



Herb Beck Marina

Breakwater Condition Assessment and
Marina Entrance Dredging Assessment



Herb Beck Marina Overview





Condition Assessment

August 11, 2022

Marina Overview

Site visit/condition assessment
conducted on June 16th, 2022 at
an approx. -4ft MLLW tide



Condition Rating

	Good	Fair	Poor	Inconclusive
1. Marina – Floats				
2. Marina – Gangway				
3. Marina – Piles				
4. Marina – Boat Ramp				
5. Rock BW – Slopes				
6. Rock BW – Crest				
7. Timber BW				
8. Armor Stone – Condition				

Good/Excellent

: Only minor deterioration or defects/only slight imperfections

Fair/Marginal

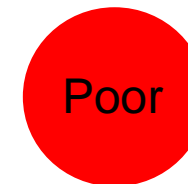
: Moderate deterioration/deterioration evident but structure is sound

Poor/Failed

: Serious deterioration in portions of structure/general failure

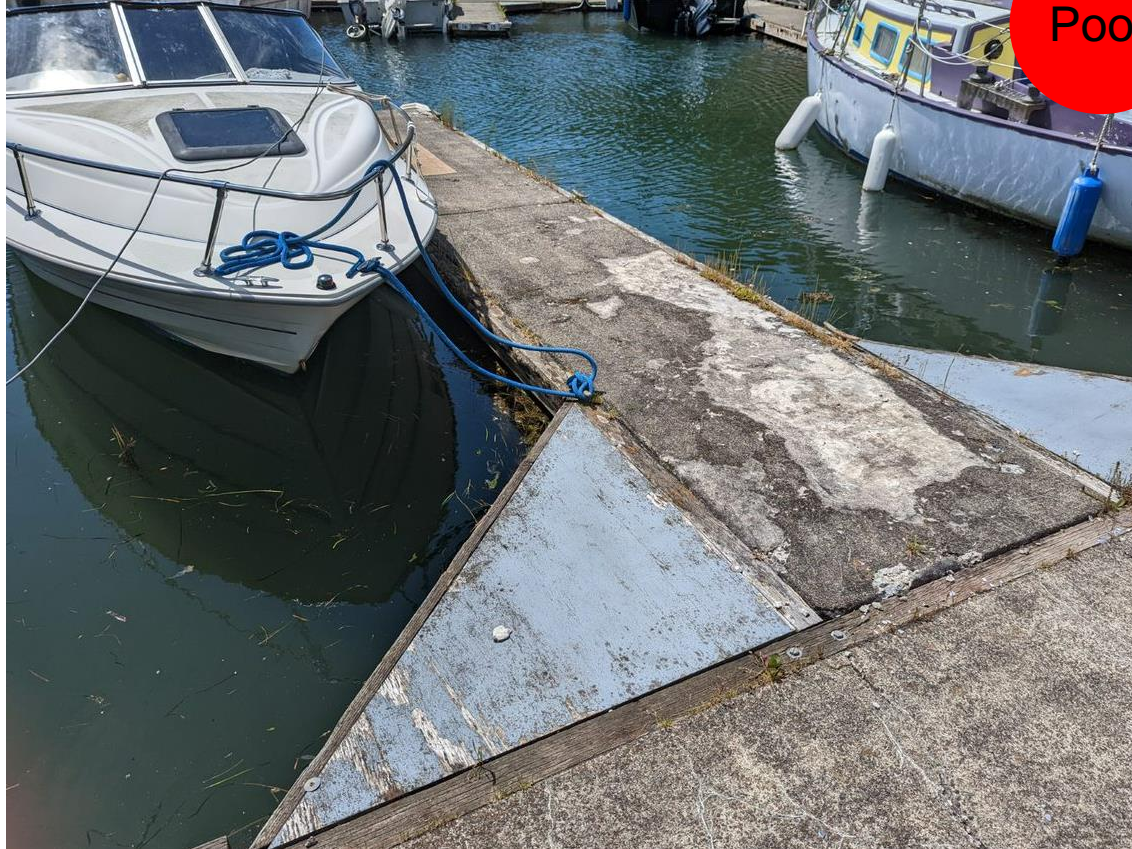
Inconclusive

: Additional data is needed



Marina - Floats

Concrete floats



Poor

- Surface cracks and spalling of concrete observed in select locations
- Deterioration of timber walers observed along a significant portion of the concrete floats
- Listing of select floats was observed

Timber floats



Fair

- Deterioration of timbers under grating observed
- Connections rusted

Marina - Gangway

Fair



- Deterioration (rust) observed on structure, connections, and handrails of both gangways
- Entire Deck could be replaced with fiberglass decking to improve traction

Marina - Piles

Fair



- Variety of pile hoops and both timber and steel piles observed
- Significant marine growth observed on both pile types
- Deterioration noted on both type of piles, likely timber piles have failed and been replaced with steel

Marina – Boat Ramp

Fair



- Concrete cracking and spalling observed
- Minor undermining of panel near bottom of ramp observed

Rock Breakwater – Slopes and Crest



DOE Shoreline Photos



5/22/2001

DOE Shoreline Photos



6/23/2006

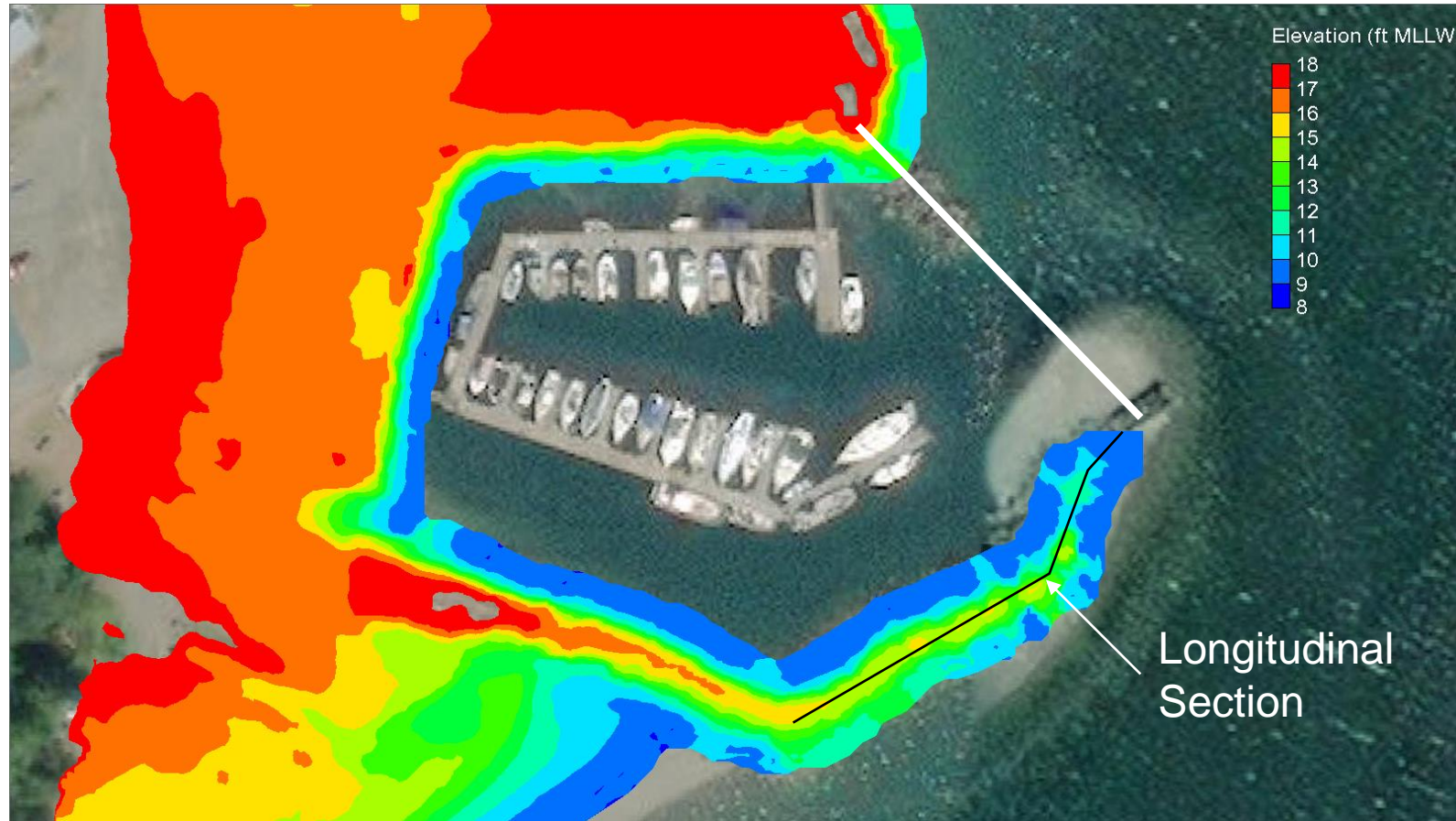
DOE Shoreline Photos



7/24/2016

Rock Breakwater

2017 USGS Survey Analysis



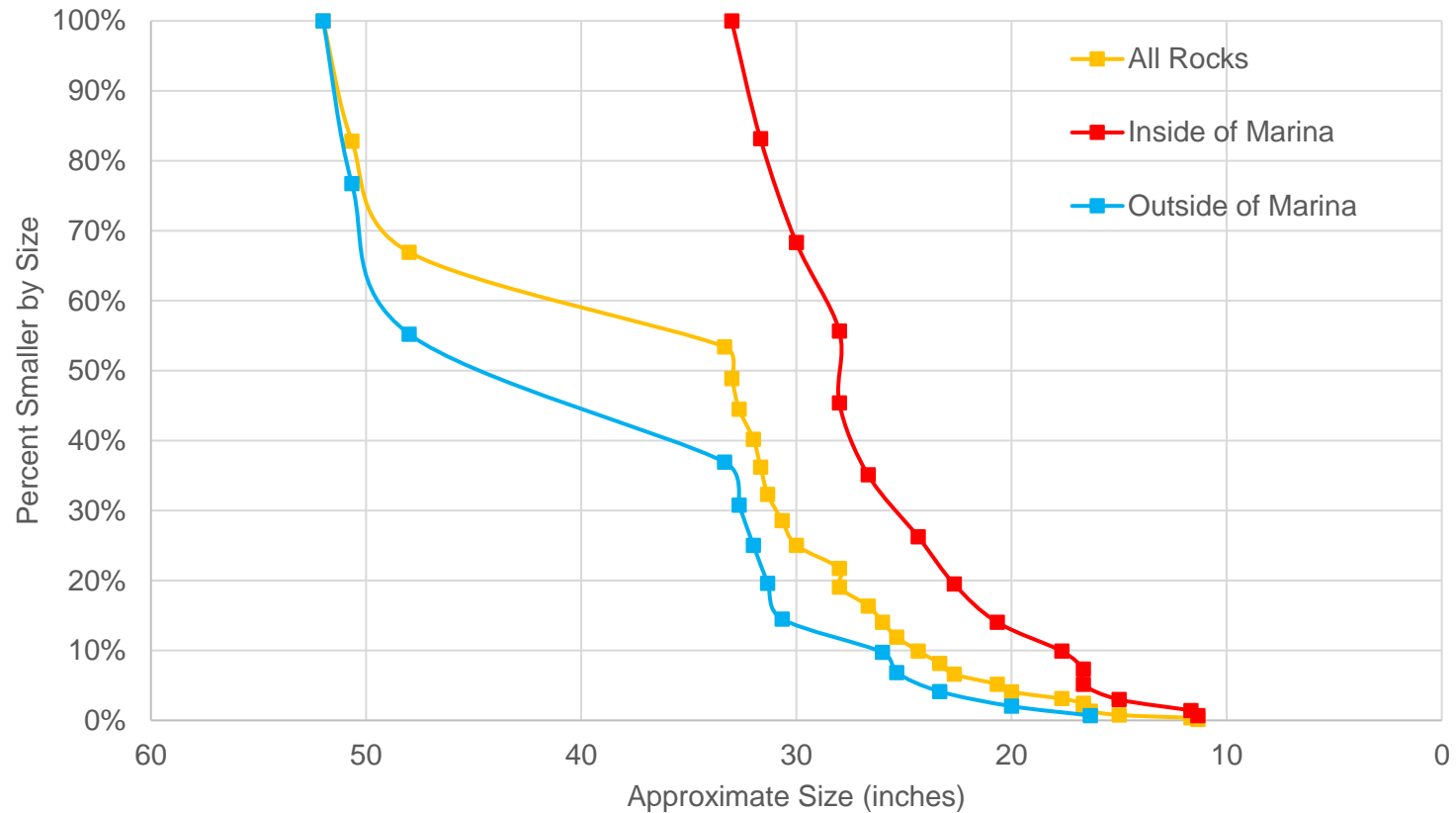
Armor Stone - Condition

Fair



- Basalt rock deterioration
- Cracks resulting in rocks breaking into smaller pieces
- Marine growth
- Freeze-Thaw
- Wave Action

Armor Stone - Size



- Variation in rock size on the marina side of the breakwater vs the bay side of the breakwater.
- Unlikely caused by erosion from wave action, more likely being built intentionally

Condition Assessment Results

	Good	Fair	Poor	Inconclusive
1. Marina – Floats			X	
2. Marina – Gangway		X		
3. Marina – Piles		X		
4. Marina – Boat ramp		X		
5. Rock BW – Slopes				Pending survey
6. Rock BW – Crest				Pending survey
7. Timber BW			X	
8. Armor Stone – Condition		X		

Good/Excellent

: Only minor deterioration or defects/only slight imperfections

Fair/Marginal

: Moderate deterioration/deterioration clearly evident but structure is sound

Poor/Failed

: Serious deterioration in portions of structure/general failure

Inconclusive

: Additional data is needed



Good



Fair



Poor



Inconclusive

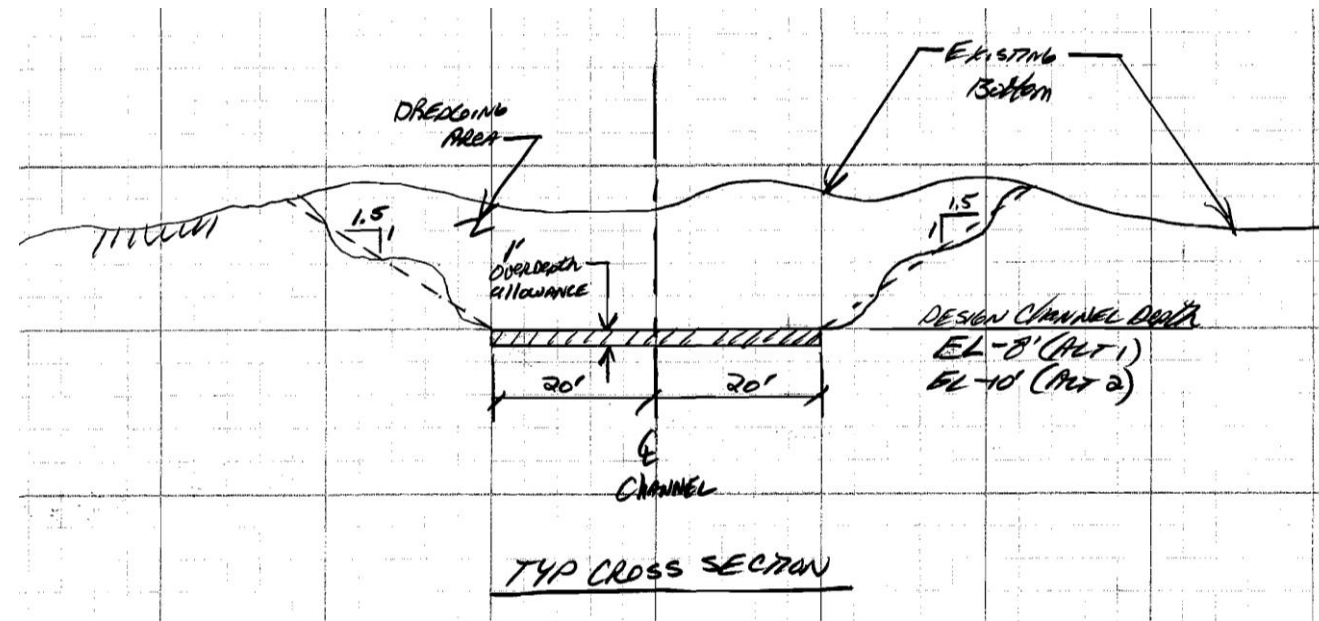


Basis of Design

August 11, 2022

Design Criteria

- Design Criteria
 - Design Vessel: L=32ft, B = 9ft
- Design Standards
 - US & International Recreational Boating Facility Standards
- Depth
 - El -10ft (Minimum depth)
 - El -12ft (advanced maintenance dredging)
- Over depth Dredging Allowance
 - 1 ft
- Bottom Width (Reduced from Std min 60ft)
 - 40 ft at breakwater
- Side Slopes
 - 1.5H:1V (or flatter)





Thank you

