Action Items Highlighted

Wood River Water Collaborative Meeting Minutes
12/19/18

Attendees: Justin Stevenson, Pete VanDerMuelen, Pat McMahon, Mark Davidson, Amy Trujillo, Larry Schoen, Keri York, Greg Loomis, Muffy Davis, Frank Edelmann, Pat Purdy, Bryan Wood, Bob Simpson, Chris Johnson, Ron Abramovich, Maggi Kraft, Kira Finkler, John Wright, David Stephenson, Carl Pendleton, Frank Suwanrit, Kelly West, Phone: Peter Anderson, Paul Arrington

Member Updates – Big Wood Planning Process (Larry Schoen)

- Blaine County terminated Army Corps study and now contracting with Cardno to study the Big Wood River after the 2017 flood to aid in evaluation of stream alteration permits
- Want to create an accessible product for river dynamics and best management practices for staff, decision makers, and engineers
- The assessment will not be project-focused, but will look at river migration, river function, and the deliverables are meant to be tools
- Will take approx. 1 year, forming a stakeholder advisory group, want to have a community conversation around a holistic approach to development along the river
- Comment that we should look at diversions and infrastructure throughout the Big Wood River along with the Cardno assessment
- Blaine County was also approved for Army Corps Section 206 (aquatic habitat and restoration) funding for Angela Drive in north Hailey to complete a study and design up to $500,000; is a 50% cost-share component
- Blaine County will decide on whether to move forward with the Section 206 in January; they have also applied for Section 205 (flood mitigation) funding for the same area

NRCS Snow Survey Update (Ron Abramovich)

<u>2018 Review</u>

- The winter of 2017 filled reservoirs, so lots of carryover during the year following
- In 2018, we needed 43% of average streamflow to provide adequate water supplies for Magic Reservoir water user, and runoff was 77%
- Fall 2018 flows in the Big Wood were at average, similar to 2012 water year

<u>2019 Projections</u>

- Magic projected at 120,000 acre-ft by March 31, 2019; capacity is 191,500 acre-ft; inflows won't change much through winter
- Little Wood is projected at 23,000 acre-ft by Feb 28, 2019; capacity is 30,000 acre-ft
- Ag threshold for Big Wood at Hailey is at 51% average streamflow (135,000 acre-ft); this is the amount needed to marginally satisfy upper valley users. Usually, an April 1 snowpack of approx. 70-80 % average snowpack is needed to satisfy adequate runoff
- Magic Reservoir needs 58% average streamflow; or approx. 90% average snowpack to satisfy adequate runoff needs
- Current oceanic conditions of split jet stream similar to water years of 1987, 2007, 2013 (since the meeting 2013 analog year was replaced with 1969) but still not sure which jet stream will

become dominant; right now storms coming from northwest not southwest which benefits the Wood River basins.

- Right now, daily forecast showing about 65% average volume, need 51% April – September for marginally adequate irrigation supplies in upper valley Through Dec 16th, Big Wood snowpack was 51% of normal and Little Wood was 38% of normal
- IWRB is funding the automatization of Iron Mine at Fish Creek station, with possible matching funding provided by Blaine Soil Conservation District; will be used with GIS analysis to determine gaps in data

Next Step: Ron to give update in February, hopefully have Big Wood SWSI above Hailey in January, forecasting working group to continue working with Ron for 2019 projections

Watershed Predictive Modeling Tools (Rob VanKirk, Henry's Fork Foundation)

Background of the Henry's Fork Foundation (HFF) and the Henry's Fork watershed

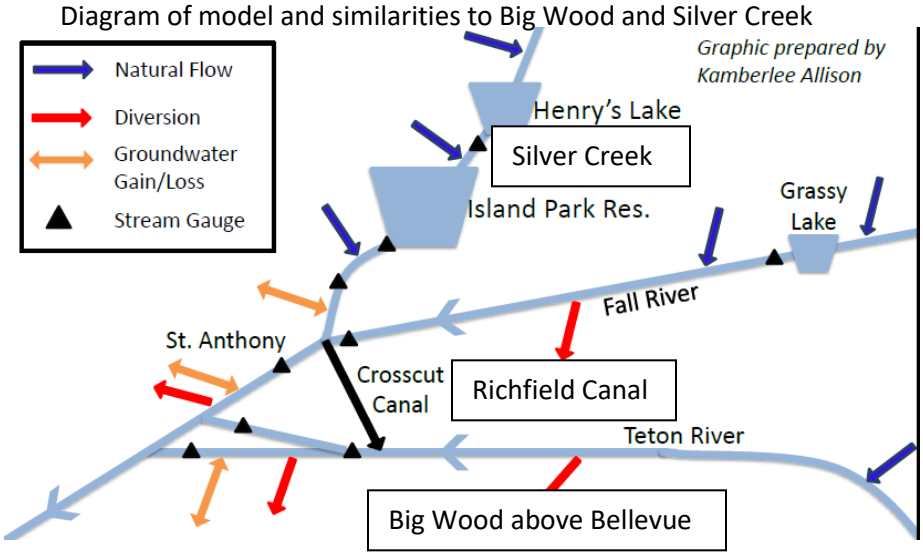
- Henry's Fork is the north headwaters of the Snake River; has three reservoirs; ¼ of the watershed is irrigable; core irrigated acres are in the Fremont-Madison Irrigation District; 7 hydroelectric plants
- HFF founded to conserve, protect, and restore the Henry's Fork focusing on 15 miles immediately downstream of Island Park Reservoir
- Henry's Fork Watershed Council Formed in 1993; hydroelectric facilities transferred to FMID in 2003 which required a drought management plan with 6 signatories including HFF, TU, TNC
- Until 2016, focused on fish passage and winter flow management which resulted in a 9% increase in trout populations when annual variability is 25%

- 2013 – 2016 driest 4-years since 1930s, reservoir drained to 15% capacity; poor water quality; poor fishing; increases in algae and cyanobacteria
- Created new strategies based on communication; farm-based incentive programs; managed aquifer recharge; and precise water measurement

Predictive System Management Model

- Model that tracks and uses predictors of natural streamflow, irrigation diversion, groundwater gains/losses, reservoir storage/delivery
- Predicts April-Sept hydrology based on April 1 conditions
- Based on simulations of probability distributions in model

Diagram of model and similarities to Big Wood and Silver Creek



- In Big Wood, already have ground/surface water interaction information from groundwater model or included in ESPA (parts of Little Wood)
- Model chooses similar water years based on probabilities

System Operation and Implementation

- After runoff, set Henry's Lake outflow to 70 cfs
- Set minimum flow target in Henry's Fork at St. Anthony and irrigation delivery targets
- Committee determines St. Anthony flow target in May from model
- Use model to determine Island Park outflow based on target flow at St. Anthony using annual predictions and 90% prediction intervals
- Rob sends out report every day to 170 subscribers throughout the summer; projections are refined with real-time data
- Rob, FMID, Crosscut Canal teams communicating constantly throughout summer
- In 2018, flow at St. Anthony was constraining for 90 days; target was set at 1,000 cfs; flow dropped below for 10 days during which average was 980 cfs

Transferability to other watersheds

- Need streamflow, snotel data, diversion information
- Need local knowledge and information on groundwater interactions
- Need to identify goals and objectives
- Need realistic targets, communication, trust

Transferability to Big Wood

- How to integrate with groundwater?
- Need to identify what the specific needs are and how we can make changes in practices
- Can use temperature trend curves to account for climate change
- How would this be used for management decisions – would we have commitment from users?

Next step – NGOs to have further discussions with Rob about developing a similar model that incorporates groundwater for the Big Wood

Update on Groundwater Model Runs with IDWR (Mark Davidson)

- IDWR told Mark that they will not run the scenario as proposed by the Collaborative to support draft water transactions by TNC
- The scenario was too specific – need to have consultants run those types of scenarios
- IDWR indicated that they have completed a recharge model run, but has not communicated the output – maybe at next MTAC meeting?

Next Meeting: Friday, Jan 18 at 10 am, IDWR presentation on Groundwater Model Run Scenarios

Additional Notes from Follow-Up Meeting with Rob VanKirk – Keri and Mark

- Response functions from the ESPA model have been used to assess effects of aquifer recharge at Egin Lakes, and a similar approach could work on the Big Wood
- A spatial response (increase or decrease in discharge) can be detected for model cells associated with reaches that have calibrated gauges
- A temporal response can also be detected – time at which a fraction of recharge volume will affect streamflow, and how long will one specific recharge input affect aquifer storage; can use for multiple inputs
- From the groundwater model, you can pull out response functions at specific geographic locations to see how flows at those locations respond to surface water inputs
- Can create spreadsheet from model that has multiple locations of outputs (i.e. target flow locations); can calculate what percentage of surface water input (at specific locations) will show up at response locations
- For example, could indicate the response at Station 10 and Sportsman's access to input at recharge locations – what percent of recharge water will show up at locations and how much time will it take
- This does not require a full 'model run' but uses parts of the groundwater model to answer questions
- Can use desired cfs (target flow) converted to acre-ft to determine percentage of total input will be available and when
- IDWR would probably do something similar to evaluate a change in water rights or transfer