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& More!

ADAPTIVE MANAGEMENT FOR WATER RESOURCES

WASHINGTON STATE'S NEW ERA

UPDATE ON THE 2021 COLUMBIA BASIN FORECAST AND THE STREAMFLOW RESTORATION ACT

by Carl Einberger, LHG and Jon Turk, LHG (Aspect Consulting, Seattle, WA)

Introduction

In April 2019, Washington State Governor Jay Inslee declared a drought emergency. By May, the governor expanded the declaration to include over half the state as impacts from a snowpack half of its historical average and a warm summer forecast became a reality. In the face of recent warmer, recurring, drought conditions in Washington state, policy makers and water managers are collaborating to find new models of managing water. Developing strategies aim to positively effect a wide range of competing interests for both surface and groundwater supplies.

Indeed, the regulation and management of Washington State water resources must continue to evolve with the changes in climate and increasing out-of-stream demands. In Washington, over a decade of State Supreme Court rulings and water resources legislation has resulted in state-wide responses. Progress continues into this new era of adaptive management.

This article spotlights two key and current efforts to improve water resources in the state: 1) the 2021 Columbia Basin Long-Term Supply and Demand Forecast; and 2) the Streamflow Restoration Act (codified in chapter 90.94 Revised Code of Washington (RCW)).

Columbia River Basin Long-Term Supply and Demand Forecast: The 2021 Update

The Columbia River Basin is intensively managed for water demands arising from hydropower, irrigation, navigation, flood control, fish protection, municipal and industrial water supplies, tribal treaty commitments, and recreation. Current management efforts are shaped by over a decade of critical legal decisions and legislation.

Legislative Mandate

In 2006, the Washington State Legislature passed HB 2860, creating the Columbia River Basin Water Supply Development Program. The Legislature thereby required the Washington State Department of Ecology (Ecology) to develop and submit a long-term water supply and demand forecast for the Columbia River Basin every five years. Ecology's Office of Columbia River submits an updated long-term (20-year) water supply and demand forecast to the State Legislature. Aspect Consulting (Aspect) is part of a team, led by Washington State University, currently working on the fourth iteration of these reports — scheduled for release in 2021. This report will forecast into 2040 the next 20 years of supply and demand scenarios for the Columbia River Basin.

The legislative report provides a regional assessment of environmental and economic conditions in three tiers (Tier Analysis) of the Forecast: the (1) Columbia River Basin; (2) Eastern Washington Watershed; and (3) Washington's Columbia River mainstem.

Adaptive Management

Supply & Demand

Foundation for Models

Groundwater Decline

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State-of-the-art modeling tools and techniques are used to assess impacts to water management from climate change, regional and global economic conditions, and state-level water management actions. In addition to the Tier Analysis, the Forecast includes specific modules for independent systems that influence the Tiers.

Factors Influencing Supply and Demand

Climate Conditions — The Forecast is updated every five years using global and regional-scale climate model results published at a similar frequency. The Pacific Northwest is expected to experience wetter winters and springs, and drier summers, declining snow packs, shifts in timing of peak flows, and prolonged periods of low-flows. Each update of the Forecast utilizes the most current range of data downscaled from Global Climate Models ("GCMs" — see sidebar below).

Agricultural Trends — The Forecast updates consider changes in agricultural market conditions, input costs, production decisions, global trade conditions, temperature and precipitation patterns, water management policies, and water storage capacities. Washington hosts a diverse mix of crops and is responsive to consumer trends from domestic and export markets.

Hydroelectric Water Demands — Hydropower uses were forecasted by relying on planning documents published by the Northwest Power and Conservation Council, and consultations with Bonneville Power Association and Columbia River public utility districts.

Water Management — This includes changes in water availability, storage, and costs to develop new water supplies.

The 2016 Forecast: Five Modules

In addition to the Tier Analysis, the 2016 Forecast included five modules to inform future model updates and water management decisions. The modules were completed independently of the Tier Analysis to provide a foundation for model expansion in future forecasts, and to inform water management and policy decisions.

The 2016 Modules included:

1) Integrating Declining Groundwater Areas into Supply and Demand Forecasting — this module identified ten basins with sufficient data to assess trends in declining aquifer levels and provided recommendations for integrating groundwater trends into future forecasts.
2) Pilot Application of METRIC (Mapping Evapotranspiration at high Resolution with Internalized Calibration) to assess finer scales of agricultural water demands, non-consumptive return flows, and stream discharges.
3) Analysis of Water Banking Trends in Washington and other western states to inform water management and policy decisions.
4) Assessment of User-Pay Systems for Water Right Permitting and potential impact on water demands.
5) Feasibility Assessment for Incorporation of Western Washington into future studies to create a state-wide system plan.

2016 Forecast available at: https://ecology.wa.gov/Water-Shorelines/Water-supply/Streamflow-restoration

Global Climate Modeling Groups

Global Climate Models

Global Climate Models (GCMs) bear the same acronym as their components (general circulation models), as they are generally coupled general circulation models of atmospheric (AGCM) and oceanic (OGCM) conditions at the planetary scale. Global Climate Models vary in complexity from simple heat transfer models to more complex models that integrate the dynamics between the oceans, atmosphere, and sea ice, and chemical transport. GCM results are published from a variety of government and academic research programs. The IPCC (Intergovernmental Panel on Climate Change) is the United Nations body for assessing and distributing research related to climate change. In the United States, the NOAA Geophysical Fluid Dynamics Laboratory and the Program for Climate Model Diagnostics and Intercomparison at Lawrence Livermore National Laboratory have central roles in the IPCC, along with many other contributing scientists around the world. Program for Climate Model Diagnostics and Intercomparison at: https://pcmdi.llnl.gov/CMIP6/

Adaptive Management

Comparison of regulated surface water supply and agricultural water demands for the historical (1981-2011; top panel) and forecast (2035; bottom panel) periods across the entire Columbia River Basin. Interannual variability is shown for both supply (dotted lines) and demand (error bars).

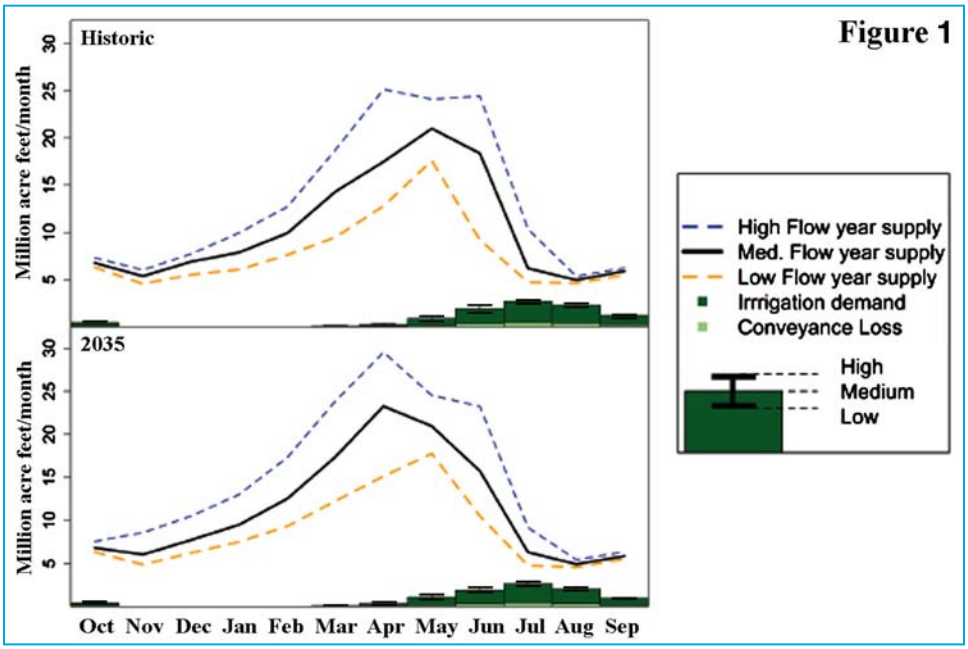
Demand Changes

Water Use/Need

Summary of 2016 Forecast Results

In general, the 2016 Forecast predicted that shifts in quantities and timing of surface water flows are expected to occur, resulting in greater overall water availability, but occurrence during periods when demands are lowest — greater wet-season flows, lower and prolonged drier low-flow periods.

Figure 1. Comparison of Historic-vs.-2035 Water Supply Forecast in the Columbia River Basin



A comparison of results from the 2011 Forecast to the 2016 Forecast is shown in the following table:

Table 1. Comparison of Modeled Changes in Demand Between 2011 and 2016 Forecast Reports

Water Use or Need	Estimated Volume (acre-feet)	Source
Projected changes in Agricultural Demand by 2035	-332,837 to -250,027	WSU Integrated Model
Projected changes in Agricultural Demand by 2035 with 10% Double Cropping	-272,837 to -130,027	WSU Integrated Model + Coarse Estimate of 2nd Crop Water Needs
Projected changes in Agricultural Demand by 2035 with 10% Double Cropping and Planned Water Supply Projects	27,163 to 169,973	WSU Integrated Model + Coarse Estimate of 2nd Crop Water Needs + Planned Water Supply Projects through 2026
Projected changes in Municipal and Domestic Demand (including municipally-supplied commercial) by 2035	80,000	Municipal Demand Projections
Projected changes in Hydropower Demand by 2035	35,000 to 75,000	Review of Projections by Power Planning Entities
Water Use or Need to be met with Surface Water		
Unmet Columbia River Instream Flows	13,400,000	Ecology data, McNary Dam, 2001 drought year
Unmet Tributary Instream Flows	30,000 to 660,000	Ecology data, tributaries with adopted instream flows, on average, and for a drought year (generally 2001)
Unmet Columbia River Interruptibles	40,000 to 310,000	Ecology Water Right Database (depending on drought year conditions)
Yakima Basin Water Supply (pro-ratables, municipal/domestic and fish)	450,000	Yakima Integrated Water Resource Management Plan (April 2011)
Alternate Supply for Odessa	155,000	Odessa Draft Environmental Impact Statement (October 2010), adjusted based on consultations with the East Columbia Basin Irrigation District
Declining Groundwater Supplies (other than in the Odessa Subarea)	750,000	*See Integrating Declining Groundwater Areas into Supply and Demand Forecasting* Module

Adaptive Management

Double-Cropping

Droughts

Supply Increase

Forecast Updates

Irrigation Forecast

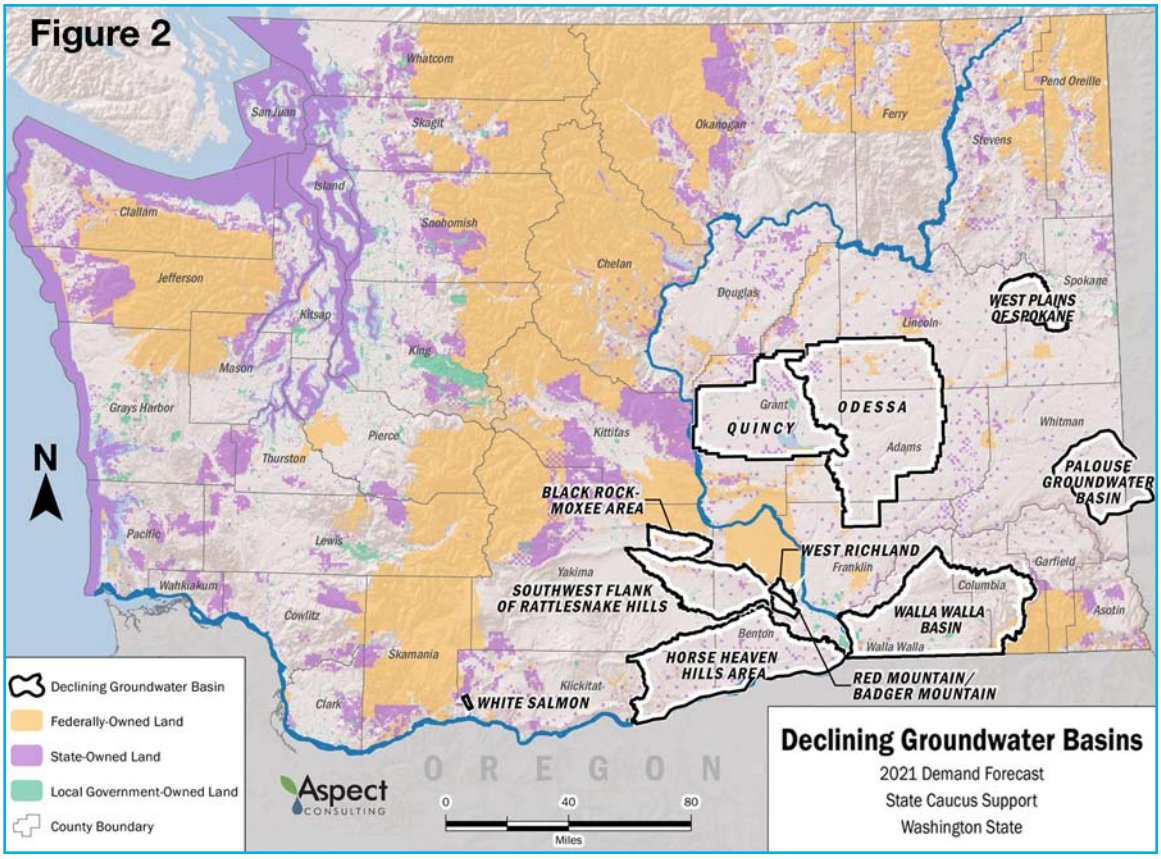
Key Findings from the 2016 Forecast include:

- Producers with existing water rights may respond to decreased crop irrigation demand by more frequently double-cropping (i.e., two crops-one field-one year) or growing cover crops, which could offset the demand decreases projected in this Forecast. However, preliminary results suggest that double-cropping would need to occur over much more than 10 percent of the eligible acreage by 2035 to lead to an overall increase in irrigation demand.
- Agricultural production remains vulnerable to future changes in climate. Droughts are generally expected to occur more frequently and become more severe as the climate changes. And forecast results present a trend towards increasing frequency and intensity of curtailment in the spring.
- Average annual increase in water supply at Bonneville Dam in south central Washington (lower Columbia River after all major tributaries have entered the river) could be on the order of +11.7 percent.
  A decrease in supply of -10.6 percent is expected from June to October.
  An increase in supply of +28.6 percent is expected from November to May.
- Demand shifts due to climate change and cropping changes could be on the order of -14.1 percent between July and October, and +6.1 percent between March and June.

2016 vs. 2021 Forecast Comparison

Taking into context the results of the 2016 Forecast, the current work on the 2021 Forecast will include: the five-year update of climate data; extending the forecast window forward five years; and will include a number of module improvements and additional modules. These include extended and improved climate data inputs from the Coupled Model Intercomparison Project 6 (CMIP6) using two different emissions scenarios to simulate long-term global atmospheric changes. Though the 2016 Forecast discussed the feasibility of including Western Washington watershed data into the 2021 update, this will not occur in this latest version.

Figure 2. Declining Groundwater Basins in Washington State



The 2021 Forecast will include:

- Double-Cropping and Pre/Post Season Irrigation patterns
  This will be the result of a variety of interviews with producers and agricultural professionals throughout the Columbia Basin to inform estimates of pre- and post-season irrigation needs.

Adaptive Management
Curtailment

• Improved Water Rights Interruption (Curtailment) Modeling
GIS and database analysis of water rights that are curtailed during low-flow periods, and meetings with Ecology water managers to refine estimates of priority date thresholds. This will include interruption of irrigation water rights subject to instream flow rules, prorationing where it occurs in the Yakima River Basin, and interruption of junior irrigators subject to senior water right holders.

Declining Groundwater

• Groundwater Integration
Declining groundwater issues facilitated meetings with Ecology and other state agencies to leverage state assets for potential improvements in data collection and consolidation of water level information. Additional outreach will be focused towards the major water right holders within ten declining groundwater basins (*see* Figure 2), from whom we will solicit data and participation in groundwater monitoring. Additionally, Aspect will work with Washington State University, Ecology database managers, and other agencies to incorporate additional water level monitoring data into a consolidated database within Ecology's Environmental Information Management (EIM) system.

Modeling

• Model and Simulation Improvements
Additional functionality of software improvements to the Vic-CropSyst from V2.0 to V3.0; better integration of ColSim (RColSim) with Vic-CropSyst V 3.0 to minimize manual workflows and provide comprehensive scenario modeling.

Municipal Use

• More Precise Municipal and Consumptive Use Estimates
Improvements in the methods and estimates of municipal water demands and consumptive use and incorporation into the Tier Analysis. The 2016 Forecast, and previous forecasts used simplified methods for estimating municipal and domestic water use RcolSim. The 2021 Forecast will include additional data collection, refined population estimates, and analyses of per-capita water demands.

Work on the 2021 Forecast is ongoing, with results expected to be released in Fall 2020.

The Streamflow Restoration Act

Washington's Streamflow Restoration Act (chapter 90.94 RCW) has significant potential to influence state water resources for decades to come. Before discussing more recent news and current policy developments, a look at where current policies arose from will be useful.

Recent Impacts to Washington Water Management Framework

Watershed Planning

The Water Resources Act of 1971, amongst other things, defined the boundaries and numbering of the State's 62 Water Resource Inventory Areas (WRIAs). In 1997, the Washington State Watershed Management Act was passed and codified as Chapter 90.82 RCW. Between 1998 and 2012 watershed planning groups developed plans, with some, but not all, adopting the plans.

Court Rulings

Leading up to the current regulatory environment, the 2015 *Foster* decision and 2016 *Hirst* decision shaped the way Washington water is managed and permitted. [Editor's Note: For more information on these decisions and their outcomes, *see* Moon, *TWR* #153; Dickison & Haensly, *TWR* #155; Water Briefs, *TWR* #168; and Pitre, *TWR* #169].

"OCPI" Overruled

In 2015, the Washington Supreme Court in *Foster v. Ecology, City of Yelm, and Washington Pollution Control Hearings Board* overruled Ecology's use of **o**verriding **c**onsiderations of **p**ublic **i**nterest (OCPI) in the evaluation and approval of using out of place and time water-for-water mitigation, along with habitat improvements for mitigation. Based on the *Foster* decision, no level of impairment with instream rights is allowed, regardless of the magnitude or ecological benefit of proposed habitat mitigation. Only in place and in time water-for-water strategies may be used to address impacts to instream flows, in support of new water right appropriations or water right changes.

Permit Exempt Wells & Instream Flow

In January 2018, the Washington State Legislature passed Engrossed Substitute Senate Bill (ESSB) 6091, which was a response to the 2016 *Whatcom County v. Hirst, Futurewise, et al*. decision by the Washington State Supreme Court (the "*Hirst* decision"). The *Hirst* decision placed the burden on counties to address legal availability of water for permit-exempt wells as part of the building permit approval and planning process. The *Hirst* decision led to a range of responses from counties that contain watersheds with existing instream flow rules, ranging from continued approval of building permits (in some cases including disclaimers that the approvals did not constitute a guarantee of the right to use the associated permit-exempt well), to moratoriums on approval of building permits that request use of an unmitigated permit-exempt well.

Adaptive Management

***"Hirst* Fix"**

Instream Flow Rules

Instream flows are an element of water and river management — finding ways to maintain healthy and diverse ecosystems that are part of Washington's high quality of life, while sustaining basic life functions and economies ... Setting instream flows protects the river from new withdrawals that would harm instream resources. Instream flows do not put water in the streams and do not affect existing (senior) water rights. (From definition at Ecology website.)

Restoration Plans

The Birth of the Streamflow Restoration Act

ESSB 6091 was passed to be a "*Hirst* fix" — i.e., to provide counties clarity on a path forward for approving building permits and subdivisions in watersheds with instream flow rules. The law was codified in chapter 90.94 RCW, and requires updates to existing watershed plans, or for watersheds without existing plans, to develop new watershed plans specific to permit-exempt well mitigation. Basin-specific regulatory pathways were defined in chapter 90.94 RCW, and summarized in Ecology's *ESSB 6091-Streamflow Restoration, Initial Policy Interpretations*, published on March 20, 2018 *(see*: https://fortress.wa.gov/ecy/publications/documents/1811008.pdf). This policy document outlined applicability of the law by Water Resource Inventory Area (WRIA) as follows:

- In Basins with Instream Flow Rules That Do Not Regulate Permit-Exempt Uses (red, pink and green areas in map below) evidence must be consistent with the new programs established in Sections 202 and 203 of the law, including requirements about a fee and water use restriction. Alternatively, building permit applicants may show other evidence of an adequate water supply that complies with RCW 90.03 and 90.44.
- In Basins with Instream Flow Rules that Explicitly Regulate Permit-Exempt Uses (yellow areas) evidence must be consistent with requirements set forth in the rule.
- In the Yakima Basin (grey), Ecology may impose additional requirements to satisfy adjudicated water rights.
- In the Skagit Basin (also grey), additional requirements apply due to the *Swinomish* Supreme Court decision (*see* Water Briefs, *TWR* #117).
- In the Rest of the State (white areas), a well report showing physical availability of water is sufficient proof of an adequate water supply.

Figure 3. Streamflow Restoration Act Watersheds, per 2018 Legislation

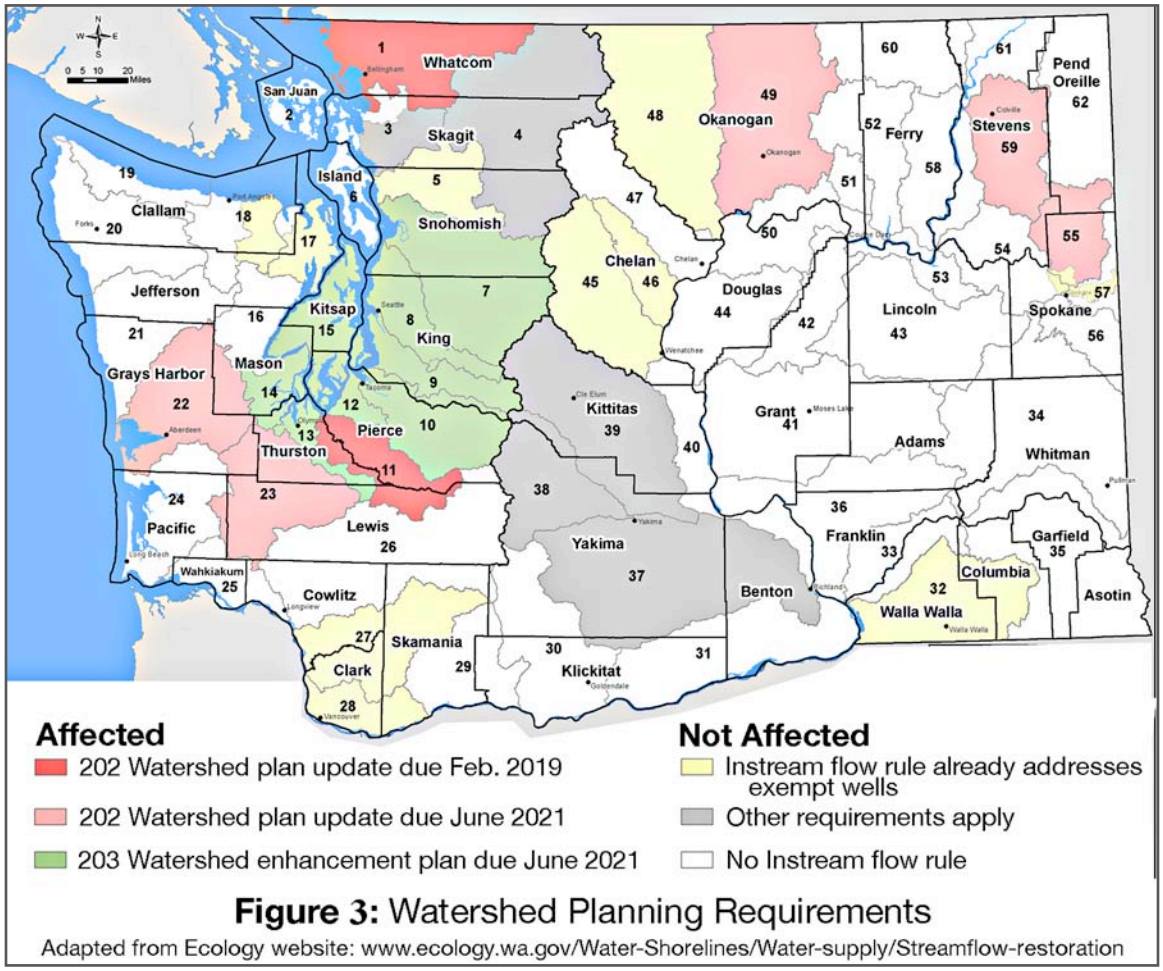


Figure 3: Watershed Planning Requirements

Adapted from Ecology website: www.ecology.wa.gov/Water-Shorelines/Water-supply/Streamflow-restoration

Streamflow Restoration Act Application

Washington's Streamflow Restoration Act applies to 30 of the 62 Water Resource Inventory Areas (WRIAs) in state: The remaining 32 WRIAs do not have regulated instream flow requirements, including the Columbia River Project area.

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Basin Rules Distinction

Basins with Instream Flow Rules That Do Not Regulate Permit-Exempt Uses

The remainder of this discussion focuses on watersheds that have instream flow rules that do not specifically regulate permit-exempt well uses (*see* Figure 3). For WRIAs that already have existing adopted watershed plans from the previous chapter 90.82 RCW watershed planning process (sometimes referred to as "Section 202" watersheds based on the applicability of that section of chapter 90.94 RCW), updates to the existing watershed plan are required. However, Ecology notes in its policy interpretation that: "A comprehensive review of the existing watershed plan is not required. The requirement to update the plan can be limited to the objectives of the new legislation, and a complete update of all the elements of the original watershed plan is not required." For WRIAs where previous watershed planning did not result in an adopted watershed plan (sometimes referred to as "Section 203" watersheds), a watershed restoration and enhancement plan must be developed.

Pathways & Timelines

Three different pathways and timelines were established in chapter 90.94 RCW:

In WRIA 1 (Nooksack) and WRIA 11 (Nisqually) — both of which had existing adopted watershed plans — "fast-track" watershed plan updates were required to be adopted by February 1, 2019, or Ecology was required to implement rulemaking. The Initiating Governments from the previous watershed planning process reconvened and led the process in collaboration with the Planning Unit. [Editors' Note: Initiating Governments may include counties, cities, water purveyors, tribes and other government entities depending on the WRIA.] The outcomes of these WRIA updates are discussed further below.

Adopted Plans

In WRIA 22 (Lower Chehalis), WRIA 23 (Upper Chehalis), WRIA 49 (Okanogan), 55 (Little Spokane), and 59 (Colville) — all also with existing adopted watershed plans — watershed plan updates are required to be adopted by February 1, 2021, or Ecology will again be required to implement rulemaking. As for the "fast-track" WRIAs, the WRIA-specific Initiating Governments from the previous watershed planning process reconvened and are leading the process in collaboration with each WRIAs Planning Unit.

Plans Lacking

In WRIA 7 (Snohomish), WRIA 8 (Cedar-Sammamish), WRIA 9 (Duwamish-Green), WRIA 10 (Puyallup-White), WRIA 12 (Chambers-Clover), WRIA 13 (Deschutes), WRIA 14 (Kennedy-Goldsborough), and WRIA 15 (Kitsap) — all of which have no adopted watershed plans (i.e., the "Section 203" watersheds) — each watershed restoration and enhancement plan must be adopted by June 30, 2021. Otherwise, Ecology's Director must submit a final draft plan to the salmon recovery funding board established under RCW 77.85.110 for technical review followed by plan amendments by Ecology and adoption. For the Section 203 watersheds, Ecology convenes and chairs a watershed restoration and enhancement committee comprised of local stakeholders.

Requirements

Key requirements of the chapter 90.94 RCW planning process applicable to all watersheds include development of permit-exempt well consumptive use estimates over a 20-year planning horizon and development of projects that mitigate for the consumptive use from the permit-exempt wells plus provide Net Ecological Benefit (NEB) for the watershed.

Use Estimates

Net Ecological Benefit

Consumptive Impacts

From Sections 202 and 203 of the law:

> The highest priority recommendations must include replacing the quantity of consumptive water use during the same time as the impact and in the same basin or tributary. …The watershed plan may include projects that protect or improve instream resources without replacing the consumptive quantity of water where such projects are in addition to those actions that the planning unit determines to be necessary to offset potential consumptive impacts to instream flows associated with permit-exempt domestic water use.

Permit Exempt Wells

"Permit-Exempt" Wells

WHY DOES THE CONCEPT OF A "PERMIT-EXEMPT" WELL MATTER?

In essence, a permit-exempt well in Washington State is a well that withdraws less than 5,000 gallons per day of groundwater for small domestic (and other non-commercial) uses such as a single home or group of homes. The concept of "permit-exempt" wells has been an institution in Washington State's water code. Historically, these wells have been exempt from obtaining a formal water right permit from the state. First instituted in RCW 90.44.050 in 1945, this rule has been an assumed settled part of water law, particularly for rural water supply. However, over the last 10 years, recent Ecology rule(s) and a series of Court decisions — including the *Hirst* challenge — threw that assumption into question. Going forward, the Streamflow Restoration Act aims to give legislative guidance and to somewhat reinstate the permit-exempt philosophy while also setting clear guidelines (and requirements) for habitat and streamflow benefits.

Adaptive Management

Consumptive Use Demand

Estimates of Consumptive Use from Permit-Exempt Wells

Chapter 90.94 RCW requires estimates of consumptive use demand from permit-exempt wells on a 20-year planning horizon (January 19, 2018 to January 19, 2038). The Legislature wrote the new law so that wells constructed in a *Hirst*-affected basin before the effective date of the act (January 19, 2018) would serve as proof of an adequate water supply for a building permit.

In June 2019, Ecology issued ESSB *6091 – Recommendations for Water Use Estimates* (*see* https://fortress.wa.gov/ecy/publications/documents/1811007.pdf). The recommendations for estimating the increase in the number of new permit-exempt wells included:

- use of past building permit data to estimate future development;
- use of population forecasts from the Washington State Office of Financial Management (OFM); or
- use of trends in filing of water well reports for water supply wells (although Ecology notes that use of water well reports will likely be less reliable).

Per Capita Use

Following development of the number of new homes relying on permit-exempt wells, the associated consumptive use also needs to be estimated. Ecology recommendations provide an example of per capita indoor water use of 60 **g**allons **p**er **d**ay (gpd), with 10% of that being consumptive (for a home using a septic system, which applies to the majority of homes relying on permit-exempt wells).

Outdoor use can be estimated by an analysis of averaged irrigated landscape in the watershed or assuming the limit of 1/2 acre of outdoor watering that applies to permit-exempt well use under RCW 90.44.050, combined with an estimate of crop use for pasture/turf grass specific to the location (based on Appendix A in the Washington Irrigation Guide and methods described in Ecology Guidance 1210: *Determining Irrigation Efficiency and Consumptive Use*).

"Net Ecological Benefit"

The New Concept of Net Ecological Benefit

In July 2019, Ecology issued final guidance for determining Net Ecological Benefit (NEB), in GUID-2094 (https://fortress.wa.gov/ecy/publications/documents/1911079.pdf). NEB, as Ecology notes, is a concept (rather than a scientific term) created specifically for the Streamflow Restoration Act.

NEB Definition

The definition of NEB in the guidance document is:

> The outcome that is anticipated to occur through implementation of projects and actions in a plan to yield offsets that exceed impacts within: a) the planning horizon; and, b) the relevant WRIA boundary.

The document also notes that:

> After conducting a thorough scientific literature review, Ecology has determined that NEB is not a technical term that has been defined in the natural sciences. Instead, it is a creation of the Washington State Legislature. Therefore, Ecology has prepared this guidance for interpretation and application of this term.

Mitigation Goal

NEB is developed by investigating and providing a range of water-offset and non-water-offset projects within the watershed. Recall that chapter 90.94 RCW states that: "The highest priority recommendations must include replacing the quantity of consumptive water use during the same time as the impact and in the same basin or tributary" — but that other water-offset and non-water-offset projects can contribute to NEB as well.

Offset Projects

Examples of potential water offset projects include:

- water right acquisitions
- managed aquifer recharge (MAR; see Figure 4)
- source exchange
- streamflow augmentation through pumping groundwater and discharging it to surface water
- off-channel storage

Habitat Improvement

Non-water-offset projects (habitat improvement) include:

- floodplain restoration
- habitat restoration
- beaver reintroduction (and analogs)
- riparian/upland conservation
- water conservation
- fish barrier removal
- reconnection of off-channel habitat (some of these may also have a water offset component as well, for example: floodplain restoration, water conservation)

Adaptive Management

Figure 4. Example of Managed Aquifer Recharge Project

Photo Credit: Walla Walla Basin Watershed Council

"MAR"

The Barrett Infiltration Gallery (Walla Walla Watershed) during construction, which is now providing 200 to 300 acre-feet/year of Managed Aquifer Recharge (MAR). MAR is one example of a water offset project that would support the NEB determination by providing a water offset. MAR projects are most feasible for project conditions that include available water during winter and spring, suitable infiltration rates and capacity, appropriate aquifer storage, and delayed release to surface water during low flow periods.

Implementation Steps

Summary of Implementation Process

The implementation process for the existing watershed plan updates and watershed restoration and enhancement plans can be summarized in five key steps:

Step 1: Define impacts of 20-year domestic permit-exempt well consumptive use
Step 2: Define water-for-water projects at the watershed scale
Step 3: Define mitigation gaps in time and space at a subbasin scale
Step 4: Define the list of NEB projects
Step 5: Evaluate NEB, reach local approval consensus, and submit for Ecology NEB evaluation and plan adoption

Nooksack Planning

"Fast-Track" WRIAs Status

The WRIA 1 (Nooksack) Planning Unit was unable to reach consensus on a plan update to meet the February 1, 2019 deadline, and Ecology implemented rule making (https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC-173-501). In April 2019, Ecology issued a draft rule which proposes a limit of 500 gpd for indoor use and a maximum of 1/12th of an acre of irrigation for outdoor use, with curtailment of outdoor use during drought emergencies. Ecology accepted informal comments on the draft language and is planning to issue an updated rule proposal in November 2019, to be followed by public hearings and a formal comment period. The deadline for adopting a final rule amendment under chapter 90.94 RCW is August 1, 2020.

Nisqually Planning List

The WRIA 11 (Nisqually) Planning Unit successfully reached consensus on a watershed plan update, and Ecology formally adopted the plan on the February 1, 2019 deadline (*see*: http://nisquallyriver.org/nisqually-water-planning/). The plan included a "Tier 1" project list in support of NEB that relied on a combination of managed aquifer recharge projects (the largest contribution to NEB, at 1.66 cubic feet per second of anticipated streamflow benefit), connections to the City of Yelm water system, water right acquisitions, and floodplain restoration and protection.

Spokane Area Case Study

Planning Under the Streamflow Restoration Act

Case Study: WRIA 55 (Little Spokane Basin)

Aspect has been working with Spokane County and the WRIA 55 (Little Spokane) Planning Unit to update that watershed plan under the chapter 90.94 RCW process. In this case, the three counties within WRIA 55 (Spokane, Stevens, and Pend Oreille Counties) relied on a combination of historical growth rates and Office of Financial Management (OFM) population estimates to develop a range of predicted growth in permit-exempt well use by subbasin over the required 20-year period. They then conducted a detailed

Adaptive Management

Use Estimate

Offset Projects

Consensus

Funding Challenges

20-Year Plan

Localized Solutions

Sustainable Management

analysis of irrigated acreage on properties with permit-exempt wells, using a statistically representative sample of single-family units and aerial photography to estimate average irrigated lawn size on a subbasin level. Guidance 1210 and the Washington Irrigation Guide were then used to estimate outdoor consumptive use on a subbasin level. Indoor use relied on the estimate of 60 gpd per capita, with census data used to establish the average number of people per household.

Technical presentations to the Planning Unit have provided important background information, covering topics including:

- the recently developed GSFLOW integrated groundwater/surface water model for the Little Spokane watershed that will be used for evaluation of potential water offset projects (*see* model report at: www.spokanewatersheds.org/wria-55-57-current-projects)
- managed aquifer recharge project examples from the Walla Walla watershed
- fisheries/habitat distribution and issues
- examples of habitat improvement projects implemented or proposed in WRIA 55

WRIA 55 Takeaways: Collaboration and Funding are Key

A key goal of the Planning Unit meetings is to support collaboration, with the goal of attaining consensus among Planning Unit members on the decisions and actions taken in support of the watershed plan update. Opinion polling on key topics and individual follow up with members of the Planning Unit are intended to support the goal of reaching consensus, with the ultimate goal of achieving a successful watershed plan update that Ecology will adopt.

One of the major challenges ahead following plan adoption is funding for ongoing implementation of the plan, and in particular, funding for development and implementation of projects identified in support of the NEB determination. Establishing funding sources for ongoing operation, maintenance, and monitoring costs, such as for managed aquifer recharge projects, are also a concern and have yet to be identified. Information and supporting documents on the WRIA 55 planning process can be found at: https://www.spokanecounty.org/3843/WRIA-55-Watershed-Plan-Update .

Conclusion

PREPARING FOR WATER USE WITH A 20-YEAR LINE OF SIGHT

Increased out-of-stream demands combined with changing climate conditions are prompting both state policy makers and water managers to plan far ahead.

A core concept of sustainable water supply management is the preservation of freshwater supplies for the highest and best uses — including sustaining instream flows and providing safe drinking water.

The dichotomy of Washington's water resources across the Cascade divide drives the need to adapt policies and regulations around flexibility in response to a wide range of environmental and urban conditions. What is the highest and best use of a water resource?

Fundamental to NEB analyses is the attention to time and location, creating a need for localized solutions, with basin-scale programs to coordinate them.

In Washington State, the 2021 Columbia River Basin Supply and Demand Forecast, as well as work in basins such as the Little Spokane, Yakima (the Yakima Integrated Plan), the Walla Walla (the Walla Walla Watershed Council), or the newly-forming Columbia Basin Sustainable Water Coalition for specific goals and strategies, are all instructive examples of how regulators, water managers, communities and tribes are responding.

Whether exacerbated by persistent drought conditions, population growth, or agricultural market drivers, sustainable water management — translating to water for fish, water for people, water for agriculture — must adapt to the changing regulatory policies and shifting climate conditions.

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Carl Einberger, LHG is an Associate Hydrogeologist at Aspect Consulting. Carl is currently leading technical evaluation and facilitation tasks with the WRIA 55 Planning Group in the Little Spokane Basin to update their existing watershed plan, as required by ESSB 6091 and the Streamflow Restoration Act.

Jon Turk, LHG is an Associate Hydrogeologist at Aspect Consulting. He is currently part of the technical team developing the 2021 Long-Term Supply and Demand Forecast for the Columbia Basin. Jon is also working with the Skokomish Tribe in WRIA 14 and 15 on tasks related to the Streamflow Restoration Act and assisting multiple clients with water supply infrastructure and water rights optimization.

Adaptive Management

2019 AWRA-WA State Conference

American Water Resources Association – Washington Section Event
October 1, 2019

"Water Resources Planning and Implementation: Challenges, Complexity, and Uncertainty"
Venue: The Mountaineers in Seattle, 7700 Sand Point Way NE

The conference will highlight the role of water resource planning efforts in Washington in addressing competing needs and sources of future uncertainty such as climate change. Interdisciplinary perspectives will be presented on the challenges and success stories of past water resource planning efforts and effective plan implementation.

Will Stelle from Washington Water Trust will kick off the conference with a keynote speech, sharing his insights into planning in Washington State. Session 1 will feature a historical perspective on planning in Washington, followed by presentations on lessons learned from Watershed Planning that are cross-cutting and relevant to multiple watersheds. Session 2 will focus on the *Hirst* decision and related planning activities and methodologies, such as Net Ecological Benefits. Session 3 will cover managing uncertainty in planning efforts, including climate change. Session 4 will cover significant planning efforts in Washington other than Watershed Planning, such as the Yakima Integrated Plan. Session 5 will be panel discussion with a view towards future planning and how to make it more effective.

Conference Schedule

Keynote Address: Will Stelle, Washington Water Trust

Session 1: Lessons Learned from Watershed Planning
Tom Ring, Yakama Nation
John Kounts, Washington PUD
Sharon Haensly, Squaxin Island Tribe
Mike Kaputa, Chelan County

Session 2: *Hirst* and Beyond
Lisa Dally Wilson, Dally Environmental, and David Troutt, Nisqually Indian Tribe
Bennett Weinstein, Department of Ecology
Andy Hover, Okanogan County

Session 3: Uncertainty in Planning
Abishek Singh, Intera
Gillaume Mauger, University of Washington
Carrie Sessions, Department of Ecology
Joe Mentor, Mentor Law Group

Session 4: Bookends of the Planning Process
Urban Eberhardt, Kittitas Reclamation District
Abby Hook, King County

Session 5: Panel Discussion
Tom Ring, Yakama Nation
Will Stelle, Washington Water Trust
Andy Hover, Okanogan County

For info: www.waawra.org/event-3394493

Federal Deregulation

Certification Procedures

ESA Applicability & Implementation

Trump Initiatives

Section 401 State Standards

Certification Impacts

FEDERAL DEREGULATION INITIATIVES

ENDANGERED SPECIES ACT & WATER QUALITY CERTIFICATION RULEMAKINGS

EFFORTS TO STREAMLINE FEDERAL PERMITTING

by Morgan Gerard & Elizabeth McCormick (Troutman Sanders LLP, Washington DC)
& Angela Jean Levin (Troutman Sanders LLP, San Francisco CA)

Introduction

Early August, typically a slow month for federal agency activity, was uncharacteristically busy as the Environmental Protection Agency (EPA), US Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS), each announced sweeping changes to their regulatory oversight programs. First, on August 9th, EPA unveiled a pre-publication version of a notice of proposed rulemaking (NOPR) to clarify state water quality certification (certification) procedures under section 401 of the Clean Water Act (CWA), 33 U.S.C. 1251, *et seq*., to allow for increased regulatory certainty in federal licensing and permitting activities, and particularly authorization of infrastructure projects. EPA Administrator Andrew Wheeler stated that the "proposal is intended to help ensure that states adhere to the statutory language and intent of Clean Water Act." The NOPR proposes substantive changes to the scope of state water quality certification authority under the CWA and the procedures governing these certifications, focusing on the plain language of the statute and at times departing from prior case law precedent.

Significant components of the NOPR are summarized below. EPA has established a 60-day period for public comment on the proposed rule, from August 22, 2019, the date of publication in the Federal Register, until October 21, 2019. In light of the substantial modifications to the scope, substance and procedures related to state water quality certification, the NOPR presents a unique opportunity for utilities, manufacturers, developers, and other regulated entities to help shape a significant regulatory program.

Next, on August 12, the USFWS and NMFS (collectively, the "Services") released pre-publication versions of three final rules that are expected to significantly affect the applicability and implementation of the Endangered Species Act (ESA), 16 U.S.C. § 1531, *et seq*. These regulations relate to the process and standards for listing species and designating critical habitat, the scope of protections for threatened species, and the process for consultations with federal agencies under section 7 of the ESA. The final ESA rules will go into effect on September 26, 2019, 30 days after they were published in the Federal Register on August 27.

Together, the section 401 NOPR and ESA final rules are part of one of President Trump's key initiatives — to reduce regulatory burdens for infrastructure and domestic energy production projects. The ESA final rules have already been challenged by several environmental groups and the 401 NOPR is almost certain to be challenged as well once finalized. However, if they are able to withstand scrutiny, the result will be a streamlining of the Services' implementation of the ESA and greater predictability surrounding the section 401 water quality certification process. Both section 401 and the ESA have been at the root of significant delays in infrastructure development, particularly in the hydroelectric licensing and relicensing contexts where the Federal Energy Regulatory Commission (FERC) is frequently statutorily prohibited from issuing licenses without these key approvals (see Figure 1, page 14). Thus, collectively, these deregulatory initiatives are set to provide regulatory efficiencies and increased certainty to many types of water infrastructure projects, including hydropower projects seeking licensing or relicensing.

EPA's Section 401 Notice of Proposed Rulemaking

Section 401 of the CWA requires that any applicant for a federal license or permit that may result in a discharge to navigable waters obtain a water quality certification from the state or states in which the discharge will originate. Although the CWA is a federal statute, section 401 delegates to the states and certain Native American Tribes authority to issue a water quality certification aimed at ensuring that discharges from a federally licensed project satisfy state water quality standards. Some of the most common examples of licenses or permits that may be subject to section 401 certification are:

- hydropower licenses and natural gas pipeline certificates issued by FERC;
- CWA section 404 permits for the discharge of dredged or fill material;
- Rivers and Harbors Act section 9 and 10 permits issued by the Army Corps of Engineers; and
- CWA section 402 National Pollutant Discharge Elimination System (NPDES) permits where EPA administers the permitting program.

The state water quality certification process has long been a cause of delay and uncertainty for a number of proposed infrastructure projects. If adopted, EPA's NOPR would considerably limit section 401 programs nationwide and in some instances curtail efforts by certifying state authorities to delay or block projects through the water quality certification process.

Federal Deregulation

Actual Discharge v. Overall Activity

Discharges Focus

Broad Review Limited

Maximum Period to Act

"Reasonable" Time Period

Waiver Provisions

Modification Power?

Scope of State Section 401 Review

EPA proposes to "interpret the scope of section 401 as protecting the quality of waters of the United States from point source discharges associated with federally licensed or permitted activities by requiring compliance with the CWA and EPA-approved state and tribal CWA regulatory program provisions." Here, EPA would focus a state's or an authorized tribe's review on the water quality of the actual discharge rather than the overall activity that is the subject of the federal permitting effort.

EPA's NOPR offers an interpretation of section 401's scope that is considerably narrower than the US Supreme Court's landmark 1994 ruling in *Public Utility District No. 1 of Jefferson County v. Washington Department of Ecology*, in which the Court found that the authority of States to include conditions pursuant to Section 401 is very broad, though not unbounded. Explaining that the federal regulations that guided the Court's *PUD No. 1* ruling were enacted prior to the 1972 CWA, and that the Court in *PUD No. 1* lacked the benefit of EPA's interpretation, EPA clarifies that it interprets section 401 water quality certification as pertaining only to point-source *discharges* associated with a federally licensed or permitted activity — and not the entire project proposal.

EPA's new interpretation of CWA section 401 would disallow a state's broad review and conditioning of a proposed project. EPA maintains that states' conditions are limited to water quality standards in EPA-approved plans, and that non-water quality impacts are more appropriately reviewed by the federal licensing or permitting agency under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, *et seq*., and other applicable environmental programs.

Time Period for Section 401 State Review

ONE-YEAR MAXIMUM PERIOD TO ACT ON A WATER QUALITY CERTIFICATION REQUEST

Building on the DC Circuit's early 2019 ruling in *Hoopa Valley Tribe v. FERC*, EPA in the NOPR clarifies that one year is the "absolute outer bound" for states to act on requests for water quality certification under section 401. EPA states that this one-year period begins to run from the state's receipt (meaning the date the request was received) of a certification request (meaning a signed and dated written communication requesting certification with a description of the project, its discharges, and receiving waters). The NOPR also seeks to amend EPA's regulations to prohibit a state and water quality certification applicant from engaging in a coordinated effort of withdrawal and resubmittal of water quality requests to toll the section 401 one-year maximum time period. Thus, the NOPR states:

> The certifying authority is not authorized to request the project proponent to withdraw a certification request or to take any other action for the purpose of modifying or restarting the established reasonable period of time.

EPA reasons that this statement reflects the plain language of section 401, as well as the statute's legislative history.

Recognizing that the statute expressly requires state action within a "reasonable" time period (up to a maximum of one year), EPA also asserts that not all projects should require a full year for the state to act. In setting the reasonable period of time for a certification — either on a project-by-project basis or categorically through a rulemaking — EPA proposes to require federal agencies to consider: (1) the complexity of the proposed project; (2) the potential for any discharge; and (3) the potential need for additional study or evaluation of water quality effects from the discharge. Although EPA is seeking comment on whether a "reasonable" time period should be categorially determined by regulation, EPA also states that federal agencies should be able to modify the established reasonable period of time as long as the modification does not exceed the one-year period.

Failure or Refusal to Act on a Water Quality Certification Request

Section 401 provides that the state or authorized tribe has waived its certifying authority if it fails or refuses to act on a request for water quality certification. In its NOPR, EPA defines the meaning of a state's "failure or refused to act" on a section 401 application, finding that a state has waived when it:

> …actually or constructively fails or refuses to grant or deny certification, or waive the certification requirement, within the scope of certification and within the reasonable period of time.

With this definition, EPA maintains that a certifying agency waives its certifying authority when it "states its intention unambiguously in writing or takes no action within the reasonable period of time." Further, a certifying agency "constructively fails or refuses to grant or deny certification" when it acts "outside the scope of certification," such as including conditions beyond the scope of section 401, as described above.

Water Quality Certification Modifications

In light of the statute's one-year time limit for acting on a section 401 certification request, EPA's NOPR solicits comment on whether and to what extent states or tribes should be able to modify a previously issued certification, either before or after the time limit expires, before or after the license or permit is issued, or to correct an aspect of a certification or its conditions that were remanded or found unlawful by a federal or state court or administrative body.

Federal Deregulation

Federal Determination

Rejecting Conditions

Federal Enforcement

Sweeping Changes

Role of Federal Agencies

State Waiver Determinations

The NOPR reaffirms precedent established by the DC Circuit in *City of Tacoma v. FERC*, 460 F.3d 53 (D.C. Cir. 2006), and other cases that the federal permitting agency determines whether a state waiver has occurred. EPA places the burden on the state to comply with section 401, and finds that states run the "risk [of] having [a] certification denial be set aside by the permitting federal agency" if the state exceeds the scope of its CWA authority.

Moreover, in a reversal of longstanding judicial precedent, including the Second Circuit's decision in *American Rivers v. FERC*, 129 F.3d 99 (2nd Cir. 1997), EPA in the NOPR would allow the federal licensing or permitting agency to review and reject conditions in a state water quality certification that are beyond the scope of addressing discharges to meet state water quality standards. The NOPR then proposes that the federal licensing or permitting agency would allow additional time (up to the end of the reasonable time period for certification) for the state or authorized tribe to remedy its certification.

Water Quality Enforcement

The NOPR asserts that the federal permitting agency is solely responsible for enforcing the state water quality conditions that ultimately become part of the federal approval. EPA notes that section 401 does not provide an independent regulatory enforcement role for certifying authorities for conditions included in federal licenses or permits.

EPA Oversight of Certifications and Modifications

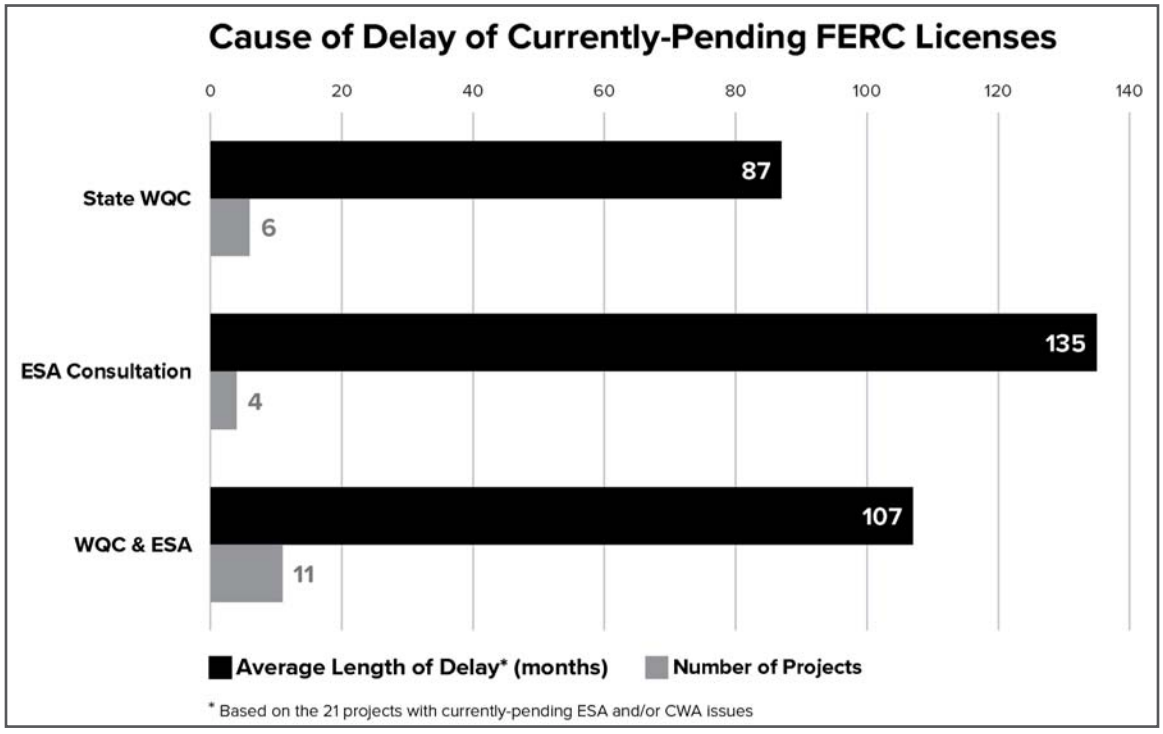
Currently, EPA does not play an active role in the issuance of water quality certifications. EPA notes that section 401 does not provide an express oversight role for EPA with respect to the issuance or modification of individual water quality certifications by state agencies. The NOPR solicits comments on the appropriate scope of EPA's general oversight role over state and tribal certifications and modifications.

Opportunity for Public Comment

EPA's NOPR seeks to implement sweeping changes to the scope of state water quality certification authority under CWA section 401, as well as the procedures governing these certifications. EPA's proposed new regulations are intended to facilitate expediency and efficiency in federal licensing and permitting activities by reducing overlapping authorities and reducing the time in which states can act on water quality certification requests.

EPA's proposal, therefore, offers a highly unique and important opportunity for the regulated community to help shape final regulations that have not been amended for nearly 50 years, and which could be highly beneficial in meeting business objectives of new project development and reauthorization of existing infrastructure. All comments are due October 21, 2019, 60 after the NOPR was published in the Federal Register in Docket ID No. EPA-HQ-OW-2019-0405.

Figure 1



Federal Deregulation

"Take"

ESA Listing & Habitat

New Regulations

ESA Reach Narrowed

Foreseeable Future

Climate Change Consideration

Critical Habitat

Unoccupied Habitat Approach

Endangered Species Act Final Rules

The federal Endangered Species Act (ESA) is the primary mechanism for protecting our nation's species and their habitats, making it unlawful under ESA section 9 to "take" (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) a listed endangered species without a permit from USFWS or NMFS (Services).

The Services determine which species should be listed as endangered (a species in danger of extinction) or threatened (a species likely to become endangered) under ESA section 4, and also designate area as critical habitat (the geographic area essential to the conservation of the species that may need special management or protection) at the time of listing. In addition, when a project proponent seeks a federal approval, the federal agency is required to ensure that actions they authorize do not jeopardize the existence of a listed species or adversely affect designated critical habitat, and, as such, must initiate consultation with the Services under ESA section 7 if a listed species or its critical habitat is impacted by project activities.

The proper scope of the ESA has been consistent fodder for debate. Project proponents have argued the Obama-era interpretations and certain judicial rulings have been overly expansive, and, thus, overly restrictive for both project development and voluntary mitigation, while environmental groups have already expressed concern over the expected narrowing of the ESA's protections under the recently finalized rules. The three new ESA final regulations relate to:

1) the process and standards for listing species and designating critical habitat, 50 C.F.R. § 424
2) the scope of protections for threatened species, 50 C.F.R. § 17
3) the process for consultations with federal agencies under section 7, 50 C.F.R. § 424

Species Listings and Critical Habitat Designations, 50 C.F.R. § 424

This rule is intended to narrow the reach of the ESA by further defining the criteria required to list species under the ESA as well as the scope of the designation of habitat as critical habitat.

Defined Scope of Foreseeable Future

Before the Services can list a species as threatened, they must make a determination that the species "is likely to become endangered within the *foreseeable future* throughout all or a significant portion of its range." 16 U.S.C. § 1532(20) (emphasis added). Several past cases have expansively interpreted this term to include species' "likely" extinction, which can be as forward-looking as approximately 100 years from the time of listing. *See*, *e.g.*, *Alaska Oil & Gas Ass'n v. Pritzker*, 840 F.3d 671 (9th Cir. 2016).

In the final rule, the Services include a new framework for the term foreseeable future, stating that it "extends only so far into the future as the Services can reasonably determine that both the future threats and the species' responses to those threats are likely." *See* 50 C.F.R. § 424.11(d). The Services further explain in the preamble that the term only extends to actual, not potential, threats and a species' response to those threats "more likely than not" to occur — a determination that will be completed on a case-by-case basis using the best data available. Specifically addressing climate change, the Services state that they will "consider the ranges of probabilities and uncertainties associated with the available [climate change] data, and...will not arbitrarily dismiss reliable aspects of various climate change predictions or projections (e.g., directionality) even if other aspects (e.g., rate of change) have greater levels of uncertainty."

Unoccupied Habitat

The final rule changes the Services' approach to the designation of "unoccupied habitat" as critical habitat. At the time a species is listed under section 4, the Services are directed to designate areas of critical habitat, which may include areas that are currently occupied by the species, and areas unoccupied by the species if those unoccupied areas are essential for the conservation of the species.

As background, the ability to designate "unoccupied habitat" was recently addressed in *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.,* 586 U.S. (2018). In *Weyerhaeuser*, the USFWS had designated as critical habitat a large area of privately held land. The land was virtually incapable of serving as habitat to the dusky gopher frog, the listed species, without significant remediation, and also had not been occupied by the frog since 1965. The US Supreme Court held that unoccupied habitat must also be habitat and therefore capable of supporting conservation of the species. However, the Supreme Court refused to define "habitat," instead remanding the case to the lower courts to determine the meaning of the term.

With this final rule, the Services partially respond to the *Weyerhaeuser* holding. First, the Services have re-instituted the pre-Obama Administration "step-wise approach" to designate unoccupied habitat as critical habitat. In 2016, the Obama Administration finalized a rule that allowed the Services to designate unoccupied habitat as critical habitat *without* first determining that the designation of occupied habitat alone would be inadequate to ensure conservation of the species. Under the new rule, the Services will only designate unoccupied habitat as critical habitat if occupied areas are insufficient to conserve the species and the unoccupied area is essential for the conservation of the species. For an unoccupied habitat to be considered essential, there must also be a "reasonable certainty" that the area: (1) will contribute to the conservation of the species; and (2) contains one or more of the physical or biological features essential to the conservation of the species. The Services have indicated they plan to undertake additional rulemaking to further address the meaning of habitat, which could further limit the ability to designate unoccupied habitat.

Federal Deregulation

Threatened Species Rule

Blanket Extension Removal

Protections Issued

Section 7 Consultation Streamlined

Informal v. Formal

Habitat Modification

The designation of unoccupied habitat has significant implications for a wide range of projects. For example, in the hydroelectric context, the designation of unoccupied habitat as critical habitat is particularly notable because there are likely multiple instances in a waterway where a particular aquatic species might have historically been found in a segment of a lake, river or stream, but where those segments are currently uninhabited and potentially uninhabitable.

The Scope of Protections for Threatened Species (the "4(d) Rule Removal"), 50 C.F.R. § 17

As discussed above, section 9 of the ESA prohibits a "take" of an endangered species. Under section 4 of the ESA, the Services can extend section 9 protections to species listed as threatened. In 1975, USFWS issued a "Blanket 4(d) Rule" extending section 9 protections to all threatened species; however, the NMFS did not promulgate a similar blanket 4(d) rule. The new finalized "4(d) Rule Removal" amends 50 C.F.R. §§ 17.31 and 17.71 to remove the "blanket" extension of protections to USFWS threatened species that otherwise would only apply to endangered species, including the prohibition on "take" under ESA section 9.

Going forward, USFWS will determine what protections, if any, are appropriate for each listed or reclassified threatened on a species-specific, case-by-case basis. USFWS states that the final rule allows the agency to capitalize on the benefits of tailoring regulations to the needs of a particular threatened species. While not required under the final regulations, USFWS has stated its intention to finalize a species-specific rule concurrent with a final listing or reclassification.

While the 4(d) Rule Removal will reverse the presumption of protections for threatened species, USFWS has already been issuing tailored 4(d) rules for newly-listed threatened species under the Trump Administration (*e.g.*, the Carolina Madtom, American Burying Beetle). Thus, the practical impacts for this reversal — as opposed to the current administration's approach to threatened species more generally — are relatively minimal.

Interagency Consultation under Section 7, 50 C.F.R. § 424

Many of the final revisions to the section 7 Interagency Consultation rule are intended to streamline consultation, including codifying the ability to use alternative consultation methods and the ability to adopt portions of other federal agencies' documents to support the consultation process. These changes are expected to provide benefits to the regulated community when federal licenses are needed. For example, in the hydroelectric context, the greater ability for FERC to directly adopt the Services' interpretations and documents and vice-versa may relieve the burden for license applicants to duplicate efforts before both the Services and FERC.

The Interagency Consultation Rule clarifies that formal consultation with the Services is required when a federal agency, through a biological assessment or review, determines that an action is *likely to adversely affect* a listed species. In contrast, informal consultation with the Services is required when an action *may* affect a listed species. The rule supports the use of programmatic consultations to reduce the number of project-by-project consultations. It also imposes time limits for informal consultations, with the Services only allotted 60 days to make a determination, though this may be extended upon mutual consent for up to an additional 60 days.

Definition of Destruction or Adverse Modification

Consultation under ESA section 7 includes evaluating not only whether the action will jeopardize a listed species, but also whether the action will adversely modify that species' critical habitat. In the new rule, the Services finalized the revision of the definition of "destruction or adverse modification," which clarifies that adverse modification is an alteration that appreciably diminishes the value of a critical habitat "as a whole." In adding this modifier, the Services clarify that "the final destruction or adverse modification determination is made at the scale of the entire critical habitat designation." Impacts to only portions of a critical habitat can still be considered an adverse modification, but only if the impacted area is "particularly important in its ability to support the conservation of a species (*e.g.*, a primary breeding site)."

Effects of an Action

During section 7 consultation, the Services must not only consider the immediate effects of a proposed action, but also certain related effects. The prior regulations differentiated between direct and indirect effects. Now, effects (now called "consequences") caused by the action must meet a two-part test: (1) the

Federal Deregulation

"Reasonably Certain" to Occur

"Environmental Baseline"

Ongoing Activities

"Water Projects"

Trumps Regulatory Goals

effect would not occur *but for* the proposed action; and (2) the effect is *reasonably certain* to occur. The final rule also includes a new definition for "activities that are reasonably certain to occur," at 50 CFR § 402.17. The "reasonably certain to occur" standard is reviewed in two specific contexts — activities caused by but not included as part of the proposed action, and activities under "cumulative effects." Additionally, consequences include impacts that "may occur later in time" and may include effects "occurring outside the immediate area involved in the action." According to the Services, these changes are intended to avoid spending agency resources unnecessarily on determining whether an effect is direct or indirect, and simply requires all effects to be considered.

Environmental Baseline

The final rule also includes a stand-alone definition of "environmental baseline," which is the agency's starting point from which to compare "the effects of the action."

The new environmental baseline definition is as follows:

> *Environmental baseline* refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. *The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.*

(emphasis added).

The final rule adds another sentence (italicized above) in an effort to make clear that the consequences of ongoing agency activities and existing facilities that are not within the Services' discretion to modify should be considered part of the baseline. Further, the preamble to the final rule states that, with regard to "water projects," such as hydropower projects, the federal permitting agency has the authority (particularly for ongoing operations or for constructed facilities that are seeking modifications or permit renewals) to appropriately scope the section 7 consultation to focus on certain discretionary actions.

CONCLUSION

Both of these developments further President Trump's regulatory goals announced in the Executive Order on Promoting Energy Infrastructure and Economic Growth. In addition to the ESA final rules and section 401 NOPR, the Trump Administration has launched an initiative to streamline environmental reviews under NEPA and narrow the reach of which waters quality under the CWA as Waters of the United States (WOTUS), 83 Fed. Reg. 67,174. Whether a project will discharge to WOTUS is a preliminary step to determining whether a section 401 water quality certification is required or if a different state water regulatory regime is implicated.

The section 401 NOPR and ESA rules have each drawn praise and sharp criticism from interested participants, with challenges already filed against the ESA rules. While the comment period for the Section 401 NOPR has only just begun at the time of this publication, similar challenges are expected to be filed by environmental groups and states for the section 401 NOPR if finalized as proposed. As a result, it remains to be seen whether and to what extent these regulatory changes will affect the regulated community in the long run.

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Elizabeth McCormick is an associate in the Energy practice at Troutman Sanders. Elizabeth helps clients navigate complex energy infrastructure proceedings before FERC. Her practice focuses on hydropower and natural gas proceedings, where she advises clients on a wide range of federal energy and environmental statutes, including the Federal Power Act, the Natural Gas Act, the Clean Water Act, the Endangered Species Act and the National Historic Preservation Act.

KLAMATH HYDROELECTRIC AGREEMENT

UPDATE ON KLAMATH HYDROELECTRIC SETTLEMENT AGREEMENT IMPLEMENTATION PROGRESS

by Richard Roos-Collins, Water and Power Law Group PC (Berkeley, CA)

Klamath Hydro Agreement

Risk Management

Ecosystem Restoration

Key Provisions

Rate Surcharges

Bond Measure

"Dam Removal Entity"

Capacity to Perform

Consultants Reliance

Introduction

On July 29, 2019, the Klamath River Renewal Corporation (KRRC) passed a critical milestone in the Klamath Hydroelectric Settlement Agreement (2016). It submitted proof of its capacity to manage risks that may arise in the removal of the four primary dams that comprise the Lower Klamath Project.

Removing these dams will constute the largest dam removal project ever undertaken. In a March 15, 2018 order, the Federal Energy Regulatory Commission (FERC) essentially asked the KRRC:

- What if contingencies arise during dam removal and you do not have adequate funds to complete the job?
- What is your Plan B?

The KRRC recently submitted a comprehensive risk management approach to address these questions. This approach will materially advance implementation of the KHSA. If successful, it will also establish best practices for completing complex ecosystem restoration projects — including other dam removals.

KHSA Terms

As previously reported (*TWR*s #170, #143, and #49), the Klamath Hydroelectric Settlement Agreement (KHSA) is a multi-party agreement to remove the Lower Klamath Project in order to restore free-flowing conditions and anadromous fish passage in the Klamath Basin.

The KHSA includes three key provisions:

First, PacifiCorp (as the current licensee for the Lower Klamath Project) will collect $200 million, including interest, from rate surcharges on its Oregon and California customers. The State of California will contribute $250 million in bond funds.

Second, a new "**d**am **r**emoval **e**ntity" (DRE) will be responsible to plan, permit, and perform dam removal.

Third, the DRE will protect PacifiCorp and the states from any cost overrun or liability associated with dam removal.

The first and second terms have been met. By 2011, PacifiCorp secured approvals from its public utilities commissions to collect the rate surcharges, on findings that dam removal under the KHSA would be less risky and costly than relicensing for continued generation under the Federal Power Act. Revenues will reach $200 million by December 31, 2019. The California Natural Resources Agency encumbered $250 million in funds from a bond measure, Proposition 1 (2014). Concerning the DRE, in April 2016, the KHSA signatories formed the KRRC, a new non-profit corporation, as the dam removal entity. The KRRC has already: entered into funding agreements with the states of California and Oregon; developed a Definite Plan for dam removal; and applied for license transfer and surrender as discussed below.

License Transfer Proceeding

In September 2016, PacifiCorp and the KRRC applied to FERC for transfer of the license for the Lower Klamath Project. The KRRC concurrently applied for surrender of the license to effect dam removal. As the co-applicants requested, FERC is first undertaking the license transfer proceeding. Under the Federal Power Act, KRRC must demonstrate that it has the legal, technical, and financial capacity to perform all of the obligations of a licensee for the Lower Klamath Project.

Legal Capacity

The KKRC is a California non-profit corporation in good standing. It has the legal capacity to be licensee. The Federal Power Act allows any legal person to be a licensee.

Technical Capacity

FERC permits a licensee to rely or employees or consultants that collectively have the technical capacity to perform the obligations of licensee. KRRC elected to rely primarily on consultants, as it will sunset as a corporation once dam removal is complete. KRRC has secured a best-in-industry team of consultants. It contracted with AECOM as the "owner's technical representative" to develop the planning documents for dam removal. AECOM has participated as a designer or advisor in every dam removal effort on the West Coast, including the Elwha Dam on the Olympic Penisula.

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KRRC engaged Kiewit Infrastructure West Company to perform dam removal, including design, construction, and mitigation activities. Kiewit has an exceptional track record completing large-scale and challenging civil projects of all types, including hydroelectric projects. As a recent example, it completed the emergency repairs of the California Department of Water Resources' Oroville Dam, which involved reconstruction of the main and emergency spillways in less than 18 months, as well as extensive debris and sediment removal, access roads, and other work. Kiewit has substantial experience working with the states of California and Oregon and with PacifiCorp.

Public Interest Concerns

FERC's Heightened Scrutiny on Financial Capacity

Financial capacity is the gravamen (most serious aspect) of the heightened scrutiny in this license transfer proceeding. In its March 15, 2018 order, FERC stated that license transfer as proposed in the KHSA — for the sole purpose of dam removal — "raises unique public interest concerns" not present in an ordinary license transfer proceeding.

Increased Scrutiny

> If a project is transferred to an entity that lacks the financial and operational capacity to complete these measures, and if the Commission can no longer hold the former licensee liable, the responsibility to decommission a project or restore project lands may fall to federal or state authorities. To prevent this, the Commission applies more scrutiny to [such a license transfer application].

As the order further states:

Funding Sources

> [T]he Amended Settlement Agreement provides that the Renewal Corporation will have three sources of funding for decommissioning, removal, and restoration of the Lower Klamath Project, totaling $450,000,000: (1) $184,000,000 from the Oregon Customer Surcharge; (2) $16,000,000 from the California Customer Surcharge; and (3) $250,000,000 from the California Bond Measure. These funds, known as the state cost cap, are the maximum monetary contributions available from the states of Oregon and California. The applicants have not identified any additional sources of funding if the cost of the measures required exceeds the state cost cap.

The Federal Power Act requires a licensee to comply with a license, without regard to a cost cap in an agreement such as the KHSA.

Abandonment Risk

FERC's March 15, 2018 order reflects its 1995 policy on decommissioning licensed projects at the end of their useful lives. There, FERC addressed the risk that a project would be "abandoned" and become the unwanted financial or regulatory responsibility of a state.

Responsibility Relief

> Several commenters noted also that a licensee might seek to transfer an increasingly marginal project to a new licensee that lacked the financial resources to maintain it or close it down in an appropriate manner. Through that process, the former owner relieves itself of the responsibility, which then may fall to State authorities or, at least when Federal lands are involved, on other Federal agencies. While the Commission is aware of no widespread problems on this score, it agrees that transfer applications should be scrutinized to foreclose this sort of situation, and where warranted, other authorities should be consulted before transfers are approved. …The Commission's goal is that generally matters of this type can and will be resolved to the *satisfaction of the successor agency* as part of the Commission's decommissioning process, obviating the need for any later other action. There could then be a *smooth transition to the new regime with a minimum of interruption*. (Emphasis added)

KRRC's Response to Heightened Financial Scrutiny

Risk Management Plan

In June 2018, KRRC had submitted a Definite Plan for dam removal, including methods for deconstruction, mitigation, and risk management. In its July 29, 2019 filing, KRRC included an Amended Risk Management Plan to demonstrate its capacity to manage all risks associated with dam removal. This plan consists of multiple elements, now discussed.

Responses to Board of Consultants

Independent Board Review

In its March 15, 2018 order, FERC required an independent Board of Consultants (BOC) to review "all aspects of the dam removal process" proposed by the KHSA. As its first task, the BOC was charged to "determine the adequacy of cost estimates, insurance, bonding, and the overall financial resources available to implement the [dam removal] plan," for the purpose of FERC's action on the license transfer application. The BOC effectively functions as a peer reviewer of elements of financial capacity. The BOC prepared reports in December 2018 and July 2019. The July 2019 Amended Risk Management Plan is intended to comply with all of the BOC's recommendations on risk analysis and management.

Klamath Hydro Agreement

Cost Estimate

Guaranteed Maximum Price

Dam Removal

Delivery Method

Indemnity

Financial Capacity

Performance Guarantee

Risk Exposure

Updated Cost Estimates

In its July 29, 2019 filing, KRRC updated the cost estimate in its 2018 Definite Plan. The updated cost estimate is $433.7 million, inclusive of: all expenditures to date; the future costs of planning, oversight, construction, and mitigation; the costs of insurance, bonds, and indemnification; and contingencies discussed below. The estimate is based on AECOM's modeling of many thousands of scenarios for risk occurrence during project implementation. The estimate reflects the P(80) standard, under which 80% of remaining project risks break against the project. P(80) is a conservative industry standard used for complex construction projects. The cost estimate is $442 million under the P(95) standard, which is highly conservative, assuming 95% of project risks break against the project. Each is under the state cost cap.

Under the P(80) standard, the KRRC has $16.3 million as cash reserve relative to its cost cap, along with $62.8 million as a risk contingency. Under the P(95) standard, the Renewal Corporation has $8 million as a cash reserve, along with $7.4 million as a risk contingency. As planning proceeds to Guaranteed Maximum Price (targeted for February 2020, see below), and if provided contingencies do not materialize, the corresponding financial benefit of greater certainty would be an increase in cash reserves. Thus, up to $27.7 million (P(80)) or $31.6 million (P(95)) will possibly move from contingency to cash reserve when this milestone is achieved.

Despite cost inflation, the updated estimate is roughly $43 million less than the 2018 estimate. This is a result of: risks being retired (e.g., risks related to engaging a Progressive Design-Build contractor); better definitions as to probability (e.g., risks associated with wildfire); or risk being assigned (e.g., risks to be assigned to a Liability Transfer Corporation) — in various combinations.

Progressive Design-Build Contract

In April 2019, KRRC and Kiewit entered into a Project Agreement that governs all aspects of dam removal. The contract applies a delivery method known as "Progressive Design-Build." Under this method, Kiewit is responsible for design and construction activities (including mitigation and restoration), and for correcting any errors or omissions that arise through its own fault or its subcontractors' fault. Kiewit will secure an insurance package that assures recourse for insured events. Kiewit will indemnify the Renewal Corporation for events relating to Kiewit's fault and certain other events specified in the Project Agreement. Overall, by establishing a single point of accountability, this delivery method substantially reduces the risks of cost overrun relative to other methods conventionally used in civil works projects (such as Boston's problematic Big Dig). Among other things, it minimizes the risk of litigation between owner, contractor, subcontractors, and their respective insurers, which has routinely occurred under other methods in the absence of a single point of accountability.

Kiewit anticipates that it will complete a 60% design for the project by January 31, 2020. The target date for the Guaranteed Maximum Price (GMP) is February 15, 2020. Once 60% design has been achieved and after the GMP has been established, the Renewal Corporation will update relevant portions of the cost estimates. Kiewit has provided an indicative statement that, based on its pre-GMP due diligence to date, the Renewal Corporation has adequate financial capacity. The GMP will provide definitive market proof of the sufficiency of the overall project budget. It will be subject to adjustments only if final permit terms are materially more costly than draft permit terms, or costs otherwise increase due to circumstances outside of Kiewit's control. The Renewal Corporation will secure insurance against the occurrence of such uncontrollable circumstances, to the extent such insurance is commercially reasonable to obtain. In the past decade of experience with water resources projects, Kiewit has not exceeded a GMP in this manner.

Parent Company Guarantee

Kiewit will provide a Parent Company Guaranty for its performance. Under that guarantee, its parent, Kiewit Infrastructure Group, Inc. will perform or pay for performance if it defaults. The parent company has $4.8 billion in revenue, no operational long-term debt, and a strong balance sheet that offers assurance that their projects will get completed. Further, the Project Agreement requires Kiewit to secure performance, payment, and maintenance bonds (surety bonds), prior to the commencement of any physical work, in an amount equal to the face value of the Project Agreement.

Insurance

KRRC engaged Aon Risk Insurance Services West, Inc. (Aon) as its insurance advisor and broker. Aon is one of the world's leading consultants in risk management, working across nations, industry sectors, and public and private clients. As consultant to the Renewal Corporation, Aon applied methods commonly used in insurance underwriting, including Project Enterprise Risk Assessment, to identify and quantify risk exposure associated with Dam removal. This method establishes the probability of an event, assesses

Klamath Hydro Agreement

Contractor Insurance

claim cost exposure, and then simulates a year of claim costs. This process is repeated to generate 50,000 simulated results via a Monte Carlo simulation. Aon benchmarked its modeling against actualized risks in other dam removal and civil works projects.

Over the past year, Aon analyzed insurance options. It recommended a Contractor Controlled Insurance Program (CCIP). Relative to alternatives, a CCIP would provide greater insurance cost efficiencies given the: long-tail nature of these claims (e.g., the prospect that claims may arise many years after project completion); greater participation by minority and woman-owned business; avoidance of gaps in coverage; and avoidance of trigger and exhaustion issues associated with long-tail claims. Kiewit will secure the insurance package before Dam removal. The program will cover potential third-party losses at a 99.5% confidence level. As Aon's modeling shows, this coverage will be sufficient to cover the largest expected risks *and* other project risks on each line of coverage.

Largest Insurance Coverages in Comprehensive Insurance Program

Insurance Type	Function	Amount
Umbrella Excess Liability	Commercial and general liability	$200 million
Builder's Risk/Inland Marine	Physical loss and/or damage to covered property arising out of a covered cause of loss	Probable Maximum Loss
Pollution Liability	Pollution caused by construction or by site	$100 million unknown pre-existing or new pollution incidents associated with the project site and pollution incidents resulting from the project work

Assuring Capacity

Such contingent instruments are part of financial capacity under generally accepted accounting principles. Consistent with those principles, the Nuclear Regulatory Commission credits such instruments in assuring capacity to decommission a nuclear powerplant. FERC has also relied upon such instruments to assure capacity for license compliance, including license surrender.

Liability Transfer

KRRC intends to engage Resource Environmental Solutions LLC (RES) for two functions: as surety for long-term management of restoration and mitigation measures, and as a specialty corporate indemnitor.

"Residual Risks"

In the July 29, 2019 filing, RES identified risks that could occur during and after Dam removal that are not otherwise covered by insurance or Kiewit's contractual indemnification. In the Amended Risk Management Plan, these are called "residual risks." RES identified and analyzed two categories of residual risks: 1) risks associated with long-term impacts to natural resources; and 2) risks associated with impacts to property arising through no error in Kiewit's design or implementation. RES undertook this analysis in coordination with Aon and AECOM. The analysis and recommendations are described in the Amended Risk Management Plan.

KRRC intends that RES will assume responsibility for long-term maintenance and adaptive management of mitigation measures. This includes conditions in the surrender order as well as post-surrender obligations under other permits. This responsibility is not limited by any cost cap.

Indemnification Program

Further, KRRC and RES intend that a RES entity will function as specialty corporate indemnitor to provide an indemnification program protecting PacifiCorp and the states against loss or expense associated with the physical impacts of Dam removal. This program will cover risks which are not otherwise fully covered by the Project Agreement or the insurance and bond programs. As described in the Amended Risk Management Plan, RES may form a Local Impact Mitigation Fund to address claims (such as loss in groundwater production, or diminution in property values) that may arise without fault in Kiewit's performance. The KRRC has an obligation under KHSA Appendix L to address such claims, which it recognizes are outside of FERC's jurisdiction.

Operation and Maintenance Agreement

O&M Agreement

KRRC and PacifiCorp entered into an Operation and Maintenance Agreement (O&M Agreement) that will go into effect upon license transfer. After that event, PacifiCorp will continue to operate and maintain the Lower Klamath Project, at its cost, until the KRRC is prepared to begin dam removal in compliance with a license surrender order. If FERC approves license surrender, and the KRRC accepts that order, PacifiCorp will be responsible for "decommissioning" the project, defined as disconnecting project works from the grid and salvaging any useful equipment. During the period that PacifiCorp operates the project

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pursuant to the O&M Agreement, it will indemnify the KRRC "from, and against any loss, expense, cost, liability, damage, claim, fine or penalty resulting from or otherwise related to the operation, maintenance, replacement, restoration or repair of the Lower Klamath Project or any failure by PacifiCorp to observe and comply with the terms and conditions" of the O&M Agreement.

Extension of Funding Agreements

In a December 2018 report, the BOC found that the KRRC's funding agreements could expire prior to completion of dam removal.

Funding Extensions

> Both the Oregon and California Funding Agreements have expiration dates of January 31, 2022, and the California Bond Measure has an expiration date of June 30, 2021, with exceptions for funds devoted to ongoing mitigation or monitoring activities. In response to FERC's question about whether the funding sources would still be available if dam removal extends beyond these dates, Renewal Corporation only stated that it would seek extensions from the states but provided no assurances that the states would be amendable to those extensions.

Extensions Secured

FERC subsequently asked how the "project will be funded if the dam removal extends beyond the expiration dates identified in the funding agreements." The KRRC advised the Commission that it would secure extensions of these dates (if and as needed), and that post-completion activities can be funded under the express terms of each of its funding agreements into escrow accounts before funding deadlines occur. In its July 29th filing, the KRRC stated that it has now secured extensions of all of its funding agreements. These extensions are summarized in the following table. After construction and mitigation activities are completed, the KRRC will encumber funds as necessary for monitoring and continued operation of the mitigation measures in compliance with permit conditions.

Funding Agreement	Amount	Original Expiration	New Expiration
OPUC	$184 million	1/31/22	12/31/24 (approved 5/21/19)
CPUC	$16 million	1/31/22	12/31/24 (approved 7/10/19)
California Bond	$249.5 million	7/1/20	7/1/25 (approved 12/5/18)

Plan B

Package Elements

The financial capacity of the KRRC is an integrated package consisting of the following elements:

- $450 million in committed funding;
- use of Progressive Design-Build contract to assure a single point of accountability;
- engagement of best-in-industry project team;
- requirement of GMP before the KRRC's acceptance of license transfer; insurance, bond, and indemnity program that provides many hundreds of millions of dollars of risk protection;
- a project cost estimate at the industry standard P(80) level; and
- cash and contingency reserves that exceed the industry standard P(80) level. As discussed above, the cash reserve will likely increase as the project proceeds, as current risks based on uncertainties are retired. Further, the States and PacifiCorp must agree to the sufficiency of the financial capacity before license transfer.

Unforeseen Circumstances

The KRRC has the financial capacity to move forward with Facility Removal, and to do so from a position of strength. However, like any licensee that is responsible to meet its license obligations, unforeseen and remote circumstances theoretically could arise that would require the KRRC (if FERC approves license transfer) to raise additional funds. Facing these circumstances, how would the KRRC respond?

Reducing Costs & Risks

In its July 29th filing, the KRRC stated that it would evaluate value-engineering opportunities. This is a best practice in any complex construction project. Prior to construction, the Kiewit team will identify such opportunities to reduce costs and risks that could arise after construction begins, consistent with the project purpose and any permit terms for protection of environmental quality and public interest. The KRRC will examine these opportunities on an iterative basis as construction proceeds. The KRRC has received authorization for such adjustments in Oregon's water quality certification and will seek such authorization in other permits.

Additionally, under KHSA sections 7.2.1.A(5) and 8.7, parties will meet and confer to address and resolve any such circumstances that could arise after license transfer or surrender (in this case, after construction begins). Further, while its financial capacity of $450 million is created and limited by the state cost cap, the parties agree to "work jointly to identify potential partnerships to supplement funds generated pursuant to this Settlement."

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Future Support

In connection with the removal of the Edwards Project on Maine's Kennebec River, FERC approved a license transfer subject to future financial contributions to the transferee. Similarly, for the removal of the Penobscot Project, FERC approved license transfer on the transferee's representation of expected philanthropic contributions. Here, the KRRC almost certainly has all funds necessary for Dam removal; and, as Plan B, the States and other KHSA signatories will work with other parties to "identify potential partnerships to supplement funds" if necessary after license transfer. In sum, the KRRC reasonably expects to secure additional funds if necessary, taking into consideration the strength of the project team, and the active support of the States and other parties for completion of dam removal as an essential step in restoration of the basin ecosystem.

Removal Dates

Proposed Timeline for License Transfer and Surrender

In entering into the KHSA, the parties concluded "that decommissioning, and removal of the [Lower Klamath Project] will help restore Basin natural resources, including anadromous fish, fisheries and water quality," as an "important part of the resolution of longstanding, complex, and intractable conflicts over resources in the Klamath Basin." *See* KHSA section 1.1. The KHSA secures critical benefits for the states of California and Oregon and their citizens, PacifiCorp and its customers, tribal nations, local governments, non-governmental organizations, irrigators, and other interested parties. The KHSA establishes "target" dates of January 1, 2020 for start of dam removal, and December 31, 2020 for completion "at least to a degree sufficient to enable a free-flowing Klamath River allowing volitional fish passage." *Id*., section 7.3. The agreement also contemplates the possibility of an extended schedule if necessary to secure regulatory approvals or for other reasons.

In its July 29th filing, the KRRC asked FERC to act on the license transfer and surrender applications, so that the KRRC (if authorized to proceed) may complete dam removal by December 2022. That target date requires the commencement of pre-drawdown actions no later than May 2021.

Timeline

Proposed Timeline for KRRC's Actions Related to Dam Removal

Date	Event	Explanation
February 2020	Execution by the KRRC of GMP amendment to Project Agreement; negotiated instruments for bonding and indemnification consistent with Amended Risk Management Plan.	
May - December 2021	Pre-drawdown construction actions.	These actions include: replacement of Yreka water system; hatchery modification; access improvements; and flood control improvements. These actions will require a seven-month period.
January – March 15, 2022	Reservoir drawdown.	Drawdown must occur during this limited period in order to protect fishery resources.
Mid-March - December 2022	Construction and mitigation actions.	The KRRC will complete these actions in an eight-month period following reservoir drawdown.

Completion 2022

Request for Action on License Transfer

The KRRC filed the license transfer application in September 2016. Over the ensuing period, the KRRC provided FERC with detailed information regarding its legal, technical, and financial capacity to assume the obligations of licensee of the Lower Klamath Project. Accounting for preparatory activities and the window for reservoir drawdown (January 1 to March 15 in a given year), the KRRC must start work in May 2021 if dam removal is to be complete in 2022. In its July 29th filing, the KRRC asked FERC to act on this application as soon as possible and turn its attention to the surrender application.

Subsequent Conditions

Section 7.1.4 of the KHSA includes specific preconditions to KRRC's acceptance of license transfer. Further, FERC has recognized that approval of license transfer could include conditions subsequent. "If the Commission approves the [license] transfer, the approval order will specify what information PacifiCorp and the KRRC will need to provide and any conditions that will need to be satisfied before the transfer can take effect. After receipt of any additional information and satisfaction of conditions, FERC would issue a notice that the transfer is effective."

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Fee Title

Comments & Notice

Acceptance of license transfer is subject to a standard condition that the transferee must hold fee title to the properties under the license. PacifiCorp will transfer and the KRRC will accept fee title to the properties that comprise the Lower Klamath Project, once the KRRC meets the requirements of KHSA section 7.1.4 and 7.6.4.D for protection of the States and PacifiCorp, including specifically their determining that the KRRC will protect them against any liabilities associated with dam removal.

Request for Start of License Surrender Proceeding

In its October 5, 2017 notice related to the license transfer, FERC stated: "We are not requesting comments at this time on the surrender application. After receiving the applicants' supplemental filing regarding a decommissioning plan, the Commission will issue a notice requesting comments, protests, and motions to intervene in that proceeding." The KRRC has now updated its Definite Plan with respect to cost estimates and risk management. In its July 29th filing, the KRRC requested that FERC proceed with its notice and pre-decisional steps related to license surrender, including environmental review, immediately upon approval of license transfer.

CONCLUSION

The Klamath River Renewal Corporation has now submitted a comprehensive approach for risk management associated with the largest dam removal project ever proposed for FERC's approval. This approach consists of multiple elements — project delivery method, insurance, bonding, and indemnification — integrated to avoid and manage risks to the maximum extent feasible.

For Additional Information:
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References

All documents referenced in this article are available at:
www.klamathrenewal.org/ ("Resources")

Richard Roos-Collins is Principal of Water and Power Law Group PC. He is the general counsel for the Klamath River Renewal Corporation. Any opinions in this article are personal.

Editor's Note: On September 3rd, just as *The Water Report* was about to go to press, the California State Water Resources Control Board (SWRCB), Division of Water Rights (Water Quality Certification Program) issued a "Denial Without Prejudice of Water Quality Certification."

The Denial Without Prejudice is a non-substantive procedure for complying with the one-year deadline in section 401(a) of the Federal Clean Water Act (33 USC § 1341 et seq.). It means that SWRCB is not ready to act on the certification request.

SWRCB stated in its Denial letter that "[S]ince submitting its certification application on September 4, 2018, the KRCC has provided the State Water Board with several updates to its project... ." Among other reasons set out in the Denial letter, SWRCB noted that it is the CEQA lead agency for the Project and that the SWRCB "cannot issue a certification until the CEQA process is complete." Denial at 2.

"The State Water Board issued a draft certification for public comment on June 7, 2018...At this time, the State Water Board is unable to certify that the Project will comply with California water quality standards and other appropriate requirements of state law because of recent changes to the proposed Project requiring evaluation, the pendency of information requests, and the ongoing work necesary to comply with CEQA." *Id*.

KRRC is expected to file a new request soon for a water quality certification for the project. For questions regarding the Denial letter, contact Philip Meyer, SWRCB Water Quality Certification Program, 916/ 341-4369 or Philip.Meyer@waterboards.ca.gov.

WATER BRIEFS

ROSEMONT COPPER MINE HALTED AZ

FLAWED ANALYSES LEADS TO OVERTURNING OF APPROVAL

On July 31, the US District Court for the District of Arizona (Court) halted construction of the controversial Rosemont Mine in southern Arizona's Santa Rita Mountains. The decision overturns the 2017 approval of the open-pit copper mine by the US Forest Service. The Court noted, "[T]he litigation in these [consolidated] cases stems from the evaluation and ultimate approval of the Rosemont Mine by various agencies of the federal government." *Center for Biological Diversity, et al. v. United States Fish and Wildlife Service, et al.,* Case 4:17-cv-00475-JAS (July 31, 2019); Order at 1. The ruling prevents Toronto-based Hudbay Minerals from beginning construction on the $1.9 billion mine in the Coronado National Forest, 30 miles southeast of Tucson.

The proposed mine is massive in scale and impact. "Rosemont's proposed mining operation is projected to impact thousands of acres of the Santa Rita Mountains." *Id*. at 1. "In the course of digging through 3,000 feet of geologic material, Rosemont will penetrate the wall of the groundwater table lying beneath the Santa Rita Mountains and will need to pump groundwater out of the pit to continue their mining operations. After Rosemont ceases its mining operations in 20 to 25 years, Rosemont will turn off the pumps, and the pit will then act as a hydraulic sink such that the pit will fill with groundwater." *Id*. at 2.

Also at stake in the case was the impact on the cultural resources of three Indian tribes: "As recognized by the Forest Service, among the cultural resources impacted by the Rosemont Mine would be the disturbance and desecration of 33 ancient Native American burial grounds containing, or likely containing, the human remains of ancestors of the Tohono O'odham Nation, Pasqua Yaqui Tribe, and Hopi Tribe (collectively "Tribes"); there is also the potential for additional disturbance and desecration of unmarked and unrecognized graves outside known cemetery areas. *See* FEIS at 1036-1040. The Forest Service further acknowledged that the Rosemont Mine would adversely impact the Tribes': 'historic properties, human burials, sacred sites...villages and graves of ancestors and traditional resource gathering areas, would be destroyed...These impacts are severe, irreversible, and irretrievable... [The Rosemont Mine] would destroy this historical and cultural foundation [of the Tribes], diminish tribal members' sense of orientation in the world, and destroy part of their heritage.' *See* FEIS at 1036-1037." *Id*. at 3.

In 2017 the Forest Service issued a "record of decision" for the Rosemont Mine, saying the project complies with environmental laws and regulations and should proceed. The decision authorized Hudbay to build and operate the mine for its projected life of 30 years. The July 31st decision overturns the record of decision and the underlying environmental analysis for the mine project, sending both back to the Forest Service for review.

Save the Scenic Santa Ritas, the Center for Biological Diversity (CBD), the Arizona Mining Reform Coalition and the Sierra Club's Grand Canyon Chapter filed a lawsuit in November 2017 challenging the Forest Service's approval. The Center also sued the US Fish and Wildlife Service (USFWS) over its determination that the mine would not jeopardize threatened and endangered species. A decision in that case is pending. In September 2017, CBD sued to challenge a biological opinion from the USFWS that determined the mine would not jeopardize threatened and endangered species in the area. The Forest Service relied on the USFWS's opinion in its decision to approve the mine. In the July 31st Order, the judge said he would issue a separate order at a later date for this case.

The Court's Order also ruled in favor of three Indian tribes — the Tohono O'odham, Pascua Yaqui, and Hopi — that filed a similar lawsuit challenging the Forest Service's approval. Like the environmental groups, the tribes also are challenging the US Army Corps of Engineers (Corps) issuance of the Clean Water Act permit. The tribes are represented by Earthjustice.

After summarizing several dispositive issues raised by the plaintiffs in Part Two of the Order (beginning on page 7), the Court in Part Three "goes into a much deeper, extensive discussion of many of these issues." *Id*. at 7. (Part Three starts on page 11). The Court pointed out that the "…focus of the Dispositive Case is the arbitrary and capricious actions of the Forest Service." US District Judge James Soto sets out his Conclusion on page 36 of the 37-page Order.

> Throughout the administrative process, the Forest Service improperly evaluated and misapplied: 1) Rosemont's right to surface use; 2) the regulatory framework in which the Forest Service needed to analyze those surface rights; and 3) to what extent the Forest Service could regulate activities upon Forest Service land in association with those surface rights. These defects pervaded throughout the FEIS and ROD, and led to an inherently flawed analysis from the inception of the proposed Rosemont Mine.

The Court's critique of the Forest Service analyses continued in the Conclusion. There the Court first cites 5 U.S.C. § 706(2)(A) for the proposition that "[t]he reviewing court shall...hold unlawful and set aside" unlawful agency actions (*id*. at 36). Judge Soto then adds a footnote explaining why the Order doesn't allow Hudbay Minerals to proceed with construction of the mine while the case is on remand to the Forest Service. "Given the magnitude of the errors discussed herein, allowing the Rosemont Mine to proceed while the Forest Service conducts further proceedings on remand is unwarranted." Order at 37, Footnote 17.

The Rosemont Mine faces additional legal challenges not addressed by the ruling. The Judge has not yet ruled on the merits of the groups' March lawsuit challenging the Corps' issuance of a Clean Water Act permit for the mine. The mine, which would threaten critical water resources and wildlife habitat, cannot be constructed without the permit.

For Info: Order available at: www.biologicaldiversity.org/campaigns/rosemont/pdfs/Dkt-248-order-granting-pi.pdf ; Randy Serraglio, CBD, 520/ 784-1504 or rserraglio@biologicaldiversity.org; David Steele, Save the Scenic Santa Ritas, 520/ 907-2620 or davidss@simginc.com

WATER BRIEFS

COLORADO RIVER WEST

LAKE MEAD TRIGGER

On August 15, the US Bureau of Reclamation (Reclamation) released its Colorado River Basin August 2019 24-Month Study, which sets the annual operations for Lake Mead and Lake Powell in 2020. Based on projections in the 24-Month Study, Lake Mead will operate in the Normal or ICS Surplus Condition in Calendar Year 2020 and Lake Powell will operate in the Upper Elevation Balancing Tier in Water Year 2020 (October 1, 2019 through September 30, 2020). The August 2019 24-Month Study projects Lake Mead's January 1, 2020, elevation to be 1,089.4 feet, about 14 feet above the Lower Basin shortage determination trigger of 1,075 feet. Lake Powell's January 1, 2020, elevation is projected to be 3,618.6 feet — 81 feet below full. Because Lake Mead is projected to begin the year *below* the drought contingency plans threshold of 1,090 feet, Arizona, Nevada and Mexico will make water savings contributions to Lake Mead in 2020.

As a result of the 24-Month Study of conditions on the Colorado River system, Arizona will take a reduction of 192,000 acre-feet (AF) in its 2020 deliveries of Colorado River water to the Central Arizona Project canal system, leaving that water in Lake Mead. The May 20 Drought Contingency Plan (DCP) agreement among the seven Colorado River States and the Department of the Interior, as well as Minute 323 of the Water Treaty between the US and the Republic of Mexico, will prompt more participating entities to leave water, earlier and at higher levels, in Lake Mead.

Arizona's delivery reduction will help bolster surface levels at Lake Mead, which, according to some projections, could fall to critical levels within a few years if left unaddressed. Thanks largely to the DCP, however, Arizona will not be alone in leaving portions of its allocation in the reservoir. As a result of the DCP, signed by the States May 20, Nevada also will leave 8,000 AF of its 300,000 AF annual allocation in Lake Mead. The DCP agreement also stipulates that California will begin leaving a portion of its allocation in the reservoir should surface levels go below 1,045 feet. Additionally, the Republic of Mexico will leave 41,000 AF of its annual allocation in Lake Mead, according to the Binational Water Scarcity Contingency Plan that Mexico recently signed with the U.S. The BWSCP was made possible by Minute 323 to the U.S.-Mexico Water Treaty, which was entered into force in September 2017. Those efforts — plus a much deeper than average snowpack this winter in the Rocky Mountains — have reduced the risks to the Colorado River system caused by lingering drought conditions, as well as over-allocation.

The Upper Basin experienced above average snowpack, and runoff was 145% of average this past spring, raising Lake Powell's elevation by more than 50 feet since early April. Total Colorado River system storage today is 55% of capacity, up from 49% at this time last year. In addition, critical drought contingency plans adopted by the seven Basin States, federal government and Mexico earlier this year are now in place to reduce risks to the system. "While we appreciate this year's above average snowpack, one good year doesn't mean the drought is over. We must remain vigilant," said Reclamation Commissioner Brenda Burman. "I applaud everyone who came together this year to get the drought contingency plans done. The additional actions under the contingency plans will help ensure the reliability of the Colorado River system for the 40 million people dependent upon it."

Despite the above average 2019 snowpack, the Colorado River Basin continues to experience its worst 20-year drought on record, dating back to 2000. This 20-year period is also one of the driest in the 1,200-year paleo record. The August 2019 24-Month Study can be found at www.usbr.gov/lc/region/g4000/24mo.pdf.

For info: Reclamation website: www.usbr.gov; Patti Aaron, Reclamation, 702/293-8189; Doug MacEachern, ADWR, 602/ 771-8507 or dmaceachern@azwater.gov

DRINKING WATER FUND CA

HUMAN RIGHT TO WATER

The California State Water Resources Control Board (SWRCB) on August 20 authorized spending nearly a quarter billion dollars to help local water systems provide safe, reliable drinking water to communities throughout the state and begin closing the safe drinking water gap for more than one million Californians. The Board authorized spending $130 million this year and for the next 10 years from the Safe and Affordable Drinking Water Fund. Last month, Governor Newsom signed Senate Bill 200 (Monning), which created the fund to provide a reliable source of ongoing funding for safe drinking water needs using revenue from the state's cap-and-trade program. The Board also voted to authorize spending $80 million in one-time appropriations from Proposition 68, the statewide bond measure voters passed in 2018, and $31.5 million in onetime, legislatively sanctioned General Fund dollars to provide emergency funding for projects serving disadvantaged communities.

More than 300 communities and thousands of domestic well users across the state lack safe drinking water because of contamination by arsenic, nitrates and other chemicals. Many other communities served by small drinking water systems are also vulnerable to water quality violations and lack the financial capacity to build, operate and maintain necessary treatment facilities.

The new funding will allow the SWRCB to comprehensively address the full array of issues that prevent water systems from providing safe and affordable drinking water. This includes operating and maintaining modernized treatment systems, building the technical and managerial capacity of local water systems, and consolidating smaller systems with nearby larger ones. The funding also will allow small water systems to access additional resources for new treatment facilities and other needed infrastructure. Until now, many small systems could not access these resources because they lacked the funding and technical and managerial expertise to operate this critical public

WATER BRIEFS

health infrastructure. During the first year of implementation, most of the funding will be used to award grants and contracts with assistance providers to address immediate drinking water and public health needs in the short term, while beginning to plan and implement long-term solutions in hundreds of communities around the state.

Also, at the SWRCB meeting, the Office of Environmental Health Hazard Assessment presented a new interactive, web-based map tool for assessing water quality, affordability and accessibility for each of the state's communities and water providers. The tool uses 13 indicators to provide a baseline assessment that will help SWRCB track progress towards achieving the goals of safe and affordable drinking water accessible to all Californians.

The draft report and tool are works in progress, and additional data is needed to provide a comprehensive assessment. During a 60-day public comment period, OEHHA and the State Water Board will conduct webinars and workshops to solicit public input that will be used to finalize the report and tool by the end of the year.

For info: George Kostyrko, SWRCB, george.kostyrko@waterboards.ca.gov or www.waterboards.ca.gov

CWA CIVIL LIABILITY CA

VINEYARD VIOLATIONS

Following a civil liability settlement, Rhys Vineyards, LLC, has agreed to pay $3.7 million in penalties for committing multiple violations of the federal Clean Water Act (CWA) while developing a hillside property that straddles the South Fork Eel River and North Fork Ten Mile River watersheds in Mendocino County, the California State Water Resources Control Board (SWRCB) announced August 2.

A multiagency inspection team discovered a series of illegal activities on the 20-acre vineyard, including the permanent fill and loss of a half-acre of wetlands and 2,148 feet of a stream channel buried beneath the property. The development also involved the improper construction of roads and stream crossings — causing irreparable harm to already fragile wetlands — and was conducted without the required permits or authorization from state agencies. The Rhys Vineyards, LLC property spans 4,591 acres over 41 parcels in and around the North Fork Ten Mile River watershed and nearby outlying areas of Mendocino County.

In addition to the CWA, the infractions violated the state's Water Code, North Coast Water Quality Control Plan, and Fish and Game Code. The investigation, and settlement negotiations, involved the SWRCB, North Coast Regional Water Board and Department of Fish and Wildlife, and stretched over four years. The settlement represents a substantial and unique agreement involving multiple agencies and Water Board programs, and a significant penalty coupled with required corrective actions. The settlement requires Rhys Vineyards to pay approximately $1.89 million of the $3.7 million penalty to fund two habitat restoration projects: a supplemental environmental project (SEP) in the nearby South Fork Ten Mile River, overseen by the Nature Conservancy, to restore aquatic habitat to support resident fisheries and wildlife; and a project to enhance instream habitat in Dutch Charlie Creek managed through the National Fish and Wildlife Foundation.

The agreement also requires the vineyard to correct the entire road network on the property, mitigating or eliminating future sediment impacts. This kind of soil erosion, from the hillside to the watershed below, is a major source of pollution on properties throughout the region. Excessive sediment negatively impacts the migration, spawning, and reproduction of salmonid species, such as endangered Chinook and Coho salmon and steelhead trout, found within the impacted watersheds. The settlement agreement is available on the North Coast Water Board's website.

For info: Joshua Curtis, SWRCB, Joshua.Curtis@waterboards.ca.gov or www.waterboards.ca.gov

WATER RIGHT REVOKED CA

FAILURE TO REPORT USE

On August 7, the California State Water Resources Control Board (SWRCB) announced that it had recently revoked a water right license of a Delta landowner for repeated failure to file annual diversion and use reports in violation of the terms and conditions of the license. Following a 2017 investigation, the Delta Watermaster issued an administrative civil liability complaint alleging that Lamb Gianelli Family Limited Partnership (Lamb Gianelli) had repeatedly failed to file required reports of annual diversion and use of water by the applicable deadlines. The Delta Watermaster and Lamb Gianelli reached a settlement agreement without the need for a SWRCB hearing.

Pursuant to the settlement agreement, confirmed by a SWRCB order, Lamb Gianelli has paid a $20,000 penalty and did not contest the revocation of the portion of the water right license it owned. The license, with a priority date of 1926 (when the license was requested), had been issued in 1943 following confirmation of water availability and subsequent construction and inspection of diversion facilities. The portion of the license benefiting the Lamb Gianelli property has now been revoked.

All surface water diverters are required by the terms of their water right license, SWRCB regulations (23 CCR §920), and/or the Water Code (§5101), to report their water diversion and use annually.

For info: Michael George, SWRCB, Michael.George@waterboards.ca.gov or www.waterboards.ca.gov/waterrights/

NONPOINT SOURCES MT

EPA SECTION 319 GRANT

The Environmental Protection Agency (EPA) announced on August 15 that it has awarded $1,041,000 to the Montana Department of Environmental Quality (MTDEQ) to help protect human health and the environment through a Nonpoint Source Program (NPS) Clean Water Act Section 319 grant. This grant is given to states to implement environmental programs that address nonpoint source pollution in surface and ground water to meet and maintain water quality standards.

Under this program, a total of seven proposals were selected for funding that will restore natural processes (e.g., stream channel

WATER BRIEFS

migration, floodplain connectivity, native riparian revegetation) and will result in measurable improvements in water quality. The program is based on principles that emphasize voluntary and incentive-based participation. MTDEQ seeks to involve stakeholders through communication, cooperation, and common goals. For more information, on Montana's NPS accomplishments for 2018 visit: https://go.usa.gov/xyMJs [1].

Nonpoint source pollution encompasses a wide range of sources that are not subject to federal or often state regulation. These sources include agricultural runoff, unpermitted urban runoff, abandoned mine drainage, failing onsite disposal systems, and pollution caused by changes to natural stream channels. Congress enacted Section 319 of the Clean Water Act in 1987, establishing a national program to control nonpoint sources of water pollution. Through Section 319, EPA provides states, territories, and tribes with guidance and grant funding to implement their nonpoint source programs and to support local watershed projects to improve water quality. Learn more about successful nonpoint source projects at www.epa.gov/nps/nonpoint-source-success-stories [2].

This grant is one part of EPA's overall effort to ensure that America's waters are clean and safe. This year, EPA is distributing more than $165 million in section 319 grants to states, territories, and tribes to reduce nonpoint runoff in urban and rural settings, including efforts to reduce excess nutrients. Over the last two years, states restored over 80 waters and reduced over 17 million pounds of nitrogen, nearly 4 million pounds of phosphorus, and 3.5 million tons of excess sediment through section 319 projects. The 319 grants received by Montana complement thousands of additional dollars awarded to the state to carry out multiple programs that protect water quality including wetlands protection and restoration and water pollution control programs as well as $7.8 million in wastewater infrastructure funding for Clean Water Act State Revolving Fund.
For info: Lisa McClain-Vanderpool, EPA, 303/ 312-6077 or mcclain-vanderpool.lisa@epa.gov

NONPOINT SOURCES US WATER QUALITY TRADING

On September 5, the EPA Administrator Andrew Wheeler announced an important step to help promote the use of market-based approaches to efficiently and cost-effectively improve water quality across the nation. Speaking at the Chesapeake Bay Executive Council meeting, Administrator Wheeler announced several new policy proposals that could simplify and give more flexibility to states, tribes, and stakeholders seeking to develop market-based programs or to generate or use nutrient reduction credits.

The action seeks comment on policy options related to one of the six market-based principles identified in EPA's February 6, 2019 Water Quality Trading Policy memo — encouraging simplicity and flexibility in implementing baseline concepts. The proposal seeks comment on approaches to clarify and provide flexibility for nonpoint sources to generate credits for use in water quality trading.

Under the Clean Water Act, water quality trading is an option for those seeking compliance with a discharge permit. Under trading programs, permitted facilities facing higher pollution control costs may be able to meet their regulatory obligations by purchasing environmentally equivalent (or superior) pollution reductions from other sources at lower cost. While EPA has long interpreted the Clean Water Act to allow for pollutant reductions from water quality trading, the practice has not been used to its fullest potential.

EPA invites the public to consider the policy options presented in today's notice and provide written comment on those options and others that may help promote market-based approaches to water quality improvements. EPA will host a public meeting to facilitate discussion on this important aspect of market-based programs, including water quality trading, that can be used to cost-effectively achieve water quality improvements.
For info: EPA website: www.epa.gov/npdes/water-quality-trading; EPA Press Office: press@epa.gov

TRIBAL LAND PURCHASE OR WILLAMETTE FALLS SITE

On August 15, the Confederated Tribes of Grand Ronde finalized its purchase of the Blue Heron Mill site at Willamette Falls from Washington developer George Heidgerken. The 23-acre Willamette Falls property is located within the Tribe's ancestral homelands and holds significant historical and cultural importance for the Tribe.

Once home to the Charcowah village of the Clowewalla (Willamette band of Tumwaters) and the Kosh-huk-shix Village of Clackamas people, the area is part of the lands ceded to the US Government under the Willamette Valley Treaty of 1855. The Clowewalla band were year-round residents at the falls and were known as the gatekeepers of the falls. They were responsible for the management of the fishery and visiting tribal members would share with them a percentage of their catch as a type of tribute at the fishery.

Following the Willamette Valley Treaty (signed January 22, 1855 and ratified on March 3), tribal members were forcibly removed from their ancestral lands at Willamette Falls and relocated to Grand Ronde, the 60,000-acre reservation at the headwaters of the Yamhill River at the base of the coast range. Following this removal, tribal members would return to the Falls to fish for subsistence purposes. "This is a historic day for the Grand Ronde Tribe and our people," stated Cheryle A. Kennedy, Chairwoman for the Confederated Tribes of Grand Ronde. "Since 1855 the government has worked to disconnect our people from our homelands. Today, we're reclaiming a piece of those lands and resurrecting our role as caretakers at Willamette Falls."

The Tribe has been working with various local, regional, and state partners throughout the sale process to shape the future of the property. The Tribe has worked with Metro and Willamette Falls Trust on the Willamette Falls Riverwalk Project and established a clean-up plan with the Oregon Department of Environmental Quality. The Tribe placed the property under a purchase and sale agreement in May 2019. The August 15th closing concludes a three-month purchase

and due-diligence process. The due-diligence included actively consulting with partners and stakeholders, a review of the site's master plan, conducting environmental reviews, title and boundary reviews, looking at the historic and cultural resources at the site, and examining over 140 different documents associated with every aspect of the property.

The Tribes' website includes a Frequently Asked Questions section that explained the Tribes' interest in the property, including:

- Cultural Preservation: Willamette Falls is part of the Tribe's ancestral homelands and this purchase allows the Tribes to reclaim a culturally important part of that homelands.
- Cultural Awareness: By acquiring the site, the Grand Ronde Tribe can tell the Tribe's history and connection to the falls accurately. Without this acquisition, the Tribe's story would be told by a third party.
- Secures Access: The acquisition of this property assures that tribal members will always be able to access Willamette Falls for cultural purposes.
- Rehabilitation: The Clackamas and Clowwewalla people were the year-round residents at the falls and responsible for its management. Ownership of this property allows the Tribe to return to its role as stewards of these lands and ensures a caretaker role as it works on rehabilitating the site and rebuilding this special piece of the Tribe's homelands in the Tribe's vision.

For info: Confederated Tribes of Grand Ronde, 800-422-0232, info@grandronde.org and www.grandronde.org/

CONTAMINATION REPORT TX

GROUNDWATER MONITORING

The Texas Commission of Environmental Quality (TCEQ) released its *Joint Groundwater Monitoring and Contamination Report 2018* in July 2019. The annual report on the quality of groundwater in Texas lists all current groundwater-contamination cases in the state and their enforcement status.

Texas Water Code, Section 26.406 requires the annual report to describe the current status of groundwater monitoring activities conducted or required by each agency at regulated facilities or associated with regulated activities. The report is required to contain a description of each case of groundwater contamination documented during the previous calendar year. Also to be included, is a description of each case of contamination documented during previous periods for which voluntary clean up action was incomplete at the time the preceding report was issued. The report is also required to indicate the status of enforcement action for each listed case.

The report is divided into five sections. The section titled Groundwater Protection Program Descriptions provides a narrative, program-specific overview for each contributing agency or organization. The section titled Groundwater Contamination Case Description Tables contains a tabular listing of individual contamination cases which were documented for the calendar year. For more information, see the User's Guide section in this report.

An interactive, online map ("Viewer") of the cases is available that provides users with the ability to query the database for the current and some previous years, obtain spatial relationship information about these cases, and download the data. See the Viewer's User Guide Adobe Acrobat PDF Document for more information.

After identifying the file number, agency, and program for the groundwater contamination case of interest listed in one of the Groundwater Contamination Case Description tables, you may file an open records request to obtain additional information related to the case. Contacts for agency programs are located in Appendix 7 of the report.

For info: GW Report available at: www.tceq.texas.gov/publications/sfr/056

LEGIONELLA THREAT US

WATER SYSTEMS REPORT

On August 14, the National Academies of Sciences released a report entitled "*Management of Legionella in Water Systems*." Legionella is a bacterium found in drinking water distribution systems, premise plumbing, hot tubs, hot water heaters, cooling towers, fountains, and other building water systems. At high enough concentrations and when inhaled, Legionella can cause Legionnaires' disease or a milder, flu-like condition called Pontiac fever. Legionnaires' disease can be deadly if not treated with antibiotics. Nationwide reported incidence of Legionella infections has increased by five-fold between 2000-2018.

The report examines what is known about Legionella occurrence in water systems, and makes recommendations for managing bacterial growth in these environments in order to reduce the incidence of Legionnaires' disease. The report is available for free download at www.nap.edu/download/25474.

For info: www.nap.edu

WOTUS IMPACTS NM

CWA PROPOSAL: IMPACTS TO ARID STATE

According to a new analysis posted by Public Employees for Environmental Responsibility (PEER), New Mexico is so arid it can ill afford to lose the waters targeted by the Trump plan to roll back federal Clean Water Act (CWA) protections. New Mexico will see not only detrimental impacts to accessing clean drinking water and much of its fish and wildlife habitat, but also its attractiveness to tourism — all jeopardized under Trump's pending deregulatory initiative.

The Trump administration seeks to dramatically shrink the definition of Waters of the United States (WOTUS) which governs the jurisdiction of the Clean Water Act (*see* Sensiba, et al., *TWR* #179). The proposed changes would remove jurisdiction from all ephemeral streams, some intermittent streams, and all wetlands adjacent to those streams. That, in turn, would strip legal protection from most streams and wetlands in New Mexico, with the following consequences:

- More than 90% of New Mexico's streams and rivers are ephemeral or intermittent, and not connected to a traditionally navigable waterway. Santa Fe County, for example, now receives more than half of its drinking water from streams that would become vulnerable to pollution or destruction under Trump's plan;

WATER BRIEFS

- While wetlands cover less than one percent of New Mexico, virtually all these 482,000 acres of marshes, fens, alpine snow glades, wet meadows, shallow ponds, and playa lakes would be at risk from dredge or fill; and
- The riparian habitats vital to 80% of New Mexico's vertebrates and 70% of its birds would also lose legal protection.

"Trump's plan would be an unmitigated ecological and public health disaster for New Mexico," stated PEER Science Policy Director Kyla Bennett, a scientist and attorney formerly with the US Environmental Protection Agency, "because it leaves the vast majority of New Mexico's surface waters federally unprotected." "Water is too precious in New Mexico to be made into a political pawn."

The Santa Fe River is a critical trench line in this WOTUS debate. Due to New Mexico's aridity, the Santa Fe is perennial only near its headwaters, and becomes intermittent and then ephemeral as it flows downstream. The river provides about 40% of the City of Santa Fe's water supply.

Climate change will magnify these impacts. As it becomes hotter and drier, more streams will only flow after precipitation, resulting in more legally unprotected ephemeral waterways. These water shortfalls will be compounded as competition for dwindling water supplies increases.

"New Mexico is already on a perilous clean water path that Trump would steer into a train-wreck," Bennett added, noting that the Trump WOTUS plans are near finalization. Among the many casualties will be New Mexico's nearly $10 billion outdoor recreation economy.

For info: Kirsten Stade, PEER, 240/ 247-0296; PEER Newsroom: www.peer.

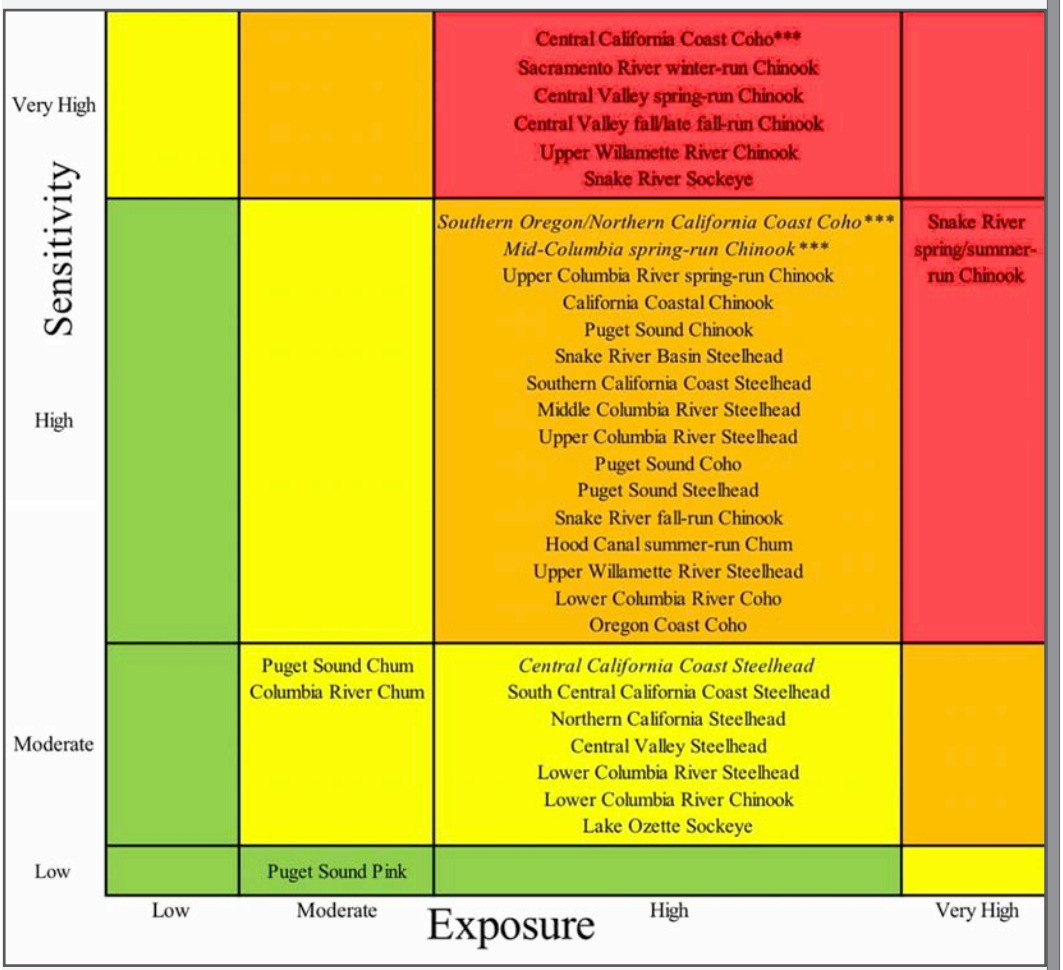
SALMON V. CLIMATE WEST COAST

COMPREHENSIVE ANALYSIS OF CLIMATE THREATS

Last July 24th, scientists from the National Marine Fisheries Service, the US Geological Survey, and various universities released: "*Climate Vulnerability Assessment for Pacific Salmon and Steelhead in the California Current Large Marine Ecosystem*" (Crozier et al, 2019) — an in-depth analysis of risks to pacific coast salmonids from impending climate change. Their assessment was based on three components of vulnerability: 1) biological sensitivity; 2) climate exposure; and adaptive capacity.

The Report warns that global warming is particularly threatening to the survival of several important salmonid populations in California, Oregon, and Idaho.

Salmonids with lengthy summer stream migrations that spawn far inland and those spending considerable time in coastal habitats are at higher risk. Species most at risk include Chinook salmon in California's Central Valley and in the Columbia and Willamette River basins; coho salmon in parts of Northern California and Oregon; and sockeye salmon that migrate to the Snake River Basin in Idaho — all of which are already listed under the federal Endangered Species Act.



Final Cumulative Vulnerability Rankings. Box shadings show final vulnerability rank for each Distinct Population Segment (DPS) as a product of sensitivity and exposure scores. Uncertainty in final ranks was represented with a bootstrap analysis. Borderline DPSs were those that placed in a higher rank in at least 25% of resampled data. Borderline sensitivity ranks are shown in italic, and borderline exposure ranks indicated with asterisks (***). All other cumulative vulnerability ranks were considered likely.

For info: Open Access Report available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0217711

CALENDAR

September 16-17 Alberta
4th Annual Canadian Shale Water Management 2019: Reducing the Cost of Water Recycling & Reuse Summit, Calgary. Calgary Stampede. Presented by IQ Hub. For info: www.canada.shale-water-management.com

September 16-18 China
American Water Resources Assoc. International Conference, Beijing. Joint AWRA-Chinese Academy of Sciences Event. RE: New Technologies, Strategies, Policies & Institutions. For info: www.awra.org

September 16-19 CO
Water Information Management Systems (WIMS) Workshop & USGS Water Use Collaboration, Fort Collins. Hilton Fort Collins. Presented by Western States Water Council & USGS. For info: http://www.westernstateswater.org/upcoming-meetings/

September 17 WEB
Cool Cities & Climate Change Webinar, 12 pm - 1:30 pm. Presented by Environmental Law Institute. For info: www.eli.org

September 17-18 MT
Montana Water Law Seminar, Helena. Best Western Great Northernn Hotel. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

September 18 CA
Industrial Stormwater General Permit 2018 Amendments - Public Training Workshop, Riverside. Santa Ana Regional Water Quality Control Board, 3737 Main Street, Ste. 500, Highgrove Room. Presented by State Water Resources Control Board, 9 a.m. - Noon. For info: Laurel Warddrip, 916/ 341-5531 or Laurel.Warddrip@waterboards.ca.gov

September 18-20 TX
One Water Summit: Sustainable, Integrated Water Management, Austin. JW Marriott Hotel. For info: http://uswateralliance.org/summit/

September 19 CA
Proposed Implementation Approach for TMDLs in Statewide Construction Stormwater General Permit Reissuance - Stakeholder Meeting, Sacramento. CalEPA Headquarters, 1001 I Street, Second Floor, Sierra Hearing Room. Presented by State Water Resources Control Board. For info: www.waterboards.ca.gov/water_issues/programs/stormwater/docs/construction/notice_cgp.pdf

September 19 NE
The Omaha Green Infrastructure Tour 2019, Omaha. Baxter Arena, 2425 S 67th Street, 8:30 am - 3:30 pm. Presented by University of Nebraska Extension Service. For info: Katie Pekarek, Extension, 402/ 413-1166, kpekarek2@unl.edu or www.regonline.com/registration/Checkin.aspx?EventID=2570316

September 19-20 TX
Texas Water Law Conference, San Antonio. La Cantera Hill Country Resort. For info: CLE Int'l, 800/ 873-7130, live@cle.com or www.cle.com

September 19-20 WA
Tribal Water in the Pacific Northwest Seminar, Seattle. Crowne Plaza Hotel. For info: Law Seminars International, 206/ 567-4490 or www.lawseminars.com/

September 21-25 IL
WEFTEC 2019: The Water Quality Event & Exhibition, Chicago. McCormick Place. Presented by Water Education Foundation. For info: www.weftec.org/future-weftec-schedule/

September 23 WA
Bioretention Hydrologic Performance Monitoring Studies I & II: Findings from Twenty Facilities in Western Washington (AWRA Washington Section Dinner Meeting), Seattle. Pyramid Alehouse Restaurant, 1201 1st Avenue S, 5:30 pm - 8:00 pm. Presented by American Water Resources Association, Washington Section. For info: admin@waawra.org

September 24 WEB
Introduction to SWAT+ (Watershed Model) Webinar, WEB. Focus on TMDL, Standards & Water Quality Permitting Programs. Presented by EPA Office of Water; Register in Advance to Participate. For info: https://register.gotowebinar.com/register/5893696086998112268

September 24 DC
Technology & the Seas: Enforcement in Marine Protected Areas Conference, Washington. Environmental Law Institute, 1730 M Street, NW, Ste. 700. Presented by Environmental Law Institute. For info: www.eli.org/events/technology-and-seas-enforcement-marine-protected-areas

September 24 CA
Climate Conversations: Voices of California Native American Tribes on the Impacts of Climate Change on Communities and Culture - Film Screening & Panel Discussion, Sacramento. California Natural Resources Agency Auditorium, 1416 9th Steet, 12 pm - 1 pm. Presented by State Water Resources Control Board. For info: www.waterboards.ca.gov

September 26 CA
Water & Environmental Law Program Speaker Series: Laurel Firestone, California State Water Resources Control Board, Sacramento. McGeorge School of Law. Presented by Water & Environmental Program. For info: Jennifer Harder at jharder@pacific.edu

September 26 OR
Long Tom Watershed Council Annual Celebration, Monroe. Hazel Dell Road; 5-8 pm. Presented by the Long Tom Watershed Council. For info: www.longtom.org/annualcelebration2019/

September 26-27 AZ
Tribal Water Law Conference, Scottsdale. Hilton Resort & Villas. For info: CLE Int'l, 800/ 873-7130, live@cle.com or www.cle.com

September 30-Oct. 1 FL
Managing Florida's Aquifers 19th Annual Conference, Orlando. Florida Hotel & Conference Center. Presented by the American Ground Water Trust. For info: www.agwt.org/events

September 30-Oct. 1 MN
Grey to Green Conference, Twin Cities. McNamara Alumni Center. For info: https://greytogreenconference.org/

October 1 WA
"Water Resources Planning & Implementation: Challenges, Complexity, and Uncertainty" - American Water Resources Assoc.-WA State Conference, Seattle. Mountaineers Seattle Program Center, 7700 Sand Point Way NE. Presented by the Washington Section of American Water Resources Assoc. For info: WA Section, 206/ 838-6299 or admin@waawra.org

October 1-3 WA
GreenTech 2019: Innovating Environmental Protection for the Future Conference, Seattle. Bell Harbor International Conference Center. Presented by Environmental Law Institute; Early Bird Rate Until August 31. For info: www.greentechconference.org

October 2 WA
Stormwater Climate Resiliency Workshop, Redmond. Redmond City Hall. Presented by Washington Stormwater Center, 9 am - 12:30 pm. For info: Laurie Larson, 253/ 445-4504 or laurie.larson-pugh@wsu.edu

October 2-4 NV
WaterSmart Innovations Conference & Exposition, Las Vegas. South Point Exhibition Hall. For info: https://watersmartinnovations.com/index.php

October 3 OR
Environmental Year in Review CLE, Troutdale. McMenamins Edgefield Manor. Presented by Environmental & Natural Resources Section Oregon BAR. For info: https://ebiz.osbar.org/ebusiness/Meetings/Meeting.aspx?ID=2469

October 3 WA
Northwest Remediation Conference: Cleanup/Reuse of Contaminated Properties, Tacoma. Greater Tacoma Convention Center. Presented by Northwest Environmental Business Council and Washington Dept of Ecology. For info: https://nwremediation.com

October 3 WA
Hydropower Relicensing Seminar, Seattle. Washington Athletic Club, 1325 6th Avenue. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

October 3-4 NM
New Mexico Water Law Conference, Santa Fe. Eldorado Hotel & Spa. For info: CLE Int'l, 800/ 873-7130, live@cle.com or www.cle.com

October 3-4 NM
Cultural Resources Law Conference, Santa Fe. Eldorado Hotel & Spa. For info: CLE Int'l, 800/ 873-7130, live@cle.com or www.cle.com

October 4 WA
Navigating Floodplains & Flood Risk Seminar, Seattle. Washington Athletic Club, 1325 6th Avenue. For info: The Seminar Group, 800/ 574-4852, info@theseminargroup.net or www.theseminargroup.net

October 6-9 CA
Stormwater…Why We Do What We Do - CASQA 2019 Fifteenth Annual Conference, Monterey. Monterey Conference Center. Presented by the California Stormwater Quality Assoc. For info: www.CASQA.org

October 7 UT
Utah Water Law Conference - 27th Annual, Salt Lake City. Marriott University Park. For info: CLE Int'l, 800/ 873-7130, live@cle.com or www.cle.com

October 7-10 OR
Oregon Association of Water Utilities Fall Operators Conference, Florence. Florence Events Center. For info: https://oawu.net/training-events/training-courses/

October 7-11 NC
Water & Health: Where Science Meets Policy Conference, Chapel Hill. Friday Conference Center. Presented by UNC Water Institute. For info: https://waterinstitute.unc.edu/conferences/waterandhealth2019/

October 8 WY
Streamflow Drivers for Ungaged Streams Using Geospatial Analysis - Water Forum, Cheyenne. Water Development Office, 6920 Yellowtail Road, 10 am - Noon. Presented by Wyoming State Engineer's Office. For info: Jeff Cowley, WSEO, 307/ 777-7641, jeff.cowley@wyo.gov or https://sites.google.com/a/wyo.gov/seo/interstate-streams/water-forum

October 8-10 AL
Interstate Council on Water Policy 60th Annual Meeting, Mobile. Renaissance Hotel Downtown. For info: Sue Lowry, ICWP, 307/ 630-5804, Sue.ICWP@gmail.com or www.icwp.org

October 8-10 TX
Autumn Environmental Conference & Expo, Austin. Palmer Events Center, 900 Barton Springs Road. Presented by Texas Commission on Environmental Quality. For info: www.tceq.texas.gov/p2/events/autumn-environmental-conference-and-expo

October 17 CA
Association of California Water Agencies Annual Regulatory Summit: "Riding the Regulatory Wave in California", Sacramento. Hilton Sacramento Arden West. For info: www.acwa.com/events/

October 17-20 CA
27th Annual Environmental Law Conference at Yosemite, Yosemite. Tenaya Lodge. Presented by the California Lawyers Assoc. For info: https://calawyers.org/Yosemite

October 20-23 MO
Water Infrastructure Conference & Expo, St. Louis. Hyatt Regency. Presented by American Water Works Assoc. For info: www.awwa.org/Events-Education/Water-Infrastructure

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CALENDAR

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October 21-24 Spain
Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales - AGU Chapman Conference, Valencia. International Participants from the Hydrology, Policy, Economics & Social Science Communities. For info: https://connect.agu.org/aguchapmanconference/upcoming-chapmans/aquifers-sustainability or Jim Butler, U-Kansas, jbutler@kgs.ku.edu

October 22 DC
Environmental Law Institute Annual Award Dinner, Washington. Omni Shoreham Hotel. Presented by Environmental Law Institute. For info: www.eli.org

October 23-24 CA
7th Annual World Water-Tech North America, Los Angeles. Ritz-Carlton Marina del Ray. For Practicioners, Innovators & Investors. For info: https://worldwatertechnorthamerica.com

October 23-24 CA
26th Annual California Aquatic Bioassessment Workgroup & 7th Annual Meeting of The California Chapte Society of Freswater Sciences, Davis. UC Davis Activities & Recreation Center Conference Facility. For info: Shuka Rastegarpour, 916/ 341-5556 or shuka.rastegarpour@waterboards.ca.gov

October 23-24 TX
The Annual US Water Treatment Conference, Dallas. Hosted by LMN Power. For info: Daniel Craig, 312/ 544-0023 or daniel.craig@lmnassets.com

October 28-31 FL
Association of Safe Drinking Water Agencies Annual Conference & Expo, Tampa. Hilton Downtown. For info: www.asdwa.org/event/asdwa-annual-conference-2019/

October 29-30 CO
Endangered Species & Other Wildlife Special Institute, Denver. Sheraton Downtown Hotel. Presented by the Rocky Mountain Mineral Law Foundation. For info: RMMLF website: www.rmmlf.org/ or info@rmmlf.org

October 29-30 TX
The Annual US Water Treatment Conference, Dallas. Crowne Plaza Dallas Downtown. For info: https://lmnpower.com (Conferences)

October 29-30 MD
Grey to Green Conference, Silver Spring. Tommy Douglas Conference Center. For info: https://greytogreenconference.org/

October 30 CA
Water Education Foundation's 36th Water Summit: "Water Year 2020: A Year of Reckoning", Sacramento. Embassy Suites Riverfront. For info: www.watereducation.org/wefsummit2019

November 3-6 UT
2019 AWRA Annual Water Resources Conference, Salt Lake City. Sheraton Salt Lake City Hotel. Presented by American Water Resources Association. For info: www.awra.org