Welcome and Introductions

- USEPA - Great Lakes National Program Office
  - Illinois Indiana Sea Grant
  - EA Engineering, Science, & Technology, Inc., PBC
- U. S. Steel
  - Barr Engineering
  - AECOM
- Minnesota Pollution Control Agency
Primary Goals of the Spirit Lake Project

- Reduce ecological and human health risk in the project area
  - Remediate impacted sediment
  - Cleaner lake bottom is safer for fish and wildlife
- Improve aquatic and land habitat quality
  - Restore the areas remediated with native plants
Environmental Protection Controls

- Turbidity barriers during dredging and capping
  - Silt curtains
  - Cofferdam
- Water quality monitoring
- Dust and odor control
- Safety
  - Construction areas fenced with signs posted
  - Buoys and lights on the water
Remediation Overview - CDFs

- Divert Unnamed Creek flow
- Build 3 confined disposal facilities
- Large bermed areas to contain sediment
- 45 CDFs currently used across Great Lakes
Remediation Overview – Dredging

- Dredge or excavate over 780,000 cubic yards of sediment
- Divert Unnamed Creek and use coffer dam to close off Unnamed Creek Delta for excavation in dry conditions
- Water pumped out from behind dam during excavation will be treated
- Dredge in Wire Mill Pond and in lake inside curtains to control silt
Methods of Safe Dredging

- Turbidity Barrier with Booms
- Excavation Behind Cofferdam
- Turbidity Barrier
- Environmental bucket
Remediation Overview – Capping

- Capping 120 acres
  - Dredged and undredged areas of Unnamed Creek and its Delta
  - Portions of Wire Mill Pond Delta

- Engineered cap with layers to isolate impacted sediment
Remediation Overview – Natural Recovery

- Studies found the site sediments are recovering naturally through burial and breakdown
- 113 acres of natural recovery
- Enhanced Monitored Natural Recovery (EMNR) where a thin layer of sand will be placed to speed burial
- Monitored Natural Recovery (MNR) where natural recovery will be monitored
TYPICAL ENHANCED NATURAL RECOVERY (ENR) CROSS SECTION

NOT TO SCALE
Habitat Restoration

- Restoration planned for all areas affected by cleanup
- Key goals
  - Create shallow sheltered bays as fish habitat
  - Provide variety of water depths & associated native plants
Examples of Restored Habitat

Shallow Bays with Improved Sediment Quality

Riparian Zones and Fringe Marsh

Mosaic of Emergent Marsh and Submerged Vegetation
Community

- What to expect during the cleanup
- What to expect after the cleanup
- Cultural Resources and Section 106
- Project schedule
What can Morgan Park residents expect during cleanup operations?

- Daily cleanup schedule
  - 12 and/or 24-hour work periods
  - Daytime schedule as much as possible near Morgan Park
- Construction noise, light, and smells
  - Contractor will submit noise, odor, & lighting mitigation plans – provide measures for controlling impacts
- Tree Clearing
  - Most tree clearing limited to areas where cleanup is performed
  - Downhill and away from view from residences
What can Morgan Park residents expect during cleanup operations?

- New primary construction entrance
- Direct access to Route 23
- Divert construction traffic away from Morgan Park
What can Morgan Park residents expect after cleanup operations are complete?

- **Wildlife community**
  - Restoration will improve the wildlife habitat in the project area
  - Restoration will improve fisheries with more flow, oxygen, and spawning zones.

- **Recreational Potential**
  - New trails and improved shoreline fishing access
  - Kayak access and new recreational areas
  - Improved safety along rail line and new educational signage
Spirit Lake Cultural Resources

- Spirit Lake includes unique cultural resources
  - Lake Superior & Mississippi Railroad
  - Spirit Island
- EPA performed consultation under the National Historic Preservation Act
  - Goal is to avoid and/or mitigate impacts
  - Performed specific studies of the cultural resources
Lake Superior and Mississippi Railroad

- **Adverse effects**
  - Temporary impacts by installation of rail stops, chain link fences, and truck crossings
  - Temporary halt to scenic rail tours for 3-mile segment during construction
  - Permanent truck crossing and 2 bridges

- **Mitigation**
  - Reuse historic materials to extent possible
  - Compatible new materials
Spirit Lake Cultural Resources

- Spirit Island
  - **Adverse Effects**
    - Alteration of views to and from the island
    - Introduction of elements considered intrusive to the cultural and spiritual meaning of the island
  - **Mitigation**
    - Ecological and cultural resource management plan and regional interpretation
## Tentative Project Schedule

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Task</th>
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</thead>
<tbody>
<tr>
<td>March-May 2020</td>
<td>Finalize permits &amp; select construction contractor</td>
</tr>
<tr>
<td>June-August 2020</td>
<td>Mobilization to the site, with site surveys, sampling, and preparation</td>
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<tr>
<td>June 2020-December 2022</td>
<td>Construction work ongoing</td>
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Overall schedule is influenced by permit finalization