Chapter Five
Prioritized Projects

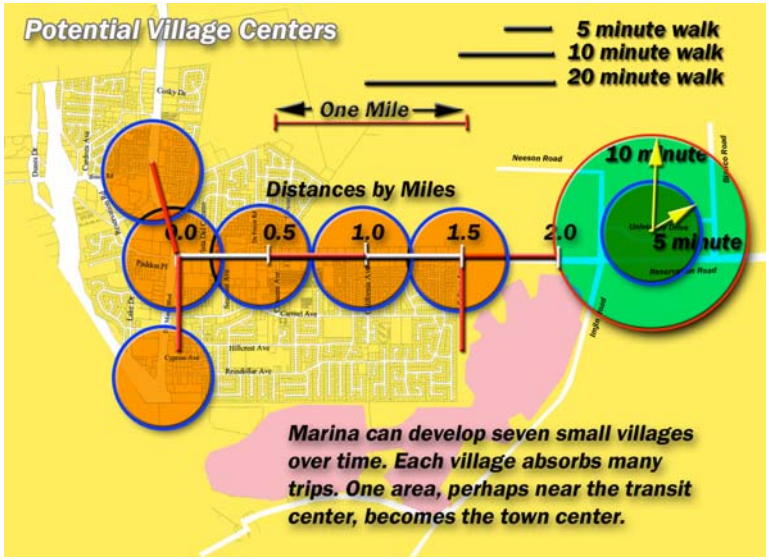
Chapter Five presents the final prioritized project list for improving walking and bicycling conditions in Marina. The prioritization criteria are primarily based on the proximity to land uses that encourage residents to walk or bike. These projects primarily represent retrofits to existing streets in the older parts of Marina. This chapter of specific recommendations for "old" Marina complements the previous four chapters that lay out general standards and policies for new development.

Prioritization Criteria and Methodology

The prioritization criteria developed for this project are based on land use, ease of construction, project need relative to other facilities, and the desires of the public. Land use is the biggest factor; walking and bicycling facilities are most needed near land uses that residents will choose to get to by walking or bicycling. The following prioritization criteria were used to develop the project ranking for this Study.

1. Proximity to Village Centers — 7 points
As recommended in previous chapters, Marina needs to develop "village centers" along its arterial streets. These centers will become major hubs of resident activity and should be easily accessible from nearby homes via walking or bicycling. The assigned point values for proximity to village centers is shown in the table below.

Distance From Project to Nearest Village Center	Points
Less than 1/4 mile	7 points
Between 1/4 mile and 1/2 mile	6 points
Between 1/2 mile and 3/4 mile	5 points
Between 3/4 mile and 1 mile	4 points
Between 1 mile and 1 1/4 miles	3 points
Between 1 1/4 miles and 1 1/2 miles	2 points
Between 1 1/2 miles and 1 3/4 miles	1 point
Greater than 1 3/4 miles	0 points



At left
Projects within 1/4 mile of these potential village centers receive the highest point value for the first rating criterion. A larger version of this image is available in chapter 3.

2. Proximity to Schools — 5 points
It is critical that students be able to easily walk to existing or planned schools. Busing children can be expensive and the unnecessary motor vehicle trips and school area traffic congestion reduce livability and endanger children who do choose to walk and bicycle to school. The assigned point values for proximity to schools is as shown in the table below.

Distance From Project to Nearest School	Points
Less than 1/4 mile	5 points
Between 1/4 mile and 1/2 mile	4 points
Between 1/2 mile and 3/4 mile	3 points
Between 3/4 mile and 1 mile	2 points
Between 1 mile and 1 1/4 miles	1 points
Greater than 1 1/4 miles	0 points

3. Ease of construction — 3 points
The cost of a project and the ease of constructing a project weigh heavily on how limited funding should be prioritized. Each project was rated on a scale of 0 to 3 for ease of construction. Simple projects like roadway restriping without the need for physical construction generally received the maximum of 3 points. If a restriping project includes a small amount of reconstruction work, this rating was dropped slightly. For construction projects like sidewalks and trails, varying values were assigned based on the amount of work necessary to build the project. For example, if a curb exists or if flat land is available adjacent to a road for a sidewalk, more points would be given than for a project that requires serious regrading or removal of trees or structures.

4. Need relative to other facilities — 3 points
Each project was rated on a scale of 0 to 3 for three factors related to need. The first factor is the continuity and connectivity of a project. For example, a long continuous bike lane on a collector street that connects several neighborhoods and crosses other collector streets would get a higher rating. Second, if the project is near an existing parallel facility of the same type, it would get a lower "need" score. For example, a situation where there is already a sidewalk on one side of the street, or where a nearby existing or planned bike lane provides a more important connection than the project being rated. The third factor is based on the need for this project relative to existing or future development. (e.g. a bike lane project that is really more needed once development extends a planned through-street would get a low score at present; in addition, it might be possible to have these projects funded by the development.)

5. Public input — 2 points
If a particular project was drawn on a map at a workshop or requested by residents at the public meetings or in other correspondence, then it receives 2 points. Other projects receive 0 points.

The total points possible for these prioritization criteria is 20 points. Several of the projects in the list are identified as "maintenance projects." These projects are not rated with the other projects as they should be completed as soon as possible.

Residents provide input regarding walking and bicycling in Marina

Construction Cost Estimates

A conceptual level cost estimate has been completed for each project identified in Table 3.1 and Table 3.2. These estimates are based on the approximate length of construction and striping necessary to build the project. These lengths were then multiplied by unit costs to come up with the total approximate construction costs. The unit costs used in this study were derived from actual construction costs from various places around the country. Detailed information about each unit cost is included in the next few paragraphs.

For bike lane and other longitudinal striping, unit costs were devised for each width of striping that might be used on all projects. Four-inch striping will be necessary for white edge lines between bike lanes and parked vehicles, white skip stripes for lane lines, and double yellow centerlines. Six-inch stripes will be needed to delineate bike lanes on collector streets as called for in Chapter 1000 of the California Highway Design Manual. Although not a California standard, for arterial streets, eight-inch stripes are recommended to delineate bike lanes. Finally, 12″ stripes will be needed to restripe a few crosswalks. In general, thermoplastic or other non-paint durable markings should be used to mark the bike lanes. Although this adds to the initial expense, it will reduce long-term maintenance costs. The costs for pavement markings are based on a unit cost per linear foot as follows.

Striping Item	Cost
4″ durable line	$ 2.00/LF
6″ durable line	$ 2.50/LF
8″ durable line	$ 3.00/LF
12″ durable line	$ 4.00/LF

For each bike lane, bike symbol markings and bike lane signs will be needed. Bike lane symbol markings are estimated to cost $2.50 each. Based on the California requirement to place a bike lane symbol at the beginning of each block, an estimated spacing of 500 feet between symbols was used, resulting in a unit cost of $0.50 per linear foot of bike lane. Bike lane signs are estimated to cost $50 each. Signs are not required every block, so an average spacing of 1000 feet was used, resulting in a unit cost of $0.05 per linear foot of bike lane.

In some situations, pavement striping will need to be removed in order to shift lanes to install bike lanes. The removal of a single line is estimated to cost $0.50 per linear foot.

In a few areas, minor widening is necessary to add bike lanes. This widening for bike lanes is estimated to cost $10.00 per linear foot. This cost is for a typical widening that does not require major grading or removal of structures and obstructions. An additional unit cost of $5.00 per linear foot was added if construction seemed especially difficult.

Sidewalk construction projects are estimated to cost $15.00 per linear foot assuming a 5-foot sidewalk width. As with bike lane construction, an additional unit cost of $5.00 per linear foot was added if construction seemed especially difficult and if the sidewalk needs to be wider than 5 feet.

Shared use trails are estimated to cost $40 per linear foot for a 10 foot wide trail without serious grading or obstruction removal. An additional unit cost of $10.00 per linear foot was added if construction seemed especially difficult.

Prioritized Project List

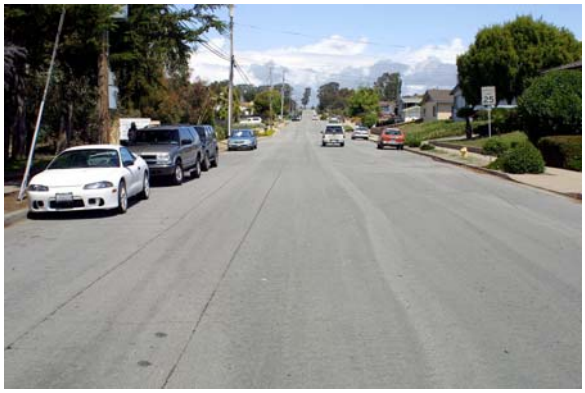
The lists shown in Tables 5.1 and 5.2 show all of the projects identified in Chapter 3 prioritized per the prioritization criteria shown above. This list also includes the approximate construction cost of each project.

Sample Project Images

The series of photos at right shows a typical collector street in Marina. The existing width of most collectors is 40 feet wide. This width can be restriped to include two 6-foot bike lanes, two 10-foot travel lanes and an 8-foot parking lane. Most of the collector streets have only minor demand for on-street parking, so eliminating parking on one side should not be a problem. The photos below (left) show DeForest Road restriped with the same cross section.

In general, centerlines should be left off of these roads to enhance the traffic calming effect of the restriping. However, per MUTCD guidelines, centerlines *shall* be striped if the average daily traffic (ADT) is greater than 6,000 vehicles per day (vpd), and centerlines *should* be striped if the ADT is greater than 4,000 vpd.

At bottom right, two images of Del Monte Boulevard show the potential for adding a bicycle lane on that major street.



DeForest Road – existing conditions

DeForest Road restriped with bike lanes

Reindollar Avenue – existing condition

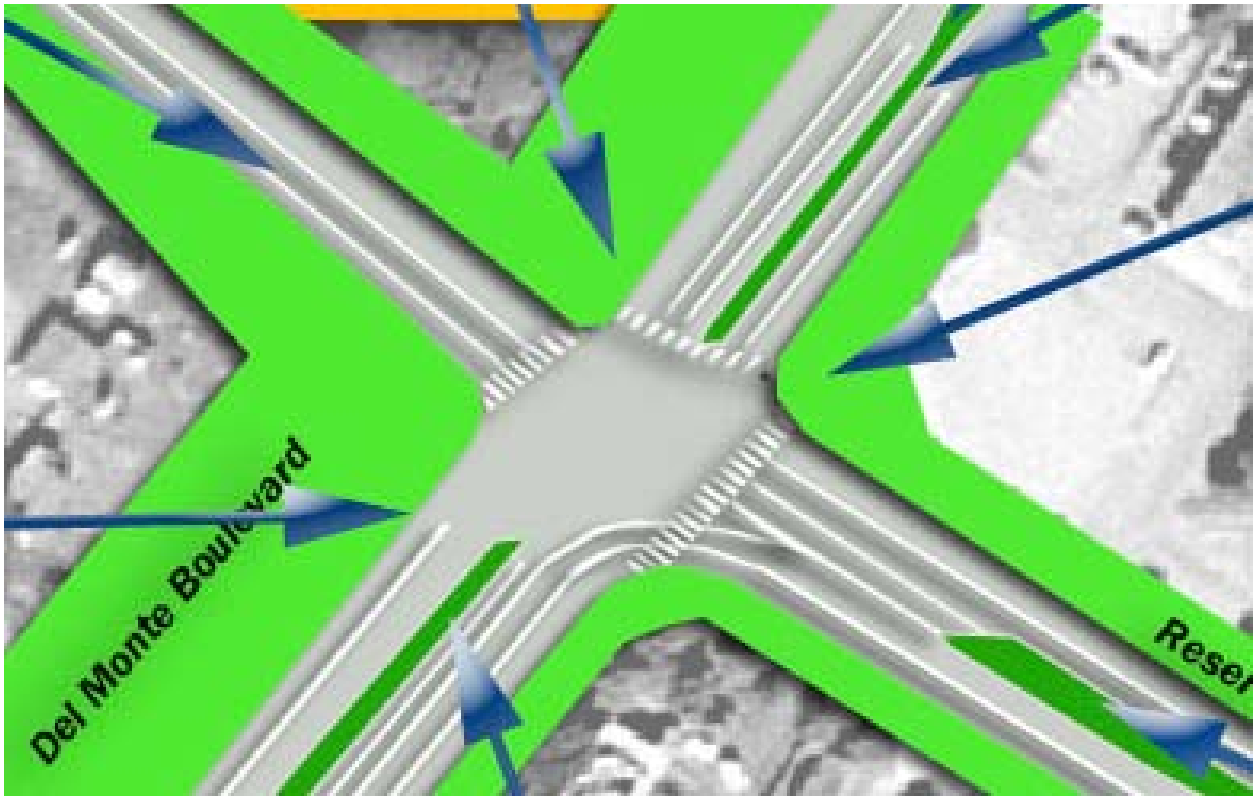
Reindollar Ave. - restriped to add bike lanes

Reindollar Ave. - Include centerline if warranted per the MUTCD

Del Monte Boulevard – existing conditions

Del Monte Boulevard with bike lanes

The images below show the intersection of Del Monte Boulevard and Reservation Road in its existing condition and with a proposed two-lane/one-lane roundabout.



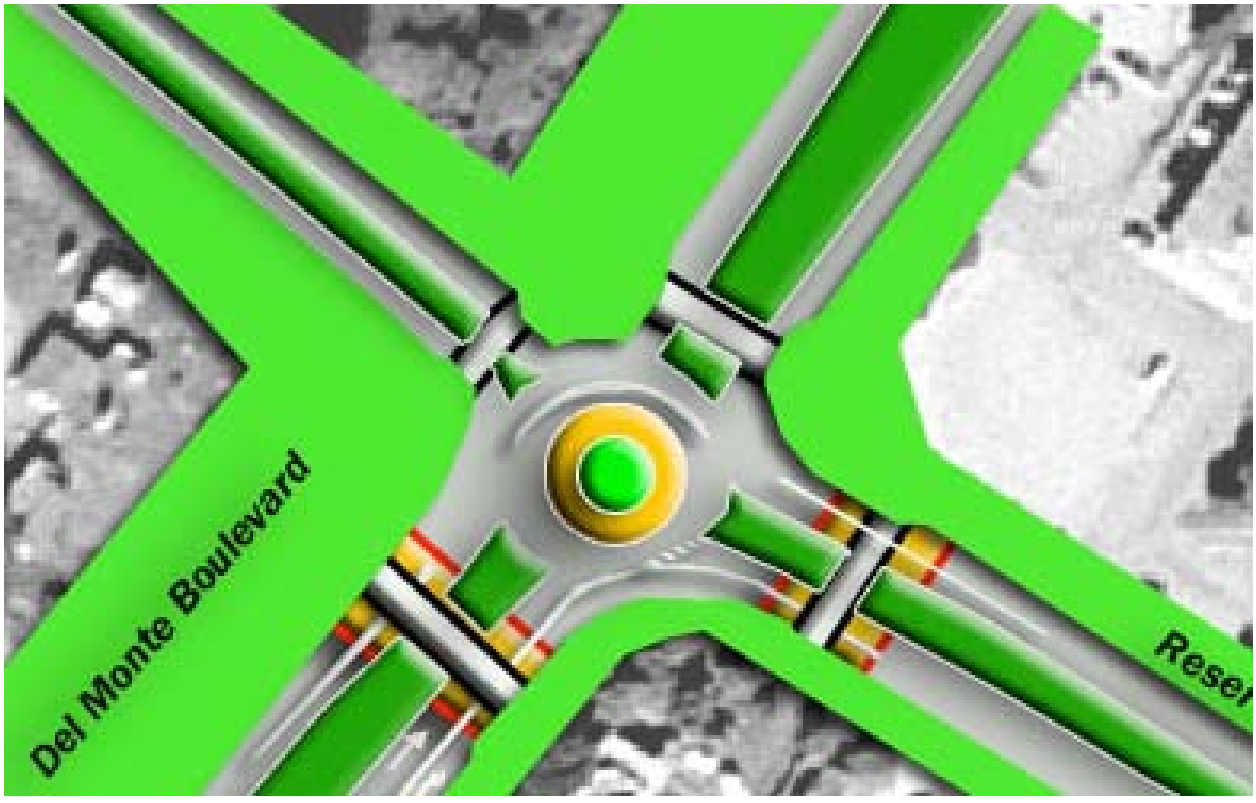


Table 5.1. Prioritized list of Bicycling Infrastructure Projects

Rank	Total Point Rating	Project Type	Project Location and Description	Length of Construc-tion (feet)	Length of striping (feet)	Total Cost
1	20	Signing	Remove stop signs at signalized trail intersections, replace with R9-5 sign (Bikes Use Ped Signal)			$300
2	20	Bike Lanes	California Ave. from Reservation Rd. to Carmel Ave.		1530	$19,278
3	19	Bike Lanes	Beach Rd. from Reservation Rd. to Del Monte Blvd	100	1430	$21,583
4	19	Bike Lanes	Reservation Rd. from Del Monte Blvd to Beach Rd.		3090	$21,939
5	18	Bike Lanes	Reservation Rd. from Del Monte Blvd to Salinas Ave.		7320	$99,552
6	18	Trail	Along south edge of "old" Marina from Del Monte Blvd. To California Ave.	5000		$200,000
7	18	Trail	Along (or near) south and east edge of old Marina from California Ave. to Reservation	5100		$255,000
8	17	Bike Lanes	Lake Dr. from Palm Ave. to Lake Court		1220	$7,442
9	17	Bike Lanes	Bayer Street from Reservation Rd. to Carmel Ave.		1500	$12,150
10	17	Bike Lanes	Reservation Rd. from Beach Rd. to Dunes Dr.		1800	$12,780
11	17	Bike Lanes	Bostick Ave. from Carmel Ave. to Reindollar Ave.		1240	$16,244
12	17	Bike Lanes	Lake Dr. from Palm Ave. to Reservation Rd.		2150	$17,415
13	17	Bike Lanes	Reindollar Ave. from Del Monte to Bostick	200	7100	$96,010
14	16	Bike Lanes	Seacrest Ave. from Carmel Ave. to Reservation Rd.		1510	$19,781
15	16	Bike Lanes	Beach Rd. from Del Monte Blvd to De Forest Rd.		2770	$20,775
16	16	Bike Lanes	De Forest Rd. from Reservation Rd. to Beach Rd.		2800	$22,680
17	16	Bike Lanes	Palm Ave. from Lake Dr. to Sunset Ave.	100	1870	$23,887
18	16	Trail	Del Monte Blvd - East side from Reindollar to southern edge of "old" Marina	800		$36,000
19	16	Bike Lanes	Carmel Ave. from Sunset Ave. to Salinas Ave.		6740	$88,294
20	15	Bike Lanes	California Ave. from Carmel south to the dead end		720	$10,152
21	15	Bike Lanes	Sunset Ave. from Carmel Ave. to Reindollar Ave		1500	$12,150
22	15	Bike Lanes	Crescent Ave. from Carmel Ave. to Reservation Rd.	450	1520	$29,702
23	15	Bike Lanes	Cardoza Ave. Reservation Rd. to Lakewood Dr.		2200	$32,120
24	15	Bike Lanes	Hillcrest Ave. from City Hall to Redwood Dr.		4440	$35,964
25	15	Trail	Through park near Reservation Rd. from Del Monte Blvd to Seaside Circle	2000		$120,000
26	14	Trail	Formalize the use trail from the corner of Paddon Place and Marina Dr. to trail along Del Monte Blvd.	100		$4,000
27	14	Bike Lanes	Lake Court from Lake Dr. to the dead end.		1000	$6,100
28	14	Bike Lanes	Crescent Ave. from Reservation Rd. to Costa Del Mar		2120	$29,892
29	12	Bike Lanes	Crescent Ave. from Costa Del Mar to the north end		480	$6,768
30	12	Bike Lanes	Del Monte Blvd from Beach Rd. to Marina Greens Dr.		2670	$24,297
31	11	Bike Lanes w/ Road Diet	Del Monte Blvd from Reservation Rd. to Beach Rd.		2330	$21,203
32	11	Bike Lanes	Del Monte Blvd from Reindollar Ave. to Reservation Rd.		3050	$36,905
33	10	Bike Lanes	Cardoza Ave. from Lakewood Dr. to the dead end		410	$5,781

Table 5.2. Prioritized list of Walking Infrastructure Projects

Rank	Total Point Rating	Project Type	Project Location and Description	Length of Construc-tion (feet)	Length of striping (feet)	Total Cost
1	20	Maintenance	Realign programmed signal heads on west approach at Reservation and DeForest - currently cannot be seen adequately by all lanes of traffic.			N/A
2	20	Maintenance	Repair broken pushbutton on the SE corner of Reservation Rd. and DeForest Rd.			N/A
3	20	Maintenance	Repair broken pushbutton on the SW corner of Del Monte and Reservation			N/A
4	20	Maintenance	Repair broken pushbuttons on the NE and NW corners of Reservation and Crescent			N/A
5	18	Crosswalks	Restripe 4 bent crosswalks: N side of Del Monte @ Palm; N and E sides of Del Monte @ Reservation; S side of Reservation and Crescent		800	$3,600
6	18	Signal Timing	For pedestrian phases concurrent with major street vehicle movements, put ped signals on recall to walk			N/A
7	18	Signal Timing	Re-time all pedestrian signals for a 4 ft/s walking speed using the full crosswalk length			N/A
8	16	Sidewalks	Carmel Ave. - fill small gap on north side between Crescent and Vaughan	100		$1,500
9	16	Sidewalks	Beach Rd. - fill gap on south side at Michael Dr.	300		$6,000
10	16	Sidewalks	Paddon Place - fill gaps on south side between Lake Dr. and Marina Dr.	400		$8,000
11	16	Sidewalks	Crescent Ave. - fill gaps on west side from Carmel Ave. to Reservation Rd.	450		$9,000
12	16	Sidewalks	Carmel Ave. - south side from Del Monte Blvd to Sunset Ave.	860		$12,900
13	16	Sidewalks	California Ave. - west side from Reservation Rd. to Carmel Ave.	1530		$22,950
14	16	Sidewalks	Del Monte Blvd - fill gap on east side between Reservation Rd. and Beach Rd.	1750		$26,250
15	16	Sidewalks	Reservation Rd. - fill gaps on north side from Ocean Terrace to Lynscott	2200		$33,000
16	16	Sidewalks	Crescent Ave. - east side from Carmel to Reservation	1520		$38,000
17	15	Restriping	Remove one of two right turn lanes from Del Monte Blvd to Reservation Rd.		800	$6,400
18	15	Sidewalks	Del Monte Blvd - fill gap on east side between Palm Ave. and Mortimer Lane	450		$6,750
19	15	Sidewalks	Beach Rd. - build sidewalks on both sides across RailRd. tracks at Del Monte Blvd	200		$8,000
20	15	Sidewalks	Carmel Ave. - fill gaps on north side from Seacrest to Crescent	450		$9,000
21	15	Sidewalks	Carmel Ave. - fill gaps on south side from Seacrest to Crescent	600		$12,000
22	15	Sidewalks	Reservation Rd. - fill gaps on Southwest side from Del Monte to Lake Dr.	1000		$20,000
23	15	Sidewalks	Reservation Rd. - fill gaps on west side from Lake Dr. to Beach Dr.	1350		$20,250

Rank	Total Point Rating	Project Type	Project Location and Description	Length of Construc-tion (feet)	Length of striping (feet)	Total Cost
24	14	Sidewalks	Lake Dr. - north side from Hilo Dr. to Reservation Rd.	110		$1,650
25	14	Sidewalks	California Ave. - east side from Tamara Court to the dead end	120		$2,400
26	14	Sidewalks	Marina Dr. - west side from Legion Way to Healy Ave.	320		$4,800
27	14	Sidewalks	Carmel Ave. - gaps on north side from Del Monte Blvd to just east of Sunset	480		$9,600
28	14	Sidewalks	Beach Rd. and Reservation Rd. - fill gap on north side between Cardoza and Marina Dr.	800		$12,000
29	14	Sidewalks	Palm Ave. - north side from Elm to Sunset	600		$12,000
30	14	Sidewalks	Palm Ave. - fill gaps (both sides) from Lake Dr. to Del Monte Blvd	540		$13,500
31	14	Sidewalks	Salinas Ave. - fill gaps on west side from Carmel Ave. to Reservation Rd.	680		$13,600
32	14	Sidewalks	Marina Dr. - fill gaps on west side between Palm Ave. and Paddon Place	700		$17,500
33	13	Sidewalks	Seacrest Ave. - fill gap on east side just north of Carmel Ave.	180		$2,700
34	13	Sidewalks	Reindollar Ave. - gap on south side between Del Monte Blvd and Sunset Ave.	200		$3,000
35	13	Sidewalks	Reservation Rd. - fill gap on south side from Cardoza to Beach Rd.	220		$4,400
36	13	Sidewalks	Abdy Way - fill gap on southeast side just south of Healy Ave.	300		$4,500
37	13	Sidewalks	Lake Dr. - fill gaps on east side from Messinger Dr. to Hilo Ave.	540		$8,100
38	13	Sidewalks	Redwood Dr. - west side from Hillcrest to Carmel	550		$8,250
39	13	Sidewalks	Reindollar Ave. - fill gaps on both sides from Vera Lane to Vaughan Ave.	700		$14,000
40	13	Sidewalks	Healy Ave. - south side from Abdy Way to Marina Dr.	770		$15,400
41	12	Sidewalks	Carmel Ave. - north side from Bayer St. to Salinas Ave.	310		$4,650
42	12	Sidewalks	Reindollar Ave. - fill gap on north side between California Ave. and Eddy Circle	450		$9,000
43	12	Sidewalks	Reindollar Ave. - gap on north side west of Redwood; Redwood Dr. - gap on west side north of Reindollar	650		$9,750
44	11	Sidewalks	Abdy Way - fill gap on west side just north of Healy Ave.	200		$3,000
45	11	Sidewalks	Cardoza Ave. - east side from Abdy Way to Ora Court	200		$4,000
46	11	Sidewalks	Healy Ave. - north side from Abdy Way to Paul Davis Dr.	530		$10,600
47	11	Sidewalks	Abdy Way - fill gap on northwest side just east of Cardoza	650		$13,000