

Focused Feasibility Study
Section 9.0 & Appendix G
Remedy Protection

Presentation To: Project Focus Team
February 10, 2010

Presented By:

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Presentation Overview

1. Brief Recap

- Remedy Protection Objectives
- Scope

2. Findings

- Alternative RP-1 “No further action”
- Alternative RP-2 “Remedy Protection Projects”

3. Evaluation Results

Remedy Protection Objectives

FFS Section 9 Purpose and Scope

- Protect human health and environment
 - Keep clean areas clean
 - Manage overland water flow from flooding and rain events
 - Minimize erosion of clean barriers and deposition of contaminated sediment
- Minimizing future maintenance to the extent practical

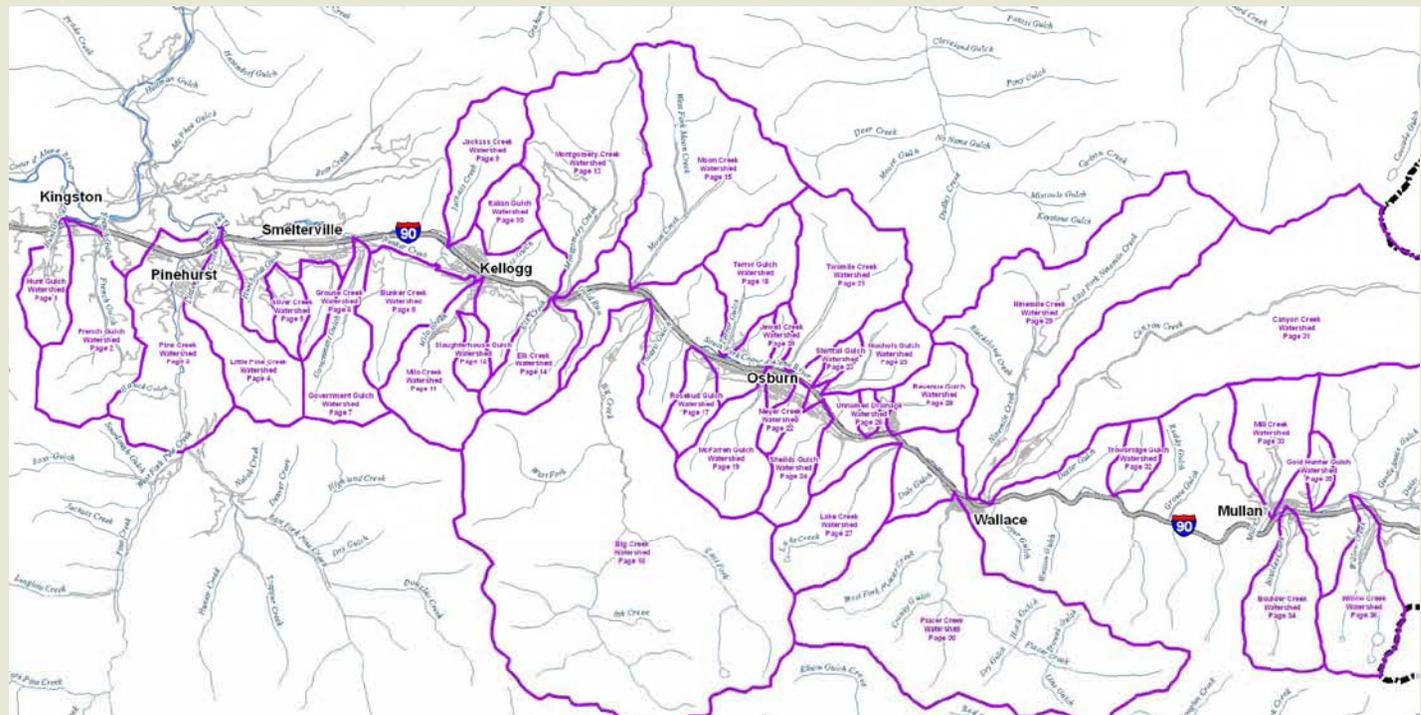
Remedy Protection Scope

- Includes:
 - Kingston to Mullan (Box & Upper Basin)
 - Tributaries to South Fork and drainages
 - EPA and DEQ looking for ways to jointly implement with others
- Does not include:
 - South Fork flooding
 - Sanitary sewer lines
 - Roads (addressed by current RODs)

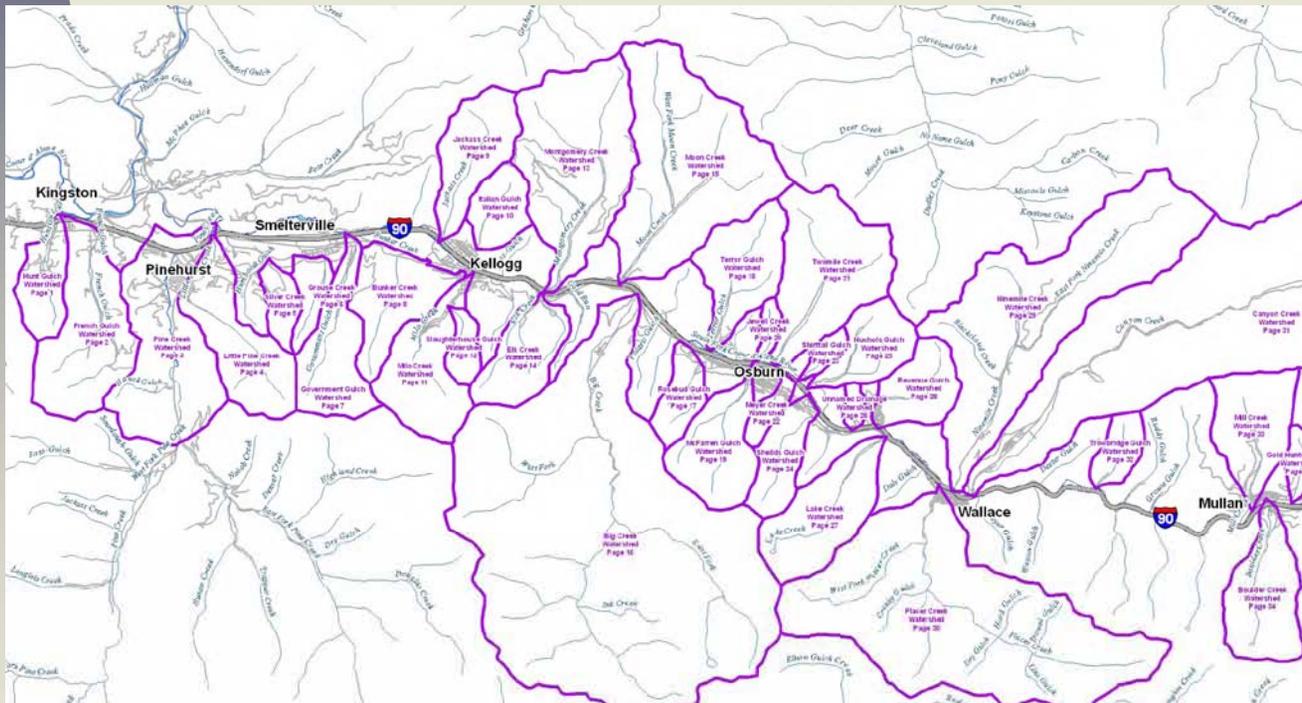
Target Areas

Communities

- Mullan
- Wallace
- Silverton
- Osburn
- Kellogg
- Wardner
- Smelterville
- Pinehurst
- Kingston



Target Areas - continued



Side Gulches

- Big Creek
- Willow Creek
- Elk Creek
- Moon Creek
- Montgomery Creek
- Shirttail Gulch
- Nuckols Gulch
- Silver Creek
- Slaughterhouse Gulch
- Terror Gulch
- Two-mile Creek
- Ninemile Creek
- Canyon Creek
- Government Gulch
- Humboldt Gulch
- Bunker Creek
- Hunt Gulch
- French Gulch

Alternatives RP1 & RP2 Development

Process Overview

Characterization

- Desktop Analysis
- Field Recon
- Modeling
- Characterization
- Ground-Truth

Development Phase

- Develop Technology Menu
- Conceptualize Capital Projects
- Input from local officials
- Cost Estimates

Evaluation Phase

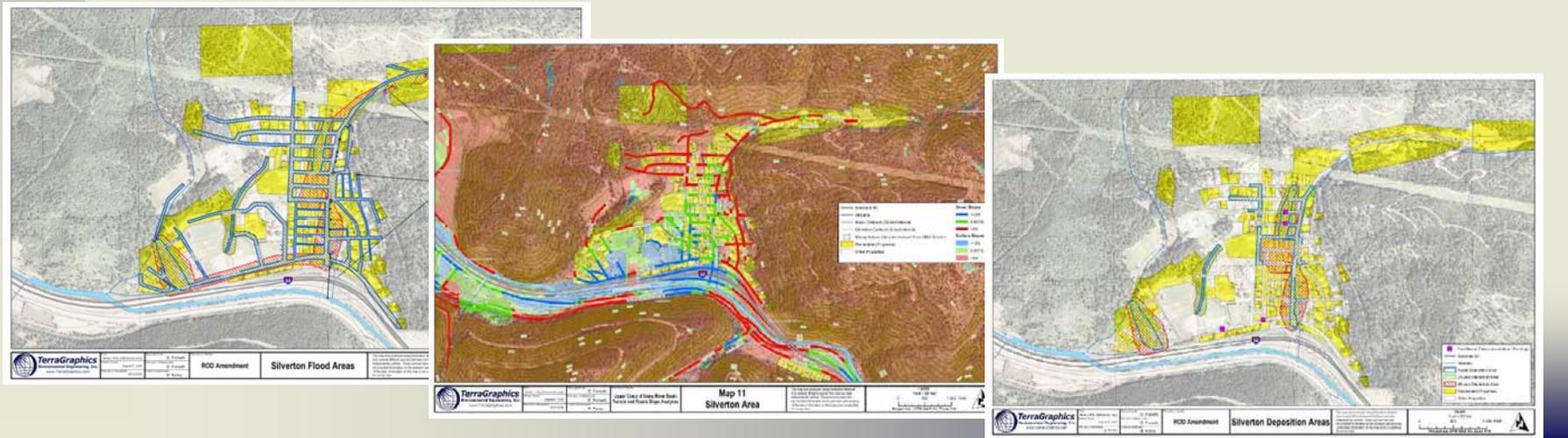
- Alt 1 (no-action/response action)
- Alt 2 (Remedy Protection Projects)

Risk Characterization Tools

- Impact Maps
 - Flood
 - Scour
 - Deposition



Remediated Area At Risk
Unremediated Area At Risk



Baseline Assumptions

- Characterize 5, 25, 50-yr Storm Events
- “Clean” Water Modeling
- Static Watershed Conditions
- O&M of Existing Systems



Flood, Scour, Deposition Examples

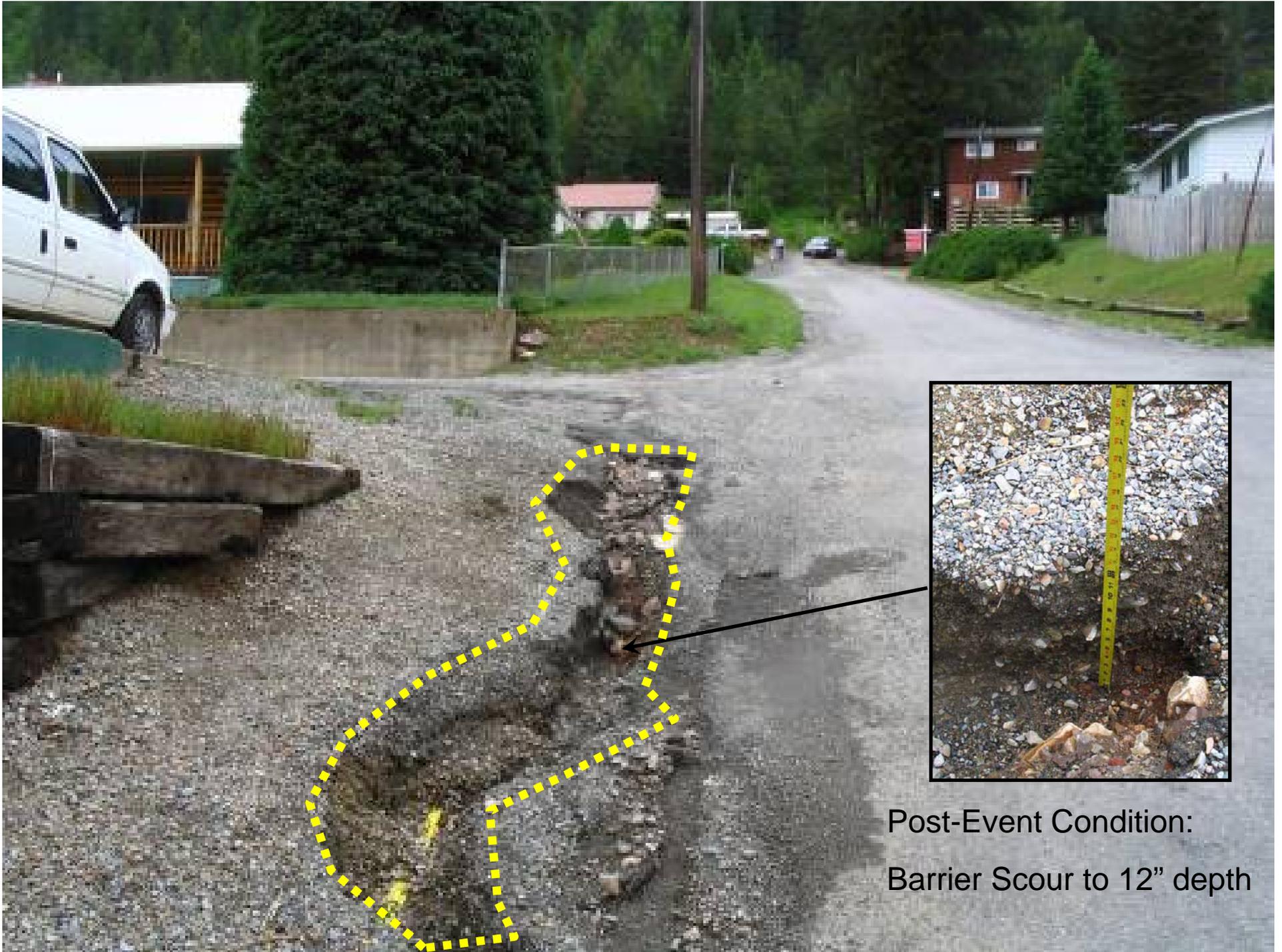
Unmanaged Stormwater Runoff Presenting Risks to Human Health Barriers



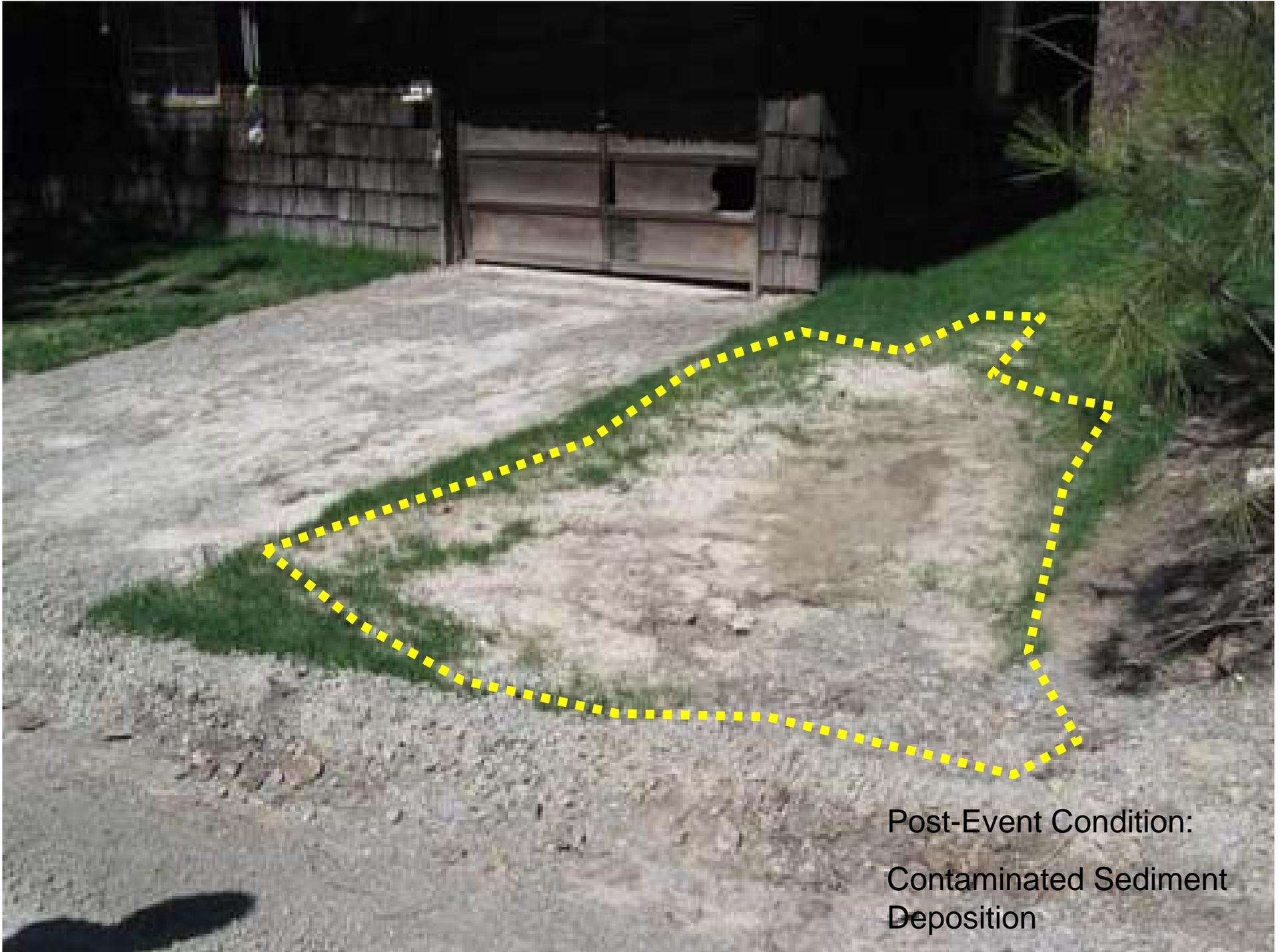
Deposition & Recontamination



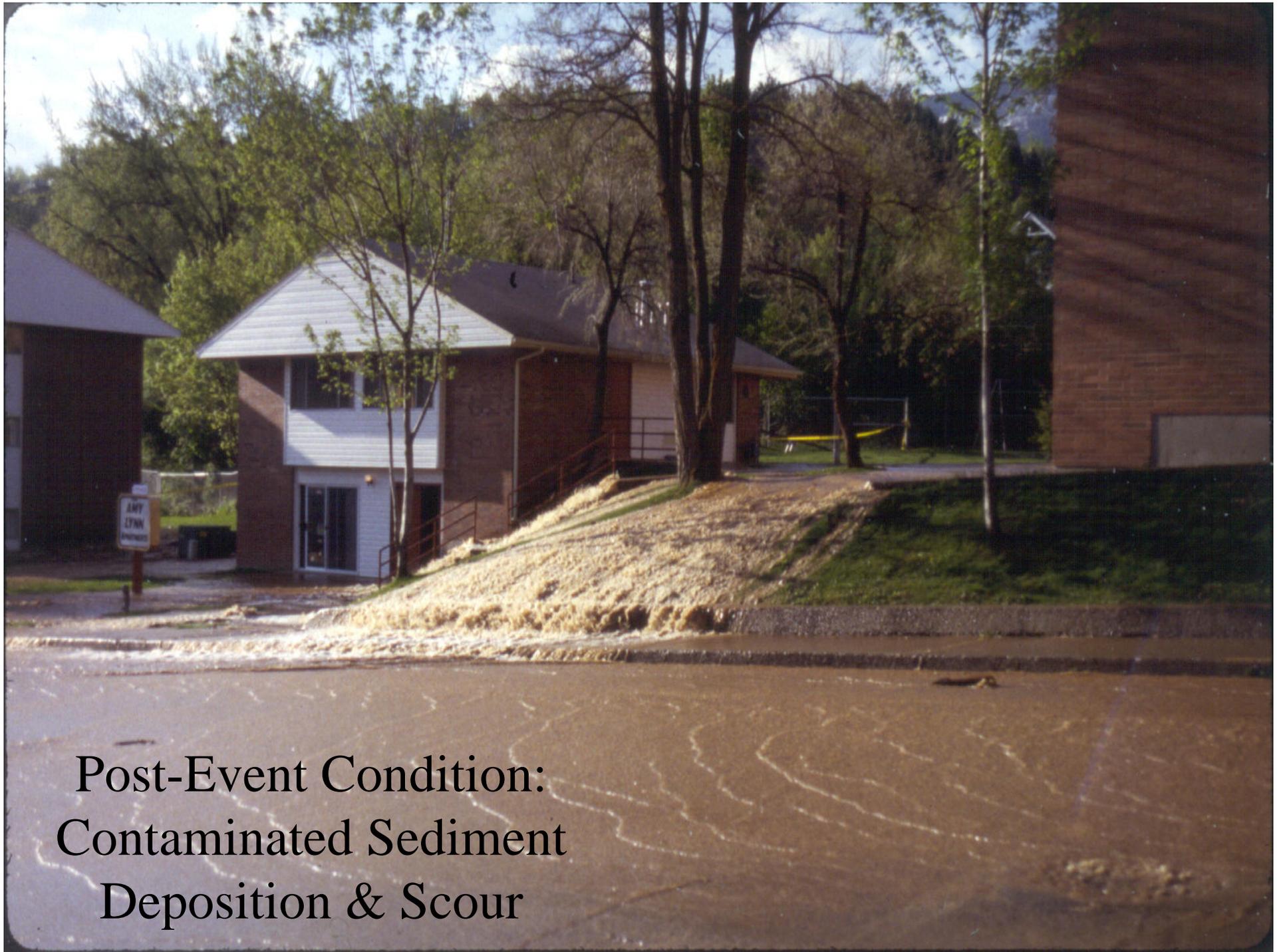
Scour



Post-Event Condition:
Barrier Scour to 12" depth



Post-Event Condition:
Contaminated Sediment
Deposition



Post-Event Condition:
Contaminated Sediment
Deposition & Scour

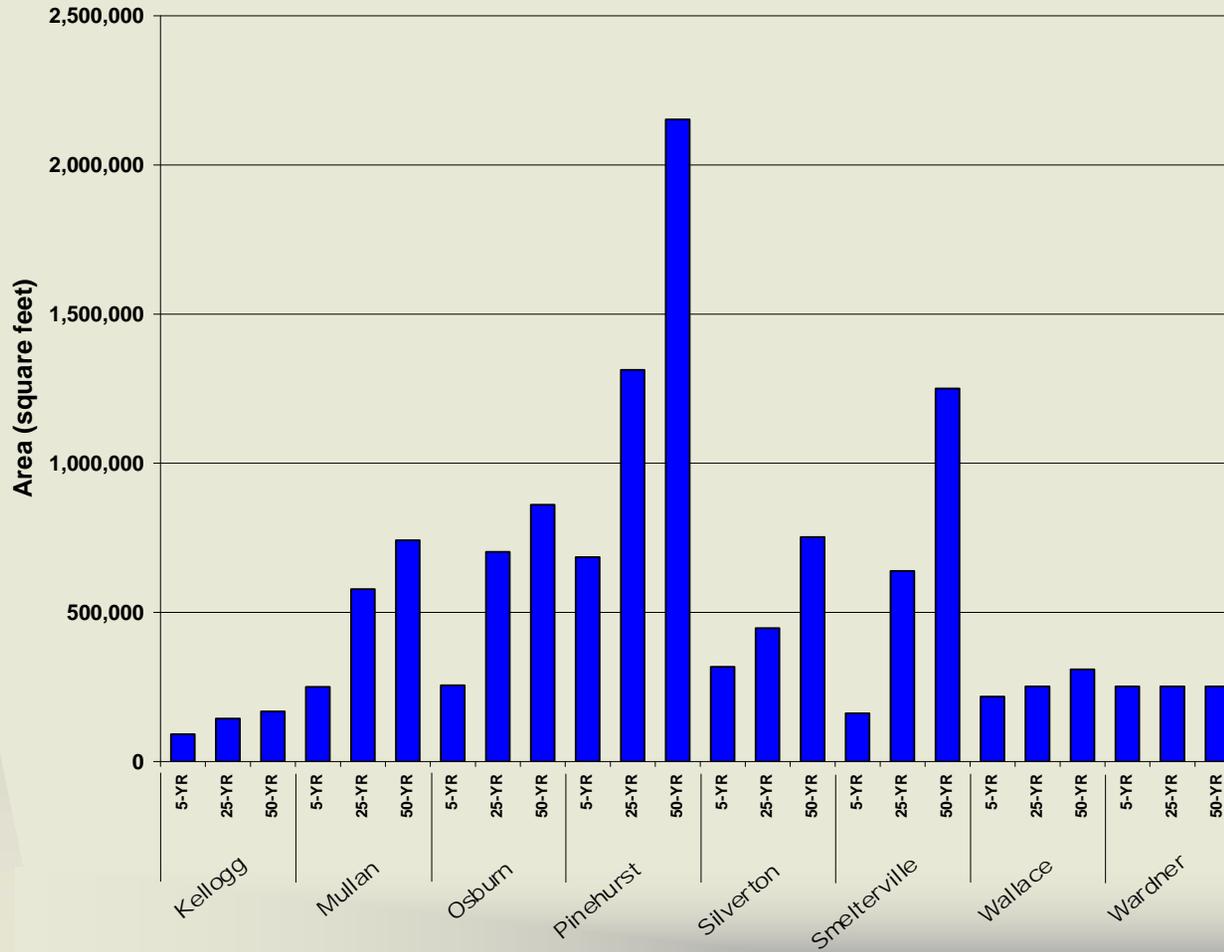
Characterization Results

Remedy-at-risk summary

<u>At-Risk*</u>	<u>Design Storm</u>
7%	5-year
16%	25-year
25%	50-year

*Within the 8 communities analyzed

Remedy-at-risk summary



The Alternatives

- Alternative RP1 “No Further Action”
 - No modifications to existing infrastructure
 - Relies on
 - Post-Event Response
 - Existing systems

The Alternatives (...cont)

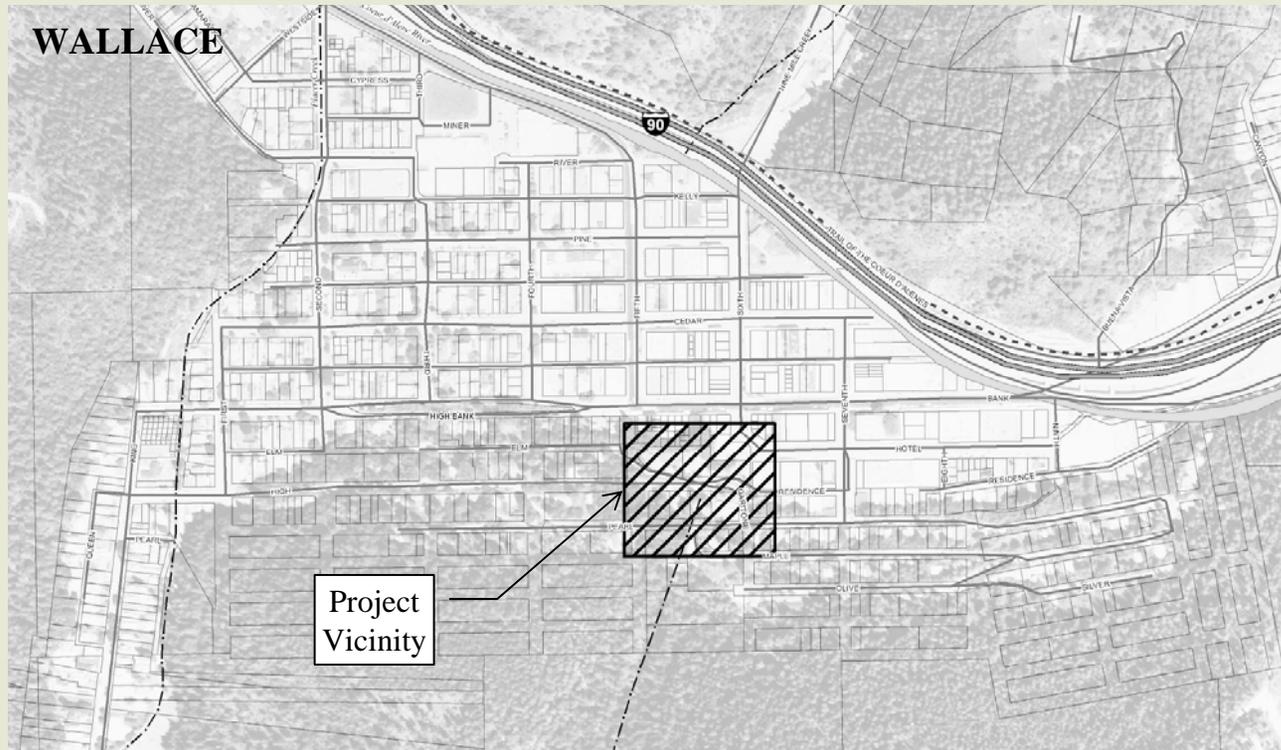
- Alternative RP2 “Modifications to Selected Remedies to Enhance Protectiveness”
 - Modifies existing drainage controls
 - Relies on
 - Remedy Protection Projects
 - 50-year design storm protection
 - Evaluated risks for 100-year storm

Remedy Protection Projects Overview

- 14 Potential Remedy Protection Projects Within the Communities
- Typical Project Elements
 - Increase Channel Capacity
 - Replace and Upsize Culverts
 - Replace and Increase Clear Span at Bridges
 - Stabilize Road-Shoulders
- Mine & Mill Sites Addressed by Current RODs or Source Control Portions of FFS.

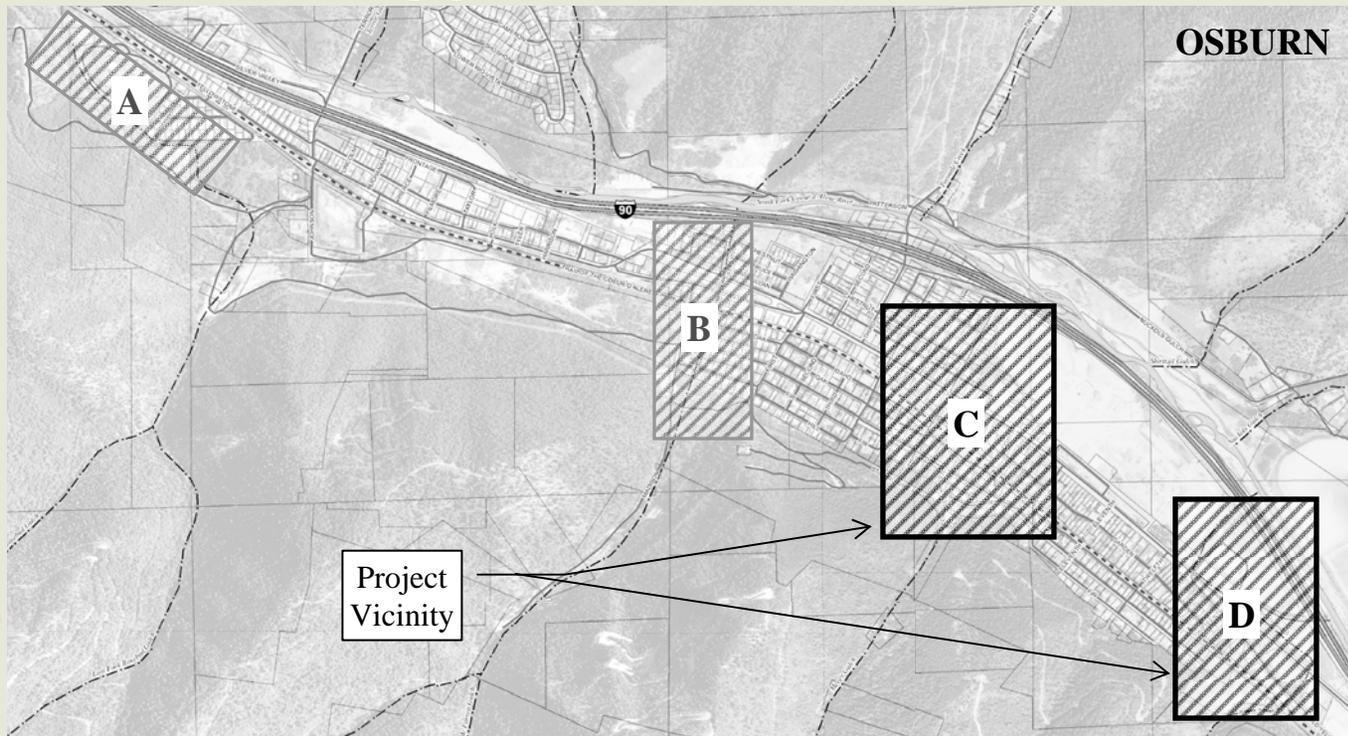
Alternative RP-2 Example – Wallace

- Problem Area
 - Printer's Creek
- Identified Risks
 - High flooding potential at inlet to subsurface conveyance system through town
 - Common clogging of inlet with debris



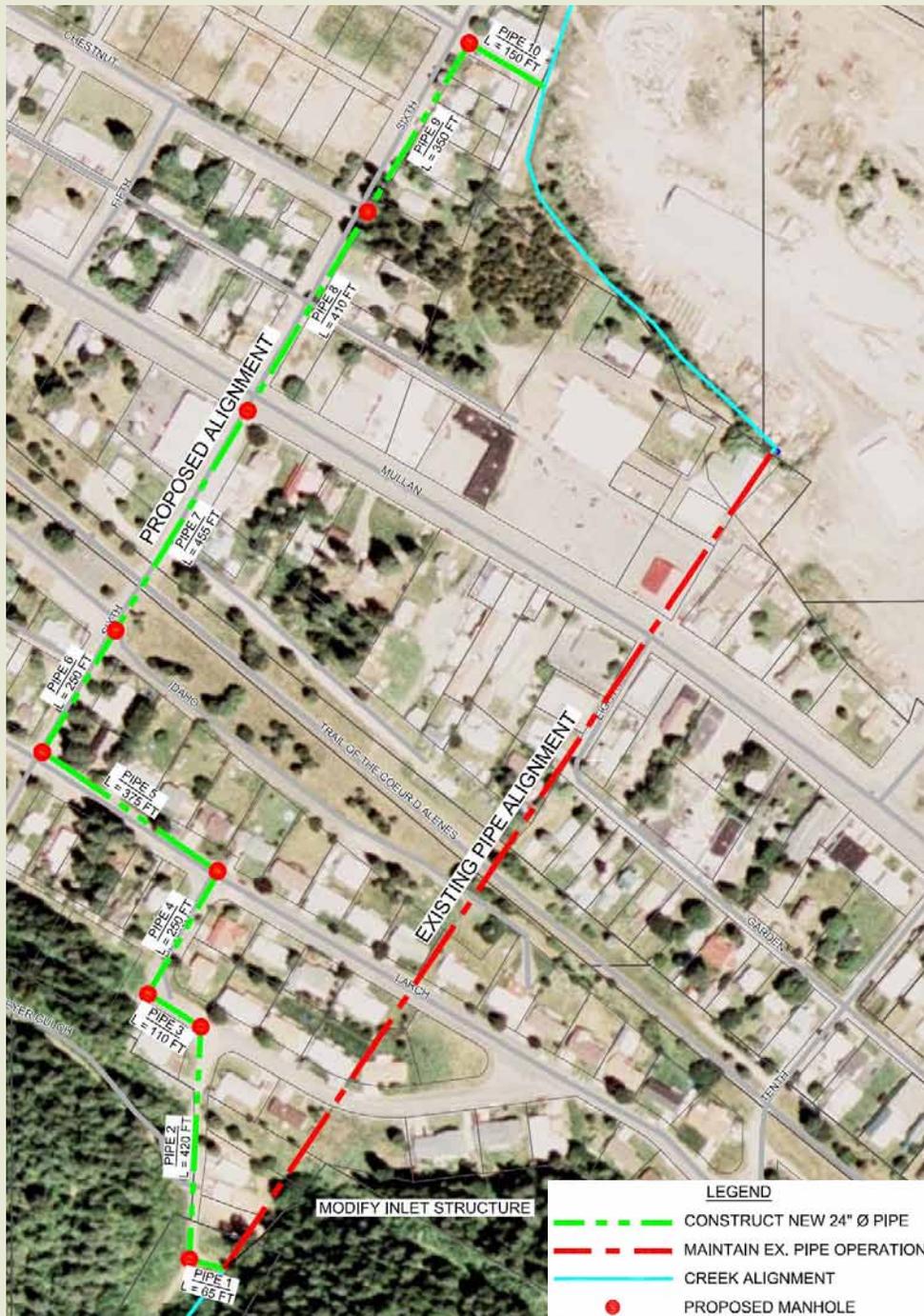
Alternative RP-2 Example – Osburn

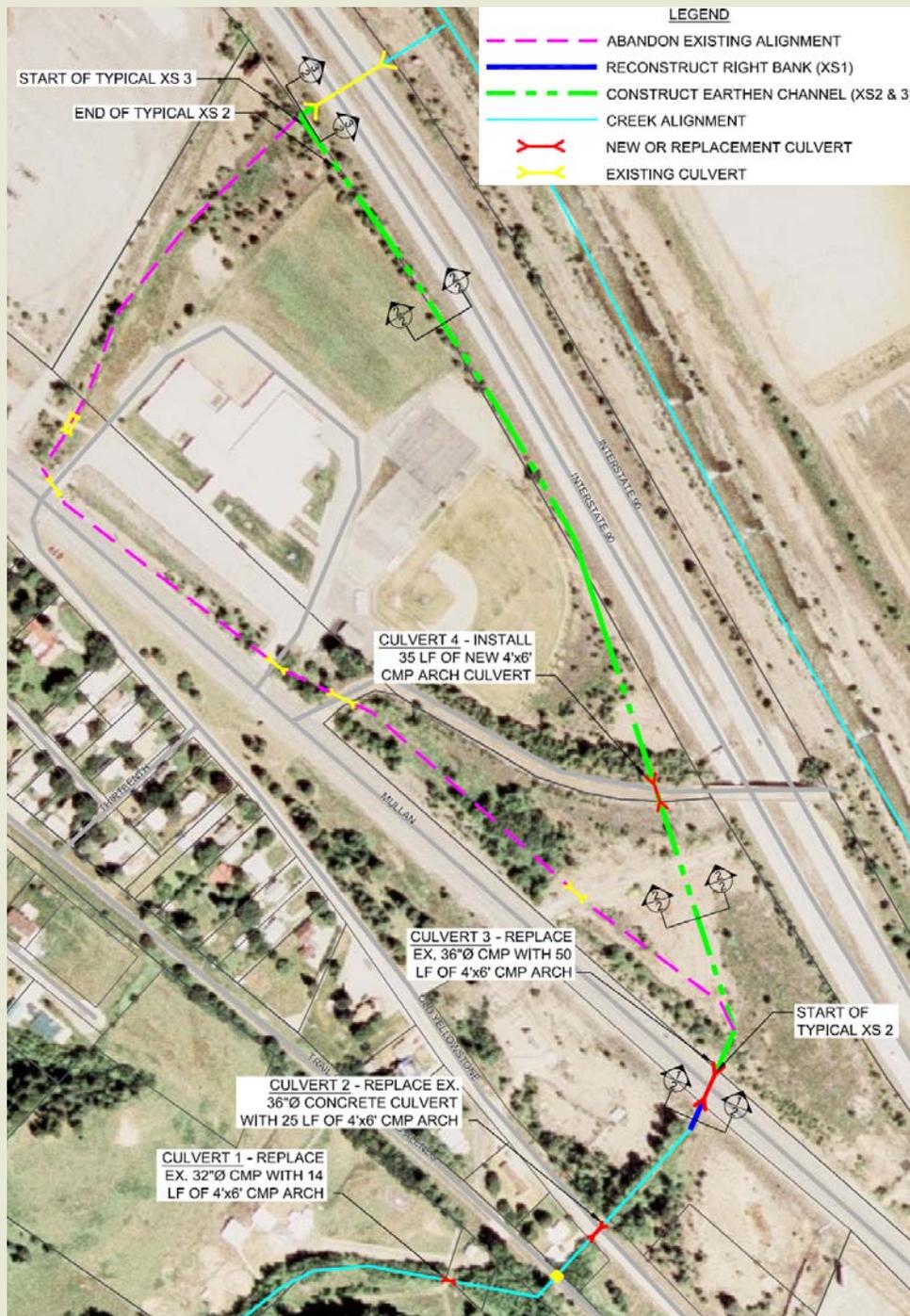
- Project Areas
 - Rosebud Gulch [A]
 - McFarren Gulch [B]
 - Meyer Creek [C]
 - Shields Gulch [D]



Meyer Creek Design [C]

- New CHDPE conveyance pipe down 6th Street
- Install manholes along new pipe system
- Modify existing inlet structure





Shields Gulch Design

- Replace and upsize existing culverts
- Channel Modifications
 - Increase right bank height
 - New channel

Alternative RP-2

Community	Primary Area Driving Risks
Pinehurst	Little Pine Creek
Smelterville	Grouse Creek
Kellogg	Jackass Creek Localized Drainage
Wardner	Localized Runoff
Osburn	Shields Gulch Rosebud Gulch Meyer Creek

Alternative RP-2 cont...

Community	Primary Area Driving Risks
Silverton	Revenue Gulch Unnamed Creek Localized Drainage
Wallace	Printer's Creek
Mullan	Mill Creek Tiger Creek Localized Drainage
Side Gulches	TBD

Cost Analysis

Community	Total Costs (30-yr NPV)	
	Alternative RP-1 No Further Action	Alternative RP-2 Remedy Protection Projets
Pinehurst	\$12,500,000	\$3,140,000
Smeltonville	\$5,320,000	\$2,320,000
Kellogg	\$1,410,000	\$429,000
Wardner	\$1,550,000	\$209,000
Osburn	\$5,910,000	\$2,900,000
Silverton	\$3,140,000	\$5,370,000
Wallace	\$431,000	\$199,000
Mullan	\$3,520,000	\$4,190,000
TOTAL	\$33,800,000	\$18,800,000
Side Gulches	TBD	\$17,300,000

Side Gulches

- Similar physical characteristics and issues to primary communities
- Technology options are applicable
- Costs extrapolated from similar basins

Next Steps

- Comments on Draft FFS may be submitted to: CDABasin@epa.gov until Feb 19, 2010
- Implementation Plan

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