

SUMMARY OF DRAFT STRUCTURAL ASSESSMENT
REPORT BY GHD, DATED NOVEMBER, 2017.

SUMMARY PREPARED BY NL, 12/18/17, Comments by
GHD, 1/9/2018

Berkeley Municipal Pier Renovation Alternatives

		Rehabilitation			Seismic Retrofit				Replacement			
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
		Concrete Repairs	Concrete Repairs + Lateral Stiffening	Concrete Repairs + Lightweight Deck	Concrete Repairs + Seismic Retrofit (Moment Frame)	Concrete Repairs + Seismic Retrofit (Pile Bent Frame)	Concrete Repair + Seismic Retrofit (Moment Frames & Light Weight Deck)	Concrete Repairs + Seismic Retrofit (Pile Bent Trusses & Lightweight Deck)	Monopile with Precast Deck	Monopile with CIP Deck	Precast Concrete Construction	Monopile with Prefabricated Steel Bents Caps and Aluminum Truss Deck System
Component of Work	Concrete	Repair	Repair	Repair	Repair	Repair	Repair	Repair	New	New	New	New
	Piles	X	Repair + Add	X	Repair + Add	Repair + Add	Repair + Add	Repair + Add	Monopile	Monopile	2 piles per bent cap	Monopile
	Deck	X	X	New 16' Deck	-	-	New 16' Deck	New 16' Deck	16'	16'	16'	16'
	Seismic Strengthening	X	X	X	Moment Frame	Bent Frame	Moment Frame	Bent Truss	✓	✓	✓	✓
Seismic	Current Building Code Seismic Compliance	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Resistance to Seismic Events	Very Poor	Poor	Poor	Fair	Fair	Fair	Fair	Good	Good	Good	Good
Sea Level Rise	Resilience to Mid Century Level (~13.5 ft)	Poor	Poor	Good	Poor	Poor	Good	Good	Good	Good	Good	Good
	Adaptability to End of Century (~15 ft)	Difficult	Difficult	Simple	Difficult	Difficult	Simple	Simple	Simple	Simple	Simple	Simple
Permits	U.S. Army Corps of Engineers	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10	Section 404 and Section 10
	Regional Water Quality Control Board	Section 401	Section 401	Section 401	Section 401	Section 401	Section 401	Section 401	Section 401	Section 401	Section 401	Section 401
	CA Department of Fish & Wildlife	Consultation	Consultation	Consultation	Consultation	Consultation	Consultation	Consultation	Consultation	Consultation	Consultation	Consultation
	US Fish and Wildlife Service	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation	Biological Opinion and Section 7 consultation
	Bay Conservation Development Commission	May need administrative permit only	May need administrative permit only	May need administrative permit only	May need administrative permit only	May need administrative permit only	May need administrative permit only	May need administrative permit only	May need administrative permit only	Major Permit action	Major Permit action	Major Permit action
Capital Costs	Probable Construction Cost (Million)	\$18.90	\$23.21	\$10.41	\$33.46	\$28.41	\$21.72	\$18.43	\$13.30	\$14.80	\$14.00	\$13.67
	Estimated Total Project Cost (Million)	\$29.75	\$36.42	\$16.58	\$54.60	\$46.17	\$35.73	\$30.27	\$21.71	\$24.01	\$22.92	\$22.47
Long Term M&O	Longevity	10 years (additional work)	10 years (additional work)	10 to 15 years (additional work)	30 to 45 years	30 to 45 years	35 to 50 years	35 to 50 years	55 to 70 years	55 to 70 years	55 to 70 years	55 to 70 years
	Long Term Maintenance (Inspection Interval/Repairs)	3 to 5 year/within 10 years	3 to 5 year/within 10 years	5 year/within 10 years	5 year/within 10 years	5 year/within 10 years	5 year/within 15 years	5 year/within 15 years	5 to 10 years/after 20 years.	5 to 10 years/after 20 years.	5 to 10 years/after 20 years.	5 to 10 years/after 20 years.

DRAFT