Milltown Superfund Restoration
2003 - 2012

Lessons Learned from the Project
Management Perspective

April 2012 NRDP Restoration Symposium
Presentation Outline

- Goals and Objectives
- Integration R/R/R
- Risk Management
- Adaptive Management
- Communications
- Contracting
- Conclusions
- Q&A
Milltown Background

• It is a Superfund Site
• $100 million Remediation Project – 1^{st}
• Integrated $13 million Restoration – 2^{nd}
Trustee’s Goals and Objectives

• **MAIN GOAL**: Restore the Clark Fork and Blackfoot rivers near the Milltown Dam to be naturally functioning and self-maintaining

• Better make goals clear / measureable
  – It’s about the RESOURCE
  – It’s about the BUDGET
Integrated Remediation & Restoration

EPA Record of Decision

Settlement Agreement

Bypass channel

March 2008: dam removal

2004-2010: Sediment removal 2.2M cubic yards

Repositories & reclamation

2002

2006

2007

2008

2009

2010

2011

Restoration Plan

Peer review

2005-2007: Data collection and feasibility analysis

2008-2011: Design and bid documents

2008-2012 Implementation
Integration of 2 Rs and 3 Rs

R(emediation)/R(estoration)  R/R/R(edevelopment)
Risk Management

- How much to spend to reduce risk?
- How much to spend to restore closer to baseline?
- Remember your goals!!
Hard or Soft, Large or Small

• Streambank / Channel / Floodplain Revegetation – all risk management
• Engineering for Failure – How?
• How large is too large?
• How hard is too hard?
• How much?
• No easy answers – Goals and Objectives, Resource guide design
There is A LOT You Will Not Control
To Plant or Not to Plant?

- Natural processes – let them happen if you can?
- Plant Large Areas?
Adaptive Management

• New Information
Floodplain Revegetation Plan Changes
Communications – What I Learned

• My Soapbox – Constructive Comments
Public Involvement

• Get them out there.
• Fact Sheets/Public Meetings
2011 As-Built, How Did We Build This?

<table>
<thead>
<tr>
<th>As-built elevation relative to bankfull (ft)</th>
<th>Feature</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5' to 4'</td>
<td>High Terrace</td>
<td>13.3</td>
</tr>
<tr>
<td>1' to 2.5'</td>
<td>Low Terrace</td>
<td>32.6</td>
</tr>
<tr>
<td>-1’ to 1’</td>
<td>Bankfull Floodplain</td>
<td>87.9</td>
</tr>
<tr>
<td>-4’ to -1’</td>
<td>Wetland</td>
<td>110.3</td>
</tr>
<tr>
<td>-11’ to -8’</td>
<td>Channel</td>
<td>34.5</td>
</tr>
</tbody>
</table>
Restoration Facts

• Moved over 2 million cubic yards of material to construct floodplain and channel
• Removed over 400,000 cubic yards of contaminated Milltown sediments out of floodplain.
• Worked on over 17,000 feet of channel
• Worked on over 500 acres of floodplain
• Planted over 100,000 plants
• No reportable injuries
Design Process

• Multi-disciplinary Team
  – Engineering
  – Hydrology
  – Vegetation
  – Contamination
Does Anyone Know it All?

- Peer Review
Braided Channel or Meandering Channel with Side Channels

- Did it REALLY matter?
- It is about the RESOURCE!!
How Did We Build These Things?
Lowest Qualified Bid (State Law)
Contractor Qualifications

- Be specific on what you need
- Stream/Floodplain/Revegetation
- (Get on DOA vendor list)
You can write a Specification for Anything

- Unit cost works for somethings really well.
GPS Guided Equipment

Old School

New School
Milltown Monitoring & Maintenance Process

Remember: Project Management View

• More Costs when $ are short, BUT
  – Valuable information
What would be different next time?
Milltown Superfund Restoration

“It was about the Resource”