

# Appendix E

## IMPLEMENTATION PLAN

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# Appendix E

## IMPLEMENTATION PLAN

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**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 1** Bay Trail - Northern Alameda County

**Corridor 5 - Bay Trail**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	35.1		\$91,208
Provide 10 foot bike path	mile	\$500,000	2.3		\$1,495,000
Improve existing path	mile	\$100,000	0.5		\$58,500
Bike lanes-retain existing striping	mile	\$18,440	1.2		\$28,766
Bike lanes-restripe lanes	mile	\$42,200	4.3		\$238,641
Bike route on residential or local street	mile	\$100,000	3.0		\$387,400
Improve difficult interchange	each	\$300,000		1	\$390,000
Improve railroad tracks	each	\$30,000		3	\$117,000
<b>Totals</b>			<b>35.1</b>		<b>\$2,806,515</b>

**Project 2** Bay Trail - Southern Alameda County

**Corridor 5 - Bay Trail**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	17.1		\$44,460
Provide 10 foot bike path	mile	\$500,000	5.8		\$3,770,000
Arterial improvements	mile	\$200,000	4.5		\$1,170,000
Bike route on residential or local street	mile	\$100,000	3.1		\$403,000
<b>Totals</b>			<b>20.4</b>		<b>\$5,387,460</b>

**Project 3** Fruitvale-Broadway

**Corridor 10 - Fruitvale/Redwood Road Oakland**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	7.9		\$20,549
Bike lanes-retain existing striping	mile	\$18,440	0.0		\$863
Bike lanes-restripe lanes	mile	\$42,200	5.0		\$276,648
Bike lanes-widen roadway	mile	\$197,960	0.1		\$27,782
Arterial improvements	mile	\$200,000	3.1		\$798,515
2 foot wide shoulder	mile	\$116,160	0.3		\$40,755
Bike route on residential or local street	mile	\$100,000	0.9		\$121,629
Improve existing bike/ped bridge/over/undercrossing	each	\$1,000,000		1	\$1,300,000
Add traffic signal	each	\$155,000		2	\$403,000
Improve railroad tracks	each	\$30,000		2	\$78,000

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 3** Fruitvale-Broadway

**Corridor 10 - Fruitvale/Redwood Road Oakland**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
<b>Totals</b>			<b>7.9</b>		<b>\$3,067,741</b>

**Project 4** Alameda-Doolittle-Lewelling

**Corridor 15 - Alameda/Doolittle**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	15.2		\$39,522
Provide 10 foot bike path	mile	\$500,000	0.5		\$325,000
Bike lanes-retain existing striping	mile	\$18,440	1.8		\$43,131
Bike lanes-restripe lanes	mile	\$42,200	3.3		\$180,425
Bike lanes-widen roadway	mile	\$197,960	1.6		\$416,728
Bike lanes-include bike lane with new road	mile	\$18,440	1.2		\$29,239
Wide curb lanes-restripe lanes	mile	\$47,520	0.5		\$33,345
Arterial improvements	mile	\$200,000	6.9		\$1,802,494
Bike route on residential or local street	mile	\$100,000	0.1		\$11,695
Add traffic signal	each	\$155,000		1	\$201,500
<b>Totals</b>			<b>15.2</b>		<b>\$3,083,080</b>

**Project 5** 73rd Avenue-Hegenberger

**Corridor 20 - 73rd Ave/Hegenberger**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	5.2		\$13,567
Provide 10 foot bike path	mile	\$500,000	0.8		\$520,000
Bike lanes-restripe lanes	mile	\$42,200	3.4		\$187,542
Bike lanes-widen roadway	mile	\$197,960	0.9		\$231,516
Arterial improvements	mile	\$200,000	4.3		\$1,122,727
Improve existing bike/ped bridge/over/undercrossing	each	\$1,000,000		1	\$1,300,000
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>5.2</b>		<b>\$3,765,353</b>

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 6** Berkeley-Emeryville I-880 corridor

**Corridor 25 - Highway 880 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	8.1		\$21,182
Provide 10 foot bike path	mile	\$500,000	0.7		\$467,803
Bike lanes-restripe lanes	mile	\$42,200	1.7		\$91,589
Bike lanes-widen roadway	mile	\$197,960	0.5		\$128,674
Bike route on residential or local street	mile	\$100,000	4.1		\$537,973
Add traffic signal	each	\$155,000		5	\$1,007,500
Improve railroad tracks	each	\$30,000		2	\$78,000
<b>Totals</b>			<b>8.1</b>		<b>\$2,332,721</b>

**Project 7** Oakland I-880 Corridor

**Corridor 25 - Highway 880 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	12.1		\$31,508
Bike lanes-restripe lanes	mile	\$42,200	9.0		\$494,467
Bike lanes-widen roadway	mile	\$197,960	0.4		\$115,758
Bike lanes-remove lane	mile	\$75,000	6.5		\$629,780
Wide curb lanes-restripe lanes	mile	\$47,520	0.4		\$22,230
Arterial improvements	mile	\$200,000	2.6		\$682,992
Add traffic signal	each	\$155,000		1	\$201,500
<b>Totals</b>			<b>12.1</b>		<b>\$2,178,235</b>

**Project 8** BART Trail/San Leandro St

**Corridor 25 - Highway 880 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	12.9		\$33,540
Provide 10 foot bike path	mile	\$500,000	6.9		\$4,485,000
Bike lanes-restripe lanes	mile	\$42,200	6.0		\$329,160
Add traffic signal	each	\$155,000		4	\$806,000
<b>Totals</b>			<b>12.9</b>		<b>\$5,653,700</b>

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 9**

Southern Alameda County I-880 Corridor

**Corridor 25 - Highway 880 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	22.7		\$59,060
Bike lanes-restripe lanes	mile	\$42,200	8.8		\$482,768
Wide curb lanes-restripe lanes	mile	\$47,520	3.9		\$240,926
Arterial improvements	mile	\$200,000	17.9		\$4,657,989
Improve difficult interchange	each	\$300,000		3	\$1,170,000
<b>Totals</b>			<b>22.7</b>		<b>\$6,610,743</b>

**Project 10**

Davis -Estudillo-Crow Canyon Road

**Corridor 30 - Estudillo/Crow Canyon Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	16.6		\$43,264
Provide 10 foot bike path	mile	\$500,000	0.5		\$325,000
Bike lanes-retain existing striping	mile	\$18,440	0.5		\$12,945
Bike lanes-restripe lanes	mile	\$42,200	3.1		\$170,615
Bike lanes-widen roadway	mile	\$197,960	0.6		\$159,556
Wide curb lanes-restripe lanes	mile	\$47,520	0.3		\$18,533
Arterial improvements	mile	\$200,000	9.2		\$2,402,400
4 foot wide shoulder	mile	\$179,520	8.0		\$1,869,342
Bike route on residential or local street	mile	\$100,000	1.6		\$209,300
Improve existing bike/ped bridge/over/undercrossing	each	\$1,000,000		1	\$1,300,000
Improve difficult interchange	each	\$300,000		2	\$780,000
Replace drainage grates	each	\$2,000		1	\$2,600
<b>Totals</b>			<b>16.6</b>		<b>\$7,293,554</b>

**Project 11**

Northern Alameda County-I-580-Foothills-

**Corridor 35 - Highway 580/Foothills**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	16.1		\$41,909
Improve existing path	mile	\$100,000	2.0		\$261,970
Bike lanes-restripe lanes	mile	\$42,200	3.3		\$183,498
Bike lanes-remove lane	mile	\$75,000	3.6		\$349,523
Wide curb lanes-restripe lanes	mile	\$47,520	1.0		\$60,540

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 11** Northern Alameda County-I-580-Foothills- **Corridor 35 - Highway 580/Foothills**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Arterial improvements	mile	\$200,000	3.7		\$958,996
Bike route on residential or local street	mile	\$100,000	7.6		\$982,215
Improve difficult interchange	each	\$300,000		2	\$780,000
Add traffic signal	each	\$155,000		5	\$1,007,500
<b>Totals</b>			<b>16.1</b>		<b>\$4,626,152</b>

**Project 12** MacArthur Blvd I-580-Foothills- **Corridor 35 - Highway 580/Foothills**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	4.1		\$10,759
Bike lanes-restripe lanes	mile	\$42,200	4.1		\$227,025
Bike lanes-remove lane	mile	\$75,000	3.1		\$301,733
Arterial improvements	mile	\$200,000	4.1		\$1,075,947
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>4.1</b>		<b>\$2,005,464</b>

**Project 13** Southern Alameda County-I-580-Foothills- **Corridor 35 - Highway 580/Foothills**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	32.5		\$84,545
Bike lanes-retain existing striping	mile	\$18,440	4.6		\$110,271
Bike lanes-restripe lanes	mile	\$42,200	6.1		\$334,251
Bike lanes-widen roadway	mile	\$197,960	1.5		\$384,316
Wide curb lanes-restripe lanes	mile	\$47,520	3.0		\$185,328
Arterial improvements	mile	\$200,000	19.9		\$5,169,667
Improve difficult interchange	each	\$300,000		2	\$780,000
<b>Totals</b>			<b>32.5</b>		<b>\$7,048,378</b>

**Project 14** Highway 92 Corridor **Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	7.7		\$20,150

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 14** Highway 92 Corridor

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Bike lanes-retain existing striping	mile	\$18,440	0.2		\$4,794
Bike lanes-restripe lanes	mile	\$42,200	3.4		\$186,524
Bike lanes-widen roadway	mile	\$197,960	0.1		\$25,735
Wide curb lanes-restripe lanes	mile	\$47,520	0.9		\$52,510
Wide curb lanes-restripe lanes	mile	\$95,040	0.4		\$49,421
Arterial improvements	mile	\$200,000	3.8		\$988,000
2 foot wide shoulder	mile	\$116,160	0.1		\$15,101
Bike route on residential or local street	mile	\$100,000	0.1		\$13,000
Improve difficult interchange	each	\$300,000		2	\$780,000
<b>Totals</b>			<b>7.7</b>		<b>\$2,135,234</b>

**Project 15** E. Castro Valley Blvd- Dublin Canyon

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	11.7		\$30,290
Bike lanes-retain existing striping	mile	\$18,440	2.6		\$62,327
Bike lanes-restripe lanes	mile	\$42,200	2.6		\$145,379
Bike lanes-widen roadway	mile	\$197,960	2.1		\$540,431
Arterial improvements	mile	\$200,000	6.5		\$1,677,000
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>11.7</b>		<b>\$2,845,427</b>

**Project 16** Dublin Blvd Extension

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	2.2		\$5,720
Provide 10 foot bike path	mile	\$500,000	2.2		\$1,430,000
<b>Totals</b>			<b>2.2</b>		<b>\$1,435,720</b>



**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 17** Collier Canyon-N. Canyons Parkway

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	1.8		\$4,680
Bike lanes-retain existing striping	mile	\$18,440	0.1		\$2,397
Bike lanes-restripe lanes	mile	\$42,200	0.6		\$32,916
<b>Totals</b>			<b>1.8</b>		<b>\$39,993</b>

**Project 18** New Trail in North Livermore

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	3.1		\$8,060
Provide 10 foot bike path	mile	\$500,000	3.1		\$2,015,000
<b>Totals</b>			<b>3.1</b>		<b>\$2,023,060</b>

**Project 19** Northfront/Altamont Pass Road

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	13.9		\$36,140
Improve existing path	mile	\$100,000	0.5		\$65,000
Bike lanes-restripe lanes	mile	\$42,200	2.1		\$115,206
4 foot wide shoulder	mile	\$179,520	10.0		\$2,333,760
<b>Totals</b>			<b>13.9</b>		<b>\$2,550,106</b>

**Project 20** Las Positas Creek Trail

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	5.9		\$15,340
Provide 10 foot bike path	mile	\$500,000	3.8		\$2,470,000
Improve existing path	mile	\$100,000	2.0		\$260,000
Bike lanes-restripe lanes	mile	\$42,200	0.1		\$5,486
Add traffic signal	each	\$155,000		1	\$201,500
<b>Totals</b>			<b>5.9</b>		<b>\$2,952,326</b>

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 21** Arroyo del valle Trail

**Corridor 60 - Stanley Ave/East Ave**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	2.4		\$6,240
Provide 10 foot bike path	mile	\$500,000	2.4		\$1,560,000
<b>Totals</b>			<b>2.4</b>		<b>\$1,566,240</b>

**Project 22** Highway 13 Corridor

**Corridor 45 - Highway 13 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	16.5		\$42,851
Bike lanes-retain existing striping	mile	\$18,440	0.5		\$12,849
Bike lanes-restripe lanes	mile	\$42,200	5.3		\$292,036
Bike lanes-widen roadway	mile	\$197,960	1.0		\$245,407
Bike lanes-remove lane	mile	\$75,000	0.8		\$78,942
Wide curb lanes-restripe lanes	mile	\$47,520	1.1		\$66,690
4 foot wide shoulder	mile	\$179,520	2.6		\$606,778
2 foot wide shoulder	mile	\$116,160	1.1		\$163,020
Bike route on residential or local street	mile	\$100,000	2.1		\$273,000
Improve difficult interchange	each	\$300,000		4	\$1,560,000
Add traffic signal	each	\$155,000		1	\$201,500
<b>Totals</b>			<b>16.5</b>		<b>\$3,543,072</b>

**Project 23** Stoneridge Blvd

**Corridor 50 - Stoneridge/Las Positas Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	4.5		\$11,700
Bike lanes-restripe lanes	mile	\$42,200	2.1		\$115,206
Wide curb lanes-restripe lanes	mile	\$47,520	0.6		\$37,066
Arterial improvements	mile	\$200,000	4.5		\$1,170,000
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>4.5</b>		<b>\$1,723,972</b>

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 24** Stoneridge Blvd-Jack London Connection

**Corridor 50 - Stoneridge/Las Positas Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	6.8		\$17,680
Provide 10 foot bike path	mile	\$500,000	5.5		\$3,575,000
Bike lanes-widen roadway	mile	\$197,960	1.3		\$334,552
Arterial improvements	mile	\$200,000	0.2		\$52,000
<b>Totals</b>			<b>6.8</b>		<b>\$3,979,232</b>

**Project 25** Jack London Blvd-Portola

**Corridor 50 - Stoneridge/Las Positas Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	3.3		\$8,450
Bike lanes-restripe lanes	mile	\$42,200	0.7		\$38,402
Arterial improvements	mile	\$200,000	1.4		\$364,000
<b>Totals</b>			<b>3.3</b>		<b>\$410,852</b>

**Project 26** Skyline-Palomares

**Corridor 55 - Skyline Blvd/Palomares Ave**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	40.7		\$105,925
Bike lanes-restripe lanes	mile	\$42,200	0.2		\$12,069
Wide curb lanes-restripe lanes	mile	\$47,520	3.1		\$188,955
Arterial improvements	mile	\$200,000	3.3		\$861,821
4 foot wide shoulder	mile	\$179,520	33.4		\$7,789,720
Bike route on residential or local street	mile	\$100,000	2.5		\$325,000
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>40.7</b>		<b>\$9,673,490</b>

**Project 27** Stanley- East Avenue

**Corridor 60 - Stanley Ave/East Ave**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	14.5		\$37,830
Improve existing path	mile	\$100,000	4.9		\$637,000
Bike lanes-retain existing striping	mile	\$18,440	1.0		\$23,972

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 27** Stanley- East Avenue

**Corridor 60 - Stanley Ave/East Ave**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Bike lanes-restripe lanes	mile	\$42,200	2.6		\$145,379
Bike lanes-widen roadway	mile	\$197,960	0.7		\$180,144
Arterial improvements	mile	\$200,000	1.0		\$260,000
Bike route on residential or local street	mile	\$100,000	0.2		\$26,000
Improve existing bike/ped bridge/over/undercrossing	each	\$1,000,000		1	\$1,300,000
Improve difficult interchange	each	\$300,000		2	\$780,000
Add traffic signal	each	\$155,000		2	\$403,000
Replace drainage grates	each	\$2,000		1	\$2,600
<b>Totals</b>			<b>14.5</b>		<b>\$3,795,925</b>

**Project 28** San Ramon-Foothill Rd-I-680 Corridor

**Corridor 65 - Highway 680 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	19.5		\$50,700
Provide 10 foot bike path	mile	\$500,000	4.6		\$2,990,000
Bike lanes-restripe lanes	mile	\$42,200	3.9		\$213,954
Bike lanes-widen roadway	mile	\$197,960	1.6		\$411,757
Arterial improvements	mile	\$200,000	2.6		\$676,000
4 foot wide shoulder	mile	\$179,520	4.3		\$1,003,517
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>19.5</b>		<b>\$5,735,928</b>

**Project 29** Iron Horse to Shadow Cliffs Trail

**Corridor 65 - Highway 680 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	7.0		\$18,200
Provide 10 foot bike path	mile	\$500,000	7.0		\$4,550,000
<b>Totals</b>			<b>7.0</b>		<b>\$4,568,200</b>

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 30** Niles Canyon to Shadow Cliffs Trail

**Corridor 65 - Highway 680 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	5.0		\$13,000
Provide 10 foot bike path	mile	\$500,000	5.0		\$3,250,000
<b>Totals</b>			<b>5.0</b>		<b>\$3,263,000</b>

**Project 31** Vineyard-Concannon

**Corridor 70 - Vineyard Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	17.9		\$46,670
Provide 10 foot bike path	mile	\$500,000	10.0		\$6,500,000
Bike lanes-retain existing striping	mile	\$18,440	0.6		\$14,383
Bike lanes-restripe lanes	mile	\$42,200	1.7		\$93,262
Bike lanes-widen roadway	mile	\$197,960	1.3		\$334,552
<b>Totals</b>			<b>17.9</b>		<b>\$6,988,868</b>

**Project 32** Vineyard Avenue Trail

**Corridor 70 - Vineyard Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	7.0		\$18,200
Provide 10 foot bike path	mile	\$500,000	7.0		\$4,550,000
<b>Totals</b>			<b>7.0</b>		<b>\$4,568,200</b>

**Project 33** Dougherty - Hopyard Roads

**Corridor 75 - Dougherty Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	6.0		\$15,730
Bike lanes-restripe lanes	mile	\$42,200	2.9		\$159,094
Bike lanes-widen roadway	mile	\$197,960	1.0		\$257,348
Wide curb lanes-restripe lanes	mile	\$47,520	0.6		\$37,066
Arterial improvements	mile	\$200,000	3.3		\$845,000
Improve existing bike/ped bridge/over/undercrossing	each	\$1,000,000		1	\$1,300,000
Improve difficult interchange	each	\$300,000		1	\$390,000
Replace drainage grates	each	\$2,000		1	\$2,600

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 33** Dougherty - Hopyard Roads

**Corridor 75 - Dougherty Rd**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
<b>Totals</b>			<b>6.0</b>		<b>\$3,006,838</b>

**Project 34** Iron Horse Trail

**Corridor 75 - Dougherty Rd**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	8.0		\$20,800
Provide 10 foot bike path	mile	\$500,000	8.0		\$5,200,000
<b>Totals</b>			<b>8.0</b>		<b>\$5,220,800</b>

**Project 35** Iron Horse Trail

**Corridor 75 - Dougherty Rd**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	15.0		\$39,000
Provide 10 foot bike path	mile	\$500,000	15.0		\$9,750,000
<b>Totals</b>			<b>15.0</b>		<b>\$9,789,000</b>

**Project 36** Avarado-Niles-Niles Canyon

**Corridor 80 - State Route 84/Niles Canyon**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	24.4		\$63,310
Bike lanes-retain existing striping	mile	\$18,440	1.1		\$27,568
Bike lanes-restripe lanes	mile	\$42,200	1.2		\$65,832
Bike lanes-widen roadway	mile	\$197,960	0.3		\$77,204
Wide curb lanes-restripe lanes	mile	\$47,520	0.2		\$12,355
Arterial improvements	mile	\$200,000	9.4		\$2,431,000
4 foot wide shoulder	mile	\$179,520	8.0		\$1,867,008
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>24.4</b>		<b>\$4,934,277</b>

**Project 37** Vallecitos Rd

**Corridor 80 - State Route 84/Niles Canyon**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	15.1		\$39,364

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 37** Vallecitos Rd

**Corridor 80 - State Route 84/Niles Canyon**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Provide 10 foot bike path	mile	\$500,000	1.5		\$975,000
Bike lanes-retain existing striping	mile	\$18,440	1.0		\$23,972
4 foot wide shoulder	mile	\$179,520	9.4		\$2,203,069
Replace drainage grates	each	\$2,000		2	\$5,200
<b>Totals</b>			<b>15.1</b>		<b>\$3,246,605</b>

**Project 38** Tassajara Rd

**Corridor 85 - Tassajara Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	8.3		\$21,450
Bike lanes-retain existing striping	mile	\$18,440	1.3		\$31,164
Bike lanes-restripe lanes	mile	\$42,200	2.9		\$161,837
Bike lanes-widen roadway	mile	\$197,960	0.5		\$128,674
Arterial improvements	mile	\$200,000	3.0		\$767,000
4 foot wide shoulder	mile	\$179,520	1.8		\$420,077
Bike route on residential or local street	mile	\$100,000	0.7		\$91,000
Improve difficult interchange	each	\$300,000		2	\$780,000
Improve railroad tracks	each	\$30,000		1	\$39,000
<b>Totals</b>			<b>8.2</b>		<b>\$2,440,201</b>

**Project 39** Tassajara Creek Trail

**Corridor 85 - Tassajara Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	2.0		\$5,200
Provide 10 foot bike path	mile	\$500,000	2.0		\$1,300,000
<b>Totals</b>			<b>2.0</b>		<b>\$1,305,200</b>

**Project 40** Vasco Road

**Corridor 95 - Vasco Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	11.2		\$29,250
Bike lanes-retain existing striping	mile	\$18,440	8.3		\$198,968

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 40** Vasco Road

**Corridor 95 - Vasco Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Bike lanes-restripe lanes	mile	\$42,200	0.1		\$5,486
Arterial improvements	mile	\$200,000	2.0		\$520,000
Improve difficult interchange	each	\$300,000		1	\$390,000
<b>Totals</b>			<b>11.2</b>		<b>\$1,143,704</b>

**Project 41** Damon Slough Bridge

**Corridor 5 - Bay Trail**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	0.1		\$156
New bike/ped bridge	each	\$1,000,000	1.0		\$1,300,000
<b>Totals</b>			<b>0.1</b>		<b>\$1,300,156</b>

**Project 42** San Leandro Slough Bridge

**Corridor 5 - Bay Trail**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	0.1		\$156
New bike/ped bridge	each	\$1,000,000	1.0		\$1,300,000
<b>Totals</b>			<b>0.1</b>		<b>\$1,300,156</b>

**Project 43** Cerrito Creek Bridge

**Corridor 25 - Highway 880 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	0.1		\$156
New bike/ped bridge	each	\$1,000,000	1.0		\$1,300,000
<b>Totals</b>			<b>0.1</b>		<b>\$1,300,156</b>

**Project 44** 42nd Avenue Bridge

**Corridor 25 - Highway 880 Corridor**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	0.1		\$156
Improve existing bike/ped bridge/over/undercrossing	each	\$1,000,000		1	\$1,300,000
<b>Totals</b>			<b>0.1</b>		<b>\$1,300,156</b>



**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 45** Hegenberger Undercrossing **Corridor 25 - Highway 880 Corridor**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	0.1		\$156
Improve existing bike/ped bridge/over/undercrossing	each	\$1,000,000		1	\$1,300,000
<b>Totals</b>			<b>0.1</b>		<b>\$1,300,156</b>

**Project 46** Emeryville Ped/bike Overcrossing **Corridor 45 - Highway 13 Corridor**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	0.3		\$780
New overpass	each	\$5,000,000	1.0		\$6,500,000
<b>Totals</b>			<b>0.3</b>		<b>\$6,500,780</b>

**Project 47** Highway 24 Ped/bike Overcrossing **Corridor 45 - Highway 13 Corridor**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	0.3		\$780
New overpass	each	\$5,000,000	1.0		\$6,500,000
<b>Totals</b>			<b>0.3</b>		<b>\$6,500,780</b>

**Project 48** Bridge over Altamont Creek **Corridor 40 - Highway 92/Dublin Blvd**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	0.1		\$260
New bike/ped bridge	each	\$1,000,000	1.0		\$1,300,000
<b>Totals</b>			<b>0.1</b>		<b>\$1,300,260</b>

**Project 49** I-580 Undercrossing **Corridor 40 - Highway 92/Dublin Blvd**

Improvement Type	Unit	Unit Cost	Total Length	Total Units	Total Cost
Countywide route signage	mile	\$2,000	0.1		\$260
New underpass	each	\$2,000,000	1.0		\$2,600,000
<b>Totals</b>			<b>0.1</b>		<b>\$2,600,260</b>

**Appendix E-1  
COST BREAKDOWN BY PROJECT**

**Project 50** Livermore Avenue Undercrossing

**Corridor 40 - Highway 92/Dublin Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	0.2		\$520
New underpass	each	\$2,000,000	1.0		\$2,600,000
<b>Totals</b>			<b>0.2</b>		<b>\$2,600,520</b>

**Project 51** Oakland-Alameda Connection

**Corridor 15 - Alameda/Doolittle**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	0.3		\$650
New overpass	each	\$5,000,000	1.0		\$6,500,000
<b>Totals</b>			<b>0.3</b>		<b>\$6,500,650</b>

**Project 52** Arroyo Mocho Trail

**Corridor 50 - Stoneridge/Las Positas Blvd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	7.0		\$18,200
Provide 10 foot bike path	mile	\$500,000	7.0		\$4,550,000
<b>Totals</b>			<b>7.0</b>		<b>\$4,568,200</b>

**Project 53** Brushy Peak to Del Valle Trail

**Corridor 95 - Vasco Rd**

<b>Improvement Type</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total Length</b>	<b>Total Units</b>	<b>Total Cost</b>
Countywide route signage	mile	\$2,000	7.0		\$18,200
Provide 10 foot bike path	mile	\$500,000	7.0		\$4,550,000
<b>Totals</b>			<b>7.0</b>		<b>\$4,568,200</b>

**APPENDIX E-2  
SUMMARY OF COST ESTIMATES**

<b>Improvement (both sides of road)</b>	<b>Unit</b>		
<b>Bike lanes</b> (striping, pavement markings and signs, no other improvements needed)	<b>mile</b>	\$17,680	
<b>Bike routes</b> - route and directional signs only	<b>mile</b>	\$2,200	
<b>Bike routes</b> -signs and pavement markings	<b>mile</b>	\$2,080	
<b>Bicycle Boulevard</b>	<b>mile</b>	\$100,000	\$10,000
<b>Class 2.5</b>	<b>mile</b>	\$102,080	\$2,400
<b>Remove and restripe</b> one lane line- 4" thermoplastic (not both sides of road)	<b>mile</b>	\$23,760	
<b>Convert 4-lane road to three lanes (twtl)</b>	<b>mile</b>	\$75,000	
<b>Standard pavement resurfacing</b>	<b>mile</b>	\$215,920	
<b>Shoulder stripe- 4" therm.</b>	<b>mile</b>	-	
<b>Shoulder Widening - 4 ft</b>	<b>mile</b>	-	
<b>Shoulder Widening - 2 ft</b>	<b>mile</b>	-	
<b>Intersection: improve signing/restriping</b>	<b>int.</b>	\$5000-10,000	

Low range

**Assumptions:**

Bike lane: 5000 feet of solid line detail- plus signs per mile and bike lane pavement markings four times per mile  
 Bike Boulevard: Assumes \$100,000 per mile for miscellaneous improvements such as signs/pavement markings  
 Cost of traffic signals added separately to individual route as needed.

More involved physical changes could exceed this figure. Exact measures need to be determined in Bicycle Boulevard  
 Bike Boulevard low range assumes signing, pavement markings, spot improvements and modifications to STOP signs  
 Class 2.5 average range assumes spot improvements as needed and routes signing and pavement markings.  
 Class 2.5 low range assumes only route signing and pavement markings. This was assumed in Appendix F.

**UNIT COST ASSUMPTIONS BEHIND PROJECT COST ESTIMATES**

<b>Signing</b>		
install sign	each	\$75.00
install pole	each	\$125.00
install sign and pole	each	\$200.00
remove sign only	each	\$100.00
<b>Striping Thermoplastic</b>		
4 " dashed	LF	\$1.50
4 " solid		\$1.50
Paint 4" solid white or yellow	LF	\$1.00
Paint 4" dashed white or yellow		\$1.00
6" white - solid	LF	\$1.50
6" white - dashed ( at intersections)		\$1.50
two-way left turn lane - yellow	LF	\$6.00
raised reflective markers	each	\$5.00
<b>Removal of Striping</b>		
4 inch thermoplastic-solid	LF	\$3.00
4 inch thermoplastic-dashed		\$3.00
4 inch paint-solid	LF	\$1.50
4 inch paint-dashed		\$1.00
Raised reflector removal	each	\$2.00
<b>Install Pavement Marking Symbol</b>		
symbol	SF	\$2.50
Bike stencil for routes	each	\$20.00
Bike lane markings	each	\$30.00
<b>Concrete Work</b>		
curb and gutter- 18"	LF	\$15.00
curb and gutter- 24"	LF	\$20.00
curb and gutter- 30"	LF	\$25.00
curb cut-ramp	each	\$1,500.00
<b>Asphalt Work</b>		
Asphalt concrete	ton	\$60
Asphalt concrete 8 inch depth	sq.ft	\$3.00
Asphalt concrete 4 inch depth	sq.ft	\$1.50

**APPENDIX E-2  
SUMMARY OF COST ESTIMATES**

<b>Improvement</b>	<b>Unit</b>	
Asphalt concrete 3 inch depth	sq.ft	\$1.13
AC- overlay 1.5-2 inches	sq.ft	\$0.75
Aggregate base	ton	\$30
Aggregate base -4 inch depth	sq.ft.	\$0.70
roadway excavation	cy	\$25
Grind existing asphalt/fabric	SY	\$3.00
Saw cut before widening	LF	5
<b>Signal Electrical Work</b>		
Traffic Signal	intersection	\$155,000
Signal Modifications	pole	\$100,000
Install Type D (Bicycle Sensitive) Detector	each	\$1,000
Flashing Yellow Beacon	pole	\$15,000
Street Lighting	pole	\$3,000
<b>Replace drainage grate</b>	each	\$500
<b>Repair catch basin frame</b>		\$600
<b>Repair failed pavement near catch basin</b>	SF	\$3.00

Unit costs include labor, material and overhead.  
Should add 10 to 20 percent contingency to total estimate.  
Small projects could be double or even triple these unit costs

**Source:**

Alameda County Public Works Agency  
Wendy Wong, Ken Emeziem, City of Berkeley, 1998  
Crisp Company for striping removal in Berkeley

**Assumptions:**

asphalt: lbs per cu.ft. 150  
aggregate base: lbs per cu.ft. 140

**Appendix E-3**  
**PRIORITY SCREENING OF CAPITAL PROJECTS**

Project #	Name	General Limits	Corridor	Total Cost	Prioritization Criteria					Priority
					Gap Closure	Safety	Auto Dependency Reduction	Intermodal Connectivity	Bicyclist Demand	
1	Bay Trail - Northern Alameda County	Contra Costa County line to San Leandro	5	\$2,806,515	H	L	M	M	H	High
2	Bay Trail - Southern Alameda County	San Lorenzo to Santa Clara County line	5	\$5,387,460	H	L	L	M	H	Medium
3	Fruitvale-Broadway	Skyline Blvd to Shoreline	10	\$3,067,741	L	M	H	H	M	High
4	Alameda-Doolittle-Lewelling	Alameda Point to San Leandro	15	\$3,083,080	M	H	L	L	M	Medium
5	73rd Avenue-Hegenberger	MacArthur Blvd to Oakland Airport	20	\$3,765,353	L	H	H	H	M	High
6	Berkeley-Emeryville I-880 corridor	Contra Costa County line to Oakland	25	\$2,332,721	L	H	H	H	H	High
7	Oakland I-880 Corridor	Emeryville to Fruitvale Avenue	25	\$2,178,235	L	H	H	H	H	High
8	BART Trail/San Leandro St	Fruitvale to Hesperian Avenue	25	\$5,653,700	L	H	H	H	H	High
9	Southern Alameda County I-880 Corridor	Hesperian to Warm Springs Blvd	25	\$6,610,743	M	H	M	H	H	High
10	Davis -Estudillo-Crow Canyon Road	Doolittle to Contra Costa County line	30	\$7,293,554	L	H	M	H	M	High
11	Northern Alameda County-I-580-Foothills-	North Berkeley to MacArthur Blvd	35	\$4,626,152	M	H	H	M	H	High
12	MacArthur Blvd I-580-Foothills-	Park Blvd to Camden	35	\$2,005,464	L	H	M	M	M	Medium
13	Southern Alameda County-I-580-Foothills-	Camden to Santa Clara County line	35	\$7,048,378	H	H	L	M	M	High
14	Highway 92 Corridor	Bay to Dublin Grade	40	\$2,135,234	H	H	M	H	M	High
15	E. Castro Valley Blvd- Dublin Canyon	Dublin Grade to East Dublin	40	\$2,845,427	H	M	M	H	L	High
16	Dublin Blvd Extension	East Dublin to Livermore	40	\$1,435,720	H	M	L	M	M	Medium
17	Collier Canyon-N. Canyons Parkway	West Livermore	40	\$39,993	H	M	L	L	M	Medium

**Appendix E-3**  
**PRIORITY SCREENING OF CAPITAL PROJECTS**

Project #	Name	General Limits	Corridor	Total Cost	Prioritization Criteria					Priority
					Gap Closure	Safety	Auto Dependency Reduction	Intermodal Connectivity	Bicyclist Demand	
18	New Trail in North Livermore	West Livermore to Springtown	40	\$2,023,060	H	M	L	L	L	Low
19	Northfront/Altamont Pass Road	Springtown to San Joaquin County Line	40	\$2,550,106	L	M	L	L	L	Low
20	Las Positas Creek Trail	North Livermore	40	\$2,952,326	H	M	M	L	H	High
21	Arroyo del valle Trail	Pleasanton	60	\$1,566,240	M	M	L	L	H	Medium
22	Highway 13 Corridor	Bay Trail to MacArthur Blvd	45	\$3,543,072	M	H	H	H	M	High
23	Stoneridge Blvd	Foothill Rd to East Pleasanton	50	\$1,723,972	H	H	L	M	M	High
24	Stoneridge Blvd-Jack London Connection	East Pleasanton to West Livermore	50	\$3,979,232	H	M	M	H	M	High
25	Jack London Blvd-Portola	West Livermore to East Livermore	50	\$410,852	H	M	L	M	M	Medium
26	Skyline-Palomares	Berkeley to Niles Canyon	55	\$9,673,490	L	M	L	L	L	Low
27	Stanley- East Avenue	Foothill Road to Greenville Road	60	\$3,795,925	L	M	M	L	H	Medium
28	San Ramon-Foothill Rd-I-680 Corridor	Contra Costa County line to Niles Canyon Road	65	\$5,735,928	H	H	L	M	M	High
29	Iron Horse to Shadow Cliffs Trail	Dublin to Pleasanton	65	\$4,568,200	M	M	M	H	M	High
30	Niles Canyon to Shadow Cliffs Trail	Niles Canyon to Shadow Cliffs	65	\$3,263,000	L	M	L	L	M	Low
31	Vineyard-Concannon	Pleasanton to Isabel Parkway	70	\$6,988,868	H	M	L	L	M	Medium
32	Vineyard Avenue Trail	Shadow Cliffs to Del Valle Trail	70	\$4,568,200	L	M	L	L	M	Low
33	Dougherty - Hopyard Roads	Contra Costa County Line to County fairgrounds	75	\$3,006,838	L	H	L	H	H	High

**Appendix E-3  
PRIORITY SCREENING OF CAPITAL PROJECTS**

Project #	Name	General Limits	Corridor	Total Cost	Prioritization Criteria					Priority
					Gap Closure	Safety	Auto Dependency Reduction	Intermodal Connectivity	Bicyclist Demand	
34	Iron Horse Trail	Contra Costa County line to Pleasanton south city limits	75	\$5,220,800	H	M	M	H	M	High
35	Iron Horse Trail	Isabel Parkway to San Joaquin County Line	75	\$9,789,000	L	M	L	L	M	Low
36	Avarado-Niles-Niles Canyon	Bay Trail to Niles Canyon	80	\$4,934,277	H	H	L	L	M	Medium
37	Vallecitos Rd	Niles Canyon to Livermore	80	\$3,246,605	H	H	L	L	L	Medium
38	Tassajara Rd	Contra Costa County Line to downtown Pleasanton	85	\$2,440,201	L	H	L	L	L	Low
39	Tassajara Creek Trail	Contra Costa County line to Dublin Blvd	85	\$1,305,200	L	M	L	L	L	Low
40	Vasco Road	Contra Costa Countyline to Tesla	95	\$1,143,704	L	H	L	L	L	Low
41	Damon Slough Bridge	Bay Trail at Damon Slough, Oakland	5	\$1,300,156	H	M	M	L	H	High
42	San Leandro Slough Bridge	Bay Trail at Slough, San Leandro	5	\$1,300,156	H	M	M	L	H	High
43	Cerrito Creek Bridge	Albany to El Cerrito	25	\$1,300,156	H	M	M	L	M	Medium
44	42nd Avenue Bridge	BART Trail at 42nd Avenue Bridge	25	\$1,300,156	H	M	H	H	H	High
45	Hegenberger Undercrossing	BART Trail at Hegenberger Bridge	25	\$1,300,156	H	M	H	H	H	High
46	Emeryville Ped/bike Overcrossing	Bay Trail to Shellmound	45	\$6,500,780	H	M	H	H	H	High
47	Highway 24 Ped/bike Overcrossing	Tunnel Rd to Lake Temescal	45	\$6,500,780	H	M	H	M	H	High
48	Bridge over Altamont Creek	Las Positas CreekTrail Bridge	40	\$1,300,260	L	M	M	M	M	Medium
49	I-580 Undercrossing	Los Positas Creek Trail	40	\$2,600,260						High

**Appendix E-3**  
**PRIORITY SCREENING OF CAPITAL PROJECTS**

Project #	Name	General Limits	Corridor	Total Cost	Prioritization Criteria					Priority
					Gap Closure	Safety	Auto Dependency Reduction	Intermodal Connectivity	Bicyclist Demand	
50	Livermore Avenue Undercrossing	Los Positas Creek Trail	40	\$2,600,520						High
51	Oakland-Alameda Connection	Alameda to Oakland Bay Trail	15	\$6,500,650	H	H	H	H	H	High
52	Arroyo Mocho Trail	I-680 to Isabel Pkwy	50	\$4,568,200						High
53	Brushy Peak to Del Valle Trail	Livermore	95	\$4,568,200						High

NOTES:

1. Cost estimates include \$2,000/mile for route signage.
2. Total Cost includes 30% for design and administration and contingencies. Does not include right-of-way acquisition or factors for inflation.



# Appendix E-4

## HIGH PRIORITY PROJECTS

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### **Project 1 – Bay Trail– Corridor Route 5: from Contra Costa County line to San Leandro**

**Jurisdictions:** Albany, Berkeley, Emeryville, Oakland and San Leandro

**Description:** This project is the northern half of the Bay Trail in Alameda County, and consists of both on and off-street segments. The two needed bridges along this section of Bay Trail are separate projects. The alignment depicted in this plan is the current planned alignment, but in some sections, the alignment may change when feasibility studies are conducted. In particular, a new alignment through downtown Oakland has been proposed to be closer to the shoreline, and is currently under study. This alignment would be included in the Countywide Plan in future updates if and when it becomes an official Bay Trail Route.

**Spur Routes:** To the Oakland Coliseum and the Shellmound to Maritime Bikeway

**Total Cost:** \$2.8 million

### **Project 3 – Fruitvale– Broadway– Corridor Route 10: from Skyline Boulevard to Shoreline**

**Jurisdictions:** Oakland and Alameda

**Description:** This corridor would include bike lanes where possible on Redwood Road and Fruitvale Avenue in Oakland and Broadway Street in Alameda. Also recommended are routes on parts of East 23<sup>rd</sup> and Coolidge and wider curb lanes on Tilden Way. The cost also includes 3.5 miles of arterial improvements and improved railroad track crossings on Fruitvale Avenue.

**Signals:** Foothill Boulevard at 34<sup>th</sup> Avenue and 34<sup>th</sup> Avenue at E. 12<sup>th</sup> Street

**Total Cost:** \$3.0 million

### **Project 5 – 73rd Avenue–Hegenberger Road– Corridor Route 20: from MacArthur Boulevard to Oakland Airport**

**Jurisdictions:** Oakland

**Description:** This project is primarily bike lanes on 73<sup>rd</sup> Avenue, Hegenberger and Airport Drive. Arterial improvements would be recommended for the entire length of 4.3 miles.

**Spur routes:** To connect the Coliseum with the Bay Trail along Damon Slough with an undefined connection to cross over I-880.

**Total Cost:** \$3.8 million

### **Project 6 – Berkeley–Emeryville–I-880– Corridor Route 25: from Contra Costa County line to Oakland city limit**

**Jurisdictions:** Albany, Berkeley and Emeryville

**Description:** This project is composed of the residential streets Washington and Jackson in Albany, the Ninth Street Bicycle Boulevard through Berkeley, a trail along the Railroad ROW in Berkeley and Emeryville, and bike lanes and routes on Emeryville Streets. This project also requires a gap closure, identified as project 43, a bridge over Cerrito Creek, to connect with Carlson Boulevard and the El Cerrito del Norte BART station in Contra Costa County.

**Signals:** Ninth Street at Cedar, Doyle at Stanford and on the California Avenue Spur at Dwight, 61<sup>st</sup> Street and Ashby Avenue.

**Spur routes:** To Route 35 to connect downtown Oakland with Central and North Berkeley via California and Market Street.

**Total Cost: \$2.3 million**

### **Project 7 – Oakland I-880 Corridor Route 25: from Emeryville to Fruitvale Avenue**

**Jurisdictions:** Oakland

**Description:** This 11 mile segment of Corridor 25 would have bike lanes on Market Street through downtown Oakland and continue on 14<sup>th</sup> Street/ International Boulevard via the Madison/Oak couplet. There would be almost three miles of arterial improvements.

**Signals:** San Pablo at Market, UPRR Trail at Seminary, 66<sup>th</sup> Avenue, 98<sup>th</sup> Avenue.

**Spur routes:** To 19<sup>th</sup> Street BART, the Ferry Terminal, the Bay Bridge, California Avenue and Telegraph Avenue.

**Total Cost: \$2.2 million**

### **Project 8 – BART Trail Corridor 25: from Fruitvale to Hesperian Avenue**

**Jurisdictions:** Oakland and San Leandro

**Description:** This project consists of providing a trail along the Union Pacific ROW adjacent to the elevated BART tracks. It also includes bike lanes on San Leandro Street in Oakland and San Leandro Boulevard in San Leandro from Fruitvale Avenue to Hesperian Boulevard. This project also includes a connection to the Bay Trail in the vicinity of the Coliseum over I-880.

**Signals:** Trail at High Street Trail at 98<sup>th</sup> Avenue; Trail at Seminary. Spur route to Bay Trail Coliseum.

**Total Cost: \$5.7 million**

### **Project 9 – Southern Alameda County I-880- Corridor 25: from Hesperian to Warm Springs Boulevard**

**Jurisdictions:** Hayward, Union City, Fremont, Newark and San Lorenzo

**Description:** Provide wide curb lanes on parts of Hesperian Boulevard, Brittany, and Cherry Street. Provide bike lanes along Union City Boulevard to Ardenwood Boulevard. It also includes 18 miles of arterial improvements.

**Total Cost: \$6.6 million**

**Project 10 – Davis–Estudillo– Crow Canyon Road– Corridor Route 30:  
from Doolittle Drive to Contra Costa County line**

**Jurisdictions:** San Leandro, Unincorporated and Castro Valley

**Description:** This project would provide bike lanes on Davis and wide curb lanes or shoulders on Lake Chabot Road, Redwood Road and Crow Canyon Road.

**Total Cost: \$7.3 million**

**Project 11 – Northern Alameda County–I–580–Foothills – Corridor Route 35:  
from North Berkeley to MacArthur Boulevard**

**Jurisdictions:** Albany, Berkeley and Oakland

**Description:** This project runs from North Berkeley through Lakeshore Avenue in Oakland. The project is composed of the Ohlone Trail in Berkeley, portions of the Bicycle Boulevard system, and connects to Oakland via bike lanes on Telegraph Avenue and on 27<sup>th</sup> Avenue.

**Signals:** Ohlone Trail at Marin; Ohlone Trail at Cedar; Virginia at Martin Luther King; Bowditch at Dwight and Hillegass at Ashby.

**Spur routes:** To UC Berkeley: Hearst from Milvia to Arch and Bowditch from Channing Way to Bancroft Way; to Rockridge BART: 57<sup>th</sup>/Ayala/Forest from Telegraph Avenue; to downtown Piedmont: Grand Avenue from El Embarcadero to Wildwood/Highland to Piedmont City Hall; to Montclair: Trestle Glen and Park Boulevard

**Total Cost: \$4.6 million**

**Project 13 – Southern Alameda County–I–580– Foothills Corridor 35:  
from Camden Avenue to Santa Clara County line**

**Jurisdictions:** Oakland, San Leandro, San Lorenzo, Castro Valley, Hayward, Union City and Fremont

**Description:** This project primarily includes bike lanes along Bancroft Avenue in Oakland and San Leandro, wide curb lanes along Mission Boulevard and other streets in Hayward, Decoto Road in Union City, Paseo Padre Parkway, Grimmer Boulevard and Warm Springs in Fremont.

**Spur routes:** To CSU Hayward: Carlos Bee Street; and to Ohlone College from Washington Boulevard to Driscoll; to downtown Fremont via Walnut. The spur route, Carlos Bee Street, is on a severe grade and improved bike access to transit should be provided.

**Total Cost: \$7.0 million**

**Project 14 – Highway 92– Corridor Route 40:  
from Bay Trail to Dublin Grade**

**Jurisdictions:** Hayward and Castro Valley

**Description:** This project is composed of providing about four miles of bike lanes on Clawiter Road, Winton Avenue, Santa Clara Street, “A” Street and Castro Valley Boulevard. Recommendations also include adding wide curb lanes on Breakwater Avenue, Clawiter Road, Middle Lane, Southland Drive and Castro Valley Boulevard

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**Total Cost: \$2.1 million**

**Project 15 – East Castro Valley Boulevard– Dublin Canyon– Corridor Route 40:  
from Dublin Grade to East Dublin**

**Jurisdictions:** Castro Valley, Unincorporated, Pleasanton and Dublin

**Description:** This project consists of bike lanes where possible on Foothill Road and Dublin Boulevard with wide shoulders along Dublin Canyon Road and wide curb lanes on Dublin Boulevard. Seven miles of this 12 mile project are arterial roadways.

**Total Cost: \$2.9 million**

**Project 20 – Las Positas Creek Trail– Dublin Canyon– Corridor Route 40:  
from Las Positas College to East Livermore**

**Jurisdictions:** Livermore

**Description:** This project consists of finishing the trail along Las Positas Creek. Two crossings of I-580 are separate projects as is the undercrossing of North Livermore Avenue

**Total Cost: \$3.0 million**

**Project 22 – Highway 13 Corridor Route 45:  
from Bay Trail to MacArthur Boulevard**

**Jurisdictions:** Emeryville, Berkeley and Oakland

**Description:** The route runs from Emeryville through Berkeley to mid-Oakland. This project consists of adding bike lanes on Caldecott Lane, Upper Broadway, Moraga Way and Mountain Boulevard in Montclair. Bike routes are recommended on 66<sup>th</sup> Street/Woolsey Street, California Avenue, Duncan Way and Fernwood Drive. A needed gap closure along this route is Project 47, an overcrossing over Highway 24.

**Signals:** Russell at Claremont

**Spur routes:** Adeline from Russell to Ashby BART and Old Tunnel Road to Skyline

**Total Cost: \$3.5 million**

**Project 23 – Stoneridge Boulevard – Corridor Route 50:  
from Foothill Road to East Pleasanton**

**Jurisdictions:** Pleasanton

**Description:** This project consists of adding both bike lanes and wide curb lanes on Stoneridge Boulevard. It also includes 4.5 miles of arterial improvements.

**Total Cost: \$1.7 million**

**Project 24 – Stoneridge Boulevard– Jack London Boulevard Connection–Corridor  
Route 50:  
from East Pleasanton to West Livermore**

**Jurisdictions:** Pleasanton, unincorporated County and Livermore

**Description:** This project consists of constructing a bike path to connect Stoneridge Boulevard and Jack London Boulevard. It also would provide bike lanes on Jack London Boulevard and a trail parallel to Jack London Boulevard to close the gap between Pleasanton and Isabel Parkway.

**Total Cost:** \$4.0 million

**Project 28 – San Ramon– Foothill Rd–I–680 Corridor Route 65:  
from Contra Costa County line to Niles Canyon Road**

**Jurisdictions:** Dublin and Pleasanton

**Description:** This project's recommendations are to add bike lanes along San Ramon Road and Foothill Road and to add wide shoulders to Castlewood Drive and Pleasanton/Sunol Road. A total of three miles of arterial improvements was assumed along the 11-mile project.

**Spur routes:** to Ohlone College from Mission Street.

**Total Cost:** \$5.7 million

**Project 29 – Iron Horse to Shadow Cliffs Trail– Corridor Route 65:  
from Contra Costa County line to South Pleasanton**

**Jurisdictions:** Dublin and Pleasanton

**Description:** This project is a series of trails that will provide a good off-road alternative that roughly parallels I-680 and Foothill Road.

**Total Cost:** \$4.6 million

**Project 33 – Dougherty–Hopyard– Corridor Route 75:  
from Contra Costa County Line to County fairgrounds**

**Jurisdictions:** Dublin and Pleasanton

**Description:** This project consists of bike lanes along Dougherty Road, Hopyard Road and Pleasanton Avenue and wide curb lanes on sections of Dougherty Road and Pleasanton Avenue.

**Total Cost:** \$3.0 million

**Project 34 – Iron Horse Trail– Corridor Route 75:  
from Contra Costa County line to South Pleasanton**

**Jurisdictions:** Dublin and Pleasanton

**Description:** This project is the continuation of the existing Iron Horse Trail along the abandoned Southern Pacific right-of-way that begins in Concord and currently terminates at the border of Alameda and Contra Costa Counties.

**Total Cost:** \$5.2 million

**Project 41 – Damon Slough Bridge Bay Trail–Oakland– Corridor Route 5:**

**Jurisdictions:** Oakland

**Description:** This project consists of a pedestrian/bike bridge over Damon Slough. This bridge is part of the Bay Trail section in Oakland.

**Total Cost:** \$1.3 million

**Project 42 – San Leandro Slough Bridge Bay Trail Corridor Route 5:**

**Jurisdictions:** San Leandro

**Description:** This project consists of a pedestrian/bike bridge over the slough. This bridge is part of the Bay Trail in San Leandro.

**Total Cost:** \$1.3 million

**Project 44 – BART Trail at 42<sup>nd</sup> Avenue Bridge– Corridor Route 25:**

**Jurisdictions:** Oakland

**Description:** This project improves the existing bridge in Oakland at 42<sup>nd</sup> Avenue.

**Total Cost:** \$1.3 million

**Project 45 – BART Trail at Hegenberger Bridge– Corridor Route 25:**

**Jurisdictions:** Oakland

**Description:** This project improves the undercrossing at the BART trail at Hegenberger in Oakland.

**Total Cost:** \$1.3 million

**Project 46 – Emeryville Pedestrian/Bike Overcrossing– Corridor Route 45:  
from Bay Trail to Shellmound Street**

**Jurisdictions:** Emeryville

**Description:** This project, shown in the Emeryville bike plan, is a bridge over I-80 to connect the Bay Trail to Corridor 45. The exact location is undetermined, but would be located between Ashby and Powell. The landings on the east and west sides of I-80 have been tentatively identified. The project could integrate with plans for a Temescal Creek Greenway.

**Total Cost:** \$6.5 million

**Project 47 – Highway 24 Pedestrian/Bike Overcrossing Corridor Route 45:  
from Tunnel Rd to Lake Temescal**

**Jurisdictions:** Oakland

**Description:** This project consists of a bridge over Highway 24 to improve the connection from Tunnel Road in Berkeley to the Lake Temescal bike path in Oakland.

**Total Cost:** \$6.5 million

**Project 51 – Oakland–Alameda Connection –Corridor Route 15:  
from Constitution Way, Alameda to Bay Trail – Jack London Square**

**Jurisdictions:** Alameda and Oakland

**Description:** This project is currently undefined but would close the gap between the island of Alameda and Oakland in the vicinity of Jack London Square and the Webster and Posey tubes. A placeholder amount of \$4.2 million dollars has been estimated for the capital costs associated with this project. Operational and maintenance costs must also be identified for this project. In this particular corridor, the estuary is currently a formidable, virtually insurmountable barrier for pedestrians and bicyclists. However, the latent demand for such travel between the two cities due to the proximity of downtown Oakland, Jack London Square, BART, the College of Alameda and Laney College is considerable. The current link for bicyclists and pedestrians is a narrow and hazardous sidewalk within one of the existing tubes. Constructing a third tube or widening one of the existing tubes for bicyclists and pedestrians appears to be financially and physically infeasible due to activities at the Port of Oakland and other structures. The existing link, even if widening were feasible, would remain a health hazard not to mention unappealing to non-motorized users due to the conditions of the dark, exhaust-filled tunnel.

A bridge (either pivot or drawbridge) could provide an efficient link for bicyclists and pedestrians. However the costs, including operations and maintenance, associated with this concept appear to pose a serious constraint. Additionally, ship traffic at the Port of Oakland, which is projected to increase, would pose a considerable constraint for a bridge sited in proximity to the existing tube.



The most attainable short term solution would incorporate a consistently scheduled water taxi/ferry with reasonable fares servicing recreational and commuter pedestrian and cyclists.

**Next Steps:** A task force should be established to identify long-term options that warrant further consideration and address operations and maintenance issues. The task force could review the bridge concept, as well as future technologies that could reduce the costs and increase the feasibility of constructing another tube (intended for bicycle, pedestrian and transit use), as possible options.

**Capital Cost: \$6.2 million**

**Operational and Maintenance Cost: Project Dependant**



**Appendix E-4  
HIGH PRIORITY PROJECTS**

<b>Project #</b>	<b>Name</b>	<b>Corridor #</b>	<b>General Limits</b>	<b>Length (mi)</b>	<b>Jurisdictions</b>	<b>Total Cost</b>
1	Bay Trail - Northern Alameda County	5	Contra Costa County line to San Leandro	35.1	Albany, Berkeley, Emeryville, Oakland, San Leandro	\$2,806,515
3	Fruitvale-Broadway	10	Skyline Blvd to Shoreline	7.9	Alameda, Oakland	\$3,067,741
5	73rd Avenue-Hegenberger	20	MacArthur Blvd to Oakland Airport	5.2	Oakland	\$3,765,353
6	Berkeley-Emeryville I-880 corridor	25	Contra Costa County line to Oakland	8.1	Albany, Berkeley, Emeryville	\$2,332,721
7	Oakland I-880 Corridor	25	Emeryville to Fruitvale Avenue	12.1	Oakland	\$2,178,235
8	BART Trail/San Leandro St	25	Fruitvale to Hesperian Avenue	12.9	Oakland, San Leandro	\$5,653,700
9	Southern Alameda County I-880 Corridor	25	Hesperian to Warm Springs Blvd	22.7	Fremont, Hayward, Newark, San Leandro, San Lorenzo, Union City	\$6,610,743
10	Davis -Estudillo-Crow Canyon Road	30	Doolittel to Contra Costa County line	16.6	Castro Valley, San Leandor, Unincorporated	\$7,293,554
11	Northern Alameda County-I-580-Foothills-	35	North Berkeley to MacArthur Blvd	16.1	Albany, Berkeley, Oakland	\$4,626,152
13	Southern Alameda County-I-580-Foothills-	35	Camden to Santa Clara County line	32.5	Castro Valley, Cherryland, Fremont, Hayward, Oakland, Piedmont, San Leandro, San Lorenzo, Union City	\$7,048,378
14	Highway 92 Corridor	40	Bay to Dublin Grade	7.7	Castro Valley, Hayward	\$2,135,234
15	E. Castro Valley Blvd- Dublin Canyon	40	Dublin Grade to East Dublin	11.7	Castro Valley, Dublin, Pleasanton, Unincorporated	\$2,845,427
20	Las Positas Creek Trail	40	North Livermore	5.9	Livermore	\$2,952,326
22	Highway 13 Corridor	45	Bay Trail to MacArthur Blvd	16.5	Berkeley, Emeryville, Oakland	\$3,543,072

**Appendix E-4  
HIGH PRIORITY PROJECTS**

<b>Project #</b>	<b>Name</b>	<b>Corridor #</b>	<b>General Limits</b>	<b>Length (mi)</b>	<b>Jurisdictions</b>	<b>Total Cost</b>
23	Stoneridge Blvd	50	Foothill Rd to East Pleasanton	4.5	Pleasanton	\$1,723,972
24	Stoneridge Blvd-Jack London Connection	50	East Pleasanton to West Livermore	6.8	Livermore, Pleasanton	\$3,979,232
28	San Ramon-Foothill Rd-I-680 Corridor	65	Contra Costa County line to Niles Canyon Road	19.5	Fremont, Pleasanton	\$5,735,928
29	Iron Horse to Shadow Cliffs Trail	65	Dublin to Pleasanton	7.0	Pleasanton	\$4,568,200
33	Dougherty - Hopyard Roads	75	Contra Costa County Line to County fairgrounds	6.0	Dublin, Livermore, Pleasanton	\$3,006,838
34	Iron Horse Trail	75	Contra Costa County line to Pleasanton south city limits	8.0	Pleasanton	\$5,220,800
41	Damon Slough Bridge	5	Bay Trail at Damon Slough, Oakland	0.1	Dublin, Oakland	\$1,300,156
42	San Leandro Slough Bridge	5	Bay Trail at Slough, San Leandro	0.1	San Leandro	\$1,300,156
44	42nd Avenue Bridge	25	BART Trail at 42nd Avenue Bridge	0.1	Oakland	\$1,300,156
45	Hegenberger Undercrossing	25	BART Trail at Hegenberger Bridge	0.1	Oakland	\$1,300,156
46	Emeryville Ped/bike Overcrossing	45	Bay Trail to Shellmound	0.3	Emeryville	\$6,500,780
47	Highway 24 Ped/bike Overcrossing	45	Tunnel Rd to Lake Temescal	0.3	Oakland	\$6,500,780
51	Oakland-Alameda Connection	15	Alameda to Oakland Bay Trail	0.3	Alameda, Oakland	\$6,500,650

**Total Cost**      \$105,796,954

NOTES:

1. See Appendix E-2 for Unit Cost Assumptions.
2. Total Cost includes 30% for design and administration and contingencies. Does not include right-of-way acquisition or factors for inflation.