Great Lakes Ports & Harbor Infrastructure
Cost Range Estimates (2010 costs)

Structure Costs ($/ft) vs. Depth Ranges
Entrance Structures

Structure Type	New/Repair	8'-13'	14'-25'	26'-35'	Notes
Rubble Mound Breakwater **(E-1)**	New	2800-6975	3850-10700	5600-14000	
	Repair	800	800-1500	1500-2000	
SSP Bulkhead w/Concrete Cap **(E-2)**	New	1250-4100	2100-7000	5090-9600	
	Repair	835-1350	1400-2900	2290-3360	1
SSP Bulkhead w/Stone Cap **(E-3)**	New	1200-1950	2025-4000	3220-4830	
	Repair	780-1270	1315-2350	2100-3150	1
SSP Bulkhead In Rock Bottom w/Stone Cap **(E-4)**	New	2140-3970	2835-5065	4160-6240	2
	Repair	*	*	*	3
Timber Crib w/Concrete Cap **(E-5)**	New	1600-3080	3185-5690	*	8
	Repair	1000-1625	1000-1625	*	3
Timber Crib w/Stone Cap **(E-6)**	New	1600-2000	*	*	3
	Repair	*	*	*	3
Timber Crib w/Lakeside Stone **(E-7)**	New	*	*	*	3
	Repair	*	3400	*	3
SSP Closed Cells w/Stone Fill **(E-8)**	New	5600-9100	6300-11250	8800-13200	4
	Repair	780-1270	1315-2350	2100-3150	5
SSP Closed Cells w/Concrete Fill **(E-9)**	New	6400-10400	8050-14500	9650-15600	4
	Repair	780-1270	1315-2350	2100-3150	5
SSP Open Cells w/Sand Fill **(E-10)**	New	6000-9750	7600-11875	8400-12600	6
	Repair	780-1270	1315-2350	2100-3150	7
Binwall **(E-11)**	New	2100	*	*	3
	Repair	*	*	*	3

* = See specific note at right of column

Notes:
1) New front sheet pile wall only
2) Sheet pile pinned or trenched into rock
3) No estimates given (unlikely structure for those depths; or replaced with newer options, typically steel sheet pile walls)
4) 20' to 30' diameter cells connected together in wall
5) 20' to 30' diameter cells connected together in wall, repair front face only
6) 30' diameter cells
7) 30' diameter cells, repair front face only
8) 12' wide x 20' long Oak cribs with treated timber tops