIP:	95961	Feb 8, 2012 5:30 PM

Q9. To help us track geographic diversity of survey responses, please provide your home zip code.

15		
ZIP:	95901	Feb 8, 2012 5:22 PM
16		
ZIP:	95961	Feb 8, 2012 5:14 PM
17		
ZIP:	95961	Feb 8, 2012 4:51 PM
18		
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19		
ZIP:	95901	Feb 8, 2012 4:12 PM
20		
ZIP:	95961	Feb 8, 2012 3:01 PM
21		
ZIP:	95961	Feb 8, 2012 2:23 PM
22		
ZIP:	95918	Feb 8, 2012 2:00 PM
23		
ZIP:	95901	Feb 8, 2012 11:46 AM
24		
ZIP:	95961	Feb 8, 2012 11:19 AM
25		
ZIP:	95961	Feb 8, 2012 10:42 AM
26		
ZIP:	95961	Feb 8, 2012 10:12 AM
27		
ZIP:	95901	Feb 8, 2012 10:06 AM
28		
ZIP:	95962	Feb 8, 2012 9:59 AM

Q9. To help us track geographic diversity of survey responses, please provide your home zip code.

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ZIP:	95961	Sep 20, 2011 2:42 PM
34		
ZIP:	95961	Sep 20, 2011 12:51 PM
35		
ZIP:	95935	Sep 19, 2011 6:47 AM
36		
ZIP:	95935	Sep 16, 2011 10:33 AM
37		
ZIP:	95961	Sep 15, 2011 3:34 PM
38		
ZIP:	95961	Sep 15, 2011 10:51 AM
39		
ZIP:	95919	Sep 14, 2011 3:47 PM
40		
ZIP:	95901	Sep 14, 2011 2:53 PM
41		
ZIP:	95961	Sep 14, 2011 12:31 PM
42		
ZIP:	95935	Sep 14, 2011 11:38 AM

Q9. To help us track geographic diversity of survey responses, please provide your home zip code.

43		
ZIP:	95901	Sep 14, 2011 8:37 AM
44		
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46		
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55		
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56		
ZIP:	95961	Sep 13, 2011 8:15 PM

Q9. To help us track geographic diversity of survey responses, please provide your home zip code.

57		
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59		
ZIP:	95961	Sep 13, 2011 5:29 PM
60		
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61		
ZIP:	95961	Sep 13, 2011 4:53 PM
62		
ZIP:	95901	Sep 13, 2011 4:23 PM
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68		
ZIP:	95961	Sep 13, 2011 1:44 PM
69		
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70		
ZIP:	95901	Sep 10, 2011 2:19 PM

Q9. To help us track geographic diversity of survey responses, please provide your home zip code.

71		
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72		
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ZIP:	95962	Sep 1, 2011 10:05 PM
80		
ZIP:	95961	Sep 1, 2011 9:04 AM
81		
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82		
ZIP:	95953	Aug 31, 2011 9:28 PM
83		
ZIP:	95993	Aug 31, 2011 9:22 PM
84		
ZIP:	95993	Aug 31, 2011 7:39 PM

Q9. To help us track geographic diversity of survey responses, please provide your home zip code.

85		
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86		
ZIP:	95991	Aug 31, 2011 3:11 PM
87		
ZIP:	95901	Aug 31, 2011 11:43 AM
88		
ZIP:	95993	Aug 31, 2011 9:03 AM
89		
ZIP:	95935	Aug 31, 2011 8:53 AM
90		
ZIP:	95962	Aug 31, 2011 8:09 AM
91		
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92		
ZIP:	95658	Aug 30, 2011 5:10 PM
93		
ZIP:	95819	Aug 30, 2011 4:49 PM



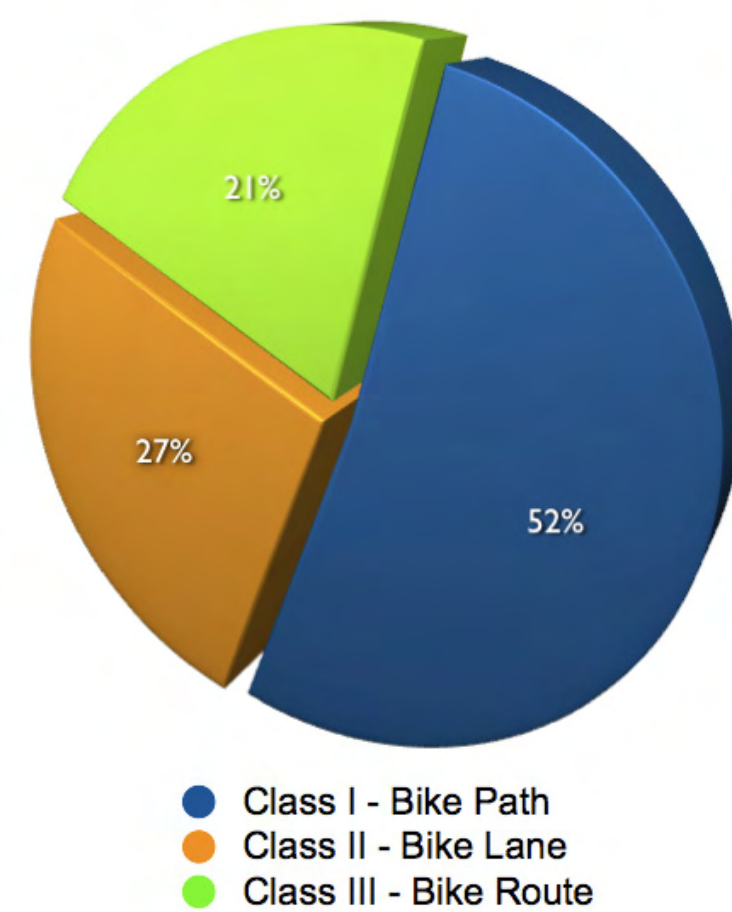
**APPENDIX C:
PUBLIC WORKSHOP #2 EXHIBITS
FEBRUARY 9, 2012**

WHAT WE HEARD

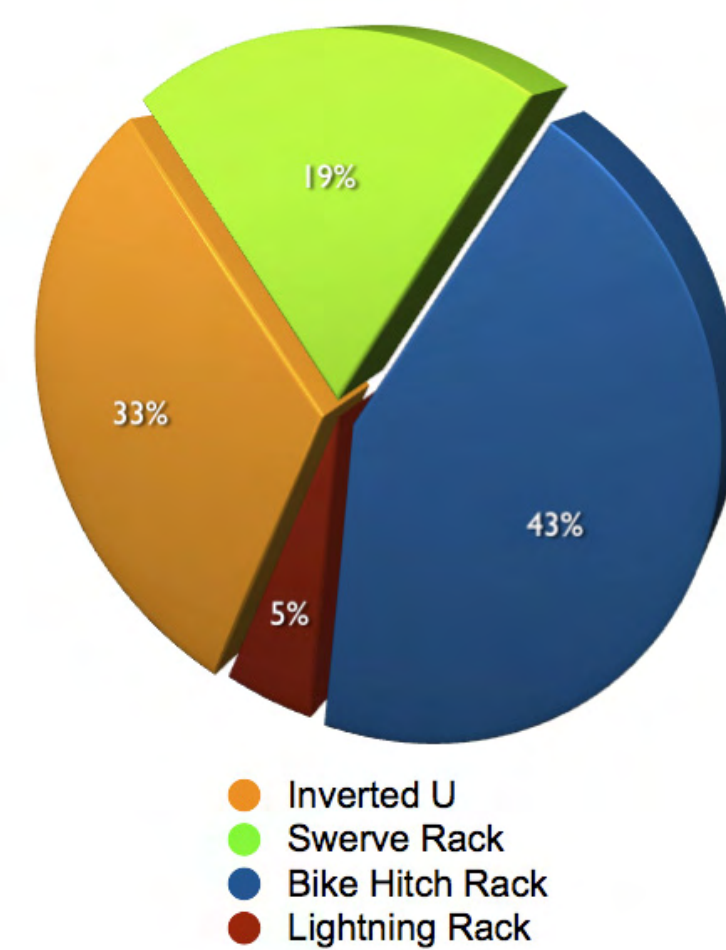
PUBLIC WORKSHOP: SEPTEMBER 14, 2011

APPROXIMATELY 30 PEOPLE ATTENDED OUR WORKSHOP IN SEPTEMBER - HERE'S WHAT THEY SAID:

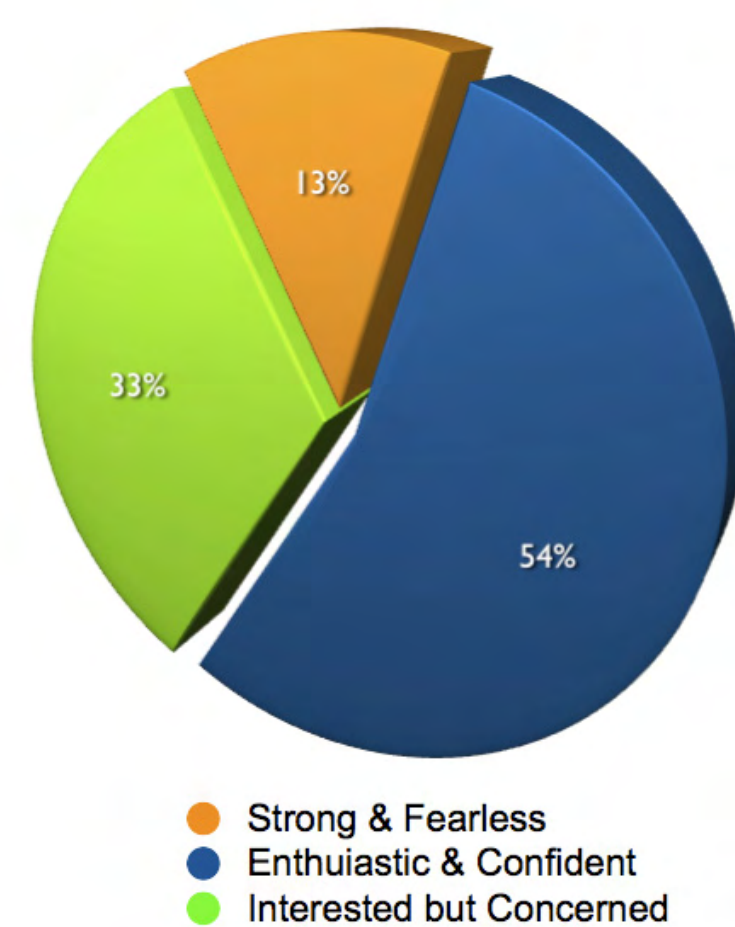
1. What type of bikeway do you prefer?



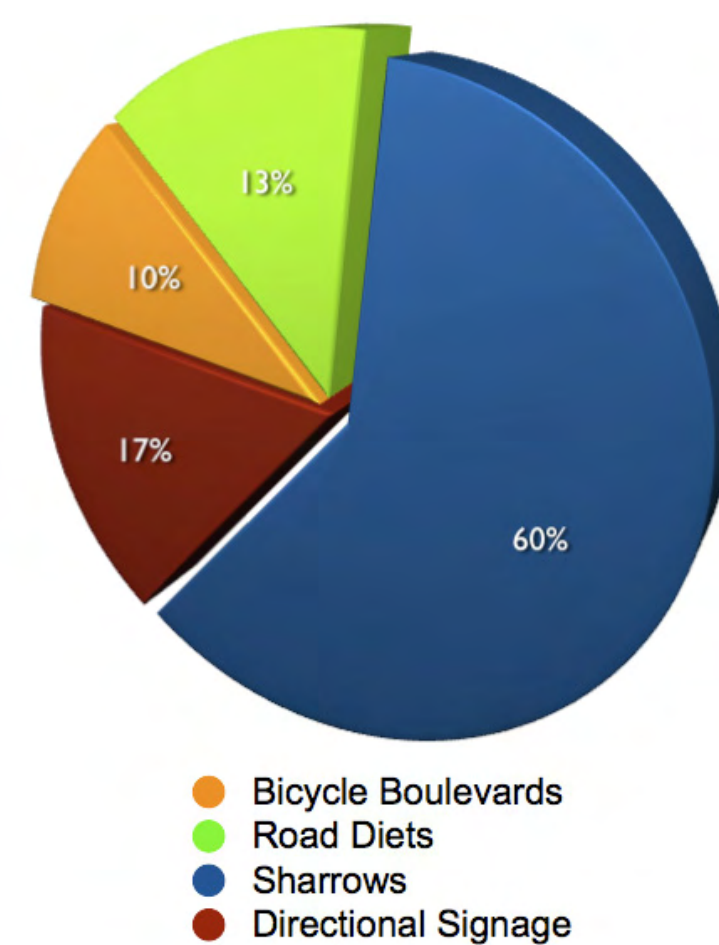
2. What is your preference for short-term bicycle parking?



3. What type of cyclist are you?



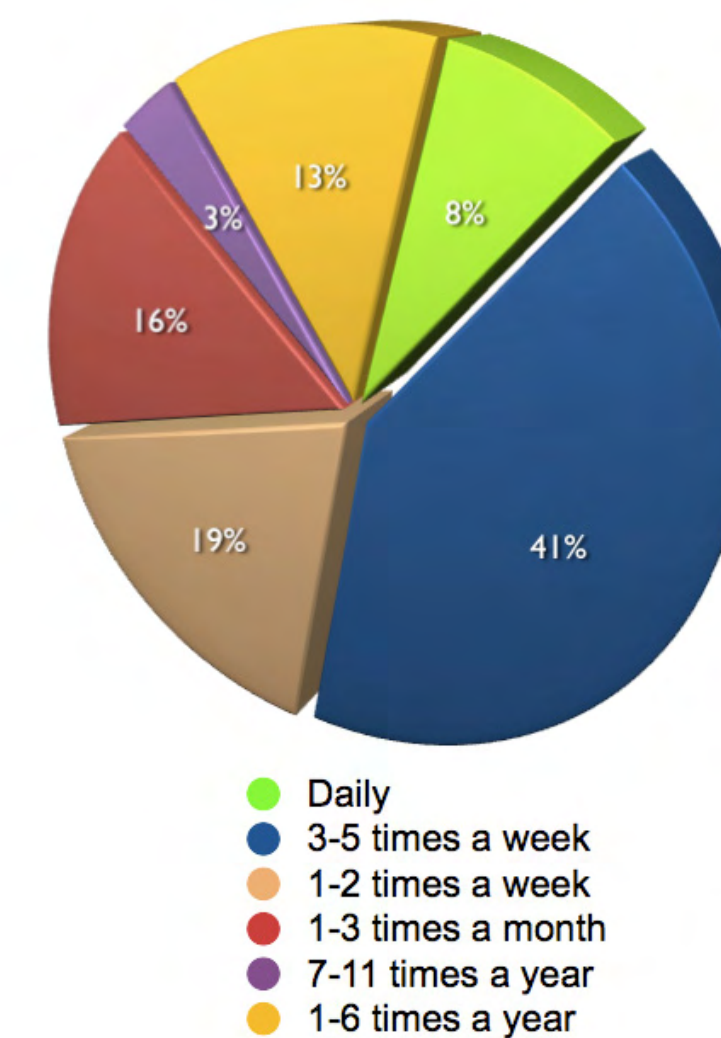
4. Which enhancements do you prefer?



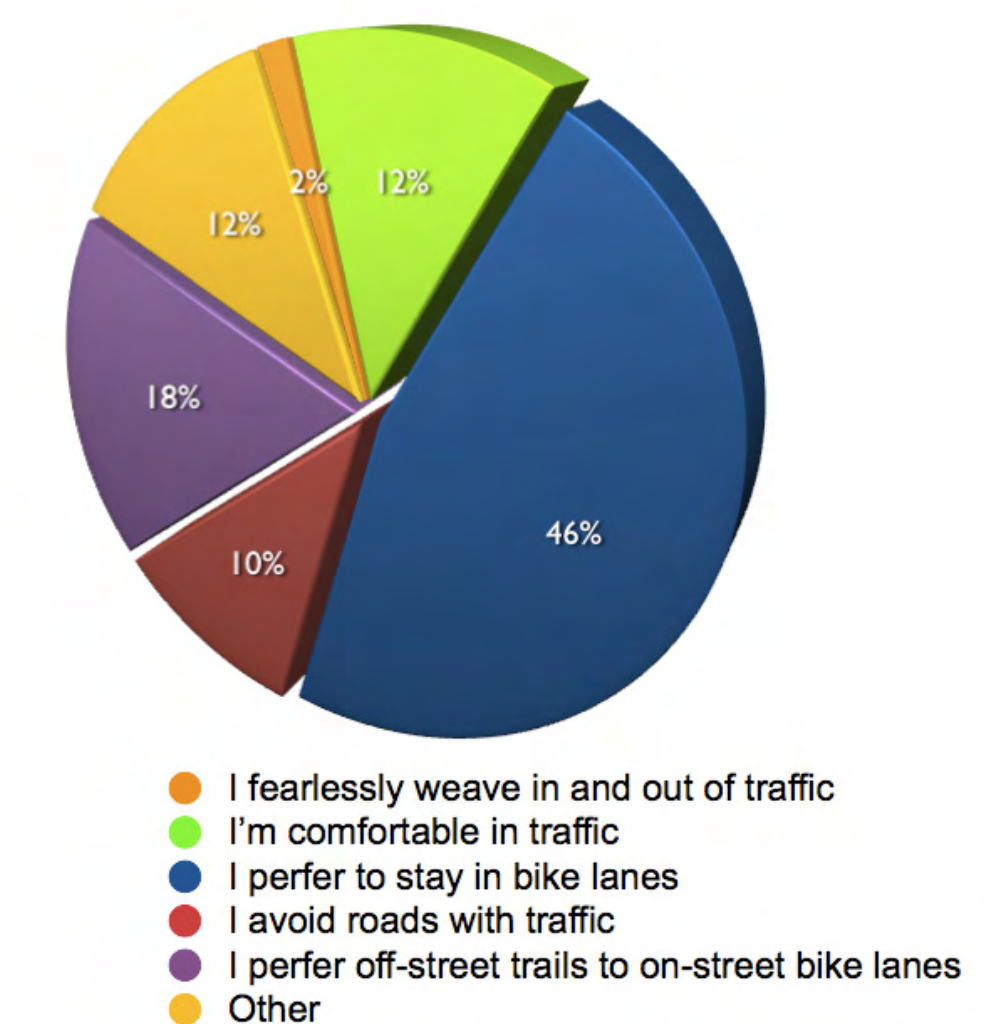
ONLINE SURVEY

OVER 60 PEOPLE COMPLETED OUR ONLINE SURVEY - HERE ARE THE MOST COMMON RESPONSES:

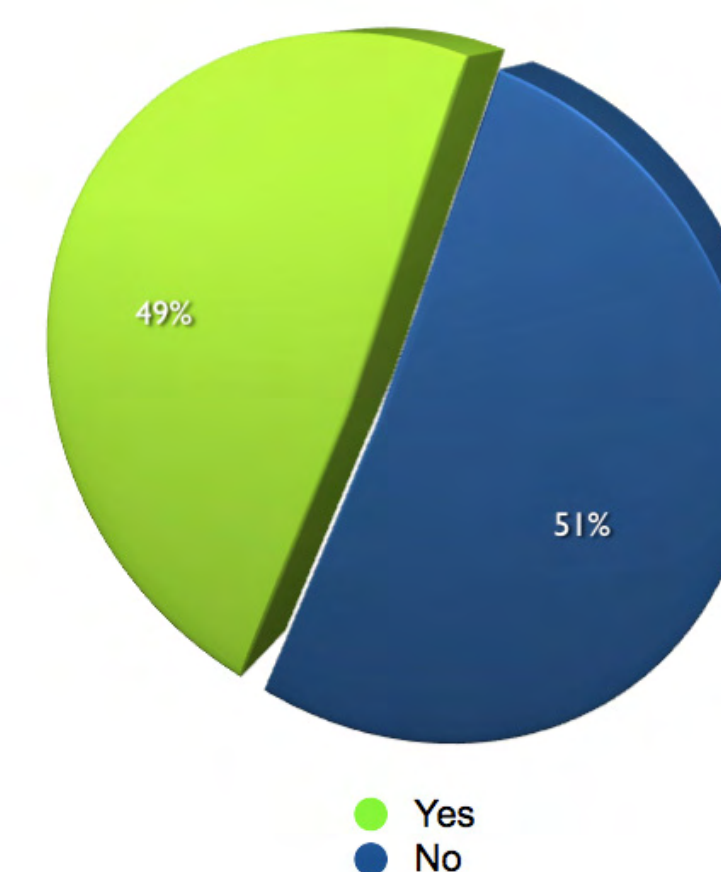
1. On average, how often do you ride a bicycle?



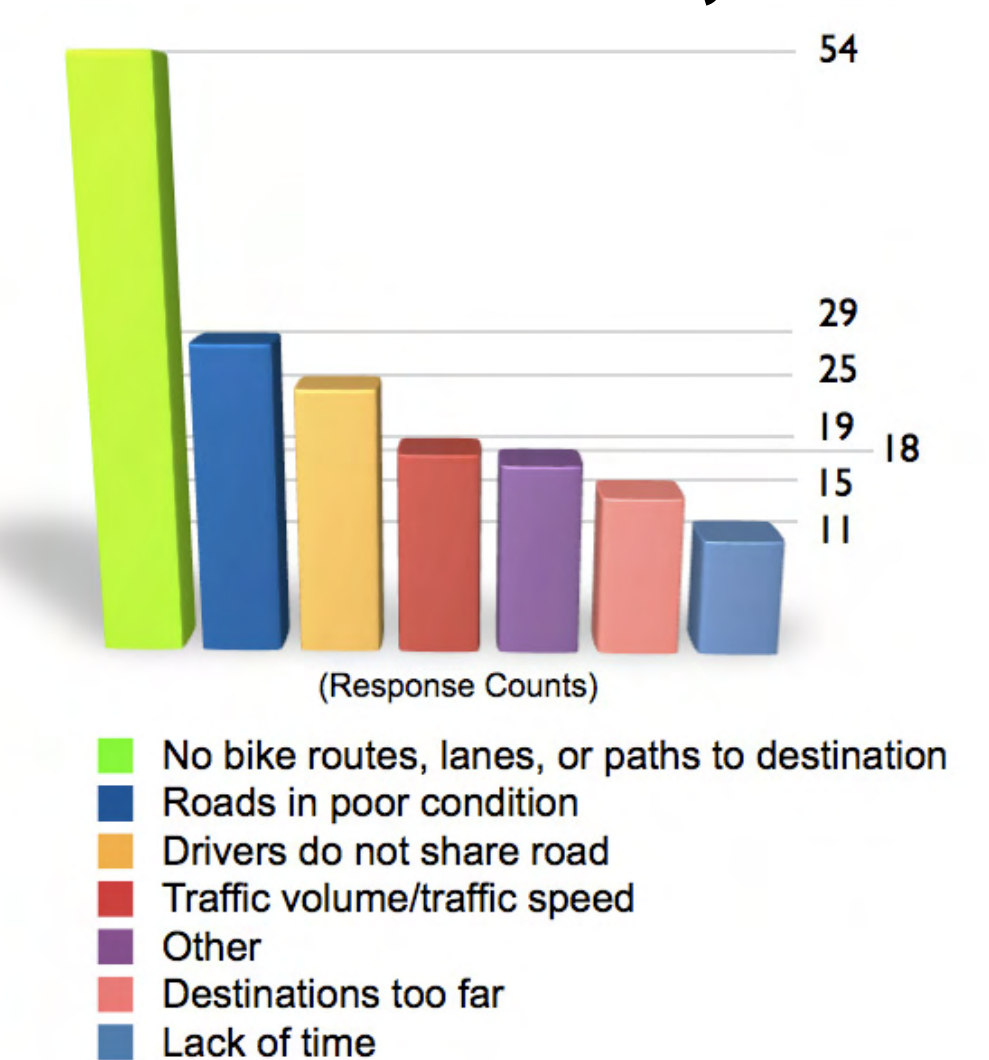
2. How comfortable are you cycling with automobiles?



3. If you have children, do they bicycle to school?



4. What are the primary factors that prevent you from cycling more often in Yuba County?



BIKEWAY TYPES

• Class I - Bike Path

Class I Bikeways, or bike paths, are used **exclusively by bicyclists and pedestrians**. They are completely **separate from roadways** with motorized traffic except for where they must traverse streets or driveways.



• Class II - Bike Lane

Class II Bikeways, or bike lanes, are striped lanes for one-way bike travel **on a roadway**.



• Class III - Bike Route (Signage Only)

Class III Bikeways, or bike routes, are roadways that **promote shared use** by both bicyclists and motorists.



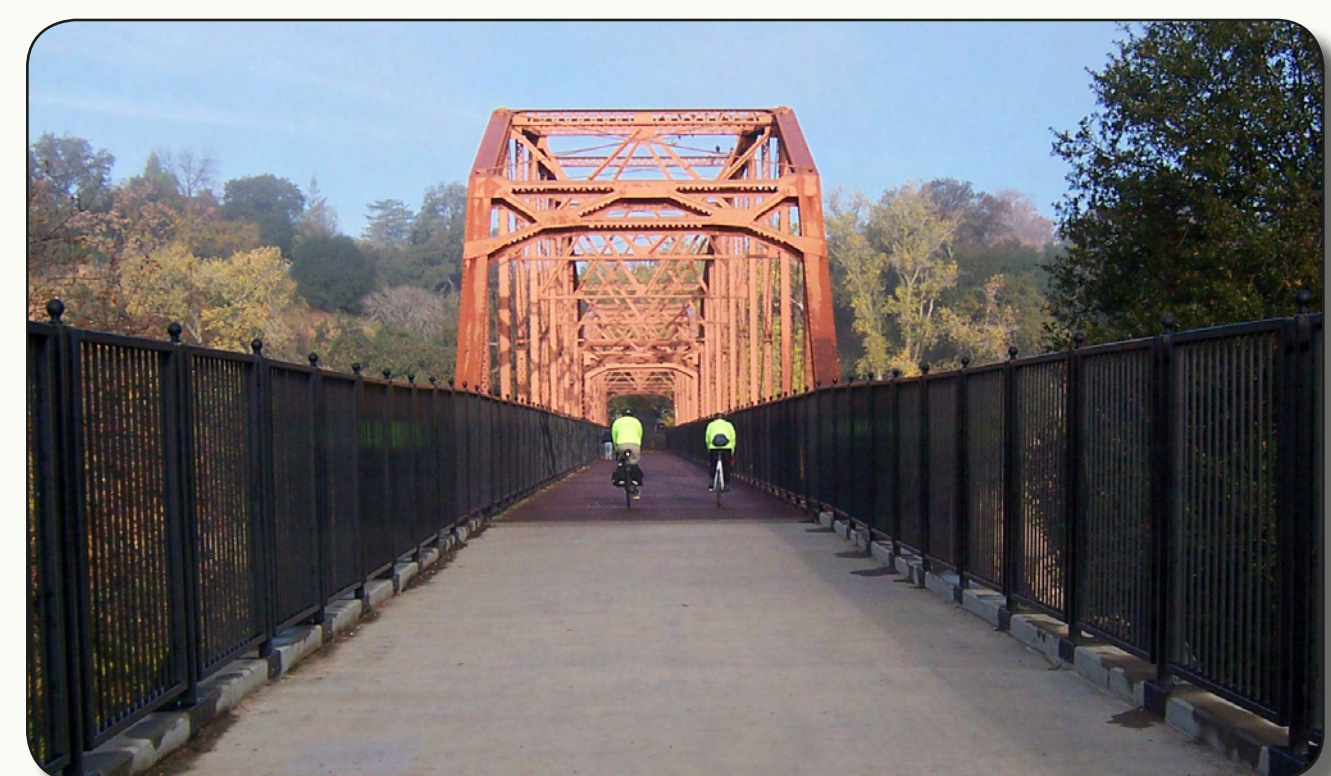
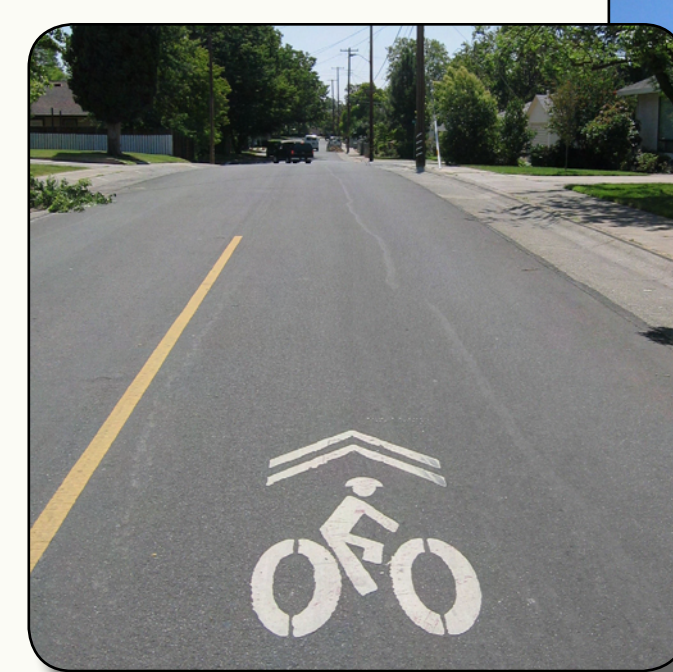
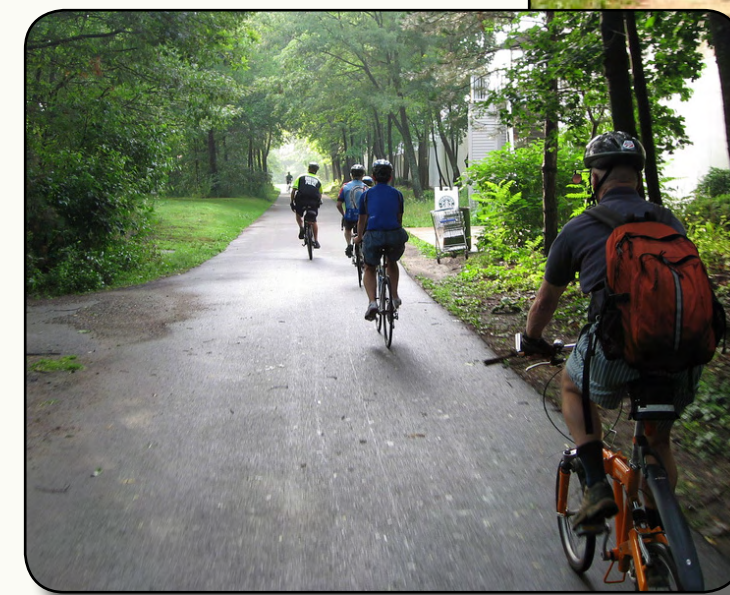
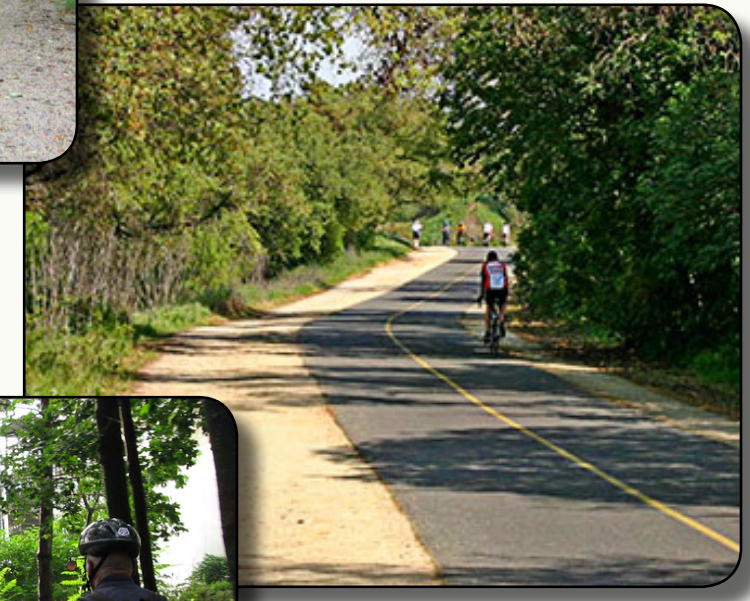
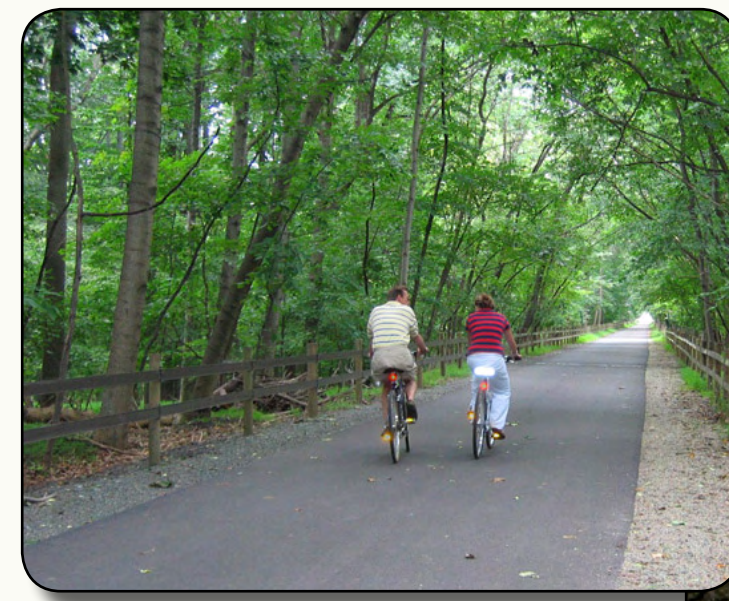
• Class III - Bike Route (With Multi-Use Shoulder)

Class III Bikeways, or bike routes, with multi-use shoulders are an **enhanced** form of Class III facility. These routes include signage as well as **additional pavement width** for bicyclists and pedestrians to use on high volume and/or high speed roadways.

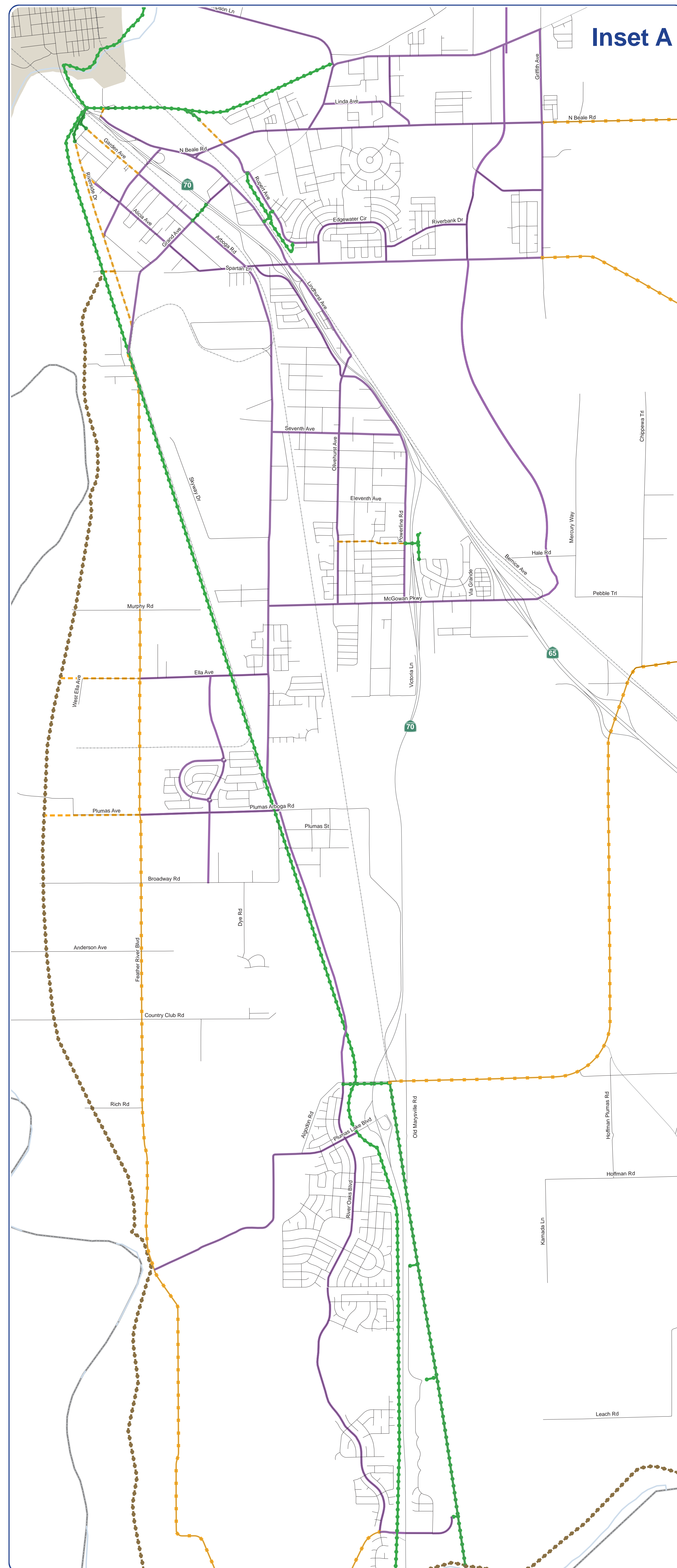


NEXT STEPS

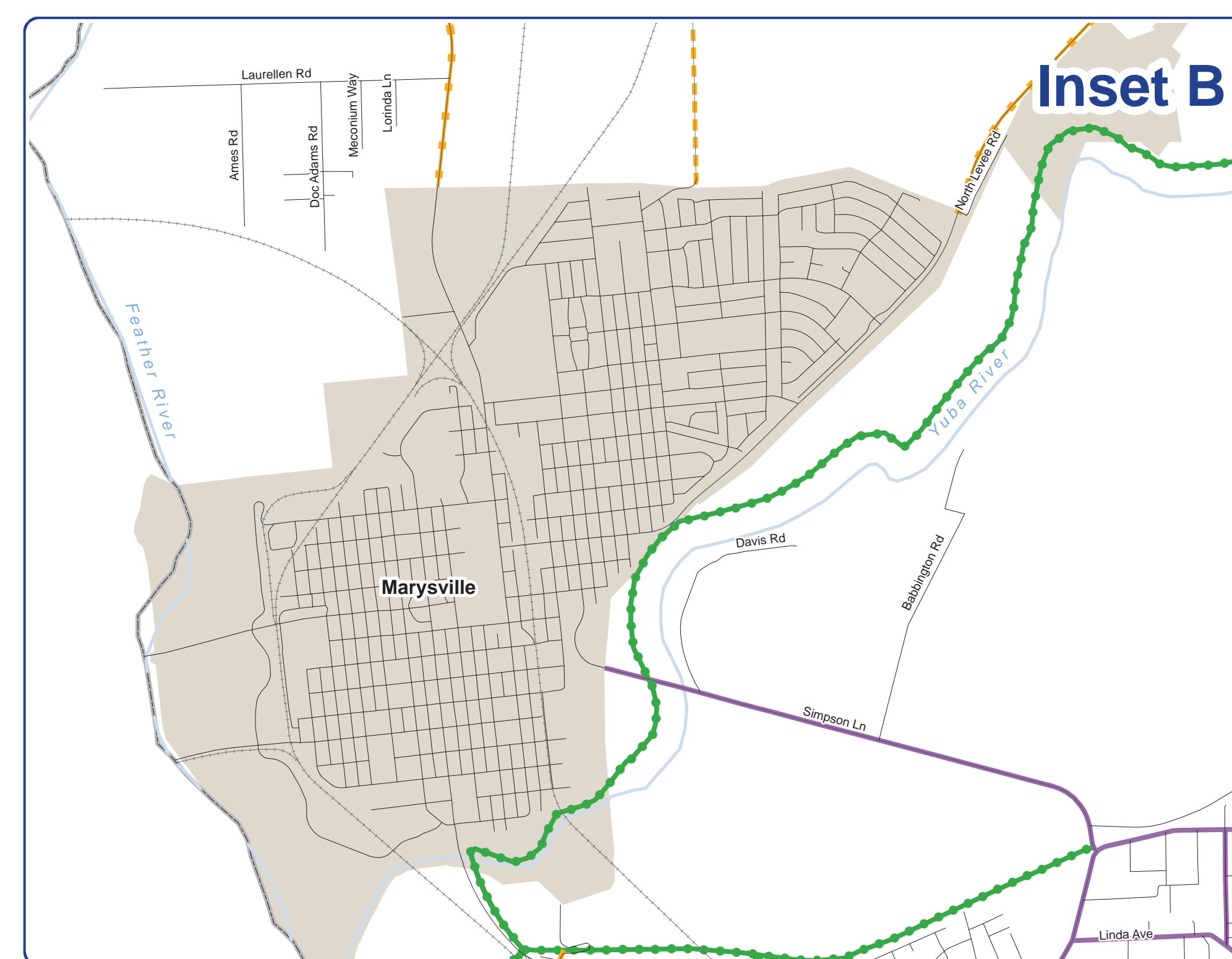
- UPDATE PROPOSED BICYCLE NETWORK MAP
- COST ESTIMATES
- PROJECT PRIORITY LISTS
 - Short, Medium and Long Term Project Lists
 - List by Class I, Class II, Class III, and Over or Undercrossing Facilities
- FUNDING ANALYSIS
- BIKEWAY IMPLEMENTATION GUIDE
- ENVIRONMENTAL DOCUMENT
- DRAFT REPORT
- PRESENTATION TO BOARD OF SUPERVISORS
- FINAL REPORT



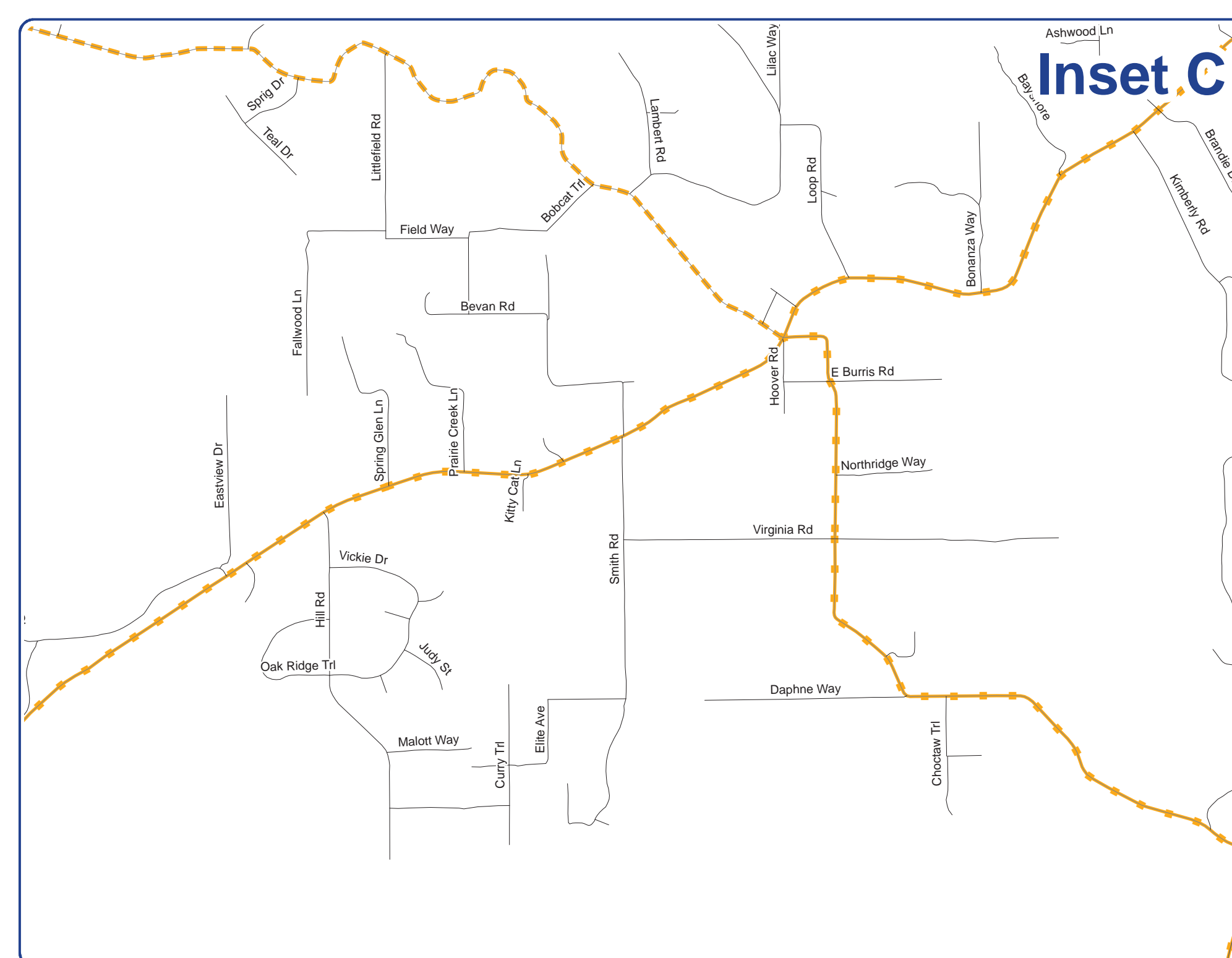
PROPOSED BICYCLE NETWORK



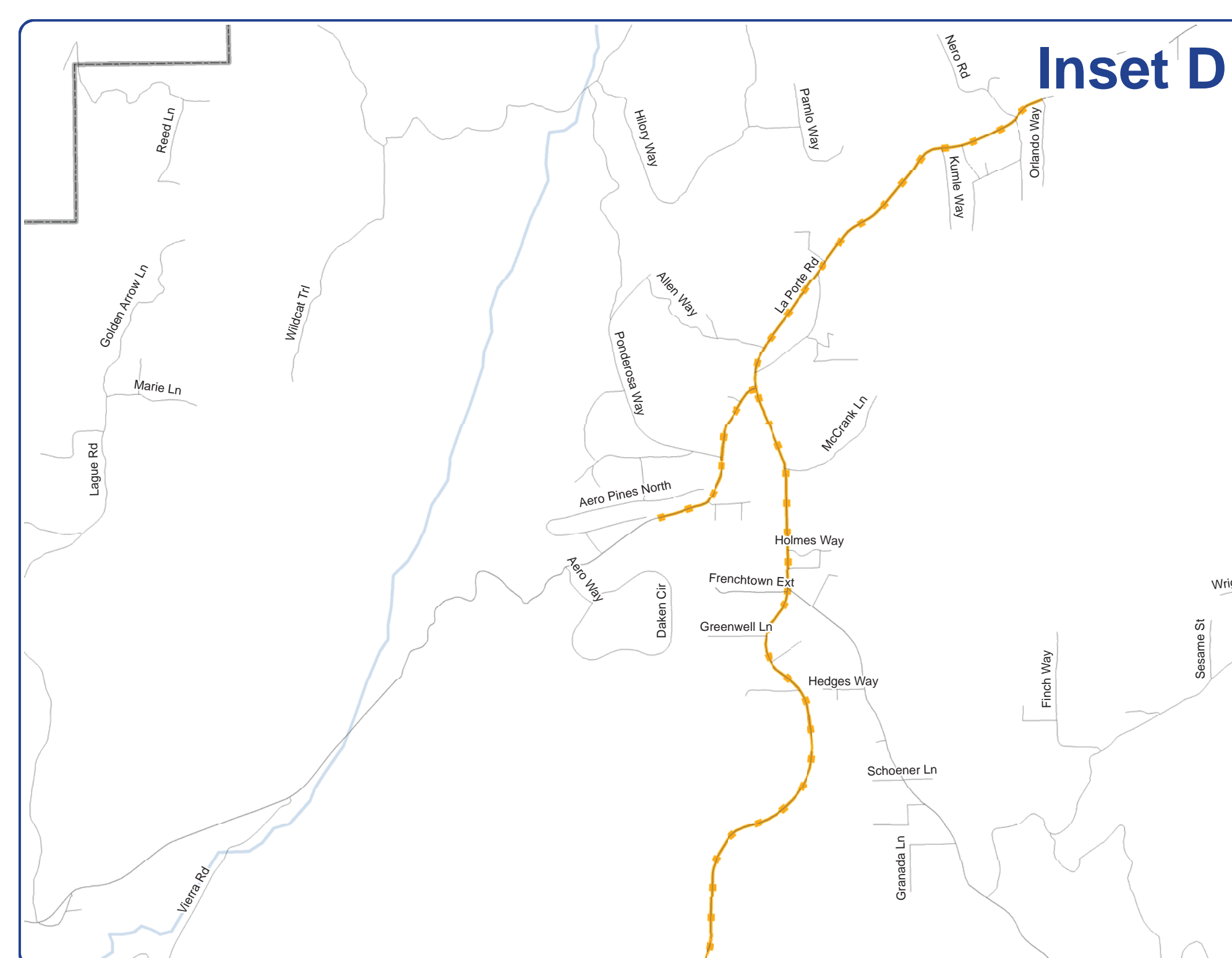
Inset A



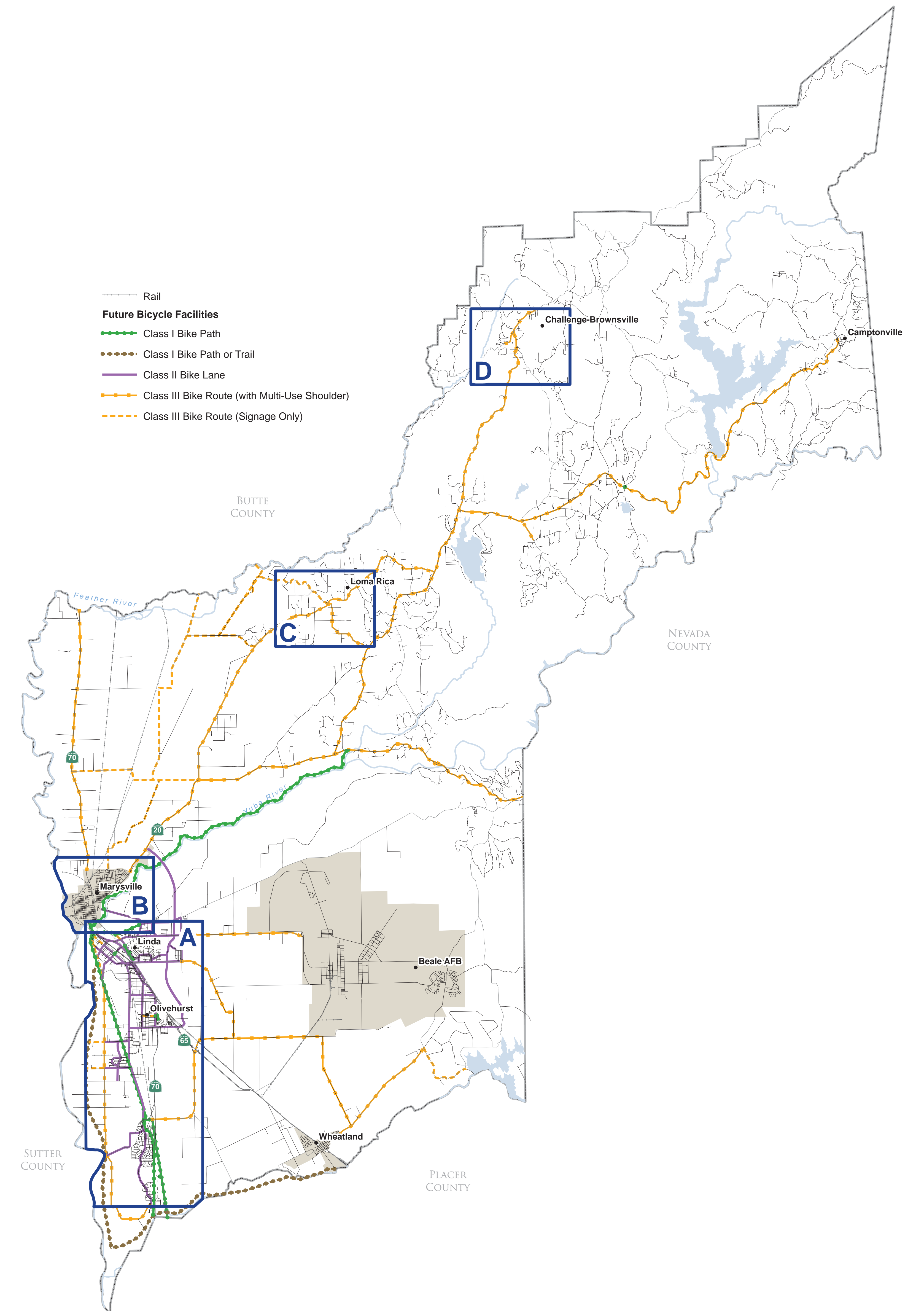
Inset B



Inset C



Inset D



- Rail
- Future Bicycle Facilities**
- Class I Bike Path
- Class I Bike Path or Trail
- Class II Bike Lane
- Class III Bike Route (with Multi-Use Shoulder)
- Class III Bike Route (Signage Only)



**APPENDIX D:
YUBA COUNTY ORDINANCE CODE
CHAPTER 12.85.070 – BIKE PARKING**

Yuba County Zoning Ordinance

12.85.070 Bicycle Parking Requirement.

Bicycle parking shall be provided in connection with the erection, major alteration, expansion or establishment of a new land use as follows:

- (1) Residential: All multi-family residential structures containing more than four units shall provide bicycle parking for a minimum of two bicycles with one space provided for every 10 automobile parking spaces required in the project for the first 200 automobile parking spaces required and one bicycle parking space for every 100 automobile parking spaces over the first 200 automobile parking spaces required. Outdoor bicycle parking requirements may be reduced by 50% for multi-family projects that provide at least one garage space per dwelling unit.
- (2) Medical Offices, Clinics, Hospitals, and Other Facilities: Bicycle parking shall be provided at a ratio of one for every 25 automobile parking spaces required for the first 200 automobile parking spaces required and one bicycle parking space for every 100 automobile parking spaces over the first 200 automobile parking spaces required, with a minimum of two required.
- (3) Educational Facilities: A minimum of two bicycle parking spaces required with one for every 10 automobile parking spaces required. (Note: Public schools are not typically addressed in the zoning ordinance as they are not subject to local ordinances, however private schools may be addressed and bicycle parking should be provided based on the school grades, proximity to student's homes and location of school.)
- (4) Places of Public Assembly: Bicycle parking shall be provided at a ratio of one for every 25 automobile parking spaces required, with a minimum of two required.
- (5) Recreational Facilities: Bicycle parking shall be provided at a ratio of one for every 25 automobile parking spaces required, with a minimum of two required.
- (6) Commercial and Industrial Facilities: Bicycle parking shall be provided at a ratio of one for every 25 automobile parking spaces required for the first 200 automobile parking spaces required and one bicycle parking space for every 100 automobile parking spaces required over the first 200 automobile parking spaces required, with a minimum of two required.
- (7) Sports and Entertainment Facilities: Outdoor motor vehicle racing facilities, amphitheaters, or entertainment facilities, or equestrian and rodeo facilities having an occupancy capacity in excess of 10,000 persons shall submit a proposed bicycle parking plan in conjunction with the required automobile parking plan for approval by the Planning Commission.

For the purposes of this section, any alteration or expansion in floor area that results in the requirement of additional vehicle parking shall provide bicycle parking as established above.

All required bicycle parking facilities shall be located in a highly visible area within close proximity of a primary entrance to a building or use and where feasible as close as or closer than the nearest non-handicapped car parking space. Where multiple bicycle parking apparatus are needed and the use has multiple entrances or buildings, the bicycle parking shall be dispersed throughout the project and conveniently located in reasonable proximity to a building entrance.

Bicycle racks or lockers should not be placed so that they block entrances or inhibit pedestrian flow in or out buildings or accessible paths of travel. The racks or lockers should be anchored so that they cannot be easily removed. Rack elements should be designed to support the bicycle upright by its frame and enable the frame and at least one of the bicycle wheels to be secured. Large employment centers (50+ employees) and projects with multiple buildings should utilize a combination of short (bicycle racks) and long-term (bike lockers) bicycle parking facilities.

Bicycle racks and lockers shall be designed and located to insure that they relate well to the remainder of the facilities and are architecturally consistent with the site and structures. Bicycle parking facilities shall be maintained for the duration of the use incurring said requirements and shall not be used for other purposes.

Facilities shall be shown on the project site plan and approved by the Planning Department prior to issuance of a building permit.

For any use not specified in this section, the same number of bicycle parking spaces shall be provided as are required for the most similar specified use as determined by the Planning Director. (#1403)



APPENDIX E: PRIORITIZED LISTS OF SHORT-, MID-, AND LONG-TERM PROJECTS

Table E-1: Proposed Class I Bike Paths or Trails											
Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term
Hammonton Rd./Grand Ave. bicycle/pedestrian overcrossing of SR-70	2	2	2	2	1	9	0.2	0%	100%	\$ 1,478,400	-Short
Linda Class I bike path Phase 1: Riverside Dr./Poplar Ave. to Shad Pad Park access road	1	2	2	2	2	9	0.4	0%	100%	\$ 211,200	-Short
Linda Class I bike path Phase 2: Shad Pad Park access road to Avondale Ave.	1	2	2	2	2	9	1	0%	100%	\$ 528,000	-Short
Cimarron Drive bicycle/pedestrian overcrossing of SR-70	2	1	2	2	1	8	0.1	0%	100%	\$ 739,200	-Short
Class I bike path along ROW west of Yuba College between Erle Road and North Beal Road	2	1	2	2	1	8	1.5	47%	53%	\$ 419,760	-Short
SR-70 bicycle/pedestrian overcrossing connecting 14th Street/Powerline Rd. Lindhurst High School and Twain Dr.	1	2	2	2	1	8	0.3	0%	100%	\$ 2,217,600	-Short
Linda Class I bike path Phase 3: Avondale Ave. to Hammonton-Smartville Rd./Simpson Ln.	0	2	2	1	2	7	1.2	0%	100%	\$ 633,600	-Mid
New Bicycle/Pedestrian crossing of Yuba River between Linda and Downtown Marysville	1	2	2	2	0	7	0.5	0%	100%	\$ 3,696,000	-Mid
Sacramento Northern Class I bike path along former railroad alignment/levee between Algodon Rd. and Bear River	2	1	1	1	2	7	3.8	0%	100%	\$ 2,006,400	-Mid
West extension of Rupert Ave. bicycle path beneath UPRR tracks with connection to Lindhurst Ave.	0	2	1	2	2	7	0.1	0%	100%	\$ 1,056,000	-Mid
North extension of Rupert Ave. bicycle path to Avondale Ave./Hammonton Smartville Rd.	0	1	1	2	2	6	0.4	0%	100%	\$ 211,200	-Mid
Sacramento Northern Class I bike path along railroad/levee alignment between Riverside Drive and Feather River Blvd.	0	1	2	1	2	6	1.7	0%	100%	\$ 897,600	-Mid
Sacramento Northern Class I bike path between Feather River Boulevard and Arboga Road	1	1	1	1	2	6	1.3	0%	100%	\$ 686,400	-Mid
Class I bike path along Algodon Rd. between Sacramento Northern Trail and powerlines, and along powerline/UPRR between Algodon Rd. and Bear River	1	2	1	1	0	5	3.8	0%	100%	\$ 2,006,400	-Mid
Sacramento Northern Class I bike path along railroad alignment between Feather River Blvd. and Algodon Rd.	1	2	1	1	0	5	5.7	0%	100%	\$ 3,009,600	-Mid
Feather River Levee Class I bike path or trail between Island Ave. and the Star Bend Boat Launch	1	0	1	0	2	4	7.3	0%	100%	\$ 3,854,400	-Long

Table E-1: Proposed Class I Bike Paths or Trails												
Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term	
Feather River Levee Class I bike path or trail between the Star Bend Boat Launch and Bear River levee	1	0	1	0	2	4	3.9	0%	100%	\$ 2,059,200	-Long	
Bear River Levee Class I bike path or trail between the Feather River Levee and the drainage canal located west of SR-70	0	0	1	0	2	3	2.2	0%	100%	\$ 1,161,600	-Long	
Class 1 bike path along Rupert Ave. with connection to Cattail Ct.	0	0	1	0	2	3	0.4	100%	0%	\$ -	-Long	
Bear River Levee Class I bike path or trail between the drainage canal located west of SR-70 and Wheatland (Malone)	0	1	1	0	0	2	7.5	0%	100%	\$ 3,960,000	-Long	

Table E-2: Proposed Class II Bike Lanes

Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term
Class II bike lanes on 7th Ave. between Arboga Rd. and Powerline Rd.	2	2	0	2	2	8	0.9	0%	100%	\$ 618,000	-Short
Class II bike lanes on McGowan Pkwy. between Arboga Rd. and SR-65 Northbound Ramps	2	2	0	2	2	8	1.9	80%	20%	\$ 261,000	-Short
Class II bike lanes on N. Beale Rd. between SR-70 Northbound On-Ramp and Griffith Ave.	2	2	0	2	2	8	3.4	98%	2%	\$ 47,000	-Short
Class II bike lanes on Olivehurst Ave. between McGowan Pkwy. and Lindhurst Ave.	2	2	0	2	2	8	1.8	65%	35%	\$ 433,000	-Short
Class II bike lanes on Powerline Rd. between McGowan Pkwy. And Olivehurst Ave.	2	2	0	2	2	8	1.9	75%	25%	\$ 327,000	-Short
Class II bike lanes on Chestnut Rd. between Erle Rd. and Olivehurst Ave.	1	2	0	2	2	7	1.1	100%	0%	\$ -	-Short
Class II bike lanes on Dunning Ave. between Linda Ave. and Hammonton-Smartville Rd.	1	2	0	2	2	7	0.4	100%	0%	\$ -	-Short
Class II bike lanes on Grand Ave. between Arboga Rd. and Sacramento Northern Trail ROW	1	2	0	2	2	7	1.1	89%	11%	\$ 84,000	-Short
Class II bike lanes on Alicia Ave. between Cedar Ln. and Pasado Rd.	1	1	0	2	2	6	1	100%	0%	\$ -	-Mid
Class II bike lanes on Arboga Rd. between Broadway Rd. and Feather River Blvd.	1	2	0	1	2	6	5.4	32%	68%	\$ 2,521,000	-Mid
Class II bike lanes on Feather River Blvd. Between N. Beale Rd. and Riverside Dr.	1	2	0	2	1	6	0.8	88%	12%	\$ 66,000	-Mid
Class II bike lanes on Feather River Blvd. between River Oaks Blvd. and Iberian Ct.	1	2	0	2	1	6	0.7	0%	100%	\$ 481,000	-Mid
Class II bike lanes on Lindhurst Ave. between Olivehurst Ave. and N. Beale Rd.	2	1	0	1	2	6	1.9	82%	18%	\$ 235,000	-Mid
Class II bike lanes on Pasado Rd. between Alicia Ave. and Arboga Rd.	1	1	0	2	2	6	0.4	77%	23%	\$ 64,000	-Mid
Class II bike lanes on River Oaks Blvd. between Feather River Blvd. and Algodon Rd.	2	1	0	1	2	6	3.5	100%	0%	\$ -	-Mid
Class II bike lanes on Simpson Ln. between Marysville city limit and Hammonton-Smartville Rd.	0	2	1	1	2	6	1.7	100%	0%	\$ -	-Mid

Table E-2: Proposed Class II Bike Lanes

Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term
Class II bike lanes on Avondale Ave. between N. Beale Rd. and Hammonton-Smartville Rd.	0	2	0	1	2	5	0.3	0%	100%	\$ 206,000	-Mid
Class II bike lanes on Edgewater Circle between Erle Rd. (west) and Erle Rd. (east)	1	1	0	1	2	5	1	100%	0%	\$ -	-Mid
Class II bike lanes on Plumas Arboga Rd. between Arboga Rd. and Algodon Rd.	0	1	0	2	2	5	2.8	0%	100%	\$ 1,922,000	-Mid
Class II bike lanes on Plumas Arboga Rd. between Arboga Rd. and Feather River Blvd.	1	1	0	1	2	5	1	40%	60%	\$ 412,000	-Mid
Class II bike lanes on Rupert Ave. between Hammonton-Smartville Rd. and Edgewater Circle	0	2	0	1	2	5	0.8	62%	38%	\$ 209,000	-Mid
Class II bike lanes on Algodon Rd. between Plumas Lake Blvd. and Feather River Blvd.	1	1	1	0	1	4	1.6	0%	100%	\$ 1,099,000	-Long
Class II bike lanes on Arboga Rd. Extension between Algodon Rd. and Broadway Rd.	0	2	0	1	1	4	1.8	0%	100%	\$ 1,236,000	-Long
Class II bike lanes on Griffith Ave. between Erle Rd. and Hammonton-Smartville Rd.	0	1	0	1	2	4	1.7	15%	85%	\$ 992,000	-Long
Class II bike lanes on Hammonton-Smartville Rd. between N. Beale Rd. and Griffith Ave.	0	1	0	1	2	4	2.1	74%	26%	\$ 375,000	-Long
Class II bike lanes on Linda Ave. between Hammonton-Smartville Rd. and N. Beale Rd.	0	1	0	1	2	4	0.7	91%	9%	\$ 44,000	-Long
Class II bike lanes on Plumas Lake Blvd. between Algodon Rd. and drainage canal west of SR-70	1	0	0	1	2	4	0.5	75%	25%	\$ 86,000	-Long
Class II bike lanes on River Bank Dr. between Edgewater Circle and Goldfields Pkwy.	0	1	0	1	2	4	0.6	100%	0%	\$ -	-Long
Class II bike lanes on Winter Rock Dr. between Links Pkwy. (south) and Links Pkwy. (north)	1	0	0	1	2	4	0.7	100%	0%	\$ -	-Long
Class II bike lanes on Erle Rd. between Arboga Rd. and Griffith Ave.	0	1	0	1	1	3	2.2	60%	40%	\$ 605,000	-Long
Class II bike lanes on Goldfields Pkwy. between SR-65 Northbound Ramps and SR-20	1	1	0	1	0	3	7.7	7%	93%	\$ 4,916,000	-Long
Class II bike lanes on Linda Ave. between Goldfields Parkway and Griffith Ave.	0	1	0	1	1	3	0.5	28%	72%	\$ 248,000	-Long

Table E-2: Proposed Class II Bike Lanes

Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term
Class II bike lanes on Links Pkwy. between Broadway St. and Ella Ave.	0	0	0	1	2	3	1.6	32%	68%	\$ 747,000	-Long
Class II bike lanes on Ella Ave. between Arboga Rd. and Feather River Blvd.	0	0	0	1	1	2	0.9	0%	100%	\$ 618,000	-Long

Table E-3: Proposed Class III Bike Routes with Multi-Use Shoulder

Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term
Class III bike route with multi-use shoulder on N. Beale Rd. between Griffith Ave. and Beale AFB	1	2	1	2	1	7	4.6	6%	94%	\$ 2,512,000	-Short
Class III bike route with multi-use shoulder on Marysville Rd. between SR-20 and SR-49	2	1	1	0	1	5	30.5	0%	100%	\$ 17,715,000	-Short
Class III bike route with multi-use shoulder on Plumas Arboga Rd. between Algodon Rd. and Forty Mile Rd.	1	1	1	1	1	5	1.6	0%	100%	\$ 930,000	-Short
Class III bike route with multi-use shoulder on Fruitland Rd. between Loma Rica Rd. and Marysville Rd.	1	1	1	0	1	4	2.7	29%	71%	\$ 1,114,000	-Mid
Class III bike route with multi-use shoulder on Hammonton-Smartville Road between Griffith Avenue and Doolittle Drive	1	0	1	0	2	`	5.1	0%	100%	\$ 2,963,000	-Mid
Class III bike route with multi-use shoulder on La Porte Rd. between Pine Meadows Rd. and Nero Rd.	1	0	1	0	2	4	1.7	24%	76%	\$ 751,000	-Mid
Class III bike route with multi-use shoulder on Loma Rica Rd. between SR-20 and Marysville Rd.	2	0	1	0	1	4	14.2	4%	96%	\$ 7,918,000	-Mid
Class III bike route with multi-use shoulder on Spenceville Rd. between Wheatland city limit and Camp Far West Rd.	0	1	1	1	1	4	4.6	0%	100%	\$ 2,672,000	-Mid
Class III bike route with multi-use shoulder on Willow Glen Rd. between Marysville Rd. and La Porte Rd.	1	1	1	0	1	4	7.8	8%	92%	\$ 4,168,000	-Mid
Class III bike route with multi-use shoulder on Erle Rd. between Griffith Ave. and Virginia Rd.	0	1	1	0	1	3	1.8	0%	100%	\$ 1,046,000	-Long
Class III bike route with multi-use shoulder on Feather River Blvd. between Grand Ave. and River Oaks Blvd.	1	0	1	0	1	3	11	0%	100%	\$ 6,389,000	-Long
Class III bike route with multi-use shoulder on Forty Mile Rd. bewteen Plumas Arboga Rd. and Rancho Rd.	0	1	1	0	1	3	2.7	0%	100%	\$ 1,569,000	-Long
Class III bike route with multi-use shoulder on Hammonton-Smartville Road between Doolittle Drive and SR-20	0	0	1	0	2	3	9.1	0%	100%	\$ 5,286,000	-Long
Class III bike route with multi-use shoulder on Rancho Road between SR-65 and McGowan Parkway	0	0	1	0	2	3	3.6	0%	100%	\$ 2,091,000	-Long
Class III bike route with multi-use shoulder on Rices Crossing Rd. between Marysivlle Rd. and Rices Texas Hill Rd.	1	0	1	0	1	3	0.9	0%	100%	\$ 523,000	-Long
Class III bike route with multi-use shoulder on SR-20 between just east of Loma Rica Rd. and just west of Spring Valley Rd.	0	1	1	0	1	3	2	0%	100%	\$ 1,162,000	-Long

Table E-3: Proposed Class III Bike Routes with Multi-Use Shoulder											
Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term
Class III bike route with multi-use shoulder on SR-20 between just west of Spring Valley Rd. and Nevada County line	1	0	1	0	1	3	11.4	0%	100%	\$ 6,622,000	-Long
Class III bike route with multi-use shoulder on SR-20 between Marysville city limit and just east of Loma Rica Rd.	1	0	1	0	1	3	4.7	0%	100%	\$ 2,730,000	-Long
Class III bike route with multi-use shoulder on SR-49 between Marysville Rd. and Cleveland Ave.	1	1	1	0	0	3	1.6	0%	100%	\$ 930,000	-Long
Class III bike route with multi-use shoulder on Virginia Rd. between Ostrom Rd. and Erle Rd.	0	1	1	0	1	3	2.4	0%	100%	\$ 1,394,000	-Long
Class III bike route with multi-use shoulder on Jasper Ln. between Ostrom Rd. and Spenceville Rd.	0	0	1	0	1	2	3.7	0%	100%	\$ 2,149,000	-Long
Class III bike route with multi-use shoulder on Ostrom Rd. between Rancho Rd. and Jasper Ln.	0	0	1	0	1	2	4.8	0%	100%	\$ 2,788,000	-Long
Class III bike route with multi-use shoulder on SR-70 between Marysville city limit and Butte County line	0	0	1	0	1	2	10	0%	100%	\$ 5,808,000	-Long

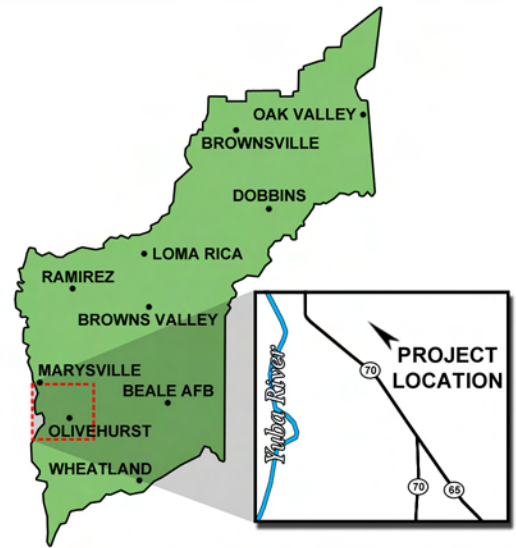
Table E-4: Proposed Class III Bike Routes with Signage Only

Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term
Class III bike route with signage only on 14th Street between Olivehurst Ave. and Powerline Rd.	1	1	0	0	2	4	0.5	0%	100%	\$ 1,000	-Short
Class III bike route with signage only on Avondale Ave. between N. Beale Rd. and levee	0	1	0	0	2	3	0.3	0%	100%	\$ 1,000	-Mid
Class III bike route with signage only on Camp Far West Rd. between Spenceville Rd. and Blackford Rd.	1	0	0	0	2	3	2.6	0%	100%	\$ 5,000	-Mid
Class III bike route with signage only on Ella Ave. between Feather River Blvd. and levee	0	1	0	0	2	3	0.6	0%	100%	\$ 1,000	-Mid
Class III bike route with signage only on Broadway St. between Feather River Blvd. and levee	0	1	0	0	2	3	0.7	0%	100%	\$ 2,000	-Mid
Class III bike route with signage only on Frenchtown Road between Marysville Road and Willow Glenn Road	0	0	0	0	2	2	7.7	0%	100%	\$ 13,000	-Long
Class III bike route with signage only on Fruitland Rd. between Ramirez Rd. and Loma Rica Rd.	0	0	0	0	2	2	7.3	0%	100%	\$ 12,000	-Long
Class III bike route with signage only on Howcut Rd. between Fruitland Rd. and Butte County line	0	0	0	0	2	2	0.6	0%	100%	\$ 1,000	-Long
Class III bike route with signage only on Iowa City Rd. between Fruitland Rd. and Loma Rica Rd.	0	0	0	0	2	2	1.5	0%	100%	\$ 3,000	-Long
Class III bike route with signage only on Jack Slough Rd. between Marysville city limit and Kimball Ln.	0	0	0	0	2	2	1.2	0%	100%	\$ 2,000	-Long
Class III bike route with signage only on Kimball Ln. between Jack Slough Rd. and Woodruff Ln.	0	0	0	0	2	2	3.2	0%	100%	\$ 6,000	-Long
Class III bike route with signage only on Lake Frances Road between Marysville Road and Lake Frances	0	0	0	0	2	2	0.7	0%	100%	\$ 2,000	-Long
Class III bike route with signage only on Matthews Ln. between Ramirez Rd. and Woodruff Ln.	0	0	0	0	2	2	3.6	0%	100%	\$ 6,000	-Long
Class III bike route with signage only on Peoria Road between SR-20 and Marysville Road	0	0	0	0	2	2	5.7	0%	100%	\$ 10,000	-Long
Class III bike route with signage only on Ramirez Rd. between Butte County line and Matthews Ln.	0	0	0	0	2	2	4.1	0%	100%	\$ 7,000	-Long
Class III bike route with signage only on Rices Crossing Road between Marysville Road and Regent Way	0	0	0	0	2	2	2.4	0%	100%	\$ 4,000	-Long

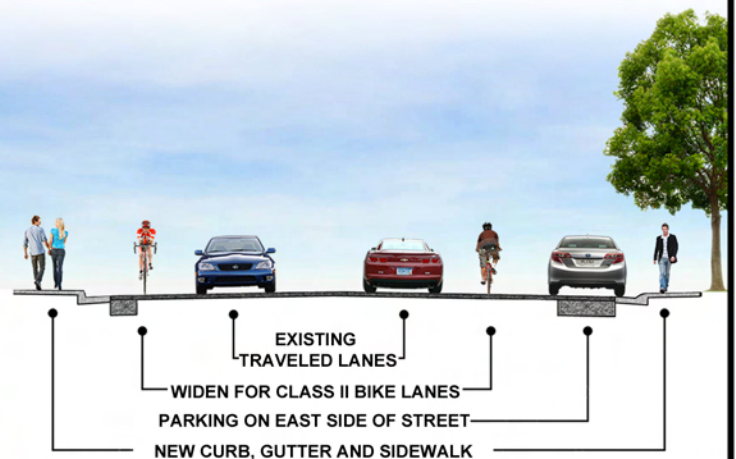
Table E-4: Proposed Class III Bike Routes with Signage Only												
Improvement	Directly accesses key destinations (schools, parks, commercial centers, transit)	Closure of a critical gap	Serves both bicyclists and pedestrians	Utilitarian vs. recreational	Feasibility	Total	Distance (mi)	% Complete	% Proposed	Estimated Cost	-Term	
Class III bike route with signage only on Sicard Flat Road between SR-20 and Peoria Road	0	0	0	0	2	2	1.4	0%	100%	\$ 3,000	-Long	
Class III bike route with signage only on Woodruff Ln. between SR-70 and SR-20	0	0	0	0	2	2	5.2	0%	100%	\$ 9,000	-Long	



APPENDIX F: PRIORITY PROJECT FACT SHEETS



VICINITY MAP
(NTS)



TYPICAL CROSS SECTION

Improvements to Dunning Avenue will include new sidewalks to create a continuous pedestrian path of travel from Hammonton Smartville Road and Linda Avenue to Linda Elementary School. Existing access to residential properties and the school will remain.

PROJECT DESCRIPTION

YUBA COUNTY BICYCLE MASTER PLAN

DUNNING AVENUE

LINDA AVENUE TO HAMMONTON SMARTVILLE ROAD



YUBA
COUNTY
PUBLIC
WORKS

FEHR PEERS



March 2012



YUBA COUNTY BICYCLE MASTER PLAN

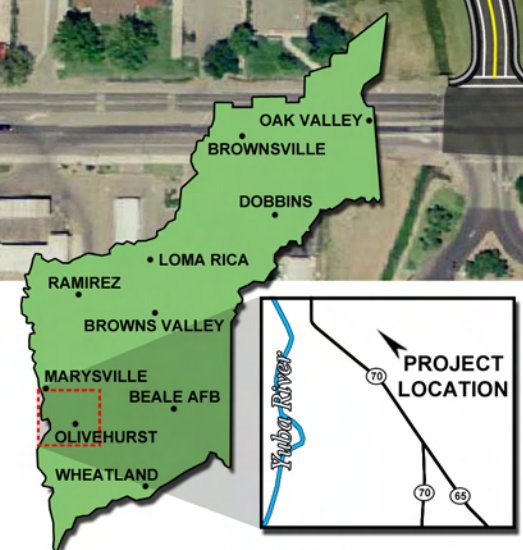
DUNNING AVENUE LINDA AVENUE TO HAMMONTON SMARTVILLE ROAD

Project Location: Dunning Avenue (Hammonton Smartville Road to Linda Avenue)

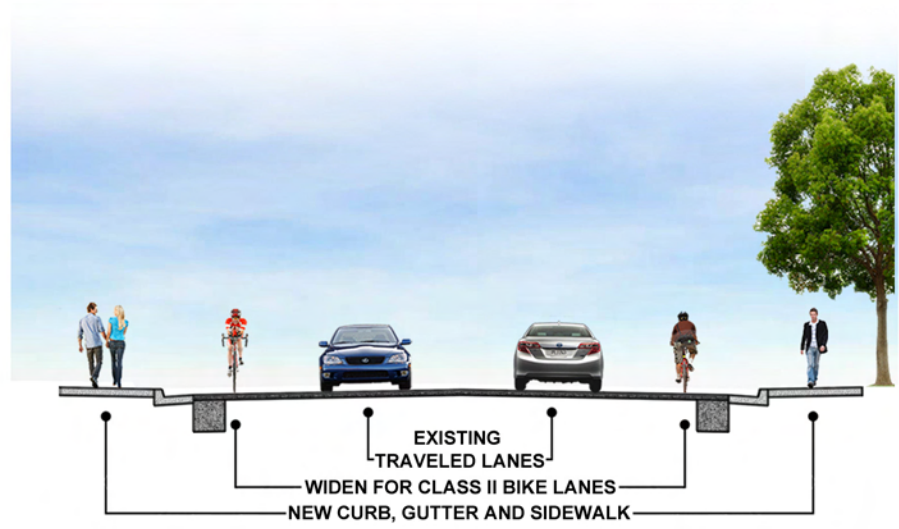
Work Description: Improvements to Dunning Avenue will include new sidewalks to create a continuous pedestrian path of travel from Hammonton Smartville Road and Linda Avenue to Linda Elementary School. Existing access to residential properties and the school will remain.

Project Length (LF)	1900	Curb Ramps (EA)	10
New Pavement (SF)	11150	Pavement Delineation	1900
Sidewalk (SF)	16500	Median Curb (LF)	0
Curb and Gutter (LF)	3650	Landscaping (SF)	0

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	1400	CY	\$40	\$56,000
2	Asphalt Concrete	280	TON	\$80	\$23,000
3	Aggregate Base	890	CY	\$50	\$45,000
4	Lime Treated Base	760	CY	\$15	\$12,000
5	Concrete Sidewalk	16500	SF	\$5	\$83,000
6	Concrete Curb and Gutter	3650	LF	\$25	\$92,000
7	Median Curb	0	LF	\$20	\$0
8	Landscaping	0	SF	\$5	\$0
9	Curb Ramps	10	EA	\$2,500	\$25,000
10	Pavement Delineation	1900	LF	\$2	\$4,000
11	Storm Drain	1	LS	\$67,000	\$67,000
12	At-Grade Railroad Crossing	0	EA	\$250,000	\$0
Estimated Construction Cost Subtotal					\$407,000
Miscellaneous Items (5% of Estimated Construction Cost Subtotal)					\$21,000
Mobilization (10% of Estimated Construction Cost Subtotal)					\$41,000
Contingencies (20% of Estimated Construction Cost Subtotal)					\$82,000
ESTIMATED CONSTRUCTION COST TOTAL					\$551,000
Design (10% of Estimated Construction Cost Total)					\$56,000
Construction Administration (10% of Estimated Construction Cost Total)					\$56,000
ENGINEERING AND ADMINISTRATION TOTAL					\$112,000
TOTAL ESTIMATED PROJECT COST:					\$663,000






VICINITY MAP
(NTS)



TYPICAL CROSS SECTION

Linda Avenue will be widened to accomodate class II bike lanes and a new curb, gutter and sidewalk. This will create a continuous pedestrian and bicycle path of travel from North Beale Road to Hammonton-Smartville Road.

PROJECT DESCRIPTION

YUBA COUNTY BICYCLE MASTER PLAN		
LINDA AVENUE		
LINDA AVENUE TO HAMMONTON SMARTVILLE ROAD		
	YUBA COUNTY PUBLIC WORKS	 
May 2012		



YUBA COUNTY BICYCLE MASTER PLAN
LINDA AVENUE HAMMONTON-SMARTVILLE ROAD TO NORTH BEALE ROAD

Project Location: LINDA AVENUE (HAMMONTON-SMARTVILLE ROAD TO NORTH BEALE ROAD)

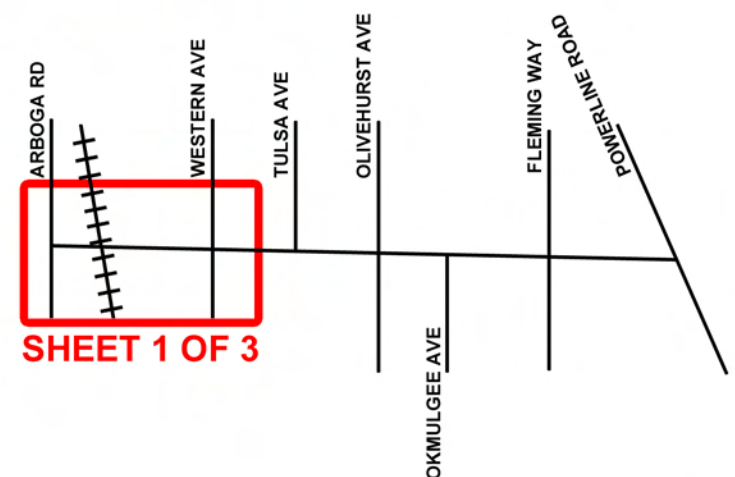
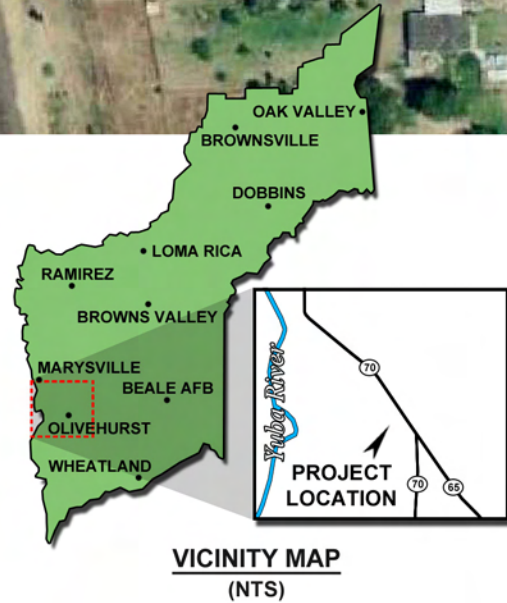
Work Description: Linda Avenue will be widened to accommodate class II bike lanes and a new curb, gutter, and sidewalk. This will create a continuous pedestrian and bicycle path of travel from North Beale Road to Hammonton-Smartville Road.

Project Length (LF)	3700	Curb Ramps (EA)	20
New Pavement (SF)	13200	Pavement Delineation	3700
Sidewalk (SF)	39500	Median Curb (LF)	0
Curb and Gutter (LF)	6600	Landscaping (SF)	0

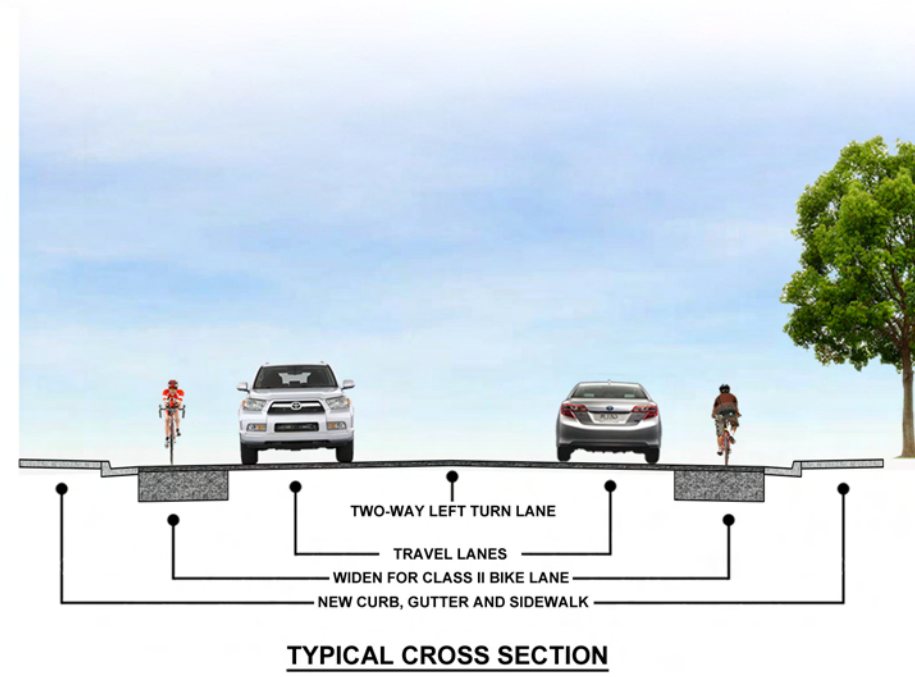
ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	2490	CY	\$40	\$100,000
2	Asphalt Concrete	330	TON	\$80	\$27,000
3	Aggregate Base	1530	CY	\$50	\$77,000
4	Lime Treated Base	1100	CY	\$15	\$17,000
5	Concrete Sidewalk	39500	SF	\$5	\$198,000
6	Concrete Curb and Gutter	6600	LF	\$25	\$165,000
7	Median Curb	0	LF	\$20	\$0
8	Landscaping	0	SF	\$5	\$0
9	Curb Ramps	20	EA	\$2,500	\$50,000
10	Pavement Delineation	3700	LF	\$2	\$8,000
11	Storm Drain	1	LS	\$130,000	\$130,000
12	At-Grade Railroad Crossing	1	EA	\$250,000	\$250,000
Estimated Construction Cost Subtotal					\$1,022,000
	Miscellaneous Items (5% of Estimated Construction Cost Subtotal)				\$52,000
	Mobilization (10% of Estimated Construction Cost Subtotal)				\$103,000
	Contingencies (20% of Estimated Construction Cost Subtotal)				\$205,000
ESTIMATED CONSTRUCTION COST TOTAL					\$1,382,000
	Design (10% of Estimated Construction Cost Total)				\$139,000
	Construction Administration (10% of Estimated Construction Cost Total)				\$139,000
ENGINEERING AND ADMINISTRATION TOTAL					\$278,000
TOTAL ESTIMATED PROJECT COST:					\$1,660,000



SEE SHEET 2 OF 3



SHEET 1 OF 3



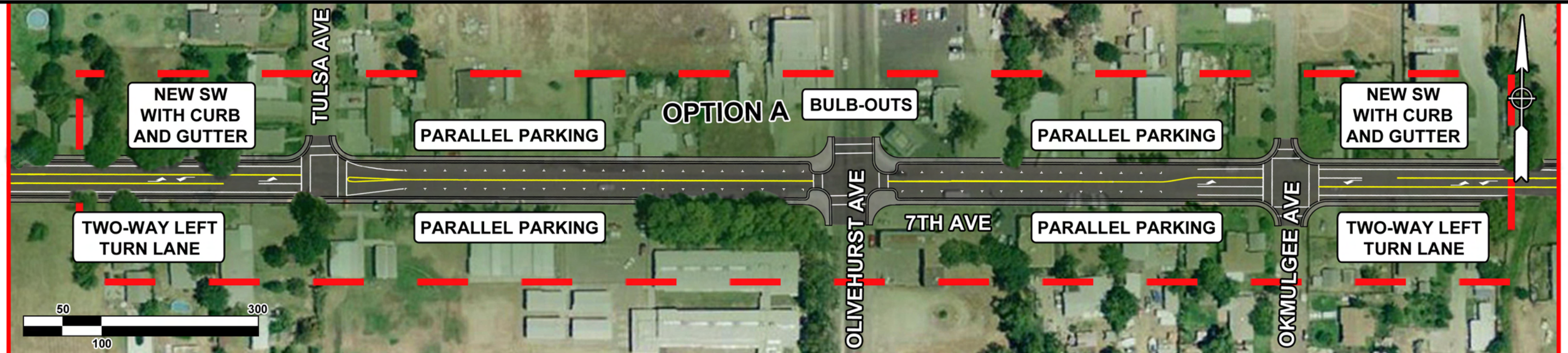
TYPICAL CROSS SECTION

7th Avenue will be widened to accommodate a two-way left turn lane, class II bike lanes and new curb, gutter and sidewalk. These improvements will create a continuous pedestrian and bicycle path of travel from Powerline road to Arboga Road.

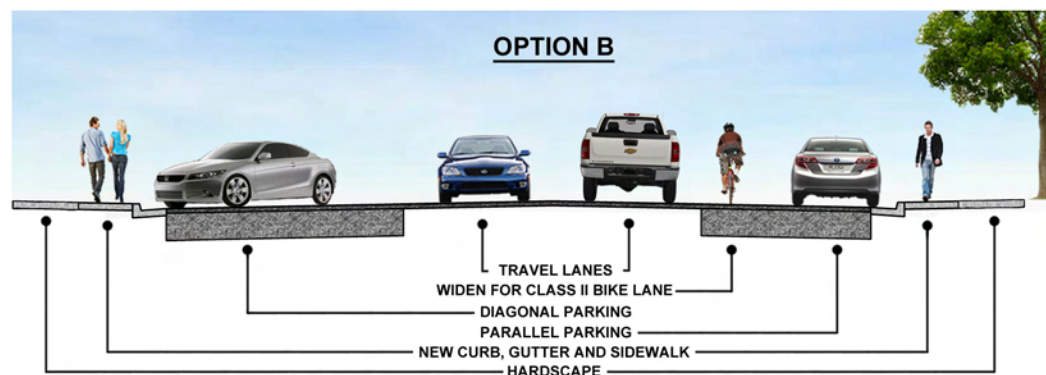
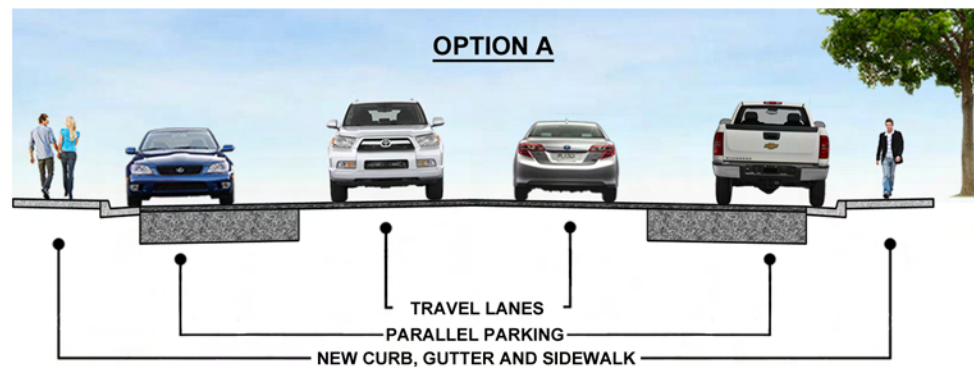
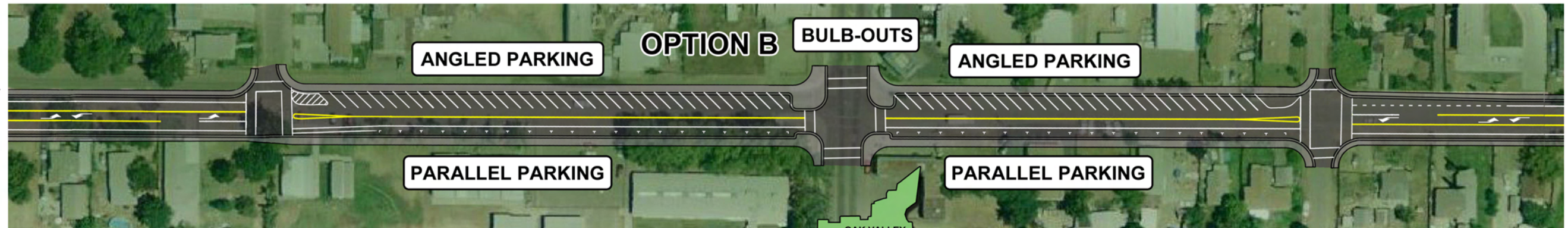
PROJECT DESCRIPTION

YUBA COUNTY BICYCLE MASTER PLAN		
7TH AVENUE POWERLINE ROAD TO ARBOGA ROAD		
	YUBA COUNTY PUBLIC WORKS	
May 2012		

SEE SHEET 1 OF 3



SEE SHEET 3 OF 3



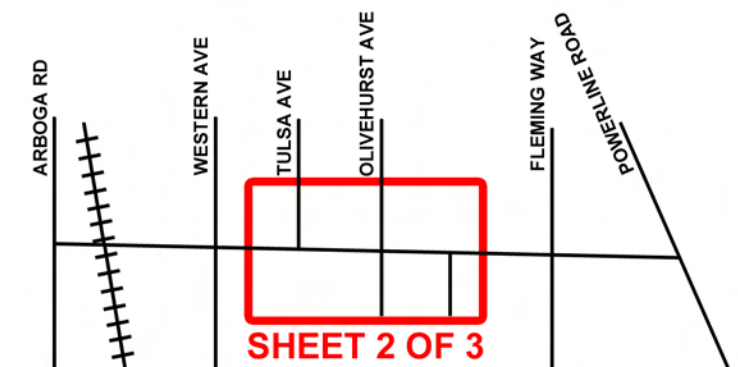
TYPICAL CROSS SECTIONS



VICINITY MAP
(NTS)

Two options are being considered for the widening of 7th Avenue between Tulsa Avenue and Okmulgee Avenue. In Option A, 7th Avenue is widened to accommodate on-street parallel parking to the north and south. In Option B, 7th Avenue is widened to accommodate diagonal parking to the north and parallel parking to the south. Both options have the potential to create a pedestrian friendly focal point Olivehurst Avenue.

PROJECT DESCRIPTION



YUBA COUNTY BICYCLE MASTER PLAN

7TH AVENUE

POWERLINE ROAD TO ARBOGA ROAD



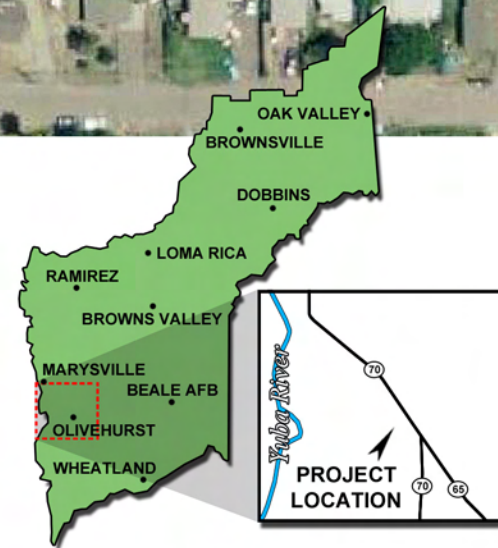
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COUNTY
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FEHR PEERS

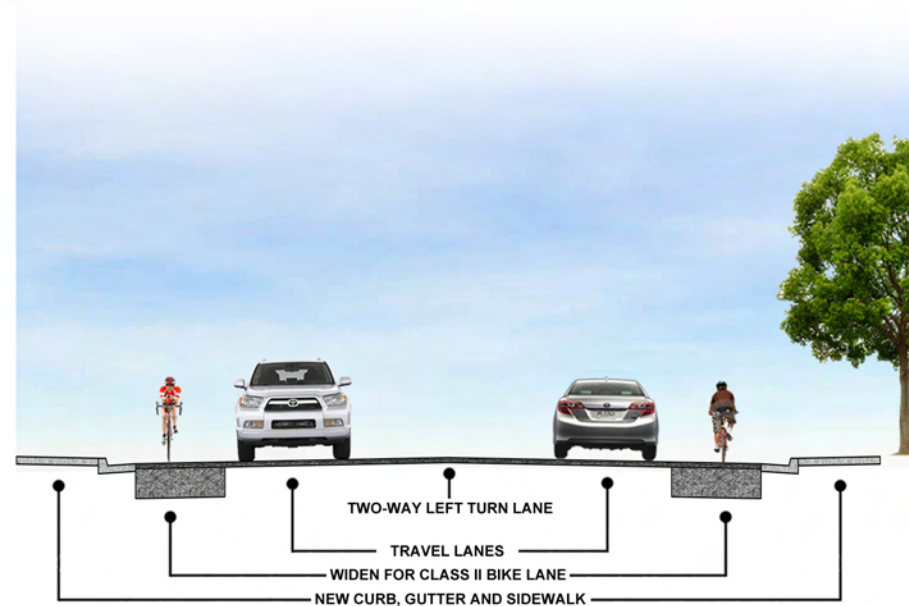
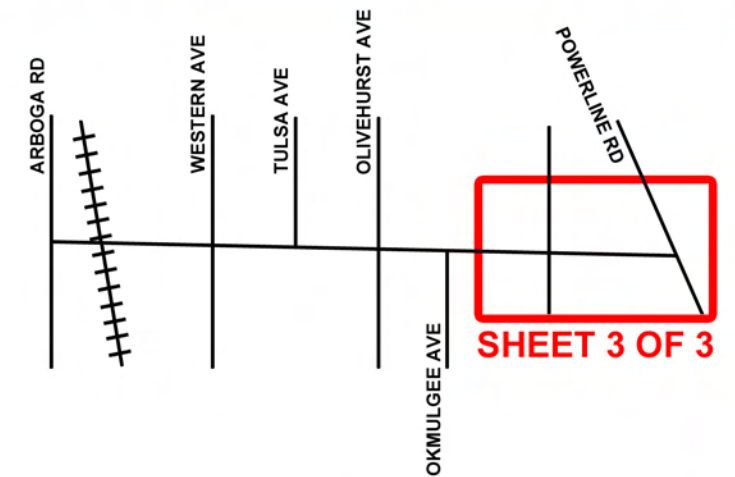


May 2012

SEE SHEET 2 OF 3



VICINITY MAP
(NTS)



TYPICAL CROSS SECTION

7th Avenue will be widened to accommodate a two-way left turn lane, class II bike lanes and new curb, gutter and sidewalk. These improvements will create a continuous pedestrian and bicycle path of travel from Powerline road to Arboga Road.

PROJECT DESCRIPTION

YUBA COUNTY BICYCLE MASTER PLAN

7TH AVENUE

POWERLINE ROAD TO ARBOGA ROAD



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MARK THOMAS & COMPANY
Providing Engineering, Surveying & Planning Services

May 2012



YUBA COUNTY BICYCLE MASTER PLAN

7TH AVENUE - OPTION A ARBOGA ROAD TO POWERLINE ROAD

Project Location: 7TH AVENUE (ARBOGA ROAD TO POWERLINE ROAD)

Work Description: 7th Avenue will be widened to accommodate a two-way left turn lane, class II bike lanes, new curb, gutter, and sidewalk. These improvements will create a continuous pedestrian and bicycle path of travel from Powerline Road to Arboga Road. Two options are being considered for the widening of 7th Avenue between Tulsa Avenue and Okmulgee Avenue. In Option A, 7th Avenue is widened to accomodate on-street parallel parking to the north and south.

Project Length (LF)	4950	Curb Ramps (EA)	38
New Pavement (SF)	99700	Pavement Delineation	4950
Sidewalk (SF)	57500	Median Curb (LF)	0
Curb and Gutter (LF)	10250	Landscaping (SF)	0

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	7640	CY	\$40	\$306,000
2	Asphalt Concrete	2440	TON	\$80	\$196,000
3	Aggregate Base	5240	CY	\$50	\$262,000
4	Lime Treated Base	4650	CY	\$15	\$70,000
5	Concrete Sidewalk	57500	SF	\$5	\$288,000
6	Concrete Curb and Gutter	10250	LF	\$25	\$257,000
7	Median Curb	0	LF	\$20	\$0
8	Landscaping	0	SF	\$5	\$0
9	Curb Ramps	38	EA	\$2,500	\$95,000
10	Pavement Delineation	4950	LF	\$2	\$10,000
11	Storm Drain	1	LS	\$174,000	\$174,000
12	At-Grade Railroad Crossing	1	EA	\$250,000	\$250,000
Estimated Construction Cost Subtotal					\$1,908,000
Miscellaneous Items (5% of Estimated Construction Cost Subtotal)					\$96,000
Mobilization (10% of Estimated Construction Cost Subtotal)					\$191,000
Contigencies (20% of Estimated Construction Cost Subtotal)					\$382,000
ESTIMATED CONSTRUCTION COST TOTAL					\$2,577,000
Design (10% of Estimated Construction Cost Total)					\$258,000
Construction Administration (10% of Estimated Construction Cost Total)					\$258,000
ENGINEERING AND ADMINISTRATION TOTAL					\$516,000
TOTAL ESTIMATED PROJECT COST:					\$3,093,000



YUBA COUNTY BICYCLE MASTER PLAN

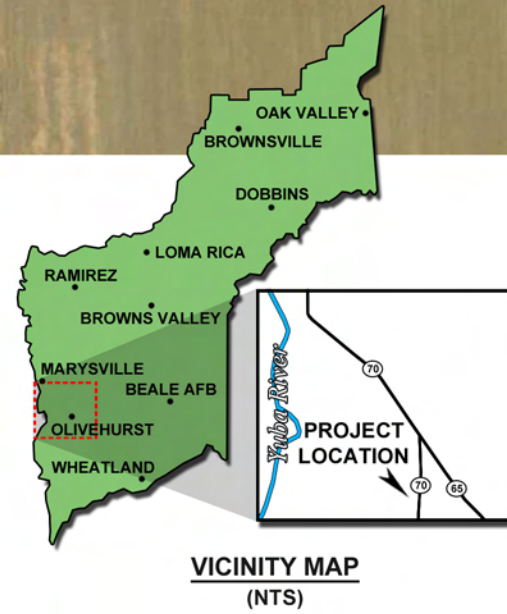
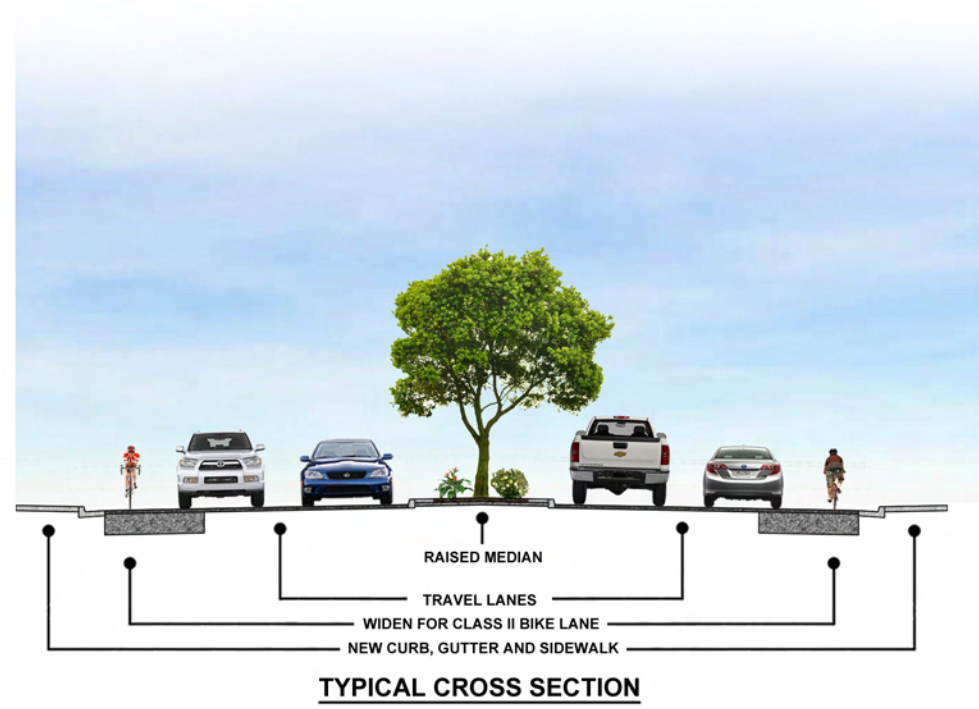
7TH AVENUE - OPTION B ARBOGA ROAD TO POWERLINE ROAD

Project Location: 7TH AVENUE (ARBOGA ROAD TO POWERLINE ROAD)

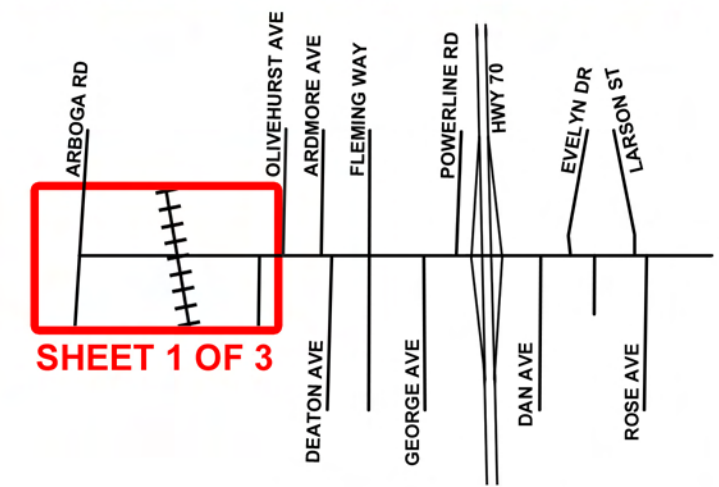
Work Description: 7th Avenue will be widened to accommodate a two-way left turn lane, class II bike lanes, new curb, gutter, and sidewalk. These improvements will create a continuous pedestrian and bicycle path of travel from Powerline Road to Arboga Road. Two options are being considered for the widening of 7th Avenue between Tulsa Avenue and Okmulgee Avenue. In Option B, 7th Avenue is widened to accomodate diagonal parking to the north and parallel parking to the south.

Project Length (LF)	4950	Curb Ramps (EA)	38
New Pavement (SF)	104950	Pavement Delineation	4950
Sidewalk (SF)	53900	Median Curb (LF)	0
Curb and Gutter (LF)	10200	Landscaping (SF)	0

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	7780	CY	\$40	\$312,000
2	Asphalt Concrete	2570	TON	\$80	\$206,000
3	Aggregate Base	5360	CY	\$50	\$268,000
4	Lime Treated Base	4840	CY	\$15	\$73,000
5	Concrete Sidewalk	53900	SF	\$5	\$270,000
6	Concrete Curb and Gutter	10200	LF	\$25	\$255,000
7	Median Curb	0	LF	\$20	\$0
8	Landscaping	0	SF	\$5	\$0
9	Curb Ramps	38	EA	\$2,500	\$95,000
10	Pavement Delineation	4950	LF	\$2	\$10,000
11	Storm Drain	1	LS	\$174,000	\$174,000
12	At-Grade Railroad Crossing	1	EA	\$250,000	\$250,000
Estimated Construction Cost Subtotal					\$1,913,000
Miscellaneous Items (5% of Estimated Construction Cost Subtotal)					\$96,000
Mobilization (10% of Estimated Construction Cost Subtotal)					\$192,000
Contigencies (20% of Estimated Construction Cost Subtotal)					\$383,000
ESTIMATED CONSTRUCTION COST TOTAL					\$2,584,000
Design (10% of Estimated Construction Cost Total)					\$259,000
Construction Administration (10% of Estimated Construction Cost Total)					\$259,000
ENGINEERING AND ADMINISTRATION TOTAL					\$518,000
TOTAL ESTIMATED PROJECT COST:					\$3,102,000



McGowan Avenue will be widened to include a raised median, class II bike lanes and new curb, gutter and sidewalk. An at grade railroad crossing will be required east of Arboaga Road. These improvements will create a continuous pedestrian and bicycle path of travel from Olive Avenue to Highway 70 and from Highway 70 to Arboaga Road.



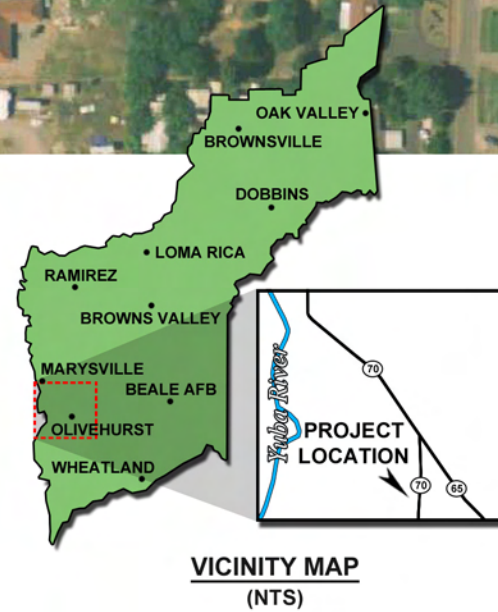
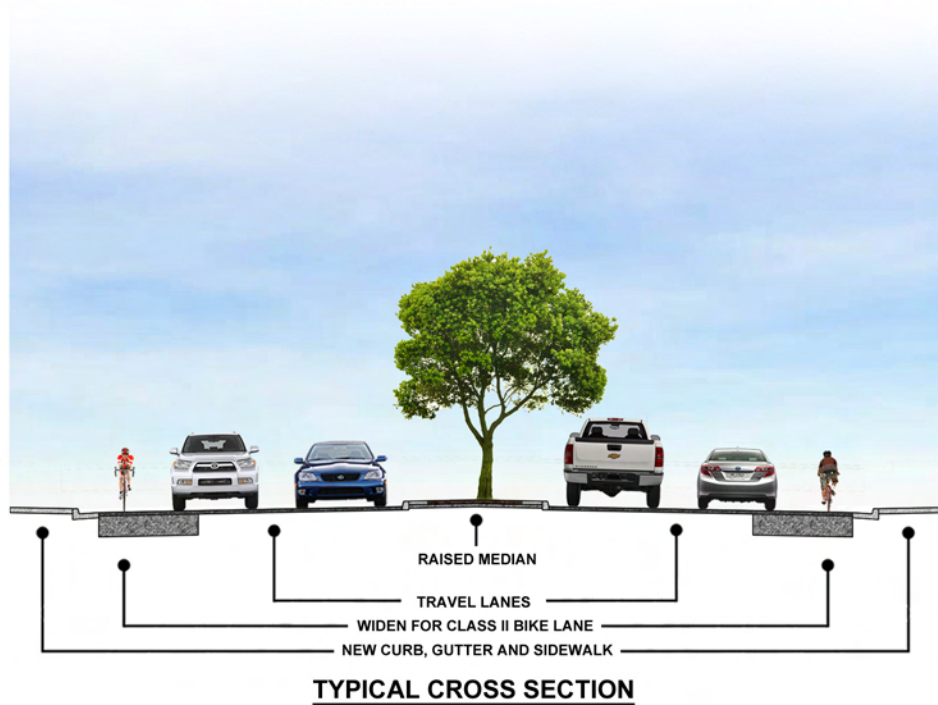
YUBA COUNTY BICYCLE MASTER PLAN		
McGOWAN AVENUE OLIVE AVENUE TO ARBOGA ROAD		
	YUBA COUNTY PUBLIC WORKS	FEHR & PEERS <small>MARK THOMAS & COMPANY</small> <small>Providing Engineering, Surveying & Planning Services</small> <small>May 2012</small>

PROJECT DESCRIPTION

SEE SHEET 1 OF 3

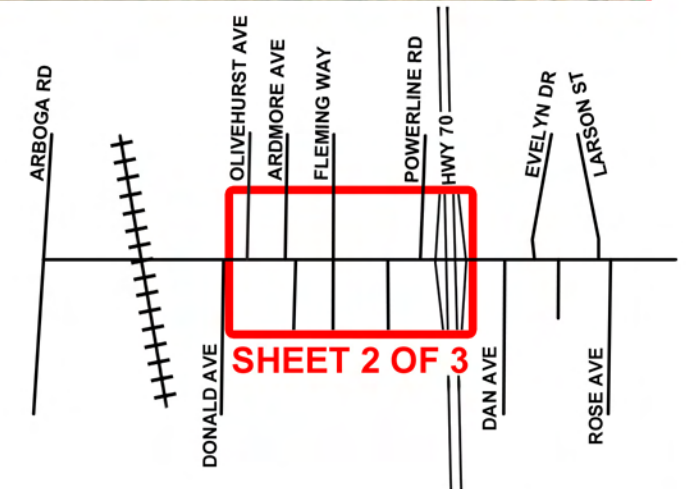


SEE SHEET 3 OF 3



McGowan Avenue will be widened to include a raised median, class II bike lanes and new curb, gutter and sidewalk. An at grade railroad crossing will be required east of Arboga Road. These improvements will create a continuous pedestrian and bicycle path of travel from Olive Avenue to Highway 70 and from Highway 70 to Arboga Road.

PROJECT DESCRIPTION



YUBA COUNTY BICYCLE MASTER PLAN

McGOWAN AVENUE
OLIVE AVENUE TO ARBOGA ROAD

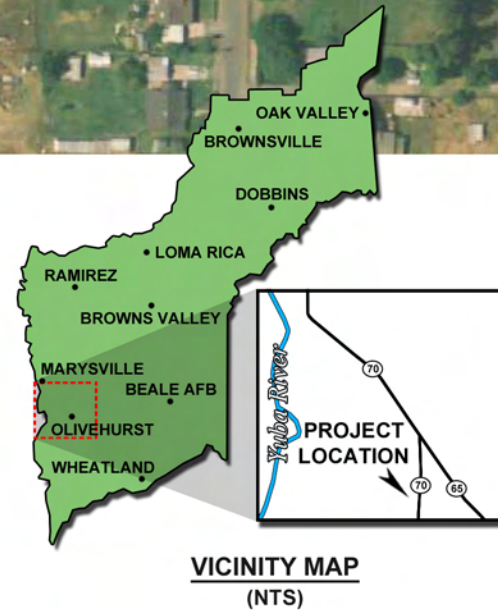
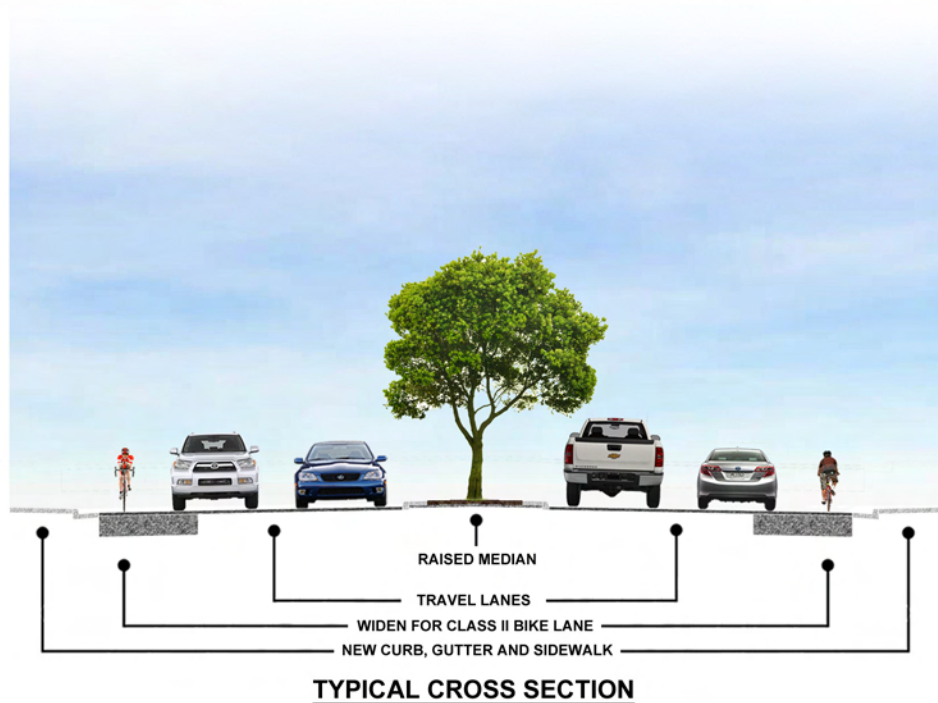


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FEHR PEERS

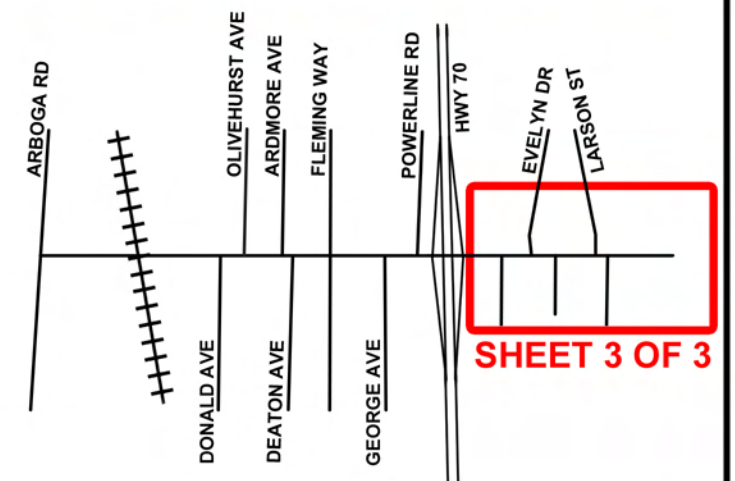
MARK THOMAS & COMPANY
Providing Engineering, Surveying & Planning Services

May 2012



McGowan Avenue will be widened to include a raised median, class II bike lanes and new curb, gutter and sidewalk. An at grade railroad crossing will be required east of Arboga Road. These improvements will create a continuous pedestrian and bicycle path of travel from Olive Avenue to Highway 70 and from Highway 70 to Arboga Road.

PROJECT DESCRIPTION



YUBA COUNTY BICYCLE MASTER PLAN

McGOWAN AVENUE

OLIVE AVENUE TO ARBOGA ROAD



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YUBA COUNTY BICYCLE MASTER PLAN
McGOWAN PARKWAY ARBOGA ROAD TO OLIVE AVENUE

Project Location: McGOWAN PARKWAY (ARBOGA ROAD TO OLIVE AVENUE)

Work Description: McGowan Avenue will be widened to include a raised median, class II bike lanes and new curb, gutter, and sidewalk. An at grade railroad crossing will be required east of Arboga Road. These improvements will create a continuous pedestrian and bicycle path of travel from Olive Avenue to Highway 70 and from Highway 70 to Arboga Road.

Project Length (LF)	7950	Curb Ramps (EA)	59
New Pavement (SF)	237950	Pavement Delineation	7950
Sidewalk (SF)	91850	Median Curb (LF)	14450
Curb and Gutter (LF)	15300	Landscaping (SF)	43250

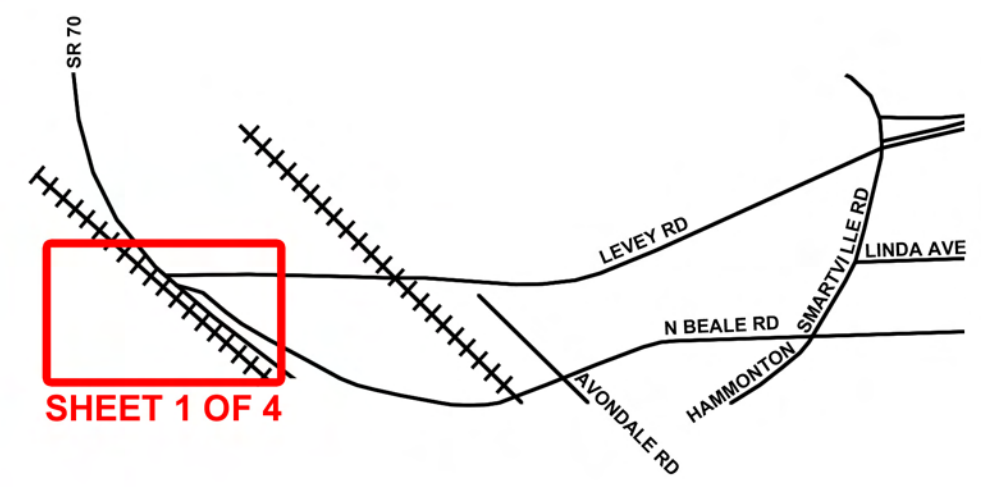
ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	15980	CY	\$40	\$640,000
2	Asphalt Concrete	5820	TON	\$80	\$466,000
3	Aggregate Base	11230	CY	\$50	\$562,000
4	Lime Treated Base	10230	CY	\$15	\$154,000
5	Concrete Sidewalk	91850	SF	\$5	\$460,000
6	Concrete Curb and Gutter	15300	LF	\$25	\$383,000
7	Median Curb	14450	LF	\$20	\$289,000
8	Landscaping	43250	SF	\$5	\$217,000
9	Curb Ramps	59	EA	\$2,500	\$148,000
10	Pavement Delineation	7950	LF	\$2	\$16,000
11	Storm Drain	1	LS	\$279,000	\$279,000
12	At-Grade Railroad Crossing	1	EA	\$250,000	\$250,000
Estimated Construction Cost Subtotal					\$3,864,000
	Miscellaneous Items (5% of Estimated Construction Cost Subtotal)				\$194,000
	Mobilization (10% of Estimated Construction Cost Subtotal)				\$387,000
	Contingencies (20% of Estimated Construction Cost Subtotal)				\$773,000
ESTIMATED CONSTRUCTION COST TOTAL					\$5,218,000
	Design (10% of Estimated Construction Cost Total)				\$522,000
	Construction Administration (10% of Estimated Construction Cost Total)				\$522,000
ENGINEERING AND ADMINISTRATION TOTAL					\$1,044,000
TOTAL ESTIMATED PROJECT COST:					\$6,262,000



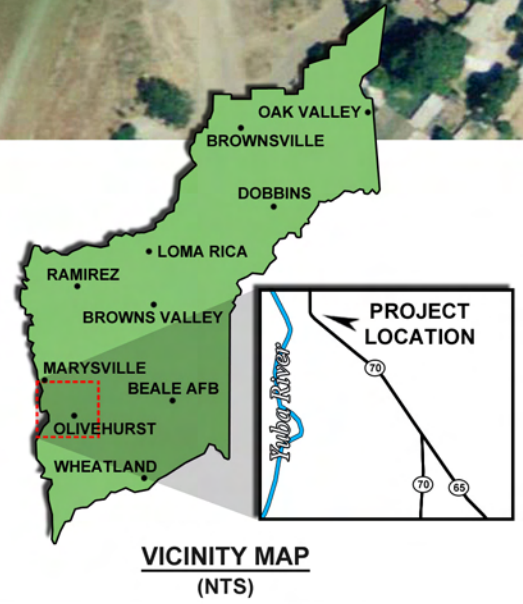
SEE SHEET 2 OF 4



CLASS I BICYCLE PATH
TYPICAL CROSS SECTION



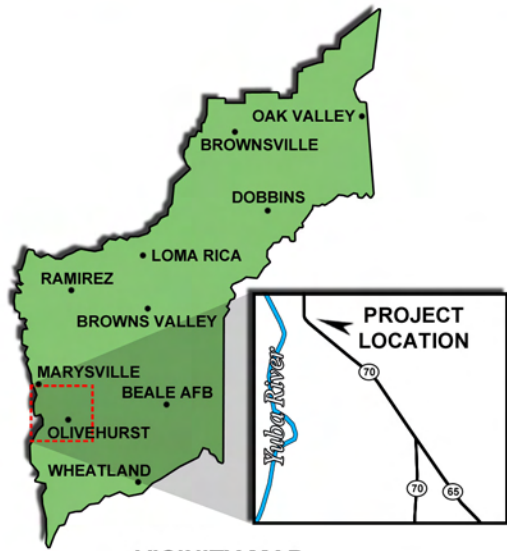
SHEET 1 OF 4



The existing levee path will be extended underneath UPRR and SR 70 to provide a Class I bicycle and pedestrian connection. These improvements will create a continuous pedestrian and bicycle path of travel from east to west of SR 70.

PROJECT DESCRIPTION

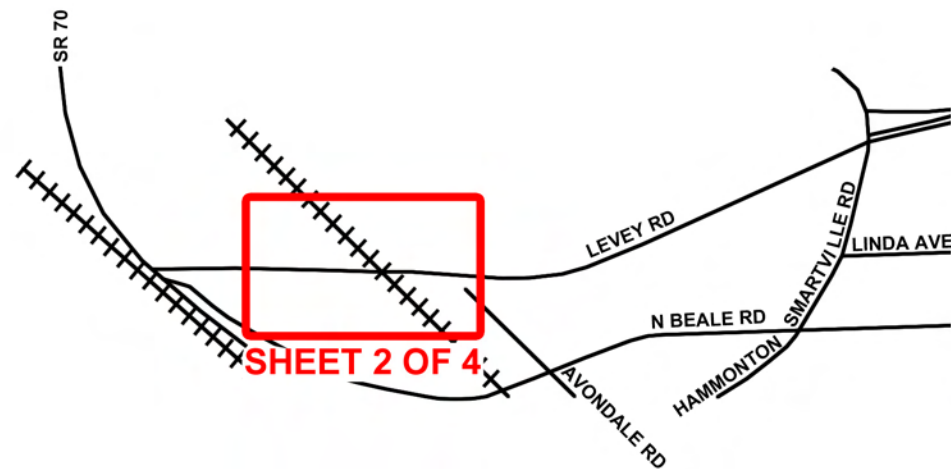
YUBA COUNTY BICYCLE MASTER PLAN		
CLASS I BICYCLE PATH		
PHASE 1 - SR 70		
	YUBA COUNTY PUBLIC WORKS	FEHR PEERS
August 2012		



VICINITY MAP
(NTS)



CLASS I BICYCLE PATH
TYPICAL CROSS SECTION



The existing levee path will be improved and extended underneath UPRR to provide a Class I bicycle and pedestrian connection. These improvements will create a continuous pedestrian and bicycle path of travel from east to west of UPRR.

PROJECT DESCRIPTION

YUBA COUNTY BICYCLE MASTER PLAN

CLASS I BICYCLE PATH

PHASE 2 - UPRR



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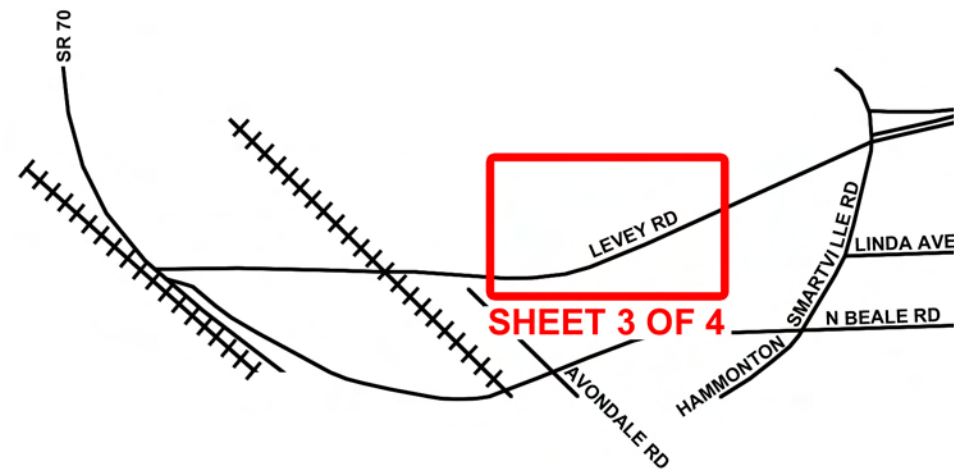
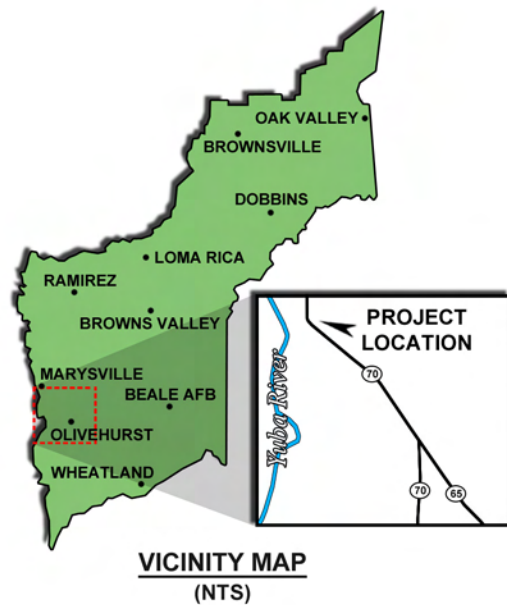
MARK THOMAS & COMPANY
Providing Engineering, Surveying & Planning Services

August 2012

SEE SHEET 2 OF 4



SEE SHEET 4 OF 4



The existing levee path will be improved to provide a Class I bicycle and pedestrian connection.

PROJECT DESCRIPTION

YUBA COUNTY BICYCLE MASTER PLAN

CLASS I BICYCLE PATH

PHASE 3 - LEVEE



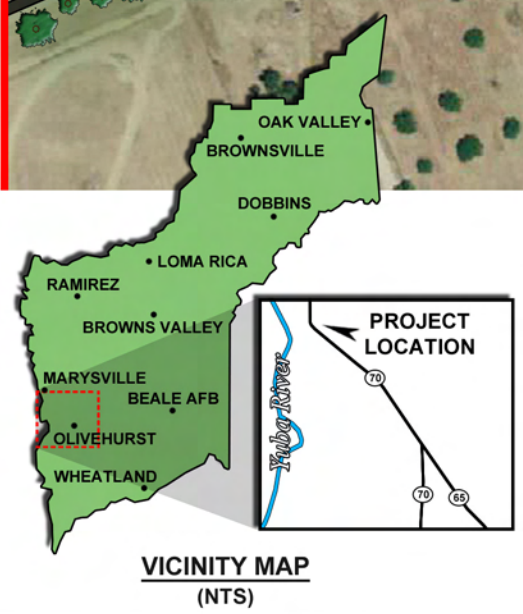
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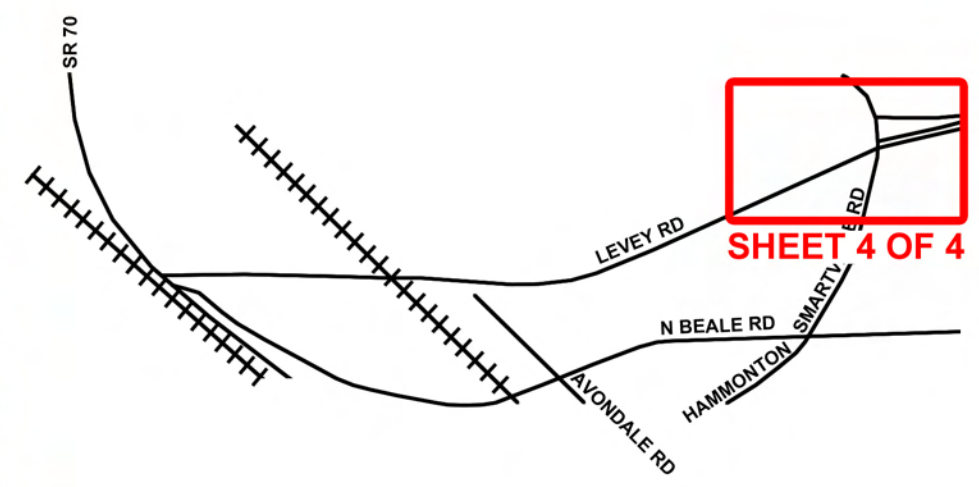
August 2012




SEE SHEET 3 OF 4



The existing levee path will be extended to Simpson Lane to provide a Class I bicycle and pedestrian connection.

PROJECT DESCRIPTION



YUBA COUNTY BICYCLE MASTER PLAN		
CLASS I BICYCLE PATH		
PHASE 3 - SIMPSON LANE		
	YUBA COUNTY PUBLIC WORKS	
		
August 2012		



YUBA COUNTY BICYCLE MASTER PLAN
CLASS I BICYCLE PATH - PHASE 1

Project Location: Class I Bicycle Path

Work Description: The existing levee path will be extended underneath UPRR and SR 70 to provide a Class I bicycle and pedestrian connection from east to west SR 70.

Project Length (LF)	2112	Pavement Delineation	0
Embankment (CY)	3432	Landscaping (SF)	0

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	791	CY	\$40	\$32,000
2	Import Borrow	3432	CY	\$10	\$35,000
3	Asphalt Concrete	520	TON	\$80	\$42,000
4	Aggregate Base	830	CY	\$50	\$42,000
5	Landscaping	0	SF	\$5	\$0
6	Pavement Delineation	0	LF	\$2	\$0
Estimated Construction Cost Subtotal					\$151,000
Miscellaneous Items (5% of Estimated Construction Cost Subtotal)					\$8,000
Mobilization (10% of Estimated Construction Cost Subtotal)					\$16,000
Contigencies (20% of Estimated Construction Cost Subtotal)					\$31,000
ESTIMATED CONSTRUCTION COST TOTAL					\$206,000
Design (10% of Estimated Construction Cost Total)					\$21,000
Construction Administration (10% of Estimated Construction Cost Total)					\$21,000
ENGINEERING AND ADMINISTRATION TOTAL					\$42,000
TOTAL ESTIMATED PROJECT COST:					\$248,000



YUBA COUNTY BICYCLE MASTER PLAN
CLASS I BICYCLE PATH - PHASE 2

Project Location: Class I Bicycle Path Phase 2

Work Description: The existing levee path will be improved and extended underneath UPRR to provide a Class I bicycle path and pedestrian connection.

Project Length (LF)	5280	Pavement Delineation	0
Embankment (CY)	4121	Landscaping (SF)	0

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	2369	CY	\$40	\$95,000
2	Import Borrow	4121	CY	\$10	\$42,000
3	Asphalt Concrete	1300	TON	\$80	\$104,000
4	Aggregate Base	2080	CY	\$50	\$104,000
5	Landscaping	0	SF	\$5	\$0
6	Pavement Delineation	0	LF	\$2	\$0
Estimated Construction Cost Subtotal					\$345,000
Miscellaneous Items (5% of Estimated Construction Cost Subtotal)					\$18,000
Mobilization (10% of Estimated Construction Cost Subtotal)					\$35,000
Contigencies (20% of Estimated Construction Cost Subtotal)					\$69,000
ESTIMATED CONSTRUCTION COST TOTAL					\$467,000
Design (10% of Estimated Construction Cost Total)					\$47,000
Construction Administration (10% of Estimated Construction Cost Total)					\$47,000
ENGINEERING AND ADMINISTRATION TOTAL					\$94,000
TOTAL ESTIMATED PROJECT COST:					\$561,000



YUBA COUNTY BICYCLE MASTER PLAN

CLASS I BICYCLE PATH - PHASE 3

Project Location: Class I Bicycle Path - Phase 3

Work Description: The existing levee path will be improved and extended to Simpson Lane to provide Class I bicycle and pedestrian connection.

Project Length (LF)	<u>6336</u>	Pavement Delineation	<u>0</u>
Embankment (CY)	<u>3708</u>	Landscaping (SF)	<u>0</u>

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Roadway Excavation	2956	CY	\$40	\$119,000
2	Import Borrow	3708	CY	\$10	\$38,000
3	Asphalt Concrete	1550	TON	\$80	\$124,000
4	Aggregate Base	2490	CY	\$50	\$125,000
5	Landscaping	0	SF	\$5	\$0
6	Pavement Delineation	0	LF	\$2	\$0
Estimated Construction Cost Subtotal					\$406,000
Miscellaneous Items (5% of Estimated Construction Cost Subtotal)					\$21,000
Mobilization (10% of Estimated Construction Cost Subtotal)					\$41,000
Contingencies (20% of Estimated Construction Cost Subtotal)					\$82,000
ESTIMATED CONSTRUCTION COST TOTAL					\$550,000
Design (10% of Estimated Construction Cost Total)					\$55,000
Construction Administration (10% of Estimated Construction Cost Total)					\$55,000
ENGINEERING AND ADMINISTRATION TOTAL					\$110,000
TOTAL ESTIMATED PROJECT COST:					\$660,000



APPENDIX G: DETAILED COST ESTIMATES

YUBA COUNTY BIKEWAY MASTER PLAN

Preliminary Estimate Memorandum

Prepared for:

Fehr and Peers
Transportation Consultants

&

Yuba County
Department of Public Works

July 31, 2012

Mark Thomas & Company, Inc.
7300 Folsom Boulevard, Suite 203
Sacramento, CA 95826
(916) 381-9100



MARK THOMAS & COMPANY
Providing Engineering, Surveying & Planning Services



Memorandum

To: Mr. Charles Alexander

File: SA-11124

Cc: Adrian Engel

From: William Shunk

Date: July 31, 2012

RE: Yuba County Bicycle Master Plan – Preliminary Estimate Memorandum

Executive Summary

Mark Thomas and Company (MTCO) has been tasked by Fehr and Peers (F&P) to assist in a planning level cost estimate for the proposed bicycle network in the Yuba County Bikeway Master Plan. As part of this work effort, MTCO was also asked to prepare a series of more detailed cost estimates and preliminary engineering drawings for a select number of high-priority, “complete street” projects. These focus studies were used to provide planning level engineering analysis on catalyst projects in the Master Plan that have the potential to build momentum for the overall bicycling network. This memorandum has been prepared to summarize MTCO’s methodologies and findings in completing these tasks.

Methodology and Assumptions

The Yuba County Bikeway Master Plan is being prepared by F&P to establish a comprehensive vision for bikeways in Yuba County that conform to the requirements of California Streets and Highways Code Section 891.2 (more commonly known as the Bicycle Transportation Act). While the BTA rigorously outlines master planning elements that create an efficient biking network, it is the experience of F&P and MTCO that an effective Master Plan also includes an implementation strategy that identifies catalyst projects and credible improvement costs. With this in mind, F&P tasked MTCO with preparing two types of estimates to support their work on the Master Plan: a general estimate for the overall cost of the final bicycle network, and a series of estimates with preliminary engineering analysis to bring key projects to the “next level” as complete streets with full bicycle and pedestrian amenities. It is the hope of F&P and MTCO that these specific projects will act as a catalyst for the overall bicycle network, and identifying specific project costs and engineering constraints at this planning level will make it easier for the County to prioritize and acquire funding sources to make the overall bicycling network a reality.

For the general network estimate, individual projects were provided to MTCO by F&P in the form of an Excel spreadsheet that categorized the improvement type (Class I Bike Path or Trail, Class II Bike Lanes,

Class III Bike Route with Multiuse Shoulder or Class III Bike Route with Signage Only), the distance of the project in miles, the existing distance of improvements already constructed, the percentage of each project that has been completed and the percentage of each project that still needs to be constructed. This data formed the framework for MTCO's general cost estimate.

Given the scope of the overall network and the inherent limitations of a planning level document, the following assumptions were made:

- Class I and Class II facilities identified by F&P were analyzed by MTCO using Google Earth and Google Streetview.
- Class III facilities and distances identified by F&P were assumed to be accurate and were not verified by MTCO.
- Measurements required for the estimate were taken from Google Earth and are approximate.
- To isolate the improvement costs of the bicycling network, sidewalk improvements were not included in the general estimate (all Class II projects were assumed to be bike lane improvements only). MTCO found this assumption to be consistent with the existing roadway conditions in Yuba County which predominantly drain into roadside ditches. Sidewalk improvements were included in the specific, complete street estimates.
- Structural sections for widening projects were derived from Yuba County's Department of Public Works' Standard Plans and MTCO's professional experience. No geotechnical analysis was performed for the purpose of the estimate.
- Right-of-way acquisition is not included in the cost estimate.
- Aerial base mapping was downloaded from the USGS

For the purpose of the general estimate, Class I projects provided by F&P were further categorized by MTCO into different project types. Class I facilities were categorized as a bike path, overcrossing, or railroad undercrossing project. Class II and Class III facilities provided to MTCO by F&P were sufficient for the purpose of the estimate and were not categorized any further.

For each project type, a project cost was developed on a linear foot basis for material costs and adjusted to account for mobilization, minor items, design fees, construction management and contingencies. Right-of-way acquisition was not included in the estimate given the unpredictable nuances of real estate and the limited scope of the task. Material costs were derived from unit costs in the *2011 Caltrans Cost Data Book*, similar projects in Caltrans District 3 from 2010 to 2012, and MTCO's estimating experience. The following assumptions were used in generating linear foot project costs:

Item	Cost
Material Costs	
Roadway Excavation	\$40/CY
Portland Cement Concrete	\$500/CY
Hot-Mixed Asphalt	\$80/TON
Aggregate Base	\$50/CY
Lime Treated Base	\$15/CY
Signs	\$300/EA
Striping	\$1/LF
Reinforced Concrete Pipe Laterals	\$100/LF
Drainage Inlets	\$2,000/EA
Maintenance Holes	\$3,000/EA
Additional Costs	
Mobilization	10%
Minor Items	15%
Design	10%
Construction Management	10%
Contingency	20%
Total	65%
Note: Percentages are a markup of total material cost	

It is important to note that the linear foot project costs developed for the estimate have been standardized for the purpose of generating a planning level estimate. Project specific design issues including, but not limited to, utility relocation, environmental constraints, conflicting facilities, railroad coordination, infrastructure improvements, signalization modifications and right-of-way acquisition may affect individual project costs as more detailed design work commences in the future. It is also important to clarify that these unit costs have been developed per linear foot of two-way bike lane improvements to be consistent with F&P's spreadsheet and do not account for economy of scale for individual improvement projects. For Class I facilities this is the unit cost per linear foot of facility. For Class II and III facilities, the unit cost assumes improvements to both sides of the road.

Design assumptions for each categorized project were developed from Yuba County's Standard Plans and Specifications, the *Caltrans Highway Design Manual* (HDM), the 2011 *Caltrans Comparative Bridge Cost* guidelines, *Designing Sidewalks and Trails for Access* published by the Federal Highway and Transportation Administration (FHWA), and MTCO's project experience.

Class I Facilities

Class I Bike Paths - \$100/LF

Class I Bike Paths were categorized as any proposed bike route project that is detached from an existing or proposed roadway and does not require a structure to cross a road or railroad tracks. These facilities are assumed to be shared use paths for pedestrians and bicyclists that exclude motorized traffic and are constructed at grade with their surrounding environment.

Per recommendations by the FHWA, it is assumed these paths will be 10' wide with a 2' graded shoulder on either side. This is more conservative than requirements in the 2006 HDM which require an 8' minimum; however the 2012 HDM notes that a 10' path is "preferred". The structural section for a Class I Bike Path is assumed to be 4" of hot-mixed asphalt over 8" of aggregate base for the path, and 12" of aggregate base at the shoulders (which will also accommodate maintenance and occasional emergency vehicular traffic). Including striping and additional markups, it is assumed that Class I Bike Facilities cost **\$100/LF**.

Class I Overcrossing - \$1,400/LF

Class I Overcrossings were categorized as any proposed Class I Bike Path project that requires a structure to cross a road (most notable State Route 70). It is assumed the proposed structures will be cast-in-place/pre-stressed box girders with a 10' wide pedestrian path. The **\$1,400/LF** unit cost for these structures is based on the 2011 *Comparative Bridge Cost* guidelines, comparable projects in the vicinity of Yuba County, and MTCO's structural experience.

Class I Railroad Undercrossing - \$2,000/LF

Class I Railroad Undercrossings were categorized as any Class I Bike Path project that requires an undercrossing of a railroad facility. Although there is only one proposed Class I Railroad Undercrossing proposed in the Yuba County Bikeway Master Plan, MTCO thought it was prudent to isolate it for the general estimate given the additional coordination required with the underlying railroad property owner, the complexity of transit design, and the extra construction measures that are required. This structure is assumed to support a 10' wide pedestrian path. This increases the unit cost for the Class I Railroad Undercrossing to **\$2,000/LF**.

Class II Facilities

Class II Bike Lanes - \$130/LF

Class II Bike Lanes were categorized as any proposed bike route project that is attached to an existing or proposed roadway facility. These facilities are intended to be exclusively used by bicyclists, although there may be some motorized vehicle overlap approaching intersections.

MTCO assumed that the final bike lane width for a Class II widening project, measured from edge of existing travel way to edge of proposed pavement or parking stall would be 5'. This meets the minimum requirements of the HDM where there is marked on-street parking and exceeds requirements on rural roadways where parking is restricted. For constructability reasons, MTCO assumed that the contractor would sawcut the existing pavement 1' off the existing traveled way resulting in an overall new pavement width of 6'.

The majority of the Class II facilities identified by F&P are on urban residential roads. Per the Yuba County Standard Plans and Specifications these roadway facilities require a minimum structural section of 3" of hot-mixed asphalt, 8" of aggregate base, and an optional 12" of lime treated base where R-values are less than 20 or its use is recommended by a geotechnical engineer. Without a geotechnical report to substantiate a specific structural section, MTCO used the minimum structural section for the next highest category of roadway in Yuba County (urban collector roads) which is 4" of hot-mixed asphalt, 12" of aggregate base, and an optional 12" of lime treated base. For the purpose of the general estimate, MTCO assumed the lime treated base would be required with the project. With the additional markups, it is assumed that Class II Bike Lane projects cost **\$130/LF**.

Class III Facilities

Class III Multi-Use Shoulder - \$110/LF

Class III Multi-Use Shoulders were categorized as any proposed bike route project that is to be widened and signed to accommodate pedestrians and bicyclists. Unlike a Class III bike route, these facilities are intended to be used exclusively by pedestrians and bicyclists outside of the traveled way along enhanced roadway shoulders.

These proposed improvements were identified by F&P in rural areas where pedestrian access is important but traditional sidewalk improvements would be impractical. For the purpose of the estimate, MTCO assumed that the proposed shoulder width of these roads will need to be 4' to be practical for bicyclist use. With a 1' offset of the sawcut for constructability reasons, this results in 5' of new pavement per linear foot of multi-use shoulder. Assuming a standard structural section of 4" hot-mixed asphalt, 12" aggregate base, 12" lime-treated base, striping and additional markups the resulting project cost is **\$110/LF**.

Class III Signing Only - \$0.30/LF

Class III Signing Only projects were categorized as any proposed bike route that is to be signed as a traditional Class III bicycling facility (where the traveled lane is shared by bicyclists and automobiles). It is assumed for the estimate that one sign would be installed per every 1,000' of bike route resulting in a project cost of **\$0.30/LF**.

Planning Level Limitations

During the course of preparing the preliminary cost estimate, MTCO made a few observations regarding the proposed Class II bicycling facilities that may affect the cost of individual projects and will require additional analysis as improvements to the network are made:

Widening of Railroad Overcrossings

- Class II bike lanes on Feather River Boulevard between North Beale Road and Riverside Drive
- Class II bike lanes on North Beale Road between SR-70 Northbound On-Ramp and Griffith Ave

At these two locations the proposed bicycle network crosses underneath existing railroad structures. A cursory review of these locations indicates that a full build out of Class II bicycling facilities will likely require a lengthening of the existing railroad structure or a creative configuration of vehicular and pedestrian facilities for a limited distance through the bottleneck. Given the relative cost of widening the existing railroad structures compared with the benefit of standard Class II bike lanes, the latter is preferred. However this approach will likely require the approval of non-standard design features.

At-Grade Railroad Crossings

- Class II bike lanes on 7th Avenue between Arboga Road and Powerline Road
- Class II bike lanes on Ella Avenue between Arboga Road and Feather River Boulevard
- Class II bike lanes on Plumas Arboga Road between Arboga Road and Algodon Road
- Class II bike lanes on McGowan Parkway between Arboga Road and Olive Avenue

While preparing the preliminary cost estimate, MTCO noted a few Class II bike lane improvements that will require at-grade crossings with existing railroad facilities. Assuming existing crossings signals and gates are sufficient, the material costs will not be significantly affected at these crossings. However, there are intangible costs associated with Railroad and Public Utility Commission coordination that is difficult to quantify without a more detailed engineering analysis. For the purpose of the general estimate these costs were excluded from the overall total.

Intersection Striping

- Class II bike lanes on Pasado Road between Alicia Avenue and Arboga Road
- Class II bike lanes on Plumas Lake Boulevard between Algodon Road and drainage canal west of SR-70

These two projects are noteworthy for the lack of bicycle connectivity across significant intersections in the Master Plan. In both cases the majority of the designated improvements on the route have been completed, but are constrained to the east by existing State Route 70 overcrossings with limited bicycling facilities. Without adequate facilities to tie into there is a notable drop off of bike lanes through these intersections. Widening of these facilities will likely be required to accommodate future Class II

facilities. However, the reconfiguration of the intersections will require additional engineering analysis taking into consideration future widening plans of the State Route 70 overcrossings, bicycling destinations in the area, and bicyclist safety with the large traffic volume.

Grant Ready Complete Street Estimates

In addition to the general estimate, MTCO prepared a series of grant ready estimates that focused on “complete street” estimates and a Class 1 trail in Linda that were deemed by the project team to be high-priority catalyst projects that could be used to build momentum for the overall bicycling network. These projects involved additional streetscape elements beyond bicycle lanes including curb, gutter and sidewalk, drainage improvements and possible landscaped medians. These projects were identified as the following:

- Dunning Avenue (Linda Avenue to Hammonton-Smartville Road)
- Linda Avenue (Hammonton-Smartville Road to North Beale Road)
- 7th Avenue – Option A (Arboga Road to Powerline Road)
- 7th Avenue – Option B (Arboga Road to Powerline Road)
- McGowan Parkway (Arboga Road to Olive Avenue)
- Linda Class I Bike Path (Phase 1, 2, 3)

Improvements to Dunning Avenue will include new sidewalks to create a continuous pedestrian path of travel from Hammonton-Smartville Road and Linda Avenue to Linda Elementary School. Linda Avenue will be widened to accommodate Class II Bike lanes and new curb, gutter and sidewalk. This will create a continuous pedestrian and bicycle path of travel from North Beale Road to Hammonton-Smartville Road.

Two options were analyzed for 7th Avenue. In both options, 7th Avenue will be widened to accommodate two-way left turn lanes, Class II Bike Lanes, and new curb, gutter and sidewalk. In Option A, 7th Avenue is widened between Tulsa Avenue and Okmulgee Avenue to accommodate on-street parallel parking to the north and south. In Option B, 7th Avenue is widened between Tulsa Avenue and Okmulgee Avenue to accommodate diagonal parking to the north and parallel parking to the south. Both options have the potential to create a pedestrian friendly focal point at the Olivehurst Avenue intersection with enhanced on-street bulb-outs.

Finally, McGowan Avenue will be widened to include a raised median, Class II Bike Lanes and new curb, gutter and sidewalk. These improvements will create a continuous pedestrian path of travel from Olive Avenue to State Route 70 and from State Route 70 to Arboga Road.

One major difference between the general estimate and the specific estimates is the inclusion of curb, gutter and sidewalk. Unlike the general estimate which assumed drainage into existing roadside ditches, the inclusion of curb and gutter requires an additional investment in drainage infrastructure.

Assumptions for drainage improvements were based solely on MTCO's experience with planning level estimates. No drainage analysis was performed for the purpose of the estimate.

For each project, MTCO prepared preliminary geometrics based on design guidelines from Yuba County's Standard Plans and Specifications, Caltrans' 2006 Highway Design Manual, and MTCO's professional experience with streetscape projects. From these layouts, pertinent project information was collected for the purpose of the estimate:

Project Length (LF) – The project length was measured in linear feet and represents the limits of construction required to complete each street segment.

New Pavement (SF) – Aerial imagery from the USGS was overlaid with the proposed improvements to evaluate the extent of widening required for each project. The amount of new pavement was reported in square feet.

Sidewalk (SF) – Proposed sidewalk improvements required for each project were measured in square feet. Sidewalks were generally assumed to be 5.5' – 6' wide based on direction from the County. One notable exception is 7th Avenue- Option B which was widened to include hardscape improvements. For the purpose of this particular estimate the hardscape improvements were included in the sidewalk measurement.

Curb and Gutter (LF) – Proposed curb and gutter lengths were measured from the layouts and quantified in linear feet.

Curb Ramps (EA) – Curb ramps required for pedestrian street crossings were tabulated and recorded. One curb ramp was counted for each side of a proposed pedestrian crossing. In the event of two pedestrian crossings at an intersection corner, 2 curb ramps were assumed.

Pavement Delineation (LF) – Pavement delineation is the measured project length requiring pavement striping and markings. This is a simplified assumption for the purpose of the complete street estimates and does not represent the actual length of pavement delineation. The unit cost for pavement delineation was adjusted accordingly to account for pavement markings and transverse pavement stripes (including pedestrian crosswalks).

Median Curb (LF) – Median Curb is the linear footage of curb improvements required for the decorative medians proposed on McGowan Parkway. The measurement represents the total perimeter of the medians measured from the flowline and includes a decorative paving strip.

Landscaping (SF) – Landscaping is the square footage of landscaping required for the decorative medians proposed on McGowan parkway.

From these measurements, the complete street estimates were setup with the following line item assumptions and costs:

1. Roadway Excavation

All improvements were assumed to be at-grade with existing ground. Contributing elements to roadway excavation were assumed to be the new pavement area, curb and gutter, and sidewalk.

New Pavement Excavation: Roadway excavation for new pavement was calculated as the square footage of new pavement area multiplied by 16" (4" AC over 12" AB) converted to cubic yards. Lime treated base was not included in the roadway excavation quantity since soil treatment does not include soil removal.

Curb and Gutter Excavation: Roadway excavation for curb and gutter was assumed to be the length of curb and gutter multiplied by 2.5' (the standard width of curb and gutter in Yuba County) multiplied by 12" (6" PCC gutter pan over 6" AB) converted to cubic yards.

Sidewalk Excavation: Roadway excavation for sidewalks was assumed to be the square footage of sidewalks multiplied by 10" (4" PCC over 6" AB) converted to cubic yards.

2. Asphalt Concrete

Asphalt concrete was assumed to be a 4" structural section over the square footage of new pavement. This volume was converted to tons assuming an asphalt density of 2 tons per CY.

3. Aggregate Base

Contributing elements to Aggregate Base were assumed to be the new roadway pavement, curb and gutter, and sidewalk.

New Pavement Aggregate Base: Aggregate base for the new pavement area was calculated as the new pavement area multiplied by 12" AB, converted to cubic yards.

Curb and Gutter Aggregate Base: Aggregate base for curb and gutter improvements was calculated as the length of curb and gutter multiplied by 2.5' (the standard width of curb and gutter in Yuba County) multiplied by 6" AB, converted to CY.

Sidewalk Aggregate Base: Aggregate base for sidewalk improvements was calculated as the square footage of sidewalk multiplied by 6" AB, converted to CY.

4. Lime Treated Base

The specific estimate assumes that lime treated base will be required for the roadway section and extends the lime treated base underneath a standard Yuba County curb and gutter section.

New Pavement Lime Treated Base: Lime Treated base for the new pavement area was calculated as the new pavement area multiplied by 12" LTB, converted to cubic yards.

Curb and Gutter Lime Treated Base: Lime Treated base for the curb and gutter length was calculated as the proposed length of curb and gutter multiplied by 2.5' (the standard width of curb and gutter in Yuba County) multiplied by 12" LTB, converted to cubic yards.

5. Concrete Sidewalk

The concrete sidewalk square footage was taken directly from measurements on the project layouts. The unit cost of \$5/square foot was derived from an assumed concrete price of \$500/cubic yard which was normalized to square footage based on an assumed sidewalk concrete thickness of 4". This assumption was verified by MTCO with current bid results on a comparable sidewalk project where sidewalk was paid for by square footage.

6. Concrete Curb and Gutter

The concrete curb and gutter length was taken directly from measurements on the project layouts. The unit cost of \$25/linear foot was derived from an assumed concrete price of \$500/cubic yard which was normalized to linear footage based on an assumed Yuba County standard rolled curb and gutter cross section. This assumption was verified by MTCO with current bid results on a project where a comparable curb and gutter type was paid for by linear foot.

7. Median Curb

Median curb lengths were taken directly from measurements on the project layouts and include an attached decorative pavement strip for the maintenance and aesthetics of the adjacent landscaping in the median.

8. Landscaping

Landscaping square footage was taken directly from measurements on the project layouts.

9. Curb Ramps

Curb ramp quantities were taken directly from measurements on the project layouts.

10. Pavement Delineation

Pavement delineation linear footage was taken directly from measurements on the project layouts and is the length of project requiring delineation (and not the total length of delineation required). The price per linear foot has been adjusted to account for transverse striping and pavement markings in addition to longitudinal striping.

11. Storm Drain

Inclusion of curb and gutter with the specific estimates requires additional drainage improvements that were not necessary for the general estimates. For the purpose of the specific estimates, MTCO assumed that one drainage inlet on each side of the road is required for every 400' of roadway improvements when curb and gutter is included with a project. Each drainage inlet, on average, will require a 20' reinforced concrete pipe lateral to a proposed maintenance hole in the center of the roadway. It is assumed that there is an existing trunk line for each

drainage inlet to tie into or that the trunk line will be paid for by others as a condition of development, and no upsizing of the trunk line is required. These assumptions result in a normalized storm drain cost of \$30/LF. For the purpose of the cost estimates, the storm drain cost is reported as a lump sum price which is the project length multiplied by the normalized storm drain cost.

12. At-Grade Railroad Crossing

At-grade railroad crossings were included in the specific estimates in an effort to capture the true cost of the complete street improvements. A standard at-grade crossing consists of the minimum required safety devices per FRA standards. They include, but are not limited to, crossing gates on the approaches, cantilever structures with flashers and signage, advanced warning signs, and associated rail detection and signaling. Based on similar projects, the average unit cost per at-grade crossing is assumed to be \$250,000.

Additional Costs

To account for the uncertainties of a planning level estimate, additional costs were incorporated with the estimate as a percentage of the construction cost.

Miscellaneous Items = Miscellaneous items were assumed to be 5% of the estimated construction cost subtotal (line items 1 through 12).

Mobilization = Mobilization was assumed to be 10% of the estimated construction cost subtotal.

Contingencies = The contingency factor for unexpected issues that may come up during construction was assumed to be 20% of the estimated construction cost subtotal.

These three factors were summed up with the construction cost subtotal to come up with an estimated construction cost. Soft costs were incorporated with the estimates to account for design and construction administration.

Design = Design fees were assumed to be 10% of the estimated construction cost.

Construction Administration = Construction administration fees were assumed to be 10% of the estimated construction cost.

Results

Based on the assumptions in this memorandum, MTCO has estimated the probable cost to complete all of the bicycle improvements in the Yuba County Bicycle Master Plan to be approximately \$138,000,000. It is unrealistic to expect the County to fund all of these improvements at once, however there could be some immediate benefits in funding the complete street projects identified by F&P and MTCO. The probable costs of these projects are as follows:

- Dunning Avenue (Linda Avenue to Hammonton-Smartville Road) - \$663,000

- Linda Avenue (Hammonton-Smartville Road to North Beale Road) - \$1,660,000
- 7th Avenue – Option A (Arboga Road to Powerline Road) - \$3,093,000
- 7th Avenue – Option B (Arboga Road to Powerline Road) - \$3,102,000
- McGowan Parkway (Arboga Road to Olive Avenue) - \$5,218,000
- Linda Class 1 Bike Path Phase 1 (Riverside Drive to Shad Pad Park) - \$248,000
- Linda Class 1 Bike Path Phase 2 (Shad Pad Park Avondale Avenue) - \$561,000
- Linda Class 1 Bike Path Phase 3 (Avondale Avenue to Simpson Lane) - \$660,000