SECTION 227

Sheldon Marsh Nature Preserve

U.S. Army Engineer District
Buffalo, NY

SECTION 227


LAKE ERIE
SHELDON MARSH

N
LAKE ERIE
CHAUSEE
SHELDON MARSH
0 1000
SCALE IN FEET
OPEN WATER
NASA
ROUTE 6
AQUEDUCT
HULL RD.
CAMP ROAD
RAILROAD
SHELDONLOCATION.DGN
NOTE: BASE MAP TRACED FROM USGS QUAD MAP DATED 1969 BARRIER ISLAND POSITION AND WETLANDS UPDATED TO 2001.

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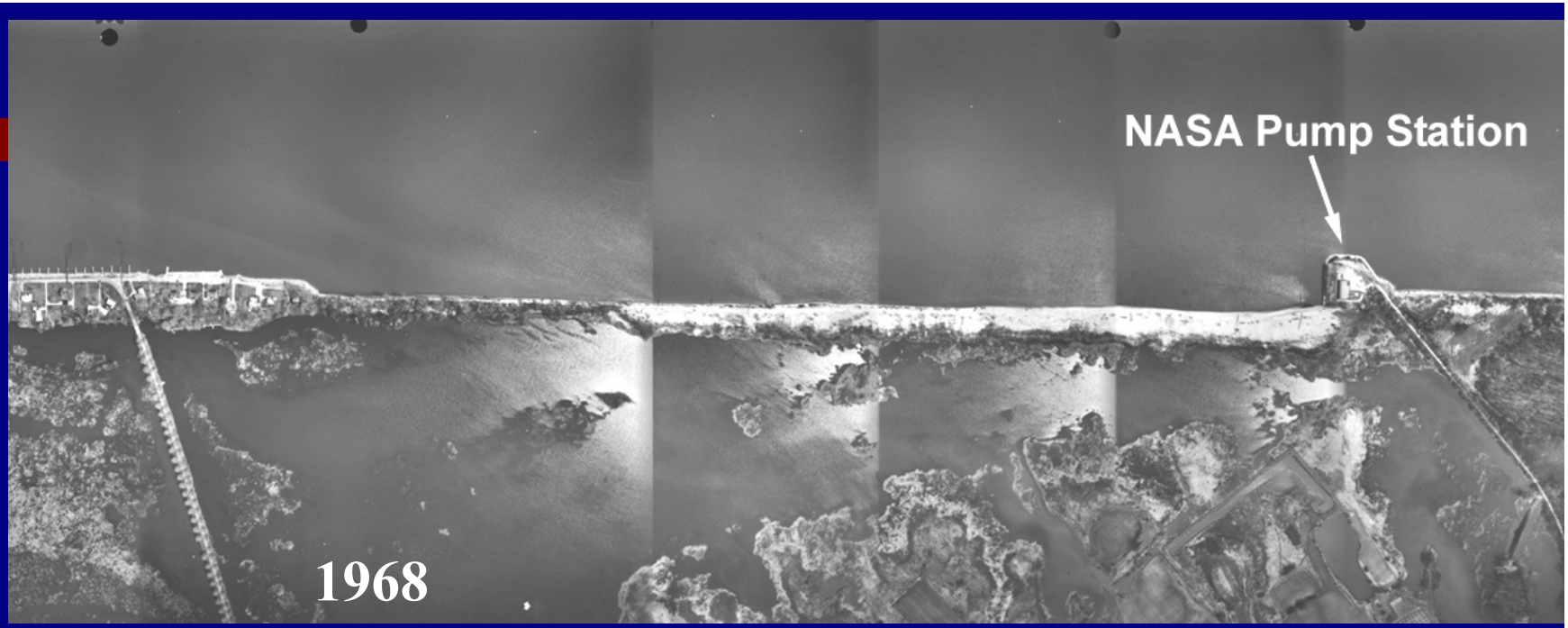

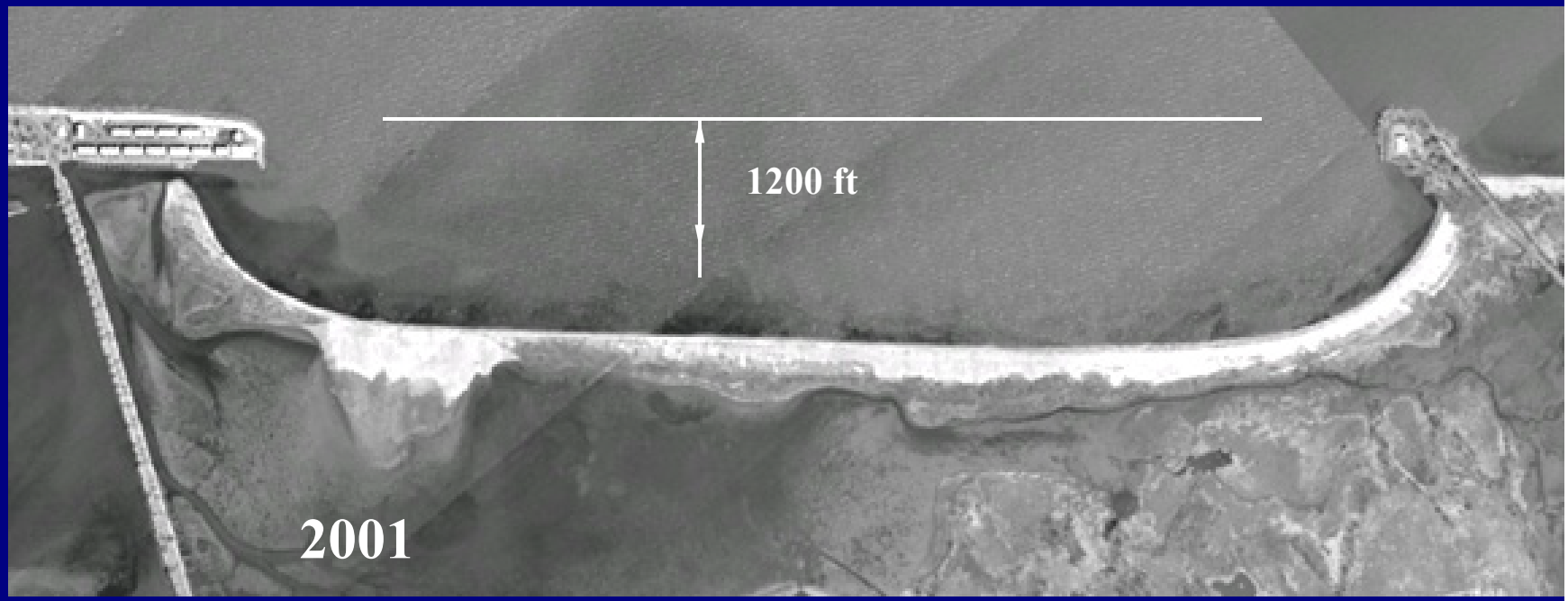

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Project Goals

- Slow the retreat of the barrier and protect the interior wetlands
- Allow waves to wet the beach slope during wave activity
- Minimize visual impact over a wide range of water levels
- Provide additional fish habitat
- Minimal construction impact
- Minimize future maintenance

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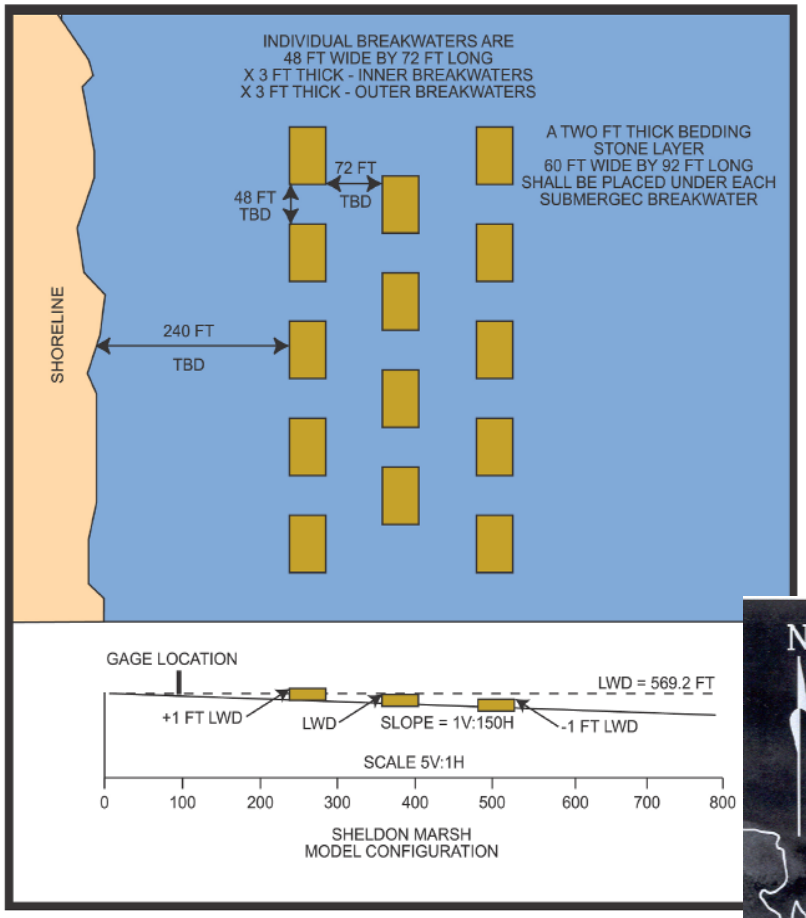
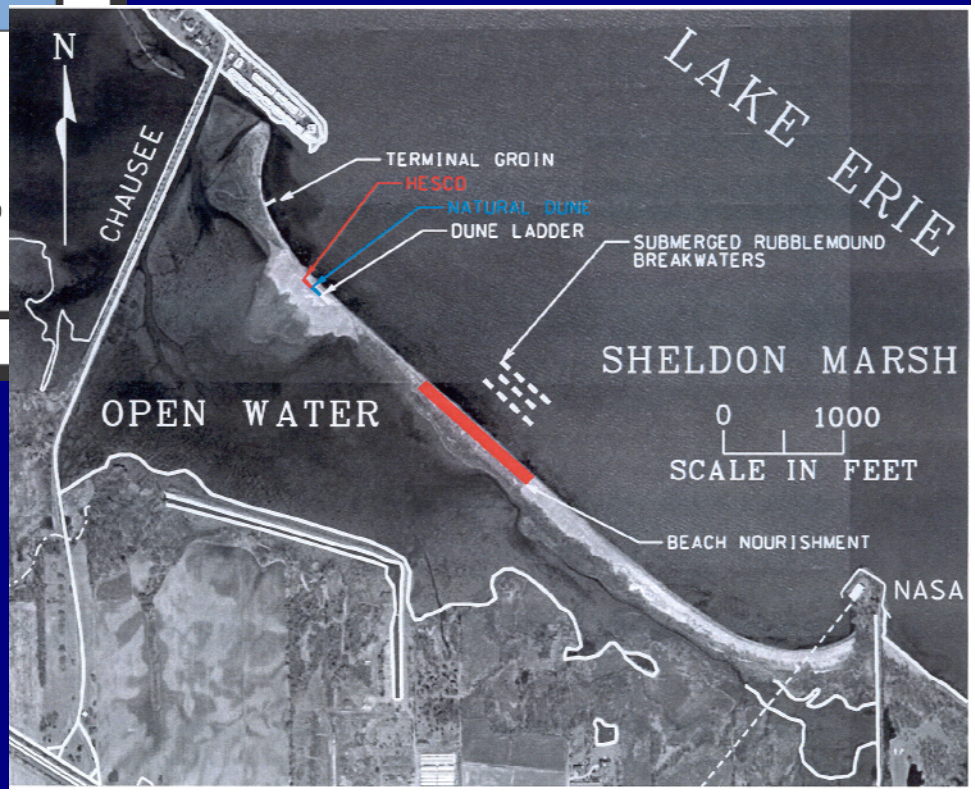

INDIVIDUAL BREAKWATERS ARE
48 FT WIDE BY 72 FT LONG
X 3 FT THICK - INNER BREAKWATERS
X 3 FT THICK - OUTER BREAKWATERS
A TWO FT THICK BEDDING
STONE LAYER
60 FT WIDE BY 92 FT LONG
SHALL BE PLACED UNDER EACH
SUBMERGEC BREAKWATER
72 FT
TBD
48 FT
TBD
240 FT
TBD
SHORELINE
GAGE LOCATION
LWD = 569.2 FT
+1 FT LWD
LWD
SLOPE = 1V:150H
-1 FT LWD
SCALE 5V:1H
0
100
200
300
400
500
600
700
800
SHELDON MARSH
MODEL CONFIGURATION


N
LAKE ERIE
CHAUSEE
TERMINAL GROIN
HESCO
NATURAL DUNE
DUNE LADDER
SUBMERGED RUBBLEMOUND
BREAKWATERS
SHELDON MARSH
OPEN WATER
0
1000
SCALE IN FEET
BEACH NOURISHMENT
NASA

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SHELDON MARSH MODEL STUDY AVERAGE WAVE HEIGHT AT GAUGES 8-10				
WATER LEVEL	WAVE RECURRENCE INTERVAL	AVERAGE WAVE HEIGHT - FT		PERCENT REDUCTION
		EXISTING	WITH PROJECT	
AVERAGE	AVERAGE	2.119	1.176	45
	2-YEAR	2.364	1.567	34
	20-YEAR	2.803	1.513	46
10-YEAR	AVERAGE	3.067	2.376	23
	2-YEAR	4.484	3.918	13
	20-YEAR	4.638	3.861	17

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Conclusions

- Project will minimize wave impact on the marsh and surroundings
- Waves will periodically overtop existing dunes
- Waves will continue to wet the beach slope
- Visual impact will be minimized over a wide range of water levels
- Additional fish habitat will be provided
- Maintenance will be minimized
- Actual wave dissipation should be higher than model

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Current Progress

- Project report is at 95%
- Tech Note has been completed and formatted at ERDC
- Geomorphology report has been completed by Morang and Chader and is being formatted at ERDC
- Technical report for ERDC is at 50%
- Scope of work completed for independent reviewers (outside agency reviewers)
- Final Report will be sent out in next few weeks for independent review

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Current Issues

- Problems with obtaining construction access to the project site and staging area
- MOA current draft does not reflect Ohio's concerns re. project removal (if necessary).
- The proposed project area has restrictions due to its Nature Preserve status. USACE and ODNR are currently negotiating to obtain construction access via land to the project site and staging area.

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Current Issues – continued

- Land access is easiest and cost effective
  - Non-Federal sponsor does not want land access, issues with possible road damage and tree removal
  - Preserve access by public will be impacted
- Water access is difficult and more costly
  - Dredging will be required
  - Bathymetry will be permanently altered - greater impact on ecosystem (organic peat lake bottom exists)
  - Still need to access beach for nourishment, dune work, etc.

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