

The Water Report™

Water Rights. Water Quality & Water Solutions in the West

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AQUIFER STORAGE AND RECOVERY

AN IMPORTANT TOOL FOR WESTERN STATES
PERMITTING DEVELOPMENTS & OPPORTUNITIES IN WASHINGTON

by Chris Pitre, Coho Water Resources, LLC (Seattle, WA)

INTRODUCTION

Aquifer storage and recovery (ASR) — i.e., the placing of water into an aquifer for later retrieval — is increasingly being used throughout the world as a water resource management tool. *The Water Report* has covered ASR in several previous articles, including TWR issues #8, #74, #91 and #130.

Two of the most important permitting issues in determining the feasibility of an ASR system are the recoverable quantity of water and the allowable changes in water quality resulting from artificial recharge. These factors drive the financial and water system viability of an ASR system.

In Washington State, the Department of Ecology (Ecology) is responsible for both water supply and water quality regulation and oversight. Ecology has recognized ASR as an important water supply management tool since the early 1990's. Yet, only two ASR systems in Washington — the cities' of Walla Walla and Yakima — are fully permitted and operational, with both having received their permits in the past two years. Several other permitted projects are not operating for a variety of reasons.

Over the past decade, obtaining additional water supply by applying for a new water right in Washington State has become nearly impossible. Balancing competing needs for potable and agricultural water supply, while maintaining healthy ecological conditions in the face of climate change, imposes serious constraints on water managers. Court decisions have restricted Ecology's ability to develop mitigation packages, and the general application of "precautionary principles" in the regulatory environment has created frustration and uncertainty for both water managers and regulators. The water balance neutral aspect of ASR is a universally accepted water resource management approach.

This article focuses on the issues of recoverable quantity and allowable water quality changes associated with ASR in Washington State. It addresses both the technical and permitting challenges of these issues as they have unfolded over the past 15 years. The primary difficulties in Washington's ASR permitting process relate to the calculation of recoverable quantity, and the required quality of recharge water as it relates to compliance with Washington's Antidegradation of Groundwater Rule.

These two issues will first be directly discussed including alternative points of recovery (Aquifer Storage Transfer and Recovery or ASTR) and the use of water quality data to evaluate mixing processes. Next, permitting difficulties are reviewed with suggestions for improvements. The article closes with a brief synopsis of ASR projects in Washington State.

WATER BRIEFS

to precipitation and stormwater, and requiring large disturbances to be stabilized faster. The 2017 CGP will last for five years.

Web content for the 2012 CGP will remain posted online until the 2012 permit expires.

For info: www.epa.gov/npdes/stormwater-discharges-construction-activities

SEWER SYSTEM PENALTY TX CLEAN WATER ACT VIOLATIONS

The US Department of Justice (DOJ) and US Environmental Protection Agency (EPA) announced on January 17th that the City of Tyler, Texas, agreed to significantly upgrade its sanitary sewer system to resolve alleged violations of the federal Clean Water Act (CWA). The City will also undertake extensive operational improvements to its sanitary sewer system and pay a total of \$563,000 in civil penalties.

DOJ on behalf of the EPA, and the State of Texas on behalf of the Texas Commission on Environmental Quality, jointly filed a complaint against Tyler alleging that, since 2005 the City has allowed and continues to allow untreated sewage to overflow from the city's sanitary sewer system in violation of the CWA and the Texas Water Code. The complaint alleges the City failed to properly operate and maintain its sewer system, resulting in problems including blockages in underground pipes, general system defects and power failures. These problems can impact public health and local water quality by allowing releases of untreated sewage into local waterways and the community. The complaint specifically alleges instances of raw sewage entering into both local waterways and into Tyler residents' private homes and yards. Many of these sanitary sewer overflows occurred in low-income and minority communities.

To comply with the terms of the settlement and significantly reduce future sanitary sewer overflows, the city must comprehensively assess and improve its sewer system's physical condition by repairing or replacing damaged assets within a certain time period after their discovery. The city must also analyze sewer system capacity using an updated hydraulic model and undertake a tailored

program to implement detailed capacity management, operation and maintenance procedures. The city must keep the public directly informed of its progress when complying with the consent decree by creating a public document repository on the city's website, where it is required to post any report required by the consent decree and all final EPA-approved plans. The city must also consider, among other things, the location of past sanitary sewer overflows in low income or minority communities when prioritizing the sequence for certain cleaning or remedial work. EPA estimates the combination of these mandated efforts will require the city to spend approximately \$65 million over the next 10 years.

Tyler's entire wastewater collection and treatment system includes 690 miles of main lines, 22 lift stations and over 9,000 manholes as part of its sanitary sewer system, which sends untreated wastewater to two wastewater treatment plants. Tyler's system serves approximately 32,000 customers and 109,000 people.

The settlement, which will be lodged in the US District Court for the Eastern District of Texas, is subject to a federal 30-day public comment period. The State of Texas also has a required 30-day public comment period.

For info: Proposed Consent Decree at: www.justice.gov/enrd/Consent_Decrees.html; EPA's National Enforcement Initiative at: www.epa.gov/enforcement/national-enforcement-initiative-keeping-raw-sewage-and-contaminated-stormwater-out-our

NEW WATER SUPPLIES WA OFFICE OF COLUMBIA RIVER

An economic evaluation of the Department of Ecology's Office of Columbia River was released by Power Consulting, Inc. in December of 2016, showing that controversy continues in the Columbia River Basin over projects to increase water supplies in the basin. Dated December 3rd, the Report was prepared for the Sierra Club. "Department of Ecology Office of Columbia River: The Last Ten Years" examines OCR's program to study dam sites and develop water projects. The Report includes in-depth analysis of

the Yakima Integrated Water Plan, the Odessa Subarea water project, and the Icicle Strategy.

The Executive Summary sets forth the premise for its analysis. "In 2006, the Washington Legislature tasked the Washington Department of Ecology (Ecology) to 'aggressively seek out new water supplies' for both instream and out-of-stream uses (emphasis added). RCW 90.90.005(2). The same legislation set up the Columbia River Basin Development Account and authorized \$200 million to fund it, much of which has been spent or committed according to OCR's 2015 Water Supply Inventory Report to the Legislature. Ecology created the Office of Columbia River (OCR) to use these funds to develop new water supplies using storage, conservation, and voluntary regional water management agreements."

The report notes that its purpose was to provide an "analysis of OCR" that "provides a critical overview of OCR's expenditures since its creation." It concludes, "[I]n light of our findings, summarized in the following conclusions and supported by the analysis contained in this report, we recommend that the Washington State Legislature not provide additional funding to OCR until a performance audit on OCR is prepared for the Legislature..." Report at 1. At that point in the Executive Summary, the Report lays out the 12 main points on which its conclusion is based.

The 41-page Report goes into detail regarding the Office of Columbia River, its purposes, and the shortcomings it perceives in the program. For those involved directly involved in the Columbia River basin supply and storage issues it is required reading and for water professionals in other states dealing with supply issues the Report and its analysis are worthwhile as well for its "critical overview" of numerous water issues.

Washington's Department of Ecology, as one would expect, has a significantly different view of OCR. See Ecology's OCR website at: www.ecy.wa.gov/programs/wr/cwp/crwp.html.

For info: Report at Sierra Club's website: www.sierraclub.org/washington/upper-columbia-river