

Appendix F:

Priority Strategy Cost Estimates

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Strategy PH-2

STRATEGY PH-2 - TREE PLANTING AND LANDSCAPING (NON-BIORETENTION)					
	UNIT	UNITCOST	QUANTITY PER 100 LF	COST PER 100 LF	COST PER MILE
Clear and Grubbing	SF	\$ 3	1600	\$ 4,800	\$ 253,440
Irrigation	LS	\$ 10,000	1	\$ 10,000	\$ 528,000
Shrub Planting - 5 Gal.	EA	\$ 50	28	\$ 1,400	\$ 73,920
Tree Planting - 15 Gal.	EA	\$ 250	25	\$ 6,250	\$ 330,000
Mulch	SF	\$ 1	1600	\$ 1,600	\$ 84,480
GRAND TOTAL					
2024 CONSTRUCTION COST					\$ 1,270,000
2030 TOTAL COST WITH GENERAL COST FACTORS (3)					\$ 2,900,000

Assumptions

1. Labor is included in the cost of plant materials.
2. Topsoil not included.
3. Assume approximately 16 ft planting width.
4. Assume all plants will be hand watered within an establishment period of one year with maintenance and monitoring by others.
5. Assume that after a one year establishment period, plants will be drought tolerant native plants with no irrigation requirements.

STRATEGY PH-2 - BIORETENTION WITH LANDSCAPING					
DESCRIPTION	QUANTIT	COST/SF		COST/LF	COST/MILE
BIORETENTION BASIN (4')	4	\$180		\$720	\$3,258,514
2024 CONSTRUCTION COST					\$3,258,514
2030 TOTAL COST WITH GENERAL COST FACTORS (3)					\$ 7,430,000

RICHMOND PARKWAY TRANSPORTATION PLAN

Strategy S-1

Location	Proposed High Vis Crosswalks (per Crossing)	Proposed Directional Ramps (per Each)	Proposed PPB (per Intersection)	Proposed Reflective Backplates (per)	Proposed Bike Video Detection (per)	Proposed Ped Scale Lighting (per Intersection)	Proposed Ped Countdown Signal (per)
180 WB ramp/Blume Dr/Richmond Parkway	\$47,374	\$109,324	\$39,858	\$0	\$113,879	\$207,259	\$0
1580 WB ramps & Castro Street	\$47,374	\$127,544	\$19,929	\$0	\$113,879	\$207,259	\$0
180 HOV off-ramp & Richmond Pkwy	\$0	\$0	\$0	\$14,576	\$0	\$0	\$13,665
180 EB ramp & Richmond Pkwy/Fitzgerald Dr	\$0	\$0	\$0	\$0	\$0	\$207,259	\$13,665
Mills Street & Castro Street	\$47,374	\$145,765	\$39,858	\$14,576	\$113,879	\$207,259	\$13,665
Castro Street & Richmond Lane	\$47,374	\$145,765	\$39,858	\$14,576	\$113,879	\$207,259	\$13,665
Hensley Street & Castro Street	\$47,374	\$145,765	\$39,858	\$14,576	\$113,879	\$207,259	\$13,665
W Ohio Avenue/Garrard Street & Richmond Pa	\$23,687	\$127,544	\$19,929	\$14,576	\$113,879	\$207,259	\$13,665
MacDonald Avenue & Richmond Parkway	\$47,374	\$145,765	\$19,929	\$14,576	\$113,879	\$207,259	\$13,665
W Barrett Avenue & Richmond Parkway	\$47,374	\$145,765	\$39,858	\$14,576	\$113,879	\$207,259	\$13,665
Hensley Street & Richmond Parkway	\$47,374	\$145,765	\$39,858	\$14,576	\$0	\$207,259	\$13,665
Gertrude Avenue & Richmond Parkway	\$47,374	\$145,765	\$19,929	\$14,576	\$113,879	\$207,259	\$0
Pittsburgh Avenue & Richmond Parkway	\$47,374	\$109,324	\$0	\$14,576	\$113,879	\$207,259	\$0
Parr Boulevard & Richmond Parkway	\$47,374	\$127,544	\$19,929	\$14,576	\$113,879	\$207,259	\$13,665
Goodrick Ave & Richmond Parkway	\$47,374	\$145,765	\$19,929	\$14,576	\$0	\$207,259	\$0
Hilltop Drive & Richmond Parkway	\$47,374	\$145,765	\$19,929	\$14,576	\$113,879	\$207,259	\$13,665
Atlas Rd & Richmond Parkway	\$47,374	\$145,765	\$19,929	\$14,576	\$0	\$207,259	\$13,665
San Pablo Ave & Richmond Parkway	\$47,374	\$182,206	\$19,929	\$14,576	\$113,879	\$207,259	\$13,665
Lakeside Drive & Richmond Parkway	\$35,530	\$109,324	\$19,929	\$14,576	\$0	\$207,259	\$0
Bella Vista & Richmond Parkway	\$35,530	\$109,324	\$19,929	\$14,576	\$0	\$207,259	\$13,665
Canal Blvd & 1580 WB ramps	\$0	\$163,985	\$19,929	\$0	\$113,879	\$207,259	\$6,833
Canal Blvd & 1580 EB ramps	\$0	\$163,985	\$0	\$14,576	\$113,879	\$207,259	\$13,665
Castro St/Standard Ave & Chevron Wy 1580 EB	\$11,843	\$36,441	\$19,929	\$0	\$113,879	\$207,259	\$0
TOTAL							

Strategy S-2

STRATEGY S-2 - SPEED FEEDBACK AND LIMIT SIGNS			
	QUANTITY	UNIT COST	TOTAL COST
Speed Feedback Signs	4	\$5,000	\$20,000
Speed Limit Signs	6	\$700	\$4,200
GRAND TOTAL			
2024 CONSTRUCTION COST			\$ 24,200
2030 TOTAL COST WITH GENERAL COST FACTORS (3)			\$ 55,117

Assumptions

1. Speed Feedback Signs will be spaced about 5 miles apart and speed limit signs will be spaced about 3 miles apart.
2. See General Cost Factors below.

General Cost Factors

- Mobilization, Demobilization, Environmental Protection, Traffic Control 1.20
- Engineering, Design, and Construction Management 1.20
- Inflation 1.22
- Contingency 1.30
- TOTAL - Combined Cost Factor 2.28

Strategy S-1 (cont.)

SUBTOTALS										
Straighten Crosswalks (per Crosswalk)	Tighten Curb Radii (per corner)	Raised Crosswalks (per Each)	Porkchop Island with Raised Crosswalk	Major Bike Intersection Improvements (per	Minor Bike Intersection Improvements (per	Enforce Right-Turn Only Lane (per	NRTOR (per Intersect ion)	Protected Right-Turn Phase (per Intersection)	Median Refuge Islands (per Intersection)	TOTAL
\$0	\$0	\$49,218	\$0	\$0	\$0	\$0	\$0	\$77,438	\$84,270	\$728,619
\$0	\$271,031	\$49,218	\$91,354	\$0	\$0	\$0	\$0	\$0	\$84,270	\$1,011,858
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,110	\$0	\$0	\$37,352
\$0	\$0	\$49,218	\$0	\$0	\$0	\$0	\$0	\$77,438	\$0	\$347,581
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$582,376
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$582,376
\$0	\$271,031	\$0	\$182,707	\$0	\$120,028	\$0	\$9,110	\$0	\$84,270	\$1,249,523
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,110	\$77,438	\$0	\$607,087
\$0	\$135,516	\$0	\$0	\$0	\$0	\$0	\$0	\$77,438	\$0	\$775,400
\$0	\$0	\$0	\$182,707	\$0	\$0	\$0	\$0	\$77,438	\$0	\$842,520
\$0	\$542,063	\$0	\$0	\$0	\$0	\$0	\$0	\$77,438	\$0	\$1,087,997
\$0	\$0	\$0	\$365,414	\$0	\$0	\$120,711	\$0	\$77,438	\$84,270	\$1,196,615
\$0	\$0	\$0	\$0	\$0	\$0	\$120,711	\$9,110	\$0	\$84,270	\$706,504
\$0	\$0	\$0	\$365,414	\$0	\$0	\$120,711	\$0	\$0	\$84,270	\$1,114,622
\$0	\$0	\$0	\$0	\$2,751,765	\$0	\$0	\$0	\$0	\$0	\$3,186,668
\$0	\$0	\$0	\$0	\$2,751,765	\$0	\$0	\$0	\$77,438	\$0	\$3,391,650
\$0	\$0	\$0	\$365,414	\$0	\$0	\$0	\$0	\$77,438	\$0	\$891,420
\$0	\$0	\$0	\$0	\$2,751,765	\$0	\$0	\$0	\$77,438	\$0	\$3,428,091
\$0	\$271,031	\$0	\$0	\$0	\$0	\$0	\$0	\$77,438	\$84,270	\$819,357
\$0	\$271,031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$84,270	\$755,585
\$0	\$271,031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$782,916
\$0	\$271,031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$784,397
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$389,351
										\$25,299,864

Strategy WB-1

STRATEGY WB-1- ROADWAY TYPICAL SECTION COSTS							
SECTION COMPONENTS	DESCRIPTION	QUANTITY	TONS/LF		COST/LF	COST/MILE	
			AC	AB			
PAVEMENT	ROADWAY(8" AC/23" AB)	48	2.64	7.084	\$1,157	\$6,110,016	
	BIKEWAY(3" AC/12" AB)	12	0.2475	0.924	\$134	\$710,028	
	COST(\$/TON)		\$170	\$100			
CONCRETE WITH GREEN ELEMENTS	DESCRIPTION	QUANTITY	COST/SF		COST/LF	COST/MILE	
	SIDEWALK(LF)	12	\$30		\$360	\$1,900,800	
	BIORETENTION BASIN (4')	4	\$180		\$720	\$3,258,514	
	PLANTER STRIP (4')	4	\$25		\$100	\$603,429	
	CENTER PLANTER/MEDIAN	14	\$25		\$350	\$1,848,000	
OTHER ASSUMED COSTS	DESCRIPTION	QUANTITY	COST		COST/LF	COST/MILE	
	RUMBLE STRIPS	4	\$2 PER LF		\$8	\$42,240	
	LANE STRIPING	6	\$1 PER LF		\$6	\$31,680	
	SD INLET RELOCATIONS	1	\$10,000 PER EACH		\$15	\$80,000	
	SD CXN TO EXISTING (15" RCP)	6	\$530 PER LF		\$5	\$25,440	
	HARDSCAPE BUFFER (2', AT EXISTING BRIDGE)	2	\$100 PER LF		\$200	\$1,056,000	
NEW SIDEWALKS	TOTAL, 2024 CONSTRUCTION COST				\$366	\$1,932,480	
	TOTAL, WITH GENERAL COST FACTORS*, 2030				\$834	\$4,401,367	
NEW BIKEWAYS WITH PLANTERS	TOTAL, 2024 CONSTRUCTION COST				\$988	\$4,751,331	
	TOTAL, WITH GENERAL COST FACTORS*, 2030				\$2,251	\$10,821,509	
ONE SIDE FULL SECTION: TWO NEW LANES, BIKE LANE WITH PLANTER, AND SIDEWALK	TOTAL, 2024 CONSTRUCTION COST				\$1,253	\$6,381,073	
	TOTAL, WITH GENERAL COST FACTORS*, 2030				\$2,853	\$14,533,368	
SPECIAL CASE: EXISTING BRIDGE. HARDSCAPE SHARED USE PATH BUFFER AND RESTRIPE	TOTAL, 2024 CONSTRUCTION COST				\$206	\$1,087,680	
	TOTAL, WITH GENERAL COST FACTORS*, 2030				\$469	\$2,477,272	
FULL SECTION - ALL NEW CONSTRUCTION INCLUDING MEDIAN	TOTAL, 2024 CONSTRUCTION COST				\$2,856	\$14,610,147	
	TOTAL, WITH GENERAL COST FACTORS*, 2030				\$6,504	\$33,275,694	
TOTAL, WITH GENERAL COST FACTORS*, 2030 RANGE: \$3M- \$33M PER MILE (Median of \$18M)							

*General Cost Factors

- 1.20 Mobilization, Demobilization, Environmental Protection, Traffic Control
- 1.20 Engineering, Design, and Construction Management
- 1.22 Inflation
- 1.30 Contingency
- 2.28 TOTAL- Combined Cost Factor

C3 Estimates per mile

Total Impervious of Cross Section	75 LF
Total Impervious Area	396000 SF
4%= Required Area of Treatment	15840 SF
LF of 4' nominal width of bioretention planter (3.5')	4526 LF
Remaining planter, non bioretention basin	6034 LF

Assumptions

Does not take into account ROW acquisitions or agency coordination.
Existing multiuse paths will remain and not be replaced.

Strategy WB-1 (cont.)

BAY TRAIL REALIGNMENT (GERTRUDE TO HENSLEY)				
	UNIT	QUANTITY	UNIT COST	TOTAL COST
GERTRUDE AVE INTERSECTION IMPROVEMENTS				
DIRECTIONAL CURB RAMPS	EA	2	\$ 8,000	\$ 16,000
SIDEWALK	SF	200	\$ 30	\$ 6,000
HIGH VIS CROSSWALK	LF	100	\$ 40	\$ 4,000
BOLLARDS	EA	2	\$ 2,000	\$ 4,000
TRAFFIC SIGNAL RELOCATION	EA	1	\$ 50,000	\$ 50,000
TRAFFIC SIGNAL PED UPGRADES	LS	1	\$ 27,000	\$ 27,000
UTILITY COORDINATION	LS	1	\$ 50,000	\$ 50,000
TRAIL				
ASPHALT FOR TRAIL	TONS	690	\$ 170	\$ 117,300
AGGREGATE BASE FOR TRAIL	TONS	2590	\$ 100	\$ 259,000
PLANTER/FLOW THROUGH	SF	15400	\$ 25	\$ 385,000
BIOSWALE	SF	1400	\$ 100	\$ 140,000
WAYFINDING SIGNS	EA	10	\$ 1,000	\$ 10,000
PATH LIGHTING	LF	2800	\$ 125	\$ 350,000
HENSLEY ST INTERSECTION IMPROVEMENTS				
DIRECTIONAL CURB RAMPS	EA	2	\$ 8,000	\$ 16,000
MEDIAN REFUGE ISLAND	EA	1	\$ 15,000	\$ 15,000
SIDEWALK	SF	200	\$ 30	\$ 6,000
HIGH VIS CROSSWALK	LF	100	\$ 40	\$ 4,000
BOLLARDS	EA	2	\$ 2,000	\$ 4,000
TRAFFIC SIGNAL PED UPGRADES	LS	1	\$ 27,000	\$ 27,000
TOTAL, 2024 CONSTRUCTION COST				\$ 1,490,300
TOTAL, WITH GENERAL COST FACTORS*, 2030				\$ 3,394,269

Assumptions

1. Pavement section is 3" hot mix asphalt over 12" aggregate base.
2. Trail is 12' wide and planter is 6' wide and does not require new curb.
3. Trail length is approximately 2,800 feet.
4. No right of way acquisition.
5. Utility coordination is with West County Waste Water (facility on SW corner of Gertrude/Richmond Pkwy) and others.
6. Path lighting does not necessarily illuminate the roadway.

WIDEN PATH TO 12' (PARR TO GERTRUDE)				
	UNIT	QUANTITY	UNIT COST	TOTAL COST
ASPHALT FOR TRAIL	TONS	1210	\$ 170	\$ 205,700
AGGREGATE BASE FOR TRAIL	TONS	4530	\$ 100	\$ 453,000
PLANTER	SF	29400	\$ 25	\$ 735,000
PATH LIGHTING	LF	4900	\$ 125	\$ 612,500
TOTAL, 2024 CONSTRUCTION COST				\$ 2,006,200
TOTAL, WITH GENERAL COST FACTORS*, 2030				\$ 4,569,269
TOTAL FOR REALIGNMENT AND WIDENING				\$ 7,963,538

Assumptions

1. Does not take into account ROW acquisitions or agency coordination.
2. No work will be performed on bridges.
3. Existing mulitiuse paths will remain and not be replaced.
4. C.3 requirements not applicable (<1 contiguous acre).

***General Cost Factors**

Mobilization, Demobilization, Environmental Protection, Traffic Control	1.20
Engineering, Design, and Construction Management	1.20
Inflation	1.22
Contingency	1.30
TOTAL - Combined Cost Factor	2.28

Strategy WB-2

STRATEGY WB-2 - WILDCAT CREEK TRAIL CROSSING				
	UNIT	QUANTITY	UNITCOST	TOTALCOST
NEW PAVEMENT - ROAD (1)				
MILLING (3" DEPTH)	SY	510	\$ 10	\$ 5,100
HOTMIXASPHALT	TON	130	\$ 170	\$ 22,100
AGGREGATE BASE	TON	80	\$ 100	\$ 8,000
NEW PAVEMENT - TRAIL CONNECTIONS (2)				
GRADING	CY	320	\$ 80	\$ 25,600
HOTMIXASPHALT	TON	60	\$ 170	\$ 10,200
AGGREGATE BASE	TON	230	\$ 100	\$ 23,000
CONCRETE				
CONCRETE (SIDEWALKS, CURB & GUTTER, CURB RAMPS, MEDIANS/PED ISLANDS, MEDIAN NOSES)	SF	1700	\$ 30	\$ 51,000
CURB RAMPS (EACH, EXTRA COSTS, FORMWORK, DWS)	EA	5	\$ 5,000	\$ 25,000
ELECTRIC				
NEW SIGNAL (INCL. TRAFFIC SIGNALS, PED LIGHTED CROSS/STOP SIGNAGE, VIDEO DETECTION, EMS OVERRIDE, ETC.)	LUMP SUM	1	\$ 800,000	\$ 800,000
STRIPING AND SIGNAGE				
HIGH VISIBILITY CROSSWALK	LF	100	\$ 100	\$ 10,000
PAVEMENT MARKINGS	LUMP SUM	1	\$ 10,000	\$ 10,000
HARDSCAPE				
FENCES	LF	30	\$ 100	\$ 3,000
GATES	EA	2	\$ 3,000	\$ 6,000
REMOVABLE BOLLARDS	EA	4	\$ 2,000	\$ 8,000
OTHER				
ENVIRONMENTAL PROTECTION (~2% CONSTRUCTION COSTS)	LUMP SUM	1	\$ 21,000	\$ 21,000
COORDINATION WITH EBRPD	LUMP SUM	1	\$ 100,000	\$ 100,000
GRAND TOTAL				
			2024 CONSTRUCTION COST	\$ 1,122,900
			2030 TOTAL COST WITH GENERAL COST FACTORS (3)	\$ 2,557,488

Assumptions

1. Road section is 4,600 sf of 3" mill and overlay, plus 500 sf of new roadway section, which is 8" asphalt over 23" aggregate base.
2. Trail section is 3" asphalt over 12" aggregate base.
3. See General Cost Factors below.

General Cost Factors

Mobilization, Demobilization, Environmental Protection, Traffic Control	1.20
Engineering, Design, and Construction Management	1.20
Inflation	1.22
Contingency	1.30
TOTAL - Combined Cost Factor	2.28

Strategy DG-1

STRATEGY DG - 1 -- SIGNALS COSTS		
Signal Strategy Component	Cost per Intersection	Total Cost
Signal coordination	\$ 4,400	\$ 101,200
Connected battery backup system	\$ 13,750	\$ 123,750
Central signal management system	\$ 141,900	\$ 1,844,700
Signal hardware and software update	\$ 30,000	\$ 690,000
Emergency vehicle preemption/transit signal priority		\$ 200,000
Adaptive traffic signal system	\$ 45,000	\$ 855,000
Connected Vehicle Roadside Unit	\$ 5,000	\$ 115,000
Subtotal - hardware and software		\$ 3,929,650
Design (15%)		\$ 589,448
Construction Management (10%)		\$ 392,965
Contingency (15%)		\$ 589,448
Grand Total (2024 Estimate)		\$ 5,501,510

RICHMOND PARKWAY TRANSPORTATION PLAN

Strategy M-1 - Pavement

Year	StreetID	Street Name	SectionID	From	To
2030	RPKYEB	RICHMOND PKWY EB	010	N/O CASTRO	N/O REDWOOD
2030	RPKYEB	RICHMOND PKWY EB	020	N/O REDWOOD	N/O MILLS
2030	RPKYEB	RICHMOND PKWY EB	030	N/O MILLS	N/O GENERAL CHEMICAL ENTR
2030	RPKYEB	RICHMOND PKWY EB	040	N/O GENERAL CHEMICAL ENTR	N/O HENSLEY
2030	RPKYEB	RICHMOND PKWY EB	050	N/O HENSLEY	2,277' @ CASTRO MERGE
2030	RPKYEB	RICHMOND PKWY EB	060	2,277' @ CASTRO MERGE	N/O GERTRUDE
2030	RPKYEB	RICHMOND PKWY EB	080	CITY LIMIT @ 1400' W/O GOODRICK AVE	W/O GOODRICK AVE
2030	RPKYEB	RICHMOND PKWY EB	090	W/O GOODRICK	W/O PKWY BRIDGE
2030	RPKYEB	RICHMOND PKWY EB	100	W/O PKWY BRIDGE	E/O PKWY BRIDGE
2030	RPKYEB	RICHMOND PKWY EB	110	E/O PKWY BRIDGE	S/O HILLTOP
2030	RPKYEB	RICHMOND PKWY EB	120	S/O HILLTOP	S/O ATLAS
2030	RPKYEB	RICHMOND PKWY EB	130	S/O ATLAS	W/O SAN PABLO
2030	RPKYEB	RICHMOND PKWY EB	140	W/O SAN PABLO	WIDTH CHANGE (630' E/O SAN PABLO)
2030	RPKYEB	RICHMOND PKWY EB	150	WIDTH CHANGE (630' E/O SAN PABLO)	E/O LAKESIDE
2030	RPKYEB	RICHMOND PKWY EB	160C	E/O LAKESIDE	W/O BLUME
2030	RPKYWB	RICHMOND PKWY WB	020C	E/O SIERRA RIDGE	E/O LAKSIDE DRIVE
2030	RPKYWB	RICHMOND PKWY WB	040	E/O LAKESIDE DRIVE	WIDTH CHANGE (630' E/O SAN PABLO)
2030	RPKYWB	RICHMOND PKWY WB	050	WIDTH CHANGE (630' E/O SAN PABLO)	W/O SAN PABLO
2030	RPKYWB	RICHMOND PKWY WB	060	W/O SAN PABLO	S/O ATLAS
2030	RPKYWB	RICHMOND PKWY WB	070	S/O ATLAS	S/O HILLTOP
2030	RPKYWB	RICHMOND PKWY WB	080	S/O HILLTOP	E/O PKWY BRIDGE
2030	RPKYWB	RICHMOND PKWY WB	090	E/O PKWY BRIDGE	W/O PKWY BRIDGE
2030	RPKYWB	RICHMOND PKWY WB	100	W/O PKWY BRIDGE	W/O GOODRICK
2030	RPKYWB	RICHMOND PKWY WB	110	W/O GOODRICK AVE	CITY LIMIT @ 1500' W/O GOODRICK AVE
2030	RPKYWB	RICHMOND PKWY WB	140	N/O GERTRUDE	1,350' @ ROAD SPLIT
2030	RPKYWB	RICHMOND PKWY WB	145	1,350' @ ROAD SPLIT	N/O HENSLEY
2030	RPKYWB	RICHMOND PKWY WB	150	N/O HENSLEY	END PCC
2030	RPKYWB	RICHMOND PKWY WB	155	END PCC	PENNSYLVANIA
2030	RPKYWB	RICHMOND PKWY WB	160	N/O GENERAL CHEMICAL ENTR	N/O MILLS
2030	RPKYWB	RICHMOND PKWY WB	170	N/O MILLS	400 N/O REDWOOD
2030	RPKYWB	RICHMOND PKWY WB	180	400 N/O REDWOOD	N/O REDWOOD
2030	RPKYWB	RICHMOND PKWY WB	190	N/O REDWOOD	N/O CASTRO
2030	GARRNB	RICHMOND PKWY EB	010	W OHIO	MACDONALD
2030	GARRNB	RICHMOND PKWY EB	020	MACDONALD	BARRETT
2030	GARRNB	RICHMOND PKWY EB	040	S/O BARRETT	N/O PENNSYLVANIA / COP
2030	GARRSB	RICHMOND PKWY WB	010	N/O PENNSYLVANIA	S/O BARRETT
2030	GARRSB	RICHMOND PKWY WB	020	BARRETT	N/O MACDONALD
2030	GARRSB	RICHMOND PKWY WB	040	MACDONALD	W OHIO

Maintenance Cost Notes:

- 1) The cost table attached shows the maintenance treatment and costs both in 2024 and 2030 (2030 based on when this project may actually be constructed) and assumes a 4% inflation rate.
- 2) The treatments shown are based on the projected 2030 pavement condition index (PCI) with an assumed deterioration of 3 PCI points per year.

Strategy M-1 - Pavement (Cont.)

Area (SY)	Current PCI	2030 PCI	Treatment	PCI After Treatment	2024 Unit Cost (\$/SY)	2024 Cost	2030 Unit Cost (\$/SY)	2030 Cost
2,951	85	67	THIN OVERLAY W/DIGOUTS	100	\$ 55.00	\$ 162,000	\$ 70.00	\$ 207,000
6,490	55	37	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 594,000	\$ 116.00	\$ 753,000
12,280	42	24	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 1,817,000	\$ 187.00	\$ 2,296,000
7,957	56	38	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 728,000	\$ 116.00	\$ 923,000
8,594	55	37	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 786,000	\$ 116.00	\$ 997,000
6,773	37	19	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 1,002,000	\$ 187.00	\$ 1,267,000
5,444	47	29	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 498,000	\$ 116.00	\$ 632,000
8,089	60	42	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 740,000	\$ 116.00	\$ 938,000
9,396	90	72	Do Nothing - PCC		\$ -	\$ -		\$ -
28,722	59	41	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 2,628,000	\$ 116.00	\$ 3,332,000
9,778	49	31	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 895,000	\$ 116.00	\$ 1,134,000
7,233	41	23	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 1,070,000	\$ 187.00	\$ 1,353,000
2,660	91	73	SLURRY SEAL	79	\$ 3.50	\$ 9,000	\$ 4.50	\$ 12,000
2,418	91	73	SLURRY SEAL	79	\$ 3.50	\$ 8,000	\$ 4.50	\$ 11,000
17,991	69	51	THIN OVERLAY W/DIGOUTS	100	\$ 55.00	\$ 990,000	\$ 70.00	\$ 1,259,000
10,550	69	51	THIN OVERLAY W/DIGOUTS	100	\$ 55.00	\$ 580,000	\$ 70.00	\$ 739,000
2,342	46	28	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 214,000	\$ 116.00	\$ 272,000
4,340	57	39	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 397,000	\$ 116.00	\$ 503,000
7,233	50	32	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 662,000	\$ 116.00	\$ 839,000
8,800	47	29	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 805,000	\$ 116.00	\$ 1,021,000
24,288	62	44	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 2,222,000	\$ 116.00	\$ 2,817,000
9,396	90	72	Do Nothing - PCC		\$ -	\$ -		\$ -
8,089	44	26	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 740,000	\$ 116.00	\$ 938,000
5,833	36	18	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 863,000	\$ 187.00	\$ 1,091,000
6,300	89	71	SLURRY SEAL	77	\$ 3.50	\$ 22,000	\$ 4.50	\$ 28,000
8,178	50	32	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 748,000	\$ 116.00	\$ 949,000
3,025	82	64	THIN OVERLAY W/DIGOUTS	100	\$ 55.00	\$ 166,000	\$ 70.00	\$ 212,000
2,383	92	74	SLURRY SEAL	80	\$ 3.50	\$ 8,000	\$ 4.50	\$ 11,000
11,169	20	2	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 1,653,000	\$ 187.00	\$ 2,089,000
5,067	27	9	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 750,000	\$ 187.00	\$ 948,000
3,300	42	24	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 488,000	\$ 187.00	\$ 617,000
3,504	3	0	RECONSTRUCT SURFACE (AC)	100	\$ 148.00	\$ 519,000	\$ 187.00	\$ 655,000
8,462	86	68	THIN OVERLAY W/DIGOUTS	100	\$ 55.00	\$ 465,000	\$ 70.00	\$ 592,000
3,911	70	52	THIN OVERLAY W/DIGOUTS	100	\$ 55.00	\$ 215,000	\$ 70.00	\$ 274,000
7,076	61	43	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 647,000	\$ 116.00	\$ 821,000
7,076	64	46	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 647,000	\$ 116.00	\$ 821,000
3,911	61	43	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 358,000	\$ 116.00	\$ 454,000
8,462	52	34	THICK MILL AND OVERLAY W/DIGOUTS	100	\$ 91.50	\$ 774,000	\$ 116.00	\$ 982,000
					2024 Total	\$ 25,870,000	2030 Total	\$ 32,787,000

3) Total costs include the section of Castro Street which was the former Richmond Parkway and is labeled as part of the Richmond Parkway in the City's StreetSaver database. The sections of Castro are at the end of the spreadsheet and are separated by a darker line. If you wanted to take out these sections from the 2030 costs would be about \$4 million less.

Strategy M-1 - General

STRATEGY M-1 -- MAINTENANCE (GENERAL)		
	Public Works Division	Annual Cost
Street sweeping	Streets Maintenance Division	\$160,431.84
Weed abatement, removal of illegal dumping, graffiti abatement, encampments (West Ohio to Giant Road)	Abatement Division, Parkway	\$102,831.00
Weed abatement, removal of illegal dumping, encampments (Castro – Hensley to Pt. Richmond, Parkway – Giant Road to HWY I-80, Parkway – West Ohio to Pt. Richmond).	Abatement Division, Parkway	\$219,792.40
GRAND TOTAL (2024 Estimate)		\$483,055.24

Strategy T-1

STRATEGY T-1 - TRANSIT STRATEGY (Bus/Walking Improvements)					
	UNIT	QUANTITY	UNITCOST	TOTALCOST	
STRUCTURAL - RETAINING STRUCTURES					
RETAINING WALLS	LF	250	\$ 600	\$ 150,000	
NEW PAVEMENT - SHARED USE PATH					
GRADING	CY	370	\$ 80	\$ 29,600	
HOT MIX ASPHALT	TON	40	\$ 170	\$ 6,800	
AGGREGATE BASE	TON	150	\$ 100	\$ 15,000	
CONCRETE					
CONCRETE (SIDEWALKS, CURB & GUTTER, CURB RAMPS, MEDIANS/PED ISLANDS, MEDIAN NOSES)	SF	2800	\$ 40	\$ 112,000	
CONCRETE BUS PAD	SF	1500	\$ 60	\$ 90,000	
CURB RAMPS (EACH, EXTRA COSTS, FORMWORK, DWS)	EA	2	\$ 5,000	\$ 10,000	
STRIPING AND SIGNAGE					
PAVEMENT MARKINGS AND SIGNAGE	LUMP SUM	1	\$ 40,000	\$ 40,000	
OTHER					
DEMOLITION (GENERAL)	SF	6600	\$ 10	\$ 66,000	
BUS SHELTERS, BENCHES, ETC.	LUMP SUM	1	\$ 50,000	\$ 50,000	
GRAND TOTAL					
				2024 CONSTRUCTION COST	\$ 569,400
				2030 TOTAL COST WITH GENERAL COST FACTORS (3)	\$ 1,296,851

Assumptions

1. See General Cost Factors below.
2. Assume the retaining structures will be less than 4' tall.
3. Trail section is 3" asphalt over 12" aggregate base.
4. Demolition (General) includes work to clear the site and remove roadway material and existing concrete improvements.

STRATEGY T-1 - TRANSIT STRATEGY (Bike lockers)					
BIKE LOCKER PRODUCTS & SERVICES	UNIT	QUANTITY	UNITCOST	TOTALCOST	
EQUIPMENT		4	\$ 9,880	\$ 39,520	
ACCESS HUB EQUIPMENT AND SERVICE		2	\$ 1,995	\$ 3,990	
DELIVERY		1	\$ 1,000	\$ 1,000	
INSTALLATION	LOCKER SPACE	7	\$ 375	\$ 2,625	
ANNUAL SERVICE AND OPERATIONS AGREEMENT	YEAR	5	\$ 840	\$ 4,200	
				SUBTOTAL	\$ 51,335
				TAX	\$ 4,117
				2024 BIKE LOCKER INSTALLATION COST	\$ 55,452
				TOTAL COST FOR STRATEGY T-1 - TRANSIT STRATEGY	\$ 1,352,303

General Cost Factors

Mobilization, Demobilization, Environmental Protection, Traffic Control	1.20
Engineering, Design, and Construction Management	1.20
Inflation	1.22
Contingency	1.30
TOTAL - Combined Cost Factor	2.28