

Appendix F - Cost Estimates

Cost Estimate Assumptions - Cost Estimate Breaks Out Vehicles & Bicycle/Pedestrian

Although this is a bicycle and pedestrian project, a many of the physical implementation improvements benefit vehicles. Therefore, when viewing the estimates of probable costs for alignments 1 and 2, note that costs for improvements, such as the signalization of East Sir Francis Drake Boulevard at Andersen Dr., reconstruction of the I-580 flyover and vehicle lane widening, directly benefit drivers. Approximate allocations of costs for bicycle and pedestrian improvements have been attempted and can be found in the following description and in the planning level estimates of probable cost tables for each alignment.

Signalization of the intersection of ESFDB and Andersen Drive mainly benefits vehicle traffic. 91% of the Alignment 1 opinion of costs are allocated for vehicular improvements, whereas 9% is allocated for pedestrian and bicycle improvements. 72% of the Alignment 2 costs are allocated for vehicular improvements, whereas 27% is allocated for pedestrian and bicycle improvements. Alignment 3 does not include a new signal at ESFDB and Andersen Drive and as such, 100% of the Alignment 3 costs are allocated for pedestrian and bicycle improvements.

Alignment 1 Planning Level Cost Estimate

The construction cost for Alignment 1 improvements is approximately \$1.6 million, per the detail in the attached Exhibit 1 and Table 2. “Soft” project costs are estimated at \$0.7 million, for a total of \$2.2 million. In addition, the cost of widening and signalizing the Andersen Drive intersection is \$2.0 million, per an estimate in the San Rafael General Plan Circulation Element. The planning level cost for reconstructing the I-580 flyover is \$20 million. In total, the Alignment 1 improvements are estimated at \$24.2 million.

Table 5: Alignment 1 Planning Level Cost Estimate

Item	Planning Level Cost Estimate
Construction cost	\$1.5 million
Soft costs	\$0.6 million
Pedestrian and Bicycle Improvements Subtotal	\$2.2 million
Andersen Drive intersection reconstruction & signalization	\$2.0 million
Estimated reconstruction of the I-580 flyover	\$20 million
Vehicular Improvement Subtotal	\$22 million
Project Total	\$24.2 million

Assumptions: The \$2.0 million estimate in the San Rafael General Plan for the signalization and widening is assumed to provide the width for shoulders through that project area that would be used as bike lanes with the addition of striping, markings and signage included in the estimate.

San Quentin Area Bicycle and Pedestrian Access Study

San Quentin Area Bicycle and Pedestrian Access Study
 Planning Level Cost Estimate

Alignment 1: Class II Bike Lanes, Signalized Intersection

Length: 1.5 miles

Construction Items:

- 1 Clearing and grubbing
- 2 Sawcut and remove A.C. curb pavement 12" wide
- 3 Culvert extension, assume 24" x 5'
- 4 Relocate/reconstruct existing inlet
- 5 Grading for road widening and sidewalk
- 6 Slope excavation and export
- 7 Retaining wall (Main St)
- 8 Driveway approach - Commercial
- 9 Driveway approach - Residential (includes conform)
- 10 Base and A.C. pavement for road widening
- 11 Striping removal
- 12 Striping
- 13 Sharrow pavement markings on Main St and Grange Ave.
- 14 Concrete median island on ESHD Blvd. (4' x 200')
- 15 Asphalt curb on ESHD Blvd. west of West Gate
- 16 Debris fence, vinyl coated chain link 5' tall
- 17 Signage - Bike traffic control/warning signs
- 18 Signage - Wayfinding signs
- 19 Signage - To be removed
- 20 Construct sidewalk on ESHD at West Gate (incl. bus stop) (195' x 5')
- 21 Construct sidewalk on Main St (incl. bus stop) (1,400' x 5')
- 22 Construct sidewalk on Grange Ave (200' x 4')
- 23 Construct sidewalk on E. Francisco Blvd. (5,600' x 5'-6")
- 24 Construct curb and gutter on Main, por. ESHD and ESHD
- 25 Add crosswalk
- 26 Add curb ramp
- 27 Traffic control

Unit	Qty.	Unit Cost	Extension
SF	30,644	\$0.30	\$9,193
LF	7,980	\$2.50	\$19,950
EA	1	\$1,000	\$1,000
EA	3	\$5,000	\$15,000
SF	30,644	\$3.50	\$107,254
CY	2,660	\$75	\$199,500
LF	310	\$350	\$108,500
EA	6	\$10,000	\$60,000
EA	4	\$7,500	\$30,000
SF	16,215	\$6	\$97,290
LF	21,000	\$1	\$21,000
LF	27,590	\$2	\$55,180
EA	12	\$250	\$3,000
SF	800	\$20	\$16,000
LF	230	\$20	\$4,600
LF	3,300	\$17	\$56,100
EA	24	\$400	\$9,600
EA	8	\$350	\$2,800
EA	4	\$200	\$800
SF	1,199	\$10	\$11,990
SF	7,724	\$10	\$77,240
SF	800	\$10	\$8,000
SF	8,745	\$10	\$87,450
LF	3,341	\$35	\$116,935
EA	8	\$1,200	\$9,600
EA	7	\$3,500	\$24,500
LS	1		\$10,000

Subtotal Construction

\$1,162,482

28 Construction overhead - mobilization, general conditions - 10%

\$116,248

29 Contingency - 20% of all above

\$255,746

Bicycle and Pedestrian Improvements Construction cost

\$1,534,477

Design, Environmental and Administration:

- 30 Survey, tech studies, and design - 15%
- 31 Environmental - 10%
- 32 Project administration - 10%
- 33 Contingency - 20% of above 3 items

\$230,171

\$153,448

\$153,448

\$107,413

Total Design, Env., Admin.(Soft costs)

\$644,480

Pedestrian and Bicycle Improvements Subtotal

\$2,178,957

Andersen Dr. intersection signalization and reconstruction**

\$2,000,000

Estimated I-580 vehicular flyover reconstruction***

\$20,000,000

pedestrian and Bicycle Improvements Total (Line 50 + 10% of line 51 and line 52)

\$4,378,957

Vehicular Improvements Total (90% of line 51 and line 52)

\$19,800,000

Total Cost

\$24,178,957

* This project presents a striped buffer as an alternative to the concrete island at the windsurfer parking area. The striped buffer would cost approximately \$1,000.

** Source: City of San Rafael General Plan. Assumed to include all signalization costs and widening, including a shoulder/bike lane east of Andersen Drive.

*** Source: Technical Advisory Committee estimate

Note: It is assumed that Marin Transit will rehab the existing bus shelter at SQSP's West Gate as necessary and that Golden Gate Transit will fund a new bus shelter on the I-580 onramp, southeast of Main Street.

Alignment 2 Planning Level Cost Estimate

The construction cost for Alignment 2 improvements is approximately \$3.7 million, per the detail in the attached Exhibit 2 and Table 3. “Soft” project costs are estimated at \$1.6 million, for a total of \$5.3 million. In addition, the cost of widening and signalizing the Andersen Drive intersection is \$2.0 million, per an estimate in the San Rafael General Plan Circulation Element. The planning level cost for reconstructing the I-580 flyover is \$20 million. In total, the Alignment 2 improvements are estimated at \$27.3 million.

Table 6: Alignment 2 Planning Level Cost Estimate

Item	Planning Level Cost Estimate
Construction cost	\$5.8 million
Soft costs	\$2.4 million
Pedestrian and Bicycle Improvements Subtotal	\$8.3 million
Andersen Drive intersection reconstruction & signalization	\$2.0 million
Estimated reconstruction of the I-580 flyover	\$20 million
Vehicular Improvements Subtotal	\$22 million
Project Total	\$30.3 million

Assumptions: The Alignment 2 estimate includes the assumption that the slope on the north side of ESFDB opposite the windsurfer parking area and at three other locations on land within the ESFDB right-of-way will be cut back to allow additional room to provide the arrangement shown. It is assumed that the cut slopes will be 2:1, whether the existing slopes are steeper or less steep.

This improvement concept and the opinion of probable cost assumes that the eastbound I-580 on-ramp (south of the I-580 flyover and east of Andersen Drive) and the I-580 off ramp (at Main Street) can be widened and shifted approximately 10 feet to the east to provide room for the Class I path.

The \$2 million estimate in the San Rafael General Plan for the signalization and widening is assumed to provide the width for shoulders through that project area that would be used as bike lanes with the addition of striping, markings and signage included in the estimate.

San Quentin Area Bicycle and Pedestrian Access Study

Planning Level Cost Estimate

Alignment 2: Class I Bike Path, Signalized Intersection

Length: 1.5 miles

Construction Items:

- 1 Clearing and grubbing
- 2 Sawcut and remove A.C. curb pavement 12" wide
- 3 Culvert extension, assume 24" x 5'
- 4 Relocate/reconstruct existing inlet
- 5 Concrete channel relocation (2 -250lf location on n side of ESFDB)
- 6 Grading for road widening and sidewalk
- 7 Slope excavation and export
- 8 Fill
- 9 Retaining wall, along ESFD east of Andersen Dr. (3' tall)
- 10 Retaining wall (Main St)
- 11 Retaining wall, along ESFD east of Andersen Dr. (6' tall)
- 12 Driveway approach - Commercial
- 13 Driveway approach - Residential (includes conform)
- 14 Base and A.C. pavement for road widening
- 15 Striping removal
- 16 Striping
- 17 Sharrow pavement markings on Main St. and Grange Ave.
- 18 Debris fence, vinyl coated chain link 5' tall
- 19 Guardrail (3'-6" high)
- 20 Signage - Bike traffic control/warning signs
- 21 Signage - Wayfinding signs
- 22 Signage - To be removed
- 23 Construct sidewalk on ESFB at West Gate (incl. bus stop) (195' x 5')
- 24 Construct sidewalk on Main St (incl bus stop) (1,500' x 5')
- 25 Construct sidewalk on Grange Ave (200' x 4')
- 26 Construct sidewalk on E. Francisco Blvd.
- 27 Construct curb and gutter on Main, por. EFB and ESFD
- 28 Add crosswalk
- 29 Add curb ramp
- 30 Traffic control
- 31 Soil preparation and slope protection
- 32 Storm Water Pollution Prevention Plan
- 33 Light pole relocation
- 34 Utility pole relocation***
- 35 Adjust manhole cover to new grade

Unit	Qty.	Unit Cost	Extension
SF	61,841	\$0.30	\$18,552
LF	17,250	\$2.50	\$43,125
EA	4	\$1,000	\$4,000
EA	3	\$5,000	\$15,000
LF	500	\$15	\$7,500
SF	61,841	\$3.50	\$216,444
CY	29,444	\$75	\$2,208,300
CY	5,000	\$10	\$50,000
LF	450	\$200	\$90,000
LF	310	\$350	\$108,500
LF	200	\$500	\$100,000
EA	6	\$10,000	\$60,000
EA	4	\$7,500	\$30,000
SF	70,720	\$6	\$424,320
LF	21,000	\$1	\$21,000
LF	28,365	\$2	\$56,730
EA	12	\$250	\$3,000
LF	3,170	\$17	\$53,890
LF	4,805	\$20	\$96,100
EA	36	\$400	\$14,400
EA	8	\$350	\$2,800
EA	7	\$200	\$1,400
SF	800	\$10	\$8,000
SF	7,724	\$10	\$77,240
SF	800	\$10	\$8,000
SF	8,745	\$10	\$87,450
SF	6,561	\$35	\$229,635
EA	9	\$1,200	\$10,800
EA	10	\$3,500	\$35,000
LS	1		\$10,000
SF	200,000	\$1.30	\$260,000
LS	1		\$10,000
EA	2	\$1,000	\$2,000
EA	1	\$75,000	\$75,000
EA	1	\$1,000	\$1,000

Subtotal Construction

\$4,439,186

36 Construction overhead - mobilization, general conditions - 10%

\$443,919

37 Contingency - 20% of all above

\$976,621

Bicycle and Pedestrian Improvements Construction cost

\$5,859,725

Design, Environmental and Administration:

38 Survey, tech studies, and design - 15%

\$878,959

39 Environmental - 10%

\$585,973

40 Project administration - 10%

\$585,973

41 Contingency - 20% of above 3 items

\$410,181

Total Design, Env., Admin.(Soft costs)

\$2,461,085

Pedestrian and Bicycle Improvements Subtotal	\$8,320,810
Andersen Dr. intersection signalization and reconstruction*	\$2,000,000
I-580 vehicular flyover reconstruction**	\$20,000,000
trian and Bicycle Improvements Total (Line 58 + 10% of line 59 and line 60)	\$10,520,810
Vehicular Improvements Total (90% of line 59 and line 60)	\$19,800,000
Total Cost	\$30,320,810

* Source: City of San Rafael General Plan. Assumed to include all widening and signalization costs.

** Source: Technical Advisory Committee estimate

Note: It is assumed that Marin Transit will rehab the existing bus shelter at SQSP's West Gate as necessary and that Golden Gate Transit will fund a new bus shelter on the I-580 onramp, southeast of Main Street.

Alignment 3 Planning Level Cost Estimate

The construction cost for Alignment 3 improvements is approximately \$2.8 million, per the detail in the attached Exhibit 3 and Table 4. “Soft” project costs are estimated at \$1.2 million, for a total of \$4.0 million. The Class I undercrossing at the ESFDB/Andersen Drive intersection is estimated at \$6.6 million. The bike/pedestrian overpass adjacent to the I-580 flyover is estimated at \$10.3 million. In total, the Alignment 3 improvements are estimated at \$20.9 million.

Table 7: Alignment 3 Planning Level Cost Estimate

Item	Planning Level Cost Estimate
Construction cost	\$5.1 million
Soft costs	\$2.1 million
Subtotal	\$7.2 million
Class I undercrossing at Andersen Drive intersection	\$6.6 million
Bike/pedestrian overpass adjacent to I-580 vehicular flyover	\$10.3 million
Pedestrian and Bicycle Improvements Total	\$24.1 million

Assumptions: The Alignment 3 estimate includes the assumption that the slope on the north side of ESFDB opposite the windsurfer parking area and at three other locations on land within the ESFDB right-of-way will be cut back to allow additional room to provide the arrangement shown. It is assumed that the cut slopes will be 2:1, whether the existing slopes are steeper or less steep.

The undercrossing cost estimate includes approaching ramps with retaining walls, undercrossing and lighting. Alignment 3 does not require the reconstruction of the I-580 vehicular flyover. Alignment 3 does propose a bike/pedestrian overpass adjacent to the I-580 vehicular flyover.

San Quentin Area Bicycle and Pedestrian Access Study

Planning Level Cost Estimate

Alignment 3: Class I Bike Path, Undercrossing

Length: 1.5 miles

Construction Items:

- 1 Clearing and grubbing
- 2 Sawcut and remove A.C. curb pavement 12" wide
- 3 Culvert extension, assume 24" x 5'
- 4 Relocate/reconstruct existing inlet
- 5 Grading for road widening and sidewalk
- 6 Concrete channel relocation (2 -250lf location on n side of ESFDB)
- 7 Slope excavation and export
- 8 Retaining wall (Main St)
- 9 Driveway approach - Commercial
- 10 Driveway approach - Residential (includes conform)
- 11 Base and A.C. pavement for road widening
- 12 Striping removal
- 13 Striping
- 14 Sharrow pavement markings on Main St. and Grange Ave.
- 15 Debris fence, vinyl coated chain link 5' tall
- 16 Guardrail (3'-6" high)
- 17 Signage - Bike traffic control/warning signs
- 18 Signage - Wayfinding signs
- 19 Signage - To be removed
- 20 Construct sidewalk on ESFB at West Gate (incl. bus stop) (195' x 5')
- 21 Construct sidewalk on Main St (incl bus stop) (1,500' x 5')
- 22 Construct sidewalk on Grange Ave (200' x 4')
- 23 Construct sidewalk on E. Francisco Blvd.
- 24 Construct curb and gutter on Main and por. EFB and ESFD
- 25 Add crosswalk
- 26 Add curb ramp
- 27 Soil preparation and slope protection
- 28 Traffic control
- 29 Storm Water Pollution Prevention Plan
- 30 Light pole relocation
- 31 Utility pole relocation***
- 32 Adjust manhole cover to new grade
- 33 Landscape and irrigation

Unit	Qty.	Unit Cost	Extension
SF	21,222	\$0.30	\$6,367
LF	7,980	\$2.50	\$19,950
EA	4	\$1,000	\$4,000
EA	3	\$5,000	\$15,000
SF	21,222	\$3.50	\$74,277
LF	500	\$15	\$7,500
CY	29,744	\$75	\$2,230,800
LF	310	\$350	\$108,500
EA	6	\$10,000	\$60,000
EA	4	\$7,500	\$30,000
SF	39,065	\$6	\$234,390
LF	21,000	\$1	\$21,000
LF	30,890	\$2	\$61,780
EA	12	\$250	\$3,000
LF	3,170	\$17	\$53,890
LF	3,220	\$20	\$64,400
EA	38	\$400	\$15,200
EA	8	\$350	\$2,800
EA	6	\$200	\$1,200
SF	844	\$10	\$8,440
SF	7,724	\$10	\$77,240
SF	800	\$10	\$8,000
SF	8,745	\$10	\$87,450
SF	6,561	\$35	\$229,635
EA	7	\$1,200	\$8,400
EA	8	\$3,500	\$28,000
SF	200,000	\$1.30	\$260,000
LS	1		\$10,000
LS	1		\$10,000
EA	2	\$1,000	\$2,000
EA	1	\$75,000	\$75,000
EA	1	\$1,000	\$1,000
SF	3,200	\$5.50	\$17,600

Subtotal Construction

\$3,836,819

34 Construction overhead - mobilization, general conditions - 10%

\$383,682

35 Contingency - 20% of all above

\$844,100

Bicycle and Pedestrian Improvements Construction cost

\$5,064,601

Design, Environmental and Administration:

- 36 Survey, tech studies, and design - 15%
- 37 Environmental - 10%
- 38 Project administration - 10%
- 39 Contingency - 20% of above 3 items

\$759,690

\$506,460

\$506,460

\$354,522

Total Design, Env., Admin.(Soft costs)

\$2,127,132

Pedestrian and Bicycle Improvements Subtotal	\$7,191,733
Class I undercrossing at Andersen Dr.*	\$6,560,400
Bike/pedestrian overpass adjacent to I-580 vehicular flyover**	\$10,309,200
Pedestrian and Bicycle Improvements Total (Line 56 + 90% of line 59 and line 60)	\$22,374,373
Vehicular Improvements Total (10% of line 59 and line 60)	\$1,686,960
Total Cost	\$24,061,333

* Undercrossing cost estimate includes approaching ramps with retaining walls, undercrossing and lighting

** Overpass cost estimate based on similar projects in California.

^ Alignment 3 does not require the reconstruction of the I-580 vehicular flyover. Alignment 3 does propose a bike/pedestrian overpass adjacent to the I-580 vehicular flyover.

Note: It is assumed that Marin Transit is the responsible agency to rehab the existing bus shelter at SQSP's West Gate and that Golden Gate Transit is the responsible agency for a new bus shelter on the I-580 onramp, southeast of Main Street.

San Quentin Area Bicycle and Pedestrian Access Study

Alignment 3: Class I Bike Path, Undercrossing

Cost Breakout of Class I Undercrossing

Construction Items:

1 Class I undercrossing at Andersen Dr.*

Unit	Qty.	Unit Cost	Extension
1	EA	\$3,500,000.00	\$3,500,000

Subtotal Construction

\$3,500,000

2 Construction overhead - mobilization, general conditions - 10%

\$350,000

3 Contingency - 20% of all above

\$770,000

Total Construction

\$4,620,000

Design, Environmental and Administration:

4 Survey, tech studies, and design - 15%

\$693,000

5 Environmental - 10%

\$462,000

6 Project administration - 10%

\$462,000

7 Contingency - 20% of above 3 items

\$323,400

Total Design, Env., Admin.

\$1,940,400

Total Cost

\$6,560,400

* Undercrossing cost estimate includes approaching ramps with retaining walls, undercrossing and lighting

Cost Breakout of Bike/Pedestrian Overpass

Construction Items:

1 Bike/pedestrian overpass adjacent to I-580 vehicular flyover**

Unit	Qty.	Unit Cost	Extension
1	EA	\$5,500,000.00	\$5,500,000

Subtotal Construction

\$5,500,000

2 Construction overhead - mobilization, general conditions - 10%

\$550,000

3 Contingency - 20% of all above

\$1,210,000

Total Construction

\$7,260,000

Design, Environmental and Administration:

4 Survey, tech studies, and design - 15%

\$1,089,000

5 Environmental - 10%

\$726,000

6 Project administration - 10%

\$726,000

7 Contingency - 20% of above 3 items

\$508,200

Total Design, Env., Admin.

\$3,049,200

Total Cost

\$10,309,200

** Overpass cost estimate based on similar projects in California.