DEVELOPMENT OF THE MILWAUKEE HARBOR DREDGED MATERIAL DISPOSAL FACILITY 2008 – 2011

Jim Killian
Wisconsin DNR
Office of Great Lakes
Sediment Management Program
Milwaukee Harbor

annual cargo: 3.5 million tons

Jones Island CDF (1976)
44 Acres
2M Yard capacity
So What’s The Problem?

- In 2004, identified that existing CDF will reach capacity by 2008 assuming allowance of 176,000 yards contaminated material from EPA/DNR dredge project on KK River. (Otherwise, capacity by 2011)
PURPOSE: “Seek a disposal solution that is the least costly, engineeringly, economically, and environmentally feasible project”

- Present Results of Studies to Date
- Provide Economic Assessment to Justify Continued Maintenance Dredging
- Discuss Potential Options That Appear Viable for Disposal of Dredged Material
- Select a Base Plan for Milwaukee Harbor Dredged Material Disposal

* Sponsored by the Milwaukee Port Authority, developed by US COE.
Conducted by Altech Environmental Services with assistance from EPA/GLNPO under contract by US COE.


21 samples throughout entire harbor; areas of shoaling

vibracore and ponar; composited across entire sample (1’ to 3’ ave.)

Material Determined to be Environmentally Unacceptable
The “Heavy Hitters” (ppm)

- Cr: 82 (22 – 450)
- Zn: 324 (22 – 530)
- Pb: 98 (12 – 170)
- Cd: 2.1 (.46 – 9.5)

High-Molec. Weight PAH’s

Hits of Aroclor 1242 (.3 ppm)

Grain Size Distribution: average of 81% fines (#200 sieve; .074mm)
<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>PLACEMENT</th>
<th>CAPACITY (Cu.Yds)</th>
<th>CONSTRUCTION COST (20-year capacity)</th>
<th>RECOMMEND TO PHASE II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct DMDF on top of CDF</td>
<td>Upland</td>
<td>510,000</td>
<td>$2,865,313</td>
<td>YES</td>
</tr>
<tr>
<td>Construct DMDF adjacent to CDF</td>
<td>Upland</td>
<td>510,000</td>
<td>$12,307,140</td>
<td>NO</td>
</tr>
<tr>
<td>Open Water Disposal (8 miles out, 3' sand cap)</td>
<td>Open Water</td>
<td>510,000</td>
<td>$8,251,440</td>
<td>NO</td>
</tr>
<tr>
<td>Beach Nourishment</td>
<td>Beach/below OHWM</td>
<td>(Unlimited)</td>
<td>-----</td>
<td>NO</td>
</tr>
<tr>
<td>No Action</td>
<td>N/A</td>
<td>N/A</td>
<td>-----</td>
<td>NO</td>
</tr>
</tbody>
</table>
DNR/EPA
KK River remed.
tipping fees: $ 2,018,000

Milw. Port Authority state grant: $ 1,500,000

$ 3, 500,000
includes E&D,
construction, & oversight
Design Basics
**Green Bay Harbor**
Placement Site: Cat Islands DMDF
Remaining Capacity: 2.3 M CY
Note: This dredging season will be the first with placement at Cat Island

**Kewaunee Harbor**
Placement Site: Kewaunee CDF
Remaining Capacity: < 50,000 CY

**Manitowoc Harbor**
Placement Site: Manitowoc CDF
Remaining Capacity: < 100,000 CY

**Milwaukee Harbor**
Placement Site: Milwaukee DMDF
Remaining Capacity: 450,000 CY