

HOOD RIVER BASIN STUDY STATUS UPDATE

April 5, 2013

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April 5, 2013 Status Update

This document provides an update of the Hood River Water Planning Group's (HRWPG) efforts from March 7 to April 5, 2013 associated with the Bureau of Reclamation's (Reclamation) Hood River Basin Study and the Oregon Water Resources Department (OWRD) Hood River Basin Surface Water Storage Feasibility Study. The objectives outlined are:

1. Define current and future basin water supply and demands, with consideration of potential climate change impacts;
2. Determine the potential impacts of climate change on the performance of current water delivery systems (e.g., infrastructure and operations);
3. Develop options to maintain viable water delivery systems for adequate water supplies in the future; and
4. Conduct an analysis and modeling scenarios of the options developed, summarize findings and make recommendations on preferred options.

The Hood River Basin Study is conducted with Reclamation and Hood River County (HRC) through in-kind services and the OWRD study was contracted to Watershed Professionals Network (WPN) and Normandeau with coordination of the two studies by HRC and WPN. The studies have similar objectives and the key tasks from these studies overlap so Table 1 clarifies each task and the parties involved with completing each task. In the following sections, each task is briefly defined and the to-date progress associated with each task is described.

Table 1. Key tasks associated with the Reclamation and OWRD studies and the responsible parties associated with each.

Key Task	Responsible Party
Groundwater Modeling	Reclamation with assistance by HRC
Climate Change Analysis	Reclamation and WPN
Water Storage Assessment	Reclamation, WPN with assistance by HRC
In-stream Flow Assessment	Normandeau
Water Needs Assessment	WPN
Water Conservation Assessment	WPN
Water Resources Modeling	Reclamation

SCHEDULE

Same as previous month with exceptions that Water Needs Assessment and IFIM shifted into May.

Hood River Water Planning Study Schedule

2012				2013												2014					
Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
CONSULTANTS																					
Project Management																					
		Water Needs Assessment																			
			Water Conservation Assessment																		
Instream Flow Assessment																					
BUREAU OF RECLAMATION																					
	Climate/ Hydrologic Modeling																				
	Groundwater Assessment																				
	Storage Assessment								Storage Assessment												
				Water Resources Modeling																	
																Reporting					
HOOD RIVER COUNTY																					
				Groundwater Monitoring Network																	
Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
2012				2013												2014					

GROUNDWATER MODELING (RECLAMATION)

1. A draft Groundwater Model Design document (attached) was distributed to the groundwater sub-group on March 4. Reclamation hosted a webinar on March 13 to discuss the contents of the design document and take comments from the sub-group. It was determined that the recharge calculation and the base flow calculation would need additional work prior to using the parameters in the model. New calculation methods are being investigated and will be included in the final design document once they are determined.
2. Work has started on the MODFLOW model. The grid has been established, and the steady-state model has been populated and run with estimated data. As the refined calculations of the recharge and base flow are completed, the MODFLOW model will be updated.
3. Reclamation and USGS are reevaluating the USGS scope to determine how to most effectively use USGS expertise for the remainder of the project.

CLIMATE CHANGE ANALYSIS (RECLAMATION / WPN)

1. A meeting was held with UW (Dennis Lettenmaier, Bibi Naz, and Bart Nijssen) and Niklas, Toni, and Bob on March 7 to discuss DHSVM model calibration. Dennis agreed to have a student (Cindy) extend the record using Linveh et al dataset back to 1916 (rather than using station data). This has been completed and the extended data has been transferred to Reclamation. See “DHSVM forcing analysis.pdf” for comparison of station data against gridded Linveh data.
2. There was some discussion about providing funds to Bibi (UW) to support Reclamation in calibrating the model, but she is unable to commit time given her schedule and upcoming new position.
3. It was decided that since UW was not available for help calibrating, WPN (Ed & Niklas) would support Reclamation in this effort. The remaining \$10,000 in OWRD grant funds will be used for this (does not include the 10% OWRD holdback money). No funds will be shifted from USGS or other parts of the project.
4. Reclamation provided a copy of the model to WPN so that they could start calibration steps.
5. Modeled precipitation was plotted against observed precipitation to confirm that differences in precipitation quantity are not the source of modeled snow water accumulation (swe) accumulation errors.
6. Initial calibration runs have shown modest improvements in swe accumulation/melt. Parameters modified so far include snow leaf area index multiplier, snow threshold, and snow roughness. Once snow accumulation and melt is simulated better, the calibration will shift focus to soil properties and baseflow recession.

WATER STORAGE ASSESSMENT (RECLAMATION)

No new update.

RESERVOIR MODELING (RECLAMATION)

1. WPN and Reclamation held a conference call to review the updated Water Needs Assessment. It was agreed that the summary data provided by WPN would be used in the reservoir model. Entering data into a useable ModSim format has begun, but until the Water Needs Assessment is finalized the model cannot be fully completed.
2. Toni will be on leave most of April and work will begin again after she returns. Bob will be the back-up for the reservoir modeling work while she is gone (though likely due to his workload, not much more work will be done on the ModSim model until Toni returns.

IN-STREAM FLOW ASSESSMENT (NORMANDEAU)

No new update - still waiting on completion of DHSVM modeling.

WATER NEEDS ASSESSMENT (WPN)

The Water Needs Assessment has been sent out to irrigation districts, water companies, and Chris Brun (insteam water rights) for review. It was requested that comments come back by April 17, at which time they will be incorporated and then the report will go to Les Perkins, Bob Wood, and Reclamation for final review.

Much of the data in the report has come directly from the water companies and irrigation districts and was previously unpublished, so I'm reluctant to send out the report before it has undergone their initial review. However, if anyone is curious about the overall sections and organization of the report, see "Water Needs Assessment to Review TOC.pdf"

INTERACTIVE MAP OF HOOD RIVER BASIN (WPN/HRC)

Through discussions with the HRWPG at the March 6 meeting, and subsequent discussions with Mike Schrankel (County GIS), it has been decided that the interactive map will be done in Arc Map (as opposed to Google Earth) and be hosted on the County website. This "Water Resource Map" will be entirely separate from the existing County maps available. WPN/HRC are in the process of converting existing Google Earth data to Arc and gathering the other GIS data needed. This process will take approximately two weeks, at which point Niklas and Mike will meet to go over map details.

WATER CONSERVATION ASSESSMENT (WPN)

WPN is currently focusing on the irrigation and potable parts of the Water Conservation Assessment. The work under way includes:

Irrigation:

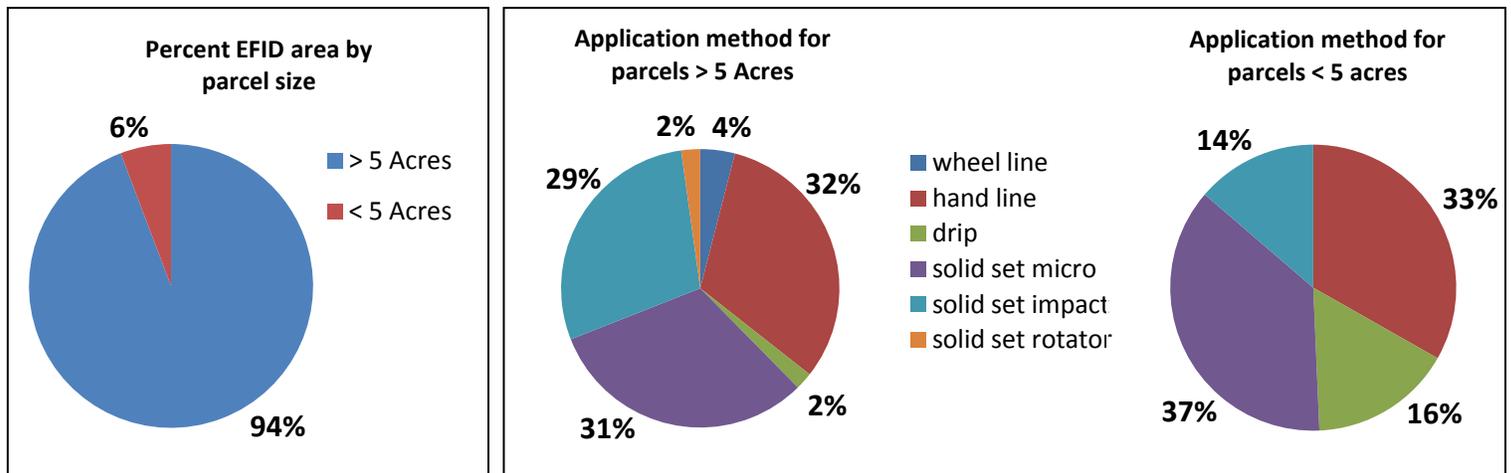
1). Assessing potential to reduce conveyance losses (i.e. installing pipe).

This is being done individually for each of the five irrigation districts and is based on the amount of open channel, flow rates, etc.

2). Assessing potential to reduce on farm use.

This will be quantified based on both converting from existing wheel or hand lines to micro as well as using soil moisture sensors and other irrigation management techniques. Mattie is assisting WPN in this and has organized EFID customer responses from an earlier survey into an Excel spreadsheet that itemizes the application method currently used (see example charts below). Mattie also organized data from a 2012 survey from MFID in a similar manner and will do the same for FID in the next few weeks. This data will be used along with a recent HRSWCD sprinkler study and a study from Irrinet to assess potential for conservation.

Sample plots: Percent of EFID having greater/less than 5 acre parcels, percent of EFID by application method.



Potable:

WPN is researching published sources for potable water conservation potential. These sources include EPA WaterSense, draft 2013 City of Hood River Water Conservation and Management Plan, and others. Not all water districts will be able to be treated the same since some receive irrigation water in addition to potable (e.g. City of HR water use goes up much more in summer than Ice Fountain since Ice Fountain area also served by Farmers Irrigation District).

Sediment, Hydro, and Industrial:

Still working though details on approach for these. Meeting with Jerry Bryan week of April 15th to discuss.

GROUNDWATER MONITORING PROGRAM (HRC/MATTIE)

1. Mattie went with Bob Wood, Marc Norton, and Joshua Hackett to assist with their quarterly groundwater level measurements and they were able to measure an additional 18 wells from the 14 wells they currently monitor. Mattie had planned for them to measure from an additional 20 wells but one well was filled with sand and the other well was not accessible.
2. Mattie will begin preparing a report detailing the steps required to establish a more expansive monitoring network. The report will investigate the feasibility of a volunteer monitoring network compared to a monitoring network with trained dedicated staff. The report will also examine the possibility of including water quality sampling into the monitoring program by investigating funding options, local equipment and lab options, and different water quality parameters that would be useful to measure.
3. As part of the monitoring program, Mattie would also like develop an Excel database listing all the well log information for each well in Hood River County. Mattie would also like to make a geodatabase for all the wells which will have updated locations of the wells from participating landowners.

OWRD HOLDBACK FUNDS

HRC sent an email to OWRD (Bill Fujii) requesting that the last 10% of the OWRD grant money be available after the grant period ends on June 30, 2013. The request was made largely because the Reclamation study period extends nine months past the OWRD grant period. An extension to the OWRD funding period would allow HRC to have input to Reclamation during the water resource modeling and to communicate results to stakeholders, as well as continue the groundwater monitoring program.