



Section 4 Construction Cost Estimates

GOALS

To develop construction cost estimates for the recommended alignments to be used in gathering funding and preparing bid documents.

PROJECT PROCESS

- Derived Costs from Recently Completed Comparable Projects
- Adjusted for Location and Difficulty





Blank Page



Introduction

An important part of this project is to develop an estimate of the construction cost. This step was made possible by taking the planning to final alignment selections and 30% level engineering drawings and calculations.

Some early cost estimates were made to assist in making choices between alternatives. After the final route was selected “30% level” engineering drawings were prepared. This level of precision over grading, drawings, and project elements not only allows for faster completion, but also for reasonable construction cost estimates. Actual costs can vary greatly based upon contractors’ need for work, inflation, and other factors. These potential influences are difficult to predict at this time.

The engineering drawings were completed and the estimated cost for all trails, except future segments, was made, broken down by trail types and location. The complete break-down is shown on this and the next page. A summary is shown to the right.

Soft Surface (Equestrian) Trails		
Norco Streets	\$	376,724
Spur A (Eastvale) Streets	\$	167,107
Corona River/Prado Basin	\$	2,038,289
Norco River	\$	267,804
Bikeways		
Norco Streets	\$	1,579,190
Spur A (Eastvale) Streets	\$	196,435
Paved Santa Ana River Trail (Corona)	\$	10,117,184
Spur A River Trail	\$	1,625,031
Total		\$16,367,764

Santa Ana River Trail - Street Equestrian County of Riverside - Regional Parks and Open Space District Engineering Estimates					
WRC Consulting Services, Inc.					6/30/2011
NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
		Imperial	Imperial		
NORCO STREETS					
1	Mobilization	1	LS	\$35,000.00	\$35,000
2	Clearing and Grubbing	1	LS	\$10,000.00	\$10,000
3	DG PX300	38,310	SF	\$3.50	\$134,085
4	Rail and Post	3,831	LF	\$12.00	\$45,972
5	Earth Work and Erosion Control	1	LS	\$15,000.00	\$15,000
6	Drainage Control	1	LS	\$5,000.00	\$5,000
7	Signage	40	EA	\$350.00	\$14,032
8	Traffic Control	1	LS	\$10,000.00	\$10,000
				SUBTOTAL	\$269,089
	Permit and Agency Processing & Approvals			5%	\$13,454
	Contingencies			20%	\$53,818
	Design Services and Construction Administration			15%	\$40,363
				TOTAL	\$376,724
NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
SPUR A STREETS					
1	Mobilization	1	LS	\$7,000.00	\$7,000
2	Clearing and Grubbing	1	LS	\$2,000.00	\$2,000
3	DG PX300	20,600	SF	\$3.50	\$72,100
4	Rail and Post	2,060	LF	\$12.00	\$24,720
5	Earth Work and Erosion Control	1	LS	\$3,000.00	\$3,000
6	Drainage Control	1	LS	\$2,000.00	\$2,000
7	Signage	10	EA	\$350.00	\$3,542
8	Traffic Control	1	LS	\$5,000.00	\$5,000
				SUBTOTAL	\$119,362
	Permit and Agency Processing & Approvals			5%	\$5,968
	Contingencies			20%	\$23,872
	Design Services and Construction Administration			15%	\$17,904
				TOTAL	\$167,107

Santa Ana River Trail - River Soft Trail County of Riverside - Regional Parks and Open Space District Engineering Estimates					
WRC Consulting Services, Inc.					6/30/2011
NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
		Imperial	Imperial		
CORONA RIVER TRAIL					
1	Mobilization	1	LS	\$100,000.00	\$100,000
2	Clearing and Grubbing	1	LS	\$30,000.00	\$30,000
3	DG PX300	212,000	SF	\$4.00	\$848,000
4	Rail and Post	23,215	LF	\$12.00	\$278,580
5	Earth Work and Erosion Control	1	LS	\$120,000.00	\$120,000
6	Drainage Control	1	LS	\$25,000.00	\$25,000
7	Chain Link Fence	2,014	LF	\$20.00	\$40,280
8	Signage	40	EA	\$350.00	\$14,061
				SUBTOTAL	\$1,455,921
	Permit and Agency Processing & Approvals			5%	\$72,796
	Contingencies			20%	\$291,184
	Design Services and Construction Administration			15%	\$218,388
				TOTAL	\$2,038,289
NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
NORCO RIVER TRAIL					
1	Mobilization	1	LS	\$15,000.00	\$15,000
2	Clearing and Grubbing	1	LS	\$10,000.00	\$10,000
3	DG PX300	0	SF	\$5.00	\$0
4	Rail and Post	11,164	LF	\$12.00	\$133,968
5	Earth Work and Erosion Control	1	LS	\$20,000.00	\$20,000
6	Drainage Control	1	LS	\$5,000.00	\$5,000
7	Signage	21	EA	\$350.00	\$7,320
				SUBTOTAL	\$191,288
	Permit and Agency Processing & Approvals			5%	\$9,564
	Contingencies			20%	\$38,258
	Design Services and Construction Administration			15%	\$28,693
				TOTAL	\$267,804

Santa Ana River Trail - Street Bikeway					
County of Riverside - Regional Parks and Open Space District					
Engineering Estimates					
WRC Consulting Services, Inc.				6/30/2011	
NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
NORCO STREETS					
1	Mobilization	1	LS	\$100,000.00	\$100,000
2	Clearing and Grubbing	1	LS	\$10,000.00	\$10,000
3	Asphalt Concrete - 3" AC / 6" AB	156,100	SF	\$6.00	\$936,600
4	Striping (I/IB)	10,315	LF	\$1.50	\$15,473
5	Striping (II)	30,645	LF	\$1.00	\$30,645
6	Markings	75	EA	\$7.00	\$525
7	Signage (1)	35	EA	\$350.00	\$12,250
8	Signage (2)	50	EA	\$450.00	\$22,500
9	Class IB Barrier	1	LS	\$15,000.00	\$15,000
10	Traffic Control	1	LS	\$100,000.00	\$100,000
11	Utility/Tree/Pole Protection/Relocation	1	LS	\$80,000.00	\$80,000
				SUBTOTAL	\$1,127,993
Permit and Agency Processing & Approvals				5%	\$56,400
Contingencies				20%	\$225,599
Design Services and Construction Administration				15%	\$169,199
				TOTAL	\$1,579,190
NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
SPUR A STREETS					
1	Mobilization	1	LS	\$10,000.00	\$10,000
2	Clearing and Grubbing	1	LS	\$2,000.00	\$2,000
3	Asphalt Concrete - 3" AC / 6" AB	20,600	SF	\$6.00	\$123,600
4	Striping (I/IB)	2,060	LF	\$1.50	\$3,090
5	Striping (II)	0	LF	\$1.00	\$0
6	Markings	3	EA	\$7.00	\$21
7	Signage (1)	2	EA	\$350.00	\$700
8	Signage (2)	2	EA	\$450.00	\$900
9	Class IB Barrier	1	LS	\$8,000.00	\$8,000
10	Traffic Control	1	LS	\$8,000.00	\$8,000
11	Utility/Tree/Pole Protection/Relocation	1	LS	\$8,000.00	\$8,000
				SUBTOTAL	\$140,311
Permit and Agency Processing & Approvals				5%	\$7,016
Contingencies				20%	\$28,062
Design Services and Construction Administration				15%	\$21,047
				TOTAL	\$196,435

Santa Ana River Trail - Paved River Trail						
County of Riverside - Regional Parks and Open Space District						
Engineering Estimates for 30% Plans						
WRC Consulting Services, Inc.				6/30/2011		
NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL COST	SPUR A COST
1	Mobilization	1	LS	\$250,000	\$250,000	\$36,470
2	Clearing and Grubbing	1	LS	\$150,000	\$150,000	\$21,882
3	Overexcavation	44,200	CY	\$6	\$265,200	\$37,778
4	Recompaction	55,200	CY	\$12	\$662,400	\$94,359
5	Excavation	7,017	CY	\$15	\$105,255	\$15,355
6	Compacted Fill	47,130	CY	\$20	\$942,600	\$137,506
7	9" PCC Pavement w/4' toe down	2,500	SF	\$25	\$62,500	\$0
8	Asphalt Concrete - 3" AC / 6" AB	226,900	SF	\$6	\$1,361,400	\$198,600
9	Rubberized Asphalt - 4" RA / 6" AB	36,150	SF	\$10	\$361,500	\$0
10	Erosion Control & Deepened Concrete	1	LS	\$500,000	\$500,000	\$72,940
11	Temperay Shoring	1,000	LF	\$1,000	\$1,000,000	\$0
12	18" Dia. Reinforced Concrete Pipe	291	LF	\$100	\$29,100	\$10,800
13	24" Dia. Reinforced Concrete Pipe	132	LF	\$150	\$19,800	\$7,650
14	36" Dia. Reinforced Concrete Pipe	357	LF	\$250	\$89,250	\$0
15	48" Dia. Reinforced Concrete Pipe	17	LF	\$250	\$4,250	\$0
16	Pipe Inlet & RP	11	EA	\$6,000	\$66,000	\$30,000
17	Pipe Outlet & RP	11	EA	\$10,000	\$110,000	\$50,000
18	Proteive Barrier 36" and larger	18	EA	\$5,000	\$90,000	\$20,000
19	6'Wx5'H RCB, Wingwall, & RP	9	CY	\$3,000	\$27,000	\$0
20	2-6'x6' RCB, Wingwall, RP	45	CY	\$5,000	\$225,000	\$225,000
21	2' Wide Concrete Ditch	2,000	LF	\$15	\$30,000	\$0
22	Protective Railing Line A, C, & D	20,000	LF	\$30	\$600,000	\$99,300
23	Delineator	5,000	LF	\$10	\$50,000	\$7,294
24	Trail Bridge	1	EA	\$500,000	\$500,000	\$0
25	View/Rest Edge Treatment	1	LS	\$8,000	\$8,000	\$0
26	Striping (2-coat) with Bike Symbol	36,435	LF	\$2	\$72,870	\$7,310
27	Speed/Warning/Regulatory/Directional Signage	158	EA	\$350	\$55,372	\$5,555
28	Trail & Vehicle Access Gates and Bollards	12	EA	\$5,000	\$60,000	\$10,000
29	SWPPP	1	LS	\$500,000	\$500,000	\$72,940
30	Chain Link Fence including Auxillary Dike	6,990	LF	\$20	\$139,800	\$0
31	Protect	1	LS	\$50,000	\$50,000	\$0
				SUBTOTAL	\$8,387,297	\$1,160,737
Permit and Agency Processing & Approvals				5%	\$419,365	\$58,037
Contingencies				20%	\$1,677,459	\$232,147
Design Services and Construction Administration				15%	\$1,258,094	\$174,110
				TOTAL	\$11,742,215	\$1,625,031
CORONA \$7,226,560 w/o contingency						CORONA+ SPUR A
CORONA \$10,117,184 w/ contingency						SPUR A

All estimates are based upon the engineer's experience, judgment, and knowledge regarding recent bids. Some unit costs vary, based upon judgments as to the difficulty involved with various trail segments.