



APPENDIX C: CAPITAL AND OPERATIONS COST MODEL

This appendix includes the complete capital and operations model as of the completion of the Parks and Recreation Strategic Plan. This should be considered a snapshot in time of a tool that is intended to change based on current conditions. The source spreadsheet has been provided to City staff so that the assumptions can be updated as needed to provide a current planning level estimate of a project, a set of projects or the improvements to the entire system.

ASSUMPTIONS

A series of cost assumptions were generated for each capital improvement and element of maintenance cost and are provided at the end of this appendix. The costs included are a combination of actual Emeryville costs, the consultant team's experience with recent Bay Area construction and operation costs for similar projects and the input of local experts. These costs are not detailed cost estimates; each assumption is intended to be applied system-wide and therefore lacks detail that will apply to specific sites or projects.

A summary of the basis for each cost is provided alongside the number that serves as the input to the formulas. In some cases the cost is a per unit cost (with the unit indicated) and in others it is an allowance per site. Allowances are scaled to cover a moderate level of development/effort.



USE OF THIS MODEL

The snapshot provided here is intended to provide a reasonable understanding of the costs involved in implementing specific projects and the entire system. This understanding will help the community and the City Council prioritize projects. Going forward the costs provided as assumptions at this time will become dated, due to changes in the real estate and labor markets and other costs of construction and operations. The model is designed so that the assumptions can be modified as needed by replacing the current values in the assumptions tab of the spreadsheet. In each of the sections of the model (capital and operations), selections have been made to indicate the facilities recommended for inclusion. These selections trigger the application of the cost assumptions and are rolled up to a total cost. The site size is also an important factor in the calculations and is provided in both acres and square feet. All of the calculations that create the total planning level capital and operations costs are linked to these assumptions, the site size and the site program selections.

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Table C1: Capital and Operations Cost Model

Inventory	Existing/Proposed Acres		Capital Cost Model																	Other: Cost/Description		Total Planning Level Capital Cost							
	Existing Acres	Proposed Acres	Site Acquisition	Site Design/Master Planning	Site Development	% Site Development	Site Furnishings	Small Turf Area	Small Turf Alternative Area	Multi-Use Sport Field	Children's Play Area (Small)	Children's Play Area (Large)	Group Picnic Area (Basic)	Group Picnic Area (Large)	Interactive Water Feature	Public Art	Restroom	Sport Court (Large)	Sport Court (Small)	Game Court/Area	Dog Park with Fencing		Challenge Area	Community Garden	Interpretive Signage				
EXISTING PARKS																													
City Parks																													
61st St. Mini-Park	0.14	0.14					x			x													1			\$ 413,575			
Christie Avenue Park	0.79	1.00	SD	x	100%		x	x	x	x					x											\$ 930,500			
Doyle Hollis Park	1.25	1.25																								\$ -			
Stanford Avenue Park	1.74	1.74								x								1								\$ 448,525			
Greenways/Linear Parks																													
Emeryville Greenway	1.50	1.50																								\$ -			
Horton Landing Park	1.40	1.40		x	100%		x																2			\$ 386,780			
Pixar Pedestrian Connection	0.65	0.65																				x				\$ 174,750			
Temescal Creek Park	0.70	0.70	SD	x	75%		x			x					x							x	x	4	\$ 40,000	Additional native plantings	\$ 1,148,713		
San Francisco Bay Trail	3.31	3.31																								\$ -			
Waterfront Parks																													
Davenport Mini-Park	0.44	0.44	SD	x	100%			x															1	\$ 20,000	Deck, stairs	\$ 339,845			
Emeryville Marina Park	7.56	7.56		x	10%		x				1	2			x								6	\$ 400,000	Identified ADA Improvements	\$ 1,693,770			
Point Emery	1.37	1.37					x								x											\$ 349,500			
Shorebird Park	1.97	1.97																					1			\$ 5,825			
Special Use Facilities																													
Community Organic Garden	0.29	0.29																									\$ -		
48th Street Community Garden	0.09	0.09		x	100%																						\$ 20,970		
Big Daddy's Community Garden	0.20	0.20																									\$ -		
Bridgework Room	-	-																									\$ -		
Civic Center	1.44	1.44																									\$ -		
Park Avenue Plaza (Site I)	0.30	0.30																									\$ -		
Recreation Center	0.24	0.24																									\$ 2,913		
Senior Center/Veteran's Memorial	0.29	0.29																									\$ 233,000		
Senior Center/Veteran's Memorial	0.29	0.29																									\$ 850,450		
SUBTOTAL EXISTING PARKS	25.67	25.88																									\$ 6,999,116		
PROPOSED PARKS																													
Site 1 Doyle Hollis Park Expansion north to 64th		6.75	x	MP	x	85%	x	x	x	x	2	1		x	x	4					x	x				\$ 38,930,888			
Site 2 PG&E site west of Hollis between 45th and 53rd		6.24	x	MP	x	100%	x	x	x		x	1		x	x	4					x	x	x			\$ 36,776,183			
Site A I-80 ped-bike bridge touchdown in Ashby interchange		0.25	x		x	100%								x									1			\$ 1,329,075			
Site B west of Shellmound north of 65th		0.50	x	SD	x	100%	x	x		x									1							\$ 3,291,575			
Site C north of 65th east of railroad tracks		1.00	x	SD	x	100%	x	x		x									1				x			\$ 6,054,575			
Site D north of Powell between Christie and I-80		0.50	x	SD	x	100%	x							x	x											\$ 3,000,325			
Site E Stanford Ave. Park expansion west to Hollis		0.80	x		x	100%	x	x																		\$ 4,315,950			
Site F Stanford Ave. Park expansion north to Powell		0.55	x	SD	x	75%	x	x							x							x				\$ 3,241,675			
Site G Powell St. Plaza west of Shellmound south of Powell		1.00	x	SD	x	100%	x	x		x					x											\$ 5,897,300			
Site H Temescal Creek Park and Temescal Creek Greenway		0.08			x	100%	x																2			\$ 65,856			
Site J on Park Ave west of Hollis		0.50	x	SD	x	100%	x			x					x												\$ 3,204,200		
Site K East Baybridge Center south of 40th west of San Pablo		3.00	x	SD	x	100%	x	x	x		x	1			x	x	2									\$ 17,590,050			
Site L Triangle neighborhood east of San Pablo north of 40th		0.50	x	SD	x	100%	x	x		x																\$ 3,250,800			
Emeryville Greenway Expansions		4.71	x	SD	x	100%	x	x		x	1				x			1	1							\$ 25,797,972			
Temescal Creek Greenway Expansions		1.32	x	SD	x	100%	x																			\$ 7,135,761			
SUBTOTAL PROPOSED PARKS	-	27.70																									\$ 159,882,185		
TOTAL SYSTEM	25.67	53.58																									\$ 166,881,301		
ADDITIONAL SITES (REMOVED FROM TOTALS)																													
Child Development Center	0.60	0.60																									\$ 1,000,000	Identified life cycle costs	\$ 1,165,000
Joint School District/City Facility		-																									\$ 25,000,000	City Commitment to joint project	\$ 25,000,000
Site 3 AC Transit site west of San Pablo north of 45h (Alternate to Site 2)		10.05	x	MP	x	100%	x		x	x	2	1		x		4					x	x	x				\$ 56,737,823		

Table CI: Capital and Operations Cost Model

Inventory	Operations Cost Model											
	Existing Acres	Proposed Acres	Basic Maintenance	Restroom	Multi-Use Sports Field	Group Picnic Area (Large)	Dog Park	Interactive Water Feature	Safety Emphasis	Intensive Use	Basic Annual Maintenance	Total Annual Maintenance Allocation
EXISTING PARKS												
City Parks												
61st St. Mini-Park	0.14	0.14	x								\$ 4,269	\$ 4,269
Christie Avenue Park	0.79	1.00	x							x	\$ 30,492	\$ 50,492
Doyle Hollis Park	1.25	1.25	x	1				1		x	\$ 38,115	\$ 118,115
Stanford Avenue Park	1.74	1.74	x								\$ 53,056	\$ 53,056
Greenways/Linear Parks												
Emeryville Greenway	1.50	1.50	x							x	\$ 45,738	\$ 65,738
Horton Landing Park	1.40	1.40	x								\$ 42,689	\$ 42,689
Pixar Pedestrian Connection	0.65	0.65	x								\$ 19,740	\$ 19,740
Temescal Creek Park	0.70	0.70	x						x		\$ 21,344	\$ 41,344
San Francisco Bay Trail	3.31	3.31	x								\$ 100,929	\$ 100,929
Waterfront Parks												
Davenport Mini-Park	0.44	0.44	x								\$ 13,416	\$ 13,416
Emeryville Marina Park	7.56	7.56	x	1		2				x	\$ 230,520	\$ 310,520
Point Emery	1.37	1.37	x								\$ 41,774	\$ 41,774
Shorebird Park	1.97	1.97	x								\$ 60,069	\$ 60,069
Special Use Facilities												
Community Organic Garden	0.29	0.29	x								\$ 8,843	\$ 8,843
48th Street Community Garden	0.09	0.09	x								\$ 2,744	\$ 2,744
Big Daddy's Community Garden	0.20	0.20	x								\$ 6,098	\$ 6,098
Bridgecourt Room	-	-									\$ -	\$ -
Civic Center	1.44	1.44	x					1			\$ 43,908	\$ 53,908
Park Avenue Plaza (Site I)	0.30	0.30	x								\$ 9,148	\$ 9,148
Recreation Center	0.24	0.24									\$ -	\$ -
Senior Center/Veteran's Memorial	0.29	0.29									\$ -	\$ -
SUBTOTAL EXISTING PARKS	25.67	25.88									\$ 772,892	\$ 1,002,892
PROPOSED PARKS												
Site 1 Doyle Hollis Park Expansion north to 64th		6.75	x	1	1	1	1			x	\$ 205,821	\$ 323,321
Site 2 PG&E site west of Hollis between 45th and 53rd		6.24	x	1	1	1	1			x	\$ 190,270	\$ 300,270
Site A I-80 ped-bike bridge touchdown in Ashby interchange		0.25	x								\$ 7,623	\$ 7,623
Site B west of Shellmound north of 65th		0.50	x								\$ 15,246	\$ 15,246
Site C north of 65th east of railroad tracks		1.00	x								\$ 30,492	\$ 30,492
Site D north of Powell between Christie and I-80		0.50	x					1			\$ 15,246	\$ 25,246
Site E Stanford Ave. Park expansion west to Hollis		0.80	x								\$ 24,394	\$ 24,394
Site F Stanford Ave. Park expansion north to Powell		0.55	x								\$ 16,771	\$ 16,771
Site G Powell St. Plaza west of Shellmound south of Powell		1.00	x								\$ 30,492	\$ 30,492
Site H Temescal Creek Park and Temescal Creek Greenway		0.08	x								\$ 2,520	\$ 2,520
Site J on Park Ave west of Hollis		0.50	x								\$ 15,246	\$ 15,246
Site K East Baybridge Center south of 40th west of San Pablo		3.00	x	1						x	\$ 91,476	\$ 161,476
Site L Triangle neighborhood east of San Pablo north of 40th		0.50	x								\$ 15,246	\$ 15,246
Emeryville Greenway Expansions		4.71	x							x	\$ 143,584	\$ 163,584
Temescal Creek Greenway Expansions		1.32	x						x		\$ 40,180	\$ 60,180
SUBTOTAL PROPOSED PARKS	-	27.70									\$ 844,606	\$ 1,192,106
TOTAL SYSTEM	25.67	53.58									\$ 1,617,499	\$ 2,194,999
ADDITIONAL SITES (REMOVED FROM TOTALS)												
Child Development Center	0.60	0.60									\$ -	\$ -
Joint School District/City Facility		-									\$ -	\$ -
Site 3 AC Transit site west of San Pablo north of 45h (Alternate to Site 2)		10.05	x	1	1	1	1			x	\$ 306,445	\$ 423,945

Table C2: Capital Cost Model Assumptions

	Cost per Acre	Cost/Allowance for Each	Notes
Site Acquisition	\$ 4,400,000		estate agents. Actual value of land will vary based on site condition, existing improvements and market conditions. Range (\$75-150/square foot). This cost does not include site clean-up, which will vary greatly depending on prior uses. Full site soil removal could cost an additional \$250,000 or more per acre.
SD - Site Design		\$ 100,000	\$100k Basic site design (including construction documents) for small sites
MP - Master Planning		\$ 400,000	Full site master plan with (construction documents) for larger more critical sites
Site Development	\$ 200,000	\$ 200,000	\$200k minimum with additional \$200k per acre after first acre of size Paving, landscape and irrigation, trees, lighting, site utilities
% Site Development			Modifier to adjust development and furnishings for previously developed or undeveloped site areas.
Site Furnishings	\$ 30,000	\$ 30,000	\$30,000 minimum with additional \$30,000 per acre after first acre of size Covers seating, trash receptacles, signage.
Small Turf Area		\$ 40,000	Irrigated turf approximately 12,000 sq ft
Small Turf Alternative Area		\$ 80,000	Decomposed Granite or enhanced paving as a lower maintenance/water efficient option 8-12,000 sq ft depending on surfacing chosen
Multi-Use Sport Field		\$ 600,000	Large sand based turf field with multiple potential configurations. Assumes no field lights
Children's Play Area (Small)		\$ 350,000	Small, separated age areas with either manufactured equipment or integrated interactive art or natural elements for play
Children's Play Area (Large)		\$ 600,000	Additional equipment and customized features.
Group Picnic Area (Basic)		\$ 50,000	grouping of tables with shade or shelter
Group Picnic Area (Large)		\$ 400,000	Tables, shelter, food preparation area with sink
Interactive Water Feature		\$ 175,000	Zero depth interactive fountain or small water playground
Public Art			Assume that 5% of each project is either accommodated on site or added to fund
Restroom		\$ 350,000	4 unit single occupancy restroom building
Large Sport Court		\$ 80,000	Adequate for a tennis court with lights or a nicely surfaced full basketball court
Small Sport Court		\$ 35,000	Based on a half basket ball court
Game Court/Area		\$ 35,000	Bocce, horseshoes, other game related area.
Dog Park with Fencing		\$ 75,000	Fenced area with turf or harder surface. Assumes this is a feature within a larger park taking advantage of other seating and existing utilities for water.
Challenge Area		\$ 150,000	Allowance for climbing, skating or other challenge features.
Community Garden		\$ 100,000	Based on estimate from San Francisco Rec and Parks 4300 sq ft, 14-plots, 20/sq ft + fencing and misc costs
Interpretive Signage		\$ 5,000	For basic design, text development, fabrication and installation of each sign
Other			Other identified projects
Other: Cost			Planning Level cost for "Other" project or cost identified from existing source
Percent for Art	1.5%		City ordinance requires 1.5% of construction cost for public projects to be dedicated to art.
Contingency	15%		Percent of total project cost

Table C3: Operating Cost Model Assumptions

	Unit	Annual Amount	
Basic Maintenance	Per SqFt	\$ 0.70	Based on labor-day estimates for all landscape and park maintenance categories along with landscape contracts and water costs. Divided by area of entire park system (plus estimate of the medians because this labor cannot be separated out)
Bonuses	Per Acre	\$ 30,492	Calculated from per square foot cost.
Restroom	Each	\$ 50,000	Reduced slightly from labor expended on Marina Park restroom maintenance, difference made up in the "Intensive Use" bonus.
Multi-Use Sports Field	Each	\$ 35,000	Annual cost for the additional maintenance required for a sport field, assuming heavy use and set of skills not yet present.
Group Picnic Area (Large)	Each	\$ 5,000	Additional maintenance driven by new facilities such as food prep areas (including sinks) and preparation and clean up around reserved use.
Dog Park	Each	\$ 7,500	Additional site management including clean up, additional trash collection
Interactive Water Feature	Each	\$ 10,000	Based on additional labor, water and materials attributed to water features in similar California park systems.
Safety Emphasis	Allowance	\$ 20,000	Bonus for sites that have reduced visibility and require additional monitoring, graffiti removal and maintenance
Intensive Use	Allowance	\$ 20,000	Bonus for sites that are amongst the most intseively used in the park system. Recognizing the increase maintenance following events, additional trash collection, restroom maintenance etc. *Staffing costs assume fully loaded hourly rate of \$50, in line with Public Works estimates, and should cover City or contracted costs

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