# 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 – 1st
- Integrated $13 million Restoration – 2nd

# 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

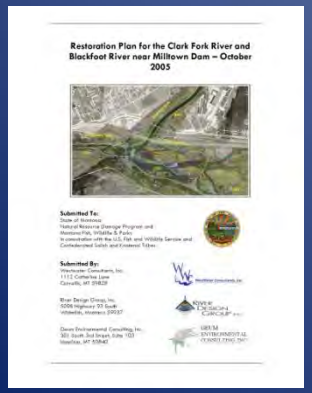
March 2008: dam removal


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

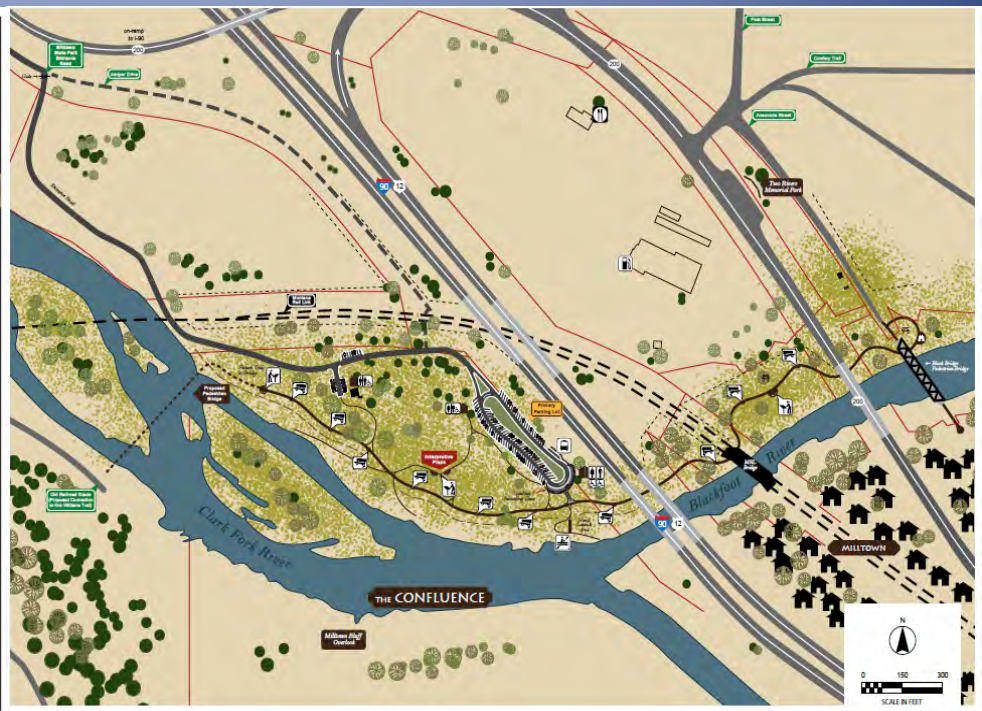
2008-2011:
Design and bid documents

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

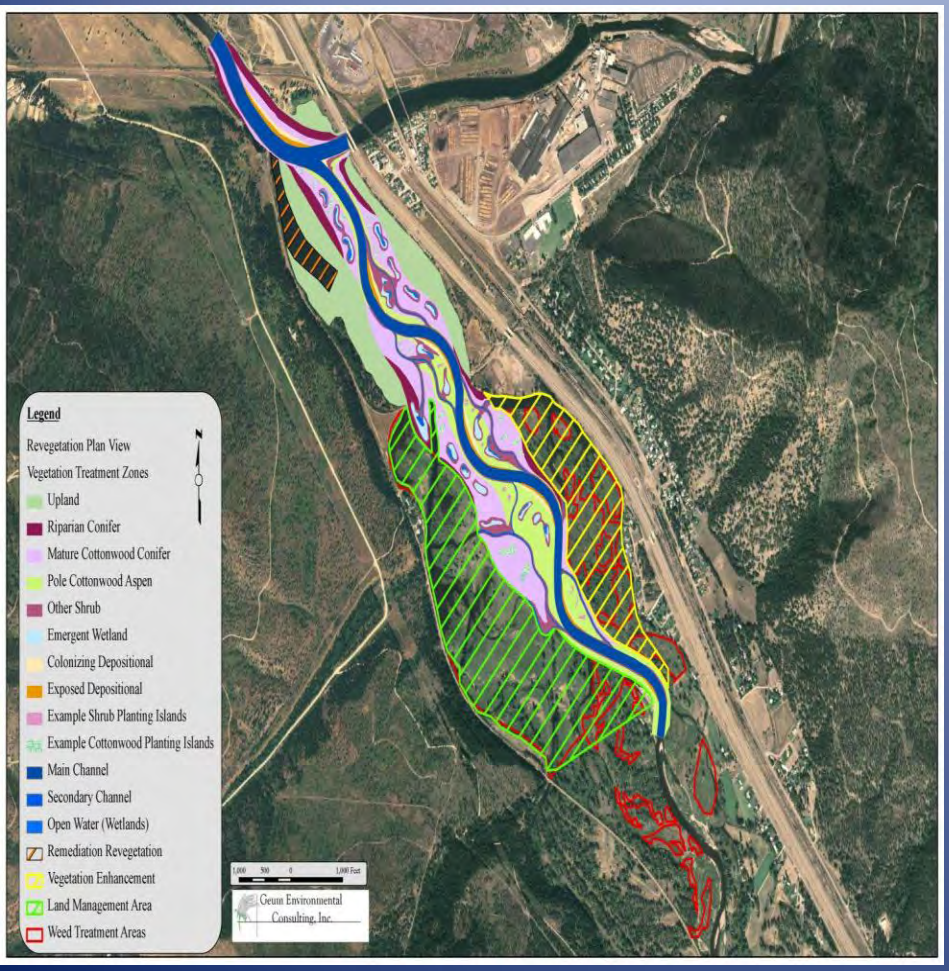
# To Plant or Not to Plant?

- 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?



| As-built elevation relative to bankfull (ft) | Feature | Acres |
|---|---|---|
| 2.5' to 4' | High Terrace | 13.3 |
| 1' to 2.5' | Low Terrace | 32.6 |
| -1' to 1' | Bankfull Floodplain | 87.9 |
| -4' to -1' | Wetland | 110.3 |
| -11' to -4' | Channel | 34.5 |

**MILLTOWN RESTORATION**

AS-BUILT CONDITIONS

**Bankfull Elevations (ft)**

| | | | |
|---|---|---|---|
| 10+00 | 3283.40 | 100+00 | 3257.54 |
| 50+00 | 3272.60 | 150+00 | 3240.99 |
| | | 160+00 | 3237.68 |

0 500 1,000 1,500 2,000 Feet

July 2011. S.Ammondt, River Design Group, Inc. Imagery: NAIP 2009 (precedes construction).

Montana Department of Justice
Natural Resource Damage Program

# 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”