

Upper Coeur d'Alene Basin Proposed Plan



Kootenai Environmental Alliance
June 17, 2010

Topics

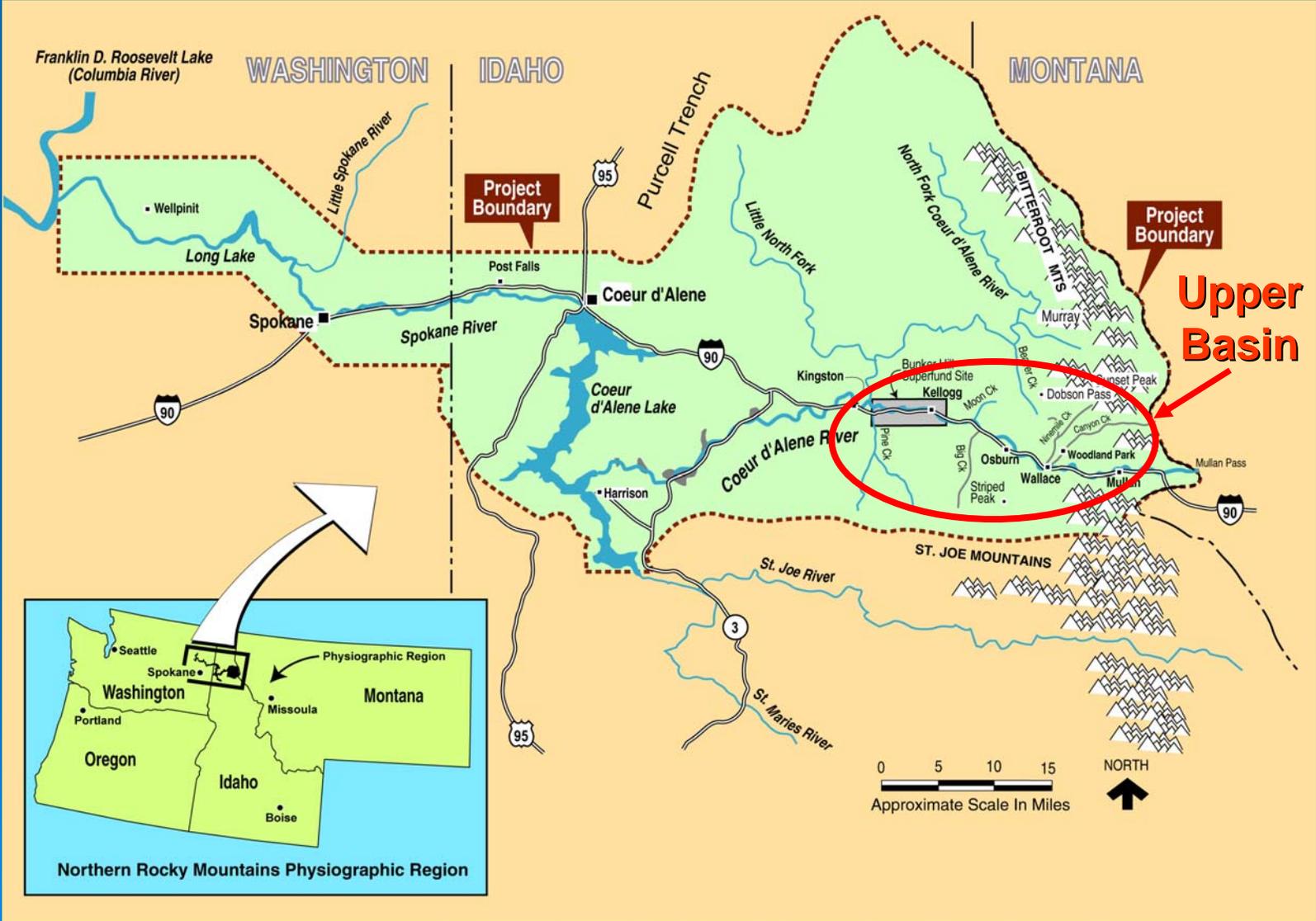
- New cleanup plan
- Description of Alternatives
- Preferred Alternative
- Implementation Plan
- Schedule



New Upper Basin Cleanup Plan



Coeur d'Alene Basin Location



What will new cleanup plan accomplish?

- Human health protection for surface water used for drinking water
 - Ecological protection for surface water
 - Human and ecological protection for soil, sediments and source material where remedial actions are taken
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Why ROD Amendment Now?

- Present a comprehensive cleanup plan for the Upper Basin
 - Reflects improved knowledge of the site
 - Addresses National Academy of Sciences' recommendations
 - 2002 Interim ROD was never intended to be a complete set of actions to meet water quality standards
 - Addresses groundwater and impaired surface water quality in "OU2" or Box non-populated areas
- Include actions to protect remedies from tributary flooding and heavy precipitation

Improved Site Understanding

- Evaluation of actions already completed, monitoring data, and pilot studies
- Better understanding of source areas with high dissolved zinc
- Revised approach and conceptual designs for hydraulic isolation and water treatment
- Evaluation of permeable reactive barriers
- Evaluation of Box OU2 Phase I cleanup actions

Upper Basin ROD Amendment Approach

➤ **Remedy Protection Alternatives**

- Protects existing remedy from tributary flooding and heavy precipitation

➤ **Remedial Alternatives**

- Updates 2001 alternatives for Coeur d'Alene Basin (OU3)
 - Added mine/mill sites
 - Change in water treatment strategy
 - Learnings from pilot studies integrated
- Box (OU2) Phase II actions for water quality

Remedy Protection --

“Protecting the Cleanup”



Remedy Protection Goals

- **Protect human health and environment**
 - Keep clean areas clean
 - Minimize erosion of clean barriers and deposition of contaminated sediment
 - Managing water flow over ground surface from tributary flooding and rain events

- **Protect CERCLA investment in human health barriers**
 - Over 5,000 parcels cleaned up to date
 - Over \$150M invested to date (EPA & PRPs)

Remedy Protection Focus

- Proposes specific infrastructure actions to address identified risks to clean soil barriers that protect people's health
- Addresses previously experienced flooding issues
- Provides framework to evaluate additional side gulches



Remedy Protection Alternatives in Draft Focused Feasibility Study

- **Alternative RP1** “No Further Action”
 - No modifications to existing infrastructure
 - Relies on
 - Post-Event Response
 - Existing systems
 - Total 30-year NPV cost \$50.1M

- **Alternative RP2** “Modifications to Selected Remedies to Enhance Protectiveness”
 - Modifies existing drainage controls
 - Relies on Remedy Protection infrastructure projects
 - Total 30-year NPV cost \$33.9M

Remedy Protection Components of Preferred Alternative

➤ 14 actions to safely move tributary flows & heavy precipitation through communities:

- Armor/pave roadside ditches
- Make culverts larger
- Replace inlet structures
- Make channels wider
- Install below grade bypass drainage pipes

➤ Framework to evaluate 18 Side Gulches

Remedy Protection Benefits

- Increases long-term effectiveness and permanence of human health remedies already in-place
 - Reduces mobility of waste left in-place
 - Reduces potential exposures after a flood
 - Cost effective
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Remedial Actions



Remedial Action Objectives

➤ Final Remedy for:

- Human health protection for surface water used for drinking water purposes
- Ecological protection for surface water
- Human health and ecological protection for soil, sediments and source material in places where actions are taken

RA Objectives (cont.)

➤ *Additional Goals*

- Reduce amount of contaminated groundwater to surface water
- Reduce groundwater metals levels
- Reduce particulate lead in river and possibility of recontamination in Lower Basin

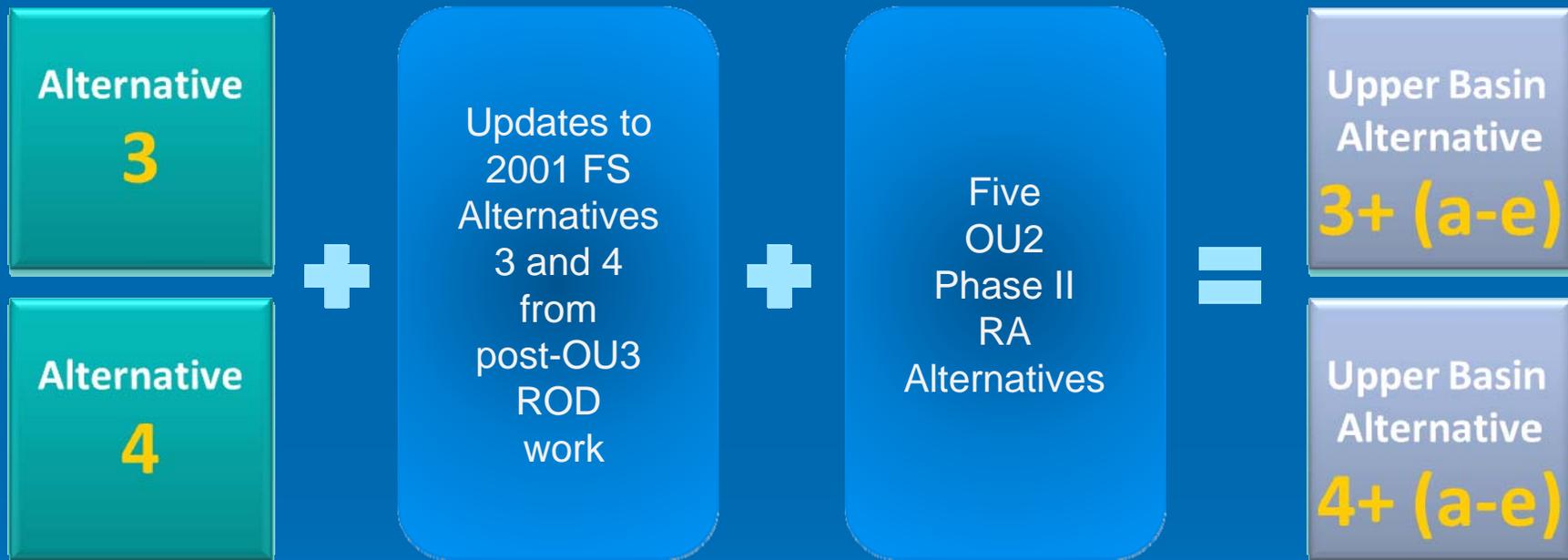
2001 Coeur d'Alene Basin Feasibility Study Eco Remedial Alternatives

- Alternative 1 - No Action
- Alt. 2 - Contain/Stabilize with Limited Removal & Treatment
- Alternative 3 - Extensive Removal, Disposal & Treatment
- Alternative 4 - Maximum Removal, Disposal & Treatment
- Alternative 5 - State of Idaho Plan
- Alternative 6 - Mining Company Plan

Development of Remedial Alternatives in Draft Focused Feasibility Study

From
2001
OU3 FS

Combined
Remedial
Alternatives



OU2 Phase II RA Alternatives

- **Alternative (a)** Minimal Stream Lining
- **Alternative (b)** Extensive Stream Lining
- **Alternative (c)** French Drains
- **Alternative (d)** Stream Lining/French Drain Combination
- **Alternative (e)** Extensive Stream Lining/French Drain Combination

Description of Remedial Alternatives

- Excavation, regrading and capping at Mine and Mill Sites and in selected floodplain locations
- Hydraulic Isolation in selected areas
- Collection and Treatment of Adit Discharge, Seeps, and Groundwater
 - Upgrade and expand the Central Treatment Plant
 - Passive treatment at selected locations
- Cleanups of stream and river banks

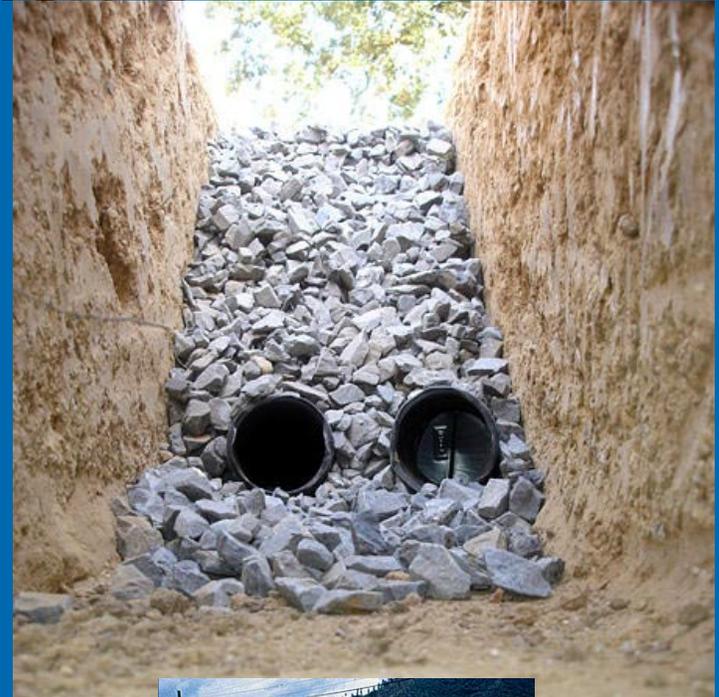
Excavation, regrading and capping

- Alt 3+ and Alt 4+ include actions at 345 and 760 mine and mill sites respectively
- Focuses on key source areas such as floodplain tailings and mine/mill areas prone to erosion and leaching
- Actions are mainly:
 - Consolidation of wastes in upland areas
 - Capping based on waste type and loading potential



Hydraulic isolation

- Stream lining in key gaining reaches
- French drains for groundwater collection
- Targeted source control actions
- Piping of groundwater to Central Treatment Plant



Central Treatment Plant Upgrades

- Expansion of CTP from 5,000 gpm up to 33,000 gpm depending on alternative
- Discharge pipeline to South Fork
- Expansion to be done in phases as source areas connected
- Provides greatest efficiency for treatment of all waters within existing plant area



Stream and Riparian Cleanups



1999 - Removal Action
Construction



Summer 2009

Silver Crescent Mill and Tailings Site
US Forest Service project

Comparison of Alternatives Superfund “Nine Criteria”

➤ **Threshold Criteria:**

- All RA Alternatives in the FFS (except No Action) meet threshold criteria

➤ **Balancing Criteria**

- Alternative 3+(d) provides the best balance of tradeoffs
 - Easier to implement
 - Similar water quality improvements relative to more costly alternatives
 - Decrease reliance on repositories
 - Fewer impacts on communities

Preferred Remedial Action Alternative: Alternative 3+(d)

- Extensive Removal, Disposal, Treatment in OU3 and
 - Stream Lining/French Drain Combination in OU2
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Preferred Remedial Action Alternative

➤ The Preferred Alternative includes

- 59 miles of pipeline
- 67,000 feet of both French drain and stream liner
- 6.1 million cubic yards of contaminated soils, sediments, and tailings consolidated on site or in repository
- 16,900 average gpm treated at Central Treatment Plant
- 47 miles of stream and riparian cleanups

➤ Estimated Cost and Timeframe

- \$1.28 Billion
- 50 to 90 years depending on funding

Key Benefits of Preferred Alternative: Alt 3+(d) and RP-2

- **Achievement of ARARs** for surface water
 - Significant reduction in dissolved metals
 - Improved conditions for fish and other aquatic life
- **Reduction in particulate lead in surface water**
 - Reduced exposure and potential for recontamination
 - Enables Lower Basin cleanups to proceed
- **Reduced direct contact with heavy metals in mine waste by people and wildlife**

Anticipated Benefits of Preferred Alternative

- **Reduce dissolved metals** in surface water and groundwater to improve conditions for fish and other aquatic life
- **Reduce particulate lead** in surface water
 - Reduce exposure and potential for recontamination downstream
 - Helps start cleanups in Lower Basin
- **Reduce direct contact** with heavy metals in mine waste by people and wildlife
- **Protect remedies** already completed from damage during tributary flooding and high precipitation

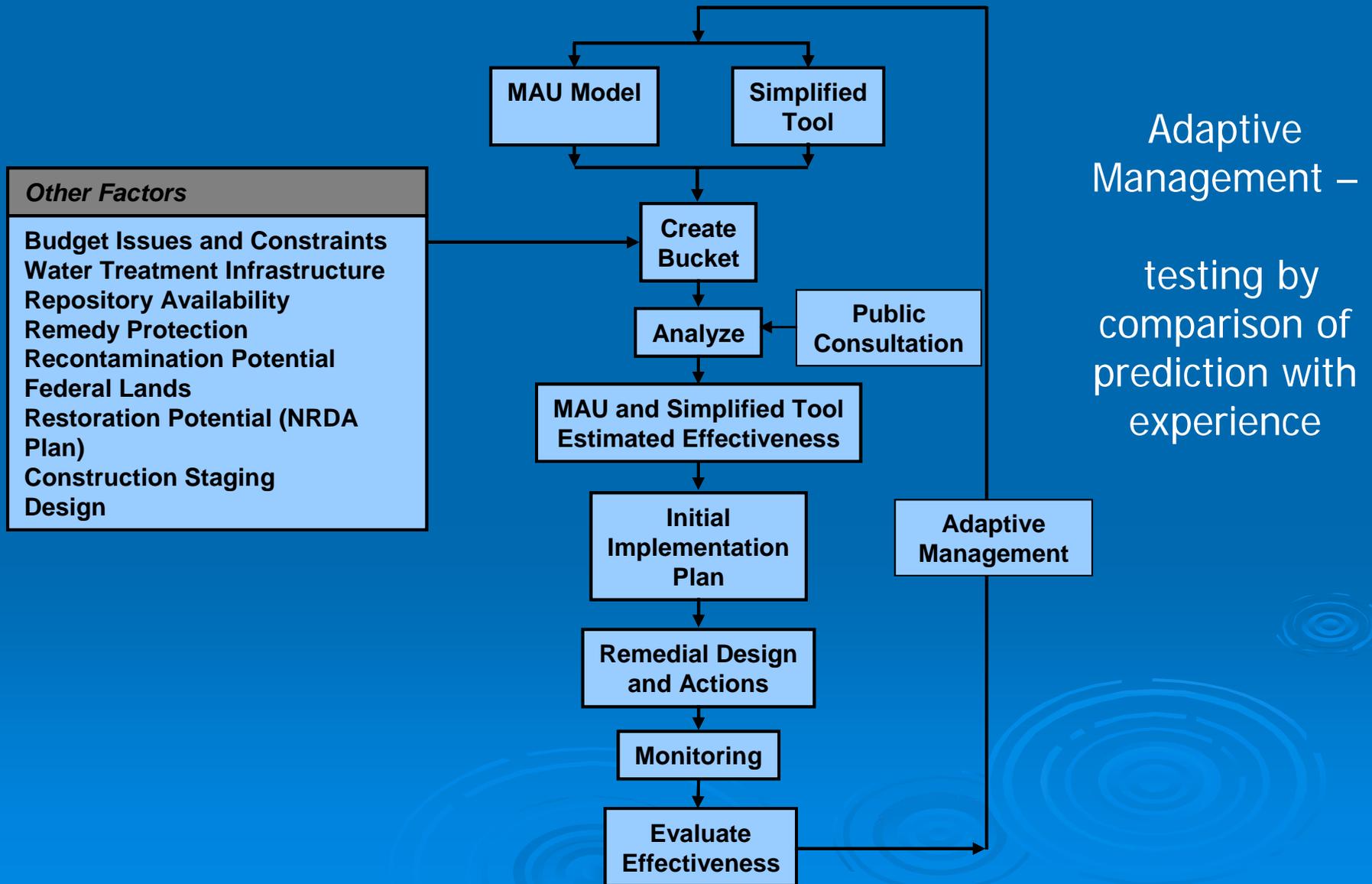
Implementation of Preferred Alternative



Adaptive Management Plan

- Helps define a process for managing uncertainty about remedial effectiveness estimates
- Restoration work with Natural Resource Trustees
- Future land use by communities, land owners, mining companies and others
- Uses several tools to help sort sites and predict effectiveness of actions
- Will adapt cleanup to learnings from actions taken

Implementation Plan Approach



Factors to Consider

- Value of meeting cleanup goals in specific stream segments that are in better shape
- Balancing expense and effectiveness of actions
- Value of completing remedy protection projects
- Unknowns with many mine and mill sites
- Need to show progress
- Need to avoid recontamination where work is completed

Bunker Hill Superfund Site Mines and Millsites

Map Sheet: 28

Legend

- ★ Cities
- ▭ Mine and Mill Sites

Map Tile Index



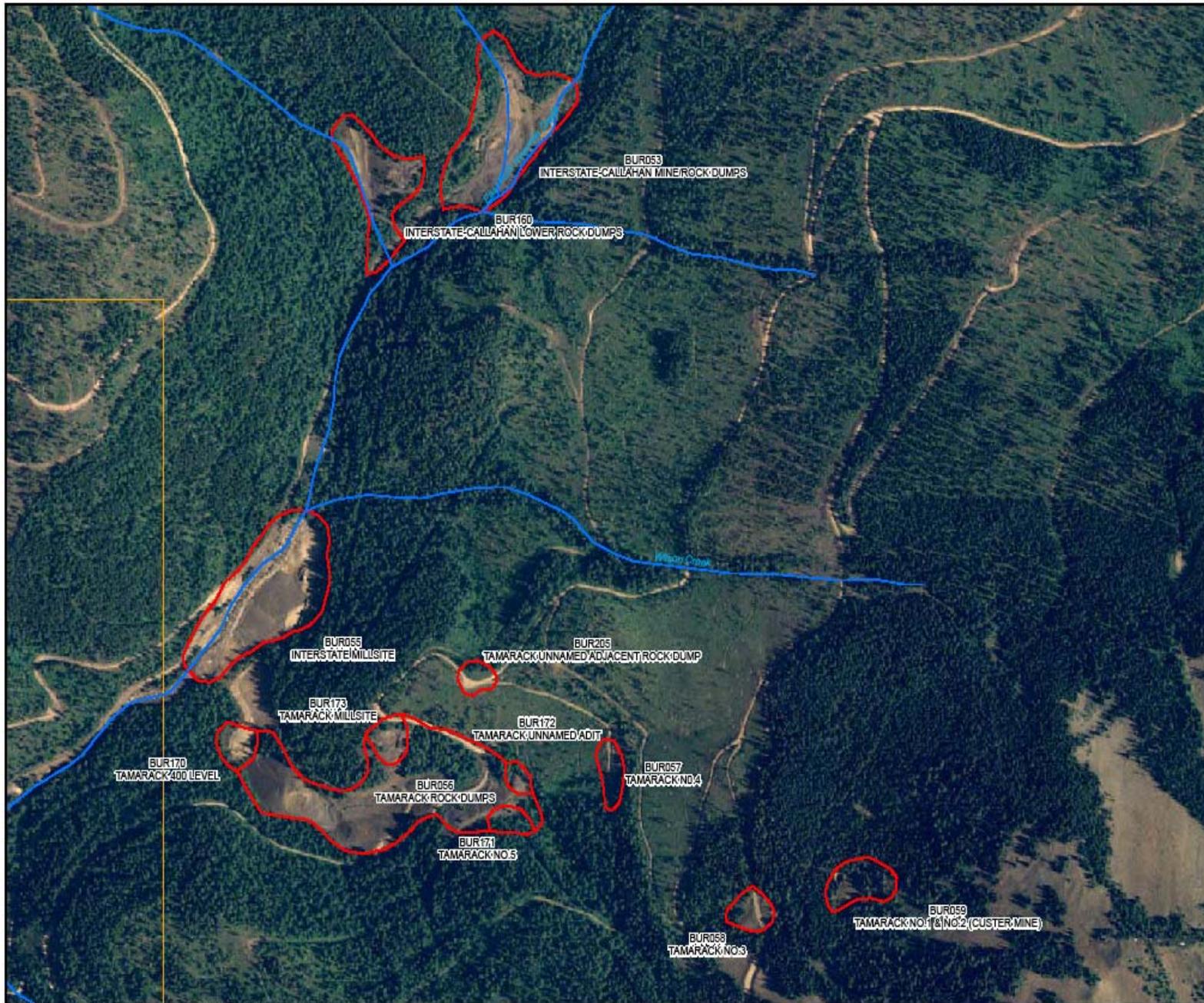
Project Location Overview



0 250 500 Feet



Aerial Photo: 2004 NAIP



Next Steps for Implementation Plan

➤ Development of plan text

- Background
- Objectives
- Tools
- Discussion of Tradeoffs
- Monitoring and Evaluation of Actions

➤ Share refined “Strawman” built upon input from last Project Focus Team meeting

➤ Discuss TODAY at PFT meeting and Public Information Session

Schedule



Schedule

➤ Implementation Plan development

- Upper Basin PFT meeting – June 17th
- Public Meeting – June 17th – Kellogg High School
 - 6:30 – 8:30 pm
 - Presentation at 7 pm

Schedule (cont.)

- **Proposed Plan (draft cleanup plan)**
 - Comment period -- July 12th – August 25th (45 days)

- **You are invited! -- Open House and Public Meeting**
 - Thursday, August 4th
 - Shoshone Medical Center, 858 Commerce Drive, Smelterville
 - **Open House** - 5 to 6:30 pm
 - **Public Meeting** - 7 to 8:30 pm

- **Written comments due to EPA on August 25th**

Schedule (cont.)

➤ Fall 2010 –

- Evaluate and consider public comments
- Develop Responsiveness Summary
- Continue development of Implementation Plan

➤ Late Fall / Early Winter – Issue Record of Decision Amendment

Conclusions

- **Significant measurable risks** exist today to people and the environment
- **Upper Basin ROD Amendment is needed to:**
 - Provide a comprehensive set of actions to meet surface water quality standards and protect human health
 - Provide actions in local communities to protect human health remedies already in place from tributary flooding and heavy precipitation
- **Preferred Alternative** - \$1.3 Billion and decades to implement
- **Implementation Plan and adaptive management are critical**
- **Community input is important – *Public Comment period coming soon!***

For more information

➤ ROD Amendment web page

- <http://go.usa.gov/igD>

➤ Contacts:

- Anne Dailey, dailey.anne@epa.gov ; 206-553-2110
- Bill Adams, adams.bill@epa.gov ; 206-553-2806

➤ Sign up for the Basin Bulletin



Thank you!

Questions?