

ASHLAND/NSP LAKEFRONT MGP SITE SEDIMENT REMEDIAL ACTION

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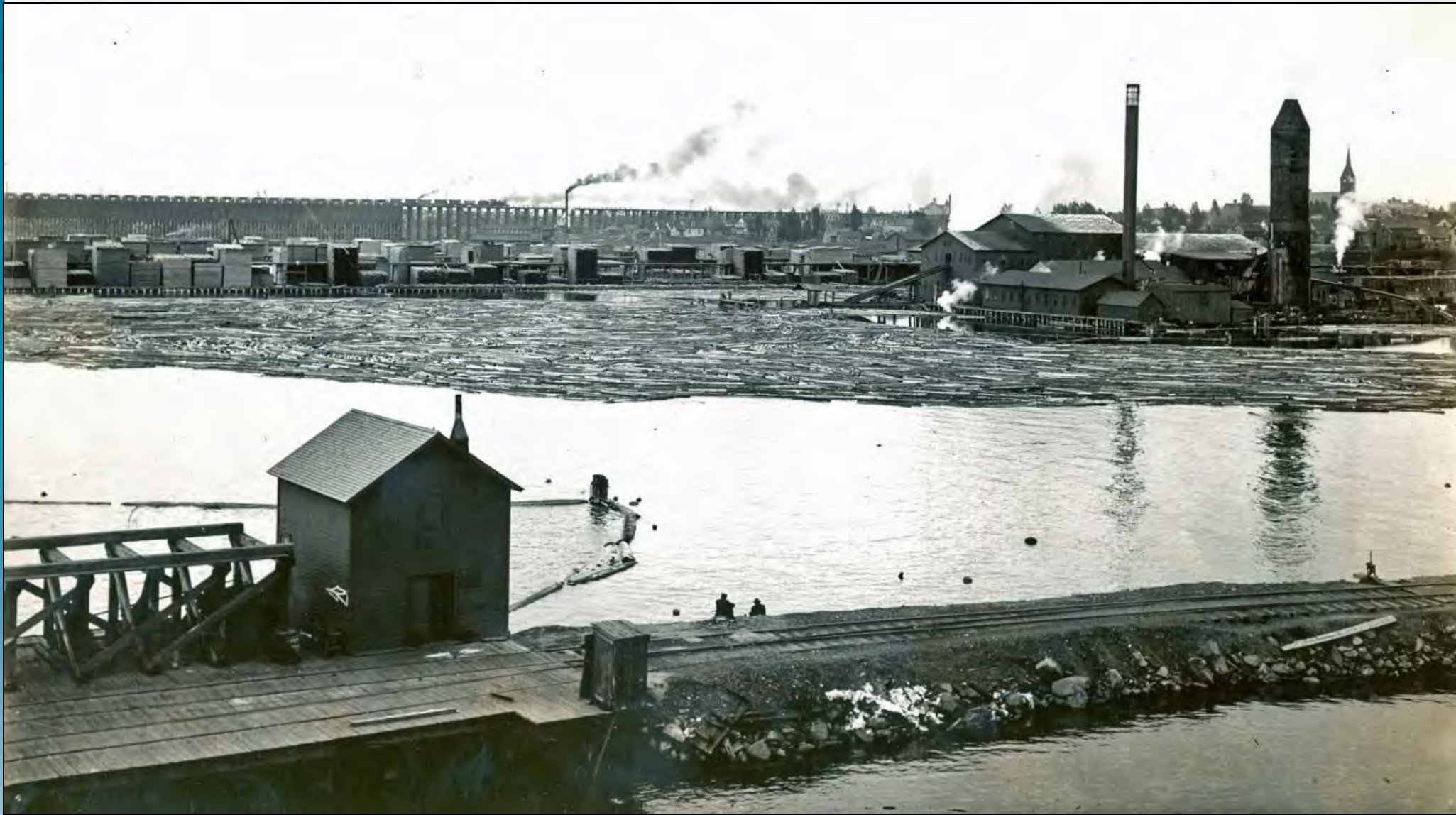
Presentation Overview

- ◆ Site Background
- ◆ Superfund Timeline
- ◆ Phase 1 Upland Remediation
- ◆ Pilot Wet Dredge Project
- ◆ Full-Scale Phase 2 Wet Dredge Project
- ◆ Keys to Success

NSP/Ashland Lakefront Superfund Site Location



Site Circa late 1800's/early 1900's





Ashland Gas Works History

62 Years of Gas
Production



Site in 1940's





WEDA DREDGING SUMMIT & EXPO '19

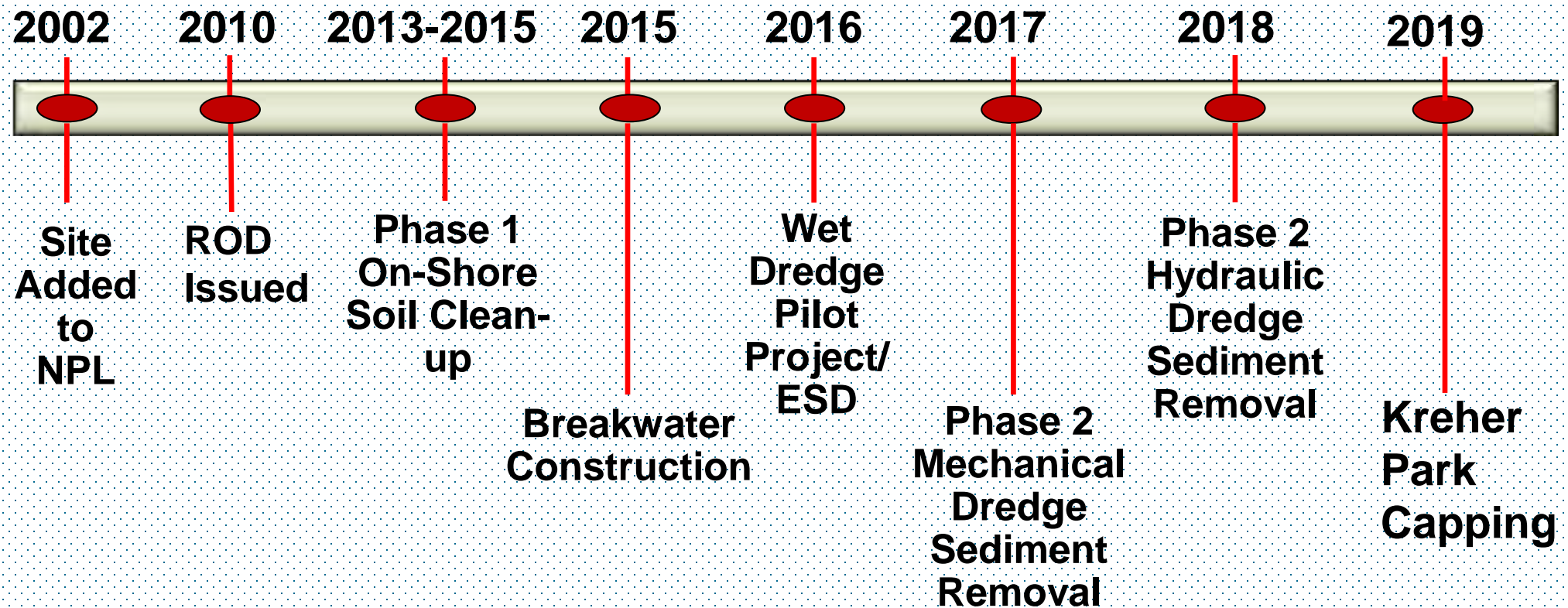
Ashland/NSP Lakefront Superfund Site

An aerial photograph of the Ashland/NSP Lakefront Superfund Site. The site is a large, irregularly shaped area of cleared land and construction activity, situated along the shoreline of a large body of water. The site is divided into two main sections: Phase 1, which is a large, flat, cleared area of brown earth, and Phase 2, which is a smaller, more developed area with several large white metal buildings and a paved parking lot. The surrounding area includes residential neighborhoods with houses and trees, commercial buildings, and a marina with many boats. A large orange barge is visible in the water to the right of the site.

Phase 1

Phase 2

Superfund Project Timeline



Phase 1 Work Summary

◆ Design/Build Project

- ▶ Building demolitions
- ▶ 1,900 ft. slurry wall
- ▶ 1,500 ft. bulkhead wall
- ▶ Soil excavation and soil thermal treatment
- ▶ Groundwater extraction wells
- ▶ Long-term water treatment plant

Phase 1 Source Control (2013-2015)

- ❖ Excavation: 90,000 tons
- ❖ Thermal Desorption: 70,000 tons
- ❖ Offsite Disposal: 20,000 tons
- ❖ Met All Soil Cleanup Standards

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Soil Excavation/Treatment



Breakwater Construction (2015)

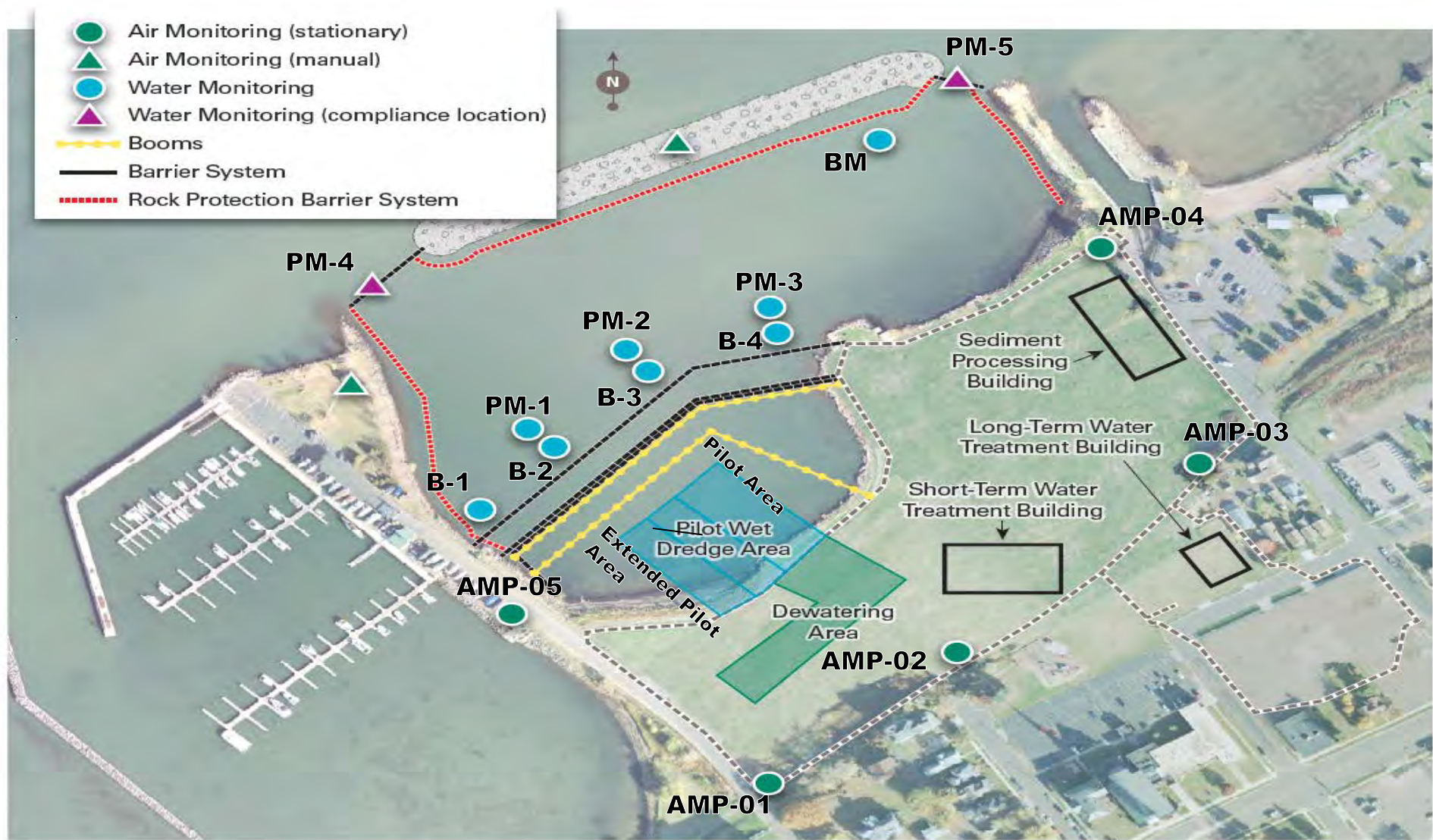
◆ Primary Purpose

- ▶ Wave barrier for 2016 Pilot Project
- ▶ Full-scale Phase 2 sediment remedy benefits
- ▶ Community benefits





Wet Dredge Pilot Project (2016)



Pilot Project Work

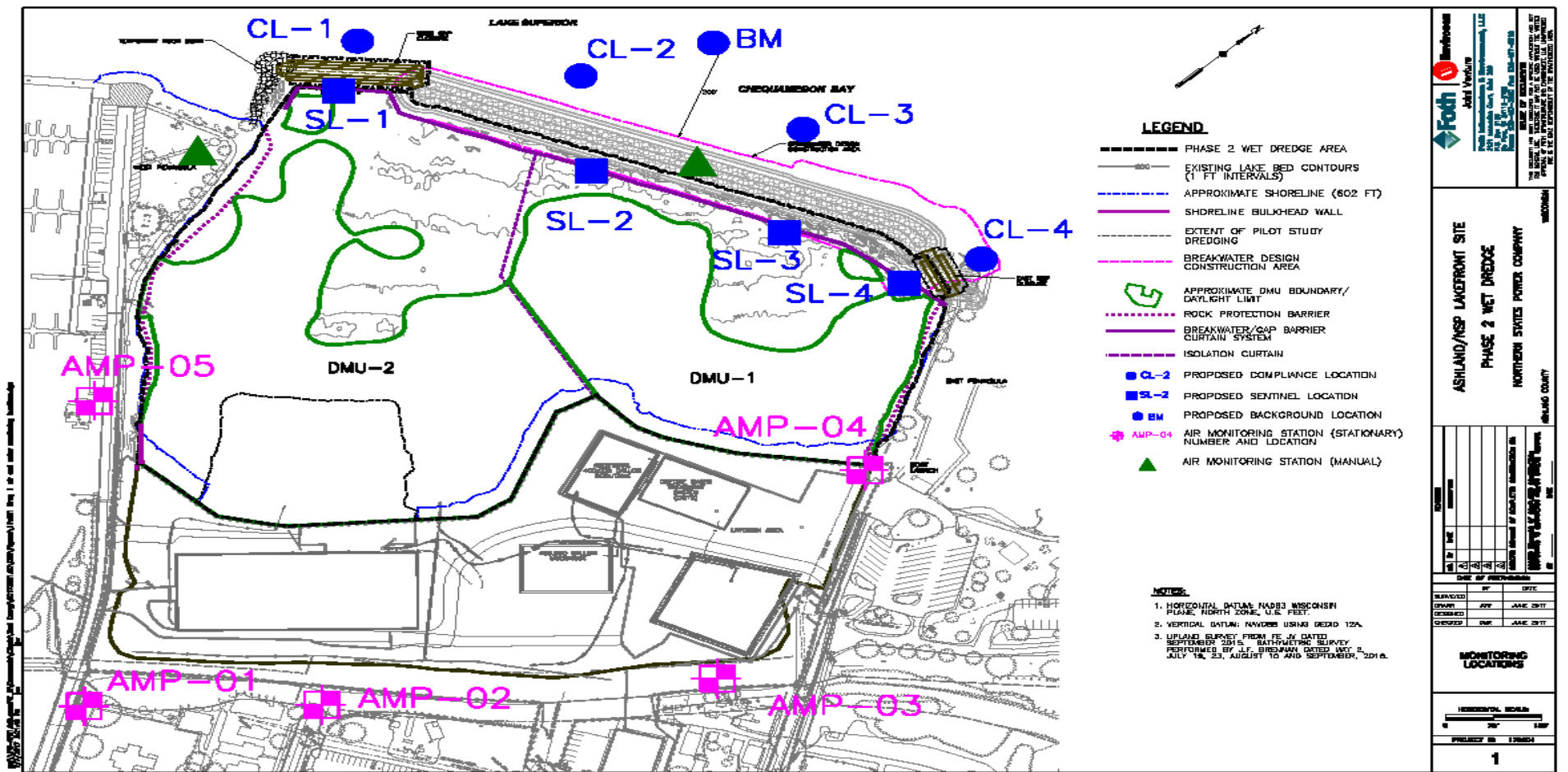
- ◆ 40,000 Square Foot Pilot Study Dredge Area
- ◆ Met ROD Performance Standards
- ◆ EPA Published **Explanation of Significant Differences (ESD)** – Allowed Phase 2 Full-Scale Wet Dredging



Phase 2 Full Scale Dredging (2017-2018)



Phase 2 Air and Water Quality Monitoring Program



Phase 2 Full Scale Dredging (2017-2018)

- ◆ Dredged/Dewatered 148,000 cy Sediment/Wood Debris
- ◆ Transported/Disposed 242,000 Tons to Licensed Landfill
- ◆ Treated 130 million Gallons of Process/Carriage Water
 - ▶ Discharged to Bay with no exceedances of standards



Mechanical Dredge



Cutterhead Dredge



Hydraulic Dredge



Vic-Vac™ Dredge Head



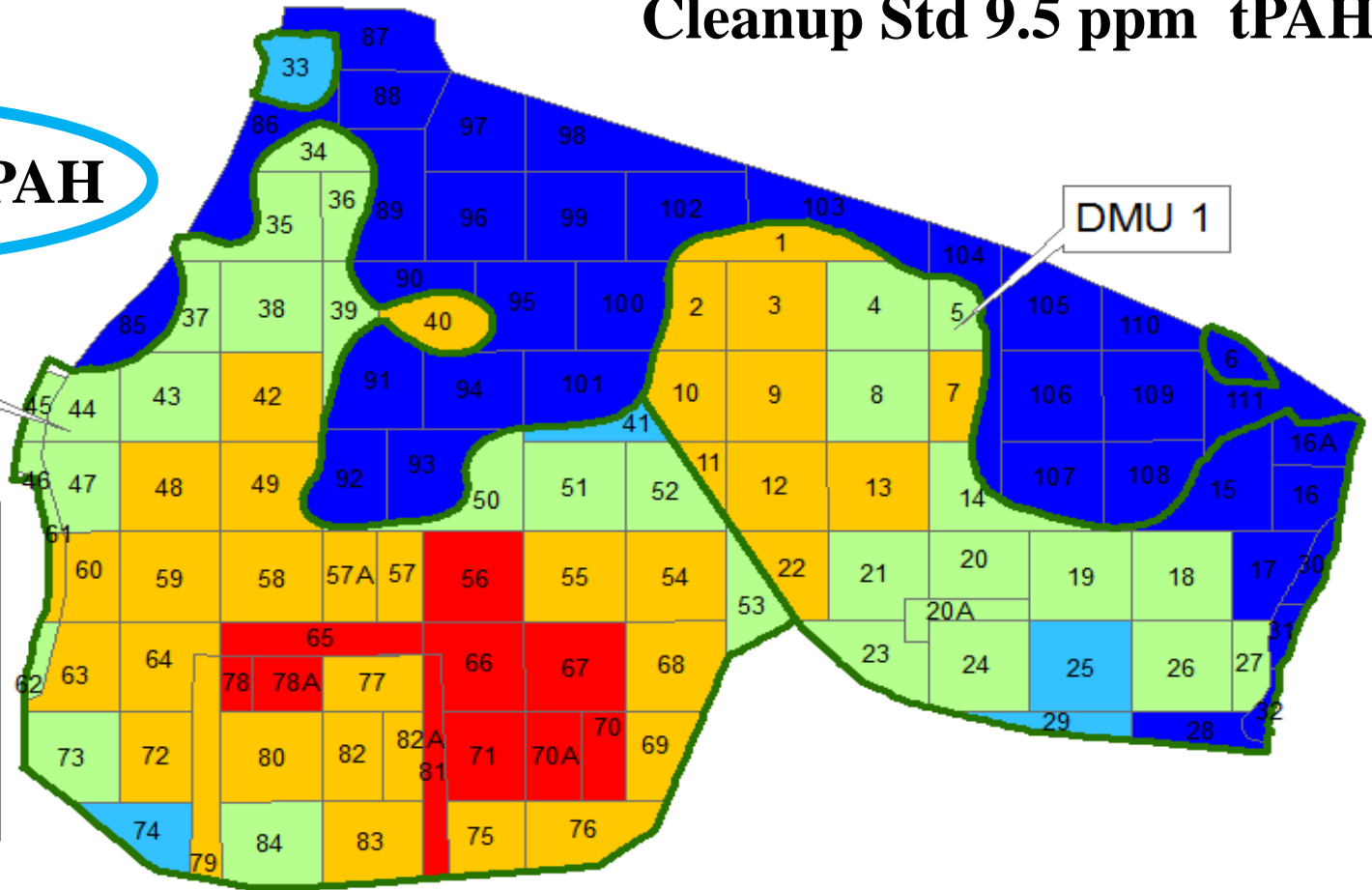
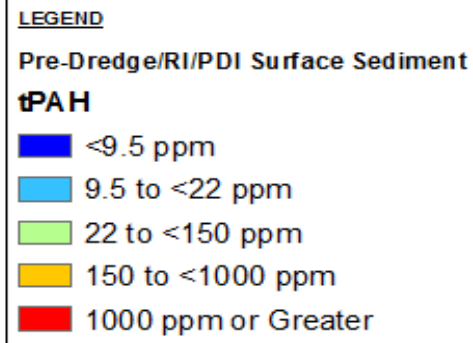
Sediment Pre-Project

Cleanup Std 9.5 ppm tPAH

SWAC 409 ppm tPAH

DMU 2

DMU 1



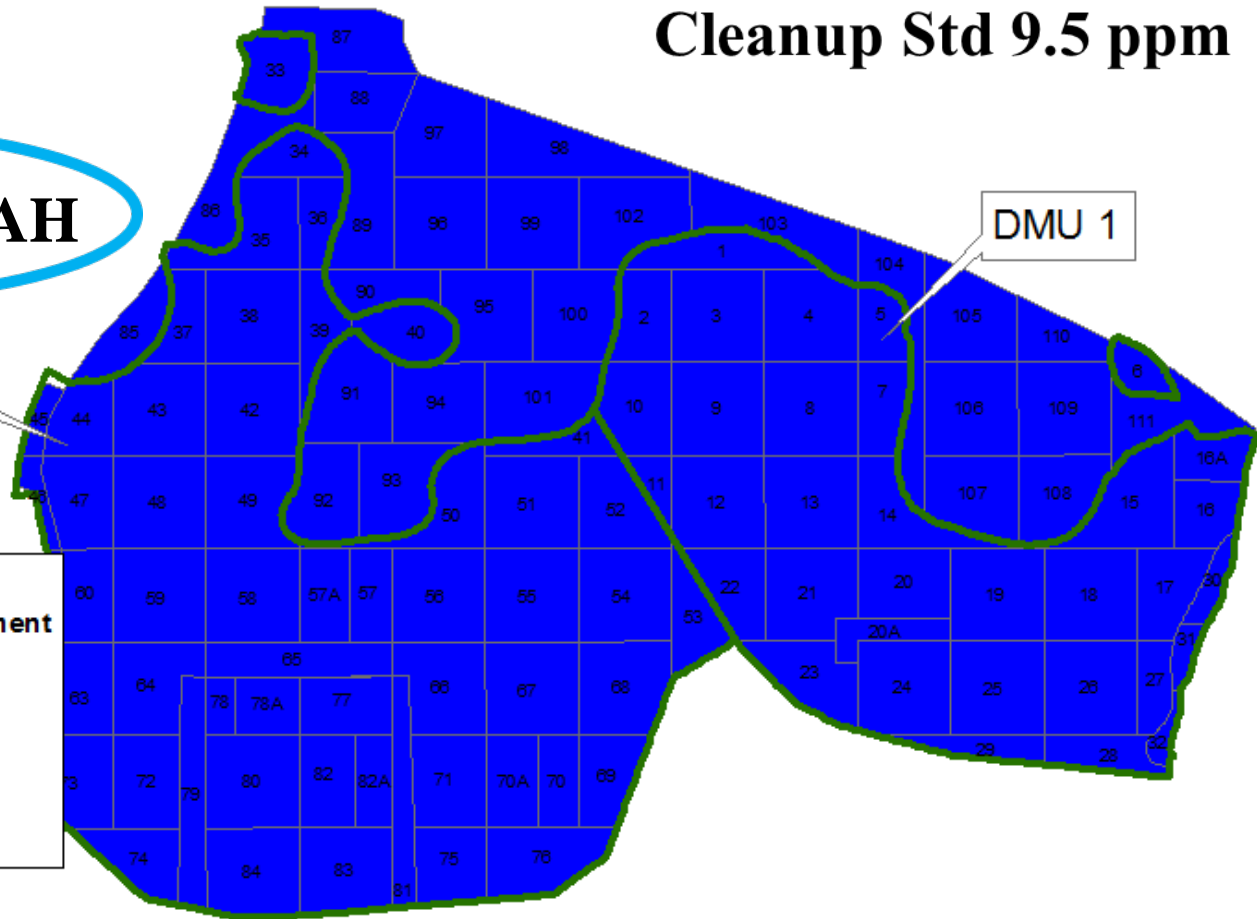
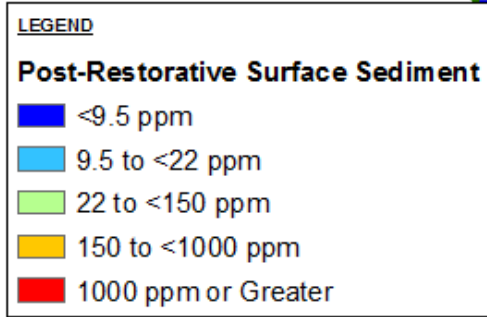
Sediment Post Dredging

Cleanup Std 9.5 ppm tPAH

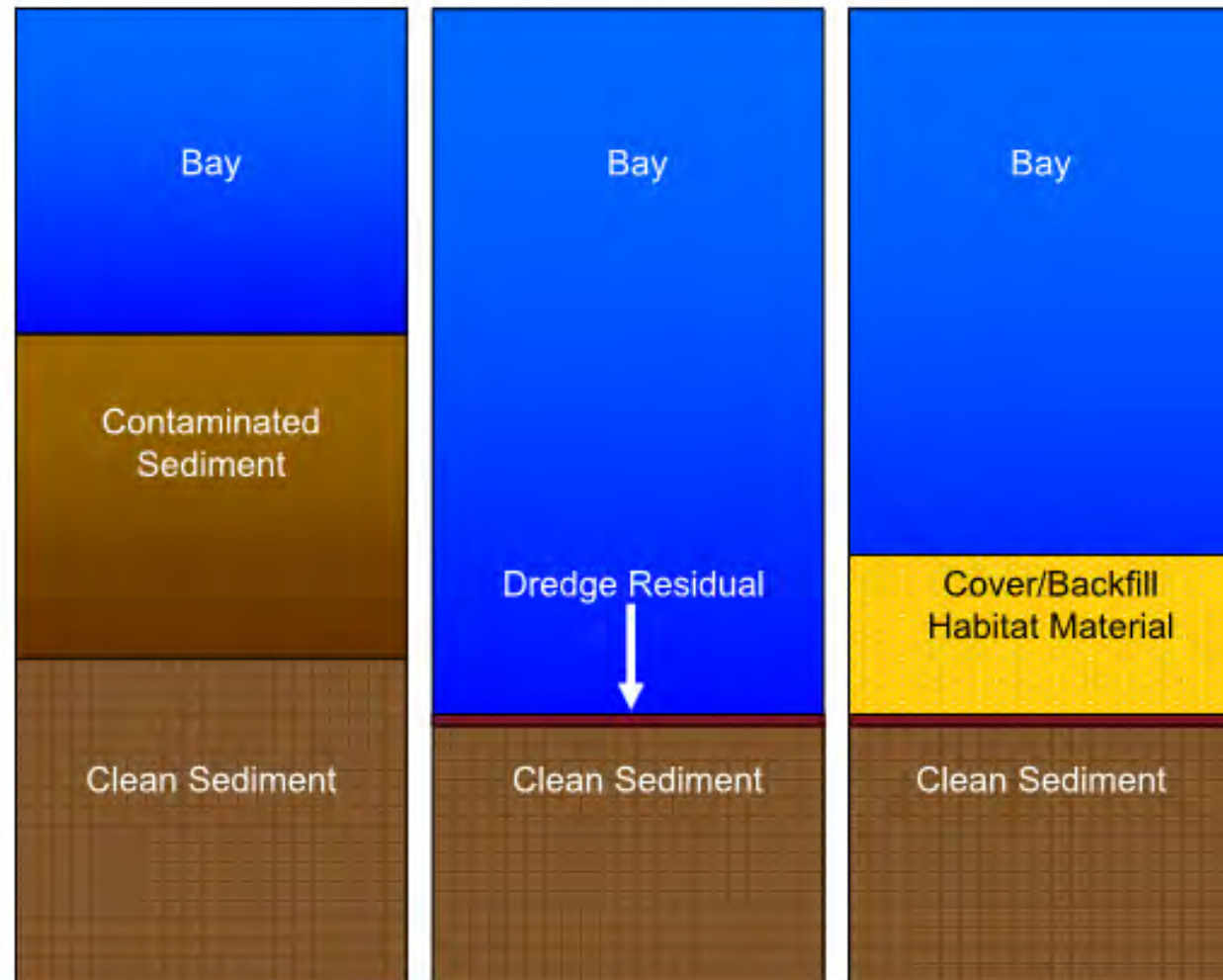
SWAC 2.4 ppm tPAH

DMU 2

DMU 1



Restorative Layer



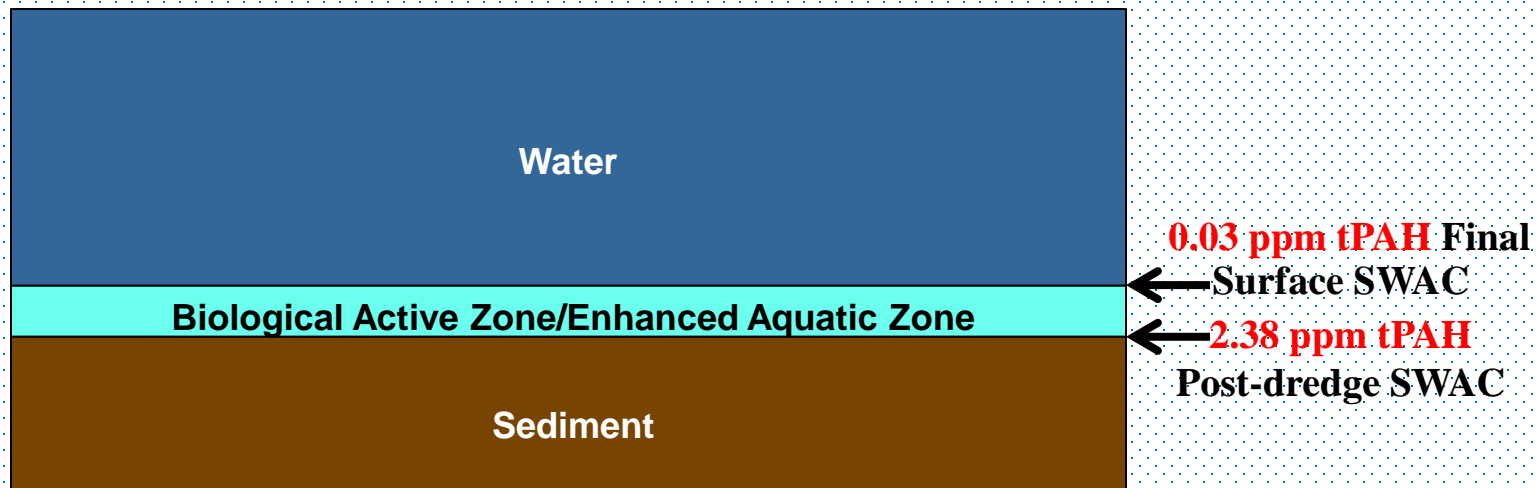
Restorative Layer Placement



Restorative Layer Thickness Verification



Final Surface tPAH Concentration



- ◆ Final SWAC of 0.03 ppm tPAH Adds to Remedy Protectiveness of Benthic Organisms Over Entire 16 Acre Site

Future Phase 1 Area Capping and Kreher Park Development

Draft concept plan



Keys to Success

- ◆ ROD Negotiation for Achievable End Points
 - ▶ NAPL requires special considerations
- ◆ Careful Evaluation and Selection of a J V Partner
- ◆ Well Conceived and Executed Pilot Projects
 - ▶ Subcontractor selection critical
- ◆ Robust Public Communications Plan with MGP Waste Sites
- ◆ Redundancy in BMPs for Attaining Air and Water Quality Performance Standards

Project Team

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Joint Venture

Baird.



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Questions

