

# ***HOOD RIVER BASIN STUDY STATUS UPDATE***

August 1, 2013

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## *August 1, 2013 Status Update*

This document provides an update for the month of July of the Hood River Water Planning Group’s (HRWPG) efforts associated with the Bureau of Reclamation’s (Reclamation) Hood River Basin Study and the Oregon Department of Water Resources (OWRD) Hood River Basin Surface Water Storage Feasibility Study. The objectives outlined in Reclamation’s Plan of Study for this effort 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 Herrera, Watershed Professionals Network (WPN), and Normandeau with coordination of the two studies by HRC. 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].**

<b>Key Task</b>	<b>Responsible Party</b>
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	Herrera/WPN
Water Conservation Assessment	Herrera/WPN
Water Resources Modeling	Reclamation

### **OVERALL CONSIDERATIONS**

1. Reclamation and WPN staff developed a draft of potential scenarios to consider for analysis. These scenarios include storage, and supply/demand alternatives to prioritize for analysis. HRC can review and sign off on suggested approach in September meeting. Modeling of approved alternatives will commence in September through October.

## **GROUNDWATER MODELING (JENNIFER JOHNSON, JON ROCHA)**

### **COMPLETED**

1. No new update.

### **NEXT STEPS**

1. Continue work on model construction and calibration.
2. Continue work on documentation.

## **DHSVM (BOB LOUNSBURY, TAYLOR DIXON) AND CLIMATE CHANGE ANALYSIS (JON ROCHA, TONI TURNER, TAYLOR DIXON)**

### **COMPLETED**

1. New employee brought on board in July. The DHSVM model was transferred to him for completion of baseline flows (bias correction) and climate change flow generation.
2. Initiated climate change process approach.
  - a. Selected CMIP3, Hybrid-Delta ensemble technique, uncertainty of climate change projections using 10/50/90 percentiles, and characterization of climate change using the More Warming/Wetter (MW/W), Central (C), and Less Warming/Drier (LW/D) multi-model ensembles for analysis (see modeling connections overview). This approach will provide a broad range of futures for the County to use when considering their future options.
  - b. Historical timeframe will be 1980-2005 {analysis confirmed this timeframe is representative of hydrologic conditions in the base when compared to the full period of record (1928-2005)}. This shortened window enables quicker run times for all the models involved. Future time window will include an option of a 30-yr period from 2010 to 2039 (2020s) or 2030 to 2059 (2040s), which will surround Hood River's population study time frame as well.
  - c. Provide presentation of this approach at the September 2013 HRC meeting.

### **NEXT STEPS**

1. Process climate change data (lots of coding/scripting), etc
2. Bias correct simulated historical natural flows.
3. Generate climate change data for use in DHSVM to generate future flow data for the climate change projections.
  - a. Use that future flow generated in DHSVM as input to MODSIM model to analyze change scenarios to be finalized in September/October.
4. Continue working on documentation.

## **WATER RESOURCE MODELING (TAYLOR DIXON, TONI TURNER)**

### **COMPLETED**

1. MODSIM drafts of unregulated and regulated models completed.
2. Demand summary from Water Needs report (latest) almost complete.
3. MODSIM unregulated and regulated models transferred to Taylor Dixon.

### **NEXT STEPS**

1. Run baseline model and compare to existing conditions. Address differences or note.
2. Revise model to incorporate change scenarios agreed to by team.
3. Continue working on documentation.

## **REPORT WRITING (TONI TURNER)**

### **COMPLETED**

1. Continuing to work on drafts of the DHSVM, MODSIM, and Climate Change Technical Memos.
2. Developed outline of the full Hood River Basin Study report completed. This outline follows Reclamation's standards for consistency. Initiated writing of some parts of report (e.g., basin description, etc). This outline will be presented to the HRC in the September meeting for their review and opportunity to add to the report as needed.

### **NEXT STEPS**

1. Continue working on documentation.
2. Develop a detailed schedule for completion of draft, final draft, and final reports of main report and all of the technical memos.

## **WATER STORAGE ASSESSMENT (DOUG BENNETT AND ROGER WRIGHT)**

### **COMPLETED**

1. Task completed.

### **NEXT STEPS**

1. Results from Water Storage Assessment will be used in the water resource modeling effort.

**NO NEW IN-STREAM FLOW ASSESSMENT (NORMANDEAU)**

**COMPLETED**

**NEXT STEPS**

**WATER NEEDS ASSESSMENT (HERRERA/WPN)**

**COMPLETED**

**NEXT STEPS**

**INTERACTIVE MAP OF HOOD RIVER BASIN (GOOGLE EARTH OR ARC EXPLORER)**

**COMPLETED**

**NEXT STEPS**

**WATER CONSERVATION ASSESSMENT (HERRERA/WPN)**

**COMPLETED**

**NEXT STEPS**

**GROUNDWATER MONITORING PROGRAM (HRC/MATTIE)**

**COMPLETED**

**NEXT STEPS**

**CROP AND IRRIGATION SYSTEM INVENTORY (HRC/MATTIE)**

**COMPLETED**

**NEXT STEPS**