Eastern Snake Plain Aquifer (ESPA)
Comprehensive Aquifer Management Plan

Advisory Committee

MEETING NOTES

Date: Thursday, November 15, 2007
Time: 10:00 am - 5:00 pm
Location: Burley, Best Western Inn

MEETING AGENDA

1. Welcome, Introductions, Agenda Review and Meeting Note Finalization
2. Presentation and Discussion: Quantitative Goal Analysis
    a. Background and Assumptions
    b. ESPA Hydrology and Water Availability
    c. Analysis effect on River Reaches
    d. Analysis effect on Aquifer Levels
3. Discussion: Quantitative Analysis Next Steps
4. Discussion: Board and Legislative Report Outline
5. Public Comment

All presentations made during the meeting can be found on the project website: www.espaplan.idaho.gov

WELCOME, AGENDA REVIEW, MEETING NOTE FINALIZATION and MANAGEMENT ALTERNATIVE MATRIX UPDATE

Diane Tate (CDR) reviewed the October 2007 Committee meeting notes and following minor revisions finalized the meeting notes. Tate noted that the Management Alternative Matrix will be updated and discussed at the Committee meetings in January. The largest area for further development is identifying accurate cost and potential environmental impacts. Individuals with technical expertise and understanding of the management alternatives will be contacted to assist in further definition of the alternatives.

Jonathan Bartsch (CDR) outlined the agenda, reviewed the charge from the Goal Sub-Committee, and described the quantitative analysis process. He noted that the goal for the meeting was to introduce the Committee to the analysis and begin discussions on how to move forward with setting a quantitative goal.

The quantitative goal analysis was presented to the Committee in four parts including:

1) Background and assumptions – Brian Patton, IDWR

2) ESPA hydrology and water availability – Steve Burrell, IDWR
3) Effect of water budget change on river reaches – Alan Wylie IDWR, and
4) Effect of water budget change on ground water levels – Bryce Contor IWWRI

1. Quantitative Analysis Background and Assumptions

Brian Patton (IDWR) introduced the Committee to the quantitative goal analysis process and outlined the assumptions used. Additionally, Brian defined the concepts of soft and hard conversions.

Comments and Questions

Q: Would the area near Jensen's Grove be considered a candidate for a soft conversion project?
A: No, because there is no pumping in that area. The kind of conversion projects we are discussing would replace groundwater pumping with surface water.

Q: What would the cost per acre or acre-foot be for a hard or soft conversion project?
Q: Have there been any analyses of the net benefit gained through conversions?
Q: If Walcott Dam was not raised, can water be diverted into the A&B area, if available, that would make hard conversion possible, and would it be a benefit to the aquifer?
A: These questions were deferred until the small group discussion.

Comment: How does this analysis fit in with our consideration of a quantitative goal? It sounds like that we've jumped right to what to do. Response: The analysis requested by the Sub-Committee required the Department to make assumptions regarding the management tools and geographic locations, the goal was to clarify what it would take to implement such a water budget change and what the responses would be if a 900 kaf change were implemented. This is only one way, not necessarily the preferred approach, to tackle this task assigned by the Sub-Committee.

Comment: On the CREP measures, I don't think you need to waste our time saying you'll get to 100,000 acres, we'll never get to that. Response: Other actions will result in same impact as CREP (reduced withdrawals from the aquifer) and we may need to use different mechanisms to reach an impact of 100,000 acres (high-lift acquisition, buy-outs, dry-year leasing).

Comment: CREP may not achieve its near term goals, however it has been extended in the last version of the Farm Bill, so we should extend our thinking. It is too much federal money to forget about – we don't have that kind of money at the state level.

Comment: I think there are opportunities to add additional incentives to CREP to encourage that program, and we need to look at how we make that program productive. For instance, we could provide additional state dollars as incentives could encourage more enrollment.

Comment: On CREP, IGWA has been working with Senator Crapo's office, and have been successful on the Senate side in removing obstacles to CREP reaching 100,000 acres. Now the

bill is in Conference Committee; we will see what happens when it is combined with the House version.

Q: What about using conservation as a tool to reduce consumptive use, have you considered this?
A: Conservation is a tool that could be very useful. For instance, we could reduce groundwater use by providing incentives to grow less water consumptive crops. IWRRI is currently conducting research, and it will most likely form a part of the "remaining measures" component of the assumptions outlined. There are other studies and measures, such as weather modification, that we're waiting to incorporate.

Q: Did you use these same assumptions to analyze 600,000 acre-feet change?
A: No, but it would be possible to reduce some of these assumptions and figure out what 600,000 acre-feet would look like, in terms of benefit. For this presentation we have presented a 900,000 acre-feet change.

Q: Dry-year leasing? What is it?
A: (Brian Patton) Typically a dry-year lease involves an agreement with an entity and a person who holds a water right; the holder of the right can continue use the water until a certain set of conditions, like a drought, occurs. It has been implemented between cities and farmers – farmers use the water until there is a drought, and then the city uses the water and compensates the farmer. The water sources used in other states include groundwater, surface natural flow, and surface storage.

Comment: IGWA tried dry-year leasing two years ago. We asked for bids, and ended up paying about $70 an acre-foot. We leased around 2,500 acre-feet, and the credit we received was 250 acre-foot in the model, because a lot of the lands that were submitted were very far away from the river. We haven't done more because the amount of credit was so low.

2. ESPA Hydrology and Water Availability

Steve Burrel (IDWR) presented on the ESPA hydrology and water availability for the budget change, outlining how much water might be available to implement the management alternatives outlined. The analysis examined spill past Milner over the past 27 years, and the used the regulation date as the stopping point in each year for the purposes of calculating available water. The analysis assumed that no water would be available from the regulation date through October 1.

The total capacity of the identified canals is 3200 cfs, however as the irrigation season begins, Steve noted, the available capacity in the canals decreases, and less water can be diverted for recharge. This analysis assumes that the facilities have been constructed to get all of this water into the ground, which is a large and expensive assumption.

The water sources for hard conversions assume new storage in the next decade (50,000 ac-ft) and that high-lift water would be exchanged for salmon flow (around 100,000 ac-ft per year, to a maximum of 205,000 ac-ft per year).

Questions and Comments

Q: If you expanded the candidate recharge canals above American Falls, would the results be uniform across those new candidates? It looks like almost any volume of available water could be captured, and that there is a lot of flexibility in the Upper Valley.
A: We weren't trying to exclude any available canal. One thing to keep in mind is that recharge above American falls has a much different effect on the aquifer than recharge below American Falls. Most of the water recharged above American falls returns to the river within the same season, and may serve to lengthen the natural flows for that season, but does not accomplish a long-term benefit to the aquifer.

Q: It was mentioned that we don't have good candidate sites for recharge in the middle of the basin. Where is the Big Lost recharge project placing water for recharge?
A: The Big Lost recharge projects are putting water anywhere they can put it – gravel pits, canals etc...

Comment: For canals close to the river, where the return is quick, it seems like any delay of that water may offset or increase natural flow later in the season, and may actually reduce demand on storage later in the season. So basically we're using the aquifer as 'in-season storage'. It is better than flushing it out of the system and having to use that storage every year.

Q: I'm assuming that when you say that you're using all of the water that could be utilized past Milner, that you'll somehow reach an agreement with the holders of the Milner power right. Can you tell us, if that water right stays and you are constrained, how much water do you really have to use? This is the "best case" scenario only for some, and not for the people that have that permit.
A: The assumption that we made was that somehow, through negotiation or court action, the Board would be able to use its recharge right to the fullest extent possible. It might not turn out that way. If it goes the other way, we can tell you what might happen. Keep in mind that recharge is subordinate to the hydropower right, but delivery to future irrigation uses is not subordinate to hydropower.

Q: What about spills during the winter time? Are those included as available and useable in the years in which they occur? A: We assumed winter water would be available for filling new Minidoka storage, however we did not assume this water would be available for managed recharge. No wintertime diversions were assumed because of icing in canals, and cold weather that make it extremely difficult to implement. We assumed water availability for recharge from March 1 in lower basin and March 15 in upper basin.

Comment: The analysis is using average years (over past 27 years), and that's essentially looking through rose colored glasses. You may call these assumptions, but I don't want this group to think about the average is the "norm". A: One of the reasons to show the last 27 years was to show the variability of supply.

Comment: The climatologists actually suggest that the future will look a lot like the 27 year data set we're using – high peaks and low lows. It is hard to make the claim that the last 5 years is

representative, because none of us know what is going to happen in the future. If we look at just the last 10 years, only 3 or 4 years of recharge was possible.

Q: Can you provide more clarity on climate change; does it mean more drought, or higher highs and lower lows?
A: Some projections are that we'll have 10 or 15 years of drought with a high year every once in a while. Some say more spring rain, less winter snow pack. In the Boise system, the Bureau scientists think we'll draw the reservoir system down harder and fill it earlier. But this is based on the traditional 80 years of record. If global warming means a different pattern than we've had in the past, then we'll get an entirely different answer. If it is just temperatures rising, that's different.

Q: Does that mean we have to be able to take advantage of the higher highs?
A: The challenge is the cost/benefit of facilities to capture high flows – maybe you'll use the facilities less often, but maybe you'll use them every year.

Comment: You can't avoid the conflict if you have a series of drought years. However, you can evaluate the impact your actions will have if we do have a series of drought years.

Q: What about an overview of the infrastructure that will be required to make conversions work?
A: For A&B conversions, it will require Minidoka enlargement or a similar alternative, acquire high-lift water or the like, and construct a full delivery system to get that water onto the acreage. Add those actions together, and it is approximately $250 million. To be able to recharge all of the water we discussed diverting, would require a large amount of infrastructure – that could be up to $50 million dollars. Even soft conversion projects would require a significant amount of new infrastructure and there is not an estimate of those costs yet.

Comment: This (quantitative goal) is a valuable analysis because we're seeing an interaction of options. We need to find a time and a place to talk about what the impacts are for downstream.
Response: This committee will have to take those impacts into account and make an informed policy recommendation based on impact, benefit and cost.

3. Effect of Water Budget Change on River Reaches

Allan Wylie, IDWR, presented the benefits that would result from implementation of management actions on river reaches. Generally the benefits to the river reaches will stabilize after 30 years, with ups and downs corresponding to wet and dry years, Wylie noted. What generally happens is that water put in the aquifer in the spring comes out later in the season, July August and September. In Allan's opinion CREP and A&B conversions have the biggest positive impact, since CREP and A&B since benefits don't diminish in the dry years.

Comments and Questions:

Q: What if you recharged closer to Minidoka dam? A: If we recharged closer to the river, we'd realize more benefit in that reach.
Q: What is the average volume of water that would be put in to A&B? A: 95,000 acre-feet, annually.

Q: When you put these reach gains in the context of how much the reaches are gaining now, would they just get lost in the noise? A: Allan: I'll look at that and get back to you.

Q: Are you assuming that the acres put in CREP are permanently set aside? A: Yes, for this analysis, we're assuming that those acres will be permanently set aside.

Comment: If you could get Power County to qualify for CREP, then you'd have a big benefit, but that would take Congressional action.

Q: What if someone wants to build a subdivision on that land once the 15 years are over, even if the land returns to farming? A: Then we will have to look at a way to continue that benefit past the 15 years.

Q: When we're looking at each of these graphs, can we add up all of the impacts to each reach, so we can understand the cumulative impacts? A; Yes, this is shown at the end of the presentation.

Q: It was clear from the measures/charts that benefits would accrue over decades; when did you assume implementation of the measures? A: Benefits started the year of implementation and accounted for the lag effect.

Comment: We need to think about the right balance long and short term.
A: The quickest responses are recharge and soft conversions (close to river) where benefits start accruing quickly. The benefit of converting A&B is that it starts benefiting A&B immediately while it takes decades to realize the benefit to the aquifer.

Comment: (Brian Patton) Conversions and recharge respond the quickest although it may take many years to negotiate arrangements and construct the infrastructure to implement.

Q: What do we do in the short term? A: the Committee needs to identify the right balance between short term and long-term projects and measures.

Q: We see significant changes based on model runs; are these changes within the scope of which the model operates or is it outside of it (statistically)?. A: Since we are looking at regional impacts from regional projects it is well within the scope of what the model was supposed to do.

Q: Are we generating numbers within the range of calibration? A: We are within the stresses the model was run through during calibration; these are reasonable numbers. If we put 400k into

aquifer it should come out, unless we increase CU, and the model tells us this. Response: I am still skeptical.

Q: What are the model run error factor, loss in x reach what is the range of accuracy? A: plus/minus 10%.

Q: What does conservation do for us? Is it big gain of water or small gain? We need to recognize the cheap power provided through water running through system (through hydropower generation). Response: Conservation is a larger discussion since there are many of ways to do this through automation, metering, crop rotation/selection etc...

6. Ground Water Levels

Bryce Contor presented the results of a 900 kaf change to ESPA aquifer levels.
Contor noted that A&B generally receives the greatest gain in aquifer levels over a long period of time. He also noted that, in the analysis, we purposely pilled a lot of effort in the central part of the aquifer that would create a water mound and propagate radially. Contor reminded the Committee that the effects of groundwater actions are propagated in circles – and results in a double 'whammy' both up-stream and down-stream. Actions near the river don't make the water pile up but rather it runs into river.

Comments and Questions:

Q: Are the model tools calibrated – how do they work from ground water to groundwater? A: model cells are 1 mile blocks, what the aquifer model represents is average head in model cell. When model is calibrated we adjust numbers that describe the aquifer until we match data points (11,000 wells and x measurements). We cannot tell you what is happening in an individual well, rather that it will be representative of the change

Comment: We need to be careful with conservation, since the only conservation that will help aquifer budget is reducing Consumptive Use (evaporation or transpired through plants). If you don't reduce CU then conservation is taking water out of one hand to another.

Q: Can you put numbers in context, in terms of the qualitative set of objectives, i.e. if we did realize benefit in the Thousand Springs reach, does it resolve calls and litigation? When can we start to see what this kind of scenario will accomplish the qualitative goal and objectives in the framework? A: That's the next step in the Committee process.

Comment: We set this task up to help us start to understand the issue. The Committee should not think that this is the only option on the table - this is simply a start at trying to get a handle on the problem, there is not only one way.

Small Group Discussions

The Advisory Committee divided up into three groups to interact more specifically with technical experts and the spreadsheet tools. The Committee asked numerous questions regarding

the analysis and requested further definition on the benefits, impacts and costs of the potential actions. Following small group discussion the group reported back to the large group. The reports from the small group are summarized below.

Group 1 - Report Back

Our group felt that the analysis and tools are very helpful and noted that you can make changes/stresses to the aquifer and it gives you a lot of opportunity to examine the relationships. The analysis and tools showed the importance of short term fixes and long term fixes, and that these tools can help us understand the impact of both kinds of actions. What is missing: if you examine a measure, say making a 50,000 ac-ft change in the Minidoka area, you've got to have a way of looking at relative costs, and then relative impacts. Which measure, for example, would have the same benefit of meeting a call, which one do we choose? This decision may depend on which has least adverse impacts and most beneficial results. We need more specific benefit responses, costs, impacts. For example, we need to know exactly how much it will cost to convert A&B. Is it cheaper to just go buy people out? What measures bring the most economic benefit and most harm?

There are a lot of people who know a lot about these canals. We've got to start moving beyond general statements to specifics on recharge, how much can each canal take, and when can it generally take that water.

Through this analysis we have examined three major geographic areas, our group noted that there are other water-short areas that we should look at. Using these tools, maybe we can examine what activities can impact those areas that need also help but were not emphasized in this analysis. .

How are we going to really determine which area will best be served by providing the first increase in whatever we do? Is it Thousand Springs? A&B service area? Where will we go first? How will we allocate our resources? We also need an economic model and start developing accurate costs per acre.

Group 2 – Report Back

Our group examined difference between subordination and non-subordination of the hydropower right to Board's recharge right at Milner. The difference is 120,000 acre-feet per year. The group thought that this was interesting and is a pretty big change on a per year basis. We explored running water early and late during irrigation season. Are there ways to provide incentives to canal companies to encourage this behavior?

We also need to know what the capacity of the canals is to run water – can they run the kind of volumes we're looking at? How much water can the canal companies run during early season? Additionally we need to determine, what it means to the reach gains if you raise the aquifer levels? Want to know what raised aquifer levels mean to reach gains. Activities closer to the river provide quicker benefits. What happens when you put those activities further out on the

aquifer? In this regard, we encourage Allan and Bryce to work together to figure out what a certain water level change means to reach levels, and report back to us on how these correlate.

One specific idea that was related to recharge at Egin Bench. The idea is to run canals into Mud Lake and pump it up thirty feet and run water over the dessert. We would like to see what would happen with that.

How much water could you put in all of the canals when you have a high peak that is above what the hydropower right can make use of? We would like to take a look at water management of the aquifer to see what reach gains are when you do those quick peaks, and see what might happen. We also need to analyze the benefits to the fisheries.

Group 3 – Report Back

Our group noticed that local efforts yielded local results and that what happens in Bingham County doesn't stay in Bingham County; what happens there seems to impact further down river. There is a time factor for consideration, i.e. long lasting effects take time to realize, we need to discuss this in our report. It feels like we are going in circles but with each circle we get a little better.

Observations from Bryce Contor and Steve Burrell and Allan Wylie

Steve noted that the analysis may be unrealistic in terms of the recharge effort, i.e. assuming all available water could be recharged. Right now we have limited permit, and need to look at that. Developing sites is the biggest hurdle to greater recharge.

Bryce mentioned that he was impressed at how much the Committee understands the ESPA hydrology, the issues and how these things work together.

Allan mentioned that the small groups had good discussions, and that the Committee expertise in the room very beneficial. Found the small groups to be informative and fun.

Q: Are there questions that we're not getting to?
A: Bryce as a technical group we might need to address cycling of benefits that occur high in the aquifer.

Quantitative Analysis – Next Steps
The Committee discussed potential next steps regarding the quantitative goal analysis process. After much discussion, the Committee decided to charge the Goal Sub-Committee with developing a plan to move forward. The following are notes from this discussion.

In order for us to move forward we need to get to the 'real world' instead of the pretend world. Some of the projects are unrealistically expensive. We need to compare the projects based on what is cost effective. One thing we need to know is if you talk curtailment, is that the end of development in Idaho as we know it? Need some costs on if you take an acre of ground out of production, what does it cost in terms of lost tax revenue to the state. To even consider spending

more time on Teton dam is ridiculous. Need some financial figures that are real, so we can quit playing with monopoly money.

Comment: Are we any closer to getting a quantitative number? These tools show increases/change. But what is that going to do to trends we see in aquifer and in river. How do we know if 900 kaf is really going reverse the declines we've seen? If we're looking for long term solutions, is this a long term solution, or just a slightly better downward trend. That's a question for the technical people.

Response: Allan Wylie -The question is about climatology not hydrology – it is hard to answer. A lot of what we're seeing is climate driven and you can't predict the future. We can only make assumptions. If we get a model scenario that projects increased reach gains, maybe we could run that output through a surface water model, and use some University of Washington climate information.
Response: Bryce Contor– we don't know climate and don't know changes in human behavior. We do know that if we do 900 kaf it will be 900 kaf less bad.

The next step will be to have further discussions with the Sub-Committee, although invitations will be sent to everyone on the Committee to increase participation.

Report to Board and Legislature

Diane Tate distributed a draft Outline for the Report to the Board and Legislature and asked for feedback. The Committee generally agreed with the direction of the Outline. A draft of the report will be distributed before the January Committee meeting. The following are items from this discussion.

Comment: We have not had public meetings but there is a way to justify it since the Committee is broad and have accomplished purpose of public involvement through broader participation.

We need to get clearer about our ideas on short term projects and funding ideas for the report.

Comment: Life is full of missed opportunities; let's start with what we know, i.e. high-lift acquisition; recharge needs to be an initiative with funding. We should be able to decide on what ideas to move forward with.

Next Meetings

Wednesday December 12, 2007, Sub-Committee – Holiday Inn, Pocatello
Friday, January 4, 2008, Advisory Committee Meeting – Holiday Inn, Pocatello
Tuesday, January 22, 2008 – Boise location to be determined

Attendees:
Advisory Committee Members
1. Vince Alberdi - Twin Falls Canal Company
2. Randy Bingham - Burley Irrigation
3. Rebecca Casper - Ball Ventures

4. Scott Clawson – Water District 110
5. Craig Evans – Water District 120
6. Lloyd Hicks – Burgess Canal Company
7. Rich Rigby – Bureau of Reclamation
8. George Katseanes – Blackfoot
9. Albert Lockwood – Northside Canal Company
10. Don Parker – Water District 110
11. Jeff Raybould – Fremont-Madison Irrigation District
12. Steven Serr – Bonneville County
13. Dean Stevenson – Magic Valley Ground Water District (MVGWD)
14. Jim Tucker – Idaho Power
15. Will Whelan – The Nature Conservancy
16. Kim Goodman – Trout Unlimited
17. Linda Lemon – Idaho Aquaculture Association
18. Charles Correll – City of Jerome
19. Tim Deeg – IGWA
20. Bob Muffley – Middle Snake Regional Water Resource Commission
21. Jared Fuhriman – City of Idaho Falls
22. Roy Mink - IWWRI

Other Attendees

24. Leonard Beck – IWRB
25. Lynn Tominaga - IGWA
26. David Blew – Idaho Power
27. Dan Temple - A&B Irrigation District
28. Brian Patton – IDWR
29. Walt Poole – Idaho State Fish and Game
30. Harriet Hensley – Attorney General's Office
31. Diane Tate – CDR Associates (facilitator)
32. Jonathan Bartsch – CDR Associates (facilitator)
33. Matt Howard – BOR
34. Stan Clark - Eastern Water Rights Coalition
35. Lyle Swank – IDWR
36. Bill Thompson MID
37. Peter Anderson – Trout Unlimited
38. Allan Wylie – IDWR
39. Bryce Contor – IWWRI