Beneficial Use Bank
Joseph Berlin
Nature Conservancy Project Goal

• Determine if a Bank/Loan to non-federal sponsors would facilitate the beneficial use of federal dredged material

• Evaluate three case studies where federal dredged material was used
  – Jamaica Bay, New York
  – Galveston Bay, Texas
  – Plaquemines Parish, Louisiana
Key Project Terms

- Non-Federal Sponsor- State or Local Government
- Federal dredged material - Spoil material from maintaining navigation channels
- Beneficial Use – Obtaining environmental benefit from placement of dredged material
- Federal Standard – Least cost environmentally acceptable method of material disposal
- Incremental Cost – Cost to Sponsor
Impediments to Beneficial Use

• **USACE**
  – Federal Standard
  – Waterway maintenance schedule - shoaling
  – Limited budget for continuing authority programs

• **Non-Federal sponsor**
  – Funding responsibilities
  - Management responsibilities
Three Case Studies

- Pierce Marsh, Galveston Bay, TX
  - Gulf Intracoastal Waterway – Source
  - Texas General Land Office - Sponsor
- West Bay / Tiger Pass, Venice, LA
  - Head of Passes, Mississippi River –Source
  - Plaquemines Parish Government - Sponsor
- Jamaica Bay, Queens, NY
  - Port of New York and New Jersey - Source
  - New York City Parks Department - Sponsor
Pierce Marsh, Galveston Bay, TX
West Bay, River Mile 5, LA
Tiger Pass, Venice, LA
Common Project Features

- Degraded Marshes
  - Caused by Subsidence and Erosion
- Dedicated Non-Federal Sponsors
- Approved Long Term Restoration Plans
- Federal Funding thru Continuing Authorities
- Nearby Source of Federal Dredged Material
  - Federal Navigation Channels
Project Steps – Continuing Authorities

• Project Agreement (Feasibility Study, Project)
  – Non-federal payment to USACE for Study
    • 50% of cost less Work-in-Kind
  – Plan to obtain real estate for Project

• Federal Approval of Feasibility Study

• Construction of Project

• Monitoring / Adaptive Management
### Texas – Gulf Intracoastal Waterway
### Pierce Marsh Dredged Material Placements

<table>
<thead>
<tr>
<th>Year</th>
<th>Acres</th>
<th>Quantity (cubic yards)</th>
<th>Source and Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>53</td>
<td>unknown</td>
<td>Internal</td>
</tr>
<tr>
<td>2001</td>
<td>45</td>
<td>Terracing only</td>
<td>Internal</td>
</tr>
<tr>
<td>2003</td>
<td>25</td>
<td>Terracing only</td>
<td>Internal</td>
</tr>
<tr>
<td>2008</td>
<td>280</td>
<td>unknown</td>
<td>Bayou Vista Subdivision</td>
</tr>
<tr>
<td>2015</td>
<td>84</td>
<td>144,000</td>
<td>GIWW</td>
</tr>
<tr>
<td>2018</td>
<td>150</td>
<td>TBD</td>
<td>GIWW</td>
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</table>
# Texas – GIWW to Pierce Marsh

## 1997 Cost of Dredged Material (Federal and Non-Federal*)

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Mode</th>
<th>Cost ($) per c.y.-mile</th>
<th>Distance (miles)</th>
<th>Cost per c.y.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIWW</td>
<td>Containment</td>
<td>Hopper</td>
<td>1.24 – 1.86</td>
<td>.5</td>
<td>.77</td>
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<tr>
<td>GIWW</td>
<td>Pierce Marsh</td>
<td>Pipeline</td>
<td>0.93 – 1.73</td>
<td>4</td>
<td>5.32</td>
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<tr>
<td>Galv. Bay*</td>
<td>Pierce Marsh</td>
<td>Barge</td>
<td>0.93 – 1.73</td>
<td>14</td>
<td>21.56</td>
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<tr>
<td>Upland*</td>
<td>Pierce Marsh</td>
<td>Truck</td>
<td>6.99- 10.49</td>
<td>10</td>
<td>87.50</td>
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</tbody>
</table>

Texas Transportation Institute, Texas GIWW Dredged Material Report, 2000
## HDDA to Tiger Pass/West Bay
### 1997 Cost of Dredged Material (Federal and Non-Federal*)

<table>
<thead>
<tr>
<th>Source</th>
<th>Destination</th>
<th>Mode</th>
<th>Cost ($$) per cubic yard (c.y.)-mile</th>
<th>Distance (miles)</th>
<th>Cost per c.y.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDDA</td>
<td>Ocean Disposal</td>
<td>Barge</td>
<td>-</td>
<td>22</td>
<td>-</td>
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<tr>
<td>HDDA</td>
<td>Tiger Pass</td>
<td>Pipeline</td>
<td>-</td>
<td>10</td>
<td>3.03</td>
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<tr>
<td>HDDA</td>
<td>West Bay</td>
<td>Pipeline</td>
<td>-</td>
<td>5</td>
<td>3.03</td>
</tr>
<tr>
<td>Barataria*</td>
<td>West Bay</td>
<td>Pipeline</td>
<td>6.84</td>
<td>45</td>
<td>307.80</td>
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</tbody>
</table>

### Louisiana - Queen Bess Island – Barataria Bay Source

**Cost of Obtaining Dredged Material (Non-Federal)**

<table>
<thead>
<tr>
<th>Source Distance (miles)</th>
<th>Acres</th>
<th>Cubic Yards</th>
<th>Year</th>
<th>Cost ($) per cy-mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4</td>
<td>8</td>
<td>82,000</td>
<td>1990</td>
<td>6.84</td>
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<tr>
<td>1.0</td>
<td>9.6</td>
<td>52,950</td>
<td>1996</td>
<td>18.20</td>
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</tbody>
</table>

The Water Institute of the Gulf Report, 2015
### New York Harbor – Jamaica Bay
**Cost of Transporting Dredged Material (Federal)**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Disposal Method</th>
<th>Year</th>
<th>Cost ($) per cy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dredge Vessel to Historic Area Remediation Site (HARS)</td>
<td>Open Water</td>
<td>2017</td>
<td>12.00</td>
</tr>
<tr>
<td>Barge to Jamaica Bay Islands</td>
<td>Thin Layer Placement</td>
<td>2017</td>
<td>30.00</td>
</tr>
</tbody>
</table>
Conclusions

• Incremental Cost Share is Significant
  – Dependent upon Distance
  – Federal Continuing Authorities Reduce NFS Cost

• Federal Channels Dredged Only DM Source

• Funding Problems Result in Delays

• Loan to NFS Might be Beneficial
  – But Many Other Issues
Potential Next Steps

• Quantify Beneficial Use Potential
  – Distance and Dredged Material Type
• TNC assistance with Feasibility Studies
  – Assist Agreements between USACE & NFS
• Study Beach Nourishment Project
  – Galveston Island Precedent
  – Different constraints (schedule, material)