RECLAMATION

Managing Water in the West

Henrys Fork Basin Study Workgroup Meeting 10/25/2011

In Cooperation with:

Idaho Water Resource Board

and

Henrys Fork Watershed Council

U.S. Department of the Interior

Bureau of Reclamation

Basin Study Update
Discussion Agenda

- Meetings Update
- Needs Assessment
- Reconnaissance Alternatives Evaluations
- Schedule – Milestones and Future Meetings
- Wrap Up

RECLAMATION

Meetings Held Since June 2011

- Idaho Water Resource Board
- Idaho Fish and Game
- US Forest Service
- BLM
- Committee of Nine
- Study Technical Team

RECLAMATION

Needs Assessment

- Final Draft for Internal Reclamation Review
- Most Significant Refinements

1. In-Basin Irrigation Needs – Dr. Van Kirk Provided Diversion Data & Consultation with FMID (Dale Swenson) & Reclamation (Mike Beus)

2. Environmental (In-stream Flow) Needs – Input from IDFG and Van Kirk, et. al. 2011

In-Basin Irrigation Needs

Input Data – Acres Served, Historical Diversions, Irrigation Requirements, Canal Loss, On-farm Efficiency

- Egin Basin – No Shortage
- Lower Teton – No/Marginal Shortage – Average Year & Shortage – Drought Year
- Freemont & Upper Teton – Significant Water Shortage – Irrigators Have Adapted Strategies

Environmental (In-stream Flow) Needs

- IDFG – Quantitative Recommendation at St. Anthony Gauging Station – Recommended Flows compared to Average Flows – Water Shortage = 200,000 ac-ft (14% of average)

- Ecological Streamflow Needs in the Henry's Fork Watershed – by Van Kirk, Rupp, DeRito – Identifies 7 "Specific Sets of Stream Reaches of Concern"

Reconnaissance Evaluations

Major Product – Interim Report

- Will require Technical Memo for Each Reconnaissance Evaluation (see list handout)

- Tech Memo Template
  1. Put each alternative on comparable level for evaluations and comparisons
  2. Evaluate in context of Workgroup Criteria
  3. Tie back to Needs Assessment

Technical Memo Template - extracted

Summary of Findings *Give a narrative summary of findings and complete the following table.*

Estimated Cost per Acre-feet	Impact on In Basin Water Budget	Impact on Out of Basin Water Budget	Change in Connectivity of Impacted River Segment

Technical Analysis

1. Basin Needs
2. Identification of Legal, Institutional, or Policy Constraints
3. Identification of Environmental Benefits and Impacts
4. Discuss hydro power potential (for surface storage alternatives only)
5. Discuss land management; recreation and infrastructure impacts and benefits
6. Cost Estimates

Review of Evaluation Criteria –

a. Water supply
b. Water rights (legal institutional constraints)
c. Environmental considerations
d. Economics

Alternatives Analysis Overview

RECLAMATION

Agricultural Conservation and Management Alternatives

11) Canal Automation

12) On-Farm Conservation Practices

13) Piping and Lining

14) Demand Reduction

Conservation Alternatives (cont.)

Conservation Alternatives Modeled by Dr. Van Kirk and Jennifer Johnson/Reclamation

- Technical Transfer Done
- Dr. Van Kirk Updating Code
- Cost Estimating for Canal Automation Underway
- Modeling Group Meeting Scheduled early December

New and Existing Surface Storage Alternatives

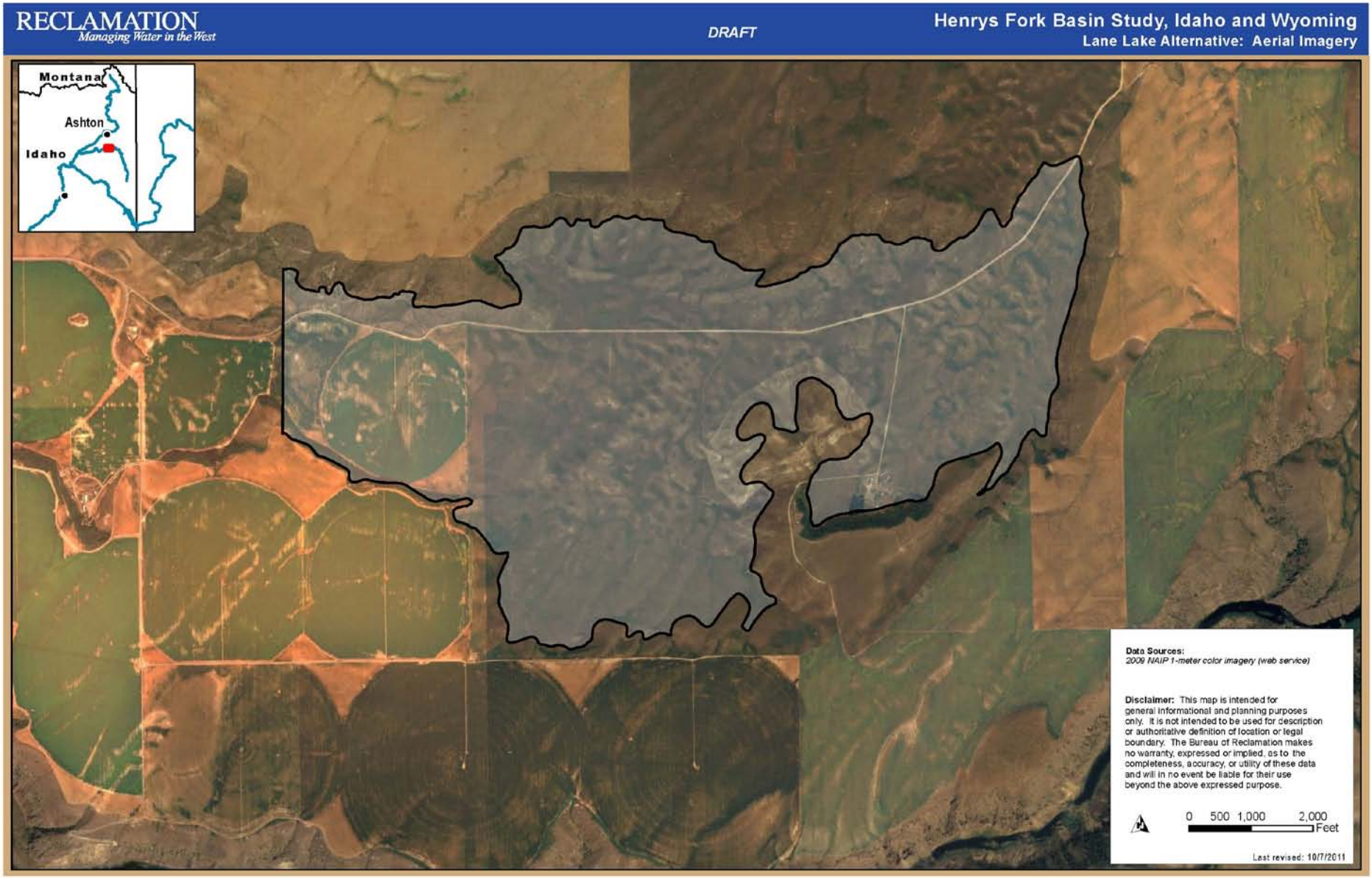
1) Lane Lake
2) Spring Creek (Canyon Creek)
3) Moody Creek
4) Upper Badger Creek
5) Island Park Enlargement with Cross Cut Canal Enlargement
6) Ashton Dam Enlargement with Cross Cut Canal Enlargement
7) Moose Creek with Cross Cut Canal Enlargement

* Teton Dam – Cost update based on 1991 Reappraisal Study

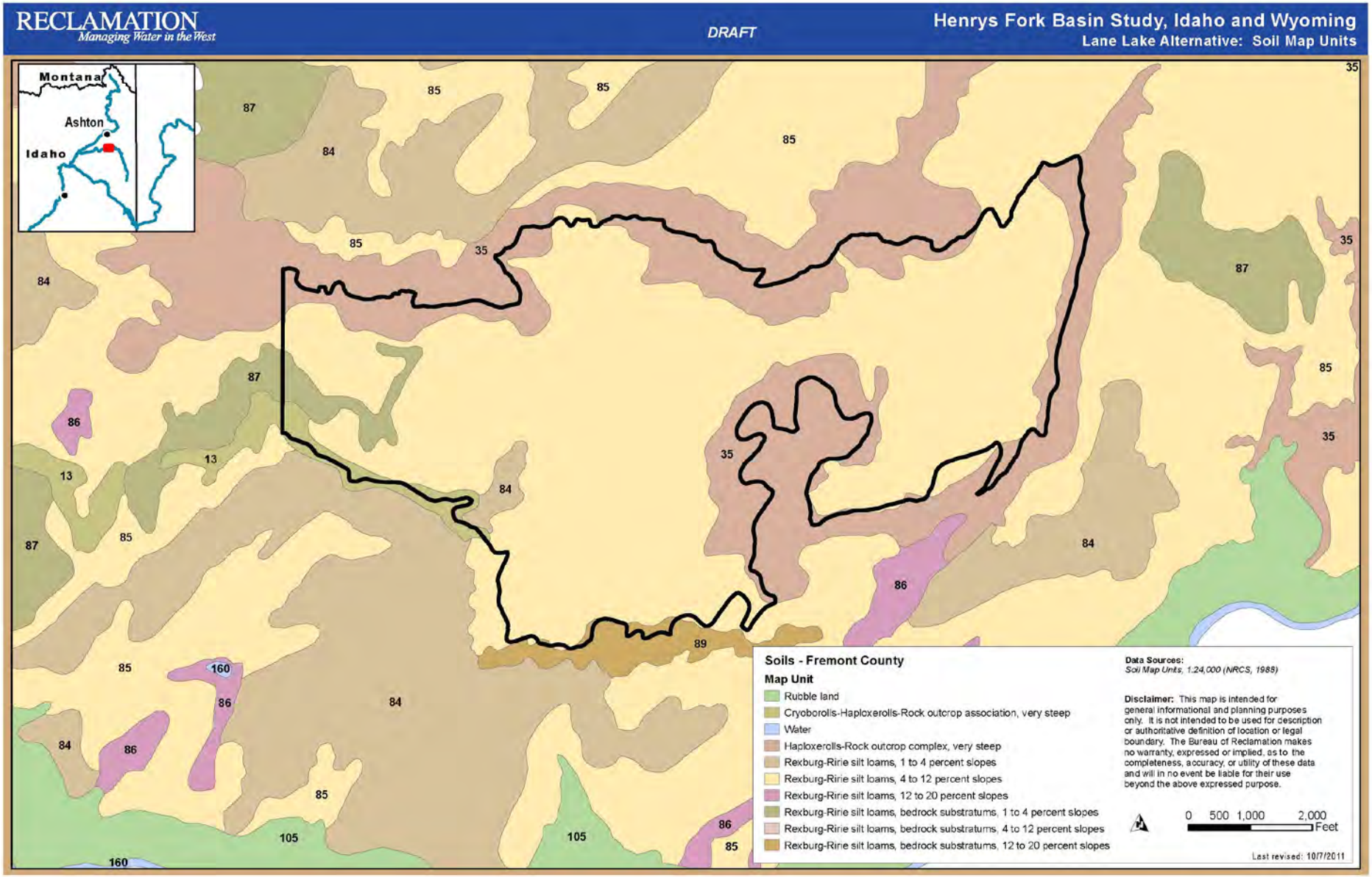
Reconnaissance-Level Analysis for Surface Storage Alternatives

- Hydrology – Water sources and potential
- Reservoir – Volume, footprint, dam, geology, conveyance, hydropower
- Affected Environment – Special status species, wetlands, infrastructure, river designations, connectivity, etc.
- Cost Estimate
- Legal, institutional, and policy constraints
- Assess ability to meet basin needs

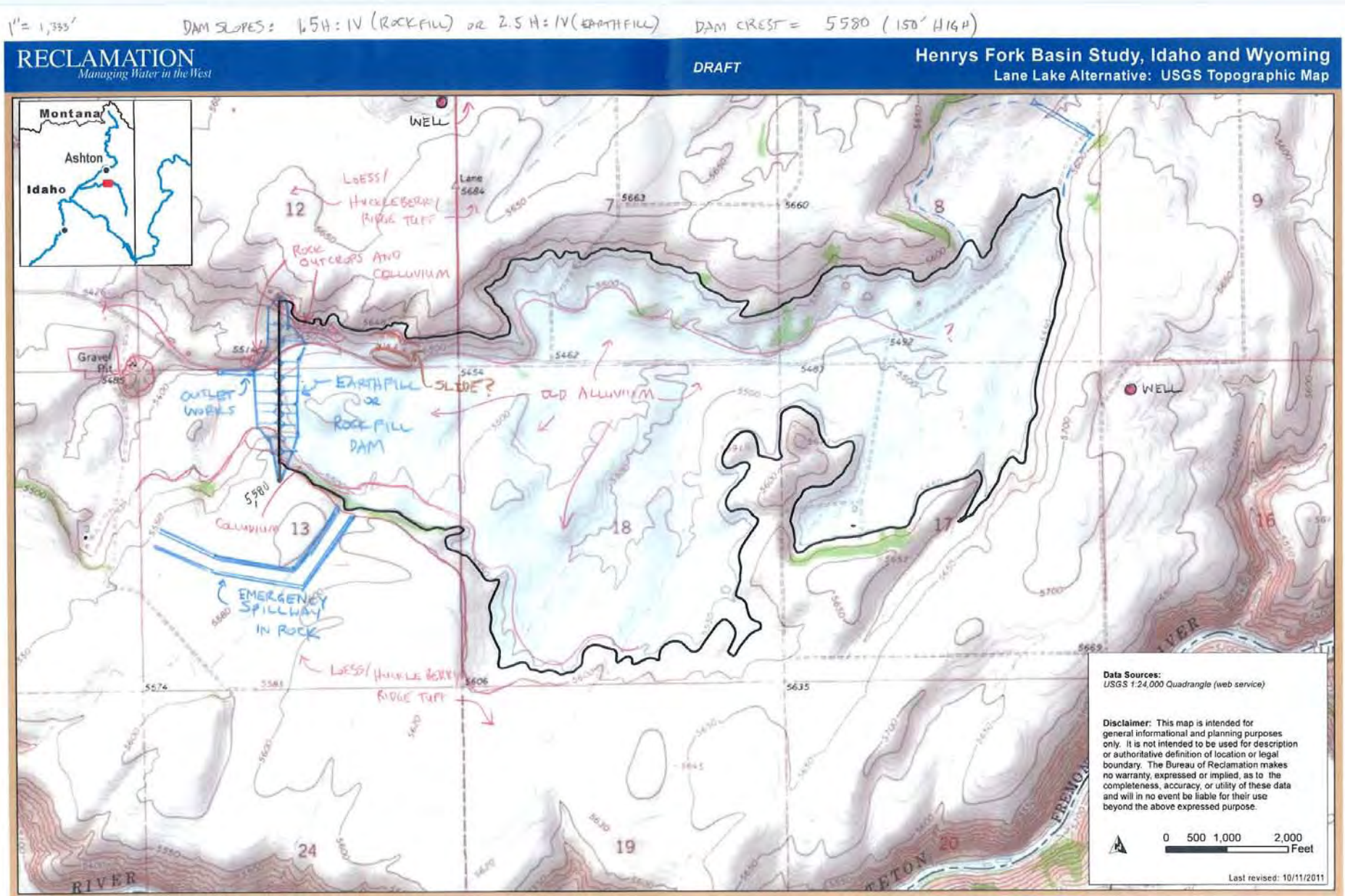
Lane Lake Example Analysis – Land Use, Infrastructure



Lane Lake Example Analysis – Geologic Conditions



Lane Lake Example Analysis – Facility Footprint



Managed Groundwater Recharge Alternatives

8) Expansion of Managed Recharge in Egin Basin

- Hydrology – review impact of current recharge program and estimate impact of expansion, including comparison to other potential recharge sites.
- Conveyance Infrastructure
- Affected Environment (potential impacts)
- Cost Estimate – infrastructure and comparison to other recharge opportunities
- Legal, institutional, and policy constraints
- Assess ability to meet basin needs

Managed Groundwater Recharge Alts (cont.)

9) Evaluate Recharge in the Lower Teton through Development of New Facilities

- Identify site, determine water source, size conveyance system.
- Affected Environment (potential impacts)
- Cost estimate – infrastructure and water
- Legal, institutional, and policy constraints
- Assess ability to meet basin needs

10) Recharge Using Existing Irrigation Canals

Municipal and Industrial Conservation Alternatives

15) Municipal and Industrial Conservation Alternatives

- Examine existing water demands, forecast future demands, and compare to other areas implementing conservation measures.
- Evaluate metering, reuse, additional surface water treatment (underutilized rights), dual pipe systems, landscaping demand reduction.
- Cost estimate
- Legal, institutional, and policy constraints
- Assess ability to meet basin needs

Market-Based Alternatives

16) Evaluate Existing and Potential Market-Based Mechanisms (Economic Valuation of Water)

- Review operating water market examples from other regions:
  - Water banking
  - Rotation-leasing
  - Groundwater recharge
- Compare to conditions in the Henrys Fork Basin Study Area, focusing on regulatory environment, water supply and demand, market participation, water pricing and trading.

Wrap Up and Questions

- Schedule
  - Milestones and Future Meetings

RECLAMATION