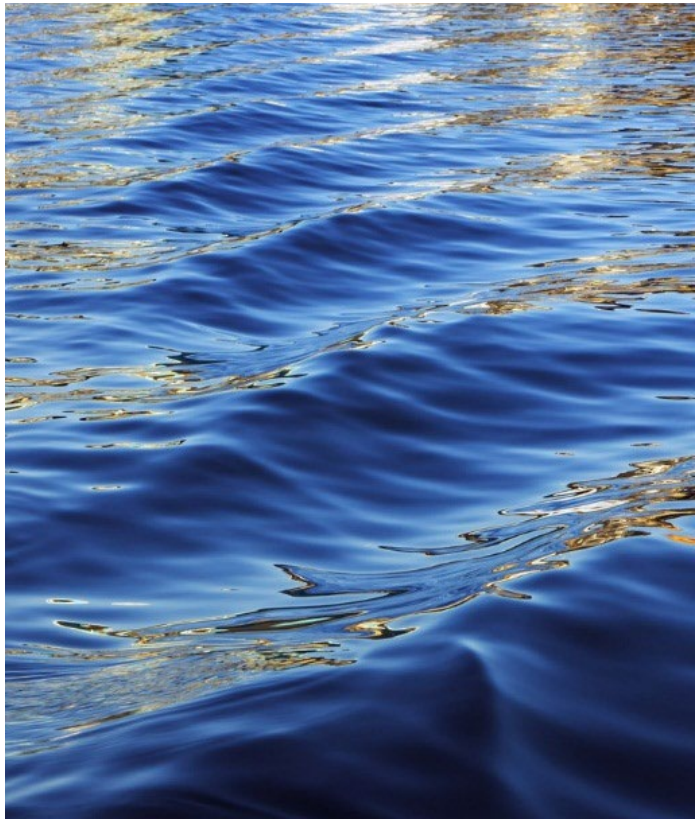
Citizen Coordinating Council

Lower Basin Information Session

June 5, 2024

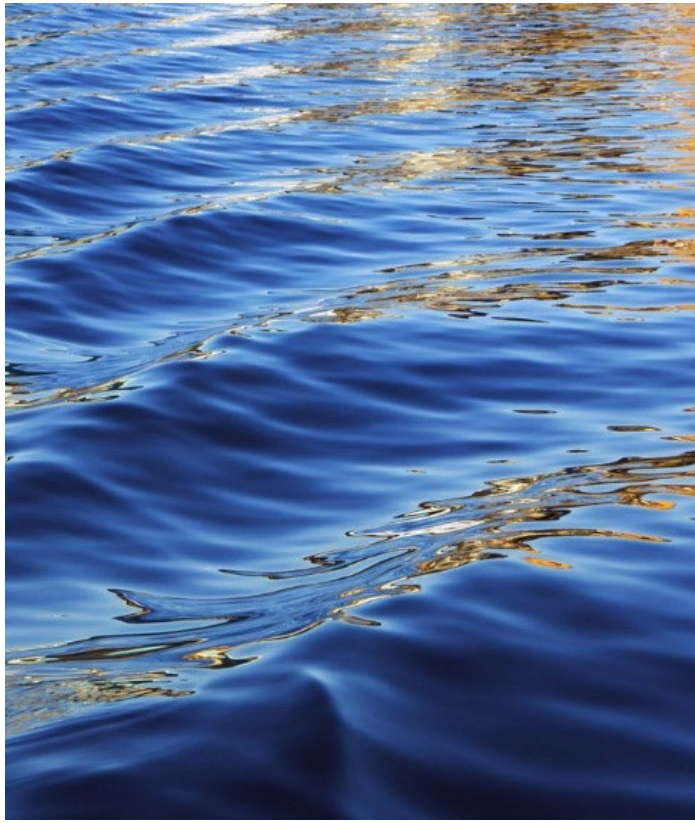


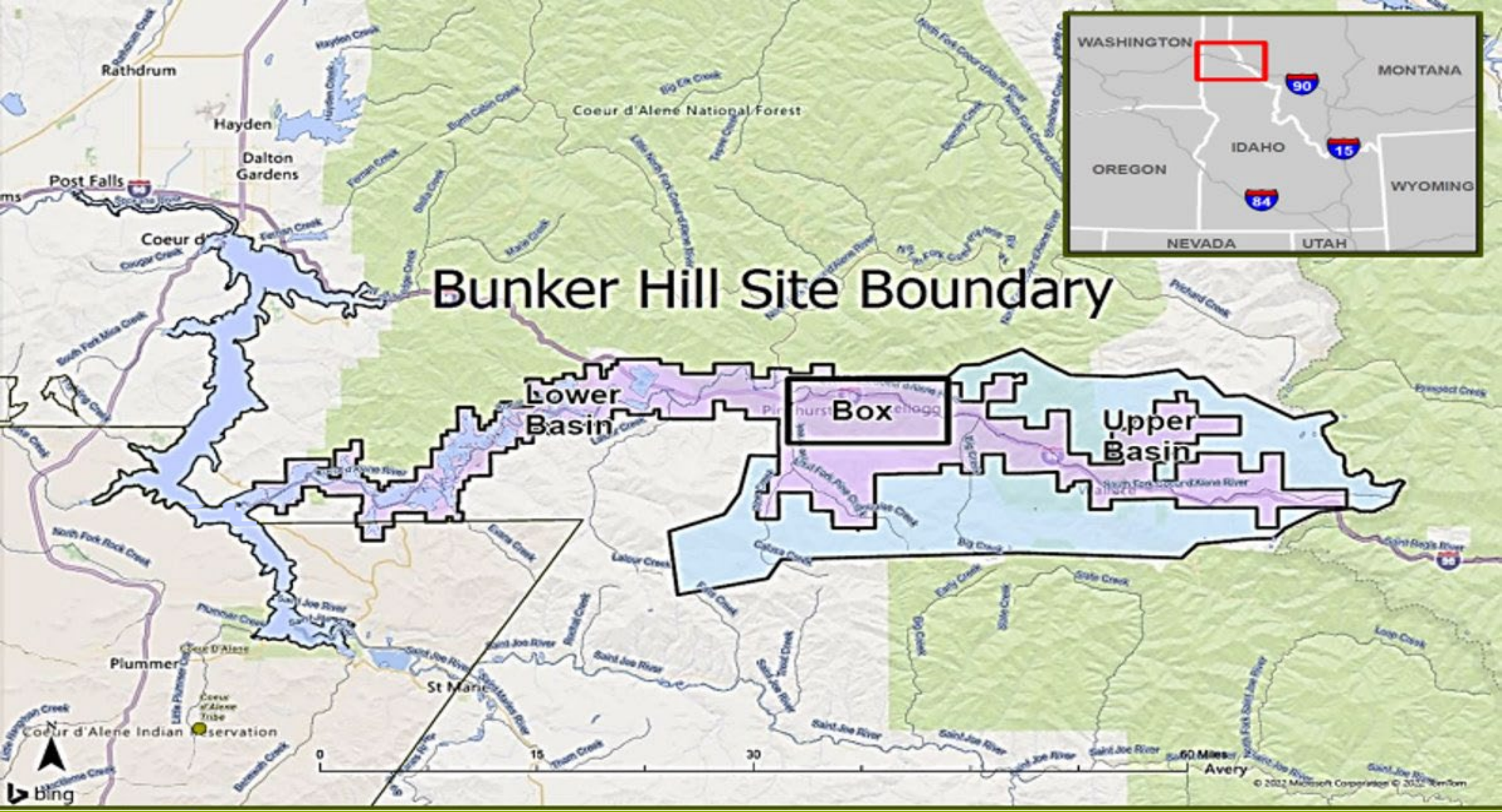
Overview

- Lower Basin Background
- Plan for Prioritizing work in the Lower Basin
- Initial List of Priorities
- Riverbed Management Plan
- Questions

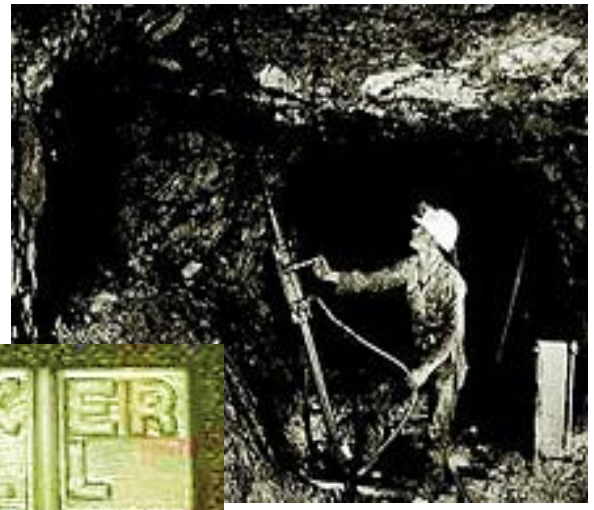
EPA Photo

Lower Basin Background



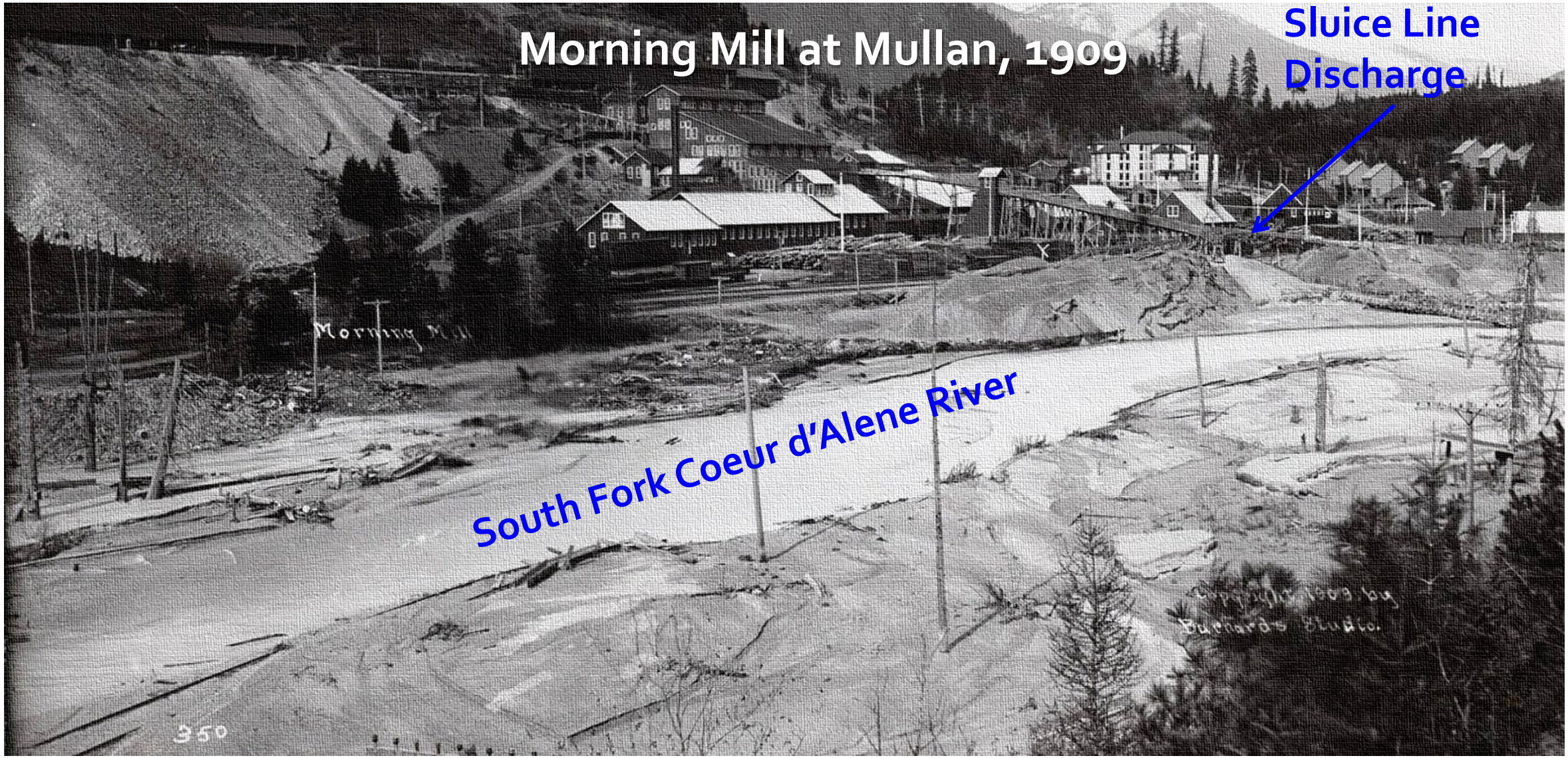

Bunker Hill Site Boundary
Lower Basin
Box
Upper Basin
WASHINGTON
MONTANA
IDAHO
OREGON
WYOMING
NEVADA
UTAH
90
15
84
Rathdrum
Hayden
Dalton Gardens
Post Falls
Coeur d'Alene National Forest
Plummer
St Maries
Coeur d'Alene Indian Reservation
Avery
0
15
30
60 Miles

Century of Mining, Milling & Smelting



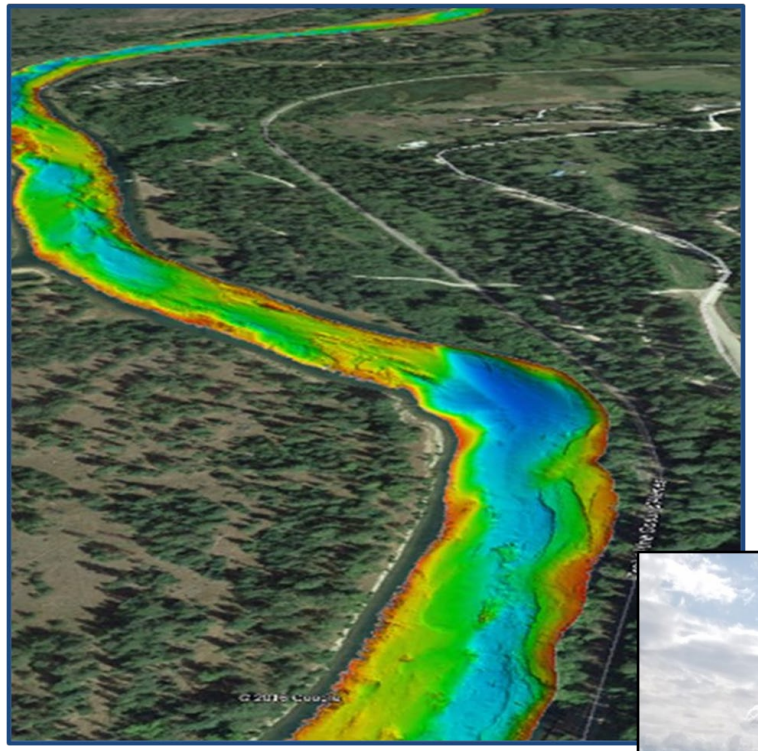
- **The Upper Basin + Silver Valley**
  - ✓ Mining & Milling: 1880s - today
  - ✓ Smelter Operations: 1917 – 1981
- **Spoils of Success**
  - ✓ One of the world's largest producers of lead, zinc & silver .
  - ✓ By 1994, > $5 billion in silver mined
- **Legacy of Widespread Contamination**
  - ✓ Over 100 million tons of mine waste including 2.4 billion pounds of lead spread over thousands of acres.

Direct Discharge to Creeks & Rivers



Scope of Work in the Lower Basin

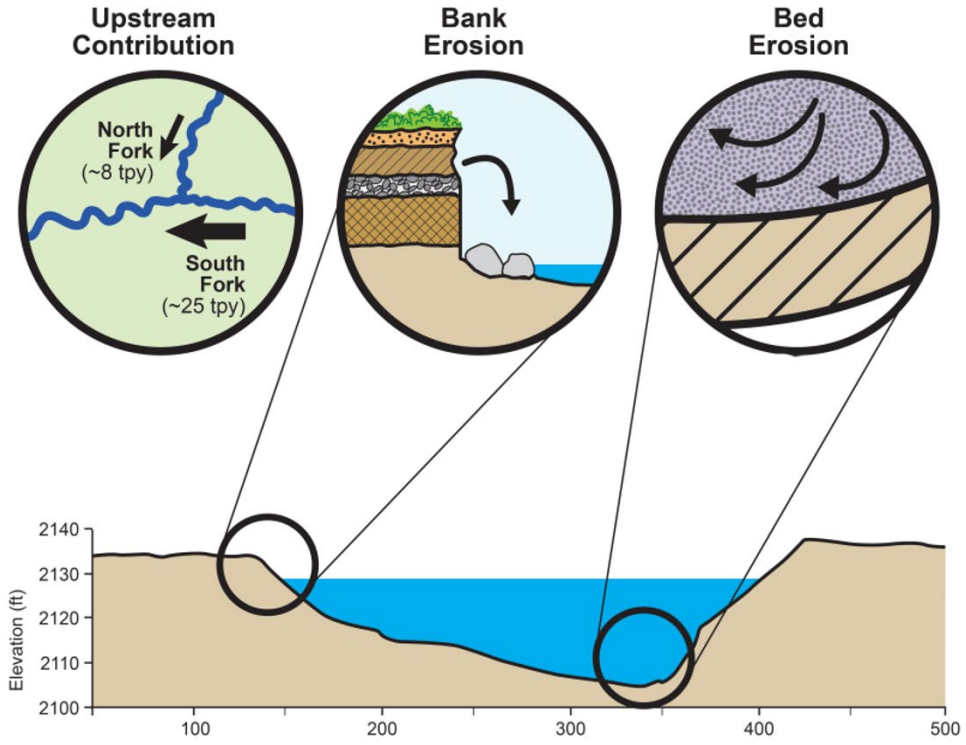
- ROD Defined:
  - Riverbed (2.6 million cy)
  - Riverbanks (33.4 miles)
  - Wetlands (1,169 acres)
  - Lateral Lakes (1,859 acres)
  - Ag to Wetland (1,500 acres)
  - Sediment Traps (4)
  - Recreational Sites (69)

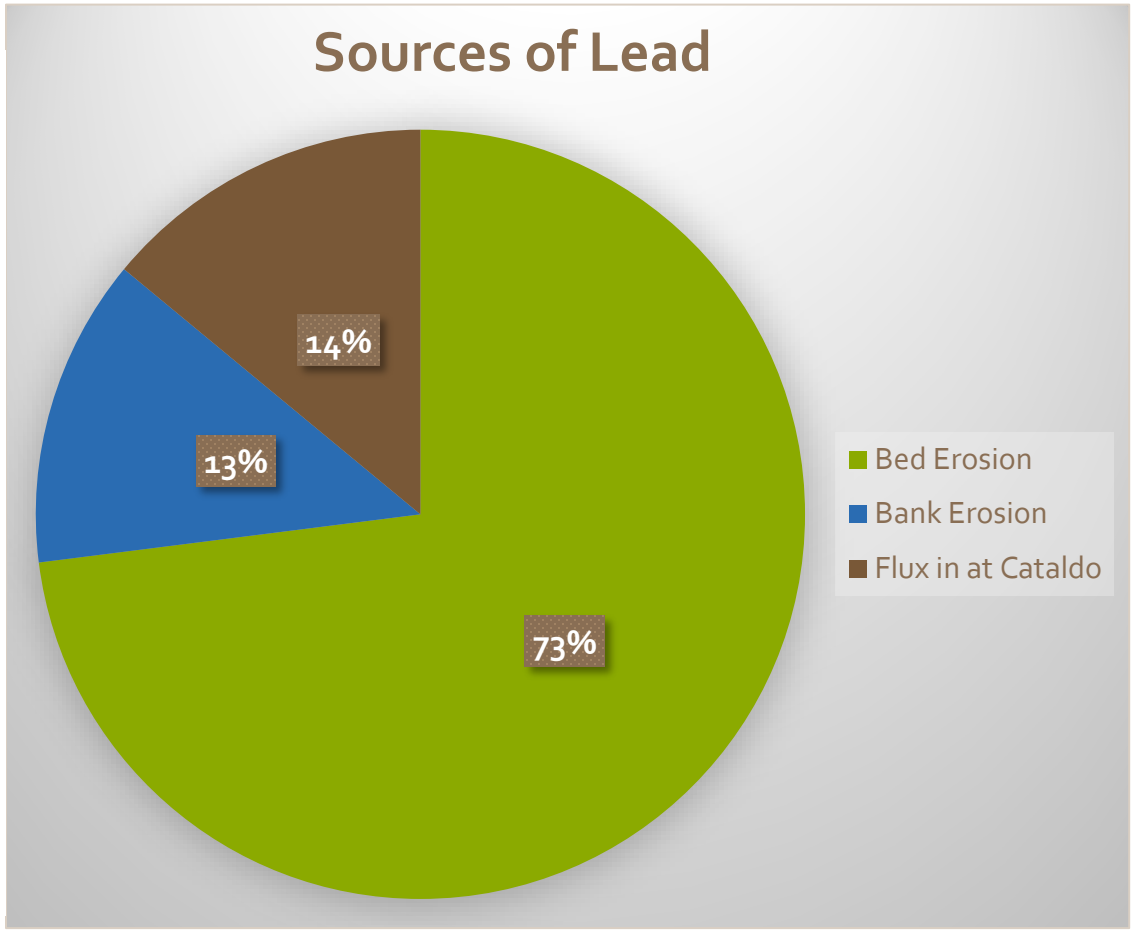


EPA Photo

EPA Photo

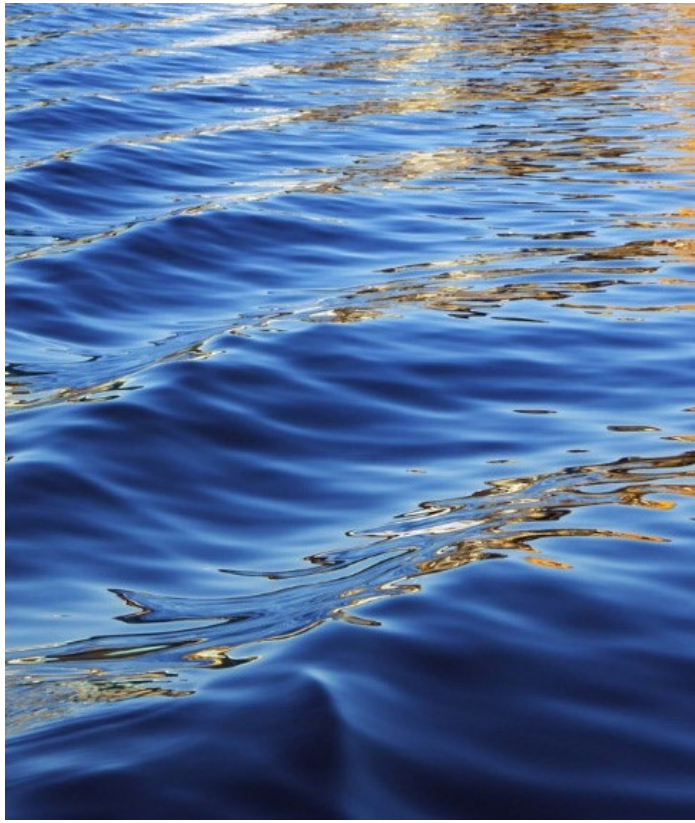
Sources of Lead in Lower Basin





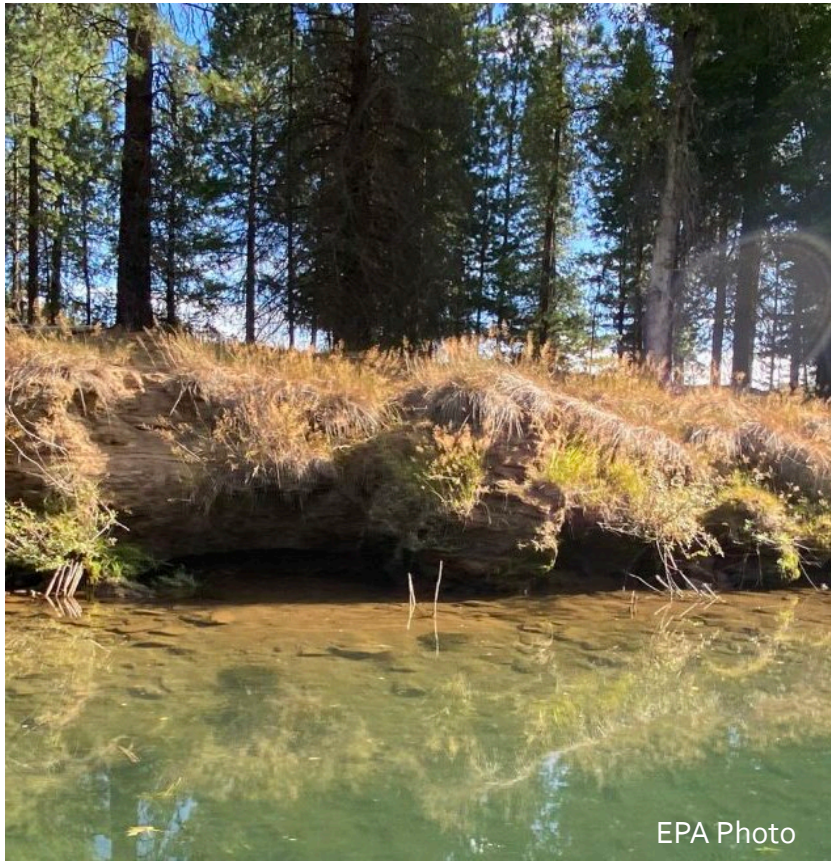
- About ¾ of lead is coming from the riverbed
- Inflow and bank erosion are relatively minor contributors

How do we prioritize work in the Lower Basin?



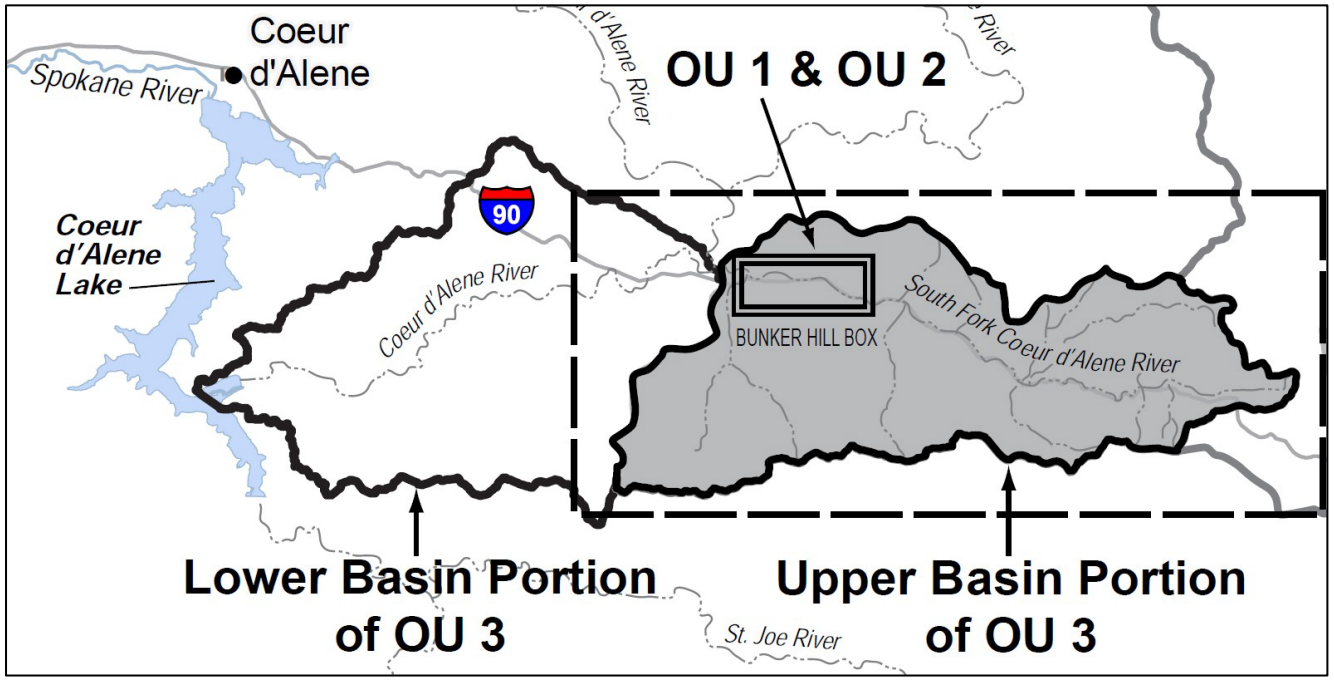
We developed the Lower Basin Prioritization Plan!

- Provides an initial approach towards prioritizing remedial actions and related data gap investigations
- Helps select pilot projects
- Applies an adaptive framework to guide pilot projects and remedial actions
- Divided into Remedial Action Site Categories:
  - Riverbeds and banks
  - Wetlands and lateral lakes
  - Recreational sites



Why do we need a Prioritization Plan?

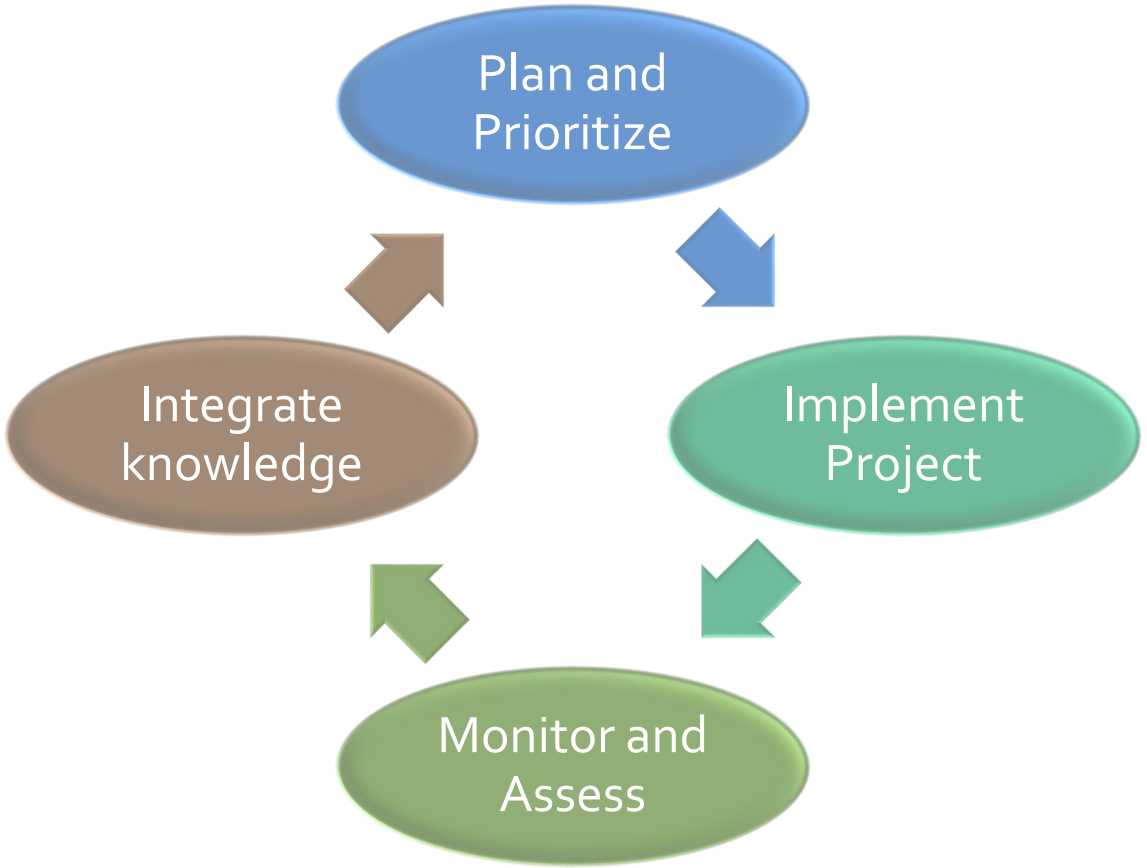
- Lots of work to do!
- Tackle the biggest sources of contamination
- Flexibility
- Must be balanced with Upper Basin work:
  - Mine and mill sites, repositories, Basin Property Remediation Program, and recreational sites



How will this Prioritization Plan be used?

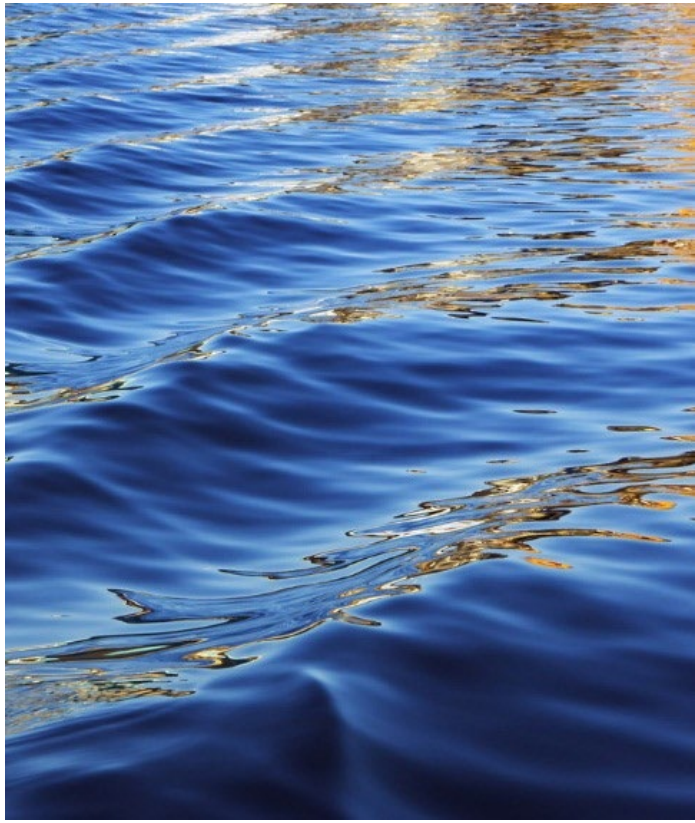
- Process
  - Create initial prioritization
  - Revisit it annually
  - Create a 10-year plan
  - Balance work between Upper Basin and Lower Basin
  - Work within the Trust's annual budget ($30m per year)

Adaptive Management



Initial Priorities

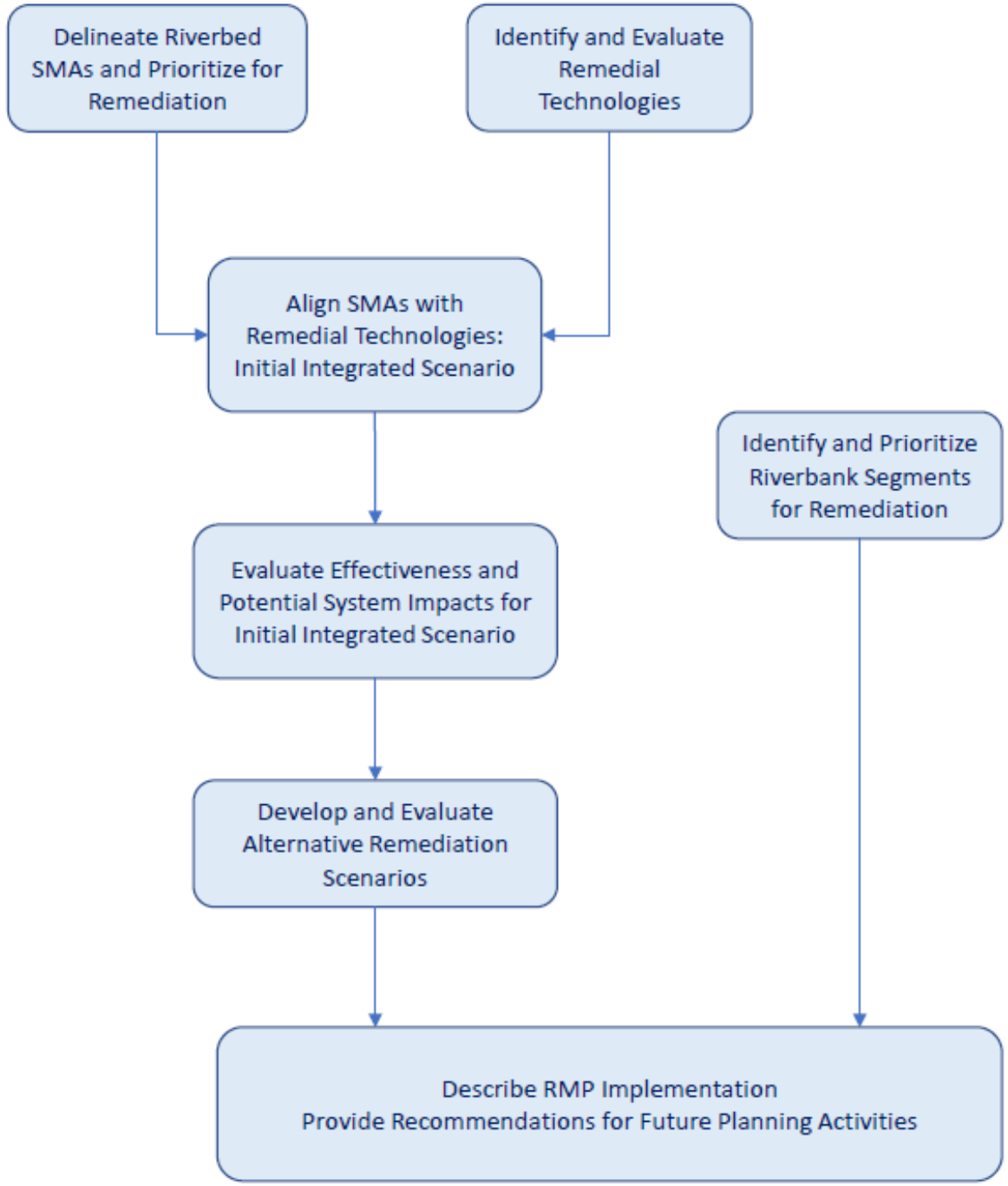
Riverbeds and Banks
Wetlands and Lateral Lakes
Recreational Sites with Risks to People's Health



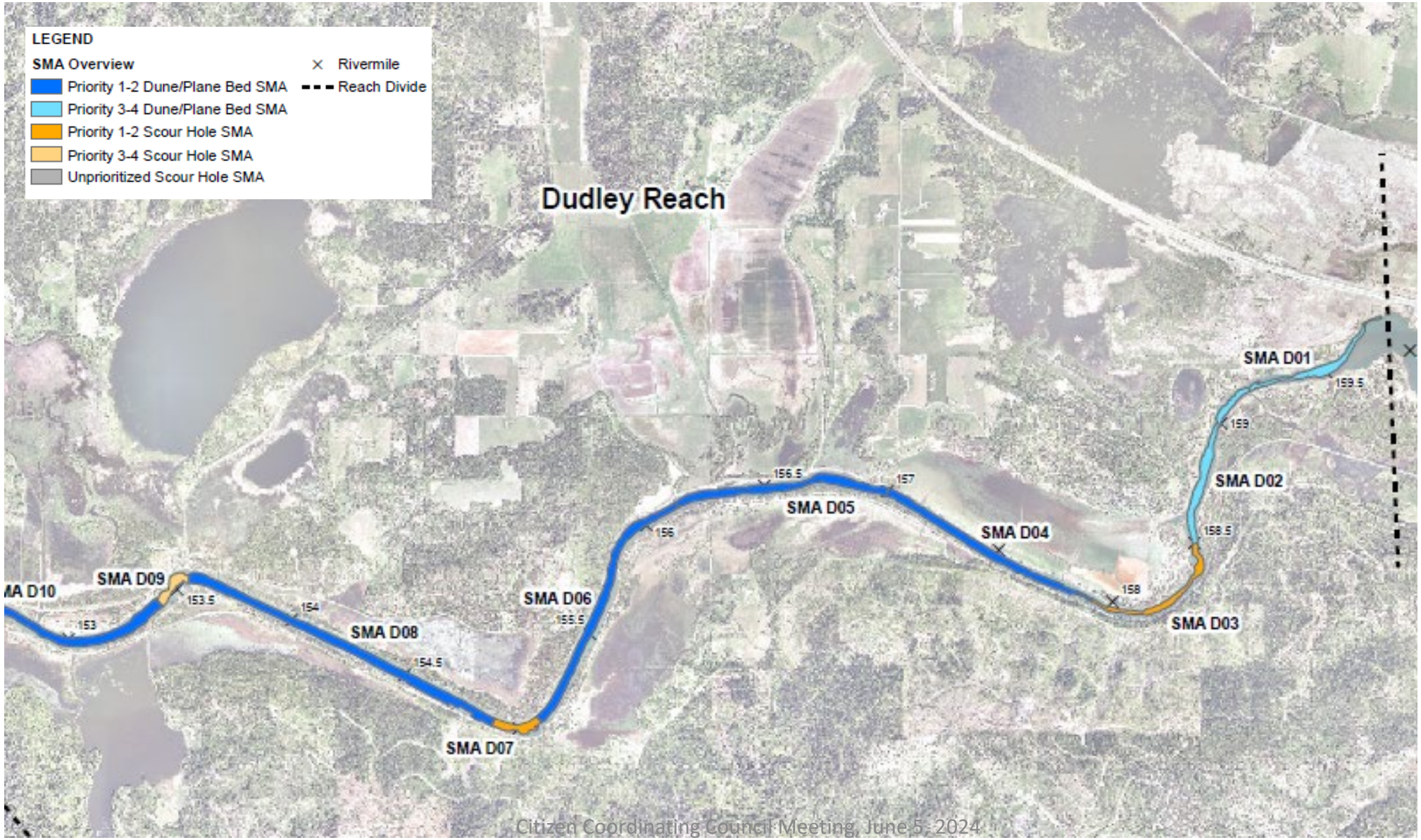
Riverbed Management Plan

- Purpose - "to guide implementation of the interim remedy for the Lower Basin riverbed and banks by providing information and analyses for selected remediation scenarios…"

- Approach
  - Identify and Assess various remedial technologies for effectiveness and system responses (i.e., water surface elevation changes) using several modeling tools.



RMP – SMA Overview



RMP – Remedial Technologies

- Dredging and dredge/cap hybrid (no net fill and over-dredge)
- Isolation capping (6" gravel and 12" sand/gravel)
- Vertical grade control sills or riverbed weirs
  - Considered experimental in lower basin
- Monitored Natural Recovery
  - Effectiveness limited due to river being net erosional
- Floodplain Splays
  - Determined to be likely ineffective through modeling

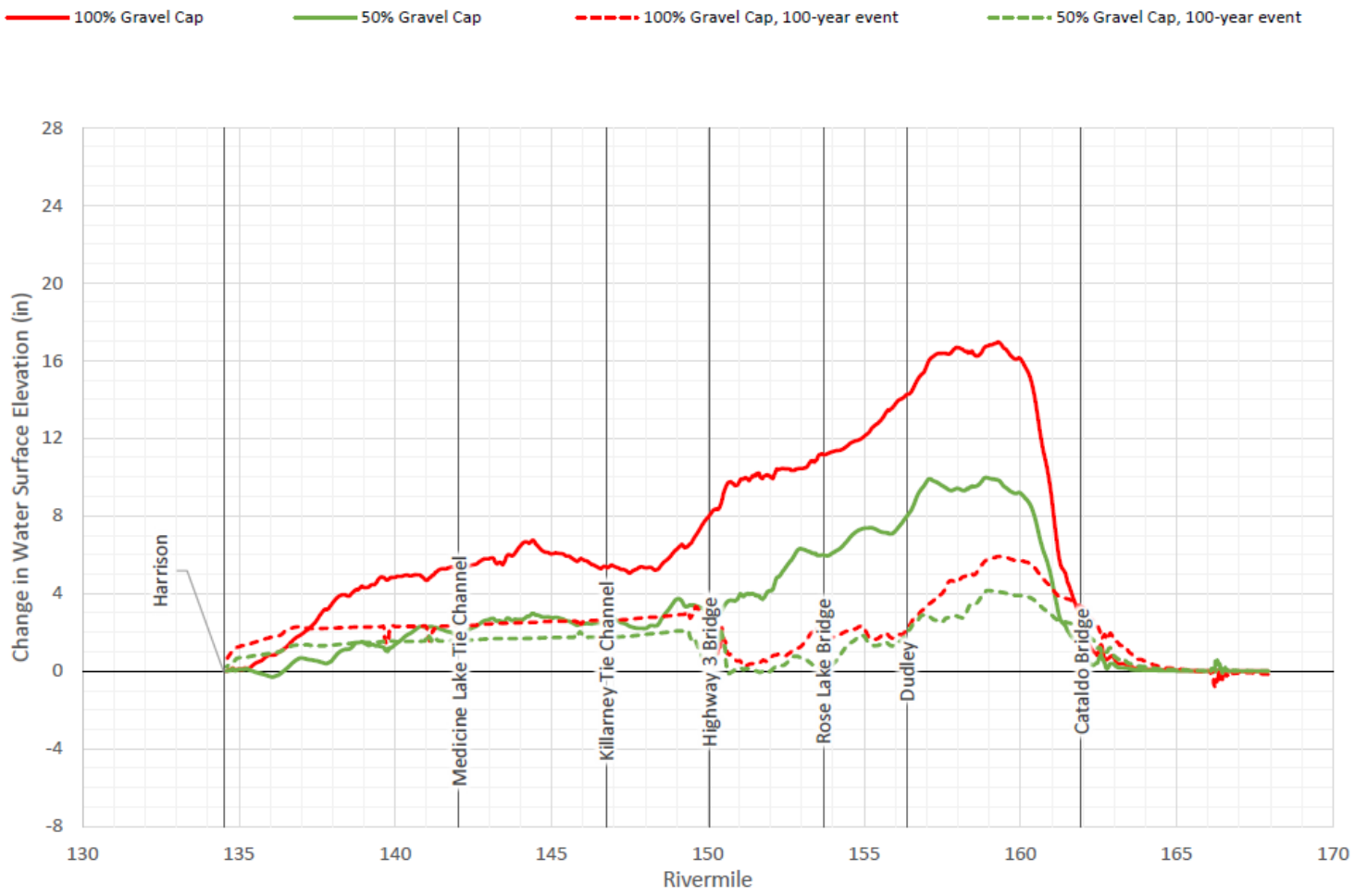
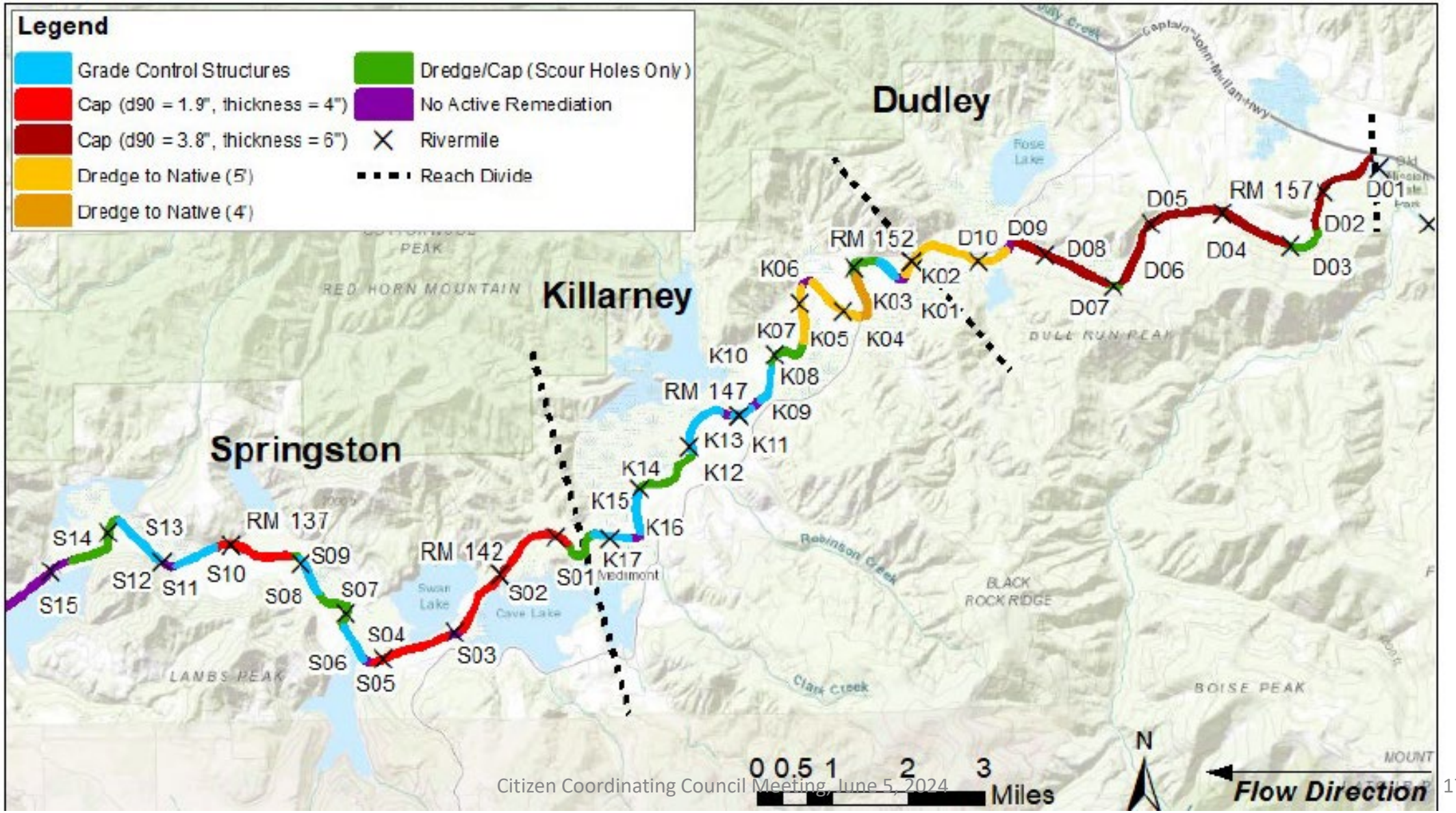


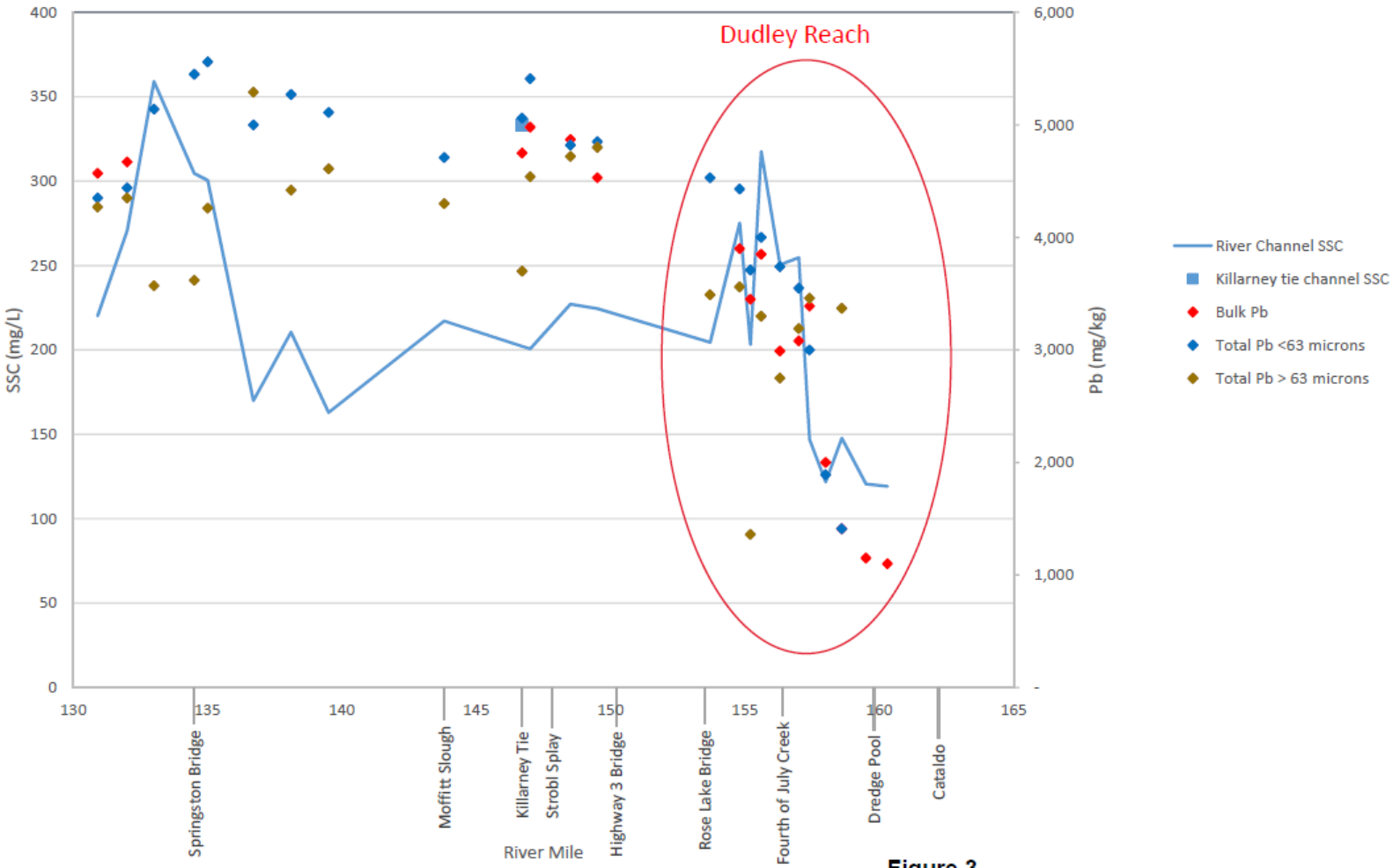
Exhibit 15

RMP – Initial Integrated Scenario



Dudley Reach Scour Hole Pilot Project

- Dudley Reach recognized in the 2002 ROD as a Source of Contamination and as an Ideal Candidate for Pilot Program
- CdA Trust confirmed the Dudley Reach is appropriate pilot project location based on more recent observations and data



Source: Flood Stage Sampling Report (CH2M, 2018b)
SSC - suspended sediment concentration

Figure 3.
Flood Stage Sampling Data, March 16, 2017
Pilot Project Alternatives Analysis
Lower Basin of the Coeur d'Alene River (OU3)

Dudley Reach Scour Hole Pilot Project

Pilot Project Goals

- Reduce downstream migration of particulate lead from the riverbed and banks while minimizing adverse system responses.
- Develop means and methods for technology applications elsewhere in the Lower Basin
- Establish monitoring methods for assessing remedy performance.

ROD Benchmark – 50% reduction in particulate lead loading during high flow events

Riverbank Monitoring

- Monitoring Goals
  - Understand location and extent of riverbank types
  - Understand nature and extent of metals concentration
  - Evidence of recreational use
  - Understand bank erosion rates and lead loading
- How do we achieve these goals?
  - Riverbank Inventory
  - Erosion pins
  - Sediment samples
  - Riverbank wedge sampling
  - Stratigraphy

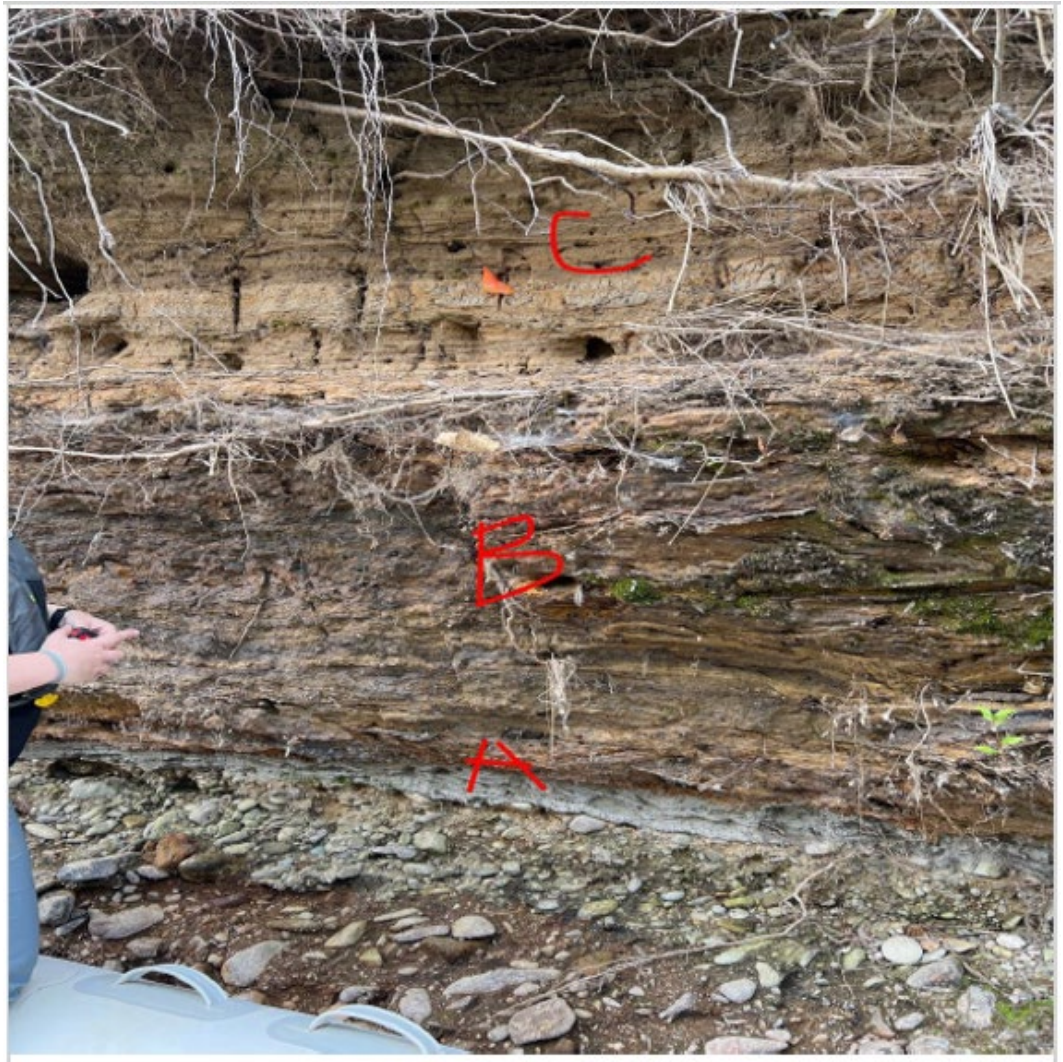


Photo courtesy of CDA Trust

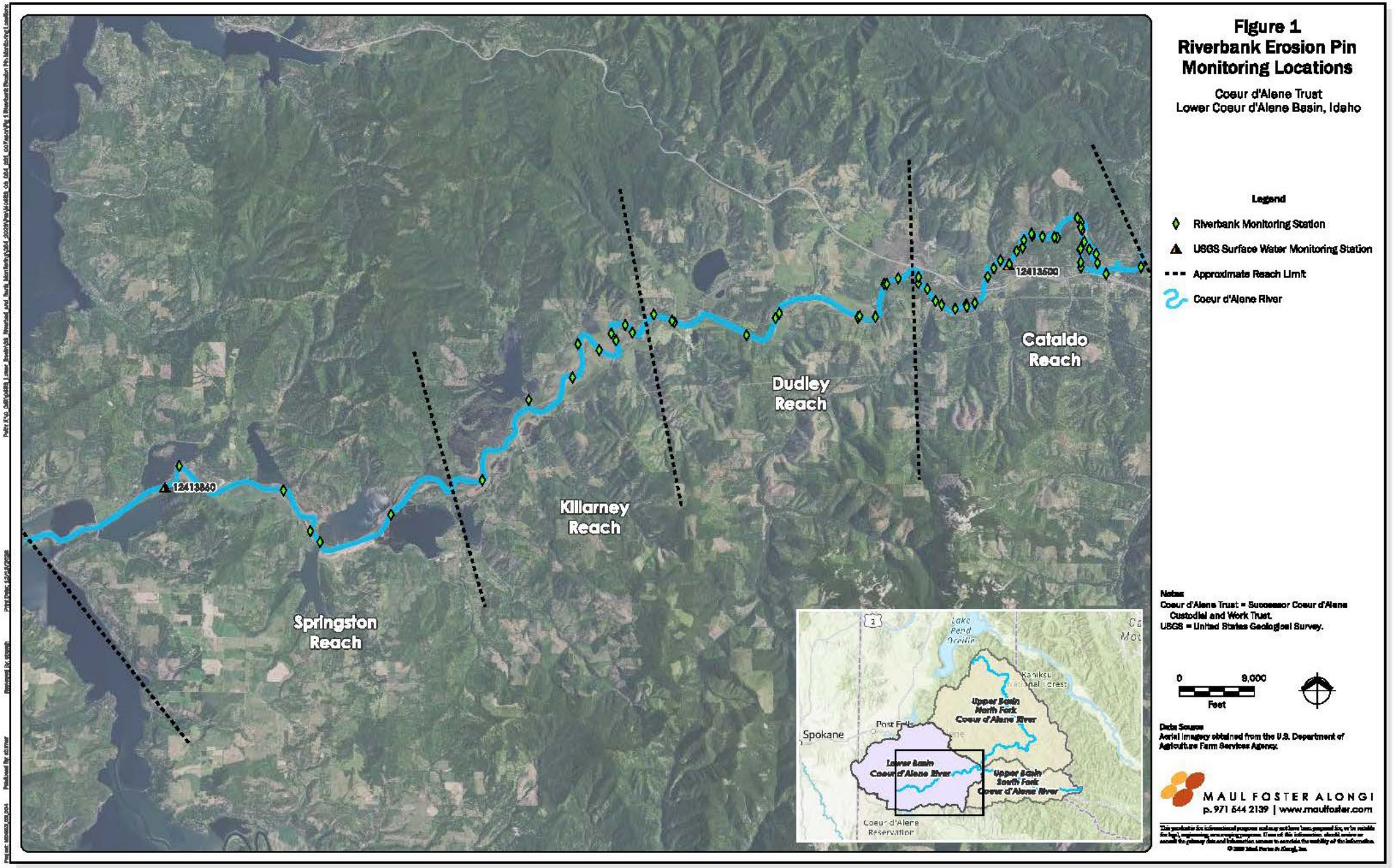
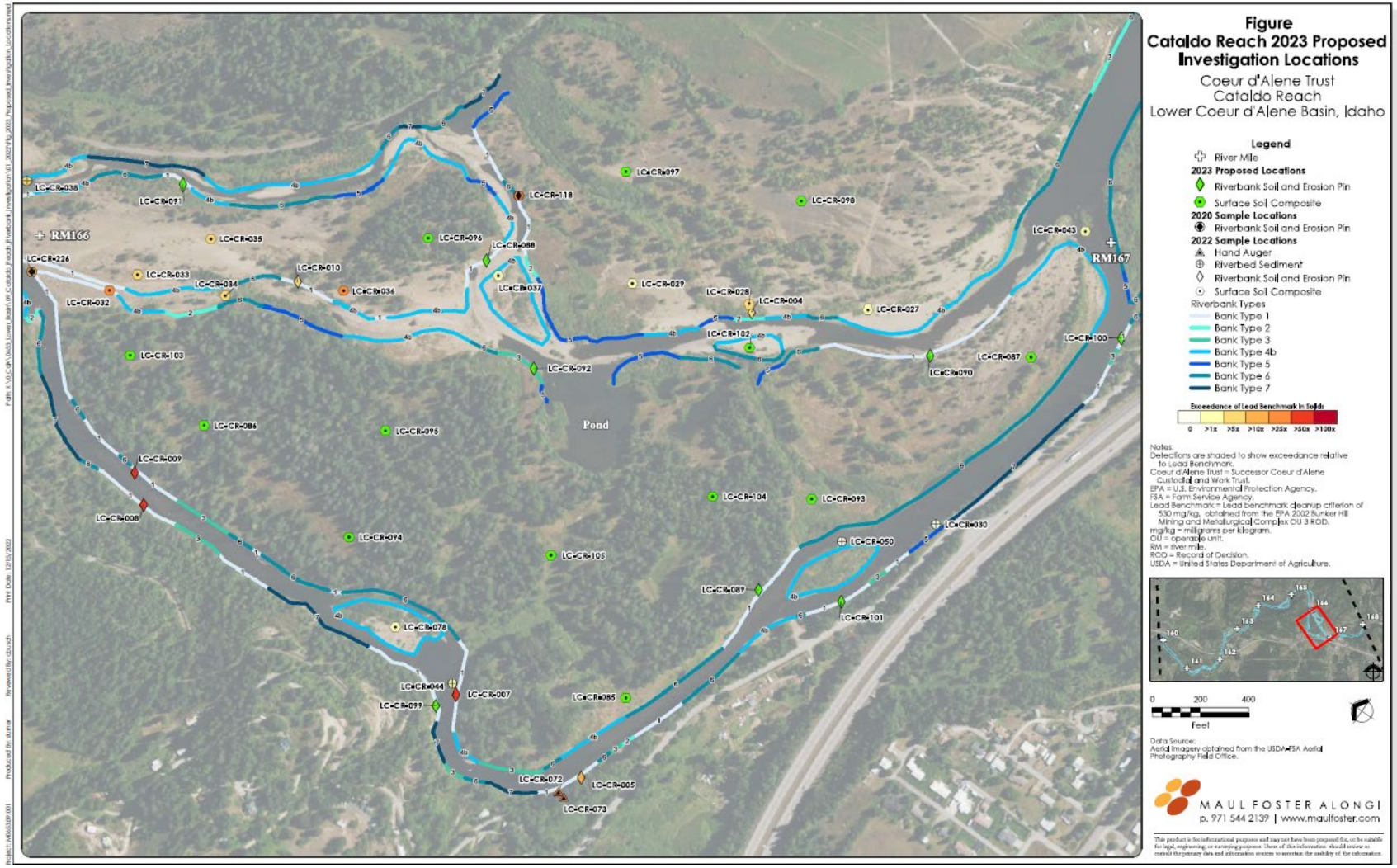


Figure 1
Riverbank Erosion Pin Monitoring Locations
Coeur d'Alene Trust
Lower Coeur d'Alene Basin, Idaho
Legend
Riverbank Monitoring Station
USGS Surface Water Monitoring Station
Approximate Reach Limit
Coeur d'Alene River
12413440
12413500
Springston Reach
Killarney Reach
Dudley Reach
Cataldo Reach
Lake Pend Oreille
Spokane
Post Falls
Coeur d'Alene Reservation
Upper Basin North Fork Coeur d'Alene River
Lower Basin Coeur d'Alene River
Upper Basin South Fork Coeur d'Alene River
Notes
Coeur d'Alene Trust = Successor Coeur d'Alene Custodial and Work Trust.
USGS = United States Geological Survey.
0
9,000
Feet
Data Source
Aerial imagery obtained from the U.S. Department of Agriculture Farm Services Agency.
MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Cataldo Reach

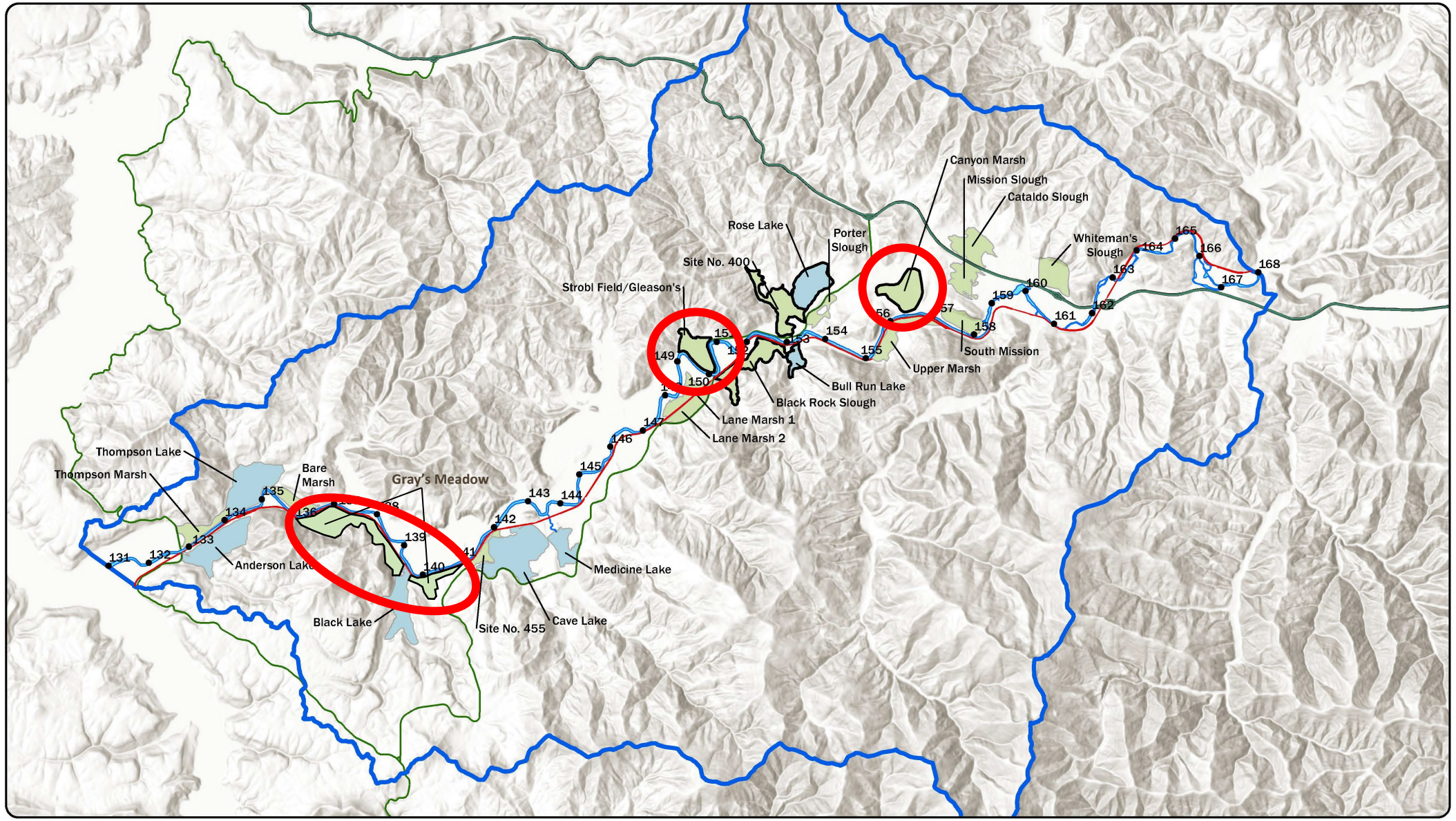
- 35 monitoring stations
- To- date , 4 banks have had one or more pins completely erode out
- In 2023, highest erosion rate was observed in Cataldo
- For 2024, focusing on bank types 1-3 (highly erodible) and the island between RM 166-167.



Wetlands and Lateral Lakes

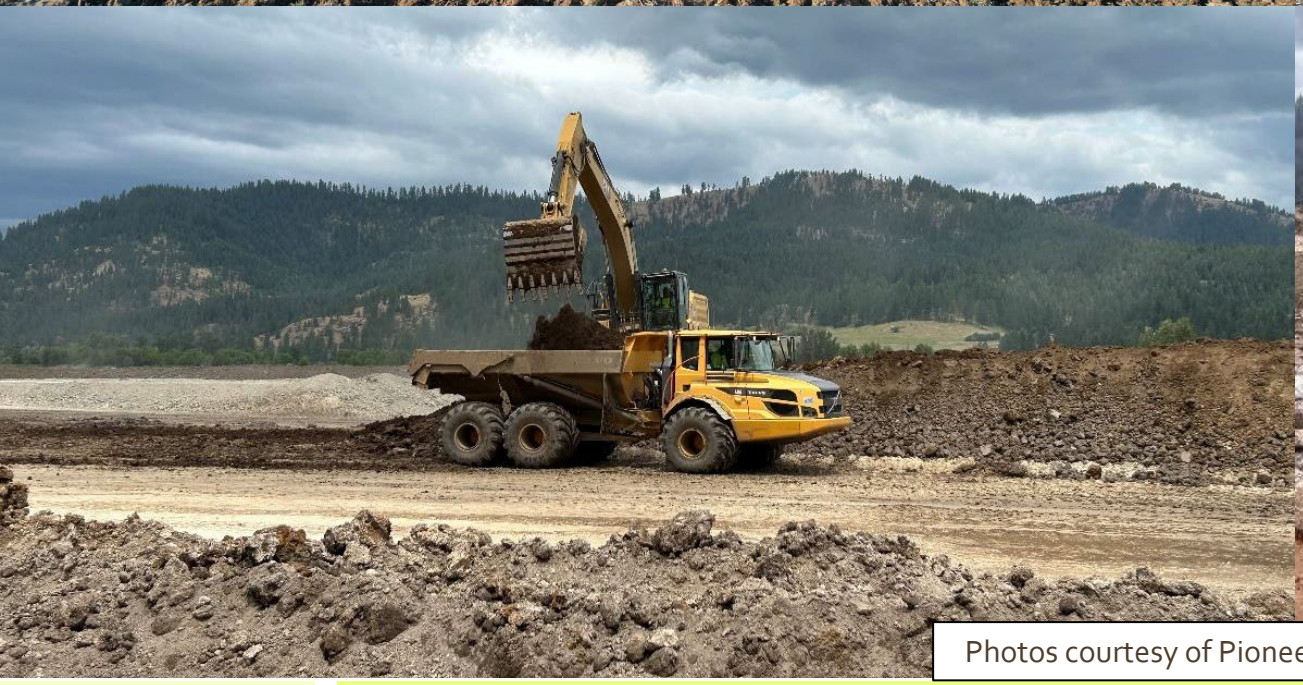
- Gray's Meadow (695 acres)
  - Ag-to-wetland conversion
  - Under construction until December 2024
  - O&M starts in 2025
- Gleason Wetland (270 acres)
  - Ag-to-wetland conversion
  - Pre-Design Investigation began in 2022
  - Design to begin in 2026
- Canyon Marsh (349 acres)
  - Existing mix of wetland and ag-land
  - Pre-Design Investigation to begin in 2028
  - Design to begin in 2032

Photo courtesy of Inland Northwest Land Conservancy


Canyon Marsh
Mission Slough
Cataldo Slough
Rose Lake
Porter Slough
Site No. 400
Strobl Field/Gleason's
Whiteman's Slough
South Mission
Upper Marsh
Bull Run Lake
Black Rock Slough
Lane Marsh 1
Lane Marsh 2
Thompson Lake
Thompson Marsh
Bare Marsh
Gray's Meadow
Anderson Lake
Medicine Lake
Black Lake
Site No. 455
Cave Lake
131
132
133
134
135
136
139
140
141
142
143
144
145
146
147
149
150
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
LEGEND
SITES WITH LOW RECONTAMINATION POTENTIAL
LOWER BASIN LAKE/POND
LOWER BASIN SWAMP/MARSH
TRAIL OF THE COEUR D'ALENES
RIVER MILES
COEUR D'ALENE LOWER BASIN HYDROLOGIC BOUNDARY
COEUR D'ALENE RIVER
INTERSTATE
STATE HIGHWAY
N
DISPLAYED AS:
PROJECTION/ZONE: IDAHO STATE PLANE WEST
DATUM: NAD 1983
UNITS: US FEET
SOURCE: ESRI/PIONEER
0 1 2 4
Miles
FIGURE 4-2
INITIAL PRIORITIZED WETLANDS AND LATERAL LAKE SITES
PIONEER TECHNICAL SERVICES, INC.
DATE: 4/26/2022

Gray's Meadow Remedial Action and Restoration

Photos courtesy of Pioneer Technical Services, Inc.



Photos courtesy of Pioneer Technical Services, Inc.

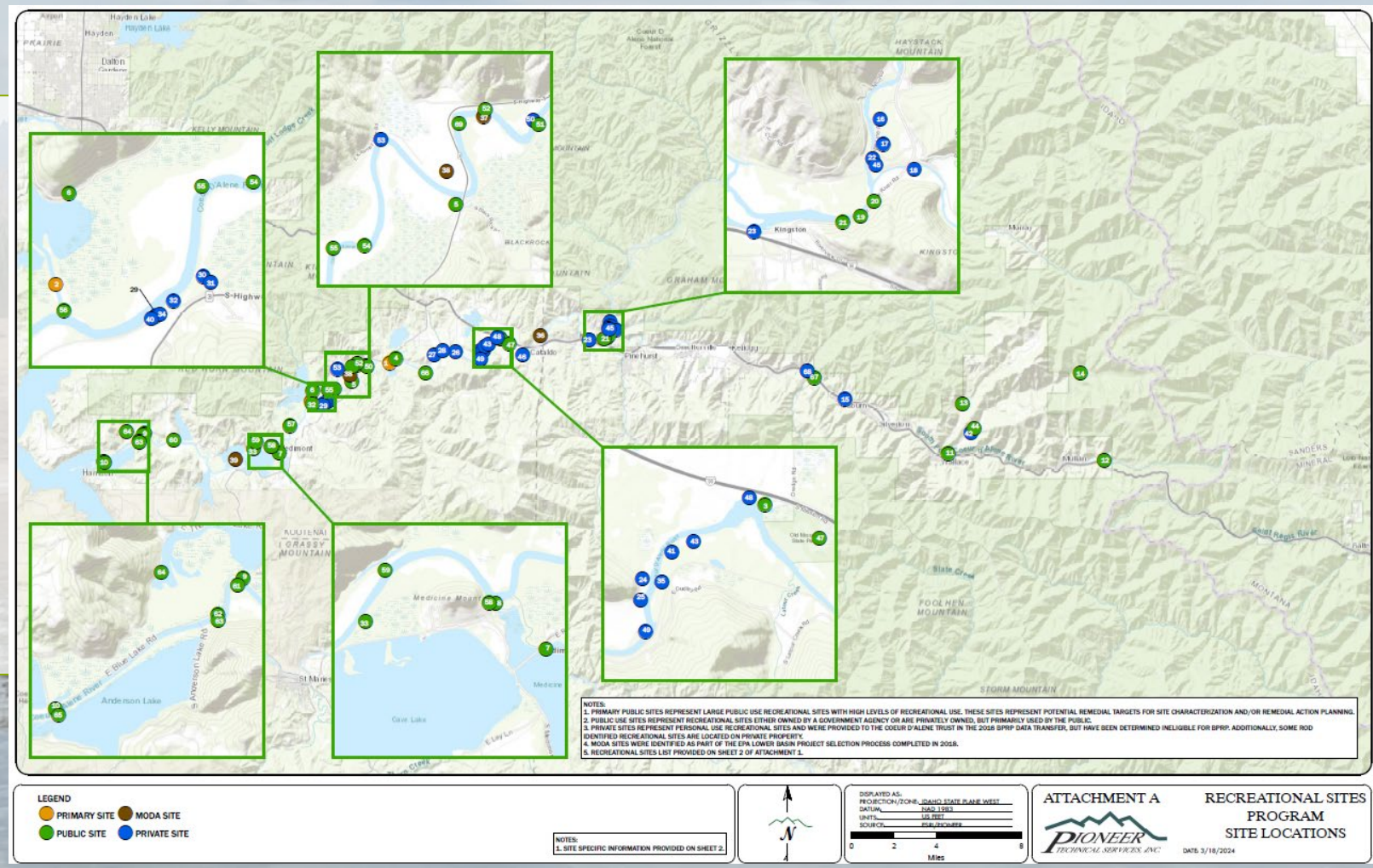
Recreational Sites

- Goal - To reduce people's exposure to lead and other metals in areas used regularly for recreational purposes
- Challenges:
  - Recontamination from high water events
  - Remote, continuously changing
- Examples of work:
  - Capping
  - Hard landscaping
  - Signage
  - Revegetation
  - Education
  - Cleanup

Hwy 3 bridge remediation complete : Photo courtesy of BEIPC

Recreational Site Categories

- Primary Public Sites (2)
- Public Sites (35)
- MODA Sites (4)
- Private Sites (28)



Killarney Beach Peninsula: Primary Public Site. Photo & Map courtesy of Pioneer.

Other Work in the Lower Basin

- Basin Environmental Monitoring Program (BEMP)
  - Groundwater, Surface Water, Soil, Sediment, and Biological Monitoring
  - 3-Tier Structure:
    1. Site-Specific
    2. Area-Wide
    3. Site-Wide

- Waterfowl Research
  - Tundra Swan Study
  - Wood Duck Study

Photo by Nick Korzen, USGS

Photos courtesy of IDFG and USFWS

Ways to Continue Communication

- **Basin Commission Website:** https://www.basincommission.com/
- **Join our mailing list**: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=1000195
- **Follow the Coeur d'Alene Facebook page**: https://www.facebook.com/CDAbasin/
- **Contact EPA's Community Involvement Coordination team**:
  - Rafi Ronquillo (206)-603-6358, Ronquillo.Rafi@epa.gov
  - Deb Sherbina (206)-679-9667, Sherbina.Deb@epa.gov

Thank you!

Questions?