## Fidalgo Marina Breakwater Repair/Replace Comparison 9/27/2022

Piles	11													
Description	Туре	Material	Permit type	Permit lead time	Demo costs	Trucking	Patch steel	Rebar	Silt curtain (required	Material Cost	Markup (12%)	Labor Cost	Total	Comments
	combi-wall													Identical to the
New	30" piles/z-			3 years										new wall at
breakwater	sheet steel	coated steel	standard	(minimum)	96,000	20,000	-	-	-	427,000	51,240	448,350	1,042,590	Anacortes Marina
														Top choice from
		C1 1 0												Global Diving.
		fiberglass &												Reviewed, spec'd
Repair with	external	cementitious				40.000	6.500	6.400	0.005	47.000	0.074	474 200	250 250	and approved by
Denso	jacket	grout	emergency	3 months	-	10,000	6,500	6,100	9,285	47,900	8,374	171,200	259,359	PND
Danain with 5		fiberglass &												Second choice
Repair with 5	external	cementitious		2		10.000	г 000	C 100	0.205	C4 250	10.160	171 200	276 402	from Global
Star	jacket	grout	emergency	3 months	-	10,000	5,000	6,100	9,285	64,350	10,168	171,200	276,103	Diving
Repair with	external	fiberglass &		2		10.000	г 000	C 100	0.205	FF 000	0.046	171 200	265 624	Third choice from
QuakeWrap	jacket	epoxy grout	emergency	3 months	-	10,000	5,000	6,100	9,285	55,000	9,046	171,200	265,631	Global Diving
Repair with	external	sto al		2 th		10.000			0.205	40 500	7.054	264 000	220 020	Direct quote
Steel	jacket	steel	emergency	3 months	-	10,000	-	-	9,285	49,500	7,054	264,000	339,839	from PND Failed testing and
		carbon fiber												new material
Repair with	internal	sock & epoxy												delivery is too
CarboSleeve	repair		emergency	2 months		10,000		_	9,285	134,146	17,212	268,292	438,935	unreliable
Carbosieeve	Терап	grout	emergency	3 1110111113		10,000	-	-	9,203	134,140	17,212	200,292	430,933	PND Engineers
														reviewed this
														option and it
														does not provide
Fill pile with	internal	cement &												required strength
cement	repair	rebar	emergency	3 months	_	_	_	_	_	_	_		_	properties
Cement	repair	ienai	emergency	3 1110111113	-	-	-	-	-	-	-	_	-	higherries