

AGENDA ITEM SUMMARY

DATE: 03/17/2014 DEPARTMENT: Admin/PW DEPT. HEAD SIGNATURE: HD

SUBJECT:

Big Wood River Modeling Committee (MTAC) Meeting Summary from February 6, 2014 Meeting

AUTHORITY: ID Code _____ IAR _____ City Ordinance/Code _____
(IF APPLICABLE)

BACKGROUND/SUMMARY OF ALTERNATIVES CONSIDERED:

Hailey has retained SPF to represent the City of Hailey at the subject meetings. Attached is the meeting summary from the February meeting

RECOMMENDATION FROM APPLICABLE DEPARTMENT HEAD:

Information only.

ACTION OF THE CITY COUNCIL:

Date _____

City Clerk _____

FOLLOW-UP:

*Ord./Res./Agrmt./Order Originals: Record
Copies (all info.):
Instrument # _____

*Additional/Exceptional Originals to: _____
Copies (AIS only)

Big Wood River Valley Model Committee (MTAC) February 6, 2014 Meeting Summary

C. Petrich
 prepared March 4, 2014

A. Overview and Summary

IDWR and USGS staff is in the process of preparing water-budget data sets and populating model components. The modeling staff is making progress, but specific data sets (and design documents describing these data sets) are not yet available for full review.

Committee members have recommended that IDWR post PowerPoint slides used by IDWR/USGS staff to describe data sets prior to the committee meetings. Committee members could then have an opportunity to review this information prior to the meetings, and be better prepared for discussion. So far this has not happened. PowerPoint slides presented at the last meeting by IDWR/USGS staff were just posted on IDWR's model-development website (hence the timing of this summary).

Rigorous analysis individual model-input data sets will occur when the model is more functional. The simulation process will help identify those input and calibration parameters that have the greatest impact on specific model results. I anticipate further scrutiny of model input data as initial model results become available.

The revised design objectives¹ (described in my last meeting summary) have now been posted on IDWR's website.

Until now, SPF has been representing the City of Hailey, Sun Valley Company, and Blaine County School District on the modeling committee with costs divided equally among these entities. The City of Bellevue is now also participating, with costs shared as indicated in Table 1.

Model Committee Cost-Sharing Percentage		
Entity	Share	
City of Hailey	2/7	28.6%
Sun Valley Company	2/7	28.6%
Blaine County School District	2/7	28.6%
City of Bellevue	1/7	14.3%
Total	7/7	100.0%

Table 1. Model Committee cost sharing.

¹

http://www.idwr.idaho.gov/WaterInformation/Projects/woodriver/pdf/MTAC/2013/12Dec/WRV_DesObj_02Dec13.pdf

B. Introduction

The Wood River Valley Modeling Advisory Committee met on February 6, 2014 in Hailey. Primary agenda items included (1) an overview of a community project status meeting, (2) a review of preliminary municipal and domestic water-use data, (3) review of modeling-process flow diagrams, (4) discussion of river-cell and drain locations, and (5) a model construction update.

C. Community Project Status Meeting

About 25 people attended an IDWR/USGS community meeting on January 29, 2014 at the Wood River High School. Sean Vincent and Jim Bartolino outlined water-budget and model-construction efforts to date.

D. Municipal and Domestic Water-Use Data

Jennifer Sukow (IDWR) summarized efforts in calculating aquifer recharge in municipal and subdivision service areas.

The Big Wood River Valley has three general types of water systems: (1) community water systems with centralized wastewater treatment, (2) community systems with septic treatment, and (3) subdivisions with individual wells and septic tanks.

Water used for irrigation is consumptively used. Most water used for indoor domestic purposes is treated and directly or indirectly returns to the river. The one exception to this is the wastewater treatment plant used by the City of Bellevue, from which a portion of treated effluent is land-applied and consumptively used by crops. Wastewater treatment plant discharge data have been obtained for the Sun Valley Water & Sewer District/City of Ketchum, Mid Valley Water Company / The Meadows, City of Hailey, and City of Bellevue. Wastewater discharge data are based on DEQ reports.

Most stormwater runoff is captured in "dry wells," and is thus a form of aquifer recharge.

For more information, see

<http://www.idwr.idaho.gov/WaterInformation/Projects/woodriver/pdf/MTAC/2014/Municipal%20&%20Domestic%20Water%20Use%20Jennifer%20Sukow.pdf>

E. Modeling-Process Flow Diagrams

Jason Fisher (USGS) outlined an input data processing schematic. He described various MODFLOW files (MODFLOW is the core code being used for this model). He also described formats for various model-input data sets.

For more information, see

<http://www.idwr.idaho.gov/WaterInformation/Projects/woodriver/pdf/MTAC/2014/Model%20Process%20Diagram%20&%20Model%20Construction%20to%20Date%20Jason%20Fisher.pdf>

Allan Wylie (IDWR) then discussed plans for model calibration. Calibration is the process of adjusting various model parameters so that the model output matches observations such as groundwater levels, reach gains to the Big Wood River, etc. Examples of calibration parameters include hydraulic conductivity, transmissivity, specific yield and storage coefficients, riverbed conductance, drain conductance, recharge on non-irrigated

land, evapotranspiration (ET) in areas or times of no ET data, tributary underflow, and canal seepage. The value of each of these parameters for each model cell becomes an adjustable calibration parameter. Items that are measurable (e.g., diversions, river gains and losses) are not adjusted during the calibration.

The automated calibration program PEST (Parameter ESTimation) will be used for calibration. This program compares model output with observations such as river-aquifer interaction (i.e., gains and losses), spring discharge, and water levels in wells. The fundamental objective is to minimize the difference between simulated and observed values.

This is the same program that I used for the Treasure Valley model and that has been used for the ESPA and Spokane Rathdrum models. An important PEST component is predictive analysis, a tool for evaluating outcome-based uncertainty.

The initial model calibration is scheduled to be complete in April 2015.

For more information, see

<http://www.idwr.idaho.gov/WaterInformation/Projects/woodriver/pdf/MTAC/2014/Calibration%20Flow%20Diagram%20Allan%20Wylie.pdf>.

F. Portrayal of River and Drains

“River” and “drain” cells are special types of model cells used for simulating channel/aquifer interaction. Jennifer Sukow (IDWR) described how these cells will be used to describe seepage to and from major streams (e.g., Big Wood River and Silver Creek).

She presented maps showing gaining and losing reaches of the Big Wood River, Silver Creek, and other tributary channels (see

<http://www.idwr.idaho.gov/WaterInformation/Projects/woodriver/pdf/MTAC/2014/River%20&%20Drain%20Locations%20Jennifer%20Sukow.pdf>).

The definition of river and drain characteristics (e.g., river stage elevation, channel bottom elevation, channel conductance) influences the simulation of seepage to and from these channels. Ms. Sukow then described how defining characteristics (e.g., bottom elevations, depth of water, bed thickness, etc.) of these channels will be estimated and represented in the river and drain cells.

One of the transient calibration targets for the model will be seasonal average gains/losses. Graphs illustrating average gains to the Big Wood River between Ketchum and Hailey, Big Wood River between Hailey and Stanton Crossing, Willow Creek, and springs above Sportsmen’s access are also presented in the above-listed link.

The reach/gains used for calibration targets are based on actual data (where available) and average is based on ratios for locations and/or times where data are unavailable. Average sub reach gain/loss targets are also illustrated in the above-listed link.

A design document is being prepared that will describe transient reach gain characteristics/calibration targets.

G. Model Construction Update

Jason Fisher (USGS) has been integrating river components (i.e., river and drain cells) into the model. These channels are currently segmented into 21 reaches for the purposes of defining and simulating various reach characteristics.

H. Next Steps

At this point, IDWR and the USGS are continuing efforts to compile water-budget data and populate various model components. The modeling team (IDWR/USGS) will likely provide further reports on water-budget development, model implementation, and model parameterization in the coming months.

I. Next Meeting

MTAC meetings are scheduled for the first Thursday of every other month. The next meeting is scheduled for April 3, 2014 at 10 AM.

J. Attendees

1. IDWR
 - a. Sean Vincent, IDWR
 - b. Jennifer Sukow, IDWR
 - c. Allan Wylie, IDWR
 - d. Neeley Miller, IDWR
 - e. Mike McVay
2. USGS
 - a. Jim Bartolino, USGS
 - b. Jason Fisher, USGS
3. Consultants
 - a. Erick Powell, Brockway Engineering
 - b. Ernie Carlson, Idaho Water Engineering
 - c. Christian Petrich, SPF Water Engineering
4. Others
 - a. Patrick McMahon, Sun Valley Water and Sewer District
 - b. Tom Hellen, City of Hailey
 - c. Larry Schoen, Blaine County Commissioner
 - d. Sunny Healey, TNC Silver Creek
 - e. Patti Lousen (self, Wood River Land Trust)
 - f. Wayne Martin (self)
 - g. Wendy Pabich, Water Futures
 - h. Ken Thornock, Valley Club
 - i. Dave Tuthill, Idaho Water Engineering

**AGENDA OF THE
HAILEY CITY COUNCIL MEETING
Monday April 7, 2014 * Hailey City Hall Meeting Room**

5:30 p.m. CALL TO ORDER - Open Session for Public Concerns

CONSENT AGENDA:

- CA 000 Grant Applications
- CA 000 Grant Agreements
- CA 000 Contracts & Bids
- CA 000 Special Events
- CA 000 Findings of Fact and Ordinance Summaries
- CA 000 Motion to approve minutes of March 17, 2014 and to suspend reading of them.....
- CA 000 Motion to approve minutes of March 20, 2014 and to suspend reading of them.....
- CA 000 Motion to approve claims for expenses incurred during the month of March, 2014, and claims for expenses due by contract in April, 2014

MAYOR'S REMARKS:

MR 000

OATH OF OFFICE TO COUNCIL MEMBERS: Martha Burke and Don Keirn

PROCLAMATIONS & PRESENTATIONS:

PP 000

APPOINTMENTS & AWARDS

- AA 000 Appointment to Hailey Planning and Zoning Commission (for vacancy of Geoffrey Moore - 3 yr term)
- AA 000 Appointment to Tree Committee (vacant seat left by Bill Josey - 3-yr term)

PUBLIC HEARING:

PH 000 Airport discussion.....

NEW BUSINESS:

NB 000
NB 000

OLD BUSINESS:

- OB 000 3rd Reading ord. no. 1145 and consideration of Ordinance Summary, amending Wastewater rates for new occupants of condos and tenants moving between houses within Hailey.....
- OB 000 3rd Reading ord. no. 1146 and consideration of Ordinance Summary, amending development fees for permanent signs, portable signs, and developments within the floodplain that have no substantial impact
- OB 000 3rd Reading ord. no 1147 and consideration of Ordinance Summary, Build Better Code Amendments

WORKSHOP:

Staff Reports Council Reports Mayor's Reports
SR 000

EXECUTIVE SESSION:

Matters & Motions from Executive Session or Workshop
Next Ordinance Number - Next Resolution Number- 2014-01

