Appendix B

Stakeholder Working Group Meeting Agendas, Materials, Summary Notes

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APPENDIX B

Stakeholder Working Group Meeting Agendas, Materials, Summary Notes

The stakeholder working group met six times between August 2005 and March 2006. The general content of each meeting is summarized as follows and agendas and meeting notes are provided following this summary.

Meeting 1

- Background, purpose, and scope of the assessment
- General discussion of water storage needs and target storage volumes
- Roundtable review of storage opportunities to be considered and issues to be addressed
- Identification of useful data sources, past studies, and other stakeholder input

Meeting 2

- First-level reservoir site screening: Initial criteria and methods applied to filter more than 200 opportunities; review of the ~60 opportunities remaining
- Opportunities other than new reservoirs: Initial discussion of potentials for other types of storage (e.g., aquifer storage, role of canal systems, and/or administrative/operational solutions)
- Storage needs and benefits analysis: First estimates of volumes for new storage facilities
- Literature review: Second call for relevant sources; schedule for completion of a literature review summary

Meeting 3

- First-level reservoir site screening: New results based on discussion at Meeting 2
- Second-level reservoir site screening: Initial discussion of constraint criteria
- Opportunities other than new reservoirs: Completion of perspectives on potential for aquifer storage, operations solutions, etc.
- Storage needs and benefits: Refined analysis of potential storage volume needs—consumptive uses, flood control, flow augmentation, etc.
- Literature review summary: Confirmation of completeness

Meeting 4

- Hydrologic analysis: Work toward estimating volumes of water available for new storage
- Second-level reservoir site screening: Full methodology—definition of reservoir conceptual "footprints," final constraint criteria lists, SWG input on the relative importance among the criteria, and techniques to be used in assessing criteria performance

Meeting 5

- Hydrologic analysis: Results/findings from modeling effort—maximum watershed yields and reservoir volumes
- Second-level reservoir site screening: Results of constraint criteria analysis—one "shortlist"
- Influence of needs/benefits and land ownership on selecting final recommendations
- Proposed shortlist of storage opportunities based on hydrology, constraints, and needs/benefits analysis
- Assessment Report product: A draft outline

Meeting 6

- Draft Assessment Report: SWG comments, edits, suggestions

RECLAMATION

Managing Water in the West

Boise/Payette Basin Storage Assessment

Stakeholder Working Group: Meeting 1 Agenda

August 23, 2005

9:30 am Introduction

- Opening statement—welcome, brief introduction and overview
  - → Genesis of the study
  - → Overall purpose and scope
  - → Role of the working group
- Introduction of Reclamation team members
- Roundtable introductions and opening remarks of working group members
  - → Who they represent
  - → Initial comments—expectations, issues and opportunities
- Purposes of the Assessment (begin PowerPoint show)
- Meeting objectives
- Review of agenda and handout materials

9:50 am Planning Team Presentation (PowerPoint show)

- **Study Scope and Process** (20 minutes)
  - → Scope & Sideboards
    - – geographic scope
    - – level of detail; use of existing data
    - – types of storage to be considered
    - – options outside the scope of this study (e.g. demand-side actions)
  - → Participants and roles
    - – Roles of Reclamation, Stakeholder working group, Consultant team—as the primary elements in the Assessment
    - – Other channels for stakeholder input and how that input will be used
  - → Work plan (work steps and products)
    - – This is to be more than just a simple listing of tasks and products. The intent is to provide insight into the process/methodology we will use, covering such items as the need/rationale for selecting a target volume, definition of options vs. alternatives, definition of evaluation factors vs. criteria, our assessment methods (including possible use of criteria ranking/relative importance), and general approach to dealing with differing points of view (e.g. ultimate recommendations could reflect differing perspectives).

→ Stakeholder Working Group—process and role
  - Group composition
  - Level of participation—all steps in the process
  - Objective—agreement on final recommendations
  - Role of facilitator
  - Role of planning team

→ Schedule

→ Conclusion and Q & A (Q and A only on what has just been presented)

- **First Steps: Background & Starting Points** (20 minutes)

→ Introduction

→ Boise/Payette hydrology primer

→ Existing facilities/allocations

→ Water demands/target storage volume
  - Consumptive demands
  - Non-consumptive demands
  - Potential target storage volume(s) based on Consumptive Demand projections

→ Candidate storage options
  - Prior studies
  - Full range of potential storage options identified to date (all categories: On-stream, off-stream, new facility, modification of existing facility, distributed-including ASR, and Reclamation policy/project purpose change
  - Short list of options already identified as candidates to be considered in this study
  - Role of the work group in defining final short list

→ Q & A (limited to the "First Steps" information presented)

10:20 am Working Group Discussion and Input

- **Introduction** (5 minutes max.)

→ Topics to be addressed today

→ General protocol for discussion and role of facilitator (based on initial sense of the group, I will reiterate some of the stuff about behavior, respect, pontificating, wasting time, etc.—I will have covered this somewhat already during my part of the presentation)

- **Target Storage Volume** (20 minutes max.)

→ Range of possibilities/needs—roundtable review of possible target volumes, including rationale and basis

→ Discussion and selection of target volume, if possible, or

→ Specific method/source for defining this target prior to next meeting, (including necessary homework by group members)

- **Storage Options to be Included in the Assessment** (60 minutes)

→ Reiteration of categories into which options might fall: on-stream, off-stream, distributed (e.g. canal actions, ASR).

→ Reiteration that we are approaching development of our shortlist of candidates from two directions: The full laundry list from prior studies, and the list compiled to date for this study from stakeholders and agency personnel.

→ Roundtable commentary by Working Group members (generally uninterrupted)—[1] specific options they believe need to be considered and [2] options which should not be considered, in either case including rationale and citing any supporting documentation.
→ Open discussion and Q & A focused on the full list emerging from roundtable.
→ First shot at a preliminary list of options to be carried forward into this Assessment, and, to the extent necessary.
→ Plan of action to finalize the list of candidates for review at next meeting (including homework by group members).

- **Working Group Contribution to Literature Review Report** (5 minutes)
  → Identification of documents/sources to be included in the literature review, and arrangements to get access to these.

11:45 am Wrap up, Next Steps, & Questions/Answers

- Review of action items (and responsibilities) emerging from this meeting
- Date and time of next meeting (confirm best time of day)
- Content of next meeting
- Additional questions, answers, and discussion

Noon Adjourn

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Meeting Summary: Stakeholder Working Group Meeting 1

August 23, 2005

I. Introduction

This document is a summary of the first meeting of the Stakeholder Working Group for the Boise/Payette Basin Storage Assessment. The meeting was held August 23, 2005, from 9:30 AM to Noon, at Reclamation's regional offices in Boise, Idaho. The meeting agenda was sent to all stakeholders prior to the meeting; this summary is organized according to the headings/topics of that agenda.

II. Meeting Attendees

Reclamation Planning Team:

Lesa Stark Reclamation--Snake River Area Office Planning Program Manager	John Petrovsky John Petrovsky Associates
John Tiedeman Reclamation--PN Regional Office, Activity Manager	Tom Haislip CH2M HILL
	Sherrill Doran CH2M HILL

Stakeholder Representatives:

Bryce Farris Ringert Clark Chartered	Cindy Robertson Idaho Department of Fish and Game
Norm Semanko Idaho Water Users Association	Eric Leitzinger Idaho Department of Fish and Game
Ron Shurtleff Water District 65	Jeff Dillon Idaho Department of Fish and Game
Lee Sisco Water District 63	Marc Shigeta Payette County
Chuck Mickelson City of Boise	Mike Holladay Holladay Engineers
Scott Rhead United Water	Dick Juengling Trout Unlimited
Shirley Dickerson J.R. Simplot	Kevin Lewis Idaho Rivers United
Kathy Peter U.S. Geological Survey	Bert Bowler Idaho Rivers United
Brayton Willis U.S. Army Corps of Engineers	Dennis Tanikuni Idaho Farm Bureau
John Olson U.S. EPA	Paul Deveau Boise Project Board of Control
Mary McGown Idaho Department of Water Resources	Debbie Willis U.S. Army Corps of Engineers

III. Meeting Summary

Agenda Item 1: Introduction

Lesa Stark began the meeting with a welcome and brief overview of the genesis, purpose and scope of the study and the role of the Stakeholder Working Group (SWG). She noted that Congressman Butch Otter provided the impetus for this study; it is part of an effort that began in 2004 to explore ways in which the ever increasing and often competing demands for water can be met in the region. The purpose of this assessment process is to explore the potential for additional water storage capacity in the Boise and Payette Basins, to identify specific opportunities/approaches, and to evaluate them based on a common set of criteria to be developed by this SWG. The intent is to determine if and where there are plausible opportunities that warrant further, more detailed study. This assessment will be at a reconnaissance level (based on existing data). To the extent that potentially feasible and acceptable options emerge from this assessment, more detailed (appraisal-level) studies would follow.

Lesa then introduced the Reclamation planning team for the assessment effort. For Reclamation, Lesa will serve as overall manager and John Tiedeman will manage the day-to-day activities of the process. Contractors brought on-board to assist Reclamation include CH2M Hill and JPA. John Petrovsky of JPA will facilitate the stakeholder process and oversee the criteria development and options/alternatives screening process. Tom Haislip of CH2M has been involved in this process from the beginning and will continue to provide senior level direction. Sherrill Doran will be the project manager and technical lead for CH2M Hill, responsible for the full technical scope of the study and preparation of deliverables.

Lesa then turned the meeting over to John Petrovsky, who asked that the introductions continue with each stakeholder representative providing a brief overview of who they represent and the highlights of their perspectives and expectations related to this study process.

These introductions and initial statements portrayed well the range of stakeholder perspectives, interests and issues which will influence the process and outcome of this assessment. Highlights include:

- Meeting the needs of both agricultural/irrigation and municipal/DCM&I providers alike
- Role of and interaction between surface and groundwater in meeting water supply needs
- Water rights and water accounting concerns
- Effects on hydropower and aquaculture
- Flood control perspectives
- Water quality perspectives
- Potential impacts on aquatic species and fisheries resources
- Potential impacts on recreation, sportsman's groups, etc.

John then wrapped up the Introduction portion of the meeting with two slides, focused respectively, on the purposes of the assessment overall and the purposes/goals of this first SWG meeting:

- Purposes of the assessment: Reiterating what Lesa has noted earlier, this assessment is:
  - Part of an overall effort to investigate water supply opportunities
  - Specifically focused on the potential for new or enhanced storage options
  - Intended to recommend a short list of options for appraisal/feasibility-level studies
- Purposes of the meeting:
  - Introduce everyone to the study, including the scope, process, and products of the effort overall and the role of the SWG.
  - Present background information and get SWG input on [1] quantifying projected increases in water demand and other "stresses" on the supply system which could warrant development of

additional storage capacity (the intent being to specify a "target volume" for use in defining and comparing potential storage options—i.e. how much storage do we need?), [2] the starting "universe" of storage options which should be considered, derived from previous studies of possible storage sites/projects and from current agency/stakeholder concepts about specific options which warrant attention (the intent being to be very inclusive initially before starting to narrow down the list, and to understand the full range of possible solutions—e.g. new facilities or modifications to existing facilities, on-stream or off-stream, aquifer storage & recovery (ASR), canals as storage, and non-structural approaches via reallocations, transfers, etc.), and [3] sources of data/information relevant to the study.

Agenda Item 2: Planning Team Presentation

The Planning Team Presentation was composed of two parts, with John presenting a series of slides addressing the study scope and process and the role of the SWG, and Sherrill following with slides describing background information and starting points related to basin hydrology, demand projections, and potential storage options. Highlights of the slide presentations are noted below, along with summaries of the Q&A discussions that followed each part. A hard copy of the full slide (PowerPoint) show was provided to all attendees (note: it was requested and agreed that future slideshow handouts be printed to be more readable—e.g. one or two slides per page rather than three—and that a larger copy of the schedule diagram in the show be provided to all SWG members).

Part 1: Study Scope and Process

- **Scope and Sideboards:** John reiterated that the assessment will be a reconnaissance level of detail, relying entirely on existing data; no data gathering or site-specific studies would be conducted at this point. He also emphasized that the assessment is focused exclusively on water storage possibilities as a component of an overall approach to meeting water needs. Demand-side actions such as conservation and reuse, while certainly an important consideration in any comprehensive solution, are not a part of this study effort.

- **Participants and Roles:** Reclamation, the SWG, and the consultant team are the primary participants in conducting this study. John noted that stakeholder outreach and participation beyond the SWG would take two forms: [1] each SWG member is responsible for communicating with and drawing expertise from within their agency/organization or constituency, and [2] other agencies, organizations or individuals will be able track the process and provide input via Reclamation's mailing list, web page, and email for this effort.

- **Work Plan:** As currently conceived, the initial steps in the assessment process (and the substance of the first two SWG meetings) are:

  [1] Settle on a target volume for use in comparing alternatives against one another (i.e. it is expected that various potential storage sites/options will vary considerably in their storage capacities; if we use the target volume approach, we can identify alternatives, some perhaps composed of multiple sites/techniques, each of which meets that target. Then we will be comparing "apples to apples" when we do the criteria analysis).

  [2] Define the full range of possible storage sites, options or techniques which should be considered and then do an initial "exclusionary" criteria screening of these to eliminate those that are clearly infeasible. In the latter regard we a looking for only those criteria, based perhaps on hydrology,

geology, or legal status, that are essentially indisputable (i.e. "on-off switches" with little or no gray area).

Subsequently, we will work on identifying and applying a full range of evaluation criteria to compare options which survive the exclusionary criteria screen against one another. As we work through that process, we may end up identifying differing points of view regarding which criteria are most important in making decisions about options that warrant further study. We are prepared to embrace and report on these differences as necessary. At this point in the process of seeking solutions, we do not need to find an absolutely "one size fits all" set of options.

- **Stakeholder Working Group:** The SWG has been formed to represent the full range of interests and points of view. The study process is designed to have SWG involvement in each step along the way. Each agency/organization on the SWG is requested to select one person who will speak for them throughout the process. Certainly, multiple representatives can attend the meetings, but we ask that only one serve as spokesperson to keep things manageable and equitable.

- **Schedule:** The proposed schedule targets completion of the assessment in March 2006. SWG meetings will be held once per month for the first 4 months of the effort (August through November). These meetings will cover the target volume, exclusionary criteria screening, and evaluation criteria screening steps in the process. Preliminary results of the assessment will discussed with the SWG in January 2006 ahead of preparing the final report.

Highlights of the Q&A session which followed John's presentations include:

- Some SWG members noted that the demand side of the equation needs to be addressed in some fashion (i.e. it is difficult to pursue the question of additional storage without exploring the role that conservation or reuse could play in mitigating the need for storage). John responded that the demand side considerations certainly need to be part of the big picture in finding solutions to water supply needs. However, we are trying only to define what might be possible in terms of new storage capacity as a way of informing decision-making during that big picture process further down the road.

- Will there be NEPA compliance associated with this assessment? No, NEPA is not applicable at this stage in the process. We will not be making decisions about specific projects, only suggesting options which might warrant further study. However, assuming that the potential exists for one or more of the options identified in this assessment to move forward and become real project proposals in the future, our intention is that this screening process be rigorous and defensible as part of the Alternatives discussion in NEPA documentation that would then be necessary.

Part 2: Background & Starting Points: Target Storage Volume & Candidate Storage Options

Background: Sherrill began with a number of slides generally portraying [1] surface and groundwater hydrologic conditions in the two basins, including conceptual water balance, runoff patterns/seasonality, and groundwater level trends, and [2] existing storage facilities and the allocation of water stored in these facilities. Of particular importance and relevance to this assessment were the following points:

- The Payette basin generally receives more precipitation than the Boise basin and the water storage and distribution system is less highly managed when compared with the Boise. However, present and future demands for water are significantly higher in the Boise basin.

- Most of the water supply in the both basins is already allocated. There is not a lot of excess capacity to meet future demands given current contractual constraints.

- The ability to capture and store additional water is limited by requirements for minimum fish flows, maintenance flows, flood control and annual refill of existing reservoirs.

- In the Boise basin, use of groundwater to meet increasing demand is becoming limited due to both quantity and quality issue.

Water Demands/Storage Volume Targets: Sherrill then addressed the question of water demand/use factors that can influence how much additional storage volume might be needed or desired (i.e. how much storage should we be looking for?). These factors could include growth in consumptive demands (DCM&I and irrigation) and/or increased provision, maintenance or reliability of non-consumptive uses such as fisheries/flow augmentation, recreation, flood control, groundwater recharge and water quality (TMDLs).

The following data was provided regarding projected growth in consumptive demands:

- In the Boise basin, DCM&I demand is projected to grow by up to 74% (another 96,000 AF) by 2025. Most DCM&I uses currently are met by groundwater and some of the increased demand may also be met by that source. However, as noted earlier, there will be increasing limitations on the capacity of the groundwater supply to meet increased demand.

- In the Payette basin, growth in DCM&I demand is expected to be 42% (another 13,000 AF) over the same period. A good portion of this demand will probably be met with groundwater.

- Demand for irrigation water in the Boise basin will be influenced by the extent to which agricultural land is converted to urban uses. This conversion trend would likely reduce demand for irrigation water (i.e. converting water use from irrigation to DCM&I). However, additional acreage could also be brought under cultivation, increasing irrigation water demand. A rough IDWR estimate of the net result of these factors between now and 2050 suggests the potential for a net increase in irrigation water demand of 25,000 AF. Given trends in DCM&I demand and consequent increasing pressure on groundwater, it is unlikely that any increase in irrigation demand would be met by groundwater.

- No projections have been found to date addressing trends in irrigation demand in the Payette basin.

- Taking the above projections and estimates, a ball-park figure for the increase in consumptive demand over next 20+ years would be >134,000 AF. Most of this would occur in the Boise basin.

In terms of non-consumptive uses, a dominant factor in both basins is fishery flow augmentation. Reclamation has a goal of providing up to 487,000 AF/yr (through rental and in-stream flows) from the Snake River system statewide. This goal is not met during drought conditions. The contribution of the Boise and Payette systems to meeting this goal ranges from 200,000 AF in normal and high water years, to 30,000 AF in dry years.

Other non-consumptive demands which could influence the need or desire for storage over time are:

- Recreation (i.e. maintaining reservoir levels and stream flows to support boating activities)

- Additional flood control requirements, especially upstream of urbanizing areas

- Increased stream flows to improve local water quality conditions for aquatic species

- Groundwater recharge programs

- Note: One SWG member suggested that channel maintenance, in the form of spring freshets, may also be a needed/desired use. However Reclamation noted that this is more in the realm of operations changes rather than storage, and would be addressed in a different venue.

Candidate storage options: Sherrill indicated that we would be approaching the task of identifying potential storage locations/techniques from two directions: [1] taking a look at all previous work on this topic (i.e. the more than 60 previous studies on Boise and Payette water storage options prepared between 1938-2004), and [2] polling agency personnel and the SWG to identify options that they see as most promising, including locations or techniques not previously studied.

In the first regard, prior studies have identified approximately 200 potential storage locations. These include primarily new storage sites (both on-stream and off-stream), but also encompass some examples of modifications to existing reservoirs (e.g. Lucky Peak, Arrowrock, and Anderson Ranch). Sherrill provided a map and associated tables illustrating the name and location of each of these options. She indicated that good information exists for some sites while little to no information is available for others.

In the second regard, Reclamation personnel have contributed an initial list of those candidate storage options they think most warrant assessment. These include:

- **Physical/mechanical options on in the Boise Basin:**
  - On-stream:
    - Add fixed flashboards to existing reservoirs
    - Raise Anderson Ranch Dam
    - Twin Springs
  - Off-stream:
    - Dunnigan Creek
    - Trapper Flat
    - Rabbit Creek
    - Coyote Butte
    - Lake Lowell
    - Hubbard Dam
    - Line Sand Hollow Canal
    - Manage canals for ASR
    - Line/pipe Boise canals
- **Physical/mechanical options on in the Payette Basin:**
  - On-stream:
    - Gold Fork
  - Off-stream:
    - Blacks Creek
    - Upper Squaw Creek
    - Lower Squaw Creek

- **Operational/political options:**
  - On the Boise, buy out irrigation water and use for DCM&I

- On the Payette, lower the conservation pool at Cascade (i.e. some portion of 250,000 AF of uncontracted space) and designate for DCM&I

Given the above as a starting point, Sherrill indicated that the next steps would be to [1] fill out list of options to include other approaches not previously considered, such as transfers and exchanges and/or groundwater storage, and [2] conduct an initial screening of all options to eliminate those that are clearly infeasible or unacceptable. In the latter regard, the initial screening would be based only on fundamental exclusionary criteria derived from such factors as refill capacity/hydrology, geography/topography, minimum volumes, legal status, etc. Sherrill concluded her presentation by reiterating that getting SWG input on both of these perspectives was an objective of this meeting.

Note: The Q&A discussion which ensued following Sherrill's presentation focused immediately on the question of target storage volume(s), and is thus incorporated into the summary of Agenda Item 3, below.

Agenda Item 3: SWG Discussion and Input

Target Storage Volume

SWG discussion of the target volume concept quickly demonstrated the complexity and sensitivity of trying to settle on a single number for future storage needs. Key points made in this regard include:

- Several SWG members echoed the concern expressed earlier that the role of conservation and reuse (e.g. gray water) should be considered in trying to reach an accurate projection of future consumptive demand growth. Even though these aspects of water supply planning are not within Reclamation's authority, they should still be recognized in some fashion when trying to quantify the volume of potentially needed additional storage. (Note: In this regard, some SWG members recalled that Senator Craig had previously asked for and Reclamation had done a study along these lines. The recollection was that this was an optimization study and, ironically, one of the criticisms of the study was that it did not address the potential role of additional storage. It was agreed that Reclamation would provide access to this study (at least the PowerPoint summary of it) on the Assessment web page. The PowerPoint summary could also be brought to a future SWG meeting if needed).

- There is a complex relationship between growth in DCM&I demand and the degree to which this demand could be met by conversion of irrigation water to DCM&I use (especially irrigation water currently pumped from groundwater). Also, as farmland is converted to urban uses, irrigation water is often simply converted from use on cultivated crops to use on urban/suburban landscapes; some irrigation districts have embraced this change, others have not. In this regard, some assert that there is a net reduction in water need, because urban/suburban uses require less irrigation water per acre than agriculture. This assertion is debatable; the reality is quite variable to the point that there may be no real reduction in irrigation water demand. Others assert that water needed to irrigate urban/suburban landscapes may cause a net increase in agricultural water needed to be provided. These factors all must be considered in attempting to quantify real growth in consumptive use demand.

- This assessment of potential for additional storage should not be limited to just looking at growth in consumptive demands. Additional flow in local streams could substantially benefit aquatic species/fisheries. Perhaps additional storage can contribute to more efficiency and/or reliability in meeting downstream flow augmentation goals. It is even conceivable that more of the system-wide flow augmentation goal could be met from the Boise and Payette systems, thus freeing up water for

other uses elsewhere in the state. We should look at the bigger picture, perhaps all the way to seeing if the entire 487,000 AF of flow augmentation could be met from these systems. Reinforcing this perspective, it was noted that the Galloway project is again being looked at in Weiser Basin, and the project is being defined as multi-objective, involving inter-basin transfers and multiple uses including DCM&I, flow augmentation, and flood control.

- Another potential role for additional storage capacity is flood control. The Corps of Engineers has done some work on additional flood control needs/requirements.

Given these concerns, it was agreed that the planning team would take another look at the concept of/need for establishing one single target volume for use in this assessment. John reiterated that the primary reason such a number was being sought was for use in comparing potential storage alternatives against one another (i.e. by assembling alternatives which each totaled the same volume of storage, a significant variable could be neutralized, making comparative analysis less complex).

For the next meeting it was agreed that the planning team would look at the idea of carrying forward multiple volume targets, perhaps categorized into the major needs/uses identified in discussion: DCM&I, irrigation, flow augmentation, and flood control. Also, where uncertainty exists, any or all of these components could be defined more as a range, rather than a single number (e.g. perhaps the DCM&I component could be expressed as a range, with the lower number anticipating the role of conservation and reuse, and the higher number reflecting less of a role for these variables).

Storage Options to be Included in the Assessment

The SWG was asked to provide initial impressions of the array of potential storage options presented by Sherrill, from the standpoints of [1] options listed which are clearly not feasible and should be eliminated early, or [2] options which should be considered but are not yet shown on the lists. Input provided is summarized below and it was agreed that SWG members would consider these questions further and provide more considered responses within the two weeks following the meeting.

- ASR/groundwater recharge should be given serious consideration.

- Especially for options in the Payette, we need to factor in how we move the water to where it is needed (i.e. the greatest growth in demand is expected to be in the Boise).

- Getting the water to where it is needed can take different forms, from physical storage/conveyances to transfers, exchanges and reallocations. We should definitely look at transfers, exchanges and reallocations (i.e. using existing storage in different ways).

- A good place to start is looking at the potential to modify/expand existing facilities. For example, we should look at raising Lucky Peak.

- A bad place to start is new in-stream reservoirs. From the standpoint of environmental impact, this type of facility is the least desirable and, if certain resources (e.g. bull trout) are present, least feasible.

- Take advantage of existing “plumbing”; look at trades, partnerships, off-stream storage, covered reservoirs.

Initial SWG input was also requested regarding the criteria which would be most relevant in the first, exclusionary screening of the options. Suggestions in this regard included (again, with additional thoughts to be provided during the following two weeks):

- Hydrology is probably the most fundamental criterion of feasibility. If the storage will not reliably fill, it is of little use in meeting firm demands.

- Look at special designations, such as wilderness or Wild and Scenic River status, as a basis for early exclusion.

- Presence of bull trout or designation as critical habitat could be considered exclusionary.

- Impact on recreation, both flat water and stream-based will be an assessment factor later on, but is probably not exclusionary.

- Cost per acre foot will eventually be an important criterion.

Agenda Item 4: Wrap Up and Next Steps

Action Items:

- Within the next two weeks, Work Group members will [1] take a closer look at the question of demand estimates and provide additional data or insight if possible, [2] review the list of potential storage options and provide further insight on both the completeness of the list and options shown which are clearly "non-starters", and [3] check to see if they have relevant data or documents that would benefit the study. Responses will be sent to John Tiedeman at Reclamation.

- For the next meeting, the planning team will rethink the approach to target storage volume(s), especially the idea of identifying different components of demand for or desirability of additional storage. Also, in reviewing quantity estimates for these components, uncertainties and/or variables will be reflected as ranges, rather trying to settle on one specific quantity.

Next Meeting:

- September 20, from 9:30 AM to Noon, at Reclamation's Snake River Area Office.

RECLAMATION

Managing Water in the West

Boise/Payette Basin Storage Assessment

Stakeholder Working Group: Meeting 2 Agenda

September 20, 2005

9:30 am Introduction

- Meeting objectives
- Review of agenda and handout materials
- Meeting 1 summary—comments and approval

9:45 am Candidate storage options—Initial screening

- **Planning Team Presentation**
  - → Previously identified sites—exclusionary criteria screening
  - → Options not previously considered, by category
  - → Summary—a first "short list"
- **Work group discussion**

10:45 am Target Storage Volume Estimates

- Introduction—adjustments to approach based on first meeting
- Planning Team presentation: Refined analysis of potential storage volume needs/uses
- Work group discussion

11:30 am Literature Review Deliverable

- Production and review schedule
- Additional SWG input regarding sources of relevant information/data

11:45 am Wrap up, Next Steps, & Questions/Answers

- Review of action items (and responsibilities) emerging from this meeting
- Next meeting—date, time, location, content
- Additional questions, answers, and discussion

Internet Web-Site Link: www.usbr.gov/pn/
Direct Link = www.usbr.gov/pn/programs/srao misc/bp storagestudy/index.html

Noon Adjourn

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Meeting Summary: Stakeholder Working Group Meeting 2

September 20, 2005

I. Introduction

This document is a summary of the second meeting of the Stakeholder Working Group for the Boise/Payette Basin Storage Assessment. The meeting was held September 20, 2005, from 9:30 AM to Noon, at Reclamation's Snake River Area Offices in Boise, Idaho. The meeting agenda was sent to all stakeholders prior to the meeting; this summary is organized according to the headings/topics of that agenda. The only topic not addressed was the status of the literature review.

II. Meeting Attendees

Reclamation Planning Team:

Lesa Stark Reclamation--Snake River Area Office Planning Program Manager	Sherrill Doran CH2M HILL
John Tiedeman Reclamation--PN Regional Office, Activity Manager	Mark Bransom CH2M HILL
John Petrovsky John Petrovsky Associates	Jenny Kindig CH2M HILL
Tom Haislip CH2M HILL	Jenni York CH2M HILL

Stakeholder Representatives:

Bryce Farris Ringert Clark Chartered	Paul Deveau Boise Project Board of Control
Norm Semanko Idaho Water Users Association	Tim Page Boise Project Board of Control
Ron Shurtleff Water District 65	Mary McGown Idaho Department of Water Resources
Chuck Mickelson City of Boise	Paul Seronko BLM
Scott Rhead United Water	Scott Campbell Pioneer ID
Kathy Peter U.S. Geological Survey	Dustin Miller Idaho Farm Bureau
Brayton Willis U.S. Army Corps of Engineers	Jerry Glenn Canyon Co. Planning and Zoning Commiss.
Eric Leitzinger Idaho Department of Fish and Game	Layne Bangerter Senator Crapo's office
Mike Holladay Holladay Engineers	Lane Jolliffe Congressman's Otters office
Kevin Lewis Idaho Rivers United	

III. Meeting Summary

Agenda Item 1: Introduction

Lesa Stark opened the meeting with a welcome and then handed off to John Petrovsky who [1] asked for comments on/corrections to the summary of Meeting 1 and [2] went over the agenda and purposes of this meeting (Meeting 2).

Regarding the Meeting 1 summary, John asked if there were any objections to nature of the summary (i.e. in the form of an interpretation and consolidation of meeting content rather than a more verbatim approach). No one in the SWG had a problem with this approach. The only specific comment on the content of the summary was from Mary McGown/IDWR, who stated that page 5 of the summary contained an overstatement regarding restrictions on the quality and quantity of groundwater in the Boise Basin to support new growth. Mary indicated that some restricted areas do exist, but the issue is not basin-wide at this point and varies widely from area to area.

John then began the planning team presentation with a slide listing the three main topics to be covered (note: hard copies of the planning team's slide show were provided to all attendees):

- **Candidate Storage Options**
  - Previously identified options (i.e. the list of over 200 introduced at the last meeting): Present and get SWG input on the results of initial screening based on four exclusion factors identified through discussion at the last meeting. Also, since several potential options are shown on many of the tributaries in both basins, begin to look at removing redundancy (i.e. reduce multiple sites down to the one or two in each tributary that makes the best sense.
  - Options not previously considered: Summarize and get SWG input on the current list of options not included in the above (e.g. off-stream, facility modification, ASR, operational/policy changes, exchanges, etc.).

- **Target Storage Volumes** — Present revised approach (based on discussion at last meeting) and associated results.

- **Literature Review Report** — Summarize content, production and review schedule.

Agenda Item 2: Candidate Storage Options – Initial Screening

Planning Team Presentation — Previously Identified Sites

Sherrill Doran began the technical presentation by showing the results of applying four initial "exclusionary" screening factors/criteria to the list of previously identified sites (summarized below; maps and matrices showing the geographic distribution of results were provided to all at the meeting):

- **Hydrology/refill capacity**
  - Factor and criteria description: This factor addresses the yield potential of the site (i.e. the percentage of years it would re-fill under long-term average hydrologic conditions). Preliminary analysis is based on USGS stream statistics and does not account for seepage or significant diversions. Criteria used to evaluate sites were:
    - Q80 (refill 80% or more of years) = good/acceptable for further study
    - Q50 (refill between 50% and 80% of years) = moderate/may or may not be acceptable

    - <Q50 = poor/unacceptable
  - Results: The analysis was run twice, first using a 20,000 AF minimum storage volume for all sites where no previous estimate of storage volume had been made, and second using a 50,000 AF minimum volume for these sites. Results were as follows (the geographic distribution of the results was shown on maps at the meeting):

	20,000 AF Min.	**50,000 AF Min.**
Good	43%	40%
Moderate	31%	29%
Poor	26%	31%

- **Special Designations — Wild/Scenic or Wilderness Areas**
  - Factor and criteria description: Site locations were reviewed to determine if they were within river reaches designated as special status at either the federal or state level. At the federal level, such status includes Wild & Scenic Rivers and rivers within designated wilderness areas. At the state level, rivers are assigned special status receive either a Natural or Recreational designation. Criteria used to evaluate sites were:
    - Neither federal or state special status = good/acceptable for further study
    - State designated Natural or Recreational = moderate/may or may not be acceptable
    - Federal designation = poor/unacceptable
  - Results:

Good	77%
Moderate	23%
Poor	<0.5%

- **Bull Trout Habitat**
  - Factor and criteria description: Definition of critical habitat for Bull Trout is in flux at the federal level. Initial criteria used to screen sites according to this factor are shown below. Adjustments based on additional study may be necessary (e.g. refined data, distinctions between spawning and migratory habitat, etc.)
    - No potential or proposed critical habitat; no occupied habitat = good/acceptable for further study
    - Potential or proposed critical habitat designation; presence or status unknown = moderate/may or may not be acceptable
    - Known populations/occupied habitat = poor/unacceptable
  - Results:

Good	51%
Moderate	45%
Poor	4%

- **Minimum Storage Capacity**
  - Factor and criteria description: It is generally agreed that this study should settle on a minimum acceptable storage capacity for candidate sites. Only sites with the potential to contribute significantly to meeting storage needs (as these are being defined in the target storage volume analysis) should be carried forward into more detailed analysis. However, it is unclear where this minimum capacity should be set. An initial cut setting criteria for this factor is:

  - >50,000 AF = good/acceptable for further study
  - >20,000 AF = moderate/may or may not be acceptable
  - <20,000 AF = poor/unacceptable
- Results: The results of this analysis are shown below. However, it will be noted that capacity estimates have never been made for a significant number of sites; sites in this "unknown" category will need to be studied further if they continue to survive screening analysis based on other factors.

Good	37%
Moderate	56%
Poor	5%
Unknown	39%

- **Summary and Interpretation**

  Both the validity of these four factors as a whole, and the "break-point" criteria to be used in screening out sites from further consideration are subject to discussion. An initial review of the above results reveals the following:
  - If the break-points for screening out sites according these factors were a rating of "good" for all, only 5 sites (~2%) would survive the screen. All of these are in the Payette Basin.
  - If a general break-point of eliminating sites that are rated poor on two or more of the factors is used, 41% of the sites would survive into the next round of analysis.

  Part of the agenda for this meeting is getting SWG commentary on these factors and criteria, including their validity or where the break-points should be. The goal is to refine this "exclusionary" level of analysis and re-run it for review at the next meeting. We do not want to eliminate candidates unjustifiably; nor do we want to carry forward and unrealistic and unwarranted number or sites.

Sherrill wrapped up the presentation on previously identified sites by discussing the desirability and validity of consolidating the number of sites on any given tributary, simply to reduce redundancy. On most tributaries in the two basins, several (sometimes higher than 10) potential sites have been identified in previous studies. Clearly, only one or two actual sites would likely be feasible from a hydrologic/yield standpoint alone. Thus, we are beginning to look at ways to determine, in a general fashion, where the most favorable locations are on each major tributary. Two lines of analysis are being followed: [1] eliminating run-of-the-river hydro sites (a considerable number of sites on our list were identified as potential hydro locations, but these may not be at all suitable for storage), and [2] looking more closely at topography, hydrology, elevation and other physical conditions along a given reach to settle on one or two candidates. We will be pursuing these investigations over the next month and will report results at the next meeting.

Planning Team Presentation — Other Candidate Storage Options

Sherrill summarized the latest list of candidate storage options not included in previous studies. This list will be given more attention for the next meeting, including defining conceptual locations, physical requirements, etc., as appropriate.

- Boise:
  - On-stream: add fixed flashboards to existing reservoirs, raise Anderson Ranch Dam, dredging

  - Off-stream: line/pipe Boise canals, line Sand Hollow Canal, manage canals for ASR, building up Hubbard Dam, Snake River transfer near Lake Lowell
  - Operational/policy: buy-out irrigation water and use for DCM&I; use "uncontracted" flow augmentation waters for DCM&I and replace elsewhere
- Payette:
  - Lower conservation pool at Cascade and designate water for DCM&I
  - Exchanges with Weiser (Galloway)

SWG Discussion

SWG commentary and discussion candidate storage options focused primarily on the factors and criteria used in the initial, exclusionary screening. Comments and observations included:

- General agreement that the Q80 break-point for Hydrology should be used.

- Caution that, in applying the Q80 criterion, we do not inadvertently eliminate sites that would work well in a "compound" configuration (i.e. storage located on a site that does not meet the Q80 criterion but would be ideal for storing water conveyed from another location—such as the main stem of the river—where water is available but storage is difficult). There have been opportunities identified in the Payette basin for such "off-stream" or "compound" solutions; and these could be superior in a number of ways to "on-stream", single site solutions. These need to be studied in their own right, and they need to be identified separately on the maps.

- Regarding the Special Designations factor and criteria, a distinction may be justified between the Natural vs. Recreation designations at the state level. Storage may be acceptable on a Recreation river and not acceptable on a reach designated as Natural. This needs to be investigated.

- Also regarding Special Designations, the Forest Plans and planning process at the federal level need to be checked. The Forest Service has been studying which river reaches may be suitable and/or eligible for Wild and Scenic status; and will be carrying out necessary analysis in this regard as part of the Forest Plan updates. River reaches that they identify (perhaps have already identified) as potentially suitable/eligible must be managed so that relevant characteristics are not compromised until an official determination is made. This is a factor to be considered in our study of which candidate sites are most feasible.

- Two concerns were discussed regarding the Bull Trout habitat screening factor:
  - The data used in the first analysis in not complete. Known populations of Bull Trout exist in many more locations than shown in this analysis. IDWR needs to be consulted for further refinement of the basic data and the actual definition of the break-point criteria.
  - Bull Trout may not be a valid exclusionary factor. The presence of any ESA-listed species does not necessarily preclude the development of a site.

- Perhaps we should not limit ourselves to sites with greater than 50,000 AF capacity. 20,000 AF could go a long way to meeting some of the projected demands the region.

- Concern was expressed that we do not lose sight of the multiple uses/purposes of this storage, and that we look at the results of our course-level screening very carefully. A prime example of this concern is embedded in the observation that only 5 sites in the Payette basin pass all four initial criteria. If we were to move forward with such a result, no attention would be paid to the very real

need for additional flood control storage capacity in the Boise basin. Clearly, we need to maintain multiple perspectives all along the way so that we are addressing all needs. This could mean keeping some sites in the analysis that may be undesirable according to some criteria but are otherwise, perhaps uniquely, well suited to meet defined needs.

At the conclusion of SWG discussion, the following action items were identified:

- Regarding the types of "compound" option discussed above (i.e. potentially feasible "off-stream" options that would be eliminated by strict application of the Q80 criterion):
  - Scott Campbell will provide information on the specific examples of which he is aware;
  - The planning team will review the examples identified by Scott as an assist in defining criteria by which other such options can be defined for inclusion in the analysis;
  - These types of projects will be mapped and defined for the next meeting (they will also be distinguished separately from simple, one-site options on all future maps).

- The distinction between Natural and Recreational designations at the state level will be investigated by the planning team. So also will be the status of Forest Service review regarding Wild and Scenic designation suitability/eligibility. Based on the results of this further investigation, the Special Designations screen will be rerun and presented at the next SWG meeting.

- The planning team will consult with IDWR and other agency specialists to refine the data and the approach to setting criteria for Bull Trout. The screening analysis will be re-rerun to reflect the outcome of this work, with results presented at the next SWG meeting.

- The COE and Reclamation will meet within the next couple of weeks to discuss the approach to defining flood control needs as a component of new storage. The results of this meeting will be reported at the next SWG meeting.

Agenda Item 3: Target Storage Volume Estimates

John began this discussion by describing how the approach to target storage volume had changed due to input received at the last SWG meeting. The main points made during discussion at the last meeting were [1] the potential role of conservation and reuse needs to be communicated in estimates of growth in consumptive demand, and [2] we need to think more broadly regarding the potential role of new storage. In the latter regard, growth in consumptive demand is only one need to be met; increasing efficiency and/or reliability in meeting flow augmentation requirements and the growing need for additional flood control space are other potentially important purposes that can be served by additional storage.

The approach to defining target storage volume has been adapted specifically to incorporate this input. First, given uncertainties exist and/or the influence of other variables such as conservation, a range of possible demand for new storage will be stated rather than a single volume number. Second, target storage volume will be viewed using a "tiered" concept, with consumptive demands (DCM&I and agriculture) representing Tier 1, the most fundamental purpose of new storage. Tiers beyond this will incorporate (add-in) possible responses to other needs and uses (i.e. flood control and flow augmentation).

Sherrill then presented the results of new analysis using this approach. Bottom-line results are summarized below (details of analytical assumptions are shown in the slide presentation distributed at the meeting):

- Tier 1: Consumptive demands (DCM&I, agriculture):
  - Estimated now over a 50 year horizon vs. the 20 year horizon of prior analysis;
  - Increase in consumptive use demand, given varying assumptions regarding the role of conservation, changes in agricultural use, etc., now estimated to range from 59,000 to 156,680 AF in the planning horizon.

- Notes regarding flood control storage: This purpose was at first conceptually considered to be Tier 2. However, the following factors make the need for such a separate designation uncertain:
  - The need for additional flood control storage volume exists in the Boise basin, not the Payette;
  - Current flood control storage volume in the Boise Project, based on existing rule curves, ranges from 150,000 to 360,000 AF; if the assumption is made that a 10% to 25% increase in volume is needed, the additional "storage pocket" in the Boise basin would range from 15,000 to 90,000 AF;
  - Assuming also that a significant amount of the storage volume needed for consumptive uses is provided in the Boise basin, the flood control pocket could be included within the consumptive use volume (e.g. at the low end of the ranges, 15,000 of the 59,000 AF of new storage volume needed to meet consumptive uses could double as flood control on an as-needed basis).

  As noted earlier, the COE and Reclamation will be determining our best approach to dealing with flood control storage volume estimates. Regardless of whether it is ultimately viewed as Tier 2 for the purposes of this study or it is subsumed in Tier 1, flood control will remain a distinct purpose be considered when selecting potential storage option to be studied in greater detail.

- Tier 2: "Discretionary" purposes, such as flow augmentation, operational timing, recreation benefits: To date, only the potential role of new storage in helping to meet the local portion of flow augmentation requirements has been reviewed. Other possible "discretionary" or non-consumptive purposes have not been quantified. Regarding flow augmentation, the following estimate was presented:
  - Of 487,000 AF requested annually from the state as a whole, the Boise & Payette basins typically provide between 30,000 AF (dry years) and 200,000 AF (wet years);
  - The available volume in un-contracted water in these basins is 136,000 AF;
  - A target for new storage volume can be defined as the difference between the amount that is "guaranteed" in un-contracted water and the total volume expected from the basins. Thus: 200,000 AF contribution minus 136,000 AF available in un-contracted water yields a target volume for new storage of 64,000 AF.

- Total maximum Tier 1 + 2 target storage volume given the above analysis and assumptions = 219,680 AF.

SWG Discussion

There were no SWG comments or concerns regarding the new method of estimating growth in consumptive use demands. SWG members also agreed that we need to wait for guidance from the COE and Reclamation before defining the role of flood control in defining potential storage options for further study.

The primary point of discussion centered on the increment (or Tier) termed discretionary in the current analysis. Concerns were raised that this study is being focused too narrowly on Boise and Payette basin water supply issues. Some stakeholders understood that Congressman Butch Otter's original intent and purpose for the study was to look at statewide water storage and demand issues, and the role that the

Boise and Payette basins could play in resolving those issues. Some members of the SWG feel it is possible that limiting this study to purposes only the Boise and Payette Basins will not garner the political support required to implement the options that are eventually chosen to be carried forward.

Agenda Item 4: Wrap Up and Next Steps

Action Items:

- Action items identified for the candidate storage option analysis are listed earlier herein.
- Regarding the concerns expressed about the scope of this study, analysis will proceed along current lines until/unless a change in direction is determined necessary by agency leadership. If there is a need for the leadership at a higher level to meet and redefine the focus of this study, that should happen in the near future.

Next Meeting:

- October 18, from 9:30 AM to Noon, at Reclamation's Snake River Area Office.

RECLAMATION

Managing Water in the West

Boise/Payette Basin Storage Assessment

Stakeholder Working Group: Meeting 3 Agenda

October 18, 2005

9:30 am Introduction

- Meeting objectives and review of agenda
- Meeting 2 summary—comments and approval

9:40 am Status of Target Storage Volume Estimates

- Introduction
- Tier 1 (consumptive uses): Working range established
- Flood control: Report on COE/Reclamation discussions
- Tier 2, flow augmentation, etc: Approach to the intra-basin/statewide needs perspective
- Q & A

10:00 am Candidate Storage Options—Latest Results & Next Steps

- Introduction
- New sites—surface—off-stream
- New sites—surface—on-stream
- Summary & Discussion: Short list of new, surface, on- and off-stream sites
- Other categories of options: Listing and description of options
  - → New sites—ASR; Existing facility modifications; and Reallocations, exchanges, transfers
  - → Discussion: next steps in completing these lists
- Criteria for next round of screening analysis (evaluation factors/criteria)
  - → Planning Team preliminary listing
  - → SWG discussion

11:30 am Literature Review Deliverable—SWG Comments & Input

11:45 am Wrap up, Next Steps, & Questions/Answers

- Review of action items (and responsibilities) emerging from this meeting
- Next meeting—date, time, location, content

Noon Adjourn

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Meeting Summary: Stakeholder Working Group Meeting 3

October 18, 2005

I. Introduction

This document is a summary of the third meeting of the Stakeholder Working Group for the Boise/Payette Basin Storage Assessment. The meeting was held October 18, 2005, from 9:30 AM to Noon, at Reclamation's Snake River Area Offices in Boise, Idaho. The meeting agenda was sent to all stakeholders prior to the meeting; and this summary is organized according to the headings/topics of that agenda.

II. Meeting Attendees

Reclamation Planning Team:

John Tiedeman Reclamation--PN Regional Office, Activity Manager	Mark Bransom CH2M HILL
John Petrovsky John Petrovsky Associates	Jenny Kindig CH2M HILL
Tom Haislip CH2M HILL	Jenni York CH2M HILL

Stakeholder Representatives:

Bryce Farris Ringert Clark Chartered	Paul Deveau Boise Project Board of Control
Jonathon Parker Idaho Water Users Association	Tim Page Boise Project Board of Control
Ron Shurtleff Water District 65	Mary McGown Idaho Department of Water Resources
Scott Rhead United Water	Scott Campbell Moffatt Thomas/Pioneer ID
Brayton Willis U.S. Army Corps of Engineers	Jeff Dillon Idaho Department of Fish & Game
John Olson U.S. Environmental Protection Agency	Lane Jolliffe Congressman's Otter's office
Mike Holladay Holladay Engineers	John Redding Reclamation--PN Regional Office
Kevin Lewis Idaho Rivers United	

III. Meeting Summary

Agenda Item 1: Introduction

John Petrovsky opened the meeting with a welcome and asked for comments on/corrections to the summary of Meeting 2, noting that Norm's comments had been incorporated into the summary and posted to the Web site. No additional changes or comments were noted. John then went over the agenda and purposes of this meeting (Meeting 3).

- Status of Target Storage Volume Estimates
  - Tier 1: Consumptive demand estimates
  - Tier 2: Flood control
  - Tier 3: Flow augmentation, other benefits
- Candidate Storage Options—Latest Results & Next Steps
  - Results of initial screen (all surface storage options/initial criteria)
    - Response to concerns re: treatment of off-stream options
    - Criteria cut-points used for this "final run"
    - Results: Options to be carried forward to next level
  - Defining Other Categories: ASR and reallocations/exchanges/transfers
  - Criteria and Process for Next Level of Screening Analysis
- Literature Review Report

Agenda Item 2: Status of Target Storage Volume Estimates

The status of work toward establishing target storage volume estimates was reviewed, as summarized below. Overall, it was observed that working estimates have now been defined for Tier 1 (consumptive demand increases) in both basins and Tier 2 (additional flood control storage) in the Boise basin. Work still needs to be done to estimate Tier 2 flood storage requirements in the Payette Basin and the upper end of Tier 3 (flow augmentation and other uses). This work will proceed in parallel with the study of potential storage sites/options.

Tier 1—Consumptive Use Demand Increases: There seems to be general acceptance of the working range presented at the last meeting for this category of demand for additional storage. This working range is 59,200 to 156,680 acre-feet per year over a 50 year planning horizon, with roughly 80% of this demand growth occurring in the Boise Basin and 20% in the Payette. Both DCM&I and agricultural demands are included in these estimates, and the low end of the range is derived from analysis of the potential role of conservation and reuse.

Tier 2—Flood Control Storage: Brayton Willis (USACE) provided and summarized a handout (included herein as Attachment 1) describing the flood control situation in the Boise Basin. The main points included on the handout are summarized below; these are derived from discussions with Reclamation and with senior USACE hydrologists.

- Due to the rapid growth in the Treasure Valley, including substantial development just outside the regulatory floodway, the threshold for significant property damage in the floodplain along a 12 mile stretch of the Boise River is now approximately the 30-year flood event.
- A 100-year flood event would cause major damage in Boise and Ada County.
- Loss of life is unlikely for this level of flooding except in the case of a dam failure or gate failure because there would be sufficient time for residents to evacuate the area.

- The minimum space required to reduce risk is probably 50,000 acre-feet.
- The amount of space required to reduce risk considerably is on the order of 200,000 acre-feet.
- In both these cases storage would be dedicated solely to flood control.
- More exact protection levels cannot be determined without more detailed study.
- If more flood control space is made available, a floodplain management plan must be developed by locals such that downstream areas are protected from flooding.

Brayton also noted that a new Twin Springs facility and/or Lake Lowell have been discussed as options that could play a role in meeting flood control needs.

Some discussion ensued regarding the potential for addition storage facilities in the Boise Basin that could accommodate both consumptive use demands and flood control storage needs (i.e. at the last meeting, Sherrill noted that such double-duty might be possible). Both Scott Campbell and Brayton Willis noted that there are potential problems with this concept; the roles of flood control and consumptive use storage are not always compatible in terms of timing and delivery. This is illustrated most fundamentally by cases where flood control releases are required, followed by inadequate/incomplete refilling to achieve expected storage for consumptive uses. Such situations illustrate the tradeoffs involved in this double-duty concept. These tradeoffs affect stakeholder expectations and agreements and add complexity to cost/benefit analyses. Tradeoffs must be studied in detail and fully understood before the concept is pursued.

Tier 3—Flow Augmentation and Other Benefits: The only estimate to date of potential target volume for these purposes is from the purely local (i.e. Boise and Payette basins) perspective. This estimate is 64,000 acre-feet, as presented at the last meeting.

Discussions of the perspective (raised by Scott at the last meeting) that this study should look also at potential expanded regional/statewide benefits have not yet occurred but are being planned. In response to Scott's inquiry on this subject, JohnT stated that the process of setting up required meetings was ongoing and that contacts made so far included the congressional delegation, IDWR, and within Reclamation.

John Petrovsky noted that, pending the results of these discussions, the current study will proceed on the following basis: [1] analysis of potential storage options/sites will continue according to the current study design (as discussed under Agenda Item 3, below), and [2] the team would look at the possibility of estimating the maximum potential yield of the Boise and Payette Basins in terms of additional water available for storage. The latter approach could at least begin to indicate what role these two basins might play in a larger, more statewide program.

Summary/Conclusion: John P. concluded the storage volume discussion overall by noting that at least we were beginning to get a sense of the order-of-magnitude volume requirements to meet local needs and achieve other local benefits. The only missing piece locally at this point is flood control needs in the Payette basin. Pending that estimate, and assuming for the moment that flood control in the Boise is additive vs. embedded, we are looking at a range to meet local needs of 110,000 to 400,000 acre-feet. The lower end of this range would assume a maximum role for conservation/reuse in meeting consumptive demand, a minimum of 50,000 AF additional flood control storage in the Boise, and no accommodation for flow augmentation or other benefits. The upper end of the range would assume a minimum role for conservation/reuse, a full 200,000 AF response to Boise flood control needs, and the 64,000 AF estimated to increase reliability/flexibility in meeting flow augmentation requests, etc. This order-of-magnitude view can give us some perspective on how potential storage sites/options (individually or in combination) match up with volume needs.

Agenda Item 3: Candidate Storage Options

John P. began discussion of storage options by presenting a revised, better organized naming convention for the various types of options. Shown below, this convention will serve as an improved guide for categorizing, discussing and comparing the distinctly different types of storage options being considered.

- Surface storage
  - New on-stream sites
  - New off-stream sites
  - Existing site/facility modification
- ASR (Aquifer Storage and Recovery)
- Canal systems as storage (i.e. piping, lining)
- Non structural/no physical facilities (including transfers, reallocations, exchanges)

Discussion then proceeded into a review of study status for each of the four major categories of options.

Surface Storage Options—Proposed "Final" Results of Initial Screening

Mark Bransom opened this discussion with a review of how off-stream options were being considered. This was in response to concerns expressed by Scott at the last meeting that the Q80 criterion could eliminate sites that were particularly viable for off-stream storage projects. Mark started with a working definition of the off-stream option: *Off-Stream = Site located on or adjacent to a drainage-way without enough year round natural runoff to fill frequently. Requires inter-basin or trans-basin water sources.* He then indicated that, by using input received from Scott and carefully reviewing the site characteristics data, potential off-stream sites that would have been eliminated based on pure application of the Q80 refill probability are being carried forward according to the other initial screening criteria and beyond, as appropriate. He also noted that as of this meeting, site mapping will now use different symbols to clearly distinguish new on-stream, new off-stream, and existing facility modification options. There were no concerns raised by the SWG about these adjustments to the study.

John P. then presented the results of the latest, and proposed final, round of the initial screening process, including application of the four "exclusionary" criteria and elimination of both redundancy and options named in source documents for which no site is specified. He started by defining the criteria "cut" points used in this final run (shown below), indicating that these cut points were selected with consideration of SWG discussion at the last meeting and further evaluation stemming from that discussion:

- Q80: Strict application to all on-stream sites; off-stream sites carried forward if they survived the other three criteria.
- Special Designations: Federal W&S or Wilderness & State "Natural" designation excluded now; Federal candidates and State "Recreation" designation carried forward for further analysis (Related to this cut point, it was noted that the Idaho State Water Board has indicated that reservoirs are not compatible with designated Recreation rivers; however the Board maintains discretion in this matter and there are cases where the State Water Plan retains a potential reservoir site on a designated Recreation segment. That is why we are recommending that State Recreation designations be carried forward).
- ESA—Bull Trout: Known resident populations & critical spawning and rearing habitat excluded now; migratory or over-wintering habitat and areas with potential, but unconfirmed, populations carried forward (It was noted that this cut point had been defined through discussion with Reclamation and IDFG specialists, and is believed to strike an acceptable balance at this point

between [1] response to ESA concerns, given knowledge of the species and its habitat, and [2] the need to carry some reasonable alternatives forward in the Boise Basin—i.e. due especially to flood control storage concerns).

- Minimum Volume: Minimum of 50,000 acre-feet strictly applied to new sites; existing reservoirs excepted from this minimum recognizing that an option of assembling 50,000 acre-feet or more volume from actions at two or more existing reservoirs warrants further study.
- Consolidation, Elimination of Redundancy and Sites "In Name Only": The basic "rules" used in this part of the analysis were:
    - Two or more sites close together, with equal screening characteristics, were consolidated into one.
    - Sites identified only as hydropower potential and near another, similar on-stream site were consolidated into one on-stream site.
    - Sites listed in source documents but with no location specified and no additional data for clarification were excluded.

Application of these criteria cut points and consolidation rules yields a total of 56 sites moving forward to more detailed analysis. These 56 sites break down as follows:

- 15 new on-stream (10 Payette; 5 Boise)
- 34 new off-stream (19 Payette; 15 Boise)
- 1 new unclassified (Payette)
- 6 existing reservoirs (3 Payette; 3 Boise)

Of the 145 sites eliminated, 63 were due to failing one or more of the criteria cut points defined above and 82 were eliminated through the consolidation process.

In asking for SWG comments on these results, John P. suggested that we had gotten about as much as we legitimately could out of this phase of analysis and that we had succeeded in both [1] cutting an initial list of ~200 down to a reasonable number for more detailed analysis, and [2] maintaining a good cross-section of site type and location. He also noted that the analysis to date was not so rigid or conclusive that a site eliminated now could not be added back in if new information came to light later.

With one exception, there was general SWG acceptance of these results and no objections were voiced. The exception centered on treatment of existing reservoirs.

First, it was noted that not all reservoirs were being analyzed; only 6 were listed up to this point, three in the Payette (Black Canyon, Little Payette Lake, Upper Payette Lake) and three in the Boise (Lucky Peak, Arrowrock, Anderson Ranch). There are many other reservoirs in these two basins, and perhaps all should be screened in some fashion for potential value in this assessment. Mark and Jenny of CH2M Hill noted that we had simply included only those sites listed in the literature/source documents. It was generally agreed that we would define a more rigorous approach to dealing with existing reservoirs. For example, many existing reservoirs are small and might legitimately be eliminated due to having insufficient volume potential to really count in this study. On the other hand, some, like Deadwood, may not have been identified previously but may have future storage potential. Overall, additional criteria may be identified to help screen existing sites and revisit the list being carried forward for further analysis.

From another perspective, questions arose concerning what actions were being considered at existing reservoirs. Types of action mentioned to date include use of freeboard, adding flashboards, raising the dam, and dredging; but no site-by-site specification of potential actions has been prepared. In this regard, the potential feasibility of dredging at Cascade was noted as something warranting attention; this

possibility could have both practical and environmental benefits. Dredging has also been suggested as a possibility at other sites. It was agreed that we would take a look at this question and that there may end up being multiple potential "projects" at any given existing reservoir (e.g. Arrowrock A, Arrowrock B, etc.).

Finally, it was suggested that some existing sites could clearly be eliminated now due to obvious impacts or constraints outside of the criteria considered to date. The main examples cited were Black Canyon and Cascade. Raising the dam at either of these locations is clearly infeasible due to obvious, unacceptable impacts (i.e. at Black Canyon, the relocation of many miles of state highway would be involved; at Cascade, land use impacts would be overwhelming). It was noted and agreed, however, that these types of impact criteria would be part of the next level of screening analysis and it was not appropriate to apply them now, piecemeal, outside of the more systematic, inclusive analysis.

ASR

The main questions about ASR at this point in the study are:

1. Is ASR a real possibility for meeting storage requirements in either or both basins? and
2. Are we at a point where we can actually define specific ASR projects (e.g. location, volume, etc.) to be compared with the surface storage options?

Paul Deveau of the Boise Project Board of Control provided an overview of ASR status in the Boise basin. His general conclusions, confirmed by other SWG members, were that, yes, ASR has potential as a future option for storage and drainage management; but, no, we are not at a point where specific projects have been or can be defined.

The same conclusions appear to apply in the Payette Basin. For example, Mike Holladay noted that the water table in Fruitland has dropped 20 to 30 feet since the 1970s and the recharge problem gets worst every year. Certainly ASR could have a place in addressing this problem; however, we are not close to defining specific projects.

Given these conclusions, John P. observed that ASR would definitely need to be a subject of discussion in the Assessment Report (i.e. this option can play a future role in storage), but it would need to be treated qualitatively (i.e. there is insufficient definition of ASR options to legitimately compare them with the surface storage options).

Canal Systems as Storage

The same basic questions noted above for ASR apply to canal systems. It was quickly concluded in discussion that lining or piping of canals is a conservation action, and does not hold potential as a storage action. Because of this, no further consideration of this type of action is warranted.

Re-Allocations, Transfers, Exchanges

As with ASR and canal systems, discussion was centered on trying to clarify and specify the role of these types of actions in meeting storage requirements. The main points emerging from discussion were:

- In the present study, we are only looking at the potential for transfer/exchange between the Boise and Payette Basins. The primary example cited to date is provision of additional storage in the Payette to free up flow augmentation water for consumptive uses in the Boise. Such action could avoid or at least forestall the need for a trans-basin conveyance. Refer to discussion of Tier 3 storage volume estimates for perspective on interactions with other basins.
- Potential for re-allocations of Federal project water in either basin would require Congressional action, exploration of which is not within scope of this assessment.
- These options will not address the need for additional flood control storage in the "receiving" basin since no new storage capacity is created in that basin.
- As with ASR, these options will likely need to be treated qualitatively in this study. We may be able to see potential applications more clearly as the work on new surface storage proceeds.

Surface Storage Options—The Next Level of Screening

John P. then began the presentation of how the next, more detailed level of screening analysis was proposed to proceed. The first steps would be to [1] conduct more detailed analysis of hydrologic feasibility, and [2] better define each project for purposes of more detailed criteria/impact analysis.

In the first regard, Jenny explained that the additional hydrologic study would be based on Reclamation's MODSIM program. She explained that MODSIM:

- is a river and reservoir operations model that accounts for all active water rights, channel constraints and flood control limitations, as well as historic hydrology, in the present system;
- can look at the refill of the new sites without impacting the system's current delivery commitments; and
- allows an understanding of the available water (what will actually be refilled) and what can actually be delivered.

MODSIM runs are being done for 15 representative sites, with the expectation that these runs will provide insight into the feasibility of, or problems with, all of the sites being carried forward. Information to be generated includes:

- Probability of refill
- Exceedance probability for annual water year deliveries
- Restrictions due to channel constraints and/or flood control limitations
- Verification that new storage will not impact the refill capacity of existing reservoirs and deliveries to existing water users.

John P. then explained that more detailed project definitions would focus on drawing a generalized pool "footprint" for each new or expanded site being considered. This project definition work would then allow general assessment of such factors as land use or infrastructure impacts. The work would be based simply and directly on applying target pool volume to local topographic data.

He then presented a preliminary working list of the evaluation factors and criteria proposed to be used in the next level of screening analysis. These include:

Socioeconomic Factors:

Land Ownership	- Public vs. Private
Land Use-Existing	- Displacement of DCM&I uses
	- Displacement of irrigated/developed agriculture
Land Use-Planned	- Displacement of planned DCM&I uses
	- Displacement of irrigated/developed agriculture
Recreation Uses	- Displacement of recreation sites
	- Displacement of noted fishing reaches
	- Displacement of noted boating reach
Infrastructure	- Relocation of Road(s)
	- Relocation of other facilities (e.g., telecomm)

Environmental Factors:

Federal ESA Species	- Bull Trout migratory/over-wintering habitat; proposed critical habitat
Protected River Status	- Potential Federal W&S
	- State Recreation River
Other?	- (are there other factors such as State species of concern?)

Major Cost Factors:

Storage Facilities	- Construct dam and appurtenant facilities
Conveyance Facilities	- Construct inter-basin
	- Construct source-to-storage

John P. concluded the presentation by noting that assessment of any of these factors would depend on ready access to information (i.e. we are working at a very general level and still considering a large number of sites). He also explained that the comparative analysis would begin with all evaluation factors being equal, but that the use of relative importance weightings (i.e. one or a group of factors being given greater importance than others) may provide important insight as the analysis progresses. Certainly, it is often the case that some stakeholders consider cost/socioeconomic factors to be most important while others consider environmental factors/impacts to have greater weight. John indicated that it is often very valuable to run the analysis with different points of view in this regard; the results can be surprising and unexpected.

The meeting was then opened for SWG discussion of the proposed next phase of screening. SWG commentary focused primarily on the list of factors/criteria to be used. Key points made include:

- Scott observed that John's slides reflected an assumption that, from the standpoint of land ownership, building a storage project on public land is clearly preferable to private land. He indicated that this may not be a valid assumption, that the situation can vary widely based on site-specific conditions. Land ownership needs to be treated in a different fashion than such clear "suitable-unsuitable" factors as displacement of residential uses.
- John Olson noted that water quality should be included as an environmental factor in the screening analysis. He suggested that a new site shouldn't be located on a segment that has excellent/good water quality. Scott, however, observed that water quality could be improved by a new storage facility (e.g. by regulating discharges), and that this is also a case-by-case concern.
- John P. mentioned the perspective that reservoirs can have beneficial effects such as helping to provide in-stream flows immediately downstream or increased reliability of flow augmentation water.

- Jeff Dillon indicated State species of concern (e.g. native redband trout) should definitely be an evaluation factor.
- Potential changes to stream morphology was suggested as an impact to be considered.
- Regarding the category of Cost Factors, John P. and Mark explained that no detailed cost analysis was planned in this study, and that such analysis is not really considered possible or appropriate at this level of planning. The preliminary cost factors shown are an attempt to at least compare projects in terms of whether or not they require major construction. This perspective had more meaning while it was thought that other types of storage, such as ASR would be part of the screening process (i.e. to build a dam or not to build a dam). Since that is not the case, this category of evaluation factor may not have much value now. The only exception might be consideration of whether or not projects require major, trans-basin conveyances. Otherwise, not enough can be known at this point about project construction costs to conduct a valid comparison.
- Other SWG members noted that [1] cost analysis should include such factors as land acquisition costs, impact mitigation requirements, etc., and [2] major cost factors could also include dredging. It was generally agreed that such detailed cost analysis was not appropriate at this level of study.

Agenda Item 4: Draft Literature Review Report

Mark distributed copies of the Draft Literature Review Report, explaining that is was essentially an annotated summary of literature reviewed to obtain the initial list of candidate surface storage options. This document will become an appendix to Water Storage Assessment Report.

Agenda Item 5: Wrap Up and Next Steps

Action Items:

- Any further thoughts on the factors and criteria to be used in the next phase of screening should be forwarded to JohnT. within a week. The next meeting will focus on the comparative analysis process, perhaps including some initial results.
- Similarly, comments on the Draft Literature Review Report, especially any omissions, should be forwarded to JohnT.

IV. Next Meeting

The next meeting will be on November 15, from 9:30 AM to Noon, at Reclamation's Snake River Area Office. The meeting will focus on the next phase of screening, including finalizing the list of factors/criteria to be used and the technical method to be applied in comparing options. (Note: at the meeting John P. indicated that preliminary results of the screening would be available for discussion at this next meeting. Subsequent review of the project work plan revealed that the actual data gathering and analysis is planned to occur after solidification of the process/methodology at the November meeting).

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Stakeholder Working Group: Meeting 4 Agenda

November 15, 2005

9:30 am **Introduction**

- Meeting objectives and review of agenda
- Meeting 3 summary—comments and approval

9:40 am **Update on Target Volume Discussions, if any**

9:50 am **Surface Storage Options—Second Round Screening Process**

- Introduction—overview of process
- Refined hydrologic feasibility analysis
- Socioeconomic and Environmental evaluation factors & criteria
  - → Revised list per SWG input
  - → Discussion and finalization
- Method of rating performance against criteria—level 1 & 2
- Use/interpretation of performance rating results:
  - → First look — Graphic-oriented matrix (non-numeric array of results)
  - → Second look — (as necessary) Numeric performance scores for each criterion summed to obtain simple, raw "score" for each option
  - → Third look — (as necessary) Application of relative importance values—exploration of differing points of view regarding which criteria are most important to decision-making
- SWG discussion
- SWG relative importance values exercise

11:45 am **Wrap up, Next Steps, & Questions/Answers**

- Review of action items (and responsibilities) emerging from this meeting
- Date, time and content of next meeting

Noon **Adjourn**

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Meeting Summary: Stakeholder Working Group Meeting 4

November 15, 2005

I. Introduction

This document is a summary of the fourth meeting of the Stakeholder Working Group for the Boise/Payette Basin Storage Assessment. The meeting was held November 15, 2005, from 9:30 a.m. to 11:00 a.m. at Reclamation's Snake River Area Offices in Boise, Idaho. The meeting agenda was sent to all stakeholders prior to the meeting; and this summary is organized according to the headings/topics of that agenda. Also, a hard copy of the PowerPoint presentation referenced herein was distributed to all meeting attendees; for this reason, the full content of the slideshow is not reproduced here.

II. Meeting Attendees

Reclamation Planning Team:

Lesa Stark Reclamation--Snake River Area Office Planning Program Manager	Sherrill Doran CH2M HILL
John Tiedeman Reclamation--PN Regional Office, Activity Manager	Mark Bransom CH2M HILL
John Petrovsky John Petrovsky Associates	Jenni York CH2M HILL
Tom Haislip CH2M HILL	

Stakeholder Representatives:

Bryce Farris Ringert Clark Chartered	Paul Deveau Boise Project Board of Control
Jonathan Parker Idaho Water Users Association	Tim Page Boise Project Board of Control
Ron Shurtleff Water District 65	Mary McGown Idaho Department of Water Resources
Bert Bowler Idaho Rivers United	Stacy Baczkowski Idaho Department of Water Resources
Kathy Peter U.S. Geologic Survey	Scott Campbell Moffatt Thomas/Pioneer ID
Mike Holladay Holladay Engineers	Jeff Dillon Idaho Department of Fish & Game
Dustin Miller Idaho Farm Bureau Federation	Mark Shleta Payette County
Chuck Mickelson City of Boise	Lane Jolliffe Congressman's Otter's office

III. Meeting Summary

Agenda Item 1: Introduction

John Petrovsky opened the meeting with a summary of the agenda and meeting objectives. The primary purpose of this meeting is to review and discuss the process we propose to use in our second round of site/option screening. This process is intended to take the roughly 60 sites that emerged from our initial screening and identify those that look the most promising for more detailed analysis in follow-on reconnaissance-level study by Reclamation. Since we want to respond to all three tiers of needs/benefits we have identified in our target volume discussions (i.e. including flood control in the Boise), our intention is to end up with a short-list of sites in both the Boise and Payette basins.

The first step in this process will be conducting more detailed hydrologic analysis using Reclamation's MODSIM program. This program incorporates all existing water rights, contracts and infrastructure, in addition to historic hydrology, and may allow the list of ~60 to be reduced somewhat based on hydrologic performance. Feasible sites remaining after the MODSIM analysis will be subjected to a comparative analysis based on the socioeconomic and environmental criteria. In addition, since it is likely that opinions will differ regarding which of these criteria (e.g. socioeconomic vs. environmental) are most important in making decisions, we will go through a relative importance exercise to get SWG rankings of the criteria so that we can run the analysis according to differing points of view and see how the results vary. Finally, we will review and discuss the technical process we intend to use to quantify criteria performance (i.e. impact levels) and then apply the relative importance values.

At this point, John Tiedeman reminded Mr. Petrovsky to ask if there were any comments on the minutes from the last SWG meeting.

The only comment was from Mary McGown of IDWR who wanted to clarify current regulatory constraints related to the feasibility of using ASR for storage. She indicated that current state regulations do not accommodate/allow an entity to store water in an aquifer and maintain exclusive rights to withdraw that same quantity of water at a later date. Instead, under current law, water entering an aquifer becomes public water and may be withdrawn according to other water rights. Mr. Petrovsky indicated that this important constraint needed to be recognized as part of our ASR discussion in the Assessment report.

John also noted that requests had been received for the planning team to get the meeting summaries out to the SWG in a more timely fashion than has been the case to date. He indicated that goal henceforth will be to get the summary out within a week following the meetings.

Agenda Item 2: Update on Target Volume Discussions

Before getting into the main purpose of the meeting, the status of target volume analysis (i.e. projected storage needs, uses and/or benefits) was reviewed. The leadership-level discussions planned related to the local vs. regional/statewide perspectives of this study have not yet occurred. Thus, our current status on this topic is the working range of strictly local needs/uses discussed at the last meeting:

Working Range of Local Needs*

Tier 1: Consumptive Demand	60,000 to 157,000 AF
Tier 2: Flood Control**	50,000 to 200,000 AF
Tier 2: Flood Augmentation/Other Benefits	0 to 64,000 AF
Total***	110,000 to 421,000 AF

* The numbers will be continued to be refined over time.
** Payette flood control needs are not yet estimated.
*** This assumes flood control is additive.

As noted in prior meetings, this target volume analysis will be used later in the process to help us review various scenarios for meeting different levels of need and achieving different levels of benefits. For example, since our minimum storage volume for candidate sites is 50,000 AF, we may look at different combinations of sites and locations to achieve different increments of the range(s) shown.

Agenda Item 3: Surface Storage Options – Second Round Screening Process

Revised/Final List of Sites/Options Entering Second Round Screening

Before getting into the screening process itself, Sherrill Doran reviewed the "final" list of sites to be analyzed in that process (copy of list attached hereto as Attachment 1; list also distributed at the meeting). Her main points regarding the list were:

- A combination of on-stream, off-stream, and existing facilities are being carried forward in each of the two the basins. (John P. also noted that the list of existing sites had been reviewed and expanded to be more inclusive based on discussion at the last meeting)
- We have significantly refined our estimates of the volume/capacity of candidate sites (new or revised volume/capacity estimates are shown on the list for most sites). Prior estimates were taken from the literature, with little to no technical backup/basis given to support these estimates. Now that we have current hydrological information and can apply MODSIM analysis (to be discussed later), we are better able to estimate how much water is really available to be captured and then delivered. We are able to get an idea, on a site-by-site basis, what the maximum hydrologic potential is--how much water is actually coming to/through a given site, how much of that water is already committed in what timeframes, etc. and thus how much water is available for new storage. Based on this analysis, we will be looking at each site in 50,000 AF increments up to its estimated maximum potential.

Scott Campbell asked what the basis was for the volume range shown for the Squaw Creek sites.

Sherrill indicated that previous analyses did not appear to consider existing water rights or water contracts. So, for example on Squaw Creek, the volume of water in the North Fork Payette that is physically available is very different from the volume of water that is legally available to be diverted due to constraints on volume, timing, and other factors. Also, once the water is in storage, we must look at how that water can be delivered as another area of possible constraint. The MODSIM tool allows us to look at both of these perspectives, how much water is actually available and how it can be delivered. We will, in fact, be refining the MODSIM analysis over the next two weeks to incorporate the delivery aspect; and these volume estimates could change slightly.

Scott Campbell asked the watermaster for the Payette River to discuss what restrictions may have been discovered with those two facilities on Squaw Creek given that there is no downstream storage facility during the non-irrigation season. Ron Shurtleff responded that he understood where the water rights

come into this. He thought that the numbers for capture are probably higher than this but some serious calculations would need to be conducted to determine the difference.

Sherrill clarified that although there is a lot of output from that MODSIM model, the numbers in the attachment reflect the maximum volume that could be stored and captured at the end of June, which is after the flood season but prior to irrigation releases. So it is not necessarily a cumulative amount over the annual period, it is the maximum volume that could be retained at any one time in any one of these facilities, which is important in this analysis as kind of a footprint for how big that site would need to be.

Lesa Stark also commented that one of the restrictive factors is the volume of consumptive use, recognizing that there would be years of higher or lower water. The volumes represent the volume of water that could be stored and contracted 80% of the time.

Refined Hydrologic Feasibility Analysis

John reiterated that refined hydrologic analysis was the first step to be done in the second round of site screening. Through the use of MODSIM analysis, it may be possible to further pare down the list of potentially viable or desirable candidates prior to entering the constraint criteria analysis. He then turned the discussion over to Sherrill who provided background on the MODSIM tool and its application in this study.

Sherrill Doran described the MODSIM model as a way to help Reclamation manage their operations and water delivery. MODSIM separates natural flow rights and storage rights and certainly incorporates water rights, senior rights versus junior rights, and the timing and what is obligated and delivered. Finally, the model predicts the probability of refill, under the current operational capacity and constraints, to determine what volume might be able to delivered 80% of the time versus 90% of the time at different sites. One of the advantages of MODSIM is that it helps assess how to avoid impacts on the refill capacity of the reservoirs and delivery to the existing water users.

Scott Campbell asked whether the MODSIM numbers reflect the active capacity of the reservoirs or the total capacity? He explained that because current facilities have a dedicated conservation pool, whether or not it is expressly dedicated for that purpose or not, it becomes a de facto conservation pool.

Lesa Stark responded that MODSIM can look at the question either using active capacity or total capacity, with qualifiers. Sherrill said that factoring in the conservation pool will be looked at in more detail in the next phase, but that the consistent treatment of sites was valuable in a comparative sense. In comparative terms, this is still a good normalizing approach and then as we analyze those final sites, we will be able to determine the difference between the active storage and the total storage. This issue will be kept in mind to make sure that appropriate active volumes are being targeted.

Comparative Analysis—Socioeconomic and Environmental Criteria

Discussion then moved to the comparative analysis process. John indicated that there were three topics to be discussed on this subject:

- Project Definition—development of reservoir footprints.
- Evaluation Factors and Criteria—getting to final list.
- The actual Analysis Process itself—both objective criteria performance scoring and applying relative importance values to these scores to portray differing points of view.

Project Definition: John showed an example of the rough reservoir footprints that will be drawn for each candidate site in the analysis. These footprints will be developed using digital topography in a GIS system. For each site, footprints will be drawn for each 50,000 AF increment in the potential storage range shown on the site list discussed earlier. This information can then be used to measure each site's potential impacts on land use, roads, and each of the other impact criteria being used in the analysis. For example, John indicated that the reservoir footprints would be overlaid in the GIS system on land use information that was also available in digital form. (John identified the land use information to be used as that available from EPA, vintage 1990-1993; Scott questioned this data source; and Sherrill indicated that a newer source, Idaho GAP data—based on 2000-2001 aerial photography, has been found and would be used instead of the EPA data)

Evaluation Factors and Criteria: John indicated that the list of evaluation factors and criteria to be used in this second round of screening had been revised based on input received from the SWG at or after the last meeting. He said that these factors and criteria fall into three categories: Land ownership, Socioeconomic factors, and Environmental factors.

Land ownership is now proposed to be considered as a separate line item in the final review and short-listing of sites (i.e. at our next meeting). As pointed out by Scott at our last meeting, land ownership is not like the other factors or criteria we are considering. For the criteria in the socioeconomic or environmental categories, minimal (or no) conflict or impact is always preferred. That is not the case with land ownership because varying ownership conditions and differing opinions effect whether public land or private land is a preferred condition for getting a project built. This is why we have taken land ownership out of the multi-criteria analysis and made it a line item to be considered side-by-side with the results of that analysis.

Socioeconomic factors and associated criteria include:

	Displacement/Removal of:
• Land Use	-Residential uses
	-Other developed uses (C/M/I)
	-Irrigated/developed agriculture
• Recreation	-Developed sites
	-Noted fishing reach
	-Noted boating reach
• Infrastructure	-Roadways/highways
	-Other (e.g. pipelines, transmission lines)

Environmental factors and associated criteria include:

	Removal of/Incompatibility with:
• Federal ESA Species	-Bull Trout migratory or over-wintering habitat
	-Other candidate species habitat
• State Species of Concern	-Specie(s) habitat
• Protected Land/River Status-Federal	-Candidate W&S or WSA
	-Other special designation (see slide)
• Protected Land/River Status-State	-Designated Recreation river
	-Conservation priority area (per IDFG CDC)

John also noted other factors and/or criteria that had been suggested by SWG members but judged not applicable or feasible at this level of planning. He noted that comparing impacts on water quality, stream morphology, and cultural resources had been suggested, but we are not at a level of detail where these can be reasonably assessed. The same is true of project costs or cost per acre foot of storage. Finally, he

indicated that secondary reservoir benefits, such as flat water recreation, habitat, etc, cannot be meaningfully assessed as part of criteria analysis; such reservoir benefits are generally common to all options and we have insufficient detail at this level to distinguish potential differences among the options.

Scott Campbell began SWG commentary on the factor/criteria lists by taking issue with the assertion that reservoir benefits could not or should not be considered in the criteria analysis. He referred specifically to the recreation criteria, noting that probably any reservoir would have an adverse impact on stream fishing, but that this fishing would be replaced by a different kind of fishing. The same is true of boating. He indicated that we should be looking at the benefits as well as the impacts or the downside of these options.

In response to Scott's concern, John P. stated that benefits are perhaps the primary motivation for this study. We are simply making a distinction in our analysis between impacts or constraints and benefits. Benefits are being considered in more of a parallel fashion, rather than being embedded in the constraints analysis. In the final analysis, in choosing a final short list of possible storage options, benefits will be considered, as will land ownership considerations and perhaps some of the major cost items.

Other specific comments on the criteria list included:

- John P. noted that John Olson of EPA, who could not make this meeting, had sent an email indicating his conviction that the State Recreation River designation does prohibit reservoirs, and all options on Recreation Rivers should be eliminated. John P. reiterated the reasoning behind making the distinction between Natural and Recreation designations at the State level: the State has in fact noted possible reservoir sites on rivers that have a Recreation designation, and has retained discretion to consider reservoirs in the future. This is not the case with rivers designated Natural. Thus we are interpreting the Recreation designation as "evaluation" rather than an "exclusion" criterion. Certainly, when we get into the relative importance part of our analysis, to be discussed later, this designation can be assigned a high importance in one or more of the scenarios we run to see how that effects which sites/options rise to the top of the "performance" list.
- The source and rationale behind the State Conservation Priority criterion was questioned. Jeff Dillon of IDFG indicated he was not familiar with this designation. John P. indicated that the criterion had been suggested by John Olson in an email subsequent to the last SWG meeting, and that the planning team would pursue this question further with IDWR/CDC before applying the criterion in the analysis.
- Jeff Dillon stated that big game winter range should be added to the list of environmental factors. Discussion then addressed the question of whether this should be [1] a separate factor from "State species of concern" or [2] included within that factor. John P. indicated that the question basically centered on whether winter range was equivalent (in terms of level of concern) to the habitat for specifically designated species of concern such as Redband Trout. Jeff felt that since all of the factors/criteria on the list now are for evaluation purposes (i.e. would not in themselves eliminate an option), there is no reason why we needed to separate the two. It was decided to simply include big game winter range within Species of Concern.
- Scott stated that hydropower should be recognized as a reservoir benefit, applicable to most, if not all, of the options being considered. This is true despite the fact that the planning team asserts these benefits cannot be analyzed in detail. Right now, the slide entry noting benefits includes recreation and habitat, but not hydropower. John P. said that hydropower would definitely be added to the list of benefits.

At a broader level, Scott voiced two concerns:

[1] This list of criteria is going to be used to eliminate possible sites because of incompatibility, and this action is not valid in at least some cases. A good example is big game winter range; there is nothing in state law that would prohibit a reservoir due to effects on this type of habitat. Certainly, winter range is not even close to being as constraining as federal T & E status; and,
[2] This whole analysis is skewed toward looking at factors that militate against a given site, rather than those that militate in favor of a site or sites. Yes, some segment of the population is concerned about the adverse impacts, the factors on this list. However, there is also a segment of the population that would focus on the relative benefits among sites and care far less about the factors on this list. To focus only on the downside is prejudicing the whole process. These studies and reports have a life of their own and to emphasize impacts/problems and ignore benefits is wrong.

John P. responded to the first concern by stressing that this second round of criteria screening is coming from the perspective of looking for the best performing sites, the sites with the least impact, rather than trying to eliminate sites. By definition, none of the criteria on the list being discussed today would warrant elimination or exclusion of a site. In addition, it is true that some of the factors/criteria on the list may be more important or more influential than others in decision-making, and opinions on which among them are more or less important can vary. That is why we are going through a relative importance exercise. We intend to find out how differing points of view on what is important effects which sites rise to the top of the list.

On the second point, John P. reiterated the view that this whole study is predicated on the potential benefits of new storage (i.e. meeting consumptive use demand, providing flood control, etc.). However, at this study's level of detail, "secondary" benefits such as recreation, habitat, or hydropower were pretty much generally applicable to all sites, and meaningful distinctions among sites could not be discerned. Given this perspective, the constraints/impacts analysis is the primary tool available to us in getting from a list of roughly 60 sites down to a short list for further, more detailed consideration.

Scott stressed that he wanted to be on record as believing that benefits can and should be included in this analysis. He believes that not to do so biases the whole process.

John wrapped up this part of the discussion by recognizing Scott's concerns, and saying [1] that benefits would be looked at (to the extent they could be defined) side-by-side with impacts during the short-listing process, and [2] the whole study design is not so rigid that it will take such components as the impact comparison as the final word, without scrutiny and professional judgment. Overall, when we get to the point of deciding on our final short list, there is room for keeping sites in consideration due to unique benefits or other factors, despite perhaps "not-so-stellar" performance from an impact perspective. Also, benefits may also turn out to be "tie-breakers", along with land ownership or major cost perspectives.

Comparative Analysis—Analytical Process

John then moved to discussion of the technical process to be used in comparing sites/options against the socioeconomic and environmental factors and criteria. He reiterated that the goal is to search for the most suitable sites in both the Boise and Payette basins.

The process will follow two fundamental steps:

1. Objectively score potential site impacts, according to all criteria, and then
2. Scale objective score by subjective "relative importance" feedback.

John indicated that the second of these would actually be discussed first, while the factor and criteria list was fresh in everyone's mind. He began by going over the basic working assumptions underlying the relative importance analysis:

- Not all criteria are equal in importance
- All factors may not be equal in importance
- All categories may not be equal in importance
- Points of view vary among stakeholders
- This is only a tool
- Testing and critical review are required
- In the end, there is no substitute for professional judgment

John stated that the team intends to run several scenarios reflecting the differing points of view expressed in SWG input on relative importance. He then asked that the SWG take 10 minutes to provide their input on the worksheet provided (copy included herewith as Attachment 2). He noted that the team was asking for relative importance ratings at the criteria, factor and category levels to ensure flexibility in conducting the scenario analysis; most likely the rating that would be most useful would be the criteria and category levels.

Jeff Dillon asked what the definition was of residential land use, noting that there was quite a difference between a couple trailer homes and a full subdivision. John responded that residential generally means one unit per 5 or 10 acres and denser. However, he was not sure where the database we are using draws that line. He indicated that we should just look at the question generally and recognize that impact to residential land use means that homes and residents would be displaced.

Scott Campbell asked whether factors or criteria could be given a zero rating, rather than 1, 2, or 3 (i.e. having no importance at all in screening sites). John responded yes.

(The meeting then entered a 10 minute combination break and worksheet completion session period)

After the break, the relative importance worksheets were collected and John began the explanation of how the objective impact scores would be assigned to each site and how the relative importance input would be used.

First, units of measure for reporting constraints are selected to make sure that all sites are treated equally (i.e. to avoid situations where larger reservoirs are at a disadvantage just because of their size). The units selected are acres, miles, or occurrences per 10,000 AF of storage, as applicable. Examples would include: acres of residential land use effected, miles of road relocated, or numbers of recreation sites displaced per 10,000 AF.

Using these units of measure, the range of impacts among the sites related to any given criterion would be divided into thirds and impacts scores would be assigned as follows:

- Top third of the range = high relative level of impact = a score of 1
- Middle third of the range = moderate level of impact = a score of 2
- Bottom third of the range = low level of impact = a score of 3
- No impact = a score of 4

To illustrate, John went through the following example: Assume the range of impacts to residential land uses among all the sites was 0 to 300 acres. In this case, sites with 201 to 300 acres of impact would get a score of 1, sites with 101 to 200 would score a 2, sites with 1 to 100 would get a 3, and sites with no impact would get a 4.

Scott asked why the scale of these scores appeared to be reversed from that used in the relative importance values, where low importance got a rating of 1, moderate got a 2, and high importance got a rating of 3. John responded that the system was set up so that the highest score was the best. (e.g. a criterion of high importance—rated a 3 x a no impact result—a score of 4 = a weighted score of 12)

Tom Haislip pointed out that the team is also planning to explore a graphic method of arraying the objective, simple impact scores (i.e. something similar to consumer reports rating symbols). John pointed out an example of this in the slide show and explained that it is often quite useful to use a graphic technique like this before any application of relative importance ratings. Frequently, those options which perform the best can be easily discerned by looking at the symbol "scores". We intend to prepare such a graphic results matrix as a tool for interpreting results at the next meeting.

John finished the process description with a slide showing how the relative importance values would be applied:

- Start with impact score for each criterion (i.e., 1,2,3,4)
- Multiply by relative importance "scaling factor" at any of three levels…
  - Each Criterion: Impact score x importance rating (1=low, 2=moderate, 3=high importance)
  - By Factor: Sum of criteria scores x importance rating (1=low, 2=moderate, 3=high importance)
  - By Category: Sum of factor scores in category x assigned portion of 100 points

John and Sherrill wrapped up the discussion overall by emphasizing again that the impact scoring and relative importance analysis is only one tool we are using. In the end, there is no substitute for professional judgment. Sherrill noted that our ultimate objective is not necessarily to find the sites with the top scores, regardless of other considerations. Instead, we are looking for the best mix of options in each basin, based on fulfillment of needs/benefits, hydrologic performance, and impact/constraint performance.

Agenda Item 4: Wrap Up and Next Step and Final Q&A's

John stated that the team's intention was to get at least some of the analytical results out to the SWG for review ahead of the next meeting.

Scott had a final question regarding the river list for the Payette: How did we determine the capacity of the Indian Creek Basin site? Sherrill responded that in the literature it was represented as an off-stream facility that would receive water from the South Fork of the Boise River, not Indian Creek. This is also true for the Firebird site, which is actually an off-stream transfer from the Black Canyon reach on the Payette River. The meeting adjourned at approximately 11:00 AM

IV. Next Meeting

The next meeting will be on January 17, from 9:30 AM to Noon, at Reclamation's Snake River Area Office.

Attachment 1

Boise/Payette Basin Storage Assessment

Final List of Sites For Second Round of Screening Analysis

Boise River Basin	Type	Capacity Range (AF)
Alexander Flats	Onstream	50,000
Barber Flats	Onstream	50,000
Casey Ranch	Onstream	50,000
South Fork Boise River	Onstream	50,000
Twin Springs	Onstream	50,000
Cat Creek	Off-Stream	50,000
Coyote Butte	Off-Stream	50,000
Dry Creek	Off-Stream	50,000
Dunnigan Creek	Off-Stream	50,000
Firebird	Off-Stream	50,000-150,000
Grimes Creek	Off-Stream	50,000
Indian Creek-Mayfield	Off-Stream	50,000
Krall Mountain	Off-Stream	50,000
Moores Flat	Off-Stream	50,000
Pioneerville	Off-Stream	50,000
Rabbit Creek	Off-Stream	50,000
Anderson Ranch	Existing	29,000
Arrowrock	Existing	6,300
Little Camas	Existing	??
Lucky Peak	Existing	35,000

Payette River Basin	Type	Capacity Range (AF)
Archie Creek	Onstream	50,000
Big Pine Creek	Onstream	50,000
Boiling Springs	Onstream	50,000
Cabarton	Onstream	50,000-300,000
Cottonwood Creek	Onstream	50,000
Deadwood Canyon	Onstream	50,000
Gold Fork	Onstream	50,000
Horseshoe Bend	Onstream	50,000-300,000
Ola	Onstream	50,000
Oxbow Bend	Onstream	50,000
Smith Ferry	Onstream	50,000-300,000
Anderson Creek	Off-Stream	50,000
Big Willow Creek	Off-Stream	50,000-150,000
Birding Island	Off-Stream	50,000-150,000
Bissel Creek	Off-Stream	50,000-150,000
Dry Buck Creek	Off-Stream	50,000-300,000
Gold Fork	Off-Stream	50,000-300,000
High Valley	Off-Stream	50,000-200,000
Little Willow Creek	Off-Stream	50,000-150,000
Lower Squaw Creek	Off-Stream	50,000-200,000
Middle Fork Payette River	Off-Stream	50,000-300,000
Round Valley	Off-Stream	50,000-300,000
Sand Hollow	Off-Stream	50,000-150,000
Scriver Creek	Off-Stream	50,000-300,000
Tripod Creek	Off-Stream	50,000-300,000
Upper Big Willow Creek	Off-Stream	50,000-200,000
Upper Shafer Creek	Off-Stream	50,000-300,000
Upper Squaw Creek	Off-Stream	50,000-200,000
Warm Spring Creek	Off-Stream	50,000
Wash Creek	Off-Stream	50,000
Big Payette Lake	Existing	35,000
Black Canyon	Existing	??
Cascade	Existing	50,000
Deadwood	Existing	25,000
Horsethief	Existing	??
Little Payette Lake	Existing	16,500
Paddock Valley	Existing	25,000
Sage Hen	Existing	??

Payette River Basin	Type	Capacity Range (AF)
Archie Creek	Onstream	50,000
Big Pine Creek	Onstream	50,000
Upper Payette Lake	Existing	??

Attachment 2

Boise/Payette Basin Storage Assessment

Surface Storage Site Evaluation and Comparison Process

Relative Importance Values Worksheet

Instructions: *This work sheet is designed to solicit S\W/G input regarding what is most important in comparing surface storage options. Specifically, your input on the relative importance among categories, factors, and criteria will be used to seek the "best" surface storage options for further evaluation. Although we are striving to use as little numeric "processing" as possible, we need to understand how differing points of view regarding what is considered "best" affects the comparative analysis.*

Relative importance can be assigned at each of the three levels (categories, factors, and criteria). Until we get your feedback, we cannot know which level yields the most meaningful or informative results. Please consider each level separately, and insert your values in the work sheet according the instructions for each level.

1. Category Level: *Distribute 100 points between the two categories (e.g. Socioeconomic: 55; Environmental: 45).*

2. Factor Level: *Rate each factor against all others, regardless of category. Ratings are: 1 = Low Importance 2 = Moderate Importance 3 = High Importance*

3. Criteria Level: *Rate each criterion against all others, regardless of factor or category. Ratings are: 1 = Low Importance 2 = Moderate Importance 3 = High*

			Relative Importance Value Options		
Category	**Factors**	**Criteria**	**Criteria Level**	**Factor Level**	**Category Level**
Socioeconomic Factors	**Existing Land Use**	**Displaces residential uses**			
		Displaces other developed uses			
		Displaces irrigated agriculture			
	Recreation	**Displaces recreation site(s)**			
		Eliminates noted fishing reach			
		Eliminates noted boating reach			
	Infrastructure	**Displaces road/highway**			
		Displaces other (e.g. pipeline, transmission line, comm. facility)			
Environmental Factors	**Federal ESA Species**	**Removes Bull Trout habitat** (migratory, over-wintering or proposed			
		Removes candidate species habitat			
	State Species of Special	**Removes species habitat**			
	Protected Land/River Status: Federal	**Candidate Wild & Scenic or within Wilderness Study Area**			
		Located in one of the following: Designated Roadless Area; Research Natural Area; Area of Critical Env. Concern			
	Protected Land/River Status: State	**Designated Recreation River**			
		Conservation Priority area (per IDFG CDC)			

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Stakeholder Working Group: Meeting 6 Agenda

March 14, 2006

Introductory Note:

The purpose of this final Stakeholder Working Group meeting is to discuss and get comments on the Draft Water Storage Assessment Report in a forum where Group members can hear and understand each other's points of view. The intent is to "short-circuit" the difficulties often arising from conflicting comments/viewpoints by collectively discussing and, to the extent possible, reaching agreement on the approach to and substance of necessary Report revisions. Given this intent, the focus of discussion will be on broad perspectives such as data adequacy, data interpretation, logic and clarity of presentation, credibility of judgments, decisions, and conclusions, etc. We do not want to use Group time to deal with minor edits and will not be going through the document page-by-page (we do request that Group members follow up with written summaries of their detailed comments as an aid in perfecting the final version of the Report). Given this intent, the following agenda is intended to [1] serve as a general guide for an orderly section-by-section discussion, and [2] help ensure that we manage our time in order to get fully through the report. Adjustments can certainly be made.

9:30 am **Introduction**

- Meeting objectives and review of agenda
- Meeting 5 summary—comments and approval

9:40 am **Overall Impressions**

- Round-table introductory commentary
- Suggested adjustments to discussion format or time allotments

10:00 am **Chapter 1 — Introduction**

- Purpose
- Stakeholder Working Group description
- Assessment Area

10:20 am **Chapter 2 — Preliminary Water Supply Target Volumes**

- Basis and Limits
- Tier 1: Consumptive Uses
- Tier 2: Flood Control
- Tier 3: Discretionary
- Summary

10:40 am **Chapter 3 — Water Storage Opportunities I.D. & Screening**

- Summary of Available Information
- Initial Screening Process (criteria, process, conclusions)
- Secondary Screening Process (benefits discussion, comparative analysis [hydrologic, socioeconomic & environmental constraints, needs response/benefit attainment], and areas of opportunity)

11:20 am **Chapter 4 — Evaluation of Potential "Areas of Opportunity"**

- Comparison of Technical Attributes
- Cost Considerations as a gauge

11:35 am **Chapter 5 — Discussion**

11:45 am **Executive Summary**

11:55 am **Next Steps**

- Action items from this meeting
- Schedule for final report production

Noon **Adjourn**

RECLAMATION

Managing Water in the West

Boise/Payette Basin Storage Assessment

Meeting Summary: Stakeholder Working Group Meeting 6

March 14, 2006

I. Introduction

This document is a summary of the sixth meeting of the Stakeholder Working Group for the Boise/Payette Basin Storage Assessment. The meeting was held March 14, 2006, from 9:30 a.m. to 12:00 p.m. at Reclamation's Snake River Area Offices in Boise, Idaho. The meeting agenda was sent to all stakeholders prior to the meeting; this summary is organized according to the headings/topics of that agenda.

II. Meeting Attendees

Reclamation Planning Team:

John Tiedeman Reclamation--PN Regional Office, Activity Manager	Sherrill Doran CH2M HILL
John Petrovsky John Petrovsky Associates	Jenny Kindig CH2M HILL
Lesa Stark Reclamation--Snake River Area Office Planning Program Manager	Paula Gustafson CH2M HILL

Stakeholder Representatives:

Norm Semanko Idaho Water Users Association	Kevin Lewis Idaho Rivers United
Ron Shurtleff Water District 65	Marc Shigeta Payette County
Jeff Dillon Idaho Department of Fish and Game	Mary McGown Idaho Department of Water Resources
John Olson EPA	Scott Campbell Pioneer ID
Bryce Farris Meridian Irrigation District	Lane Jolliffe Congressman's Otters office
Mike Holladay Holladay Engineers	

III Meeting Summary

Agenda Item 1: Introduction

Meeting objectives and review of agenda: The purpose of this final Stakeholder Working Group meeting was to discuss and get comments on the Draft Water Storage Assessment Report in a forum where Group members could hear and understand each other's points of view. The intent was to "short-circuit" the difficulties often arising from conflicting comments/viewpoints by collectively discussing and, to the extent possible, reaching agreement on the approach to and substance of necessary Report revisions. Given this intent, the focus of discussion was on broad perspectives such as data adequacy, data interpretation, logic and clarity of presentation, credibility of judgments, decisions, and conclusions, etc. The report was discussed at the Chapter/Section level, rather than page-by-page; SWG members were requested to provide editorial or minor comments separately in writing.

Meeting 5 summary—comments and approval: There were no comments or corrections to the Meeting 5 summary.

Agenda Item 2: Overall Impressions

The first part of the discussion was a round-table commentary by each SWG member in turn summarizing their general impressions regarding the draft report (e.g. response to study objectives, accuracy, clarity, etc.). Points and observations made by SWG members included:

- The report (and the Assessment process itself) is beneficial in providing an organized review of the many candidate reservoir sites identified over time in these basins and comparing them against one-another. Of particular value has been the hydrologic analysis, to see if and how much water is actually available for additional storage. However, regarding the conclusions on Areas of Opportunity (including source streams and reservoir sites), the report needs to be clear that environmental constraints data and analyses were very general and broad-scale. The report should not lead readers to conclude that these Areas of Opportunity have no significant environmental or socioeconomic constraints/impacts; while they may appear to be the least constrained in many cases, more detailed analysis may reveal that some or all do have significant impacts. The report should be clear on both [1] recognized constraints in each Area of Opportunity, and [2] the fact that more detailed, site-specific analysis is necessary before firm conclusions are drawn.
- Similarly, the report reflects a general analysis of potential growth in demand for water and benefits of additional storage (e.g. flood control). The fact that there are uncertainties and potentially wide margins of error in these estimates (e.g. population projections) should be clearly communicated in the final report.
- The report seems to confuse the Water Resource Board with the Department of Water Resources in some cases. In preparing the final report, the proper distinction between these two entities should be made, especially when attributing data or recommendations.
- We need to recognize that, while this study has been conducted with the participation of the SWG, this process is not the same as public involvement. As/if this process moves into more detailed levels of study, the broader public will no doubt weigh-in on what is feasible, justified, desirable, etc.

- The report needs to do a better job of communicating the urgency of developing additional water supplies. There are serious conflicts among existing water uses/users, water rights holders, environmental interests, etc., all in a context of increasing demand for water. Environmental litigation threatens to eliminate reservoir space. Efforts are on-going to restrict further use of groundwater. The need to develop additional supplies is what drives this study; many clearly see a need for more storage given ongoing conflicts and concerns, the Nez Perce agreement, Endangered Species Act litigation, and other dynamics. This Assessment is a way to deal with an impending crisis before it becomes one, and we are missing a clear focus to educate.
- The report should also be clear and unequivocal regarding the need for additional flood protection and role that additional storage space can play in preventing flood damage. This need is specific to the Boise basin at this point in time, and one SWG member suggested that this study may not have included a sufficient range of possible storage options in the Boise to meet this need (the commenter indicated he would provide more perspective in this regard as part of his written comments).
- Some SWG members indicated that they had not had the chance to review the draft report in detail and requested additional time for careful review and preparation of written comments (see Next Steps, below).
- Overall, the study/report does what it needed to do: It takes a list of over 200 possible storage sites, identified by different entities at different times and for different reasons over the past several decades, and conducts a defensible screening process to identify those that appear to be the most promising options for further study. The decision to identify Areas of Opportunity, rather than individual reservoir sites alone, is a good way of bringing this study to a valid conclusion, especially considering the very general level at which the comparative analysis has been conducted. This work will be a good starting point for more detailed studies/analyses; and it has been recognized all along that flexibility remains to add or subtract specific sites from consideration based on the findings of more detailed analysis.

Agenda Item 3: Chapter 1

Comments and questions on Chapter 1 included:

- In Section 1.1.1, why do we not refer to Congressman Otter by name as the impetus for this study and provide detail on the meetings held under the Congressman's auspices that led to this study? In answer to these questions, John Tiedeman responded that [1] it was felt that all the legislators would support this effort and it was not necessary to identify one in particular, and [2] the team did not have records on those earlier meetings. SWG members who participated in the earlier meetings indicated that notes were taken and they would try to forward a summary to Reclamation. It was decided that the report [1] would mention Congressman Otter by name, and [2] assuming the information could be located, would provide additional detail on the substance and conclusions of the prior process.
- Related to the above, it was also noted that the need for additional storage has been discussed for a long time (reference the number of studies on the subject), and it was not just Congressman Otter's initiative that suggested a priority on exploring new storage opportunities.
- On Page 4, after Pioneer, insert Settlers.

- In Section 1.3.1.3, the statement is made that agricultural is a $200 million industry in the study area. This figure must mean some small sub-set of the agriculture industry. For example, the dairy industry alone is $1.4 billion. We need to check where that $200 million figure comes from, what it describes, and make sure the data we are using is accurate.
- Throughout the report, in discussing irrigation, a clear distinction needs to be made between agricultural irrigation and watering of ornamental landscapes in urbanizing areas.
- Chapter 1 needs to clearly state that, based on current projections and water use patterns, water demand is rising and there is (or will be) a need for new storage. SWG members making this point offered to provide some suggested language in their written responses.
- As a counterpoint to the above assertion, one SWG member noted that a need for additional storage was not absolutely proven, given the range of potential error in demand/use projections, specific responses in areas such as conservation and re-use, etc. Care must be take to state the case for new storage dispassionately…this is not a sales document.
- On Page 14, second paragraph, in reference to "minimum instream flows", the question was asked whether or not these flows have either legal standing or scientific weight. The point was made that we need to be very clear on the origin of these minimum flow numbers. Most are not legal minimums (i.e. not adopted by the Water Resource Board) and there is doubt about at least some that they are really effective in protecting biological resources. Sherrill indicated that, yes, most do not have the force of law, however, the language used in the report was derived from IDWR sources. SWG members concerned with this point offered to provide some suggested language to clarify the minimum instream flow reference.

Agenda Item 4: Chapter 2

Comments and questions on Chapter 2 included:

- Page 20: Clarify what the 100-year regulated flood event on the Boise River means in terms of using storage space in the three existing reservoirs.
- Page 21, last full paragraph: Scott Campbell will provide suggested revisions to the narrative about the role that additional storage in the Boise and Payette systems could play in meeting salmon flow targets, and how this would relate to requirements in other parts of the Snake River system.
- Several clarifications were requested on the data, assumptions and narrative dealing with estimates of potential growth in demand for water, including: projections of growth in DCM&I demand, projections of agricultural water demand, distinctions between agriculture and ornamental landscapes when discussing "irrigation", and the potential role of conservation. Sherrill agreed to review and clarify the discussions in the report based on SWG questions. SWG members also agreed to provide suggested revisions to help clarify the discussions, recognize limitations in available data, and avoid misunderstandings among their constituents.
- Related to the above, it was reiterated that this Assessment was not intended to provide new water demand analysis or detailed study of such dimensions as conservation. The information in the report regarding projected increases in water demand is derived exclusively from existing IDWR and other sources. Information on the potential role of conservation is based on real-world examples from other areas (since there is no conservation program in this region). The fact that there are many variables and uncertainties influencing future growth in demand is the main reason the report uses such wide ranges to portray potential future needs.

Agenda Item 5 and 6: Chapters 3 and 4

Comments and questions on Chapters 3 and 4 included:

- In Section 3.1.1.2, the language used to describe potential dredging of Cascade Reservoir to gain additional storage volume is un-necessarily negative. The potential for impacts applies to only one approach to dredging, not all. We should just state that dredging has been discussed as an option and indicate that there are varying approaches regarding where dredging might occur.
- On the subject of reallocating contract water, we need to be very careful. What is in the report now can be inferred to mean that reallocation might impact existing water right/water contract holders (i.e. by somehow allowing their rights to be taken/reallocated). This would be extremely controversial to say the least. Lesa Stark stated that the intent is not to impact existing water rights/contracts in a negative or restrictive way; instead, the idea discussed in the draft report is to provide water right/contract holders more flexibility in where and how the water is used. It was agreed that the report would be revised to make the intent more clear. SWG members knowledgeable on the legal aspects of water rights and contracts will also provide suggested new language on this subject in their written comments. The bottom line on this subject is that we want to communicate the fact that additional flexibility in how and where water in existing storage facilities is used may be one of many tools used over time to help meet growing demands, prevent shortages, provide flood storage, etc. Beyond this straightforward observation, we need to make it clear that our job in this Assessment is to focus on opportunities for <u>new</u> storage, and not on how existing storage is allocated or administered.
- In Section 3.2, Initial Screening Process, it is unclear exactly how the four "exclusionary" criteria were applied in getting from the starting list of over 200 sites to the ~60 that were carried forward into the secondary screening analysis (i.e. did a candidate site need to be rated "good/acceptable" on all four criteria to be carried forward?). The Assessment should provide more clarity on this process.
- For the record, there is still discomfort on the part of some SWG members about how particular initial exclusionary criteria have been interpreted, in particular, bull trout and state-designated Recreation rivers. Some SWG members believe that any involvement with bull trout habitat (in any aspect or life stage) will ultimately weigh heavily against potential sites. Also, our process assumes some flexibility for reservoir development on state-designated Recreation rivers; while the State language describing Recreation rivers can be interpreted as prohibiting reservoir development. Discussion of these points essentially reiterated earlier deliberations by the SWG. The above perspectives may carry considerable weight in any final decisions on reservoir sites. However, there are alternative points of view that may be equally valid: [1] The ESA allows for mitigation to reduce or eliminate impacts—an approach which could be effective for the bull trout habitat components assigned to a "non-exclusionary" status in our analysis; and [2] the State Water Plan does recognize potential for reservoir development on one or more Recreation rivers—tending to caveat the language describing allowed uses on Recreation rivers. Given these uncertainties, the subject criteria should not be treated as completely exclusionary at our broad level of analysis. To do so would be stretching our data and our understanding of on-the-ground conditions beyond their credible limits.
- The footnote (#13) at the bottom of page 35 is inaccurate; no such discussion exists in Section 3.3.3.
- The Areas of Opportunity map should clearly show which candidate reservoir sites are associated with each source stream reach.

- The addition of cost considerations in Chapter 4 without equal treatment of potential economic benefits is viewed by some SWG members as presenting a skewed perspective. Including only costs casts a negative light on potential new storage projects; yes, the cost may be high, but there are counterbalancing benefits. The suggestion was made to either treat costs and benefits equally, or eliminate the detail on cost numbers (i.e. describe only the generic cost components, such as dam, conveyances, etc. without numbers attached).
- As a counterpoint to the above concern about the cost information, other SWG members indicated that it is valuable to see what the relative costs might be for projects in the Areas of Opportunity. Associated with this perspective, it was noted that the cost of environmental mitigation (which was only estimates as a percent of total construction cost estimates) could be quite understated. John Tiedeman indicated that we could not really get any more specific that the general percentage allocation for environmental compliance included in the cost data.
- Lesa Stark agreed to re-visit the question of cost information based on SWG comments at this meeting and perhaps reflected in subsequent written comments.

Agenda Item 7: Chapter 5

The primary observation made about this Chapter was that it appears too restricted to Reclamation's perspective. It assumes that Reclamation would be involved in the next phases of study and in any eventual development of new storage. While Reclamation may very well be involved, even central, in the next steps, the report should also recognize that the State, other public entities, or even private entities could independently initiate the next levels of study and could pursue development of additional storage without Reclamation's participation. SWG members agreed to provide suggested narrative along these lines.

Agenda Item 8: Executive Summary

The only comment made on the Executive Summary was that it refers to flow augmentation as an ESA requirement. This is inaccurate. The biological opinion allows/sets targets for augmentation, but these are not a legal, mandatory requirement. This clarification to the Summary should be traced through the full report to make sure that this inaccuracy does not appear elsewhere.

Agenda Item 9: Next Steps

- As noted above, additional time was requested by some SWG member for review of the report and preparation written comments. Wednesday. April 12, 2006 was agreed to be a preliminary new target date (subsequently confirmed by John Tiedeman of Reclamation via email on March 17).
- SWG members asked about access to electronic versions of the draft report for use in preparing comments and suggesting specific revisions. It was noted that electronic versions of the report and all appendices were available on Reclamation's website.
- In light of the fact that some substantive revisions may be made to the report based on discussion at this meeting and subsequent written comments from SWG members, the question of a second SWG review was raised. Lesa Stark indicated that Reclamation would make that determination and inform the SWG once all written commentary was received.
- SWG members asked about the next steps, beyond this Assessment, for studying the potential or pursuing realization of additional storage. Lesa Stark indicated that the step would be an

Appraisal-level study, which would require a 50% non-federal cost-share partner if performed by Reclamation; and it is such a partner who would need to take the initiative.

IV. Next Meeting

Right now we have no other meetings scheduled. On behalf of the Reclamation team, John Petrovsky thanked the SWG for their contribution and perseverance, and adjourned the meeting.

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Stakeholder Working Group: Meeting 5 Agenda

January 17, 2006

9:30 am — **Introduction**

- Meeting objectives and review of agenda
- Meeting 4 summary—comments and approval

9:40 am — **Surface Storage Options—Results of 2nd Round Screening Process**

- Introduction—Review of Process
- Results of MODSIM analysis—Influence on short-listing of storage options
  - → Planning team presentation
  - → Discussion/Q&A
- Results of Socioeconomic and Environmental Constraints Analysis
  - → Planning team presentation
    - – Adjustments to criteria list
    - – Characterization of Relative Importance input
    - – Preliminary short lists (both basins)
  - → Discussion/Q&A
- Influence of Geographic and Land Ownership Considerations
  - → Planning team presentation
    - – Opportunities in each basin—purposes and benefits
    - – Land ownership review
    - – Modified short lists (both basins)
  - → Discussion/Q&A
- Next steps—toward a final shortlist, draft water supply feasibility report

11:45 am — **Wrap up, Next Steps, & Questions/Answers**

- Review of action items (and responsibilities) emerging from this meeting
- Date, time and content of next meeting

Noon — **Adjourn**

RECLAMATION
Managing Water in the West

Boise/Payette Basin Storage Assessment

Meeting Summary: Stakeholder Working Group Meeting 5

January 17, 2006

I. Introduction

This document is a summary of the fifth meeting of the Stakeholder Working Group for the Boise/Payette Basin Storage Assessment. The meeting was held January 17, 2006, from 9:30 a.m to 11:00 a.m. at Reclamation's Snake River Area Offices in Boise, Idaho. The meeting agenda was sent to all stakeholders prior to the meeting; this summary is organized according to the headings/topics of that agenda. Also, a hard copy of the PowerPoint presentation referenced herein was distributed to all meeting attendees; for this reason, the full content of the slideshow is not reproduced here.

II. Meeting Attendees

Reclamation Planning Team:

John Tiedeman Reclamation--PN Regional Office, Activity Manager	Mark Bransom CH2M HILL
John Petrovsky John Petrovsky Associates	Sherrill Doran CH2M HILL
Lesa Stark Reclamation--Snake River Area Office Planning Program Manager	Tom Haislip CH2M HILL
Jenni York CH2M HILL	Jenny Kindig CH2M HILL

Stakeholder Representatives:

Dan Steenson Ringert Clark Chartered	Kevin Lewis Idaho Rivers United
Ron Shurtleff Water District 65	Tim Page Boise Project Board of Control
Jeff Dillon Idaho Department of Fish and Game	Mary McGown Idaho Department of Water Resources
John Olson EPA	Scott Campbell Pioneer ID
Jonathan Parker Idaho Water Users Association	Lane Jolliffe Congressman's Otters office
Kathy Peter U.S. Geologic Survey	Jerrold Gregg USBR
Mike Holladay Holladay Engineers	

III Meeting Summary

Agenda Item 1: Introduction

Meeting objectives and review of agenda: John Petrovsky opened the meeting by reviewing the agenda and objectives for the morning and making sure everyone had all the hand-out materials, including the agenda, the powerpoint presentation, a table showing the average relative importance scores derived from stakeholder input at the last meeting, a map of the short-list storage options, and a draft outline of the final report. He noted that the primary purpose of the meeting was to review the results of the second round screening process, focusing on a proposed final shortlist of storage options to be identified in the Assessment report as candidates for further study. A secondary objective was to distribute for SWG comment a draft outline of the Assessment report. Thus, the group is reaching the culmination of its efforts. Upon receipt of SWG input and comment at this meeting, the planning team will prepare a draft of the Assessment report for SWG review. This report will be the subject of the final SWG meeting.

Meeting 4 summary—comments and approval: There were no comments or corrections to the Meeting 4 summary.

Agenda Item 2: Surface Storage Options—Results of 2nd Round Screening Process

Introduction—Review of Process: John P. began the presentation of study results by summarizing the three parts of the screening analysis used to get us from the 60+ sites/options on the list of candidates at the last SWG meeting to the proposed final shortlist presented today:

- Hydrologic analysis, using Reclamation's MODSIM model: Estimating [1] the total amount of water that is reliably available for new storage in each basin considering existing water rights and contracts, minimum flow requirements, and other constraints in the system, and [2] the proportion of that available water that could be stored at each candidate site given its location in the watershed.
- Socioeconomic and Environmental Constraints Analysis: Using the criteria defined at prior meetings, and considering the relative importance input provided by the SWG at the last meeting, determining the level of socioeconomic and/or environmental constraints apparent at each candidate site. The intent of this analysis is to identify those sites likely to have the fewest constraints in terms of socioeconomic or environmental impacts.
- Geographic and Land Ownership Considerations: Reviewing the results of the first two steps to make sure that the final shortlist of candidates identified in this Assessment offers options in each basin, with the capability of meeting each of the demand/water use types identified (e.g. consumptive uses, flood control storage, flow augmentation, etc.). This is particularly important relative to the Boise basin, where water availability is lower and constraint conditions are generally higher than the Payette. Despite these conditions, some needs/benefits (such as flood control) cannot be met in the Payette. Thus, the most promising options in the Boise need to be identified even though they might not perform as well in the constraints screening process.

  This final step in the screening process also looks at maintaining a range of ownership conditions (i.e. not biasing the shortlist in favor of purely public or purely private lands).

The result of these three analyses is the proposed shortlist of options reflected on the map distributed earlier.
John then turned the meeting over to Sherrill Doran who led the presentation and discussion of study results.

Results of MODSIM Analysis: Sherrill first summarized important aspects of the MODSIM model and key assumptions made in arriving at the results being presented at this meeting. Primary points included:

- The model relies on the hydrologic record from 1927 to 2000 to predict the probabilities for reservoir filling and water deliveries under a wide range of conditions, from dry/low-flow years to wet/high-flow years.
- The model relies on the hydrologic record from 1927 to 2000 to predict the probabilities for reservoir filling and water deliveries under a wide range of conditions, from dry/low-flow years to wet/high-flow years.
- All existing reservoirs, water contracts, water rights, regulatory or administrative minimum flows, and other relevant aspects/realities of current operations are included and can be considered as "givens" in analysis. This also includes return flow estimates related to existing facilities.
- When evaluating sites for new reservoirs, recorded data are used for those at or near gauge location; for un-gauged sites, the data are extrapolated.
- Assessment of potential water availability (or reliable yield) for both the overall watershed and individual sites in each basin has been based on the following assumptions:
  - No impacts to existing water rights, contracts or water users.
  - Maintenance of all established minimum flows, whether statutory, policy-based, administrative, or stated goal. Water can be diverted and stored year-round; there is no seasonal limitation.
  - Estimates of water volume available for storage based on 90% reliability on an annual basis (Sherrill illustrated this point by showing a sample probability curve, illustrating the full range of volume yields at probabilities from 0 to 100% for a potential site, and showing where on this curve the team has taken the estimates for each site under study—see powerpoint slide).
  - Return flows to the system from water stored at sites being studied in this assessment are not estimated. Return flows from all existing facilities is included in the analysis. This conservative assumption provides a small reinforcement to the intent of not impacting existing users, rights, contracts or minimum flows.

Sherrill then presented the fundamental findings of the MODSIM work. Based on the above assumptions, the rough maximum volume of water available annually for new storage in the Payette Basin is 300,000 acre feet; in the Boise Basin this maximum is 50,000 acre feet. Reservoir sizes (individually or in combination) in each basin can thus range up to these maximums, dependent on their elevation and location in the watershed.

SWG comments and questions on the MODSIM analysis centered on [1] the accuracy of the model--the extent of possible error in yield estimates and extrapolations, [2] the rationale for choosing a 90% reliability for watershed and reservoir storage yields, and [3] the validity of/necessity for maintaining all minimum flows.

In the first regard, the point was made that these models can, and do, have some degree of error and that this potential error should be characterized and discussed in the Assessment report. Sherrill responded that Reclamation has invested considerable time in developing and calibrating MODSIM, and its results have proved highly reliable. Nonetheless, the point is well taken—the Assessment report will contain additional detail on the model and will address the range of potential error.

Regarding the 90% reliability assumption, the point was made that such a high degree of reliability might not be needed in several scenarios for reservoir development, for example: [1] A reservoir designed to

provide 400,000 acre-feet to supplement the "demand" of 427,000 acre-feet by Reclamation and various other entities for salmon augmentation flows might be considered feasible if it fills 50% of the time; or [2] a reservoir built as a supplemental irrigation supply might only need to fill once every three years because the water is only needed a dry year. Certainly, if the goal is a reliable irrigation supply then a 90% assumption may be perfectly valid.

Discussion of this point yielded the following perspectives:

- The planning team has selected this reliability level in effort to be conservative, to test potential storage sites and volumes under the most demanding scenarios (e.g. DCMI and/or base irrigation supply). The assumption has been cited and used throughout the study process up to this point.
- The assumption has not been used to eliminate any candidate sites. However, our constraints analysis evaluated the maximum pool size at each candidate site based on the 90% reliability assumption.
- Determination of the most appropriate reliability level will ultimately depend on the demand/use scenario ultimately pursued; this consideration is assuredly relevant in follow-on, more detailed studies. In this phase of work, ranges of reliability will be presented to inform future discussions.

On the subject of minimum flows, the point was made that the minimum stream flows approved and adopted by the Water Resource Board and the legislature would be subordinate to future consumptive development. Therefore, the question arises: why were these flows retained as defacto "rules" not to be violated? Lesa Stark responded that, as with the 90% reliability assumption, we have tried to take a very conservative approach and test our options under pretty stringent requirements. This assumption on minimum flows, however, has not been used to eliminate candidate sites.

John P. wrapped up the discussion of MODSIM data and assumptions by noting that the Assessment report should include not only a statement of assumptions and limitations used in this study, but also perspective on how the choices in each key regard (such as reliability or minimum flows) might vary based on different combinations of project goals, needs, or benefits. The most important thing right now is that [1] all key assumptions have helped to validate the potential feasibility of our final short-list of options, and [2] none of the assumptions has inappropriately eliminated options from consideration.

Results of Socioeconomic and Environmental Constraints Analysis: John P. started this discussion with a review of [1] SWG relative importance (RI) input provided at the last meeting, [2] adjustments made to the criteria list during the constraints analysis, and [3] how the RI input was used in arriving at the shortlist of storage opportunities presented at this meeting:

- SWG relative importance ratings: A total of 15 responses were received from SWG members. Of these, 6 assigned higher importance to socioeconomic criteria, 6 assigned higher importance to environmental criteria, and 3 rated the two categories at equal importance. This rather fortuitous result lends credibility to our screening analysis based on the average relative importance scores derived from all of the 15 SWG responses (discussed further below).

- Adjustments to criteria list: In conducting the constraints analysis, further insight was gained on the criteria list we were using, necessitating some adjustments. These included:
  - The Recreation—Noted Boating Reach criterion was found to be redundant with the Protected Status—Designated Recreation River criterion. Analysis showed that the latter was in fact a good indicator of important/noted boating reaches; rivers designated by the State as Recreation Rivers were largely given this designation because of their boating opportunities.
  - The State Species of Special Concern criterion was expanded to include sensitive species at both State and Federal levels (i.e. State Species of Concern and Federal ESA Candidates).
  - No State Conservation Priority designation was found to exist; so this criterion was eliminated.

  None of these changes made a significant difference in the outcome or validity of our results. Corresponding adjustments in application of SWG relative importance weights were straightforward.

- Use of SWG relative importance input: All SWG RI input was used to arrive at a consolidated, averaged set of scores to be used in the constraints analysis (a sheet showing these averages was distributed to all meeting attendees). As noted earlier, since SWG input was so evenly distributed in terms of prioritizing socioeconomic vs. environmental concerns, these averages provide a solid basis in seeking a shortlist of options that considers all points of view. In fact, the constraints analysis results/shortlist shown here today is based on these averages.

  Nonetheless, it is always valuable to explore how shortlist results vary if [1] the outer extremes of criteria importance are used (i.e. high bias in favor of one or the other categories of concern), and [2] no relative importance values are used at all (i.e. just raw constraint scores). Both of these perspectives were explored.

  In the first regard, analyses were conducted using the most two most "biased" sets of RI input, one in which the socioeconomic category was assigned 95 out of 100 RI points and one in which the environmental category received 75 out of 100. The shortlists of both runs showed significant commonality with each other and with the results of using the averages. Sites/options that appeared on only one of the biased views tended to be eliminated in the "average" run due to potentially significant constraints essentially ignored in the biased view.

  Also significant was that analysis based simply on raw scores showed nearly identical results to relative importance analysis using averages.

  Together, these findings reveal that there are several potential reservoir sites that rise to the top of the list (i.e. are much less constrained) regardless of whether one believes socioeconomic concerns should receive highest priority or the reverse. Certainly, this is not always the case in site selection processes of this type, and such results strongly validate the emerging shortlist.

SWG questions on the above centered on exactly how the average RI scores were calculated. Sherrill and Jenny K. provided explanation. It was also agreed that a clear explanation of the method would be included in the Assessment report.

Sherrill then presented a table and map showing the candidate sites comprising the top 10% of constraints analysis scores (see powerpoint show—note that the table shown inadvertently left off two sites: Upper Shafer and Wash Creeks). Key characteristics of this list included: [1] With one exception (i.e. Paddock Valley—a small expansion of an existing reservoir) all sites are off-stream, [2] Most sites are in the

Payette Basin, and of those in the Boise Basin, several would receive water via a basin transfer from the Payette river, not the Boise river, and [3] the sites in the Payette Basin are geographically distributed throughout its major tributaries.

Influence of geographic and land ownership considerations: Sherrill proceeded to describe the additional factors and concerns that must be considered, in combination with the hydrologic and constraints analyses, to arrive at a final shortlist of opportunities for inclusion in the Assessment report.

Primary among these is the fact that some needs in the Boise Basin, particularly additional flood control storage, cannot be met by sites in the Payette. Since it is a goal of this study to present an array of options capable of addressing the full spectrum of needs in both basins, the best (least constrained) sites in the Boise (and related directly to the Boise River or its major tributaries) were identified. Thus, the final list presented today includes the top rated sites in both basins.

Regarding land ownership, we have not either eliminated or selected shortlist sites based on this factor. We have, however, confirmed that a range of conditions is represented in the results, from all public to all private land. Ownership status will certainly play a significant role in more detailed studies of site feasibility.

Agenda Item 3: Proposed Final Shortlist of Storage Opportunities

Sherrill then began discussion of the planning team's proposed final shortlist of storage options. She focused on the map distributed to all participants. In order to clarify what the map shows, she explained the concept of "areas of opportunity". Essentially, this concept has emerged because there is often more than one potentially feasible/beneficial site in a given area, capable of achieving the same or similar objectives, with similar hydrologic conditions and similar constraint scores. Our general level of analysis makes it infeasible and inappropriate to select one of these and call it the best. Illustrative examples include:

- In the southern Boise Basin, Indian Creek-Mayfield and Krall Mountain both achieved relatively high scores in the constraints analysis. Both are off-stream sites that would get their water from the South Fork of the Boise River. Further study (e.g. more detailed analysis of constraints, relative benefits, costs, etc.) will be necessary to determine which of these sites is more desirable and where along the river to site the diversion. Therefore the "area of opportunity" in this case is defined as including [1] the stretch of the South Fork Boise River from which water for these facilities could be diverted, and [2] the two reservoir opportunity sites.
- In the Middle Fork/North Fork Boise River area, there are four potential reservoir sites identified within an area of opportunity. One site is Rabbit Creek, an off-stream site that rated high in the constraints analysis. The other three, Barber Flats, Alexander Flats, and Twin Springs, are on-stream sites that evidence increasingly high constraint levels in the downstream direction. The more constrained, on-stream sites are included in this area of opportunity because they may be important in meeting the need for additional flood control storage. This is particularly true of Twin Springs, which is the only one of the four that could capture flood flows from both the North Fork and the Middle Fork of the Boise.

The above examples cover the two areas of opportunity located entirely within the Boise Basin. Four other areas of opportunity are shown on the map, all of which take advantage of water from the Payette Basin. All four are similar in concept to the Indian Creek-Mayfield/Krall Mountain/South Fork Boise opportunity described above--they are defined as a set of alternative off-stream reservoir sites storing water diverted from a defined stretch of river. One opportunity would divert water from the North Fork

Payette, one would divert water from the South Fork Payette, and two would divert from the main stem Payette below the North/South Fork confluence, either in the Horseshoe Bend area or downstream from Emmett. In each case, there are alternative off-stream reservoir sites for storage of the diverted water. Most of these reservoir sites are within the Payette Basin. However, there are potential candidate sites in the Boise Basin that would require pumping/conveyance over the watershed divide.

In beginning discussion of these results, it was noted that most of the options in each Basin are mutually exclusive in terms of water stored for consumptive use. As discussed earlier, at 90% reliability, roughly 300,000 acre feet of water is available annually in the Payette, and 50,000 acre feet is available in the Boise. Most of the reservoir siting options listed in the areas of opportunity for each basin could store all of this available water. Many factors will need to be considered in future studies to determine which area(s) of opportunity might prove most beneficial and cost-effective.

The map showed areas of opportunity only as the involved river stretch and did not identify which reservoir sites correspond with each "opportunity" stretch. Future versions of the "shortlist" mapping will correct this situation.

Ensuing SWG discussion of the proposed shortlist centered on the following points:

- Continuing concern was expressed that the constraints analysis exerted too strong an influence on the short-listing of potential reservoir sites, particularly in the absence of a correspondingly detailed look at the potential benefits of each site. Some SWG members fear that potential sites offering strong, over-riding benefits could be eliminated because of seemingly high constraint levels. A related concern is that our identification of a shortlist will unduly be construed to mean that sites on the shortlist are the only ones worth considering (when, in fact, if we "lowered the bar" slightly or used different assumptions, additional sites/options would still be "in the running." The planning team responded to this concern with the following observations:
  - The assessment effort has in fact considered potential benefits at a broad level. Throughout the early phases of the study, we focused on defining the types (or tiers) of water demand and the major types of benefits that would motivate development of additional storage. As discussed at previous meetings, these demands/benefits include growth in consumptive demand (DCMI, agriculture), flood control, and what we have termed "discretionary" (including such benefits as increased reliability and flexibility in achieving flow augmentation targets, increased minimum flows, and others). We have also noted that secondary benefits such as hydropower may very well accompany new storage. However, detailed analysis of potential benefits at each candidate site (from a starting list of over 200 sites) has not been possible or appropriate. We understand the major benefits/needs that additional storage can address. However, we do not have a defined "project" with partners pursuing specific objectives. This Assessment is intended only to identify an array of options capable of meeting any or all identified tiers of demand/benefit. A primary tool for getting from 200 candidate sites down to a shortlist of potentially feasible options has been the constraints analysis.
  - We have noted from the beginning of the study that the socioeconomic and environmental constraints analysis is only a tool, not a firm and immutable filter. Other factors, including especially [1] hydrologic analysis, [2] the stated goal of addressing all tiers of need/benefit, and [3] professional judgment of SWG or planning team members, have been used in conjunction with the constraints analysis to arrive at our proposed shortlist. A primary example of this is the retention of the three on-stream options in the Middle/North Fork Boise River area. Another example is the continuing discussion of dredging at Cascade to gain additional storage space.

  - Our intent in producing the Assessment report is to make the analysis process, data, and assumptions/judgments fully transparent so that, as/if more detailed studies are undertaken, new perspectives can be explored based on more defined needs/benefits/objectives or new data. We are confident that the process we have followed is credible in helping to eliminate clearly infeasible options and identify those that appear most attractive based on existing information. Our identification of "areas of opportunity" for further study (rather than specific sites) is an appropriate end point, using the hydrologic, constraint, and needs/benefits data to maximum advantage while not reaching beyond the credible limits of these data.

- SWG members observed that we need to look at combinations of sites or options in seeking the most attractive and feasible approach to developing new storage. For example, [1] if more flows for flow augmentation were released from a new facility in the Payette, that would free up additional space in existing Boise facilities so that a new on-stream flood control facility in the Boise might not be needed, or [2] what about the possibility of using the Twin Springs site on the Boise river as a low dam site for diverting the excess flows into an off stream facility?

  In discussing this point, it was agreed that myriad combinations exist based on differing combinations of project objectives. Only when specific project proponents/partners come forward, with specific objectives, can the most appropriate and feasible options or combinations of options be further defined. This reinforces the need for flexibility in interpreting the results of this Assessment and transparency in how the Assessment's conclusions were developed. The Assessment report will serve as a starting point for further study.

- Some of potential reservoir sites on the proposed shortlist (e.g. Dry Creek) were viewed as located too far down in the watershed to do much good, except perhaps for flow augmentation. The planning team agreed that this might be the case, that some the sites may only make sense in an exchange scenario. Nevertheless, we believe it to be important to identify the least constrained sites as part of Assessment results.

- SWG members asked why we weren't seeing more attention to the retrofitting of existing reservoirs. The planning team responded that the majority of such options were both [1] limited in potential storage volume gained, and [2] highly constrained by such factors as roads, recreation sites, and other development. The exception is Paddock Valley, which shows few constraints but is still small in volume yield.

- Some SWG members were concerned about the off-stream scenarios in terms of "dewatering" impacts in the source river. The team responded that this aspect was not analyzed beyond the provision in MODSIM runs that existing minimum flows not be violated.

Agenda Item 4: Assessment Report Outline

As discussion of the proposed shortlist reached its conclusion, Sherrill focused the group's attention on a draft outline of the Assessment report. She noted that the next steps in the process would be to make adjustments/refinements in the shortlist based on input from this meeting and then prepare a full draft of the Assessment report. The draft report will be the subject of the next and final SWG meeting. Sherrill asked the group for any initial observations/comments on the outline and requested that SWG members take some time in the next few days to look at both the shortlist results presented at this meeting and the draft outline in greater detail. She asked that comments in either or both regards be submitted to Reclamation within one week.

One initial observation on the outline suggested that it appeared to portray the process as linear, starting with hydrologic analysis, moving through constraints screening, to adjustments based on factors like need

fulfillment. This presentation would seem to contradict the assertion that the three tracks of [1] needs/benefits, [2] hydrology/available water, and [3] constraints analysis were used interactively in defining study conclusions. It was agreed that the report would be structured to communicate that a parallel and interactive process was used vs. a linear process. This presentation would more accurately portray the flow of work and the interaction among factors in arriving at conclusions/findings.

Agenda Item 5: Next Steps

As noted above, Sherrill requested that any SWG comments on the "Areas of Opportunity" presented at this meeting or on the draft report outline be submitted to John Tiedeman within one week.

The goal will be to get the draft Assessment Report out for SWG review by February 27. We will then have the final SWG meeting on March 14 to receive comments and suggestions on the draft report.

IV. Next Meeting

The March 14 meeting will be at the same time (9:30 to Noon) and the same location as today's meeting.