

DULUTH-SUPERIOR HARBOR MAINTENANCE DREDGING AND COASTAL ZONE PLACEMENT ON MINNESOTA POINT

Melissa Bosman

Operations & Maintenance

U.S. Army Corps of Engineers

Detroit, MI

7 March 2018



**US Army Corps
of Engineers**®

OVERVIEW

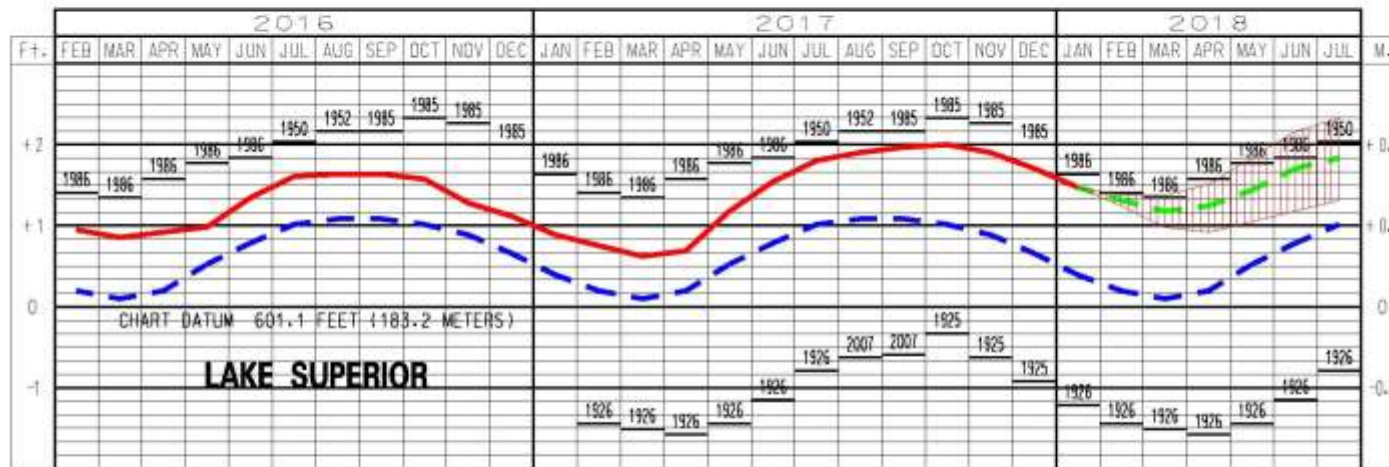
- High Water & Storm Events on Lake Superior
- Impacts on Minnesota Point
- Historic Dredging and Placement Information
- Coastal Zone Placement of Dredged Material on Minnesota Point
- Continuing Authorities Program (CAP)



US Army Corps
of Engineers®

HIGH WATER & STORM EVENTS ON LAKE SUPERIOR

LAKE SUPERIOR WATER LEVELS - FEBRUARY 2018



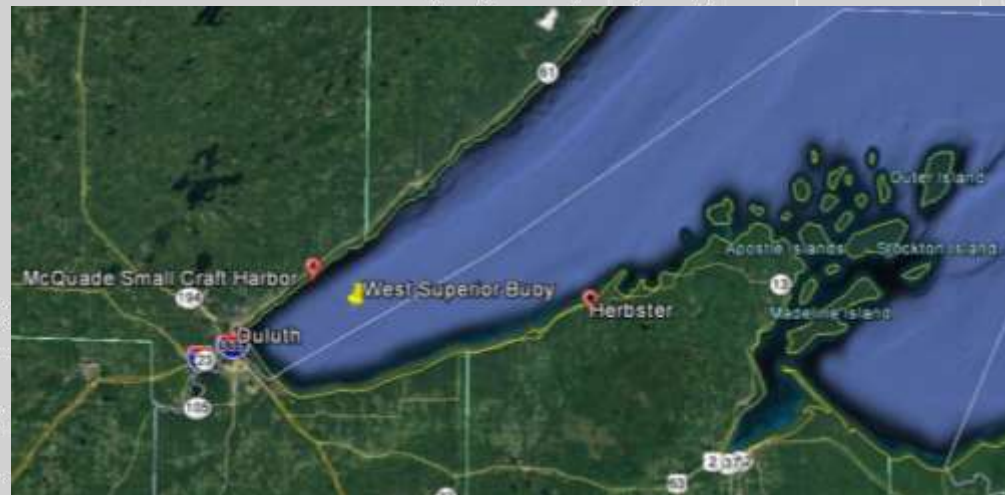
US Army Corps of Engineers®

HIGH WATER & STORM EVENTS ON LAKE SUPERIOR

West Superior Wave Height



West Superior Wind Speed



US Army Corps
of Engineers®

HIGH WATER & STORM EVENTS ON LAKE SUPERIOR



Crashing waves tore up portions of the lakewalk in Duluth,
Photo credit Karie McWherter Simpson

Erosion from the waves along Duluth's lake walk
Photo credit Ken Slatten



US Army Corps
of Engineers®

HIGH WATER & STORM EVENTS ON LAKE SUPERIOR



US Army Corps
of Engineers®

Waves overtop the breakwater structure
in Duluth, Photo credit Christian Dalbec

IMPACTS ON MINNESOTA POINT



Erosion along Minnesota Point,
Photo credit Marie Strum



US Army Corps
of Engineers®

IMPACTS ON MINNESOTA POINT



**US Army Corps
of Engineers**®

Erosion along Minnesota Point,
Photo credit Sean Strasser

IMPACTS ON MINNESOTA POINT



**US Army Corps
of Engineers**®

Erosion along Minnesota Point,
Photo credit Sean Strasser

IMPACTS ON MINNESOTA POINT



US Army Corps
of Engineers®

Erosion along Minnesota Point,
Photo credit Marie Strum

IMPACTS ON MINNESOTA POINT



Erosion along Minnesota Point,
Photo credit Marie Strum



US Army Corps
of Engineers®

HISTORIC DREDGING AND PLACEMENT INFORMATION

Operations and Maintenance Dredging/Placement at Minnesota Point & Wisconsin Point			
FY	Cubic Yards	Dredge Area	Placement Area
2008	135,721	14, 16, 17	Superior Entry NW Breakwater extending NW along MN Point for 3,000 ft.
2002	116,684	14	Behind Superior Entry Breakwater extending NW for 3,000 ft.
1998	112,975	15, 16	Washed out Area around Superior N. Breakwater Structure
1996	50,362	1,2	Duluth Entry S Breakwater extending SE along MN Point for 3000 ft.
1990	45,303	17	Superior Entry S Breakwater beginning 2.5 MI SE of S BKW and extending SE along WI Point for 0.5 MI.
1983	44,044	14	Superior Entry S Breakwater beginning 2.5 MI SE of S BKW and extending SE along WI Point for 0.5 MI.



US Army Corps
of Engineers®

HISTORIC DREDGING AND PLACEMENT INFORMATION



US Army Corps
of Engineers®

HISTORIC DREDGING AND PLACEMENT INFORMATION



US Army Corps
of Engineers®

HISTORIC DREDGING AND PLACEMENT INFORMATION



US Army Corps
of Engineers®

HISTORIC DREDGING AND PLACEMENT INFORMATION



Aerial Image of Superior Entry NW Breakwater, Photo credit Google Earth, 8/2010

Dredged material placed behind Superior Entry NW Breakwater, Photo credit DuAO, 7/2009



US Army Corps
of Engineers®

HISTORIC DREDGING AND PLACEMENT INFORMATION



Aerial Image of Superior Entry NW Breakwater, Photo credit Google Earth, 6/2017

Erosion of material behind Superior Entry NW Breakwater , Photo credit DuAO, 11/2017



US Army Corps
of Engineers®

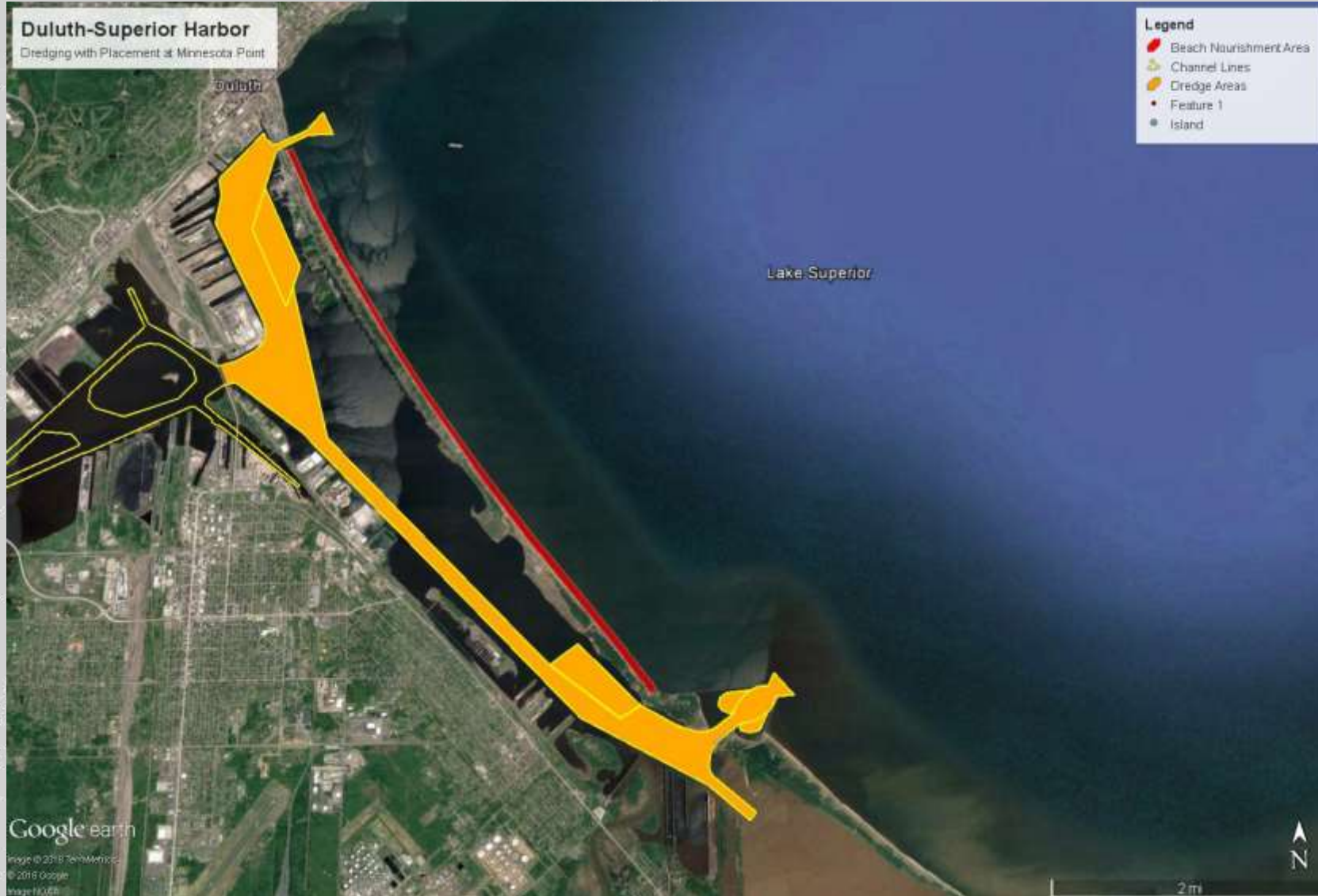
COASTAL ZONE PLACEMENT OF DREDGED MATERIAL ON MINNESOTA POINT

- 2000 FONSI - Project: Maintenance Dredging in Duluth-Superior Harbor with Associated Nearshore Placement at Minnesota Point, Duluth, Minnesota
- Requesting new 401 WQC from MPCA for placement of dredged materials along MN Point
- Extend placement limit to 12 ft. depth contour for future placement



US Army Corps
of Engineers®

COASTAL ZONE PLACEMENT OF DREDGED MATERIAL ON MINNESOTA POINT



US Army Corps
of Engineers®

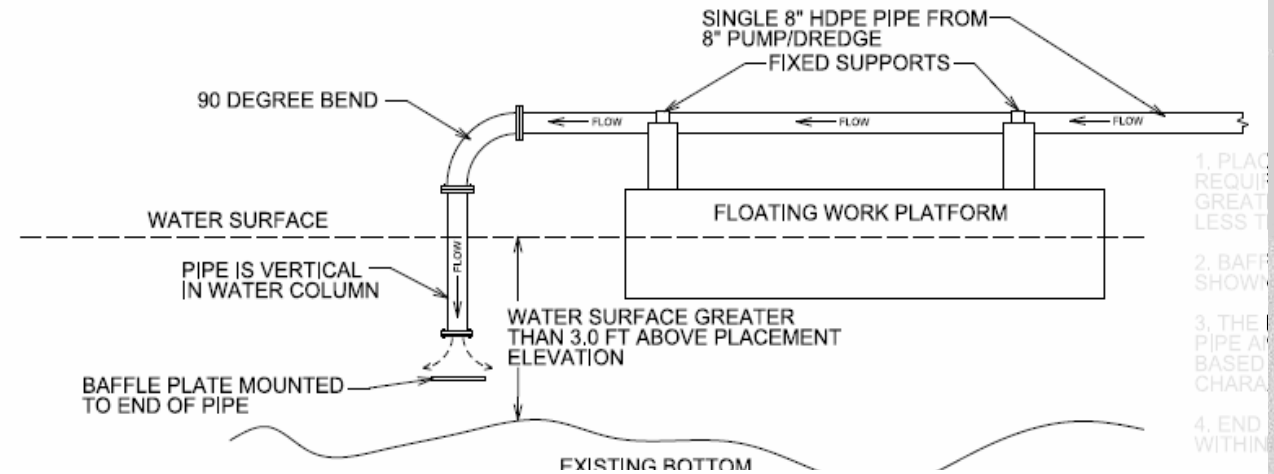
COASTAL ZONE PLACEMENT OF DREDGED MATERIAL ON MINNESOTA POINT



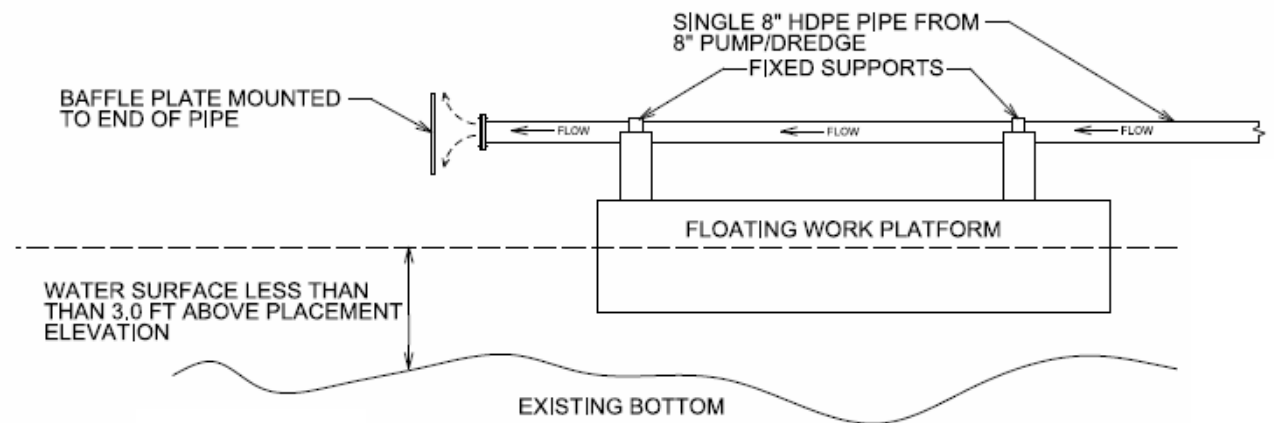
Dredged material placed near Superior Entry NW Breakwater, Photo credit DuAO, 10/2008



US Army Corps
of Engineers®



Placement BMP Configuration # 3 Vertical Discharge at Sediment Surface with Plate



Placement BMP Configuration # 4 Horizontal Discharge Above Water with Plate

CONTINUING AUTHORITIES PROGRAM

- Section 111 Mitigation of Shoreline Erosion (Attributable to Navigation Works)
- Section 145 Placement of Dredged Material on Beaches
- Section 204 Beneficial Use of Dredged Material
- Section 206 Aquatic Ecosystem Restoration
- Section 506 Great Lakes Fishery Ecosystem Restoration (GLFER)

Jim Luke

Outreach Coordinator

Detroit District Planning Office

313-226-3387

James.D.Luke@usace.army.mil



US Army Corps
of Engineers®

QUESTIONS



US Army Corps
of Engineers®