

Deschutes Basin Study Monthly Update

Updates for December, 2015

(Note: prepared for the December BSC meeting, being held November 30)

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1 Introduction

The Basin Study scope will fulfill the general objectives of the Upper Deschutes River Basin Study as identified in the MOA, and as follows:

1. Build off the solid foundation of prior studies to develop a comprehensive analysis of water supply and demand, integrating and updating the analyses to account for climate change
2. Analyze how existing operations and infrastructure will perform under the projected future water supply conditions and demands (unless otherwise noted, demands refers to instream and out of stream demands).
3. Collaboratively develop and evaluate options for addressing identified water imbalances, providing a common understanding of the interconnected effects of options that address imbalances.
4. Complete a tradeoff analysis to compare relative cost, environmental impact, risk, stakeholder response, and other common attributes of identified options. While the study will not propose any specific project, program, or plan, it will provide a current and broadly-shared basis for future water management in the basin.

To fulfill these objectives, the Study will generate a holistic assessment of the Basin's water resources system. This is accomplished through analysis of the individual parts of the system, and subsequently bringing all of the individual pieces of the system together in a water resource model to evaluate the interconnectedness and trade-offs of water management scenarios. The overarching goal is to meet instream and out of stream water demands into the future in the most efficient, cost-effective way.

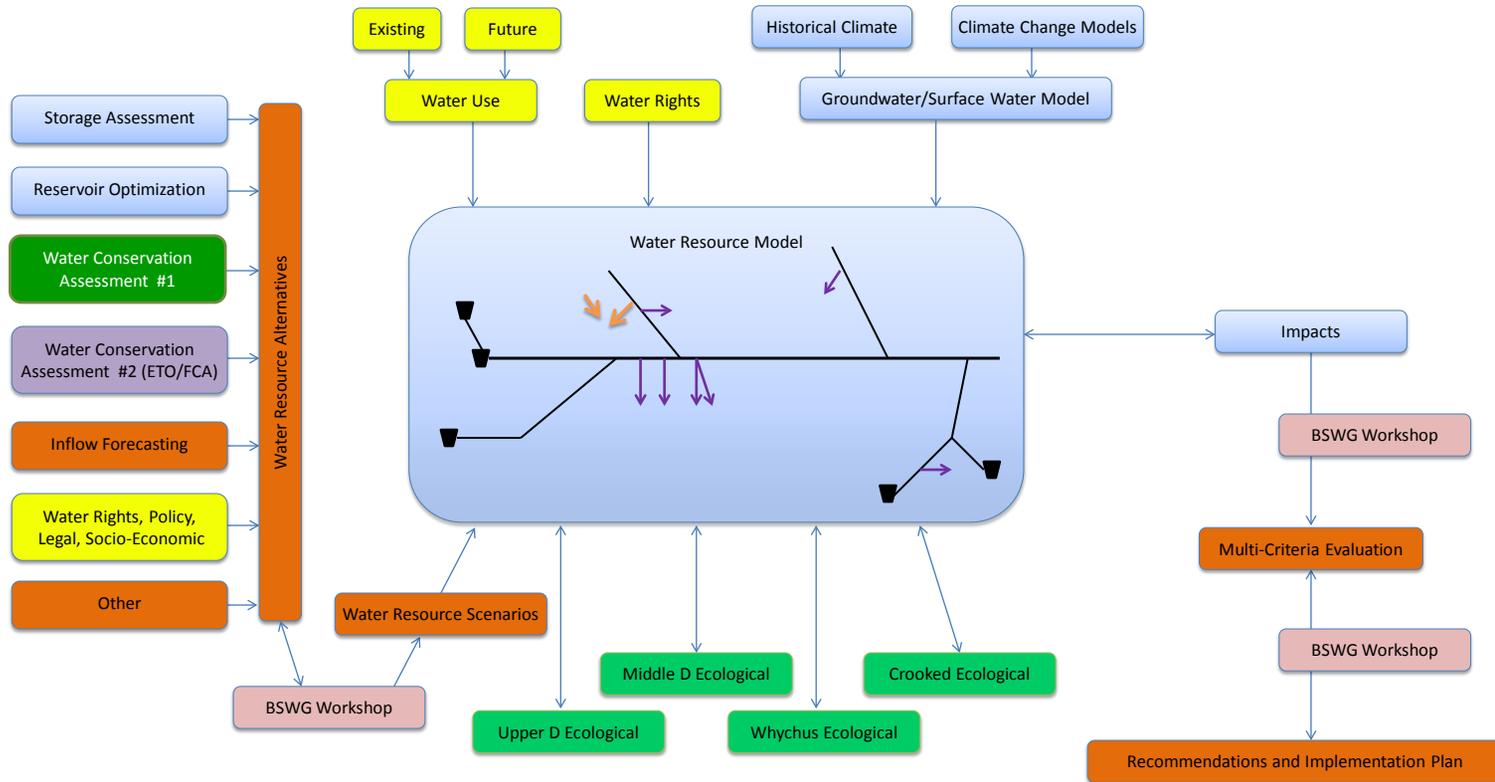
2 December Highlights

- The five **climate change projection scenarios** have been generated for the two periods selected by the BSWG: 2040s and 2060s.
- Projected temperature/precipitation data have been used to generate projected future unregulated flows in the Crooked River using the VIC model. (Future projected flows for U. Deschutes will be generated after calibrated GSFlow model is available from USGS (spring 2016)).
- BOR is developing a **storage assessment** approach for near-term discussion with BSWG.
- Anderson Perry has compiled water use and water conservation data for each district and is developing draft reports for Task 1 of the **Water Conservation Assessment (WCA)**.
- Farmers Conservation Alliance has mapped out its Irrigation Modernization program, which will be an input into the **Water Conservation Assessment (WCA)**, and is beginning to work with irrigation district boards, managers, and constituents.
- River Design Group/HDR is processing field data and will be developing the surface model and hydrologic analysis for the **Upper Deschutes Ecological Assessment (UDEA)**.
- Preliminary analyses have been run for the **Whychus, Middle Deschutes and Crooked flow-temperature analyses**.
- Significant progress has been made on Task 1 of the **Legal, Policy and Economic (LPE)** scope, documenting municipal, quasi-municipal and instream water rights.

- BSWG finalized key messages for **communications**, presented on the Basin Study to COCO, and is scheduling additional presentations to City Councils and County Commissions.

2. Study Overview

Overview of Water Planning Study



3. Schedule

2015				2016				2017				2018											
Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
BUREAU OF RECLAMATION																							
Project Management and Meetings																							
Climate Projections																							
		Hydrology / Groundwater Modeling																					
		Update and Develop Water Resource Model																					
		Reservoir Optimization																					
		Evaluate New/Expanded Storage Sites																					
				Water Quality Assessment										Water Quality Assessment									
						Develop Water Resource Scenarios																	
										Model Scenarios													
														Final Reporting									
CONSULTANTS (OWRD-funded)																							
Technical Direction / Project Management																							
		Water Conservation Assessment #1 (Basin Study funded)																					
		Water Conservation Assessment #2 (ETO/FCA funded)																					
		Upper Deschutes Ecological Assessment																					
		Crooked Ecological Assessment																					
		Whychus Ecological Assessment																					
		Middle Deschutes Ecological Assessment																					
		Water Rights, Policy, Legal, and Socio-Economic																				Eval / Recommen	
						Develop Water Resource Scenarios																	
										Model Water Resource Scenarios												Eval / Recommen	
DBBC / DRC																							
Coordination, Administration, Data, Reporting, Outreach																							
2015				2016				2017				2018											

Note: The schedule has been updated to reflect a longer work period for the Water Conservation Assessments #1 and #2.

4 Updates

(For Schedule and Budget status: green = on track; yellow = risks currently being managed; red = corrective action required)

Reclamation Work Elements	Status/Developments	Schedule	Budget
Project Mgmt/Meetings	On track.		
Task-specific Input/Review	On track: <ul style="list-style-type: none"> • Scott Willey will participate in the Habitat Suitability Criteria Workshop. • Clyde Lay will review recent work on temperature/flow relationships. • Planning is underway to initiate task-specific Crooked River work (non-structural storage, water measurement, structural improvements for forecasting, etc.). 		
Climate Projections	Complete: <ul style="list-style-type: none"> • Five CMIP5 climate change projection scenarios selected for two periods, 2040s & 2060s. BOR: Climate change projection scenarios selected for two periods 2040s and 2060s. 		
Hydrology/Groundwater Modeling	On track: <ul style="list-style-type: none"> • Projected temp/precip data have been used to generate projected future unregulated flows in the Crooked River using VIC; future projected flows for U. Deschutes will be generated after calibrated GSFlow model is available from USGS (spring 2016). • Yellow status reflects likely need for additional budget re: increased costs for GSFlow development, and need to monitor schedule per availability of calibrated model. 		

Update/Develop Water Resource Model	On track: <ul style="list-style-type: none"> Ongoing updates to improve calibration and prepare model for Basin Study uses. 		
Reservoir Optimization	Mike Relf to coordinate w/LPE Working Group to plan approach, tasks, schedule for reservoir optimization tasks.	--	--
Storage Assessments	On track: <ul style="list-style-type: none"> Proposed approach assumes initial reconnaissance-level phase for U. Deschutes, Whychus, and Crooked basins. For Deschutes, second phase would involve planning-level engineering analysis of one option. For Whychus and Crooked, next steps would be developed by Working Group based on first phase results. Storage Assessment Working Group to be engaged in December. 		
OWRD-Funded Work Elements			
Technical Director (Watershed Professionals Network)	On track: The technical director (Niklas, WPN) is spending ~10 hours/week coordinating OWRD and Reclamation work elements. Tasks over the past month include: review and coordination of WCA #1 work, coordination with FCA/ETO on WCA #2, LPE meeting, Crooked Temperature Assessment work, OSF, feedback on Reclamation work elements, and planning team/steering team meetings.		
Water Conservation Assessment # 1 (Basin Study funded: Anderson Perry)	On track: Anderson Perry (AP) is doing a background reviews of all 8 irrigation districts and has completed the following: <ul style="list-style-type: none"> Compiled data for all districts, as well as data for the overall basin. Begun to format the data into a report for each district. The report for Three Sisters is nearly complete; coordinating with Niklas to make sure the level of detail is appropriate. Work anticipated in December is to provide draft reports for each district.		
Water Conservation Assessment # 2 (ETO/FCA funded)	On track: <u>Work completed by FCA in November:</u>		

	<ul style="list-style-type: none"> • Completion of the roadmap outlining the approach for Irrigation Modernization program and district assessments. • Completion of Communication Documents for the Irrigation Modernization program. • Mapping of the checklist for deliverables and action items for analysis. • Presentation of the Irrigation Modernization program to Basin Study Work Group on November 30. <p><u>Work anticipated in December:</u></p> <ul style="list-style-type: none"> • Rollout of Irrigation Modernization program to district managers at OWRC on December 1 • Begin district manager meetings and interviews of manager, board, and constituents. • Begin interviews of stakeholders within each district. • Review background information compiled by Anderson Perry as part of Deschutes Basin Study. • Begin literature review for the four non-DBBC districts (outside of Basin Study scope). 		
<p>Upper Deschutes Ecological Assessment (River Design Group/HDR)</p>	<p>On track:</p> <p><u>Work completed by RDG in November:</u></p> <p>Task 2: Coordination with USFWS, USFS, and DRC on existing data and Oregon spotted frog information</p> <p>Task 5: Field data collection planning.</p> <p>Task 6: Surveyed channel bathymetry and floodplain topography.</p> <p>Task 7: Completed velocity and discharge measurements at low flow.</p> <p>Task 8: Processed field data including discharge measurements, survey data, and pressure transducers.</p> <p><u>Work anticipated in December:</u></p> <p>Task 2: Coordinate with on-going studies.</p> <p>Task 3: Coordinate HSC development with USFS and USFWS.</p> <p>Task 8: Field data processing, surface model development, hydrologic analysis.</p>		

<p>Middle Deschutes Temperature Assessment (Upper Deschutes Watershed Council)</p>	<p>On track: <u>Work completed in November:</u> Data compilation and formatting Procedure developed in R open-source statistical software Preliminary analyses run and outputs formatted <u>Work anticipated in December:</u> Internal review team assembled Draft technical memo produced Draft technical memo distributed for internal review</p>		
<p>Whychus Temperature Assessment (Upper Deschutes Watershed Council)</p>	<p>On track: <u>Work completed in November:</u> Data compilation and formatting Procedure developed in R open-source statistical software Preliminary analyses run and outputs formatted <u>Work anticipated in December:</u> Internal review team assembled Draft technical memo produced Draft technical memo distributed for internal review</p>		
<p>Crooked Temperature Assessment (Watershed Professional Network)</p>	<p>On track: WPN is performing Phase 1 of the temperature assessment. Regression equations have been completed for stream temperature increase below Bowman Dam ; now working on creating Bowman Dam release temperature relationships as a function of reservoir elevation. WPN will present results to the Crooked River temperature subgroup on January 13th. The group will discuss potential Phase 2 analysis at that time.</p>		
<p>Legal, Policy, Economic (LPE) Assessment (Ecosystem Economics and GSI Water Solutions)</p>	<p>On track: <i>GSI Water Solutions</i> <u>Work completed in November:</u></p> <ul style="list-style-type: none"> • Attended BSWG meeting on November 3, 2015 to discuss tasks and coordinate with Reclamation. • Met with Technical Director and EE on November 2, 2015 to discuss Tasks, specifically execution of Task 1. • Development of Task 1A and 1B outline. 		

	<ul style="list-style-type: none"> • Compiled and documented municipal and quasi-municipal water use and water rights. • Compiled instream water rights (conserved water, mitigation projects, restoration projections, state established). <p><u>Work anticipated in December:</u></p> <ul style="list-style-type: none"> • Document/summarize instream water rights • Compile, document and summarize water use and water rights for irrigation, hydropower and storage. • Develop draft technical memo. • Compile spreadsheet of data for Reclamation under Task 1B <p><i>Ecosystem Economics LLC</i></p> <p><u>Work completed in November:</u></p> <ul style="list-style-type: none"> • Coordination with GSI on Task 1a (supply and demand/water right documentation), esp. as regards assembly of inputs to Task 1b. • Development of methodology/information needs for Task 1b (document water rights transactions since 2006 Basin Study). • Drafting initial list of desired outcomes by sector for Task 1c • Attended meeting with DRC, GSI, and WPN <p><u>Work anticipated in December:</u></p> <ul style="list-style-type: none"> • Task 1b analysis (following assembly of water right information under Task 1a) • Classification of desired outcomes and development of criteria approach for options assessment (Tasks 1b and 1c) 		
Develop Water Resource Scenarios	No change: Will commence in Fall 2016		
Evaluate Results	No change: Will commence in Winter 2018		
Communications (DRC)	<p>On track:</p> <p><u>Work completed in November:</u></p> <ul style="list-style-type: none"> • Coordinated BSWG meetings and process, including planning team, working group and communications subgroup. • Finalized Key Messages. • Co-developed PowerPoint presentation. <ul style="list-style-type: none"> • Co-presented at COCO. 		

	<ul style="list-style-type: none"> • Fielded questions from the public and interested stakeholders. • Coordinated with the State on contracting and communications issues. <p><u>Work anticipated in December:</u></p> <ul style="list-style-type: none"> • Continued coordination of BSWG meetings and process. • Continued implementation of the Communications and Outreach Plan including: <ul style="list-style-type: none"> • Presentations to City Council and County Commission meetings. • Continued refinement of Powerpoint presentation. • Support for development of OWRD website. • Coordination of communications subgroup (1-2 meetings) 		
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