

Attachment 4 - Alternatives Evaluation

Attachment 4

Project Alternatives Evaluation								
			Alternative 5B-4 MG		Alternative 6-4 MG		Alternative 7-4 MG	
			Tunnel driven from canal	Tunnel driven from Ft. Funston temporary construction shaft	Tunnel driven from canal	Tunnel driven from Ft. Funston temporary construction shaft	Tunnel driven from canal	Tunnel driven from Ft. Funston temporary construction shaft
Deliver Public Benefits	Community benefits	Satisfaction Rating: 1 (satisfied) to 5 (dissatisfied)	2	1	3	1	4	1
	Public inconvenience (temporary, interim, & permanent)		3	2	4	3	5	5
	Water Re-Use Opportunities		5	5	3	3	1	1
	Flood protection	Satisfaction Rating: 1 (completely) to 5 (minimal)	1	1	1	1	1	1
	Reduce potential for overflow into Lake Merced		3	3	2	2	1	1
	Debris screening		1	1	1	1	1	1
	Wetlands enhancement	Satisfaction Rating: 1 (complements) to 3 (supports) to 5 (no support)	1	1	1	1	1	1
	Groundwater recharge potential		5	5	5	5	5	5
	Score (sum of ratings)		21	19	20	17	19	16
	Operability	Facility operations	Operability Rating: 1 (convenient) to 5 (inconvenient)	3	3	3	3	3
Stormwater screening effectiveness		3		3	2	2	1	1
Stormwater screening maintainability		1		1	2	2	3	3
Score (sum of ratings)		7	7	7	7	7	7	
Environmental Compliance	Impacts on the environment	Environmental Impact Rating: 1 (minimal) to 5 (significant)	4	3	4.5	3.5	5	4
	Effects on sensitive species		3	3	4	3.5	4	4
	NEPA/CEQA requirements	Permitting Rating: 1 (simple and well understood) to 5 (complex and time consuming)	5	3	5	3	5	3
	Water Quality Permit requirements (RWQCB)		3	3	3	3	3	3
	Score (sum of ratings)		15	12	16.5	13	17	14
Minimize Land Acquisition Costs	Land acquisition and right-of-way requirements	Land Use Rating: 1 (simple and well understood) to 5 (complex and time consuming)	2	2	3	3	4	4
	Temporary easement requirements		2	3	2	3	2	3
	Utility interference issues and relocation requirements		4	2	5	2	5	2
	Score (sum of ratings)		8	7	10	8	11	9
Maximize Constructability	Construction working space and access	Constructability Rating: 1 (simple) to 5 (complex)	3	1	4	1	5	1
	Spoils management		5	1	5	1	5	1
	Constructability		5	2	5	2	5	2
	Construction Duration		4.5	3	5	3.5	5	4
	Pipeline connections		3	1	3	1	3	1
	Anticipated Ground Conditions		3	3	3	3	3	3
	Score (sum of ratings)		23.5	11	25	11.5	26	12
Minimize Lifecycle Costs	Relative construction costs from relative cost sheet	Cost Ranking: 1 (lowest cost-risk) to n (highest cost-risk)	3.17	1.00	4.02	1.95	5.00	3.22
	Relative O&M costs-- debris removal & disposal, water treatment, pump maintenance & pumping costs	O&M Rating: 1 (low cost-risk) to 5 (high cost-risk)	3	3	3	3	3	3
	Score (sum of ratings)	6.2	4.0	7.0	5.0	8.0	6.2	
Overall Score (x10)			See Sensitivity Matrix below	See Sensitivity Matrix below	See Sensitivity Matrix below	See Sensitivity Matrix below	See Sensitivity Matrix below	See Sensitivity Matrix below

Weighting Sensitivity Matrix							Description	Weighted Overall Score	Rank										
Deliver Public Benefits	Operability	Environmental Compliance	Minimize Land Acquisition Costs	Maximize Constructability	Minimize Lifecycle Costs														
A	100%	100%	100%	100%	100%	100%	Equal weight distribution	807	4	600	1	855	5	615	2	880	6	642	3
B	15%	5%	10%	15%	5%	50%	65% cost + 35% non-cost	105	4	80	1	113	5	85	2	119	6	92	3
C	33%	5%	10%	15%	5%	33%	48% cost + 52% non-cost	131	4	106	2	135	5	106	1	138	6	109	3
D	33%	10%	10%	17%	5%	25%	35% cost + 65% non-cost	132	4	109	2	137	5	108	1	138	6	111	3
E	0%	0%	0%	0%	0%	0%		0	1	0	1	0	1	0	0	0	0	0	0
Consolidated Rank								17.0	4	7.0	1	21.0	5	7.0	1	25.0	6	13.0	3
Overall Rank								4	1	5	1	6	1	3	1	3	1		