

EWN In-Action FY15 IPR

21st Avenue West Living Shoreline

Duluth-Superior Harbor- Joe Kreitinger



Problem

- ▶ Maximizing habitat value while minimizing DM placement costs
- ▶ Shallow water placement of dredged material



Objectives

- Identify engineered and natural processes for DM placement that meet habitat restoration goals
- Evaluate construction techniques during pilot demonstration
- Provide EWN design information for full-scale
- Communicate results for Diverse Stakeholders

Approach

- Determine consensus desired habitat characteristics
- Monitor effectiveness of pilot construction methods
- Model shallow water placement/resuspension
- Develop EWN design basis for full scale plans & specs



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Planned Funding by Year

	ERDC	LRE/Minnesota
▶ FY13:	\$160	\$1,400
▶ FY14:	\$115	\$1,400
▶ FY15:	\$165	\$1,400



Major Project Deliverables

- Draft News Article 5/1/15 -
- Present Draft Design Basis to Stakeholders 2/15 -> Done
- Shallow water placement /turbidity monitoring TN 90% complete 9/15
- Draft Final Design & DDR 70% complete, TN and JA will follow 9/15

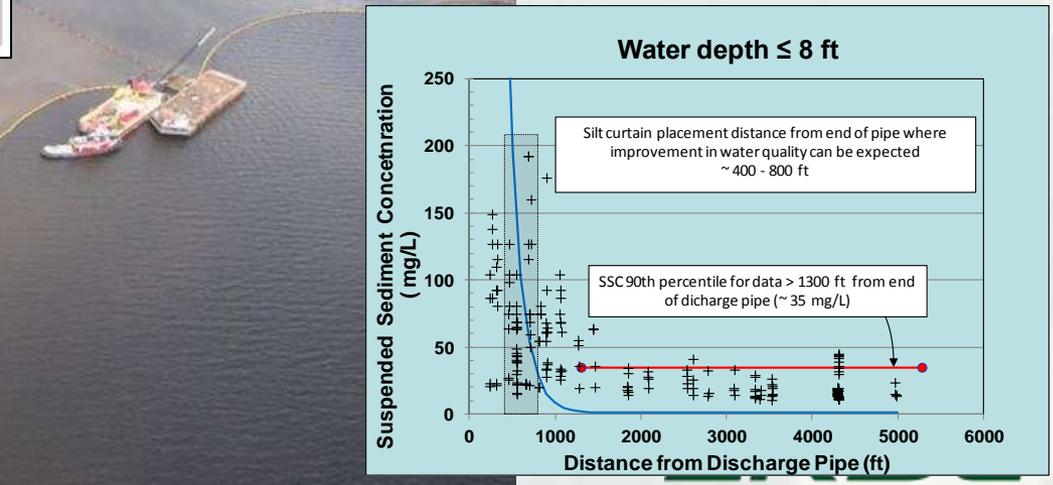
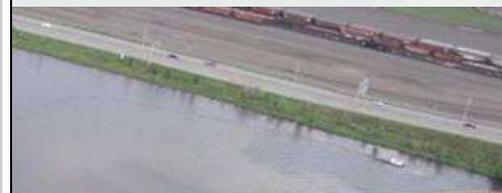
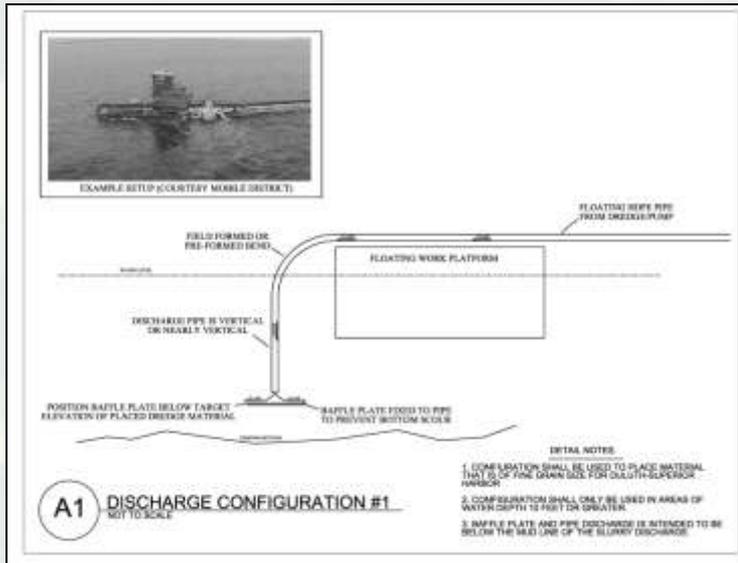
Benefits to Navigation

Creating performance data for low cost engineering approaches that advance beneficial use of dredged material for shoreline habitat restoration projects in the Great Lakes.



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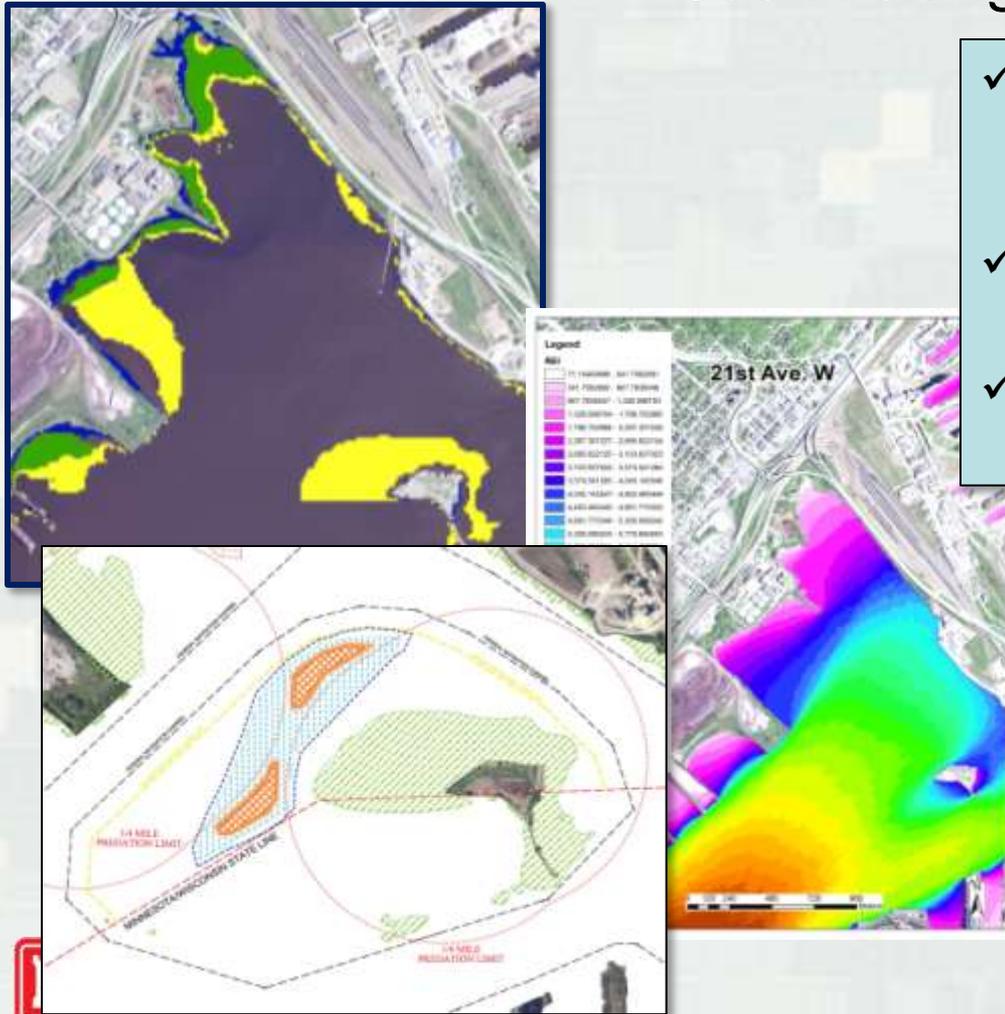
- ✓ Pilot demonstration of equipment
- ✓ Assessing turbidity during shallow water placement
- ✓ Collaboration with Detroit-LRB/ USGS / Minnesota PCA



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- ✓ Physical/Biological and Statistical Models Used For Evaluating Design Alternatives
- ✓ Tiered assessment of risk from trace level contaminants
- ✓ Quantitative metrics for assessing habitat improvement

Project Development Team

- ✓ **MINNESOTA** – Desotelle/Breneman
- ✓ **USACE Detroit** - Kuhn/Wager/Horner
- ✓ **USEPA/ORD** – Angradi/Hoffman
- ✓ **USGS MN WSC** - Ellison/Groton
- ✓ **USGS WI ESC** – Cutter/Gray
- ✓ **UMN Duluth** - Johnson
- ✓ **ERDC** – Hayter/Schroeder/Gidley/Suede/
Demoss/Friona



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■ FY15 Products

- Collaborations with other agencies: USACE-LRE, MN PCA, MN DNR, USEPA-GLNPO, USEPA-ORD, USGS-WSC/ESC, USFWS
- Collaborations with universities: UM-Duluth
- Journal papers: Two in the works
 - a) Characterizing turbidity during shallow water placement of sediment for habitat restoration*
 - b) Multi-factor design for habitat restoration; Case study for the St Louis River Great Lakes Area of Concern*
- Conferences and workshops attended: SMWG -2015
- ERDC Technical Notes: *a) Defining mixing zones for shallow water placement of dredged material; b) Design Document Record for habitat restoration in the Great Lakes.*

