

# At the Confluence of the Clean Water Act and Prior Appropriation

The Challenge and Ways Forward



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# Table of Contents

<b>I. Introduction</b>	1
<b>II. The Challenge</b>	
A. <i>The Connection of Water Quality and Quantity</i>	3
B. <i>The Separation of Governance</i>	4
C. <i>The Programmatic Consequences</i>	6
1. <i>Effects of Quantity on Quality</i>	6
2. <i>Effects of Quality on Quantity</i>	10
D. <i>The Point</i>	12
<b>III. The Landscape of Legal Leverage</b>	
A. <i>Authority</i>	13
1. <i>State Government and Prior Appropriation</i>	13
2. <i>Federal Government and the Clean Water Act</i>	14
a. <i>CWA Section 402 NPDES Permits</i>	15
b. <i>CWA Section 303 WQS and TMDLs</i>	15
c. <i>CWA Section 404 Dredge-and-Fill Permits</i>	16
d. <i>CWA Section 102 Reservoir Planning</i>	17
e. <i>CWA Section 401 Certification</i>	17
B. <i>Limitations</i>	18
1. <i>Language of the Clean Water Act</i>	18
2. <i>Language of State Law</i>	21
C. <i>Takings</i>	23
1. <i>The Property Rights in an Appropriative Right</i>	24
2. <i>Nature of the Government Interference</i>	25
<b>IV. Moving Forward</b>	
A. <i>The Wallop Directive</i>	29
B. <i>Realistic Obstacles</i>	29
C. <i>Opportunities</i>	31
1. <i>Actions by U.S. EPA</i>	31
2. <i>Actions by States</i>	35
a. <i>Water Rights</i>	35
i. <i>Quality as a Beneficial Use</i>	36
ii. <i>Quality as Part of Other Beneficial Uses</i>	38
iii. <i>Quantity Expressly to Aid Quality</i>	40
iv. <i>Quality as a Water Right Impairment</i>	41
b. <i>Process</i>	45
i. <i>General Coordination</i>	45
ii. <i>Case-Specific Consultation</i>	47
iii. <i>Allocation Processes that Consider Water Quality</i>	48
iv. <i>Allocation Conditions for Water Quality Purposes</i>	51
v. <i>Water Quality Processes that Consider Water Quantity</i>	52
c. <i>Structure</i>	52
<b>V. Conclusion</b>	55





## Abstract

This report is intended to improve comprehensive understanding, particularly among lawmakers, advocates, and state and federal agency staff, of the strength of surface water quality and quantity authorities relative to one another in the Western U.S.; the consequences of existing laws, governance structures, and practices on the success of those two programs; and opportunities to reduce adverse impacts in the future.

This report begins by detailing the impact that water quantity law and practice has had on water quality, and likewise water quality rules on water quantity management, making the case for why this rarely discussed topic deserves greater attention and ultimately solutions. The report then analyzes the legal authorities of states and the federal government over water quantity and quality, respectively, and briefly recaps the current state of takings law relevant to appropriative rights and the Clean Water Act, all of which revealing that many of the justifications for the current divide between water quality and quantity management are not the great obstacles many believe them to be. Finally, the report identifies laws, policies, government structures, and other factors that can advance relationships between, and ultimately the outcomes for, water quality and quantity management. These examples demonstrate that water quality and quantity issues are being addressed in tandem in certain places and under certain circumstances, but the number of water quality impairments attributable to water quantity, as well as instances of water quality decisions affecting water quantity, indicate that there is significant progress to be made.

Due to differences in applicable law, responsible agencies, and practice between surface water and groundwater in most states and at the federal level, this report is limited to management of surface waters. Also, due to the significance of the water allocation system on this analysis, the report focuses on the eighteen states of the American West that primarily or solely employ the prior appropriation system of water allocation for surface waters.<sup>1</sup>

## Methodology

The information in this report was gathered by the Environmental Law Institute through primary research of statutes, regulations, legislative history, case law, and state Clean Water Act Section 303(d) lists and Integrated Reports; through secondary research of law review articles and government program reviews; and through personal communication with state engineers, staff of state water quality and quantity agencies, staff of nonprofit organizations, and others from the eighteen states studied. The analysis and conclusions in the report build on and stem from this information. The report was reviewed by state and federal agency staff and academics.

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<sup>1</sup> Alaska, Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming. Mississippi also uses the prior appropriation system, but for geographic reasons was not included in this work.

# Introduction

**W**ater is simple. It brings life and takes away waste. But it has limits. Pressure on one of its services can adversely affect the others. Overtaxing its ability to carry wastes can hinder its ability to bring life downstream. Making it bring more life to one area may limit not only its ability to continue to bring life downstream, but also its capacity to remove waste.

The management of water is not simple. Chemistry and hydrology, physics and geology, politics and biology, and even history and sociology all play a role in managing water, and all before, during, and after the influence of law and administration. Perhaps, it is not surprising that water management is compartmentalized. No one can know everything there is to know about all of these disciplines in all places. Technical and geographic specialization can lead to a greater understanding of the various demands placed on water and of their impact. But an understanding of the whole should not be lost for the sake of its parts, lest interjurisdictional and interdisciplinary confusion and conflicts arise.

In the western United States, the management of surface water quality and quantity is highly compartmentalized.

Water quantity management primarily rests with state government; water quality management is largely directed by the federal government, but with significant implementation by state agencies; and most western states house their water quality and quantity authorities in separate entities. This compartmentalization among and within state and federal authorities is not inherently objectionable. To the contrary, it likely is necessary.

Yet, the degree of compartmentalization appears to have so divided management of this resource that damage has been done to both sides. Water quantity decisions are a significant source and cause of water quality impairment. Water quality protections have upset water usage and infrastructure development. Where water quality and water rights are at odds, the status quo largely has been to avoid conflict to the extent possible. While this may be an admirable approach, it is not a solution, and these occurrences are likely only to increase in severity and frequency with greater demand for water and greater uncertainty in supply looming in the foreseeable future.

Opportunities exist for cooperation, coordination, and a more holistic perspective on water management with little or even no change in law. Several western states have demonstrated the value of interagency coordination on general matters concerning water quality and quantity, as well as the benefits of case-specific consultations among those same parties. Several state agencies consider the other field when making certain decisions. Housing the two authorities within a single agency appears to have noticeable advantages for cooperation over separated entities, although unifying separated agencies also has its challenges. At the very least, physical proximity of the water quality and quantity offices, whether in the same agency or not, has proven advantageous.

Other opportunities have arisen via state water allocation laws. Defining water quality as a beneficial use of water, expressly allowing water to be used to aid water quality, or even implementing other beneficial uses of water in a manner that supports water quality can help address water quantity impacts on



water quality and foster coordination between the state authorities. Identifying water quality as a water right impairment also can bring water quality into the fold of water quantity management.

Opportunities involving the federal government are even more politically intractable than those solely within the state. But there may be realistic roles for the U.S. Environmental Protection Agency (EPA) in providing information and financial support, if not issuing water quality guidance, relevant to the impacts of flow and lake levels.

Examples of ways to address water quality and quantity issues together are numerous and varied across the West, but the number of water quality impairments attributable to water quantity and

instances of water quality decisions affecting water quantity demonstrates that the status quo is insufficient; in some instances the means exist, but their use could improve, and in others, the means are lacking, but ideas are ripe for borrowing from other states. As this Article demonstrates, there is significant progress to be made.

# The Challenge

## *The Connection of Water Quality and Quantity*

The quality and quantity of surface waters are intimately linked. At the most basic level, low flow reduces water's dilution capacity and can itself degrade water quality, and poor water quality can disrupt the natural hydrology by damaging riparian ecosystems. In addition, low flow and poor quality each can prevent intended uses of water, whether for human or ecological purposes.

Water withdrawals can lead to water quality degradation. For example, less water can mean that the stream flows slower and warms more quickly, causing increased temperatures and lower dissolved oxygen, thereby harming aquatic life. At the extreme, water withdrawals can leave a stream completely dry. Low flows also can exacerbate water quality degradation caused by pollutants. Discharges from point sources, such as wastewater treatment plants and industrial facilities, and runoff and return flow from nonpoint sources, such as farms and parking lots, can cause higher concentrations of pollutants in a stream when flows are lower. These higher concentrations can impair use of the water for recreation, fishing, and drinking.

Likewise, water quality can affect water quantity in several ways. Poor water quality can alter or completely upend riparian ecology, which in turn can change filtration rates and ultimately the timing and volume of flows. Poor quality also can limit the usefulness of available water supplies. For example, return flows from uses such as agriculture can increase salinity levels in streams, which render water less useful for crop irrigation, livestock

watering, industrial water uses, and drinking water supplies.

Water use is the ultimate objective of both quality and quantity management. Under the prior appropriation system of water allocation, water rights are only granted for uses deemed beneficial by the state; beneficial use is the basis and measure of a water right; and state water quantity laws are designed to provide the greatest possible certainty for fulfilling those water rights and thus meeting the uses for which they were established. Beneficial uses commonly include agriculture, mining, industry, municipal use, recreation, and fish and wildlife, among others. Under the Clean Water Act (CWA),<sup>2</sup> water quality is measured primarily in terms of uses designated by the state to be made of the waters. Waters of insufficient quality to attain their designated uses are to be listed and addressed. Designated uses commonly include recreational, agricultural, industrial, drinking water supply, and aquatic life uses. The lists of designated and beneficial uses are similar. What is more, uses not met are deemed "impaired" in both contexts,<sup>3</sup> and some western states even reference designated uses as designated beneficial uses or just beneficial uses. While these similarities add confusion to a discussion involving both water quality and quantity, they also highlight the singularity of the resource and our expectations of it.

The numerous cross-influences of water quality and quantity make the two issues inseparable.

<sup>2</sup> 33 U.S.C. §§1251-1387, ELR STAT. FWPCA §§101-607.

<sup>3</sup> In the water quantity context, the reason that the water right is not fulfilled matters: natural conditions do not cause impairment.



## The Separation of Governance

Yet, “separate” is precisely the way these two issues are managed in the United States. As succinctly characterized by Prof. Robert Adler of the University of Utah’s S.J. Quinney College of Law, “[w]ater quality and water quantity programs are governed by two distinct legal regimes, and implemented by different and sometimes multiple institutions.”<sup>4</sup> The federal CWA is the foundation for surface water quality regulation.

Many aspects of it are implemented by the states, and the states are allowed to be more protective of water quality, but it is at its core a national program overseen by EPA and, in specific instances, the U.S. Army Corps of Engineers (the Corps).<sup>5</sup> In contrast, water quantity, or the allocation of water, is regulated primarily by state law and state agencies.<sup>6</sup> Detail on these two bodies of law and their relationship with one another is provided in Chapter III.

Although state agencies are critical to the implementation of both water quantity and quality laws, most western states house those authorities in

distinct entities.<sup>7</sup> Water quality authorities commonly are given to the environmental agency, and quantity authorities often exist in the natural resource agency. Table 1 demonstrates the frequency and diversity of this administrative separation.



Largely due to the distinct laws and implementing entities, water quality and water quantity programs tend to have limited interaction. In addition, it is not always the norm to consider potential water quality impacts of new water rights or changes to existing rights in water allocation decisions.<sup>8</sup> Also, states tend to avoid adverse impacts to water rights whenever possible, including for water quality purposes.<sup>9</sup> Professor Adler captured one of the most significant problems in this regulatory disconnect when he wrote “one entity sells more tickets without knowing that another is reducing the size of the stadium.”<sup>10</sup>

Examples of laws and institutional developments that bridge this divide, or at least have the potential to do so, are presented in Chapter IV.

4 Robert W. Adler, *Climate Change and the Hegemony of State Water Law*, 29 STAN. ENVTL. L.J. 1, 26 (2010).

5 See, e.g., Robert W. Adler & Michele Straube, *Watersheds and the Integration of U.S. Water Law and Policy: Bridging the Great Divides*, 25 WM. & MARY ENVTL. L. & POL’Y REV. 1, 4 (2000); Reed D. Benson, *Pollution Without Solution: Flow Impairment Problems Under the Clean Water Act Section 303*, 24 STAN. ENVTL. L.J. 199, 204-05 (2005).

6 See, e.g., Benson, *supra* note 5.

7 *Id.*

8 Adler & Straube, *supra* note 5, at 5.

9 See, e.g., Benson, *supra* note 5, at 204-05.

10 Adler & Straube, *supra* note 5, at 6.

Table 1: State Water Authorities

STATE	PRIMARY WATER QUALITY AUTHORITY	PRIMARY WATER QUANTITY AUTHORITY
Alaska	Alaska Department of Environmental Conservation, Division of Water	Alaska Department of Natural Resources, Division of Mining, Land, and Water
Arizona	Arizona Department of Environmental Quality, Water Quality Division	Arizona Department of Water Resources
California	State Water Resources Control Board, Division of Water Quality	State Water Resources Control Board, Division of Water Rights
Colorado	Colorado Department of Public Health and Environment, Water Quality Control Division	Colorado Department of Natural Resources, Division of Water Resources; Colorado water courts
Idaho	Idaho Department of Environmental Quality, Water Quality Division	Idaho Department of Water Resources
Kansas	Kansas Department of Health and Environment, Bureau of Water	Kansas Department of Agriculture, Water Appropriation Program
Montana	Montana Department of Environmental Quality	Montana Department of Natural Resources and Conservation, Water Resources Division
Nebraska	Nebraska Department of Environmental Quality, Water Quality Division	Nebraska Department of Natural Resources
Nevada	Nevada Department of Conservation and Natural Resources, Division of Environmental Protection	Nevada Department of Conservation and Natural Resources, Water Resources Division
New Mexico	New Mexico Environment Department	New Mexico Office of the State Engineer
North Dakota	North Dakota Department of Health, Division of Water Quality	North Dakota State Water Commission
Oklahoma	Oklahoma Department of Environmental Quality, Water Quality Division	Oklahoma Water Resources Board
Oregon	Oregon Department of Environmental Quality, Water Quality Division	Oregon Water Resources Department
South Dakota	South Dakota Department of Environment and Natural Resources	South Dakota Department of Environment and Natural Resources
Texas	Texas Commission on Environmental Quality, Office of Water	Texas Commission on Environmental Quality, Office of Water (surface water)
Utah	Utah Department of Environmental Quality, Division of Water Quality	Utah Department of Natural Resources, Division of Water Rights
Washington	Washington Department of Ecology, Water Quality Program	Washington Department of Ecology, Water Resources Program
Wyoming	Wyoming Department of Environmental Quality, Water Quality Division	Wyoming State Engineer's Office



## ***The Programmatic Consequences***

Not surprisingly, this regulatory disconnect has affected the implementation and the success of both kinds of programs. Many surface waters across the West do not meet state water quality standards due in part or entirely to human-caused low flows or flow alterations. On the other side, the CWA and associated regulations have influenced, and in some cases even halted, water storage and use projects. Courts have played significant roles in both quality-determinative and quantity-determinative scenarios.

## **Effects of Quantity on Quality**

States have attributed many impairments of uses dedicated under state water quality standards to flow-related issues. The most recent EPA summary of state water quality assessments ranks “flow alteration(s)” as the ninth most significant cause of rivers and streams failing to meet applicable state water quality standards, cited as threatening or impairing 50,092 miles of rivers and streams across

the country.<sup>11</sup> “Flow alteration(s)” is also reported as threatening or causing 548,045 acres of lakes, reservoirs, and ponds not to attain applicable water quality standards.<sup>12</sup>

Similarly, the EPA summary ranks “hydromodification” as the fourth largest of the “probable sources of use impairments in assessed rivers and streams,” leading to impairment of uses in 58,816 miles of river and streams, and as the fifth largest of the “probable sources of impairments in assessed lakes, reservoirs, and ponds,” leading to 905,938 acres of lakes, reservoirs, and ponds failing to attain applicable water quality standards.<sup>13</sup> Within “hydromodification,” the specific sources of “water diversions” and “flow alterations from water diversions” combine for 9,020 miles of affected rivers

11 U.S. ENVTL. PROTECTION AGENCY (EPA), NATIONAL SUMMARY OF STATE INFORMATION, [http://iaspub.epa.gov/waters10/attains\\_nation\\_cy.control](http://iaspub.epa.gov/waters10/attains_nation_cy.control).

12 *Id.*

13 *Id.* Different states label sources of impairment differently in their assessments, so “hydromodification” includes a number of more specific sources, including “channelization,” “erosion/siltation,” “upstream impoundment,” “streambank modifications/destabilization,” “impacts from hydrostructure flow regulation/modification,” “channel erosion,” and others, all of which do not necessarily refer to the impacts of water withdrawals.

and streams and 28,320 acres of affected lakes, reservoirs, and ponds.<sup>14</sup> But only an estimated 27% of all river and stream miles and 46% of all lake, reservoir, and pond acres in the country are assessed,<sup>15</sup> which means that the extent of use impairments linked to flow in the EPA summary of state reports may actually be a significant underestimation.

Further understating the effects of flow on surface water quality, states vary significantly in their reporting of water withdrawal impacts.<sup>16</sup> In their most recent reports, Alaska, Arizona, Colorado, Kansas, Nevada, North Dakota, Oklahoma, and South Dakota do not reference any aspect of flow as contributing to nonattainment of water quality standards.<sup>17</sup> Nebraska, Utah, and Wyoming note

flow as contributing to nonattainment of water quality standards in fewer than 10 water segments; Texas, nearly 20; California and New Mexico, nearly 40 each; and Washington, over 50.<sup>18</sup> By contrast, Idaho and Montana each note roughly 300 such water segments, and Oregon over 700.<sup>19</sup> To be sure, flow-related adverse impacts on water quality may be more prevalent in some states than others. Yet, it strains belief to think that Oregon has over 700 water segments with uses impaired by flow alteration and Arizona, Colorado, and Nevada together have none. In the words of Prof. Reed Benson of the University of New Mexico School of Law, “[i]t is likely that if all states were diligent, realistic, and forthright in identifying these waters, flow impairment might well qualify as the greatest threat to rivers and streams in the West.”<sup>20</sup>

Unfortunately, such accuracy in accounting cannot reasonably be expected, largely because states are not required to announce flow as a cause or source of negative effects on water quality. The CWA requires that a total maximum daily load (TMDL)

14 U.S. EPA, SPECIFIC STATE PROBABLE SOURCES THAT MAKE UP THE NATIONAL HYDROMODIFICATION PROBABLY SOURCE GROUP FOR THREATENED AND IMPAIRED RIVERS AND STREAMS, [http://iaspub.epa.gov/tmdl\\_waters10/at-tains\\_nation\\_cy.source\\_wbtype\\_detail?p\\_source\\_group\\_name=HYDROMODIFICATION&p\\_wbtype=STREAM/CREEK/RIVER&p\\_wtype\\_display=Rivers%20and%20Streams&p\\_sz\\_column=size\\_1&p\\_sz\\_unit=miles](http://iaspub.epa.gov/tmdl_waters10/at-tains_nation_cy.source_wbtype_detail?p_source_group_name=HYDROMODIFICATION&p_wbtype=STREAM/CREEK/RIVER&p_wtype_display=Rivers%20and%20Streams&p_sz_column=size_1&p_sz_unit=miles).

15 U.S. EPA, *supra* note 11.

16 Benson, *supra* note 5.

17 Alaska Department of Environmental Conservation, *Alaska's Final 2010 Integrated Water Quality Monitoring and Assessment Report* (2010); Arizona Department of Environmental Quality, *2006/2008 Status of Ambient Surface Water Quality in Arizona: Arizona's Integrated 305(b) Assessment and 303(d) Listing Report* (2009); Division of Environment, Bureau of Environmental Field Services, Kansas Department of Health and Environment, *Kansas Integrated Water Quality Assessment 2012* (2012); Nevada Division of Environmental Protection, Bureau of Water Quality Planning, *Nevada's 2006 303(d) Impaired Waters List* (2009); North Dakota Department of Health, *North Dakota 2010 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads* (2010); Oklahoma Department of Environmental Quality, *Water Quality in Oklahoma: 2010 Integrated Report* (2010); South Dakota Department of Environment and Natural Resources, *The 2012 South Dakota Integrated Report for Surface Water Quality Assessment* (2012); Water Quality Control Division, Colorado Department of Public Health and Environment, *Integrated Water Quality Monitoring and Assessment Report: State of*

*Colorado* (2010).

18 State Water Resources Control Board, *2010 Integrated Report: Clean Water Act Sections 303(d) and 305(b)* (2010); Surface Water Quality Bureau, New Mexico Environment Department, *2012-2014 State of New Mexico Clean Water Act §303(d)/§305(b) Integrated Report* (2012); Texas Commission on Environmental Quality, *Draft 2010 Texas Integrated Report for Clean Water Act Sections 305(b) and 303(d)* (2010); Utah Division of Water Quality, Utah Department of Environmental Quality, *Utah's 2010 Integrated Report* (2010); Water Quality Division, Department of Environmental Quality, *2008 Water Quality Assessment for Washington* (2008); Water Quality Division, Nebraska Department of Environmental Quality, *2012 Water Quality Integrated Report* (2012); Water Quality Division, Wyoming Department of Environmental Quality, *Wyoming Water Quality Assessment and Impaired Waters List (2012 Integrated 305(b) and 303(d) Report)* (2012).

19 Montana Department of Environmental Quality, *Montana 2012 Final Water Quality Integrated Report* (2012); Oregon Department of Environmental Quality, *Oregon's 2010 Integrated Report* (2010); State of Idaho Department of Environmental Quality, *Idaho's 2010 Integrated Report* (2011).

20 Benson, *supra* note 5.



be developed for the pollutant(s) that cause one or more of a water body's water quality standards to not be met,<sup>21</sup> and the CWA Section 303(d) list of water quality-limited waters for each state is expected to include all waters in which pollutants cause or contribute to nonattainment of water quality standards.<sup>22</sup> But EPA has interpreted flow to not fall within the CWA's definition of "pollutant,"<sup>23</sup> so neither requirement applies to nonattainment caused exclusively by flow issues. California, Montana, Nebraska, New Mexico, and Texas do reference flow in addition to the pollutants in some CWA Section 303(d) listings, but the 13 other prior-appropriation states do not, which may be masking the effect of flow in listing statistics.

In 2001, EPA issued water quality reporting guidelines that changed the style of reporting and clarified the "pollutant"-  
"pollution" distinction in



21 33 U.S.C. §1313(d)(1)(C).

22 See Memorandum from Diane Regas, Director, Office of Wetlands, Oceans, and Watersheds, U.S. EPA, to Water Division Directors, Regions 1-10, Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act; TMDL-01-03 8 (July 21, 2003). The CWA itself does not differentiate pollutant from non-pollutant pollution causes of nonattainment for listing purposes, stating simply: "Each State shall identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters."

23 *Id.* The CWA defines the term "pollutant" as "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." 33 U.S.C. §1362(6).

documenting water quality conditions. The guidelines recommended the creation of an Integrated Report, combining the CWA Section 305(b) report (an analysis of the quality of the state's waters) with the Section 303(d) list of waters that are impaired.<sup>24</sup> Under this recommended listing structure, water segments would be placed into one of five categories ranging from Category 1, "not impaired," to Category 5, the Section 303(d) list.<sup>25</sup>

Category 4 consists of three subparts: (a) a TMDL has been completed; (b) a TMDL is not needed because other measures are expected to result in attainment of water quality standards; and (c) water quality standard nonattainment is not caused by a pollutant.<sup>26</sup> Category 4C is a separate list of water bodies affected by "non-pollutant pollution," such as flow modification.<sup>27</sup> Category 4C has been used to varying degrees by different states. Nebraska, North Dakota, and Texas have a few water bodies

24 U.S. EPA, 2002 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT GUIDANCE (2001).

25 *Id.*

26 *Id.*

27 Memorandum from Diane Regas, *supra* note 22.

noted under Category 4C, but none explicitly for flow issues. New Mexico, Utah, and Wyoming have placed a few water bodies in Category 4C, all of them for flow alteration. Idaho, Montana, Oregon, and Washington have included many water bodies under Category 4C, and a significant number of them are for flow issues. The eight other states currently do not use Category 4C at all.

But contributing to water quality standard nonattainment can be just the start. A national pollutant discharge elimination system (NPDES) permit may not be issued “[t]o a new source or a new discharger, if the discharge of pollutants from its construction or operation will cause or contribute to the violation of water quality standards.”<sup>28</sup> Most water quality criteria are expressed as concentrations, the pollutant load divided by the volume of water, so the same load but a lower volume of water in the river increases the likelihood of water quality criteria exceedance. Thus, decreased dilution capacity in the receiving water can affect the amount of pollutant discharge allowed in new permits, and can even bar new permits entirely. Decreased streamflow may also affect existing NPDES permits. Whether new or being renewed, the effluent limits of NPDES permits must be consistent with the pollutant loading levels for point sources (wasteload allocation) of applicable TMDLs.<sup>29</sup> Thus, reduced streamflow can affect not only water quality, but water quality protection and the opportunities and expense for those, such as



cities and industries, seeking to utilize the dilutive capacity of natural waterways.

The Colorado case of *City of Thornton v. Bijou Irrigation Company*<sup>30</sup> illustrates this sort of impact in practice. The city of Thornton proposed to, among other things, exchange waters of the Cache La Poudre and South Platte Rivers to improve its water supply. The Eastman Kodak Company manufacturing plant on the Poudre River used a little over one million gallons of water per day. After treatment, Kodak’s industrial wastewater was discharged into the Poudre River under a permit issued by the Colo-

28 40 C.F.R. §122.4(i).

29 40 C.F.R. §122.44(d)(1)(vii)(B).

30 926 P.2d 1, 89 (Colo. 1996).



rado Department of Health.<sup>31</sup> The effluent limits of the permit were based in part on average low flows near Kodak’s discharge point.<sup>32</sup> The city’s proposed water exchange would divert water from the Poudre River upstream of the Kodak plant and return the substitute supply to the river below the plant.<sup>33</sup> The amount of water flowing to the plant would still be enough to fulfill Kodak’s appropriative right, but Kodak’s complaint alleged that the depletion of Poudre River flows would reduce the average low-flow rates on which its effluent limits were based, and thereby reduce its permitted discharges.<sup>34</sup>

Kodak projected the necessary improvements in treatment would cost the company between 9 and 12 million dollars.<sup>35</sup> The Colorado Supreme Court held that the flows on which Kodak had relied for dilution were not a part of its appropriative right, nor could Kodak have such rights since private parties are prohibited from holding instream flow rights in Colorado, and “the impact of which Kodak complains is tolerated as a consequence of the policy of maximum beneficial use.”<sup>36</sup>

## Effects of Quality on Quantity

Likewise, the CWA and its associated regulations have upset state management of water quantities. Neither EPA nor the water quality agencies of prior appropriation states have established programs or promulgated rules expressly addressing water withdrawals for purposes of maintaining flow or lake levels, but water quality decisions have affected

water rights in multiple and sometimes significant ways.<sup>37</sup>

Perhaps, the best-known and most broadly influential instance of water quality concerns limiting water usage is found in the case of *PUD No. 1 of Jefferson County v. Washington Department of Ecology*.<sup>38</sup> Petitioners proposed to build the Elkhorn Hydroelectric Project, which would divert water from a 1.2-mile reach of the Dosewallips River, run it through turbines, and return it further downstream. They were required to get a Federal Energy Regulatory Commission (FERC) license to build and operate the Project; as a result, and because of the Project’s potential discharges into navigable waters, petitioners also needed state certification under CWA Section 401.<sup>39</sup> Certification must “set forth any effluent limitations and other limitations . . . necessary to assure that any applicant . . . will comply with” various provisions of the CWA and with “any other appropriate requirement of State law.”<sup>40</sup> The Washington Department of Ecology issued the certification with conditions, including that minimum streamflow be between 100 and 200 cubic feet per second (cfs), depending on the season, reducing the amount of water that could be diverted and used for energy production.<sup>41</sup> The case ultimately was heard by the U.S. Supreme Court, which upheld the conditions as a proper application of state and federal water quality laws, despite the effect on hydropower production.<sup>42</sup> Further detail on this decision is provided in Chapter III.

Another prime example of quality decisions affecting quantity arose a few years later, again in Washington State. In October 1996, EPA approved

31 *Id.*

32 *Id.* at 90.

33 *Id.*

34 *Id.*

35 *Id.*

36 *Id.* at 93-94.

37 Benson, *supra* note 5, at 200, 210.

38 511 U.S. 700, 708-09, 24 ELR 20945 (1994).

39 *Id.* at 709; *see* 33 U.S.C. §1341(a).

40 33 U.S.C. §1341(d).

41 *PUD No. 1 of Jefferson County*, 511 U.S. at 709.

42 *Id.* at 723.

the Washington Department of Ecology's Upper Chehalis River Basin TMDL. The TMDL covered several water quality parameters, including dissolved oxygen.<sup>43</sup> In summer, the river's flows are naturally low and water temperatures are high, causing low dissolved oxygen levels in some areas of the watershed.<sup>44</sup> Since Washington's water quality standards make natural conditions the baseline water quality criteria when natural conditions are lower in quality than the water quality criteria assigned, the TMDL set the wasteload allocation for the Centralia Reach from May through October to zero pounds of biochemical oxygen demanding (BOD) material.<sup>45</sup> As a result, the city of Chehalis was prohibited from discharging its municipal effluent from its existing outfall during those months. The city's solution was to reclaim the wastewater and put it to use. But the reduction in wastewater discharge during already low-flow periods would impair downstream water rights, and the state's water reclamation statute prohibits impairing downstream water rights without compensation or mitigation agreed to by the holder of the right.<sup>46</sup> The city of Chehalis averted this obstacle initially by discharging the wastewater to land, an action that does not fall under the state's water reclamation statute and thus is not subject to the provision concerning water right impairments. The city of Chehalis later switched to water reclamation, which again was not subject to the water reclamation statute because the water was previously land applied. Water quality mandates thus prevailed over water right requirements. A revised TMDL was submitted in 2000 to modify the seasonal restrictions on BOD and

43 WASHINGTON STATE DEPARTMENT OF ECOLOGY, UPPER CHEHALIS RIVER BASIN DISSOLVED OXYGEN TOTAL MAXIMUM DAILY LOAD (1996).

44 WASHINGTON STATE DEPARTMENT OF ECOLOGY, REVISED UPPER CHEHALIS RIVER BASIN DISSOLVED OXYGEN TOTAL MAXIMUM DAILY LOAD: SUBMITTAL REPORT 7 (2000).

45 WASH. ADMIN. CODE §173-201A-260(1)(a); WASHINGTON STATE DEPARTMENT OF ECOLOGY, *supra* note 44, at 5.

46 WASH. REV. CODE §90.46.130(1).

ammonia discharges, making the level of restrictions dependent on river flows: above 1,000 cfs, Chehalis now may discharge to its existing outfall at permitted limits.<sup>47</sup>

A third example involves an aspect of the CWA that has concerned water quantity interests for decades. Through the 1980s, the Denver Board of Water Commissioners and the Metropolitan Water Providers envisioned and proposed the Two Forks dam and reservoir project, with the resulting 1.1 million acre-feet of storage capacity intended to help meet the projected water needs of the Denver metropolitan area.<sup>48</sup> In 1989, the Corps had completed the environmental impact statement for Two Forks and provided notice of intent to issue the CWA Section 404 permit.<sup>49</sup> But EPA has the authority to deny or restrict the use of defined areas for the discharge of fill materials under CWA Section 404.<sup>50</sup> In March 1990, EPA Region 8 issued a recommendation to prohibit the project because "[c]onstruction and operation of the project would have unacceptable adverse effects on fishery areas (including spawning and breeding grounds), wildlife, and recreation areas" and "the record demonstrates the existence of practicable, environmentally less damaging alternatives to the proposed project."<sup>51</sup> In November 1990, EPA denied use of the proposed project location, effectively vetoing the Two Forks project.<sup>52</sup>

47 WASHINGTON STATE DEPARTMENT OF ECOLOGY, *supra* note 44.

48 Region VIII, U.S. EPA, Recommended Determination to Prohibit Construction of Two Forks Dam and Reservoir Pursuant to Section 404(c) of the Clean Water Act 1 (1990).

49 *Id.* at 2, 6 (1990).

50 33 U.S.C. §1344(c).

51 Region VIII, *supra* note 48, at 2.

52 *See* U.S. EPA, Final Determination of the U.S. Environmental Protection Agency's Assistant Administrator for Water Pursuant to Section 404(c) of the Clean Water Act Concerning the Two Forks Water Supply Impoundments Jefferson and Douglas Counties, Colorado (1990).



## The Point

In the oft-cited words of Justice Sandra Day O'Connor, herself an Arizonan, the separation of water quality and water quantity "is an artificial distinction."<sup>53</sup>

Quantity affects quality, and quantity means little without quality.

The two are naturally intertwined regardless of law, administrative structure, policies, programs, or perception. The challenges of

managing surface water with divided governance over quality and quantity are already evident, and are destined to increase over the coming years.

Ten years ago, the late Prof. David Getches of the University of Colorado School of Law penned, "[t]he expansion of federal environmental laws and the increasing scarcity of water for all uses in a growing West has made such conflicts more frequent and sometimes bitter."<sup>54</sup> Population growth, climate change, and a myriad of other influences suggest that this trend will continue and that the need for cooperation, coordination, and a more holistic perspective is greater than ever.

Realistically, successful cooperation in a historically checkered relationship often has more to do with relative leverage than pure good will. In the water context, public perception and political power predominantly favor one side (water quantity), while



law slightly favors the other (water quality), largely on account of federal supremacy. The extent and nature of the legal authorities dictate the strength of the water quality position and the incentive for the water quantity interests to seek mutually agreeable resolutions despite a political upper hand. What follows is a brief explanation of the legal authorities and limitations of the CWA and state law relevant to the intersection of surface water quality and quantity, as well as a brief explanation of the current state of takings law in this area.

<sup>53</sup> PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700, 719 (1994).

<sup>54</sup> David H. Getches, *The Metamorphosis of Western Water Policy: Have Federal Laws and Local Decisions Eclipsed the States' Role?*, 20 STAN. ENVTL. L.J. 3, 8 (2001).

# The Landscape of Legal Leverage

**R**ealistically, successful cooperation in a historically checkered relationship often has more to do with relative leverage than pure good will. In the water context, public perception and political power predominantly favor one side (water quantity), while law slightly favors the other (water quality), largely on account of federal supremacy. The extent and nature of the legal authorities dictate the strength of the water quality position and the incentive for the water quantity interests to seek mutually agreeable resolutions despite a political upper hand. What follows is a brief explanation of the legal authorities and limitations of the CWA and state law relevant to the intersection of surface water quality and quantity, as well as a brief explanation of the current state of takings law in this area.

## *Authority*

### State Government and Prior Appropriation

State authorities to legislate and adjudicate on water quantity and quality issues derive from several sources, including state constitutions, common law, and the states' inherent "police power" to provide for the public health, safety, welfare, and morals.

The regulation of water quantity has long been structured and executed primarily by the states. Under British rule, the crown did not hold title to flowing water per se; it too abided by the common-law rule that water rights were based on land ownership, specifically the ownership of riparian land. When the colonies achieved independence, they retained the legal systems on which they were founded,

including the common law of riparian rights. In ratifying the U.S. Constitution, the states retained all lands not specifically ceded to the federal government and continued administering the riparian rights doctrine.

As for western lands, the Supreme Court held that the federal government had no riparian rights there and that no riparian rights applied until the land was legally settled.<sup>55</sup> But early settlers of the West, particularly miners, jettisoned the concept of riparian rights and arranged water use rights in a "first come, first served" manner, a concept that made its way into territorial and then state law.<sup>56</sup> Today, most states west of the Mississippi River use prior appropriation as the primary if not exclusive means of allocating surface waters within their respective borders.

While each state that employs the prior appropriation doctrine has a unique set of laws, the general rules are largely the same. The first person to appropriate water is perpetually the first in line to receive all the water necessary to fulfill the original purpose of use; the next appropriator is second in line; and so forth until all the water is consumed or all users are satisfied, whichever comes first. An appropriation commonly requires (1) intent to apply water to a beneficial use, (2) a diversion of water from the water body, and (3) the actual application of the water for a beneficial purpose.<sup>57</sup>

<sup>55</sup> *Atchison v. Peterson*, 87 U.S. 507 (1874); *Sturr v. Beck*, 133 U.S. 541 (1890).

<sup>56</sup> For a more comprehensive explanation of the development of water quantity law in the West (and its relation to federal authorities), see Getches, *supra* note 54, at 6-8.

<sup>57</sup> DAVID H. GETCHES, *WATER LAW IN A NUTSHELL*, 77-78 (2009).

Appropriative rights are limited to use for a “beneficial” purpose, which traditionally includes agriculture, mining, industry, and municipal use. More recently, states have defined the term also to include water conservation, instream flows, and alternative storage techniques, among other purposes. Appropriative right holders may not speculate on the value of a water right, thus a right may be lost back to the state if it is unused for a set number of years. In addition, appropriative right holders are prohibited from impairing the rights of other water right holders, a restriction commonly resulting in the limitation of a water right to the amount historically consumed, not the amount documented as permissibly diverted.

While the states historically have been the predominant governing body over water allocation and have developed extensive legal structures to execute that authority, federal law remains “the supreme Law of the Land.”<sup>58</sup> Nothing in state law can limit the authority of the federal government. Only the Constitution, namely the Tenth Amendment and the enumerated powers, and the extent to which the federal government exercises those powers, dictates the reach of federal authority. In the words of Professor Getches, “[t]he myth of state control has always been precarious, depending as it does on congressional forbearance in the exercise of federal preemption.”<sup>59</sup> But he also noted that the federal government largely has deferred to state law for purposes of water allocation.<sup>60</sup> Examples of the federal government venturing into the field of water allocation, directly or indirectly, are few and far between. The *Winters* doctrine ensures water for federal reserved lands, including Native American reservations, to meet the original purposes of the land reservation.<sup>61</sup> In

addition, statutes such as the Endangered Species Act (ESA),<sup>62</sup> National Environmental Policy Act (NEPA),<sup>63</sup> and the CWA, as well as the regulations and activities of agencies like the U.S. Department of the Interior, have influenced water use to varying degrees in the course of accomplishing their respective objectives.

## Federal Government and the Clean Water Act

The federal government has only the powers conferred on it by the Constitution.<sup>64</sup> Those powers include the Commerce, Property, Treaty, and Spending Clauses. In addition, the Necessary and Proper Clause grants the federal government authority to execute its enumerated powers.<sup>65</sup> The U.S. Congress has relied on the Commerce Clause in particular in authorizing most of its economic and environmental laws, including the CWA. While federal law, including the CWA, is “the supreme Law of the Land,”<sup>66</sup> supremacy over state law extends only as far as Congress’ constitutional authority and the content of the laws it enacts.

The original Federal Water Pollution Control Act was enacted in 1948. Significant amendments were passed in 1972 that instituted many of the modern regulatory provisions of the law as it is now constructed. “Clean Water Act” became its common name with the amendments of 1977. The Act has the express purpose of restoring and maintaining the chemical, physical, and biological integrity of U.S. waters,<sup>67</sup> and it establishes the primary

58 U.S. CONST. art. VI, cl. 2.

59 Getches, *supra* note 54, at 8.

60 *Id.*

61 See, e.g., *Winters v. United States*, 207 U.S. 564, 577 (1908).

62 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18.

63 42 U.S.C. §§4321-4370f, ELR STAT. NEPA §§2-209.

64 U.S. CONST. amend. X.

65 U.S. CONST. art. I, §8.

66 U.S. CONST. art. VI, cl. 2.

67 33 U.S.C. §1251.

framework for surface water quality regulation by the federal government, states, and tribes.

### ***CWA Section 402 NPDES Permits***

The CWA prohibits discharging a pollutant from a “point source” into waters of the United States without a permit.<sup>68</sup> EPA has authority over the permit and enforcement program for these discharges, but EPA can delegate this authority to a state whose program is consistent with the National Pollutant Discharge Elimination System (NPDES).<sup>69</sup> Forty-six states and 39 federally recognized Native American tribes have taken delegation of the NPDES program,<sup>70</sup> but EPA still exercises review and enforcement authority if a state fails to carry out its program in accordance with the CWA.<sup>71</sup> Importantly, with regard to influence on water quantity, this authority concerns what is released into a water body, not what is taken from it.

### ***CWA Section 303 WQS and TMDLs***

CWA Section 303 requires consideration of impacts to the environment, as opposed to just the quality of discharges, and makes the regulation of those discharges more adaptive. It directs states to accomplish certain tasks, including the setting of water quality standards to guide permitting, as well as planning processes and programs to improve and

maintain overall water quality. States must adopt water quality standards to protect the public health and welfare, enhance the quality of water, and serve the purposes of the CWA.<sup>72</sup> The standards must identify the designated use or uses to be made of the waters, e.g., drinking water and fisheries, provide narrative or numerical water quality criteria sufficient to protect those uses, and establish an antidegradation policy to protect waters currently meeting or exceeding levels necessary to protect designated uses.<sup>73</sup>



But the CWA does not give all responsibility over water quality standards to the states; EPA is tasked with developing minimum criteria that reflect the latest scientific knowledge and with reviewing state water quality standards as they are submitted.<sup>74</sup> EPA must promulgate a water quality standard if it disapproves a state standard or if it determines that a new or revised standard is needed to meet the Act’s requirements.<sup>75</sup> To the extent that it is not prohibited by the Wallop Amendment (discussed

68 33 U.S.C. §1311(a).

69 33 U.S.C. §1342; 40 C.F.R. Part 123.

70 National Pollutant Discharge Elimination System (NPDES) State Program Status, <http://cfpub.epa.gov/npdes/statestats.cfm>.

71 33 U.S.C. §1342.

72 33 U.S.C. §1313.

73 40 C.F.R. pt. 131.

74 33 U.S.C. §§1313(c), 1314(a)(1).

75 33 U.S.C. §1313(c).



below), these authorities of EPA could lead to recommended or required water quality standards that consider flow in some manner, or even incorporate quantity considerations into decisionmaking for water quality. Even where law may allow it, however, politics may be enough to prevent this from happening. In a few instances in prior appropriation states, the designated uses, water quality criteria, and/or antidegradation policies do consider flow,<sup>76</sup> but this is commonly state-determined, not federally influenced.

As explained above, CWA Section 303 requires states to develop TMDLs for waters impaired by a pollutant, identifying the sum of pollutants from all point and nonpoint sources that would make the water body meet water quality standards.<sup>77</sup> Some eastern U.S. states have developed TMDLs explicitly for flow, usually focused on impervious ground cover as a surrogate for pollutants and other stressors associated with stormwater.<sup>78</sup> As with standards, EPA has review authority over the list of impaired waters and TMDLs. If EPA disapproves the list or TMDL, EPA will create its own version.<sup>79</sup> But the CWA does not expressly require that TMDLs be implemented. As a result, EPA does not have oversight authority at the TMDL implementation stage, leaving to the states decisions about whether and how a TMDL is implemented. As discussed below, some states have express limitations on the effects that water quality measures can have on water rights, which could effectively preempt TMDL implementation if the means of reducing pollutant discharges also reduce total return flow or

lead to land application or reuse of the wastewater where there previously had been direct return to the natural watercourse.

## ***CWA Section 404 Dredge-and-Fill Permits***

Section 404 of the CWA restricts the discharge of dredged and fill material into the waters of the United States. Primary authority over permitting of these discharges is with the Corps, but the Corps must comply with EPA's Section 404(b)(1) guidelines in issuing Section 404 permits and, as noted above in the Two Forks example, EPA may deny or restrict the use of defined areas.<sup>80</sup> States are authorized to assume the Section 404 permit program upon meeting appropriate conditions and operate in lieu of the Corps, but only New Jersey and Michigan have done so.<sup>81</sup>

Section 404 has the potential to significantly affect proposed and existing water rights because of the kinds of activities that it regulates. The construction of waterworks, including structures like diversion dams, usually requires the addition of fill material. As noted above, the prior appropriation system of water allocation traditionally requires the actual construction of such waterworks to perfect a water right.<sup>82</sup> Therefore, appropriating water often necessitates a Section 404 permit, and restrictions on or denial of permits can affect water right applications.<sup>83</sup> Potential limitations on this influence by the Wallop Amendment are discussed below.

<sup>76</sup> See, e.g., ARIZ. ADMIN. CODE 18-11-107.01; 5 COLO. CODE REGS. §1002-31.8; NEB. ADMIN. CODE 117.4.003; N.D. ADMIN. CODE §33-16-02.1-09; OKLA. ADMIN. CODE §785:45-5-12; OR. ADMIN. R. 340-041-0007.

<sup>77</sup> 33 U.S.C. §1313(d)(1)(C).

<sup>78</sup> Examples of flow TMDLs include Connecticut's Eagleville Brook TMDL, Maine's Barberry Creek TMDL, Vermont's Potash Brook TMDL, and Virginia's Accotink TMDL.

<sup>79</sup> 33 U.S.C. §1313(d)(2).

<sup>80</sup> 33 U.S.C. §1344. For a complete review of the §404 program, see MARGARET "PEGGY" STRAND & LOWELL M. ROTHSCHILD, WETLANDS DESKBOOK (ELI 2009).

<sup>81</sup> 33 U.S.C. §1344(g).

<sup>82</sup> Instream flow rights have become the primary exception to this rule in many western states.

<sup>83</sup> See Gregory J. Hobbs Jr. & Bennett W. Raley, *Water Rights Protection in Water Quality Law*, 60 U. COLO. L. REV. 841, 855 (1989).

## **CWA Section 102 Reservoir Planning**

CWA Section 102(b) sets out a few parameters for federal reservoir planning, further linking water quality and quantity. Subsection (1) requires the Corps, the Bureau of Reclamation, and other federal agencies planning a reservoir to consider including storage for streamflow regulation, but the storage and water releases are prohibited from replacing “adequate treatment or other methods of controlling waste at the source.”<sup>84</sup> Subsection (3) places the authority over determining the need for and value and impact of water storage for the purpose of water quality control in the hands of the EPA Administrator. Such determinations are to be included in reports to Congress proposing reservoirs that include storage for that purpose.<sup>85</sup>

## **CWA Section 401 Certification**

Section 401 of the CWA creates a different sort of authority, as it requires that states have the opportunity to review applications for federal permits and licenses for consistency with the state’s water quality standards and all other aspects of state water quality law.<sup>86</sup> While the water quality standards are influenced in various ways by EPA and the specific requirements of the CWA, Section 401 provides the states authority to ensure that certain federal government decisions do not result in exceedance of state standards. No federal license or permit may be granted until the certification has been obtained, or waived by state inaction.<sup>87</sup>

Perhaps, more than any other authority in the CWA, review and certification under Section 401 can affect new and existing water rights. As

discussed above, the Supreme Court held in 1994 that the state of Washington’s minimum stream flow requirement was a permissible condition of a Section 401 certification.<sup>88</sup> While a “discharge” is necessary to trigger CWA Section 401 review, subsection (d) “expands the State’s authority to impose conditions on the certification of a project . . . . The text refers to the compliance of the applicant, not the discharge.”<sup>89</sup> This distinguishes the certification authority under CWA Section 401 from that of NPDES permits under CWA Section 402; NPDES permits can address only the impacts of discharges, whereas Section 401 certification can address the water quality impacts from all aspects of a federally permitted project, including the effects of withdrawals, if there may be a discharge.

Consequently, it would be particularly relevant to reference flow in water quality criteria, antidegradation policies, and even designated uses in the context of a Section 401 certification. Yet, this certification is a power of the states. The statutory language and case law suggest that a state agency cannot be forced or overridden with regard to Section 401 certification decisions.<sup>90</sup> If a state water quality agency does not place flow conditions on a certification, regardless of the impacts of the project on flow, it is the state’s prerogative, with no apparent means of recourse by anyone else. To complicate matters, state statutes that prohibit water quality measures from adversely affecting water rights (explained below) may wholly prevent a state agency from using the Section 401 certification authority in the way that the Washington Department of Ecology and a few eastern state agencies have.<sup>91</sup> The 1994 Supreme Court decision identified

84 33 U.S.C. §1252(b)(1).

85 33 U.S.C. §1252(b)(3).

86 33 U.S.C. §1341.

87 33 U.S.C. §1341(a)(1).

88 PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700, 24 ELR 20945 (1994).

89 *Id.* at 711.

90 See 33 U.S.C. §1341(a)(1); City of Olmsted Falls, Ohio v. U.S. Env’tl. Prot. Agency, 435 F.3d 632, 636 (6th Cir. 2006).

91 See, e.g., Jan G. Laitos, *Water Rights and Water Quality: Recent Developments*, 23 *COLO. LAW.* 2343, 2345 (1994).



what is possible with regard to flow requirements in CWA Section 401 certification, but how often this authority will be exercised is simply unclear.

## Limitations

### Language of the Clean Water Act

As noted above, the CWA can influence appropriative rights in various ways, but the extent of its supremacy over state laws, including those concerning water quantity management, is limited to its express content. Thus, the potential areas noted above of CWA influence on appropriative rights are nearly all that exist. In addition, these points of contact are limited by a provision of the CWA commonly known as the Wallop Amendment.

Section 101(g), the Wallop Amendment, was added to the CWA as part of the 1977 Amendments, in the heat of concerns over the jurisdiction of the CWA and its potential influence on water rights. It reads:

It is the policy of Congress that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this chapter. It is the further policy of Congress that nothing in this chapter shall be construed to supersede or abrogate rights to quantities of water which have been established by any State. Federal agencies shall co-operate with State and local agencies

to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.<sup>92</sup>

The language of the provision and interpretation by its namesake have been used to advance both sides of the argument—water quality protection and protecting rights to water.<sup>93</sup> The Wallop Amendment does limit the authorities of the CWA, but the unresolved question is to what extent.

The provision makes clear that the CWA cannot be used to replace state authority over water quantity allocation or destroy state-established rights to water. Equally, the provision does not read as if it protects water rights at all cost against the consequences of fulfilling CWA obligations. By its terms, “the authority of each State to allocate quantities of water” may not be “superseded, abrogated or otherwise impaired” by the CWA. In contrast, the CWA is prohibited from being read “to supersede or abrogate rights to quantities of water.” Missing from this latter sentence, but present in the former, is the term “impair.” In short, the provision does not say that water rights shall not be impaired by the CWA. “Impairment” is common parlance in the field, and one can presume from its usage in this provision and from the definitions of the terms “supersede,” “abrogate,” and “impair” that it is the least onerous of the noted infringements.<sup>94</sup> As a result, the Wallop Amendment appears to be more protective of state authority to allocate water than of the water rights themselves.

<sup>92</sup> 33 U.S.C. §1251(g).

<sup>93</sup> See, e.g., PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700, 24 ELR 20945 (1994); Benson, *supra* note 5; Hobbs Jr. & Raley, *supra* note 83.

<sup>94</sup> “Impair” is defined as “to make worse, less, weaker, etc.; damage; reduce;” “abrogate” is defined as “to cancel or repeal by authority; annul;” and “supersede” is defined as “to cause to be set aside or dropped from use as inferior or obsolete and replaced by something else.” WEBSTER’S NEW WORLD DICTIONARY (2d ed.)

Other examples of state agencies conditioning CWA §401 certification on flow protection include the Maine Department of Environmental Protection, *S.D. Warren Co. v. Maine Board of Environmental Protection*, 547 U.S. 370 (2006), and Vermont’s Agency of Natural Resources, *American Rivers, Inc. v. Fed. Energy Regulatory Comm’n*, 129 F.3d 99, 28 ELR 20258 (2d Cir. 1997).

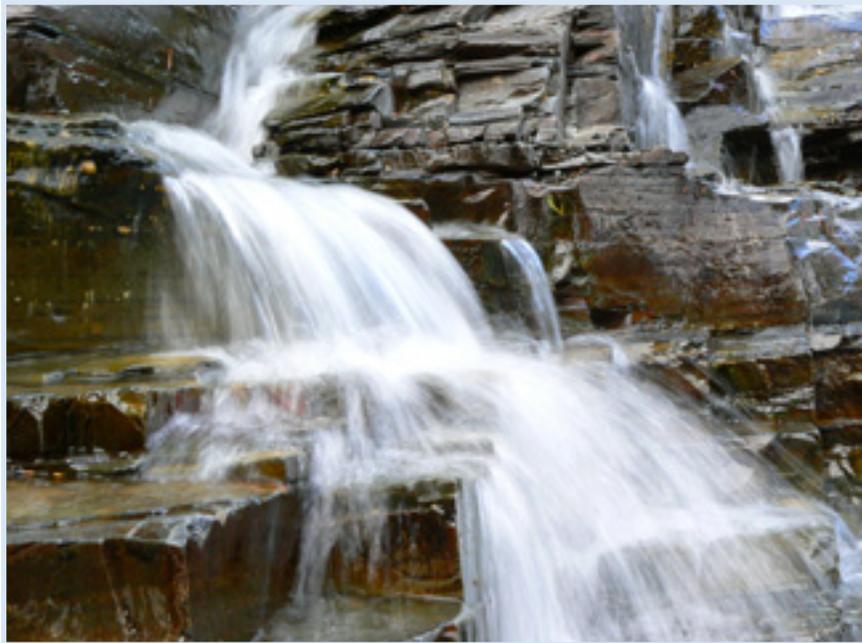
Comments by former Sen. Malcolm Wallop (R-Wyo.) around the time of the Amendment support this reading. Those touting the protection provided by the provision reference Senator Wallop's comment that ". . . the States [sic] historic rights to allocate quantity, and establish priority of usage remains inviolate because of this amendment."<sup>95</sup> This statement speaks to state authority, but not water rights. Another often-cited comment by Senator Wallop speaks to both, again protecting state authority but also noting that water rights can be affected by CWA implementation:

[t]he requirements of section 402 and 404 permits may incidentally affect individual water rights. . . . It is not the purpose of this amendment to prohibit those incidental effects. It is the purpose of this amendment to insure that State allocation systems are not subverted, and that effects on individual rights, if any, are prompted by legitimate and necessary water quality considerations. This amendment is an attempt to recognize the historic allocation rights contained in State constitutions. It is designed to protect historic rights from mischievous abrogation by those who would use an act, designed solely to protect water quality and wetlands, for other purposes. It does not interfere with the legitimate purposes for which the act was designed.<sup>96</sup>

95 Hobbs Jr. & Raley, *supra* note 83, at 854 (quoting remarks of Senator Wallop from 123 CONG. REC. 39212 (1977)).

96 Remarks of Senator Wallop from 123 CONG. REC. 39212 (1977), quoted in, e.g., *PUD No. 1 of Jefferson County*, 511

The Supreme Court has similarly interpreted the Amendment, stating that "Sections 101(g) and 510(2) preserve the authority of each State to allocate water quantity as between users; they do not limit the scope of water pollution controls that may be imposed on users who have obtained, pursuant to state law, a water allocation."<sup>97</sup>



Thus, it appears that some degree of interference with water rights is justifiable for the purposes of pollution control, but at what point does an action reach the level of abrogating or superseding a water right or impairing the authority of the state to allocate water? Case law is not particularly helpful in identifying the ceiling of this authority; if anything, it seems to suggest that the ceiling is quite high when it comes to the effects of water quality permits and certifications on water rights. Table 2 lists the federal cases addressing claims concerning the Wallop Amendment.

U.S. 700; *United States v. Akers*, 785 F.2d 814, 821, 16 ELR 20538 (9th Cir. 1986).

97 *PUD No. 1 of Jefferson County*, 511 U.S. 700.



Table 2: Federal Court Decisions Addressing the Wallop Amendment

COURT	CASE	HOLDING
U.S. Supreme Court	<i>PUD No. 1 of Jefferson County v. Washington Department of Ecology</i>	The Wallop Amendment does not prohibit the enforcement of instream flow requirements against projects required to be licensed under Section 401 of the CWA. <sup>98</sup>
Second Circuit	<i>Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York</i>	CWA Section 402 permitting requirements apply to Shandaken Tunnel discharges despite the Wallop Amendment, even if a permit requirement effectively would stop the transfer of water from the tunnel to the creek and thus interfere with New York's rights to water. <sup>99</sup>
Fourth Circuit	<i>James City County, Va. v. U.S. Environmental Protection Agency</i>	The EPA veto of the Ware Creek dam and reservoir under CWA Subsection 404(c) did not violate the Wallop Amendment. <sup>100</sup>
Ninth Circuit	<i>United States v. Akers</i>	The Wallop Amendment did not protect the appellant from the effects of Section 404 permitting requirements on his water rights. <sup>101</sup>
U.S. District Court for the District of Colorado	<i>Alameda Water &amp; Sanitation District v. Reilly</i>	The EPA veto of the Two Forks project under CWA Subsection 404(c) did not violate the Wallop Amendment. <sup>102</sup>
U.S. District Court for the District of Colorado	<i>Riverside Irrigation District v. Andrews</i>	The Wallop Amendment did not prohibit the Army Corps of Engineers from denying dam developers a nationwide temporary permit to discharge sand and gravel during dam construction. <sup>103</sup>

In *Riverside Irrigation District v. Andrews*, the U.S. District Court for the District of Colorado wrote that “[w]hile the defendant is barring the plaintiffs from exercising their water rights in a manner inconsistent with federal law, he is not taking away the rights. They may still be utilized, so long as in a manner consistent with federal law.”<sup>104</sup>

It appears from these decisions that the CWA, particularly the issuance or denial of CWA Section 402 and 404 permits and Section 401 water quality certifications, legally may have a significant effect on water rights. Exactly what actions would rise to the level of superseding or abrogating water

rights or impairing state allocation authority is yet unresolved, but the federal courts do not seem to consider the Wallop Amendment to be much of a limitation on the implementation of the CWA, a sentiment that is neither novel nor new. In the words of Professor Getches:

Even where federal laws appeared to preserve state water laws, the overriding purpose of the federal law controlled. The Supreme Court has held, in case after case, that such disclaimers mean nothing in the face of a federal purpose that conflicts with state water rights. Thus, federal programs ranging from dam-building to environmental regulations can inhibit or preclude the operation of state water law and state-granted water rights whenever there is a conflict between the state legal system and the federal purpose.<sup>105</sup>

98 511 U.S. 700, 719-721 (1994).

99 451 F.3d 77, 83-84 (2nd Cir. 2006).

100 12 F.3d 1330, 1336 (4th Cir. 1993).

101 See 785 F.2d 814, 821 (9th Cir. 1986).

102 930 F.Supp. 486, 493 (D. Colo. 1996).

103 568 F.Supp. 583, 589 (D. Colo. 1983).

104 *Id.*

105 Getches, *supra* note 54, at 8 (2001).

## Language of State Law

While states do not have authority to alter the Wallop Amendment or otherwise limit the supremacy of the federal CWA over state water allocation laws, many prior appropriation states do limit the impact that their own respective state water quality laws can have on water rights. As demonstrated by the chart below, exactly what effects are prohibited varies among the states. Colorado, Montana, and Washington do what the Wallop Amendment does not, use the word “impair” with regard to impacts on water rights. Other states use such terms as “interfere with,” “amend,” “modify,” and “estop.”

By using terms such as “interfere,” which indicate less significance in impact than “supersede” or “abrogate,” the states are placing greater protections on water rights in state water quality law than the Wallop Amendment does in the CWA. In a 1996 decision, the Supreme Court of Colorado noted that “the system of water quality regulation in Colorado reflects a continued conflict with and subordination to the prior appropriation system.”<sup>106</sup> The court stated, “[f]or better or worse, this dual system limits the ability of both the water court and the water quality control agencies to address certain water quality issues,”<sup>107</sup> a stark contrast to Senator Wallop’s comment that his Amendment “does not interfere with the legitimate purposes for which the act was designed.”<sup>108</sup>

These state laws control only what they can: state action. But because of the significant role of the states in implementing the CWA, state laws may influence the methods and results of the CWA in practice. As noted above, the CWA requires states to perform a number of tasks; state law may dictate

how discretion is exercised in implementing these activities and programs.

For example, EPA’s Integrated Reporting Guidance recommends that flow be used as an indicator of the ability of water bodies to fully support the designated uses of aquatic life/wildlife, recreation, and drinking water supply.<sup>109</sup> But this is not required, and even if states follow it, state laws like those for Idaho, North Dakota, and Wyoming may limit its relevance in practice. With regard to CWA Section 402 permitting, the inability to ensure that the exercise of water rights will not cause streamflow to drop below the levels anticipated in discharge permits reduces the reliability of the permit and places a greater burden on point source dischargers and development of control technology. In addition, if state water quality agencies are prohibited from affecting water rights, they may not have the option of exercising the discretionary certification authority in CWA Section 401 in a manner that would protect water quality standards through minimum flow requirements, as demonstrated in the *Jefferson County* case.<sup>110</sup>

Federal law is the supreme law of the land, and water quality measures and programs are guided by the CWA, associated regulations, EPA and Corps oversight, and even agency guidance documents. The state laws above do not limit federal authority.<sup>111</sup> But what is not dictated and enforced at the federal level is in the hands of the states. The more influence that the state laws above have, as a result of less being done at the federal level, the more the

109 Memorandum from Diane Regas, Director, Office of Wetlands, Oceans and Watersheds, EPA, to Water Division Directors, Regions 1-10, *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act 52* (July 29, 2005).

110 See, e.g., Jan G. Laitos, *Water Rights and Water Quality: Recent Developments*, 23 COLO. LAW. 2343, 2344-45 (1994).

111 See *id.*

106 *City of Thornton v. Bijou Irrigation Co.*, 926 P. 2d 1, 91 (Colo. 1996).

107 *Id.* at 92.

108 Remarks of Senator Wallop, *supra* note 96.



Table 3: State Limitations on Water Quality Laws for Water Right Protection

STATE	CITATION	LANGUAGE
Arizona	ARIZ. REV. STAT. § 49-206	...nor shall any provision of this [water quality control] chapter, or any act done by virtue of this chapter, be construed so as to estop any person, this state or any political subdivision of this state, or owners of land having groundwater or surface water rights or otherwise, from exercising their rights ...
Colorado	COLO. REV. STAT. § 25-8-104	No provision of this [water quality control] article shall be interpreted so as to supersede, abrogate, or impair rights to divert water and apply water to beneficial uses ... Nothing in this article shall be construed, enforced, or applied so as to cause or result in material injury to water rights ... Nothing in this article shall be construed to allow the commission or the division to require minimum stream flows or minimum water levels in any lakes or impoundments.
Idaho	IDAHO ADMIN. CODE r. 58.01.02.050.01	The adoption of water quality standards and the enforcement of such standards is not intended to ... interfere with the rights of Idaho appropriators, either now or in the future, in the utilization of the water appropriations which have been granted to them under the statutory procedure...
Kansas	KAN. STAT. ANN. § 65-171d	In no event shall the secretary's authority be interpreted to include authority over the beneficial use of water, water quantity allocations, protection against water use impairment of a beneficial use, or any other function or authority under the jurisdiction of the Kansas water appropriation act, K.S.A. 82a-701, and amendments thereto.
Montana	MONT. CODE ANN. §75-5-705	Nothing in [the assessment] part [of the water quality statute] may be construed to divest, impair, or diminish any water right recognized pursuant to Title 85.
Nebraska	NEB. ADMIN. CODE 117.4.001	These uses are not intended in any way to conflict with the quantitative beneficial uses provided for in Neb. Rev. Stat., Ch. 46, regulating irrigation or the authority of the Nebraska Department of Natural Resources.
Nevada	NEV. REV. STAT. § 445A.725	Nothing in [the water pollution control portion of the water controls chapter] shall be construed to amend, modify or supersede the provisions of [the water title] of NRS or any rule, regulation or order promulgated or issued thereunder by the State Engineer.
New Mexico	N.M. STAT. ANN. § 74-6-12	The Water Quality Act [Chapter 74, Article 6 NMSA 1978] does not grant to the commission or to any other entity the power to take away or modify the property rights in water, nor is it the intention of the Water Quality Act to take away or modify such rights.
North Dakota	N.D. ADMIN. CODE § 33-16-02.1-03	Nothing in this [Standards of Quality for Waters of the State] chapter may be construed to limit or interfere with the jurisdiction, duties, or authorities of other North Dakota state agencies.
Washington	WASH. REV. CODE § 90.48.422	The department may not abrogate, supersede, impair, or condition the ability of a water right holder to fully divert or withdraw water under a water right permit, certificate, statutory exemption, or claim granted or recognized under chapter 90.03, 90.14, or 90.44 RCW through the authority granted to the department in this [Water pollution control] chapter.
Wyoming	WYO. STAT. ANN. § 35.11.1104	Nothing in this [Environmental Quality Act]: (iii) Limits or interferes with the jurisdiction, duties or authority of the state engineer, the state board of control, the director of the Wyoming game and fish department, the state mine inspector, the oil and gas supervisor or the oil and gas conservation commission, or the occupational health and safety commission.

balance struck by the Wallop Amendment is shifted in favor of water rights, potentially to the detriment of water quality protection and restoration.

There are, however, a few examples of state law contrary to those listed above. Rather than limiting

the impact of water quality authorities on water rights, Section 468B.010 of the Oregon Revised Statutes limits the impact of other Oregon laws, including allocation laws, on water quality authorities. The statute states that, with a few exceptions for specific energy-related laws, “insofar as the

authority of the Environmental Quality Commission over water pollution . . . is inconsistent with any other law, or authority granted to any other state agency, the authority of the commission shall be controlling.”<sup>112</sup>

Along similar lines, California provides for the protection of water quality in water right administration. The State Water Resources Control Board is required to consider effects on water quality when permits are issued.<sup>113</sup> Water quality also must be considered in acting on water right change petitions, to avoid injury that might otherwise occur to third-party water right holders and to avoid unreasonable impacts on instream beneficial uses.<sup>114</sup> Even in the absence of a petition for change, the State Water Resources Control Board has authority to reopen water right permits and licenses to protect water quality.<sup>115</sup> In addition, where the program of implementation in a water quality control plan provides for implementation of water quality objectives through water right proceedings, water right decisions must

implement the objectives as provided in the program of implementation.<sup>116</sup> Thus, California law provides for integration of water quality and water right law not found in the laws listed above.

## Takings.

A partial cause of the divide between water quality and quantity management is concern over potential compensation payments to affected water right holders. The possibility that a court might find water quality protection to be a “taking” of a water right appears to have given legal leverage to water quantity and further encouraged water quality programs to exercise their authorities cautiously, if at all, when water rights may be affected. But no federal court decision to date has addressed the alleged taking of a water right through exercise of CWA authorities. Takings jurisprudence generally and decisions concerning water right impacts from implementing other laws suggest a low risk that a “taking” might be found from CWA implementation. While much discussed, the influence of takings law appears to be overblown in this context. In the words of Prof. Mark Squillace of the University of Colorado School of Law, “[o]ne of the great myths of western water law is that water rights are property rights that are essentially inviolable.”<sup>117</sup>

The requirement that government actions amounting to “takings” be compensated originates in the Constitution. The Fifth Amendment states, in part, “. . . nor shall private property be taken for public use, without just compensation.”<sup>118</sup> The Fourteenth Amendment extended this requirement to states

112 OR. REV. STAT. §468B.010.

113 CAL. WATER CODE §§174, 1258.

114 Under California law, a water right holder has a right to protection of the quality of the water supply at the point of diversion. *See Wright v. Best*, 121 P.2d 702, 709 (Cal. 1942). The statutes governing changes in the point of diversion or place or purpose of use of appropriative rights require that there be no injury to any legal user of water, and either expressly provide for or have been interpreted to provide for the protection of instream beneficial uses. *See, e.g.*, CAL. WATER CODE §§1702, 1725, 1736; Treated Waste Water Change Petition WW-20 of El Dorado Irrigation District, Order WR 95-9 at 28 (Cal. Water Resources Control Bd. 1995), available at [http://www.waterboards.ca.gov/waterrights/board\\_decisions/adopted\\_orders/orders/1995/wro95-09.pdf](http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1995/wro95-09.pdf).

115 *United States v. State Water Res. Control Bd.*, 227 Cal. Rptr. 161, 185-88 (Cal. Ct. App. 1986); *see* CAL. CODE REGS. tit. 23, §780 (standard water right permit term, authorizing the State Water Resources Control Board to reopen the permit or any license issued pursuant to the permit if the State Water Resources Control Board determines that modification of the permit or license is necessary to meet water quality objectives).

116 *See State Water Res. Control Bd. Cases*, 39 Cal. Rptr. 3d 189, 230-37 (Cal. Ct. App. 2006).

117 Mark Squillace, *The Water Marketing Solution*, 42 ELR 10800, 10803 (Sept. 2012).

118 U.S. CONST. amend. V.



and municipalities.<sup>119</sup> Over many years and many court decisions, a framework has evolved for determining whether an action constitutes a taking, and thus whether compensation is due.

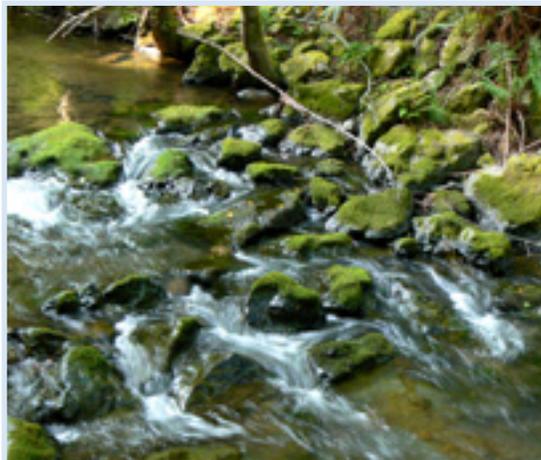
First, is “property” at issue?

The Constitution only protects property rights that are legally recognized. State, not federal, law usually defines property.<sup>120</sup>

There is no taking if “background principles of the State’s law of property and nuisance” already limited the property right, in other words, if the owner

did not have that right in the first place.<sup>121</sup> Second, what is the nature of the government interference? Physical occupation is the classic example, “a direct government appropriation or [a] physical invasion of private property,”<sup>122</sup> as in the exercise of eminent domain. A taking also can arise from regulatory action that significantly restricts the owner’s use of his or her property.<sup>123</sup> Whether the interference is temporary or permanent, total (complete elimination of value or use) or partial dictates subsequent steps in the analysis.

Permanent physical occupations generally are considered by courts to be a taking, regardless of the purpose of the intrusion or fraction of property affected. Total regulatory takings, rare as they are,



also generally are deemed takings. In the regulatory takings analysis, property is considered in its entirety. Thus, regulatory actions designated as temporary cannot constitute total regulatory takings,

no matter how complete the elimination of value or use during the period of regulation.<sup>124</sup> Regulatory actions that do not completely eliminate the value or use of property involve case-by-case analysis of three factors to determine whether a taking has occurred: (1) the economic impact on the claimant; (2) the extent of interference

with distinct investment-backed expectations; and (3) the character of the action.<sup>125</sup>

This takings analysis framework evolved primarily in the context of real property and land use disputes, and its application to surface water rights has not proven simple, nor is it yet clear.<sup>126</sup>

## The Property Rights in an Appropriative Right

What Fifth Amendment property rights exist in an appropriative right? Rights to water are quite different from rights to land: there is no ownership of specific water molecules or right to exclude third

119 *Chicago, Burlington & Quincy Railroad Co. v. City of Chicago*, 166 U.S. 226 (1897).

120 *See, e.g.*, John D. Leshy, *A Conversation About Takings and Water Rights*, 83 *TEX. L. REV.* 1985, 2004 (2005).

121 *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1029, 22 *ELR* 21104 (1992).

122 *Lingle v. Chevron U.S.A., Inc.*, 544 U.S. 528, 537, 35 *ELR* 20106 (2005).

123 *See Tahoe-Sierra Preservation Council, Inc. v. Tahoe Reg’l Planning Agency*, 535 U.S. 302 (2002).

124 *See id.* at 331.

125 *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, 124, 8 *ELR* 20528 (1978).

126 *See, e.g.*, John D. Echeverria, *Is Regulation of Water a Constitutional Taking?*, 11 *Vt. J. ENVTL. L.* 581, 583 (2010); Marcus J. Lock, *Braving the Waters of Supreme Court Takings Jurisprudence: Will the Fifth Amendment Protect Western Water Rights From Federal Environmental Regulation?*, 4 *U. DENV. WATER L. REV.* 76, 78 (2000).

parties while water is in the stream.<sup>127</sup> Appropriative water rights are usufruct (use) rights, limited by natural availability of water and needs of senior water rights holders, as well as by rules concerning beneficial use, forfeiture, waste, and, in some states, the public trust. Appropriative water rights can be conditional or “absolute,” in the form of a permit or a license. The nature of water rights varies even within and among prior appropriation states.

Few court decisions have truly analyzed the nature and scope of an asserted property interest in water, and few of those have concerned appropriative rights, as opposed to riparian rights and rights arising through contract. Courts have found not compensable the loss of diverted water that is in excess of the amount beneficially used,<sup>128</sup> as well as loss of the use of water rights that is harmful to the public trust.<sup>129</sup> Yet, there is much to be resolved regarding the Fifth Amendment property rights in an appropriative right, and given the differences in water law across states and across water rights within a state, the review of property rights in water effectively may involve case-by-case analysis in many instances for years to come.

## Nature of the Government Interference

What is the nature of the government interference? Here again, the translation from land use law to water law has proven challenging and rarely been explored. When courts have addressed the issue, they have reached varying conclusions as to what amounts to a “physical occupation” of water, total

127 Echeverria, *supra* note 126, at 593-94.

128 See, e.g., *Casitas Municipal Water Dist. v. United States*, 102 Fed. Cl. 443, 455, 41 ELR 20361 (Fed. Cl. 2011).

129 See, e.g., *National Audubon Society v. Superior Court of Alpine Cty.*, 33 Cal. 3d 419, 437, 13 ELR 20272 (1983); *Fishery Res. & Water Right Issues of the Lower Yuba River*, Decision 1644, 141-42 (Cal. Water Res. Control Bd. 2003).

regulatory interference with water rights, or partial regulatory interference with water rights. Since the analyses for these different types of interference with property vary—a near-absolute requirement of compensation for the first two (the *per se* rule) and a three-part test for the third—the initial labeling of the type of interference significantly influences the likelihood that a takings claim will succeed. Recent, prominent examples of analyzing the nature of the government interference are found in the *Casitas* and *Hage* cases.

In *Casitas Municipal Water District v. United States*,<sup>130</sup> the Casitas District had contracted with the federal government to pay the costs of construction and operation of the Ventura River Project in return for a perpetual right to all water made available by the project. The Casitas District diverted and used its water under the terms of a California water license.<sup>131</sup> To comply with the ESA, the District constructed a fish ladder, the operation of which was the basis of the District’s takings claim against the federal government.<sup>132</sup>

The government moved for partial summary judgment on the ground that the alleged takings claim “must be addressed as a regulatory constraint on the use of property and therefore subject to evaluation under the [three-part regulatory takings test].”<sup>133</sup> Casitas conceded that it could not prevail under this test and argued that the case should be reviewed under the *per se* rule.<sup>134</sup> The U.S. Court of Federal Claims, in an opinion written by Judge John Paul Wiese, sided with the government and granted partial summary judgment.<sup>135</sup> The decision

130 543 F.3d 1276, 1281-82, 38 ELR 20251 (Fed. Cir. 2008).

131 *Casitas Mun. Water Dist.*, 102 Fed. Cl. at 446.

132 See *Casitas Mun. Water Dist.* 543 F.3d at 1282.

133 *Casitas Mun. Water Dist. v. United States*, 76 Fed. Cl. 100, 101 (Fed. Cl. 2007).

134 *Id.*; *Casitas Mun. Water Dist.*, 543 F.3d at 1283.

135 *Casitas Mun. Water Dist.*, 76 Fed. Cl. at 106.



marked a departure from Judge Wiese's decision in *Tulare Lake Basin Water Storage District v. United States* six years earlier, which included the statement "[u]nlike other species of property where use restrictions may limit some, but not all of the incidents of ownership, the denial of a right to the use of water accomplishes a complete extinction of all value."<sup>136</sup> His *Casitas* decision states that the reason for the change was an intervening decision

by the Supreme Court in *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency*:

That case compels us to respect the distinction between a government takeover of property (either by physical invasion or by directing the property's use to its own needs) and government restraints on an owner's use of that property . . . *Tahoe-Sierra* admonishes that only the government's active hand in the redirection of a property's use may be treated as a per se taking.<sup>137</sup>

<sup>136</sup> *Tulare Lake Basin Water Storage District v. United States*, 49 Fed. Cl. 313, 319, 31 ELR 20648 (2001). In *Tulare*, the plaintiff county water districts had entered a contract with the California Department of Water Resources to withdraw or use set quantities of State Water Project water. But the National Marine Fisheries Service subsequently issued a biological opinion in accordance with the ESA that recommended restricting the time and manner of pumping water out of the Delta, making unavailable some of the water under contract. The U.S. Court of Federal Claims, in an opinion written by Judge Wiese, determined that restriction on the use of water should receive a physical takings analysis. The court noted that water rights are unique: "[u]nlike other species of property where use restrictions may limit some, but not all of the incidents of ownership, the denial of a right to the use of water accomplishes a complete extinction of all value." As a result, plaintiffs succeeded on their motion for summary judgment.

But, a divided panel of the U.S. Court of Appeals for the Federal Circuit reversed Judge Wiese's decision and remanded it for further proceedings.<sup>138</sup> The focus of the case shifted on appeal, from a claim of taking via the requirement that water be left in

<sup>137</sup> *Casitas Mun. Water Dist.*, 76 Fed. Cl. at 106.

<sup>138</sup> On remand, Judge Wiese held that plaintiff's cause of action was not yet ripe since "the relevant property interest . . . plaintiff's right to beneficial use . . . cannot be taken until defendant's action encroaches on plaintiff's ability to deliver water to its customers," an event which had not yet happened. *Casitas Mun. Water Dist. v. United States*, 102 Fed. Cl. 443, 471, 41 ELR 20361 (Fed. Cl. 2011). Plaintiff's complaint was dismissed without prejudice. *Id.* at 478.

the river to a taking via the requirement that water, once in the canal, be sent through a fish ladder.<sup>139</sup> The court held that, due to the fish ladder, the government action was physical, and that the per se takings analysis applied as a result.<sup>140</sup>

The appeals court concluded its decision with a discussion of *Tahoe-Sierra*, which had played such a significant role in Judge Wiese's decision. The Federal Circuit stated that "*Tahoe-Sierra* did not depart from the substantial body of precedent dictating that the government's physical appropriation of a portion of a water right is compensable . . . it did not involve a claim of physical taking, nor did it involve water rights."<sup>141</sup> Further, the court noted that in *Tahoe-Sierra* "[t]he land itself was in no way changed or diminished due to th[e] restriction," but

the water that is diverted away from the Robles-Diversion Canal is permanently gone . . . and it does not leave the right in the same state it was before the government action . . . Unlike *Tahoe-Sierra*, the government, in this case, directly appropriated Casitas' water for its own use—for the preservation of an endangered species.<sup>142</sup>

Despite all of this commentary, the court expressly declined to "opine on whether Tulare was rightly decided," and it even noted "that the *Tulare* decision has been criticized."<sup>143</sup>

Prof. John D. Echeverria, a preeminent takings scholar at Vermont Law School, suggests that the federal circuit "may believe Judge Wiese correctly repudiated his Tulare Lake decision and that he correctly resolved the taking issue in *Casitas* based

<sup>139</sup> Echeverria, *supra* note 126, at 592.

<sup>140</sup> *Casitas Municipal Water Dist. v. United States*, 543 F.3d 1276, 1295-96, 38 ELR 20251 (Fed. Cir. 2008).

<sup>141</sup> *Id.*

<sup>142</sup> *Id.* at 1296.

<sup>143</sup> *Id.* at 1296 n.16.

on the claim as it was presented to him," as a taking via the requirement that water be left in the river.<sup>144</sup> The Federal Circuit clearly differentiates the claim before it from restrictions on water withdrawals. The court explicitly noted that "the United States did not just require that water be left in the river, but instead physically caused Casitas to divert water away from the Robles-Casitas Canal and towards the fish ladder."<sup>145</sup> The fact that the Federal Circuit relied so heavily on the fish ladder and diversion from the canal narrows the scope of the decision and increases the likelihood that it will be distinguished in future cases.<sup>146</sup>

Interpreted narrowly, the Federal Circuit decision in *Casitas* sets a precedent that if water becomes a possessory rather than usufruct interest once diverted from the river, requiring a fish ladder from the canal is a physical interference, and thus a taking per se. But a future court instead may view this decision more broadly, as precedent for the notion that when the government actively causes water already withdrawn from a river to be diverted for its or a third-party's use, the action is a physical interference, and thus a taking per se. Yet, if the water has not first been withdrawn, merely required to be left in the river, the language of the Federal Circuit's decision and that of the preceding and subsequent Court of Claims decisions likely would prompt a court to consider such a requirement to be only a partial regulatory interference with water rights, requiring the three-part test.

The case of *Estate of Hage v. United States*<sup>147</sup> does not analyze whether a government action qualifies as physical or regulatory interference, but

<sup>144</sup> Echeverria, *supra* note 126, at 601.

<sup>145</sup> *Casitas Mun. Water Dist. v. United States*, 543 F.3d 1276, 1295, 38 ELR 20251 (Fed. Cir. 2008).

<sup>146</sup> In addition, there is dissent from the Federal Circuit ruling, authored by Judge Haldane Robert Mayer.

<sup>147</sup> *Estate of Hage v. United States*, 82 Fed. Cl. 202, 211 (Fed. Cl. 2008).



it demonstrates takings analysis regarding water rights under both scenarios—and before it was recently reversed and remanded, the decision stood as a rare example of a water right taking. Plaintiffs’ physical takings claim stated that the government’s construction of fences around water sources caused a physical taking of their water rights since the fences blocked plaintiffs’ cattle from accessing the water. In an opinion authored by Judge Loren A. Smith, the U.S. Court of Federal Claims held for plaintiffs since they “had a grazing permit and their cattle had the right to water at [those sources],” but the fences prevented the cattle from doing so.<sup>148</sup> On appeal, Judge Kimberly Moore, the same judge who four years earlier authored the Federal Circuit’s *Casitas* decision, reversed Judge Smith’s decision. The Federal Circuit stated that to “entirely fence off a water source, such as a lake, and prevent a water rights holder from accessing such water . . . could be a taking,” but this particular claim is “flawed because there is no evidence that the government actually took water that they could have put to beneficial use.”<sup>149</sup>

Plaintiffs’ regulatory takings claim stated that the government took their property interests in water by allowing “the proliferation of riparian vegetation, the presence of beaver dams, and the denial of Plaintiffs’ access to stream channels for clearing and maintenance purposes.”<sup>150</sup> Judge Smith held that these government actions constituted a regulatory taking of plaintiff’s water rights. With cursory explanation and arguably deviating from the requirements of the three-part test, Judge Smith found plaintiffs to have had investment-backed expectations in the water rights, found there to be “considerable” economic impact, and found the government action

to include “threats and intimidation” and “hostility.”<sup>151</sup> On appeal, the Federal Circuit held that Judge Smith erred in his holding of a regulatory taking, stating that the issue was not yet ripe since a special use permit for ditch maintenance had not been applied for, let alone denied.<sup>152</sup> The court remanded the case for further proceedings, which are ongoing.<sup>153</sup>

None of these decisions concern government actions made in the course of carrying out the CWA. But since the CWA presently lacks any federal court decisions concerning the taking of water or water rights, a court likely would attempt to apply the precedent arising from these decisions to obligations of the CWA. In practice, flow-related tactics for meeting water quality standards very rarely if ever would require fencing or diverting water once it is withdrawn from a river. Waters impaired by low flow can be aided or even rehabilitated by “just requir[ing] that water be left in the river,”<sup>154</sup> modifying the amount of water withdrawn or the amount released from dams. Thus, if these decisions are a proper guide, such requirements for water quality purposes at most would qualify as a regulatory interference; the standards governing regulatory restrictions on the use of water would be the same as those governing other kinds of regulatory takings cases. As demonstrated by the *Casitas* District’s concession at the outset of the case and the inability of the Federal Claims Court’s *Hage* decision to hold up on appeal, the three-part test is a high hurdle for plaintiffs to clear. Even amidst the confusion and controversy over application of the takings analysis framework to water issues, the effects of implementing the CWA appear unlikely to be held as a taking of water or water rights in most instances.

148 *Id.*

149 *Estate of Hage v. United States*, 687 F.3d 1281, 1290 (Fed. Cir. 2012).

150 *Estate of Hage*, 82 Fed. Cl. at 210.

151 *Id.* at 212-13.

152 *Estate of Hage*, 687 F.3d at 1287.

153 *Id.* at 1292.

154 *Casitas Mun. Water Dist. v. United States*, 543 F.3d 1276, 1295, 38 ELR 20251 (Fed. Cir. 2008).

# Moving Forward

## *The Wallop Directive*

The third sentence of the Wallop Amendment is often overlooked.<sup>155</sup> In contrast to the sentences that precede it, which identify limitations on the CWA, the third sentence pertains to solutions, and to bridging the gap between water quality and quantity management: “Federal agencies shall co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.”<sup>156</sup>

As with the prior two sentences of the Amendment, much may be gleaned from the wording of the statement. First, by placing federal agencies as the subject of the sentence, the onus is on them. Second, the provision requires cooperation. While cooperation does not necessarily mean complete equality among the parties, it is important to note that the drafters did not use “follow,” “comply with,” or another term suggesting subservience: the obligations and powers of federal agencies outlined in the CWA remain intact. In addition, the term “cooperate” lessens the onus on federal agencies; shared effort by all parties is an inherent aspect of cooperation.

Third, the call is for “comprehensive solutions.” Cooperation alone does not suffice, but must be cooperation toward an end product. Fourth, the term “develop” suggests that solutions available at the time of the Amendment were not sufficient, and that new ones were needed. Fifth, the solutions should address “pollution,” which is defined in the CWA

155 Benson, *supra* note 5, at 256; Hobbs Jr. & Raley, *supra* note 83, at 861.

156 33 U.S.C. §1251(g).

as “the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water,”<sup>157</sup> and EPA has labeled low-flow conditions as “fit[ting] the definition of pollution.”<sup>158</sup> Finally, the solutions to pollution are to be “in concert” with water quantity management. As explained above, synergies between water quality and quantity management are important, if not critical, to meeting current and future needs. But lest anyone read “in concert” to suggest unquestioned deference to water quantity management, the solutions requested are solely “to prevent, reduce and eliminate pollution,” not to manage water resources. The question is how, not whether, pollution is to be addressed.

In this congressional directive, federal agencies and water quality management generally may be more burdened than states and water quantity managers to bridge the divide between surface water quality and quantity management. Yet, the ultimate goal is still solutions to pollution, and cooperation by all relevant parties will be critical to fulfilling the directive.

## *Realistic Obstacles*

Despite the apparent respect for the third sentence of the Wallop Amendment from commentators on both sides of the water quality-quantity discussion,<sup>159</sup> significant challenges exist to achieving cooperation, let alone “in concert” comprehensive solutions to water pollution. First, the issue is largely dormant.

157 33 U.S.C. §1362(19).

158 Memorandum from Diane Regas, *supra* note 22.

159 See, e.g., Benson, *supra* note 5, at 256; Hobbs Jr. & Raley, *supra* note 83, at 861.

While, as noted above, the impacts of water quantity management on quality and vice versa persist, the perception of conflict or controversy as anything more than isolated instances is relatively rare. Without a strong sense of need, changing the way in which business is conducted is difficult. And considering the investment of time and money necessary to develop new strategies and institute cooperative efforts, particularly across levels of government, change is even harder to justify.

Second, lines have been drawn. Water quality and quantity each have rather elaborate and well-developed management structures across and within levels of government. The CWA sets out clear roles for federal and state water quality agencies, and while there is some flexibility in state authority over certain programs, the federal government is usually the overseer, if not the decisionmaker and implementer. Water quantity management structure and procedure varies more across the prior appropriation states, but in most states, roles are well-defined within and among various state agencies and, if applicable, local and federal entities. In addition, quantity and quality management have developed largely independent of the other. As noted above, they often are separated in prior appropriation states, whether in different agencies or different divisions, departments, or programs within the same agency. Not surprisingly then, politics, finances, territoriality, and even just a history of practice have created wide divides between quality and quantity management in many prior appropriation states.



The third sentence of the Wallop Amendment directs federal water quality agencies, EPA in many cases, to develop water pollution solutions through interaction with state water quantity agencies, a task that crosses federal-state and quality-quantity lines—a tall order. Substantive involvement of federal agencies, including EPA, usually is not well-received by state entities, particularly concerning water quantity. Part of the concern stems from federalism issues: the supremacy of federal law and a defense of states' historic authority over water quantity management. Part of the concern stems from the perception, merited or not, that EPA does not understand prior appropriation and how each state's system functions.

In some instances, the concern is over added complication to existing tensions between state water quality and quantity entities. Thus, EPA would have multiple and varied hurdles to clear should it wish to work with quality and quantity entities in each of the prior appropriation states to develop a more robust, sustainable, and effective approach to water pollution. It is a daunting task that, if attempted, might necessitate using less traditional means of intergovernmental cooperation

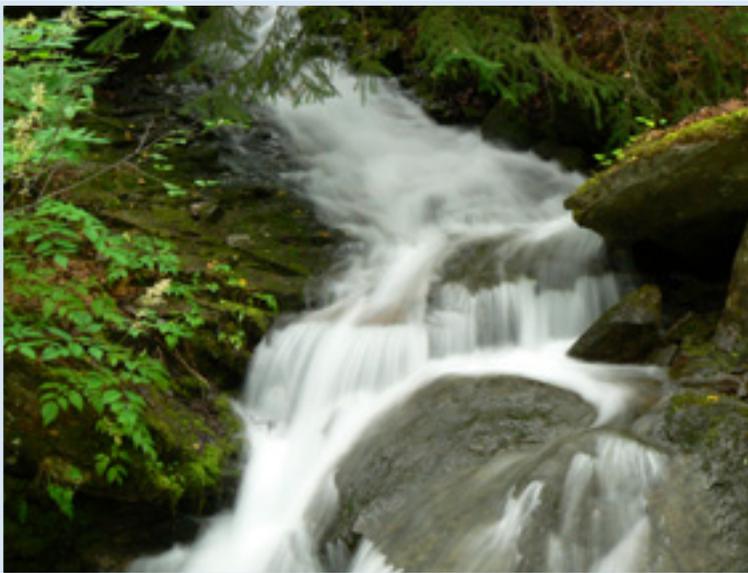
to avoid or minimize some of these challenges, such as academic forums or third-party intermediaries.

Third, financial resources are limited. State and federal agencies involved in either water quality or quantity management tend to have more work in accomplishing their respective objectives than the means for doing it. A more comprehensive decision-making process and developing new institutional operations that transcend historical subject-matter

lines would be added work. What is more, recent budget cuts for many state and federal agencies make accomplishing even just the well-established tasks difficult.

## Opportunities

Given the apparent challenges with implementing the third sentence of the Wallop Amendment, the question of alternatives arises. Comprehensive solutions to coordinating pollution control with water quantity management may be too much to expect from federal agencies under current circumstances, but that does not preclude EPA from taking other steps. Similarly, the Wallop Amendment's directive could be fulfilled by the states, thus avoiding the complications of direct federal involvement. This likely would be more welcomed by states, but the lack of perceived need, lack of finances, and required transcendence of the quality-quantity divide remain as hurdles. States also could take smaller steps through changes in practice and even in law that benefit coordination between water quality and quantity management, from improving synergies in agency structure and procedure to making water



quality a beneficial use of water and expressly allowing water rights to be acquired for water quality purposes. The answers may not be succinct nor the results immediate, but progress in addressing these two aspects of water more holistically should reduce problems and ideally improve outcomes for both in the future.

## Actions by U.S. EPA

As explained in Chapter III, EPA legally can do a great deal to protect and restore water quality despite impacts to water quantity. At the most fundamental level, EPA could help in generating information about the role of water quantity in failures to support uses designated in water quality standards. As described in Chapter II, notation of water quantity as a cause or source of not attaining water quality standards varies tremendously among prior appropriation states. EPA could write in its Integrated Reporting Guidance that states should note if waters fail to meet water quality standards in part or entirely because of water quantity issues, including flow and lake level.<sup>160</sup> If water body uses are impaired by a pollutant, then water quantity

would be a mere additional notation of cause or source for the CWA Section 303(d) listing, as California, Montana, Nebraska, New Mexico, and Texas already have done. If water body uses are impaired solely by non-pollutant pollution, the water segment would be included in Category 4C, as Idaho, Montana, New Mexico, Oregon, Utah, Washington, and Wyoming have done.

Since states already should be using Category 4C, an effort to promote its use should be straightforward. The CWA clearly requires that states

<sup>160</sup> See Benson, *supra* note 5, at 257.



identify those waters not meeting any applicable water quality standard, regardless of the cause or source.<sup>161</sup> While states should not place in Category 4C waters with designated uses that actually are impaired by a pollutant and belong on the CWA Section 303(d) list, noting impairments in 4C is important for information purposes, as well as effectively mandated by law. It appears implausible that not a single water segment in an entire state would fail to meet quality standards due solely to non-pollutant stressors such as flow alteration, channelization, or upstream impoundment; yet nearly one-half of the prior appropriation states have not used Category 4C. A history of litigation and consent decrees has focused the efforts of the Section 303(d) program on TMDL development, and consequently on failures to meet water quality standards as a result of pollutants. As such influences are waning, a more complete view of impairment of water body uses is feasible, many of the more challenging problems are left to be addressed, and comprehensive information regarding impairments—including the effects of water quantity—is more important than ever to good decisionmaking by EPA and the states.

In addition to information, EPA can supply and facilitate financial support. The CWA Section 319 Program includes grant-making for efforts to address nonpoint sources of pollution.<sup>162</sup> Including water quantity solutions within the scope of this funding could be financially expedient, and, in some instances, may be critical to meeting water quality standards. As is true with most “best practices” and other efforts funded by the Section 319 Program, water quantity solutions would need to be considered on a case-by-case basis; not only will the hydrology and pollution circumstances vary, but so too will the political, social, legal, and infrastructure circumstances. For example, state law may not

161 33 U.S.C. §1313(d)(1)(A).

162 See 33 U.S.C. §1329(h).

allow water rights to be changed to a water quality purpose, willing water lessors or sellers may not be where the water is needed, or dam operations may not be able to be altered to meet the water quality needs. Another potential challenge stems from the distinct focus of Section 319 grant-making on implementing state nonpoint source management programs, which cover best management practices and measures for reducing pollutant loadings from nonpoint sources, potentially excluding water quantity issues.<sup>163</sup>

In terms of financing, EPA also may be able to coordinate with other federal agencies to improve the quality/quantity focus of other financial assistance programs. As demonstrated by the recent National Water Quality Initiative by the U.S. Department of Agriculture’s Natural Resources Conservation Service, coordination for water quality purposes in financial and technical support vehicles is expanding. If the Environmental Quality Incentives Program can be used to help producers implement nutrient management plans, plant cover crops, and install filter strips in critical watersheds, it should be able to prioritize grant-making for water conservation support in locations needing more natural flows for water quality purposes. Just as EPA has provided important information for development of the National Water Quality Initiative, it could support similar efforts with information about where the timing, rate, and height of water is causing or contributing to water quality impairments—which in turn is further reason to collect such information.

As another potential step, EPA could better integrate water quantity considerations into the fabric of CWA implementation. Under Section 303, water quality standards are the objectives of all water quality management efforts pertaining to the CWA. These standards consist of designated uses and criteria. Several prior appropriation states include

163 33 U.S.C. §1329(b)(2)(A).



consideration of water quantity in designating uses for water segments. For example in Colorado, Class I Cold and Warm Water Aquatic Life Uses are only to “be considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species.”<sup>164</sup>

Some states explicitly include the term “natural” in flow considerations for designating uses, suggesting a distinction from human-induced low flows via dam operations or water withdrawals. For example, in North Dakota “coldwater marginal fish life propagation” is “assigned to surface waters of the state which support aquatic life and are suitable for stocked catchable-size coldwater fish during portions of the year, but which, because of critical natural conditions including low flows, siltation, or warm temperatures, are not suitable for a perma-

nent coldwater fish population.”<sup>165</sup> Water quantity also can be an explicit part of assessing whether designated uses are being met. Idaho has aquatic habitat parameters for this purpose that include stream depth and water flows.<sup>166</sup> EPA could incorporate these and other water quantity considerations into guidance on establishing water quality criteria and assessing water body support of designated uses.

The CWA requires states to adopt water quality criteria protective of each designated use.<sup>167</sup> EPA has produced a series of water quality criteria guidance documents. States may adopt the criteria in the guidance without providing additional information; if they submit other criteria or criteria modified for site-specific conditions, they must provide a sound scientific rationale.<sup>168</sup> Thus, the states have

<sup>164</sup> 5 COLO. CODE REGS. §1002-31.13(1)(c).

<sup>165</sup> S.D. ADMIN. R. 74:51:01:01(14).

<sup>166</sup> IDAPA 58.01.02.054.

<sup>167</sup> See 33 U.S.C. §1313(c)(2)(A).

<sup>168</sup> 40 C.F.R. §131.11.



a significant incentive to adopt criteria recommended by EPA. This role and incentive could be an opportunity for EPA to expand the consideration of water quantity factors in relevant water quality criteria, such as aquatic life use and temperature.

Another step that EPA could take is actually a preventive one concerning use attainability analyses (UAAs). UAAs are scientific assessments of the factors influencing the attainment of the “fishable” and “swimmable” uses.<sup>169</sup> The factors include, among others, “low flow conditions or water levels,” “human caused conditions or sources of pollution,” or “dams, diversions or other types of hydrologic modifications.”<sup>170</sup> If attaining the designated use is not feasible due to one or more of these factors, states may simply establish sub-categories of the use.<sup>171</sup> EPA could delete this regulatory language, and thus remove explicit permission to reset the baseline of water quality expectations due to human-induced flow modification. At the very least, EPA should tread lightly in the exercise of this provision, lest the goals and obligations of the CWA be quietly undermined by water allocation decisions.

EPA also has relevant authorities under Section 404 of the CWA. Under Section 404(b), EPA must develop guidelines, in conjunction with the Corps, for the specification of dredged and fill material disposal sites.<sup>172</sup> As noted in Chapter III, structures such as diversion dams often require the addition of fill material. These activities can modify downstream flow rates, potentially affecting the ability to meet water quality standards by reducing aquatic habitat, modifying water temperature, decreasing dissolved oxygen levels, and elevating concentrations of pollutants downstream. The guidelines state that

169 U.S. EPA, WATER: USE ATTAINABILITY ANALYSIS, available at [http://water.epa.gov/scitech/swguidance/standards/uses/uaa/about\\_uas.cfm](http://water.epa.gov/scitech/swguidance/standards/uses/uaa/about_uas.cfm).

170 40 C.F.R. §131.10(g).

171 40 C.F.R. §131.10(g).

172 33 U.S.C. §1344(b).

“dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.”<sup>173</sup> Applying this language, the relevant impact of the discharge could be exceedance of water quality standards, caused by a combination of flow modification and downstream pollution contributions by point and nonpoint sources.

These guidelines go on to require that the CWA Section 404 permitting authority, whether the Corps or a state agency, must document the potential short- and long-term effects, including “the nature and degree of effect that the proposed discharge will have individually and cumulatively on water, current patterns, circulation including downstream flows, and normal water fluctuation.” The authority must consider “water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, and eutrophication plus other appropriate characteristics [and] the potential diversion or obstruction of flow, alterations of bottom contours, or other significant changes in the hydrologic regime.”<sup>174</sup> In addition, the authority must determine and consider secondary effects on the aquatic ecosystem “that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.”<sup>175</sup> Thus, the existing guidelines contain all the pieces necessary to consider in Section 404 decisionmaking the water quality impacts from a project’s anticipated long-term modification of flow. But EPA could make the connection clearer in guidance, and raise its expectation of this consideration.

173 40 C.F.R. §230.1(c).

174 40 C.F.R. §230.11(b).

175 40 C.F.R. §230.11(h).

Also within its Section 404 authorities, EPA can veto the specification of a discharge site, and effectively a project. EPA “is authorized to prohibit the specification . . . of any defined area as a disposal site, and . . . [can] deny or restrict the use of any defined area . . . [if it] will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas . . . , wildlife, or recreational areas.”<sup>176</sup> The water quality effects of flow modification could become a consideration in exercising this veto authority. But EPA’s Section 404(c) authority is controversial and only has been used 13 times—and only once in a western state, the aforementioned Two Forks dam and reservoir project.<sup>177</sup> It is a powerful authority that may be used to prompt coordination between water quality and quantity authorities, but if the objective is to “cooperate,” actually exercising the veto should be approached with caution.

## Actions by States

The states have the potential to accomplish much at the intersection of water quality and quantity, not only preempting conflicting means and ends, but realizing mutual benefits. Given the state governments’ dominant role in water quantity management, as well as their water-quality obligations and authorities under the CWA, states are central figures in both realms. They determine where in their agencies the water quantity and quality authorities are housed, their geographic proximity, and, to a large extent, the breadth and depth of interaction. In practice, the states set the baseline for relative authority between water quality and quantity, limited almost exclusively by property right protections on the quantity side and federal authority on the quality

side. States also determine the parameters of water rights, who can acquire rights for what purposes and when, and what constitutes impairment of other water rights, all of which can significantly influence opportunities for addressing water quality problems within the water quantity regime.

While federalism concerns are nonexistent when considering only state actions, many of the same sentiments that underlie concerns of federal involvement remain. The protection of water rights and the allocation system often takes top billing. Absent federal authority, water quality does not have much legal leverage, and it shows. As demonstrated in Chapter III, states commonly have provisions in law even more protective of water rights than the Wallop Amendment. Politics at the intersection of quality and quantity may not be as inflammatory at the state level, but that is partly because one side has a decided advantage. It does not mean that true coordination is necessarily any easier; in fact, it could be harder. But politics, perception, and priorities vary considerably from state to state and are better left to another article. This discussion of opportunities at the state level focuses on what already exists in law and government structure that has led or could lead to improved coordination between water quality and quantity, and ultimately mutual benefits.

## Water Rights

Opportunities for innovative solutions to challenges that involve when, where, and how much water is present depend at least in part on the parameters of water rights set by the state. As explained in Chapter III, the universal tenets of prior appropriation include that (1) appropriative rights are limited to use for a “beneficial” purpose and (2) the exercise of a water right shall not impair other water rights. State laws determine what constitutes a “beneficial”

<sup>176</sup> 33 U.S.C. §1344(c).

<sup>177</sup> U.S. EPA, CHRONOLOGY OF 404(c) ACTIONS, *available at* <http://water.epa.gov/lawsregs/guidance/wetlands/404c.cfm>.



purpose and what constitutes “impairment,” and thus determine the true effect of those tenets.

The definitions vary across prior appropriation states. The definition of “beneficial use” identifies whether water rights may be held for a particular purpose. If water quality is treated as a beneficial use, water rights can serve as tools for water quality efforts. State laws also may expand or reiterate the definition of beneficial use through independent authorization of using water rights for water quality purposes.

The definition of “impairment” identifies in part what rights are included in an appropriative water right. For example, the timing and quantity of available water are so essential to a water right that adversely affecting them out of priority would be injuring the water right. If water pollution is considered an impairment, water quality is a concern under water quantity law, and the two programs become more intertwined. Several states allow water rights for

water quality purposes, directly or indirectly, and in some states, “impairment” includes water quality issues, but limitations often exist and application has been sparse. Improvements here could create more opportunities for greater coordination between water quality and quantity management.

### **Quality as a Beneficial Use**

“Water quality” is explicitly listed as a beneficial use of water quantity in seven states.<sup>178</sup> Another state lists “pollution abatement” as a beneficial use,<sup>179</sup> and yet another lists “contamination remediation” and “sediment control in a reservoir.”<sup>180</sup> In several other states, some form of water quality protection is considered a beneficial use of water in practice,

178 See ALASKA STAT. §46.15.260; IDAHO CODE §42-1501; MONT. ADMIN. R. 36.16.102; NEB. REV. STAT. §46-288; WASH. REV. CODE §90.03.550; CAL. CODE REGS. tit. 23, §670; 30 TEX. ADMIN. CODE §297.1, -.43.

179 OR. REV. STAT. §537.332, -.334.

180 KAN. ADMIN. REGS. 5-1-1.

although not explicitly noted in law.<sup>181</sup> While a majority of the prior appropriation states include water quality within the definition of beneficial use in some capacity, many of them come with limitations.

In Idaho, Montana, and Oregon, water quality as a beneficial use is tightly linked with the states' instream flow laws. In Idaho's minimum stream flow statute, water quality is noted along with protecting fish and wildlife habitat, aquatic life, aesthetic beauty, recreation, and transportation and navigation as purposes for which preserving flow is a beneficial use.<sup>182</sup> But minimum stream flows only may be appropriated and held by the Idaho Water Resources Board.<sup>183</sup> Thus, individuals or other entities may not hold water rights for water quality purposes, although they can request the Board to consider such an appropriation.<sup>184</sup> In addition, minimum stream flows must be a new water right from unappropriated water; this law does not authorize a change in purpose of use of an existing water right for water quality purposes.<sup>185</sup> In Montana, "the term beneficial use includes the maintenance of a minimum flow, level, or quality of water" for purposes of the state's water reservations rules.<sup>186</sup> But water reservations only may be acquired by a political subdivision or agency of the state or United States.<sup>187</sup> In Oregon, three agencies can file for instream flows, each for particular purposes. The purpose for which the Department of Environmental Quality may request instream water rights is pollution abatement to protect and maintain water quality standards,<sup>188</sup> and only the Department can apply for rights for this purpose. All instream water rights in

Oregon, regardless of purpose, are held in trust by the Water Resources Department.<sup>189</sup>

In Washington, water quality as a beneficial use is connected to municipal water usage. The statute states that "[b]eneficial uses of water under a municipal water supply purposes water right may include water withdrawn or diverted under such a right and used for: (1) Uses that benefit fish and wildlife, water quality, or other instream resources or related habitat values; or (2) Uses that are needed to implement environmental obligations. . . ."<sup>190</sup> Only municipalities are afforded water quality as a beneficial use by this statute, and the water right must already have been appropriated for municipal purposes.

Nebraska laws expressly label "water quality maintenance" as a beneficial use in interbasin and other water transfers, as well as mere changes in the purpose of use of existing water rights.<sup>191</sup> The water quality maintenance purpose is accomplished by "augment[ing] the flow in a specific stream reach."<sup>192</sup> But while the law suggests that water quality as a beneficial use is limited to modifications to existing water rights and maintenance of water quality, as opposed to restoration, practice may not be so confined. State law has predefined few purposes as beneficial, leading the Department of Natural Resources to determine if a project is beneficial case-by-case based on application materials supplied for review.

California explicitly classifies water quality as a beneficial use, but since water appropriations require a diversion in California, appropriations for water quality are effectively limited to situations

181 See, e.g., South Dakota and Wyoming.

182 IDAHO CODE §42-1501.

183 See IDAHO CODE §42-1503.

184 IDAHO CODE §42-1504.

185 See IDAHO CODE §42-1503.

186 MONT. ADMIN. R. 36.16.102(4).

187 MONT. CODE ANN. §85-2-316.

188 OR. REV. STAT. §537.336.

189 OR. REV. STAT. §537.332(3).

190 WASH. REV. CODE §90.03.550.

191 NEB. REV. STAT. §46-288(2); 457 NEB. ADMIN. CODE §9-002.01.

192 NEB. REV. STAT. §46-290(5); 457 NEB. ADMIN. CODE §9-002.01.



Aspects of water quality in the definition of “beneficial use” in Alaska, Kansas, Montana, and Texas are not clearly limited by the language of the law. In Alaska, the definition is found at the end of the Water Use Act and generally applicable to the Act, which covers all water uses.<sup>195</sup> In Kansas, the definition is found at the outset of the administrative regulations pertaining to the Kansas Department of Agriculture, Division of Water Resources, and applies to “these regulations and the Kansas water appropriation act.”<sup>196</sup> In Texas, the definition is found in the “Issuance and Conditions of

where water is stored or otherwise diverted for water quality purposes. The regulation reads: “[w]ater quality use includes appropriation of water by storage to be released for the purpose of protecting or enhancing the quality of other waters which are put to beneficial uses.”<sup>193</sup> In practice, water quality is not quite so confined in this context; it is viewed as an aspect of other beneficial uses, much like states noted above have done explicitly. Where water quality is a concern, water may be appropriated for a beneficial use, such as irrigation or fish and wildlife, with some or all of the appropriated water being used to protect water quality for that use.

While there is no legal language to reference, water quality as a beneficial use in Wyoming has almost exclusively centered on storage rights. In Wyoming, what qualifies as “beneficial use” is at the discretion of the State Engineer.<sup>194</sup> The State Engineer has included pollution control as a beneficial use for many years, primarily for coal mines and sediment control ponds—which have involved stored water.

193 CAL. CODE REGS. tit. 23, §670.

194 See WYO. STAT. ANN. §41-3-101; State Engineer’s Office, 1974, Regulations and Instructions, Part I—Surface Water, Chapter 3, *Instructions for Preparing Surface Water Applications*, Section 2, Subpart (d)(3).

Water Rights” portion of state rules concerning the Texas Commission on Environmental Quality and reads: “State water may be appropriated, stored, or diverted for the following purposes of use. . . .”<sup>197</sup> However, Texas law prohibits the Commission from issuing new permits for instream flows dedicated to environmental needs, allowing only the change or addition of use of an existing permit or certificate of adjudication for this purpose.<sup>198</sup>

### Quality as Part of Other Beneficial Uses

Water quality also can be indirectly, which is not to say unintentionally, aided by other beneficial uses of water. Fish, wildlife, other environmentally protective uses, and even municipal uses can include water quality considerations and objectives. For example, certain water quality problems, such as temperature and dissolved oxygen levels, can adversely affect habitat and be addressed by the flow rights usually associated with fish and wildlife uses. Further,

195 See ALASKA STAT. §46.15.260.

196 KAN. ADMIN. REGS. 5-1-1.

197 30 TEX. ADMIN. CODE §297.43.

198 TEX. WATER CODE ANN. §11.0237(a).

insufficient water quantity for fish migration, spawning, etc., can be both a cause of water quality impairment and the basis for flow rights for fish purposes.

In New Mexico, water has not been appropriated or transferred explicitly for water quality purposes; however, it has been leased to address turbidity and other adverse influences on fish propagation, particularly in silvery minnow populations. Recently, in South Dakota, the state granted the federal Bureau of Reclamation an instream flow right to address high water

temperatures in a trout fishery below one of its dams. The stream below the dam typically heats up in the spring and summer but is cooled by the increased flow of water to meet irrigation demands. In years

with a wet spring, the call for irrigation water may come later and result in high stream temperatures in the early months of summer. This instream flow right is meant to address those scenarios.

In Colorado, the definition of beneficial use does not include water quality, but it does “include the appropriation by the state of Colorado . . . of such minimum flows between specific points or levels for and on natural streams and lakes as are required to preserve the natural environment to a reasonable degree.”<sup>199</sup> The Colorado Water Conservation Board may acquire from or with any person water, water rights, or interests in water “appropriate for stream flows or for natural surface water levels or volumes for natural lakes to preserve or improve the

199 COLO. REV. STAT. §37-92-103(4).



natural environment to a reasonable degree.”<sup>200</sup> A few of these appropriations and acquisitions have benefitted water quality. As a recent example, at the recommendation of the federal Bureau of Land Management (BLM), the Colorado Water Conservation Board has filed water court applications for instream flow water rights in the Kerber Creek watershed in Saguache County. BLM recommended these instream flow protections “because the BLM and multiple other partners have worked to address acid mine drainage impacts from historic mines in the Kerber Creek watershed,” and “flows

contributed by the watershed to Kerber Creek are critical for diluting heavy metals and maintaining Ph [sic] levels in Kerber Creek.”<sup>201</sup>

In the city of Twin Falls, Idaho, two sources of its drinking water

had been exceeding federal standards for arsenic. The city, state, North Snake Groundwater District, and Magic Valley Groundwater District agreed to purchase the Pristine Springs trout hatcheries, which provided the city of Twin Falls water rights in Alpheus Creek and Sunny Brook Springs and ultimately the ability to meet the federal arsenic standard.<sup>202</sup> The beneficial use noted for the arsenic reduction was municipal water supply. Idaho state

200 COLO. REV. STAT. §37-92-102(3).

201 Letter from Leigh Espy, Deputy State Director, Resources and Fire, Bureau of Land Management, to Linda Bassi, Stream and Lake Protection Section, Colorado Water Conservation Board 1 (Jan. 11, 2012), available at <http://cwcb.state.co.us/public-information/board-meetings-agendas/Documents/Jan2012/23a.pdf>.

202 CITY OF TWIN FALLS STRATEGIC PLAN UPDATE 2008-2012, available at <http://www.tfid.org/DocumentView.aspx?DID=368>.



officials consider municipal water supply to encompass water rights for dilution capacity, but this is the only instance of it to date.

### Quantity Expressly to Aid Quality

While the use of water must be for a beneficial purpose, a state's formal definition of beneficial use may not fully determine whether water can be used for water quality purposes. Many states with and without water quality noted in law as a beneficial use expressly allow water to be used as a means of addressing water quality problems. The laws of two states, Alaska and California, identify this opportunity seemingly without limit as to who may appropriate water for this purpose.<sup>203</sup> In four other states, the government expressly may acquire rights or use water for water quality purposes.<sup>204</sup> The same is true in two other states, but only for emergencies.<sup>205</sup> And the laws of one state allow agricultural water rights to be temporarily converted for the purpose of improving water quality.<sup>206</sup>

In Alaskan law, any person may apply to the Commissioner of the Alaska Department of Natural Resources to “reserve sufficient water to maintain a specified instream flow” for, among other things, “sanitary and water quality purposes.”<sup>207</sup> The Alaska Administrative Code defines “sanitary and water quality purposes” as “the quantity or level of water necessary to attain and maintain water quality standards . . . drinking water standards . . . or to maintain the naturally occurring water quality

conditions.”<sup>208</sup> Despite this opportunity for wastewater dischargers to appropriate water for the purpose of dilution capacity, and state mixing zone guidance recommending obtaining such water rights, no water reservations for water quality reasons have yet been filed by wastewater dischargers. The Alaska Department of Environmental Conservation worked collaboratively with the Alaska Department of Fish and Game in applying for water reservations. While not directly focused on water quality, water reservations by the Alaska Department of Fish and Game for the protection of fish and wildlife habitat can offer support for certain water quality elements, such as temperature and dissolved oxygen levels.

California law authorizes the State Water Resources Control Board to “approve appropriation by storage of water to be released for the purpose of protecting or enhancing the quality of other waters which are put to beneficial uses.”<sup>209</sup> In California, many large water storage projects, including the State Water Project and the Central Valley Project, have water quality as a purpose of use in their water right permits. Water released from storage is used to provide, among other things, salinity control, minimum instream flows, pulse flows, and temperature maintenance for fish.

In Arizona, the Director of the Department of Water Resources may “acquire, hold and dispose of . . . water and water rights, as necessary or convenient for the performance of the groundwater and water quality management functions of the department.”<sup>210</sup> In North Dakota, the State Water Commission has “full and complete power, authority, and general jurisdiction: . . . To provide sufficient water flow for the abatement of stream pollution.”<sup>211</sup> Neither of these authorities has been exercised much, if at all.

203 See ALASKA STAT. §46.15.145(a); CAL. WATER CODE §1242.5.

204 See ARIZ. REV. STAT. §45-105(A); N.D. CENT. CODE §61-02-14; OR. REV. STAT. §537.336; WASH. REV. CODE §90.22.010, -.48.422.

205 See KAN. ADMIN. REGS. 5-3-5a; NEB. REV. STAT. §46-706, -714.

206 NEV. REV. STAT. 533.0243(1).

207 ALASKA STAT. §46.15.145(a).

208 ALASKA ADMIN. CODE tit. 11, §93.141(4).

209 CAL. WATER CODE §1242.5.

210 ARIZ. REV. STAT. §45-105(A).

211 N.D. CENT. CODE §61-02-14.

Washington law requires the Department of Ecology to “establish such minimum flows or levels as are required to . . . preserve the water quality. . .” when necessary.<sup>212</sup> Washington law also allows the Department to lease and purchase water rights to meet water quality standards when standards “cannot be reasonably met through the issuance of permits or regulatory orders.”<sup>213</sup> Flow concerns in Washington tend to focus more on fish needs than water quality on its own, but the flows supplied for fish needs often are viewed by state officials as more than sufficient to meet water quality needs. As a result, water quantity decisions purely for quality purposes are rather rare in Washington. Water quality is at times included in determining the environmental value of water rights for purposes of state acquisition for instream flow purposes.



212 WASH. REV. CODE §90.22.010.

213 WASH. REV. CODE §90.48.422(2).

As noted above, Oregon law allows the Department of Environmental Quality to “request the Water Resources Commission to issue water right certificates for in-stream water rights . . . to protect and maintain water quality standards. . .”<sup>214</sup> Nearly 100 instream flow rights in Oregon are related to pollution abatement.

Kansas law authorizes the chief engineer to use water for emergency purposes, which includes “when needed to protect the quality of a water supply.”<sup>215</sup> In Nebraska, prohibitions on new appropriations due to full or overappropriation do not apply “to new surface water uses or water wells that are necessary to alleviate an emergency situation,” “including, if applicable, compliance with federal or state water quality standards.”<sup>216</sup> For water quality purposes, the emergency use provision has been exercised little, if ever.

In Nevada, the legislature declared it the policy of the state “to allow the temporary conversion of agricultural water rights for wildlife purposes or to improve the quality or flow of water.”<sup>217</sup> This statute has been used only once, on the Truckee River for spawning of endangered fish. There may be more on the horizon, though, as this law is being discussed as a means for temporarily converting agricultural water rights for flow purposes above Walker Lake, and ultimately supporting the water levels of the lake.

### Quality as a Water Right Impairment

Fundamental to the operation of the prior appropriation system, the oldest water rights are superior to those that followed. If anyone receives water, it is the individual holding the oldest water right, then

214 OR. REV. STAT. §537.336.

215 KAN. ADMIN. REGS. 5-3-5a.

216 NEB. REV. STAT. §46-706, -714.

217 NEV. REV. STAT. 533.0243.



the individual with the next oldest right, and so forth until there is no more water left or all rights are fulfilled. Water right impairment usually is a matter of water quantity; for example, a junior appropriator's use of water results in a senior appropriator not receiving enough water to fulfill his or her right. But impairment also can be a matter of water quality. As noted above, the quality of water may make it unsuitable for the purpose of the water right. Water may become too saline for adequate crop growth, too laden with algae for recreational purposes, or have too high a level of a hazardous contaminant for municipal use.

Many prior appropriation states recognize water quality as an aspect of water right impairment, but like so many other aspects of prior appropriation, its manifestation in law and practice varies from state to state. In some states, water quality is considered an inherent part of a water right, potentially protecting those rights against all existing and future uses of water. In other states, water quality is noted as an impairment only in the context of new appropriation review, hence an application may be rejected because its effect on water quality likely would impair existing water rights. Either way, water quality is made more a part of water quantity law and offers at least the potential for more holistic water management.

Court decisions often have been the source of sweeping statements regarding water quality as an aspect of water rights. Early in the 20th century, a farmer brought suit against several mining companies in Arizona, seeking permanent enjoinder of the mining activities that he claimed polluted the Gila River and made the water not fit for his irrigation purposes.<sup>218</sup> On appeal, the Supreme Court affirmed the decision of the territorial supreme court to enjoin unless the copper company constructed

settling basins at its own expense.<sup>219</sup> The Court stated: "[t]he only subordination of one water user to another is the right of the first appropriator to a sufficiency of water for his necessary uses. That includes the quality as well as the quantity."<sup>220</sup>

The Supreme Court of Arizona has since referenced this conception of water rights on several occasions. In the case of *Adams v. Salt River Valley Water Users' Association*, plaintiffs were members of the defendant association and were receiving water of a higher salinity level than the average delivered to all members.<sup>221</sup> The salinity resulted from the amount of pumped water received by plaintiffs as opposed to stored and developed water, to which the defendant association also had rights.<sup>222</sup> The court stated that "[t]he source of his supply may be changed without his consent, providing the quality of the water is not lowered and he is put to no expense . . ."<sup>223</sup> But the case was one in equity, and the Supreme Court of Arizona affirmed the decision of the trial court in favor of defendant despite this statement due to, among other things, contract language, hydrology, and geography.<sup>224</sup>

In the case of *Pima Farms Co. v. Proctor*, the Supreme Court of Arizona stated as "a rule of general accommodation and utility [that] has been universally followed by the courts when applied to surface streams": "[a]n appropriator of water from a running stream is entitled to have it flow down the natural channel to his point of diversion undiminished in quantity and quality."<sup>225</sup> Yet, the case concerned the quantity of water more than the

<sup>219</sup> *Id.* at 54.

<sup>220</sup> *Id.* at 56-57.

<sup>221</sup> *Adams v. Salt River Valley Water Users' Ass'n*, 89 P.2d 1060, 1069 (Ariz. 1939).

<sup>222</sup> *Id.*

<sup>223</sup> *Id.* at 1066.

<sup>224</sup> *Id.* at 1072.

<sup>225</sup> *Pima Farms Co. v. Proctor*, 245 P. 369, 372-73 (Ariz. 1926).

<sup>218</sup> *Arizona Copper Co. v. Gillespie*, 230 U.S. 46, 53 (1913).

quality; the water rights of Pima Farms were junior to those of Proctor, but usage by Pima Farms had made Proctor's pumping equipment inadequate to receive his quantity of water.<sup>226</sup> The lower court enjoined Pima Farms from withdrawing water but suspended the judgment pending its adoption of a method or plan to supply Proctor with water through one of its canals.<sup>227</sup> The Supreme Court of Arizona affirmed.<sup>228</sup>

In 1942, the Supreme Court of California decided the case of *Wright v. Best*.<sup>229</sup> Marie Wright asserted that, as the owner of an appropriative water right, she could enjoin respondent from polluting Rock Creek through its mining operations as well as recover damages. The Supreme Court of California's analysis covers many issues of fact and law, one of them being the role of water quality within a water right. The court stated:

[I]t is an established rule in this state that an appropriator of waters of a stream, as against upper owners with inferior rights of user, is entitled to have the water at his point of diversion preserved in its natural state of purity, and any use which corrupts the water so as to essentially impair its usefulness for the purposes to which he originally devoted it, is an invasion of his rights. Any material deterioration of the quality of the stream by subsequent appropriators or others without superior rights entitles him to both injunctive and legal relief.<sup>230</sup>

The Supreme Court of Utah stated in 1954 that "[t]he owner of a water right has a vested right to the quality as well as the quantity which he has ben-

<sup>226</sup> *Id.* at 370.

<sup>227</sup> *Id.* at 370-71.

<sup>228</sup> *Id.* at 375.

<sup>229</sup> *Wright v. Best*, 19 Cal. 2d 368, 121 P.2d 702 (Ariz. 1942).

<sup>230</sup> *Id.* at 378.

eficially used."<sup>231</sup> The case involved an application to change the place of diversion of a water right from below the mouth of the Mill Creek Canyon, where water requires more than chlorination to be fit for human consumption, to the springs roughly two thousand feet upstream, before the water is mixed with contaminated water.<sup>232</sup> The district court affirmed the State Engineer's approval of the application.<sup>233</sup> The Supreme Court of Utah affirmed that decision, noting that while the "change will slightly increase the degree of contamination . . . with or without the change, [the water] is not fit for human consumption" and "the difference in the degree of contamination affected by the change will not decrease its value for [an irrigation] purpose."<sup>234</sup>

The Supreme Court of Colorado also has referenced a right to the quality of water necessary to fulfill the beneficial purpose of a water right. In the case *Wilmore v. Chain O'Mines, Inc.*,<sup>235</sup> defendant mining companies operated ore-reduction mills upstream of plaintiffs' farms and discharged mill tailings and slime into the stream. Plaintiffs claimed that, among other things, the water was unfit for domestic or irrigation purposes due to these discharges and sought an injunction against the pollution.<sup>236</sup> The trial court held in favor of the plaintiffs but allowed the experimental discharge of 670 tons of tailings and slime per day.<sup>237</sup> The Supreme Court of Colorado affirmed the findings in part, but directed the trial court to make the injunction full, complete, and permanent.<sup>238</sup> On rehearing, the Supreme Court of Colorado adhered to its original

<sup>231</sup> *Salt Lake City v. Boundary Springs Water Users' Ass'n*, 270 P.2d 453, 455 (Utah 1954).

<sup>232</sup> *Id.* at 454.

<sup>233</sup> *Id.*

<sup>234</sup> *Id.* at 455-56.

<sup>235</sup> *Wilmore v. Chain O'Mines, Inc.*, 44 P.2d 1024, 1025 (Colo. 1934).

<sup>236</sup> *Id.*

<sup>237</sup> *Id.*

<sup>238</sup> *Id.* at 1028.



opinion but clarified it, stating that discharges may occur under the injunction but “the thing forbidden is the injury.”<sup>239</sup> The court said: “For the purposes of this case, the word ‘pollution’ means an impairment, with attendant injury, to the use of the water that plaintiffs are entitled to make.”<sup>240</sup>



Sixty-eight years later, the Supreme Court of Colorado referenced this decision as “establish[ing] a common law theory based on the prior appropriation doctrine that prohibits the discharge of contaminants into streams where doing so makes the water unsuitable for an appropriator’s normal use of the water.”<sup>241</sup> The 2002 case of *In re Concerning Application for Plan for Augmentation of City and County of Denver*<sup>242</sup> concerned an augmentation plan allowing out-of-priority diversions for irrigation of Overland Park Golf Course. The city of Thornton, a downstream senior water right holder, alleged that the effluent used as the substitute water supply under the augmentation plan “was unsuitable for Thornton’s use as a municipal water supply” and filed a petition requesting that the water court reconsider the finding of non-injury to Thornton.<sup>243</sup>

The water court denied the petition, and the Supreme Court of Colorado reversed that decision.<sup>244</sup> The Colorado Water Right Determination and Administration Act (WRDAA) explicitly requires sub-

stituted water to be of a quality “to meet the requirements for which the water of the senior appropriator has normally been used. . . .”<sup>245</sup> While this simplified the matter for the court, the court suggested that this law was reflective of the rights inherent in water rights. The court said: “[t]he WRDAA and the [Water Quality Control Act] therefore preserve the common law standard that the introduction of pollutants into a water supply constitutes injury to senior appropriators if the water is no longer suitable for the senior appropriator’s normal use. . . .”<sup>246</sup> The court added: “[i]f the substitute supply . . . renders the water supply Thornton receives unsuitable for Thornton’s normal use of the water in comparison to the water it would otherwise receive at its point of diversion . . . Thornton’s property right in the use of its water is impaired by the substitute supply.”<sup>247</sup>

The view of water rights in Oregon is similar to that reflected in these cases. A junior water right holder can be denied water if exercise of that right diminishes water quality to the detriment of purposes for which senior water rights are used. In Oregon, a prime example of such a scenario is the reduction

<sup>239</sup> *Id.* at 1029.

<sup>240</sup> *Id.*

<sup>241</sup> *In re Concerning Application for Plan for Augmentation of City and County of Denver*, 44 P.3d 1019, 1028 (Colo. 2002).

<sup>242</sup> *Id.* at 1022.

<sup>243</sup> *Id.*

<sup>244</sup> *Id.*

<sup>245</sup> COLO. REV. STAT. §37-92-305(5).

<sup>246</sup> *In re Concerning Application for Plan for Augmentation of City and County of Denver*, 44 P.3d at 1030.

<sup>247</sup> *Id.* at 1031-32.

in flow from water withdrawals in coastal areas that causes saltwater intrusion higher in the channel of the river.

Similarly, Idaho administratively recognizes water quality as a means of water right impairment, but there is little precedent to that effect. The issue has been arising in trout production; the return flows from agricultural irrigation have in some instances affected the temperature and purity of water required for that purpose. In addition to the consequences of return flows on water quality, the state also considers the effect of water withdrawal on water quality and ultimately other water rights. While limited to permitting new applications, Idaho's Water Appropriation Rules do state:

A proposed use will be determined to reduce the quantity of water under an existing water right (i.e., injure another water right) if: . . . The quality of the water available to the holder of an existing water right is made unusable for the purposes of the existing user's right, and the water cannot be restored to usable quality without unreasonable effort or expense.<sup>248</sup>

Several other prior appropriation states also reflect the right to a quality as well as a quantity of water in this limited context of permitting new applications. Kansas law states "[w]ith regard to whether a proposed use will impair a use under an existing water right, impairment shall include . . . the unreasonable deterioration of the water quality at the water user's point of diversion beyond a reasonable economic limit."<sup>249</sup> In Washington, several decisions by the Pollution Control Hearings Board suggest that "[g]ranteeing proposed consumptive water right[s] upstream which would aggravate serious water quality downstream, [sic] would be detrimental to

existing instream users. . ."<sup>250</sup> In Montana, people have objected to applications based on water quality implications, but this has not been a significant consideration in the approval process.

## **Process**

Decisionmaking procedures, particularly what factors are considered and who is consulted, also can play a significant role in whether and how water quality and quantity management support one another. Such processes can be regular and engrained or ad hoc. They can involve one agency or many. They can occur among agency heads or at lower levels. They can be specific to a particular application or much more general. They also can be all of these things, occurring at different levels for different purposes with different levels of regularity. Regardless, the key appears to be communication, cooperation, and consideration across these two disciplines.

## **General Coordination**

Policies and practices supporting coordination between water quality and quantity entities can be at a high level of authority and general in objective. Very broadly, the Natural Resources Cabinet of the Oregon Governor was created in the mid-1990s to align missions and budgets of the state's natural resource and environmental agencies, as well as to address pressing new issues not fitting into the mission of any single agency. The Cabinet, which meets biweekly, includes the Oregon Departments of Agriculture, Energy, Environmental Health, Environmental Quality, Forestry, Fish and Wildlife,

250 WASHINGTON STATE DEPARTMENT OF ECOLOGY, DIGEST OF WATER RESOURCES DECISION 133 (2006) (citing *Cheney v. Ecology*, PCHB No. 96-186 (1997); *Oetken v. Ecology*, PCHB No. 96-42 (1997); *Lewis County Utility Corp. v. Ecology*, PCHB No. 96-043 (1997)), <https://fortress.wa.gov/ecy/publications/summarypages/0611002.html> (last visited Dec. 14, 2012).

248 IDAHO ADMIN. CODE r. 37.03.08.045(01)(a).

249 KAN. STAT. ANN. §82a-711(c).



Geology and Mineral Industries, Land Conservation and Development, Parks and Recreation, State Lands, and Water Resources, as well as the Columbia Gorge Commission, Marine Board, Northwest Power and Conservation Council, and Public Utility Commission. In addition, the Departments of Water Resources, Environmental Quality, Agriculture, and Fish and Wildlife have developed an Integrated Water Resources Strategy to meet the state's future water quality, quantity, and ecosystem function needs in a holistic fashion.

Alaska also has an interagency workgroup that includes the Departments of Environmental Conservation, Natural Resources, and Fish and Game. In Colorado, the Department of Health, the primary water quality authority, and the Office of the State Engineer and Colorado Water Conservation Board meet quarterly to discuss pressing, high-level matters. In Wyoming, management of the Department of Environmental Quality and the State Engineer's Office meet quarterly to discuss issues that affect both agencies, a practice that they have found helpful in preventing situations where regulated entities play one agency against the other.

Among other efforts, the two agencies have worked together to develop a map of water quality and existing water rights to provide detail to applicants and simplify the review process for coal-bed methane development.

Montana and North Dakota have interagency communication through, among other avenues, high-level governmental bodies. In North Dakota, the Department of Health, the primary water quality authority, and the State Water Commission communicate via informal consultation through the

governor's office, a process stemming largely from water quality and quantity challenges posed by the highly saline, terminal Devils Lake. In Montana, the Water Policy Interim Legislative Committee often includes appearances by staff from both the Department of Natural Resources and Conservation and the Department of Environmental Quality.

Laws in Idaho formally task the Department of Water Resources with coordinating efforts with the Department of Environmental Quality. The Idaho Code gives the director of the Department of Water



Resources the duty to “cooperate with and coordinate activities with the director of the department of environmental quality as such activities relate to the functions of either or both departments concerning water quality.”<sup>251</sup> In practice, the coordination between directors is ad hoc but functional. In addition, the Code requires the Water Resource Board to study water pollution “and to advise, cooperate and counsel with the state board of environmental

251 IDAHO CODE §42-1805.

quality. . . .”<sup>252</sup> A lack of funding has severely limited the implementation of this statutory provision.

With or without coordination among agency heads, staff-level communication and coordination on general issues occurs in several prior appropriation states to varying degrees. As explained in greater detail below, this often is the result of personal connections and workplace proximity.

### Case-Specific Consultation

In addition to or instead of general coordination, communication between state water quality and quantity entities is triggered in some states by specific applications or other events. The form and amount of communication ranges from providing notice of an application to cooperative efforts to resolve an issue. The practice can be regular—occurring with every application—or ad hoc as circumstances dictate.

In Oregon, an interagency review team, composed of staff from the Departments of Water Resources, Environmental Quality, Fish and Wildlife, and other state natural resource agencies, reviews applications for new water appropriations that may affect sensitive, threatened, or endangered fish

species.<sup>253</sup> While the process exists, participation of the Department of Environmental Quality, which has primary authority over water quality issues, has reduced significantly in recent years due to a lack of funds. Similarly, although less formally, the Idaho Departments of Environmental Quality and Water Resources discuss water right applications that may have an adverse impact on endangered species, particularly fish species.

The water quantity entities of several states offer their respective water quality agencies an opportunity to review and comment on applications concerning water rights. In Utah, the Division of



Water Rights routinely sends the Department of Environmental Quality water right applications for comment. In North Dakota, the State Engineer sends notice of each water permit application to the Department of Health, as well as the Department of Game and Fish, the U.S. Fish and

Wildlife Service, and the U.S. Natural Resources Conservation Service. The State Engineer considers the concerns of these agencies on the basis of their merit and addresses them in the recommended decision concerning the water permit. In Oregon, the Department of Water Resources sends e-mail notices of water right applications to the Departments of Environmental Quality and Fish and Wildlife for review and comment. The Oregon

252 IDAHO CODE §42-1734.

253 See OR. ADMIN. R. 690-033-0010, -0330.



Department of Environmental Quality usually defers to the comments of Fish and Wildlife as being sufficient to meet their needs as well, but permits have been conditioned solely based on comments from the Department of Environmental Quality.

Section 6 of the Wyoming Surface Water Quality Standards states that “[t]he department shall, after review and conference with the State Engineer, make recommendations to the State Engineer concerning proposed new diversions which could cause violations of these regulations.” In practice, this process has evolved over time, from the State Engineer’s Office sending permits to the Department of Environmental Quality to review, to the Office putting the applications in an entry book for Department staff review, to a now more ad hoc system. The two agencies tend to address municipal and industrial applications together, in large part because the State Engineer’s Office is permitting the withdrawal of water and the Department of Environmental Quality is permitting its return.

Colorado has a notice-and-comment process different from those above in several key ways: the notice comes from the applicant rather than the agency, and the commenting is done by the water quantity agency about water quality matters. The state has referral structures built into the process of applying for wastewater discharge permits. The applicant must send a copy of the permit application to the Division of Water Resources for comment on potential water right injury that may result from the proposed activity.

Communication between state water quality and quantity entities also may be spurred by quite specific, even unique, circumstances. Despite rather consistent communication on various levels, the Kansas Department of Agriculture, the water quantity authority, and Department of Health and Environment, the water quality authority, most

commonly interact when an NPDES-permitted facility decides to dispose of its effluent by means other than discharge, such as deep well injection or land application like irrigating parks. This change decreases the available water supply to other water right holders and thus is of significant interest to the Department of Agriculture, just as the NPDES authority and potential water quality benefits make it an issue for the Department of Health and Environment.

In New Mexico, there is little consultation between the Office of the State Engineer and the New Mexico Environment Department. On one particular case, however, the Interstate Stream Commission, a separate entity housed in the Office of the State Engineer, and the Environment Department are working together to develop solutions to elevated salinity levels in the Rio Grande. The quantity and quality of the water delivered to the state of Texas is at issue, and New Mexico is seeking to avoid the years of litigation it faced regarding similar issues on the Pecos River. In addition to monitoring and other efforts, the two entities created the Rio Grande Salinity Management Coalition, which includes water managers, the Rio Grande Compact Commission, and water user groups in Colorado and Texas, as well as New Mexico.<sup>254</sup>

### **Allocation Processes that Consider Water Quality**

Cooperation and consultation with other agencies may net the most expert opinions and information, but simple requirements for the water quantity agency to consider the potential water quality impacts of a decision also can be beneficial to more comprehensive water management. As with consultation, water quality considerations and their execution vary significantly from state to state. The

<sup>254</sup> See <http://www.nmenv.state.nm.us/swqb/Lower-RioGrande>.

purpose of considering water quality may be compliance with water quality standards or protecting other water rights. Practice may stem from explicit laws or interpretation of public interest requirements. The process can be as basic as requiring consideration of water quality impacts, or it may actually prohibit approval of an application if water quality impacts would be too great. In addition, the applications for which water quality impacts are considered can be for new appropriations, water transfers, changes in use, other modifications, or several of the above.

Alaska's regulations for the transfer and change of water rights require the Department of Natural Resources to amend and issue the permit or certificate if the proposed change "is unlikely to adversely affect," among other things, water quality.<sup>255</sup> By contrast, the Department may issue a change permit for a limited period of time if the change "may adversely affect" water quality, so long as the change "will not adversely affect the water rights of other persons or the public interest."<sup>256</sup> Unlike many states, Alaska addresses water quality in this context on its own, not just as an aspect of water rights or the public interest. In practice, the Department of Natural Resources often relies on the Department of Environmental Conservation to identify potential water quality impacts. Thus, the interagency communication is quite important to implementation of this water quality protection in water quantity decisions.

Several states explicitly include water quality among the factors considered in protecting other water rights. In Colorado, temporary review and approval procedures exist for augmentation plans, rotational crop management contracts, and changes to water rights that have been filed with a water court but for which no decree has yet been issued. Among the conditions that must be met for the state engineer's

approval, the activity must not adversely affect the "water quality and continuity [needed] to meet the requirements of use to which the senior appropriation has normally been put. . . ."<sup>257</sup> In practice, this consideration rarely is significant given how the water usually is replaced in the stream, such as via agricultural rights changed to an augmentation purpose and not diverted. But this issue was the focus of the *In re Concerning Application for Plan for Augmentation of City and County of Denver* decision discussed earlier in this chapter.

California law allows a temporary change in the point of diversion or place or purpose of use if the State Water Resources Control Board finds by a preponderance of the evidence that, among other things, the "change would not injure any legal user of the water . . . through significant changes in . . . water quality."<sup>258</sup> Since water quality protection is a necessary part of protecting third-party water right holders and instream beneficial uses, water quality impacts also are considered in connection with permanent changes, long-term changes, and temporary urgency changes. Water quality impacts are frequently at issue in water right change petitions. In Montana, a water permit applicant must prove "by a preponderance of evidence that . . . the water quality of a prior appropriator will not be adversely affected" if a valid objection to a water permit application is filed based on water quality concerns.<sup>259</sup> The same is true for changes to water rights.<sup>260</sup> In practice, water quality objections occur in Montana but are not common; rarely are water quality impacts pivotal in a decision.

Texas, unlike the states already mentioned, does not explicitly make water quality a threshold question dictating whether an application is approved,

<sup>255</sup> ALASKA ADMIN. CODE tit. 11, §93.930(c).

<sup>256</sup> ALASKA ADMIN. CODE tit. 11, §93.930(d).

<sup>257</sup> COLO. REV. STAT. §37-92-308(4).

<sup>258</sup> CAL. WATER CODE §1727(b).

<sup>259</sup> MONT. CODE ANN. §85-2-311.

<sup>260</sup> MONT. CODE ANN. §85-2-402.



but it does require that the issue be considered in the review process. The Texas Commission on Environmental Quality, under its water quantity authority, is required by law to “assess the effects, if any, of the issuance of [a water appropriation] permit on water quality.”<sup>261</sup> Similarly, for interbasin transfers, Texas law requires the Commission to “weigh the effects of the proposed transfer by considering . . . the projected impacts . . . on . . . water quality,” among many other factors.<sup>262</sup>



Likewise, a provision in the Oklahoma Administrative Code requires the Water Resources Board to consider water quality impacts from proposed diversions from a stream designated as a “scenic river area” or as “outstanding resource waters.” The law states that “the Board shall consider . . . the following factors . . . to assure that appropriate instream flows are protected: . . . Existing water quality in the

<sup>261</sup> TEX. WATER CODE ANN. §11.150.

<sup>262</sup> TEX. WATER CODE ANN. §11.085(k).

stream and the potential of the diversion to alter the water quality or physical characteristics of the stream.”<sup>263</sup>

Idaho law also includes an explicit protection of water quality in a very specific aspect of its water quantity management. The U.S. Bureau of Reclamation has the authority to rent water in the Snake River Basin to augment flows for endangered anadromous fish, but that rental must be in compliance with, among other things, “applicable water quality rule[s] and regulation[s] or other requirements of the clean water act.”<sup>264</sup> The purpose of this restriction was to prevent water quality problems when trying to meet ESA requirements, ensuring that water would not be released all at once and create low flows later. In practice, the restriction has not had much of an impact.

Idaho also has a more general requirement to consider water quality in water quantity decisions, but through interpretation of the term “public interest.” According to a 1985 decision by the Supreme Court of Idaho, the Department of Water Resources “is precluded from issuing a permit for a water appropriation project which, when completed, would violate the water quality standards of the Department of Health and Welfare.”<sup>265</sup> Under state statute, the Department of Water Resources may reject, partially approve, or condition a permit application if, among other reasons, the water use “will conflict with the local public interest.”<sup>266</sup> The court concluded that “the legislature in §42-203A must have intended the public interest on the local scale to include the public interest elements listed in §42-1501: ‘fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, transportation and navigation values, and

<sup>263</sup> OKLA. ADMIN. CODE §785:20-5-5(e).

<sup>264</sup> IDAHO CODE §42-1763B.

<sup>265</sup> *Shokal v. Dunn*, 707 P.2d 441, 452 (Idaho 1985).

<sup>266</sup> IDAHO CODE §42-203A(5).

water quality.”<sup>267</sup> The Idaho Legislature has since clarified its definition of “public interest” for purposes of Section 42-203A, but water quality issues still are typically considered in the process of new water rights.

Several other prior appropriation states include water quality in some form of “public interest” review. Kansas regulations state that “in ascertaining whether a proposed use will prejudicially and unreasonably affect the public interest, the chief engineer shall also take into consideration the quantity, rate and availability of water necessary to . . . protect senior water rights from being impaired by the unreasonable concentration of naturally occurring contaminants.”<sup>268</sup> California law requires the State Water Resources Control Board to determine the amount of water available for appropriation; in so doing it “shall take into account, whenever it is in the public interest, the amounts of water needed to remain in the source for protection of beneficial uses, including any uses specified to be protected in any relevant water quality control plan.”<sup>269</sup> This provision is routinely applied in acting on water right applications, and has been used, along with other legal authority, in setting minimum bypass flows, temperature control requirements, and other permit terms for the protection of instream beneficial use.

In Arizona and Utah, water quality could be considered in the review process as an aspect of public interest. Arizona law requires the Department of Water Resources to reject an application if it “is a menace to public safety[ ] or is against the interests and welfare of the public.”<sup>270</sup> Utah law requires the Department of Natural Resources to reject an application if it “will unreasonably affect public

recreation or the natural stream environment, or will prove detrimental to the public welfare.”<sup>271</sup>

### Allocation Conditions for Water Quality Purposes

Beyond application review, the laws of several states expressly authorize the water quantity agency to condition water rights and transfers on water quality protections. As noted in Chapter III, the State Water Resources Control Board has authority to reopen water right permits and licenses to protect water quality, and California law now explicitly requires the conditioning of all new permits and existing permits seeking a time extension on meeting water quality objectives.<sup>272</sup>

The Texas Commission on Environmental Quality is required by statute to condition permits to store, take, or divert water as “necessary to maintain existing instream uses and water quality of the stream or river,” “to the extent practicable when considering all public interests.”<sup>273</sup> In selecting the permit conditions, the Commission must consider, among other things, the aforementioned assessment of potential permit effects on water quality conducted in the application review stage.<sup>274</sup>

In Alaska, the Department of Natural Resources can condition an initial permit and a subsequent certificate to appropriate water on, among other things, maintaining a specific quantity of water for protection of sanitation or water quality.<sup>275</sup> Such a condition was attached to a water right when transferred from a closed pulp mill to the city of Sitka for other purposes; at least two million gallons per day were required in the pipe for water quality

267 *Shokal*, 707 P.2d at 449.

268 KAN. ADMIN. REGS. 5-3-9.

269 CAL. WATER CODE §1243.5.

270 ARIZ. REV. STAT. §45-153(A).

271 UTAH CODE ANN. §73-3-8(b).

272 CAL. CODE REGS. tit. 23, §780.

273 TEX. WATER CODE ANN. §11.147(d).

274 TEX. WATER CODE ANN. §11.147(d).

275 ALASKA ADMIN. CODE tit. 11, §§93.120(e), -.130(c).



purposes. There is hesitation in the Department of Natural Resources to conditioning a new water right on maintaining flows for quality purposes because it effectively creates an instream water reservation, which has its own creation process in Alaska. Permits often are conditioned to require adequate remaining flow and water levels to support indigenous aquatic life and to provide for fish habitat and fish passage, which can indirectly benefit water quality.

In Colorado, water judges or referees may condition a change of a water right, augmentation plan, or implementation of a rotational crop management contract to prevent injury to other water rights. If the type of use and point of diversion would be changed, more than 1,000 acre-feet of annual consumptive use would be permanently removed from irrigation, and “the change would cause an exceedance or contribute to an existing exceedance of water quality standards,” the judge or referee may impose a “condition that addresses decreases in water quality.”<sup>276</sup> The applicant would “be responsible for only that portion of the exceedance attributable to the proposed change.”<sup>277</sup>

Idaho’s water appropriation rules state that the Idaho Department of Water Resources “may condition permits to insure compliance with Idaho’s water quality standards.”<sup>278</sup> In practice, this provision primarily has been used with regard to trout production.

Several other states have conditioned water rights in practice. Montana has conditioned approximately 16 permits with meeting water quality standards or otherwise complying with water quality requirements. Oregon also has done so on numerous occasions, based on comments from the Department

of Environmental Quality. Such conditions in Oregon have included: “The use may be restricted if the quality of the source stream or downstream waters decrease to the point that those waters no longer meet existing state or federal water quality standards due to reduced flows.”<sup>279</sup>

## Water Quality Processes that Consider Water Quantity

As explained in Chapter III, many prior appropriation states limit the impact that their respective state water quality laws can have on water rights, a reflection or even expansion of the idea behind the Wallop Amendment in the CWA. The laws of prior appropriation states rarely, if ever, require other consideration of water quantity in water quality permitting processes.

## Structure

As noted in Chapter II, most western states house their water quality and quantity authorities in distinct entities.<sup>280</sup> Alaska, Colorado, Montana, Nebraska, and Utah house most if not all of their water quality authorities in their respective environmental agencies, and most if not all of their water quantity authorities in their respective natural resources agencies. Arizona, Idaho, Oklahoma, and Oregon each have a water resources department or board in which most of their water quantity authorities are housed, and they house most of their water quality authorities in their respective environmental agencies. New Mexico and Wyoming each have a state engineer’s office, unaffiliated with another agency, which houses most of their water quantity authorities, and these states house most of their water

276 COLO. REV. STAT. §37-92-305(4)(a)(V).

277 COLO. REV. STAT. §37-92-305(4)(a)(V).

278 IDAHO ADMIN. CODE R. 37.03.08.050(11).

279 See, e.g., Oregon Certificate of Water Right 85688 (2002) (issued to city of Portland for use of Columbia River water for commercial and industrial use).

280 Benson, *supra* note 5, at 205.

quality authorities in their respective environmental agencies. North Dakota houses all of its water quantity authorities in the State Water Commission and all of its water quality authorities in the Department of Health. In Kansas, the Department of Agriculture is the state's primary water quantity agency, and most of the water quality authorities rest in the Department of Health and Environment. In contrast, California, Nevada, South Dakota, Texas, and Washington place both authorities within the same state agency, although often still compartmentalizing the two authorities into different divisions of the agency.

Officials from several states that house the two entities in the same agency commented that communication between water quality and quantity staff has the opportunity to be more informal at all levels; there is less demand for protocol and less concern about stepping on someone else's turf. But several officials also noted that such informality then relies on opportunistic staffers to develop that communication; it is not the programs but the people in the programs that make effective solutions. This reliance on interpersonal connections and the proximity that promotes it is another reason why co-location is so valuable in this context.

From informal polling of water quality and quantity staff in each of these states, the general sentiment among water officials in most states is that they like the structure that their state has, regardless of which structure it is. Water officials in states that house both authorities within a single agency rather consistently referred to several agency characteristics that they believe benefit interaction between water quality and quantity management and are made possible, or at least more common, by having both within one agency. The most emphasized and frequently noted of these characteristics was co-location—that being in the same agency likely means being in the same building. Noted benefits of co-location ranged from a greater likelihood of recognizing or even knowing the other staff to the ease of face-to-face conversations given the proximity of offices.



A few officials from different states commented that management of water quality and quantity has benefitted from staff changes and rotations among those programs; having staff with substantive knowledge of and personal connections with the other program can significantly aid in understanding the other program and communication between them. Housing both water quality and quantity within one agency appears to increase the likelihood of these changes and rotations. Several officials also noted that having one executive and one office of



counsel over both water quality and quantity creates more accountability over the intersection of the two programs and promotes more holistic consideration of big issues and individual cases that affect both quality and quantity. One state official referenced his state's use of statutory water quality control authority for water quantity program purposes as another benefit of housing both programs within one agency.

Despite the benefits for more unified and comprehensive water management, merging historically distinct agencies can be challenging, if not impossible. Efforts have been made to merge water quality and quantity management in most western states, often for budgetary reasons and at numerous points in the past. They have failed. Many water quality and quantity officials in states that house the two programs separately cited their respective mandates, sources of funding, and independent influence on the governor and others as significant impediments to a merger. Several officials also commented that the constituents, cultures, and laws of the two programs are too distinct for a useful merger. Even those who felt that a merger could be beneficial, all things considered, commonly expressed such trepidation. Many felt that a unified agency would inevitably lean in favor of one program or the other, whether as a result of structure, politics, or the background of the individual chosen to lead the agency. Concerns also extended to specific bureaucratic processes, from the added process that may be required for the water quantity program head to be called before the legislature to when a new state engineer would be selected.

If a single agency for water quality and quantity is not feasible in a state, some of the cross-program benefits of that unity still may be accomplished. Co-location can be valuable for communication and coordination between water quality and quantity staff even without being in the same agency. Many

officials from states that house the two programs in separate agencies noted the value of their respective buildings being near one another, both for main and field offices. Several officials lamented the fact that the two agencies are not housed in the same building in their states. As one official stated: "When you are out of sight, you are out of mind, so it is good to be close." Separated water quality and quantity agencies also might benefit from staff rotations or assignments to the other agency, promoting cross-agency understanding of culture, objectives, and law and ultimately improving communication and coordination. Given staffing and financial constraints for both agencies around the West, this could be tested initially as a case-specific endeavor. In addition, having one office of counsel for the two agencies could better align the legal considerations for decisions made by either agency.

The five states that house water quality and water quantity authorities within a single agency demonstrate that the structure can be functional. The variations in population, climate, water scarcity, and dominant water pollution sources among California, Nevada, South Dakota, Texas, and Washington suggest that this concept is replicable elsewhere. But if the political and institutional hurdles are too significant to transcend, states should at least co-locate the two programs and establish whatever unifying institutional oversight is feasible. Realistically, personal connection and understanding may be the most critical component to mutually beneficial outcomes in the future of water management, and it should be supported.

# Conclusion

**W**ith increasing demand and greater uncertainty in water supply, pressures on water users and natural systems will continue to mount. Prior appropriation has demonstrated the ability to adapt, albeit slowly, to changing circumstances, and it will need to continue to do so in order to meet the many water needs of the West, and ultimately to remain a viable method of water quantity management. While likely not the biggest test of its staying power, prior appropriation's ability to cooperate with efforts to protect and restore water quality will be important. States already have shown ways to address water quality and quantity issues in tandem. Yet, the number of water quality impairments attributable to water quantity, as well as instances of water quality decisions affecting water quantity, indicate that there is significant progress to be made.

This progress could take many forms, and so it has. States can promote or even require high-level communication on planning and significant general issues, such as water reclamation and reuse and hydrofracturing. States can do the same through case-specific consultations, or at the very least through requiring consideration of the other discipline. States can better include water quality within water quantity management, either by labeling water quality a problem (water right impairment) or by creating a tool to aid its protection (defining water quality as a beneficial use).

At the federal level, EPA could better incorporate water quantity into water quality management by guiding states to use Category 4C for waters impaired solely by water quantity; including water quantity solutions within the scope of CWA Section 319 funding; incorporating water quantity considerations into designated uses; and recommending

consideration of water quality impacts from a project's anticipated flow modification in Section 404 decisionmaking. In an ideal world, functioning lines of communication would exist between EPA and state water quantity entities, as the third sentence of the Wallop Amendment seeks, but the current state of politics may not afford that.

In some instances, the law may need to adapt to allow, facilitate, or ensure such progress. In others, it is just a matter of implementation. But in the end, opportunities and obstacles at the intersection of water quality and quantity appear to be largely determined by the personalities, knowledge, and objectives of government staff and their relationship with and understanding of each other. Familiarity with another program and its people can go a long way in securing mutual respect and ultimately, when coupled with effort, cooperation. Physical proximity can be invaluable toward those ends. Barring that, program rotations, hiring practices that promote cross-fertilization of knowledge, and even social events can make a difference. In this context, the old adage appears to hold true, where there is a will, there is a way; but the agencies, both federal and state, need to promote the will in their staffs and facilitate the way to the extent feasible.



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