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INTERSTATE WATER ALLOCATION

by Christopher H. Meyer, Givens Pursley LLP (Boise, Idaho)

INTRODUCTION

State and federal water law is designed, by and large, to allocate and manage water within state boundaries. A separate body of law governs the allocation of water between states. If you imagine a water resource common to two states as a pie, interstate allocation divides that pie into two pieces. Each state, in turn, allocates its portion of the pie to individual water users within the state. In other words, interstate allocation of water operates only at the macro level. It addresses disputes between states, not disputes between individual water users located in different states.

The effect of an interstate allocation of water is to force one state to take action to deliver more water to the neighboring state. Then, whatever water arrives in the state is allocated according to the rule of priority within that state. Thus, it could be that a senior water right in an upstream state could be curtailed, while a junior water right in the downstream state received its full share — if that is what the interstate allocation demanded in order to satisfy the overall entitlement of the downstream state.

Interstate allocation can take various forms:

- The brute force approach to interstate allocation is through litigation brought by one state against another. These cases are resolved by the US Supreme Court under the doctrine of "equitable apportionment."
- The second approach is by interstate compact, in which the states sharing the common water resource work out a voluntary agreement allocating that resource, which agreement is then approved by the Congress.
- The third approach is for the Congress to unilaterally allocate the water resource among the states through legislation. This is very rare (having occurred only twice).
- The fourth is for the states to enter into agreements that are less formal than interstate compacts and do not entail congressional approval. The advantage of this approach is that it is simpler. The disadvantage is that it may not be enforceable.
- The fifth is for one state to attempt to unilaterally restrict the access by out-of-state water users to water within its borders. Such restrictions are sharply limited by the Dormant Commerce Clause of the US Constitution.

This article will first present a general overview of the development and application of these various forms of interstate allocation and then examine their possible implications for the current interstate allocation dialogue between the states of Washington and Idaho.

THE LAW OF INTERSTATE ALLOCATION

Equitable Apportionment

In the past, state-versus-state conflicts have focused on water supply for agricultural and other private consumptive water needs. In coming years, however, one can expect to see more interstate battles fought over water needed to meet new urban demands, to meet water quality and other instream needs, and to avoid jeopardy to endangered species.

Interstate Allocation

Priority of Use

Eastern Cases

Original Jurisdiction

Special Master

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260 North Polk Street,
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Editors: David Light
David Moon

Phone: 541/ 343-8504
Cellular: 541/ 517-5608
Fax: 541/ 683-8279
email:
thewaterreport@hotmail.com
website:
www.TheWaterReport.com

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For over a hundred years, the axiom "first in time is first in right" has reigned as the central governing principle of Western water law (Prior Appropriation Doctrine). One might think, then, that this principle would govern disputes between states as well as between water users. It does not. One of the more curious incongruities of water law in the West is that the rule of first in time does not govern the allocation of water between western states. Priority of use between the states is a factor to be considered, but only one. As Justice Douglas noted, "But if an allocation between appropriation States is to be just and equitable, strict adherence to the priority rule may not be possible." *Nebraska v. Wyoming*, 325 U.S. 589, 599, 618 (1945).

The law of interstate allocation did not arise until the 20th century. In the 1800s, water resources were not sufficiently developed in Western states sharing common rivers to generate any cross-border conflicts. Beginning in the early 1900s, however, depletions in some interstate streams became so severe that states took each other to court to fight over what was left. Interestingly, some of the early interstate water conflicts developed not in the parched West, but on the East Coast as major cities tapped the rivers in neighboring states to satisfy their growing populations. See *New Jersey v. New York*, 283 U.S. 336, 342 (1931) (This case contains Justice Holmes famous statement: "A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it."); and *Connecticut v. Massachusetts*, 282 U.S. 660 (1931). Indeed, disputes over water in the Eastern United States are becoming increasingly common today. *Virginia v. Maryland*, 124 S. Ct. 598 (2003) (ruling that Maryland may not prohibit a Virginia county from diverting water from the Potomac River, despite the fact that the river is entirely on Maryland's side of the border).

The US Supreme Court (Court) has the power to entertain and decide disputes between two or more states pursuant to the Constitution's grant of original jurisdiction (U.S. Const. art. III, § 2, cl. 2). Such litigation is most unusual in that it is initiated directly in the Court, bypassing the lower federal district and appellate courts. As a practical matter, the Court is not equipped to conduct a trial of such matters. Consequently, it appoints a Special Master to conduct the trial. Trials before the Special Master are lengthy, complicated, and expensive. The Special Master hears evidence, rules on motions, and proposes a recommended decree. The Court pays significant deference to the Special Master's recommendation, but reserves the right to render the final judgment. See William D. Olcott, *Equitable Apportionment: A Judicial Bridge Over Troubled Waters*, 66 Neb. L. Rev. 734, 736 (1987).

The Court will not automatically take jurisdiction over any dispute between states. Rather, it has construed the Constitution and 28 U.S.C. § 1251(a)(1) as making original jurisdiction actions discretionary with the Court. In theory, the dispute must be serious enough that it could cause the states to enter into war with each other, if they were sovereigns. *Missouri v. Illinois*, 200 U.S. 496, 519-21 (1906). More recently, the Court has said that the party initiating the suit must demonstrate "real or substantial injury or damage." *Colorado v. New Mexico*, 459 U.S. 176, 188 n.13 (1982), *appeal after remand*, 467 U.S. 310 (1984).

The Court's jurisdiction is equitable in nature. The Constitution provides no guidance on how to resolve these matters, so the Court has written on a blank slate in creating the body of federal common law of water allocation known as equitable apportionment. Of course, the principles of equitable apportionment assume that there has been no congressional apportionment of the waters through legislation (discussed below). "Where Congress has so exercised its constitutional power over waters, courts have no power to substitute their own notions of an 'equitable apportionment' for the apportionment chosen by Congress." *Arizona v. California*, 373 U.S. 546, 546 (1963).

The Court has made clear that whether the headwaters of a river arise in one state or another is "essentially irrelevant." *Colorado v. New Mexico*, 467 U.S. 310, 467 (1984). As a practical matter, equitable apportionment litigation is typically initiated by a downstream state seeking to curtail surface diversions by an upstream state.

Although all cases to date have originated in the context of disputes over rivers, the principles of equitable apportionment apply equally to the allocation of an interstate aquifer. For instance, in a 2001 decision the Court awarded damages to Kansas because Colorado allowed groundwater pumping that depleted surface flows in the Arkansas River to which Kansas was entitled under a 1949 compact. *Kansas v. Colorado*, 533 U.S. 1 (2001). Although this was a compact case, not an equitable apportionment case, it built on a long history of equitable apportionment of that river. *Kansas v. Colorado*, 206 U.S. 46 (1907), *prior history*, 185 U.S. 125 (1902), *subsequent history*, *Colorado v. Kansas*, 320 U.S. 383 (1943), and *Kansas v. Colorado*, 514 U.S. 673 (1995).

The first interstate equitable apportionment case was decided in 1907 (*Kansas v. Colorado*, 206 U.S. 46 (1907)). Kansas sued Colorado charging that extensive irrigation in Colorado was drying up the Arkansas River and restricting the ability of Kansas farmers to launch new irrigation projects. Each state argued from the perspective of the water rights system with which it was familiar. Kansas, a state which largely follows the system of riparian rights (water use shared by landowners adjacent to the river), argued

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Equitable Apportionment

"Fair" Allocation

Eleven Cases

Ad Hoc Rulings

Summary of Factors

Conservation & Efficiency

that Colorado's use of water was unreasonable. Colorado, a prior appropriation state upstream, argued that by its Constitution it owned all the water and could allocate it on the basis of "first in time."

In deciding the case, the Court had no precedent to go on; a case like this had never arisen before. The Court noted that the Constitution granted it the authority to resolve disputes between the states, and set out with a clean slate to write a new body of interstate allocation law now known as "equitable apportionment."

Had the case arisen today, it is likely that the parties would have documented the environmental consequences of a dried-up Arkansas River. There was no mention of dead fish or the environment in this 1907 decision. Instead, the Court focused its attention on the benefits of irrigated farming. The Court determined that it would be inequitable to cut off the water already being used by Coloradans simply to provide more water to Kansas. The Court did not rule in Colorado's favor, however, simply because its uses were "senior" to uses in Kansas. Rather, the Court engaged in a balancing act to determine what allocation of water was "fair" to each of the disputants and concluded that the status quo was "fair." Thus, the Court allowed Colorado to continue its diversions for the time being, with the proviso that Kansas could institute a new suit if Colorado increased its depletions.

In the first case to arise between two prior appropriation states, *Wyoming v. Colorado*, 259 U.S. 419 (1922), the Court found it appropriate to apply the rule of priority in time to allocate water between the two states. However, in subsequent litigation between prior appropriation states, the Court has declared that the rule of priority is only one factor to be considered. *Nebraska v. Wyoming*, 325 U.S. 589, 599, 617-18 (1945); *Colorado v. New Mexico*, 459 U.S. 17613 (1982), *appeal after remand*, 467 U.S. 310 (1984).

Over the years, the Supreme Court has heard eleven cases in which decrees were sought allocating water on interstate streams.

These equitable apportionment decisions include:

- Arkansas River: *Kansas v. Colorado*, 206 U.S. 46 (1907), *prior history*, 185 U.S. 125 (1902), *subsequent history*, *Colorado v. Kansas*, 320 U.S. 383 (1943), and *Kansas v. Colorado*, 514 U.S. 673 (1995), 1949 *compact enforced in*, *Kansas v. Colorado*, 533 U.S. 1 (2001).
- Bois de Sioux: *North Dakota v. Minnesota*, 263 U.S. 365 (1923).
- Chicago River: *Missouri v. Illinois*, 200 U.S. 496 (1906).
- Colorado River: *Arizona v. California*, 373 U.S. 546 (1963), *decree entered*, 439 U.S. 419 (1979), *decree modified*, 460 U.S. 605 (1983).
- Columbia & Snake Rivers: *Idaho v. Oregon*, 462 U.S. 1017 (1983) (dealing with anadromous fish).
- Connecticut River: *Connecticut v. Massachusetts*, 282 U.S. 660 (1931).
- Delaware River: *New Jersey v. New York*, 283 U.S. 336 (1931), *decree amended*, 347 U.S. 995 (1954).
- Laramie River: *Wyoming v. Colorado*, 259 U.S. 419 (1922), *decree modified*, 260 U.S. 1 (1922), *new decree entered*, 353 U.S. 953 (1957).
- North Platte River: *Nebraska v. Wyoming*, 325 U.S. 589 (1945), *decree modified*, 345 U.S. 981 (1953), *settlement entered*, *Nebraska v. Wyoming and Colorado*, 534 U.S. 40 (2001).
- Vermejo River: *Colorado v. New Mexico*, 459 U.S. 176 (1982), *appeal after remand*, 467 U.S. 310 (1984).
- Walla Walla River: *Washington v. Oregon*, 297 U.S. 517 (1936).

No hard and fast rules have emerged from this history of litigation. To the contrary, the Supreme Court has ruled on an *ad hoc* basis, considering whatever evidence on the issue of equity it found appropriate at the time.

Justice Douglas, writing for the Court in *Nebraska v. Wyoming*, 325 U.S. 589, 618 (1945), summed up the law this way:

> Apportionment calls for the exercise of an informed judgment on a consideration of many factors. Priority of appropriation is the guiding principle. But physical and climatic conditions, the consumptive use of water in the several sections of the river, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas, the damage to upstream areas as compared to the benefits to downstream areas if a limitation is imposed on the former — these are all relevant factors. They are merely an illustrative not an exhaustive catalogue. They indicate the nature of the problem of apportionment and the delicate adjustment of interests which must be made.

More recently, however, considerations of water conservation and efficiency have moved to the forefront. In the most recent case, Colorado sued New Mexico, charging that New Mexico was wasting water taken from the Vermejo River (*Colorado v. New Mexico*, 459 U.S. 176 (1982), *appeal after remand*, 467 U.S. 310 (1984)). Although the water uses in New Mexico were longstanding and therefore "senior" to Colorado's potential uses of the river in the future, Colorado asked the Supreme Court to consider the inefficiency of New Mexico's irrigation system. The Special Master appointed by the Court to hear the

Interstate Allocation

"Waste" of Water

facts found that "the heart of New Mexico's water problem is the Vermejo Conservancy District" which he considered a failed reclamation project that "quite possibly should never have been built." The Court nevertheless determined that Colorado should not be able to force New Mexico to improve the efficiency of the project to free up water for Colorado's use, because Colorado had not demonstrated any stronger water conservation program of its own.

This important case demonstrates the possibility that in the future, water may be shifted by the Court from one state to another on the basis of states' relative commitment to promoting water conservation and efficiency of use. The case should serve as a prod to all Western states to eliminate wasteful water use.

Congressional Approval

Compacts Between States

An interstate compact is an agreement by two or more states that has been approved by Congress for the purpose of allocating the rights to the use of a natural resource such as water among the compacting states. The federal Constitution tacitly authorizes such agreements between states: "No State, shall without the Consent of Congress…compact with another State, or with a foreign Power …" (U.S. Const. art. I, § 10, cl. 3).

Compact Standards

WATER ALLOCATION COMPACTS IN THE WEST: ALLOCATION FORMULAS
Source: Doug Kenny, Western Water Assessment

Compact			Hydrologic Standard Used				Time Scale of the Hydrologic Standard			
Basin	Signatory States	Year	Minimum Flows	Reservoir Storage	Consumptive Amount	Delivery Volume (annual or longer)	Constant	Seasonal	Annual	Multi-Year
Arkansas	CO, KS	1948		X				X		
Arkansas	KS, OK	1965		X			X			
Arkansas	AR, OK	1970			X				X	
Bear	ID, UT, WY	1955, 1978		X	X		X			
Belle Fourche	WY, SD	1943			X		X			
Big Blue	NE, KS	1971	X	X			X	X		
Caddo Lake	LA, TX	1979			X			X		
Canadian	NM, TX, OK	1950		X			X			
Colorado	WY, CO, UT, NM, NW, AZ, CA	1922				X				X
Costilla Creek	CO, NM	1944, 1963			X			X		
Klamath	OR, CA	1957			X		X			
La Plata	CO, NM	1922	X				X	X		
Pecos	NM, TX	1948	X		X					X
Red	TX, OK, AR, LA	1978			X				X	
Republican	CO, NE, KS	1942			X				X	
Rio Grande	CO, NM, TX	1938				X			X	
Sabine	TX, LA	1953	X		X		X		X	
Snake	WY, ID	1949			X				X	
South Platte	CO, NE	1923	X				X	X		
Upper Colorado	WY, CO, UT, NM	1948			X				X	
Upper Niobrara	WY, NE	1962		X					X	
Yellowstone	WY, MT, ND	1950			X				X	

Interstate Allocation

Dual Codification

Typically, Congress invites the states to initiate negotiations, with the expectation that whatever accommodation is achieved will receive subsequent congressional approval. Upon approval by Congress a compact becomes a law of the United States. *Texas v. New Mexico*, 462 U.S. 554 (l983). Thereafter, the compacting states act to incorporate the terms of the compact into their respective state laws. This dual codification aids in the enforcement of the compact's terms. The federal codification ensures that states cannot back out, and eliminates any potential for a dormant commerce clause attack on the allocation. State codification ensures that every affected individual water user will be subject to the benefits and burdens of the compact.

Compact Commissions

Compacts are typically implemented though the creation of administrative compact commissions. These compact commissions "create political institutions that help break down barriers that have prevented more effective water management" and have been described as "the greatest contribution to interstate water resource management." Karl Erhardt, *The Battle Over "The Hooch:" The Federal-Interstate Water Compact and the Resolution of Rights in the Chattahoochee River*, 11 Stan. Envtl. L. J. 200, 216 (1992).

Monetary Damages

Compacts are enforceable agreements. In 2001, the Court awarded monetary damages and pre-judgment interest to Kansas, based on Colorado's violation of its compact with the state. *Kansas v. Colorado*, 533 U.S. 1 (2001). The Court noted that "it is the State's prerogative either to deposit the proceeds of any judgment in the 'general coffers of the State' or to use them to 'benefit those who were hurt.'" *Id*. at 10. [Editor's Note: Litigation to enforce a compact has been commenced by Montana against Wyoming: see TWR, Water Briefs, #36 and #38].

Allocation Methodology

The first interstate compact allocating water in the West was the Colorado River Compact of 1922. Since then, interstate compacts have been frequently employed by states sharing common water resources. To date, about two dozen interstate compacts have been authorized to allocate the waters of interstate streams among the states. The allocations are based either on an agreement to share the waters of the interstate stream on a percentage basis, or upon the agreement of one or more upper basin states to deliver a fixed amount of water to one or more lower states. Two useful sources on the law of compacts are Frankfurter and Landix, *The Compact Clause of the Constitution—A Study in Interstate Adjustments*, 34 Yale L.J. 685 (l925); and Zimmerman and Wendell, *The Interstate Compact Since 1925* (Council of State Governments, 1951). A complete text of all western water allocation compacts is available at the Western Water Assessment website: http://wwa.colorado.edu/resources/western_water_law/pubs/WWAC.pdf.

Supremacy Clause

Congressional Apportionment (aka Congressional Allocation)

On rare occasions, two to be exact, the US Congress has unilaterally allocated water among states. Unlike congressional approval of interstate compacts, this action may occur over the objection of affected states. Congress has the power to do so under its commerce power, and its actions override those of the states under the supremacy clause, which renders "congressional action the supreme law of the land, bind[ing] even unwilling states to the terms of congressional acts." Joseph L. Sax, et al., *Legal Control of Water Resources* 731, 737 (2nd ed. 1991).

Boulder Canyon Project Act

The most notable congressional apportionment (also known as congressional allocation) came in the form of the Boulder Canyon Project Act enacted by Congress in 1928 (ch. 42, 45 Stat. 1057 (1928) (codified at 43 U.S.C. §§ 617(a)-717(t)). The Act became effective after further state and federal actions in 1929, and is sometimes referred to as the Boulder Canyon Project Act of 1929. The Act established a comprehensive scheme for apportioning the waters of the Colorado River among Arizona, California, and Nevada. Although the Act did not contain an express allocation of water, the US Supreme Court ruled in 1963 that the intent of Congress was to make such an allocation. *Arizona v. California*, 373 U.S. 546 (1963).

Nevada & California

The only other congressional apportionment to date involved a division of the waters of the Truckee and Carson Rivers and Lake Tahoe between Nevada and California. Although technically enacted as a congressional apportionment, Congress acted on an agreement worked out between the states which had originally taken the form of a compact.

Informal Approaches

Informal Agreements

As an alternative to formal interstate compacts, states may elect to enter into less formal agreements. Just as with an interstate compact, these agreements could take all manner of approaches to allocation of the resource. They could allocate water according to a formula. The formula might or might not include variables that change over time. The agreement might include procedural mechanisms aimed at promoting cooperation and/or dispute resolution. It might require adjudication of water rights. It might mandate additional data collection. It could even provide for changes in state law governing water rights, for instance, to promote greater efficiency and conservation. The key difference between this approach

Interstate Allocation

Other Entities

Enforceability Questions

Compact Clause

Commerce Clause

Export Restrictions

***Sporhase* Case**

Conservation Concerns

Consistency of Restrictions

and an interstate compact is that it is easier and more flexible. This informal approach does not require congressional ratification or a special form of approval by the states. Thus, depending on what it sought to accomplish, it might take the form of something as informal as a memorandum of understating between state agencies. It also has the flexibility to incorporate other entities, such as tribes or non-governmental organizations.

Downsides to the informal agreement approach include:

- It lacks the strong enforcement mechanisms that come automatically with an interstate compact. This approach relies in large part on each state's commitment to making the process work. Of course, states may build in whatever enforcement mechanisms they wish in the form of a contract. But questions remain about their enforceability. The ability of states to wiggle out of such informal agreements is both a strength and a weakness. It gives states a chance to take their cooperation a step at a time, without making an ironclad commitment.
- These agreements could be subject to challenge as a violation of the compact clause of the Constitution, which prohibits states from compacting without the approval of Congress.
- These agreements could also be challenged as a violation of the so-called dormant commerce clause, which precludes states from restricting interstate commerce. However, if the compact was crafted in terms of promoting water conservation, it would probably survive the test established in *Sporhase v. Nebraska ex rel. Douglas*, 458 U.S. 941 (1982). See discussion below.

Unilateral Restrictions on the Export of Water

From time to time, states have sought to solve their water problems by barring out-of-state interests from physically taking water out of the state. Federal constitutional constraints severely constrain this approach. The so-called dormant commerce clause of the US Constitution has been interpreted to restrict the ability of states to regulate commerce. In *Sporhase*, the Court held that water was an article of interstate commerce, and that a state therefore may not unreasonably restrict its interstate use. See also *City of El Paso v. Reynolds*, 563 F. Supp. 379 (D.N.M. 1983); *City of El Paso v. Reynolds*, 597 F. Supp. 694 (D.N.M. 1984); and *Linsey v. McClure*, 136 F.2d 65 (1943). For a fuller discussion see, Christopher H. Meyer, *Sporhase v. Nebraska: A Spur to Better Water Resource Management*, 1 The Environmental Forum 28, Environmental Law Institute (1983); and Steven E. Clyde, *State Prohibitions on the Interstate Exportation of Scare Water Resources*, 53 U. Colo. L. Rev. 529 (1982).

In 1990, the Idaho Legislature enacted detailed legislation specifically dealing with any new out-of-state uses of water (1990 Idaho Sess. Laws, ch. 14; codified at Idaho Code §§ 42-222, 42-401(3) and elsewhere). The 1990 Act was intended to bring the state into compliance with *Sporhase*, which set constitutional standards under the federal commerce clause for the circumstances under which states may restrict water exports to other states. In *Sporhase*, the Court struck down parts of Nebraska's water export statute which violated the "dormant commerce clause" of the US Constitution (art. I, § 8, cl. 3). The Court voided Nebraska's absolute ban on water exports to "non-reciprocating" states, but upheld those provisions reasonably relating to the "conservation" of water. Thus, so long as restraints on exportation are expressed in terms of legitimate state concerns (which the Court found to include conservation), a limited preference for in-state use may not constitute an unconstitutional burden on commerce. In Nebraska's case, the Court commended the state's objective "to conserve and preserve diminishing sources of groundwater," ruling that "[t]he purpose is unquestionably legitimate and highly important" and that this purpose was "advanced" by the conservation requirements imposed on exporters of water. 458 U.S. at 954-55. Accordingly, for Idaho to make the restrictions on export stick, it was necessary to add the water conservation test to the requirements for *all* new and transferred water rights.

Idaho's 1990 Act included two primary elements. First, it added a requirement applicable to *all* water right applications (not just those out-of-state): Every new water right appropriation or transfer must be shown to be consistent with the "conservation of water resources within the state of Idaho." Idaho Code §§ 42-203A(5)(f), 42-222(1). Second, the 1990 Act repealed earlier measures aimed particularly at water use in Oregon, and replaced them with a set of rules applicable to all out-of-state water transfers. Such out-of-state uses were required to follow special procedures and to satisfy five additional tests aimed generally at evaluating the relative availability of water in the sending and receiving states (Idaho Code §§ 42-401(3)). Out-of-state water bank rentals were made subject to the same five tests in 1992 (Idaho Code § 42-1763).

Interstate Allocation

Idaho Compacts

SVRP Aquifer

"Sole Source"

Perched Geologic Feature

Map Adapted from USGS Scientific Investigations Report 2007-5041

INTERSTATE ALLOCATION ISSUES IN IDAHO AND WASINGTON

Idaho Compacts

Idaho is a party to an interstate compact with the states of Utah and Wyoming for the Bear River located in the southeast corner of the state. The Amended Bear River Compact was ratified by the three states in 1979 and approved by Congress on February 8, 1980 (Pub. L. 96-189, 94 Stat. 4; Idaho Code § 42-3402). The compact is actively administered by the Bear River Commission, which is made up of representatives appointed by the governors of the three states and a Federal representative.

Idaho also is a party to the Snake River Compact with the State of Wyoming which allocates 96 percent of the waters of the Snake River for use by Idaho and 4 percent for use by Wyoming upon satisfying certain storage replacement provisions (Act of March 21, 1950, 64 Stat. 29; Idaho Code § 42-3401).

In 1963, Idaho ratified the Columbia River Interstate Compact among the states of Idaho, Montana, Oregon and Washington (1963 Sess. Laws 818). Not all of the states ratified the compact. Idaho repealed its ratification of the compact in 1975 (1975 Sess. Laws 29). Some discussions have occurred in recent years concerning the prospects for renewing the interstate compact initiative as a way of addressing the numerous fish and water resource issues among the Columbia River states.

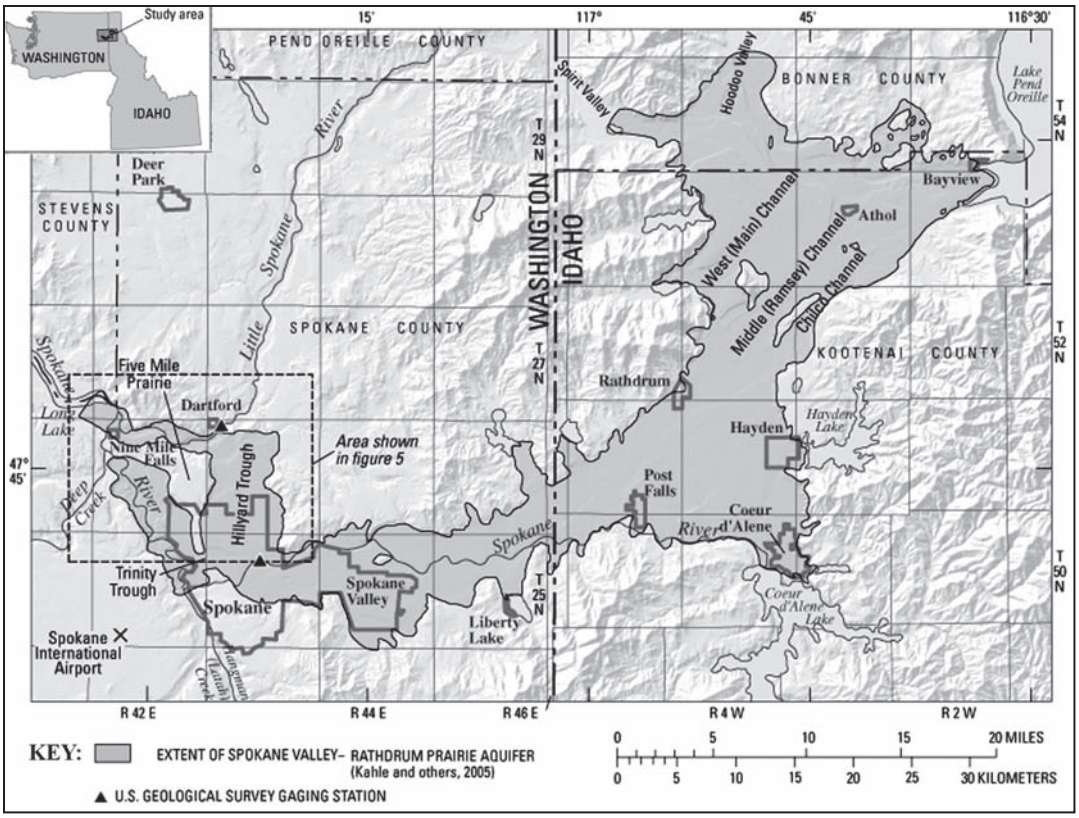
Interstate Allocation in the Spokane, WA – Coeur d'Alene, ID Area

THE SPOKANE RIVER AND THE SVRP AQUIFER

The Spokane Valley Rathdrum Prairie Aquifer underlies the Spokane River and areas north of Coeur d'Alene Lake in Washington and Idaho. The aquifer is known as the Spokane Valley Aquifer in Washington and the Rathdrum Prairie Aquifer in Idaho. It is referred to collectively as the Spokane Valley Rathdrum Prairie Aquifer or SVRP Aquifer (see Map).

In 1978, the SVRP Aquifer was designated as a "sole source aquifer" providing drinking water for over 400,000 people in this region, including the cities of Spokane, Spokane Valley, Liberty Lake, Post Falls, and Coeur d'Alene. The aquifer also feeds the Spokane River in Washington, which is experiencing difficulties in meeting minimum flow requirements during the summer months. These instream flows are needed to protect water quality, fisheries, and recreation.

A peculiar geologic feature of the aquifer is that the Spokane River is perched above the aquifer in Idaho, but not in Washington. Thus, ground water diversions from the SVRP in Idaho have no impact on river flows within Idaho. They do, however, reduce river flows where the aquifer is hydraulically connected to the river downstream in Washington.



Interstate Allocation

TMDL and Instream Flows

Four Forums Possible

Apportionment Hammer

Washington De Facto Moratorium

Availability Issue

Aquifer Study

Hydrologic Balance

River Impacts

Allocation between Washington and Idaho

Unlike other interstate water conflicts, the tensions over water allocation on the Spokane River are not driven by unmet consumptive water rights in the downstream state. By and large, holders of surface water rights on the Spokane River in Washington are being satisfied. Rather, the conflict is driven by water quality and instream flow needs in Washington. This includes, notably, concerns over meeting the TDML (total maximum daily load) requirements imposed under the federal Clean Water Act. It also includes concerns about maintaining fisheries and whitewater recreational opportunities.

There are four possible forums for resolving these disputes:

- Washington could initiate an original jurisdiction lawsuit before the US Supreme Court seeking an equitable apportionment of water. As noted above, such a lawsuit would be tried before a Special Master appointed by the Court. The Court, however, would have the last say. This is considered the "brute force" approach. It typically results in a fairly arbitrary division of water between the states. Since there is little clear precedent (other than general equitable principles), outcomes are hard to predict and therefore dangerous from both sides' perspectives.
- The two states could resolve their differences by entering into a formal interstate compact, pursuant to the US Constitution. This would require the approval of the US Congress. It appears that Idaho and Washington are not interested in pursuing this approach. There appears to be concern that Congress might widen the scope of the discussion to address issues beyond those contemplated by the states (such as endangered species). To date, state leaders have insisted that they prefer to resolve these water allocation issues without federal involvement (other than funding of studies).
- The states could seek a congressional allocation of water between the two states via federal legislation. However, this approach would entail the same federal involvement found to be unacceptable in the context of interstate compacts. At this time, this approach does not appear to be on the table.
- The two states could enter into a less formal agreement (something short of a congressionally-approved compact). Such an agreement might take any form, from a contract to a memorandum of agreement. It would not necessarily set out a fixed formula for allocation. Instead, it might establish procedural mechanisms, set out broad criteria and goals, provide for additional fact-finding, and the like. To date, the two states have expressed a strong preference for this approach as reflected in the cooperative effort in the SVRP Study. Of course, were this approach to fail, either state could always fall back to the first option (equitable apportionment litigation).

Thus, the first option remains a hammer driving the parties to make the cooperative approach work.

The Bi-State Aquifer Study

In the mid-1990s, the State of Washington imposed a de facto moratorium on new ground water appropriations in the Spokane Valley Aquifer. Two applications were filed in 2001 seeking huge groundwater appropriations from the Rathdrum Prairie Aquifer in Idaho for proposed energy facilities (Application for Water Right No. 95-09086 by Kootenai Generation LLC; Application for Water Right No. 95-09069 by Cogentrix Energy, Inc.). In 2002, the Idaho Department of Water Resources (IDWR) denied the applications as being inconsistent with the "conservation of water" test under Idaho Code §§ 42 203A(5)(f), 42-222(1). Nevertheless, concern was aroused by these cases over the extent of water available.

In 2003, IDWR declined a request to impose a moratorium on new water appropriations in Idaho. In the same year, the US Geological Survey (USGS), IDWR, the Washington Department of Ecology, the University of Idaho, and Washington State University launched the Bi-State Aquifer Study to evaluate the SVRP. The $3.5 million study resulted in the creation of a groundwater model showing the hydrological connection between the SVRP and the Spokane River. Thus, for the first time, questions about how the river and aquifer interact may be answered with a high degree of scientific certainty.

On May 8-9, 2007, the USGS and the other participants released reports on the Bi-State Aquifer Study in two days of meetings in Spokane Valley. One report (Scientific Investigation Report 2007-5044) described the groundwater model. The other (Scientific Investigation Report 2007-5041) described the hydrogeologic conditions and water budget.

At the risk of oversimplification, the studies concluded that the SVRP aquifer is very productive and is in hydrologic balance. In other words, withdrawals from the aquifer are in overall balance with natural inputs, with groundwater declines that are experienced from time to time driven by short term climatic conditions (e.g., drought), rather than groundwater mining.

On the other hand, the study confirms that groundwater pumping in both states reduces Spokane River flows in Washington. At this point, however, there appears to be reason for cautious optimism that the parties can build on the model and on cooperative efforts to date to find solutions to the problems. It

Interstate Allocation

Instream Flow Strategies

Moving Wells

Lake Releases

Artificial Recharge

is Idaho's position that there is not an overall water shortage in the basin. Rather, there are timing issues, notably in July and August, when the Spokane River drops below instream flow targets. This suggests that practical, on-the-ground solutions merit exploration.

Possible strategies for improving instream flows in Washington include:

- The City of Spokane could move its production wells further from the river. Today, they are located so close to the river that they are literally pumping river water and contributing to summer instream flow violations. Moving the diversion points, say, six or seven miles away might spread out the impact of diversion over time, lessening the impact of peak diversion during this critical time.
- Additional water could be released from Lake Coeur d'Alene during the summer. This is a simple solution from a Spokane-oriented perspective. It would have very significant downside impacts on interests around Lake Coeur d'Alene. There are also constraints related to lake level agreements and requirements, and the interests of Avista Corporation (private utility serving Northern Idaho) in connection with its Post Falls Dam operation.
- It may be that the SVRP could be artificially recharged with river water during periods when flows exceed minimum flow levels. This could entail either direct diversion from the river or, conceivably, pumping from the City of Spokane's production wells (which as a practical matter pump river water). Thus, the SVRP could be used as an underground reservoir, recharge of which would increase base flows in the river during the critical summer months. [see USGS Report: http://pubs.usgs.gov/sir/2007/5038

At this point, ideas like these are only ideas. It is premature to suggest that they will work and there are other reasons that they may be unacceptable. They are listed here solely to give a sense of the sort of things that might be explored. In any event, much work lies ahead to better understand which strategies could be practical and effective. Then there is the question of how to fund them, and how to mitigate adverse impacts and tradeoffs that may be entailed.

Complicating Factors

Adjudication in Idaho

North Idaho Adjudication

In 2006, the Idaho Legislature authorized IDWR to proceed with planning and designing the mechanisms for implementing an adjudication of water rights in the Coeur d'Alene and Spokane River drainages. Idaho Code § 42-1406B. This is envisioned as the first of three such northern Idaho adjudications. The adjudication will later extend to the Palouse River Basin and the Clark Fork-Pend Oreille River Basins.

Claims in 2008

On September 29, 2006 the Idaho Supreme Court issued a provisional order assigning the current Snake River Basin Adjudication (SRBA) Judge (John M. Melanson) to serve as presiding judge over the North Idaho Adjudication. IDWR anticipates petitioning the district court to initiate the litigation in the Fall of 2007. Taking of claims would then begin in early 2008.

Like the SRBA, the North Idaho Adjudication will be a McCarran Amendment proceeding. 43 U.S.C. § 666. This means that the federal government has waived its sovereign immunity, and that federal water rights may be adjudicated in this state court proceeding.

Process Changes

This adjudication will be modeled largely on the SRBA process, which has been underway for years in southern Idaho and is now nearing completion. A big difference, however, will be how IDWR handles beneficial use claims. In the SRBA, a claimant simply filed a form asserting the existence of such a right. IDWR then initiated an often time-consuming process of soliciting and evaluating evidence in support of the claim. IDWR has learned to demand such evidence up front. The result is expected to be a more streamlined process (from IDWR's perspective) and a more rigorous process from the applicant's perspective.

Case Law Developed

The process is also expected to move much faster because the parties can build on the substantial body of law developed in the course of the SRBA. That process was stalled for years as the Idaho Supreme Court heard a series of "basin-wide" issues on interlocutory appeal. That cumbersome process, one would hope, need not be repeated. Finally, the state of computer technology and data interconnection is far superior to what it was when the SRBA was initiated, so IDWR will now be able to take advantage of extensive data bases at the local government level (which often bear indirectly on water use).

Database of Uses

As a practical matter, this adjudication process is likely to force a number of skeletons out of the closet. Indeed, that is one of its purposes. Water rights that people have held (or claimed) for years may be disallowed. Others will be substantially cut back. At the end of the process, the State will have for the first time a comprehensive database of virtually all water uses in the region. This in turn should assist cooperative efforts to manage the water resource system.

Interstate Allocation

Adjudication Benefits

Although having more data on the table can cut both ways, on balance it will probably strengthen Idaho's hand vis-à-vis Washington in the context of interstate disputes. One of the things that the US Supreme Court looks at in equitable apportionment decrees is the extent to which states have undertaken efforts to conserve and control water, and to prevent waste. The adjudication will count for something on that score. On the other hand, it will put data into the hands of everyone, and some of it could be used to support arguments by Washington against Idaho users. A key question facing Idaho and Washington is how the pending adjudication of water rights in northern Idaho (and the possible future adjudication of rights in Washington) could factor into equitable apportionment litigation between the states. Plainly, if such litigation were to be initiated, the Court would not simply tote up how much water Idaho has adjudicated to its users and award that to Idaho. On the other hand, the adjudication of rights would increase the state's ability to document its need for water. It could also be used to bolster the argument that the state is committed to weeding out "paper" water rights unsupported by historic use, enforcing limitations, conditions and mitigation requirements, and generally promoting water conservation. It would appear that these considerations are not lost on Washington, which is now considering ramping up the adjudication of rights on its side of the border.

AVISTA HYDROPOWER RIGHTS

Avista Water Rights

Avista Corporation is a private utility serving Northern Idaho. It holds senior water rights in connection with its Post Falls Dam hydropower plant. Its most senior rights on this project are two beneficial use claims with January 1, 1907 priority dates. Water Right No. 95-4518 is a hydropower right for 4,250 cubic feet per second (cfs). Water Right No. 95-9115 is storage right for 164,440 acre-feet per annum. These rights work in conjunction. The Company also holds two smaller rights for the project with less senior priority dates (Nos. 95-9119 and 95-8003). These water rights will all be adjudicated in the upcoming North Idaho Adjudication. Moreover, Avista's Post Falls Dam project is now being relicensed by the Federal Energy Regulatory Commission (FERC) which has the power to impose conditions affecting water releases.

No "Call" by Avista

These conditions (Avista's water rights and subsequent FERC-imposed license conditions) are a sleeping dog that could substantially complicate the water picture. The Post Falls Dam power facility frequently operates substantially below capacity, yet the company has never placed a "call" on upstream junior water rights (a "call" requires junior water rights to cease diversions to satisfy the senior right). Such a call could significantly disrupt existing and anticipated future development throughout the Coeur d'Alene area. It could also have significant effects on lake levels in Lake Coeur d'Alene — a highly sensitive subject. To date, Avista has never asserted its senior rights against any other user and has never expressed any inclination to do so.

Idaho Power Example

On the other hand, the entire Snake River Basin Adjudication in the lower part of Idaho was driven by litigation in the 1970s which forced Idaho Power Company to assert its hydropower water rights. That litigation was driven by ratepayers who opposed Idaho Power Company's plan to build a new coal-fired power plant. They complained that the company should fully exercise its existing hydropower rights before constructing new facilities. That litigation was ultimately resolved in the so-called Swan Falls settlement, which subordinated a portion of the company's water rights and mandated the initiating of the Snake River Basin Adjudication to adjudicate all water rights in the basin.

Could such a thing happen with Avista? In theory, it could. However, there are several reasons to think it will not.

Avista Factors Differ

These reasons include:

First, Avista has shown no interest in such an assertion. Indeed, doing so would create a public relations nightmare for the Company. (Then again, Idaho Power was also forced into asserting its water rights.)

Second, unlike Idaho Power's situation, the Post Falls hydropower project is a relatively small component of Avista's power production system. Thus, not as much is in play.

Third, Avista's operations are constrained by long-established rules, policies, and statutes governing lake levels in Lake Coeur d'Alene.

Fourth, and perhaps most importantly, Avista's senior rights are not licensed rights, but mere "beneficial use" claims. In other words, there is no piece of paper evidencing a determination of this water right; they are simply assertions by the company that they have always used these rights in this manner. It is entirely possible that when these rights are adjudicated in the upcoming North Idaho Adjudication, they will be deemed to have been subordinated to other water uses.

Interstate Allocation

Coeur d'Alene Tribe's Rights

Municipal Rights

COEUR D'ALENE TRIBE

The US Supreme Court determined recently that the Coeur d'Alene Tribe owns the bed of the southern third of Lake Coeur d'Alene. *Idaho v. United States*, 533 U.S. 262 (2001). The Court did not address water rights. However, the Tribe has made it clear in recent statements (e.g., at the May 8-9, 2007 meeting in Spokane Valley) that they intend to assert water right claims in the upcoming adjudication based on their ownership of the lake and, presumably, on other treaty rights.

The Nez Perce and other tribes have made similar federal reserved water rights claims in Idaho, all of which have been settled (see Rigby, TWR #18). Speaking practically, one would reasonably expect the same to occur here, after a period of saber rattling by both sides. At the end of the day, the Tribe's interest in maintaining the status quo of lake operations in Lake Coeur d'Alene are not that different from other developers and property owners. While the Tribe's wild card will remain in play for some time, the end game will probably not result in substantial reallocation of rights or otherwise impair ongoing cooperative efforts between the two states to allocate water and manage the SVRP cooperatively within existing legal structures.

MUNICIPAL WATER RIGHTS

In 2003, the State of Washington enacted H.B. 1338 validating what are known in Washington as "inchoate" water rights for municipalities. These rights allow municipalities to grow into larger uses over time. Those rights, though, are now being challenged in Washington courts. Thus, there is potential for significant new municipal demand in Washington, despite the de facto moratorium on new water rights. Meanwhile, Idaho has long recognized the right of cities to hold water rights for reasonably anticipated future needs.

CONCLUSION

Other parts of the West have grappled with seemingly intractable interstate allocation issues for many decades. The Pacific Northwest, in contrast, has been largely spared these challenges. To be sure, Idahoans have fussed for years about imagined water raids by water-thirsty states to the south. And in the last decade, Idahoans have been pressed to contribute (via willing sellers) substantial quantities of Snake River water to the salmon recovery effort. But these interstate matters are nothing compared to the task of, say, divvying up the Colorado River.

Now Idaho and Washington find themselves in the early (still very polite) stages of a potential showdown over interstate water. The question is whether we can prove that there are more effective, and less costly, ways to solve these conflicts than other states have found. So far, there is room for cautious optimism.

Please Note: This article will be reproduced as a new chapter in the *Idaho Water Law Handbook.* For a copy of the entire handbook, please contact the author via email at: chrismeyer@givenspursley.com.

FOR ADDITIONAL INFORMATION: CHRIS MEYER, Givens Pursley 208/ 388-1200 or email: chrismeyer@givenspursley.com

Chris Meyer received his J.D. from the University of Michigan School of Law in 1981 and is a member of the bars of Idaho, Colorado, and the District of Columbia. Chris has been a leader in the fields of water, land use, environmental, constitutional and administrative law for twenty-five years. He has served for a decade as coordinator of the Idaho Environmental Forum, the largest environmental policy group in the state. Before joining Givens Pursley in 1991, Chris held the position of adjunct professor at the University of Colorado Law School where he taught water law, negotiation, and environmental law. Prior to that, he practiced environmental law in Washington, D.C.

Nutrients

Editors' Note:
MORE TO COME
As is not uncommon, The Water Report finds itself covering subject matter for which there exists divergent viewpoints. Our next issue will feature an article by author(s) directly involved in the development of the "nutrient numeric endpoint" methodology discussed herein. Readers should be aware that there are fundamental disagreements over both interpretation of the NNE process and the facts themselves.

As this article was circulated in draft form to parties interested in presenting another view, our editing has been minimal.

Clean Water Act

NPDES

Point Source Discharges

Non-point Source

NUTRIENT NUMERIC ENDPOINTS

NOT QUITE READY FOR PRIME TIME?

by Jeremy N. Jungreis and Scott Thomas, Ph.D.

INTRODUCTION

The US Environmental Protection Agency (EPA) and California State Water Resources Control Board (SWRCB) want to know whether water is clean enough to meet all of the goals established by federal and state law. Often, just looking at a waterbody or taking a sample in the water column is not enough to definitely inform regulators about the overall health of a river. So, with Tetra Tech Incorporated (hereinafter Tetra Tech) as the primary author, EPA and the SWRCB are developing a process, the Nutrient Numberic Endpoint (NNE) approach, that is intended to answer some of the most difficult questions about "nutrients" that come up in water quality decision-making. They hope to take some of the subjectivity out of complex water quality and permitting decisions.

NNE is a process for evaluating water quality utilizing secondary indicators (such as algal density, chlorophyll prevalence, benthic integrity and dissolved oxygen levels among other factors). Unfortunately, at this early stage of the NNE process development (the pilot study stage), many questions remain unanswered about NNE's long-term usefulness in balancing water quality goals with the realities of human habitation in an arid climate. After discussing the genesis of the NNE and its relationship to state and federal responsibilities under the federal Clean Water Act (CWA), this article will discuss recent efforts to apply NNE in California watersheds — focusing particularly on a recent pilot study which applied an NNE type analysis (largely in the absence of site specific data) in California's Santa Margarita River (SMR) Basin. The results of the SMR pilot project, which included no opportunity for stakeholder participation until after a "final" draft report was issued, seem to suggest a trend towards setting of water quality targets for nutrients (nitrogen and phosphorus) at levels lower than natural background levels. (See generally, Central Coast Regional Water Quality Control Board, Final Project Report, 2006). Obviously, the setting of water quality targets at levels more stringent than those which can be achieved in a world without the influence of mankind begs the question of NNE's usefulness. While NNE may someday prove the valuable tool that EPA and the SWRCB hope it to be, initial indications — as discussed herein — are that significant modifications in the process (including the acquisition and analysis of far more site specific data) need to be incorporated before the public will accept the validity of conclusions generated through NNE.

REGULATORY BACKGROUND TO THE NNE

When Congress passed the federal Water Pollution Control Act ("Clean Water Act" or CWA) in 1972, 33 U.S.C. § 1251-1387, stakeholders on all sides thought that treatment plant technology would be the salvation of our Nation's waters — waters that were very much in need of healing after more than a century of largely unregulated discharges. They were right, and they were wrong too. The National Pollutant Discharge Elimination System (NPDES) created by the CWA (33 U.S.C. § 1342), ushered in an era of mandatory treatment for industrial and municipal discharges. And the waters did get cleaner. However, the NPDES program, which is triggered only upon point source discharges of pollutants to jurisdictional waters, could only do so much (see generally, Reed D. Benson, *Pollution Without Solution: Flow Impairment Problems Under Clean Water Act Section 303*, 24 Stan. Envtl. L.J. 199 (2005)). In 1999, states reported that 40 percent of the waters they surveyed remained too contaminated for basic uses, including fishing and swimming. More troubling still, such impairment persisted in the face of private and public sector spending in excess of $500 billion for water-pollution control facilities (USGS 1999). Today, over 10,000 water bodies in 49 states are listed as impaired for nutrients or nutrient-related eutrophication (USEPA 2007), and much of the pollutant loading in our Nation's waterways comes not from a pipe but from non-point source pollution — i.e. pollution that emanates largely from urban and agricultural runoff. Non-point source pollution remains the hardest to control because the sources are diffuse and often outside the reach of regulatory oversight (there is no "discharge" per se with runoff). As our nation becomes increasingly urbanized, stakeholders are seeing that non-point source loadings alone are sufficient to "impair" beneficial uses in a waterbody — leaving no allocation for new or existing point source discharges.

Nutrients

CWA Goal: Fishable and Swimmable

State's Role

"Impaired" Waterbody

"TMDL Targets"

Although many stakeholders did not know it at the time, Congress retained the central theme of water quality laws that preceded passage of the CWA. As before, states were instructed to continue establishing and enforcing water quality standards for water segments within their jurisdiction, but now these water quality standards would be measured against the CWA's goal of having all waters become fishable and swimmable (Benson at note 81). Accordingly, Congress prescribed a much greater federal role in water quality standard setting, but the principal actors remained the states. The states, utilizing criteria established by the newly-created EPA, designated beneficial uses to be protected in each waterbody within their jurisdiction. They were then required, again with EPA's assistance and oversight (33 U.S.C. § 1314(a)(7)), to develop water quality criteria (either narrative, numeric, or in many cases both) that would ensure the attainment and maintenance of all identified beneficial uses. 40 C.F.R. § 130.3.

That is where the fight is now. Most point source dischargers throughout the country have valid NPDES permits that already apply expensive technology to the removal of water pollutants. Nonetheless, many streams, particularly in arid portions of the country where diluting flows are seasonal at best, fail to consistently meet water quality standards. When standards are not met — and a growing segment of the public is increasingly eager to raise the issue for state and federal regulators — the Clean Water Act requires states to list the waterbody as "impaired" with the EPA, and this listing triggers further regulatory action under Section 303(d) of the Clean Water Act. 33 U.S.C. § 1313(d); also 40 C.F.R. § 130.7(d)(1) (requiring submission of state 303(d) lists to EPA every two years). The next step in the process is for the states, upon consultation with EPA and prioritization of efforts, to develop a **t**otal **m**aximum **d**aily **l**oad (TMDL) for the impaired waterbody. 33 U.S.C. § 1313(d)(1)(C). Setting of a TMDL is a formal administrative process subject to public participation. In the process of setting the TMDL, the regulatory agency may establish "TMDL targets" (measured endpoints that demonstrate attainment of pertinent beneficial uses), and such targets may be set lower than the numeric water quality standards in order to provide a margin of safety. 33 U.S.C. § 1313 (d) (1) (c); See also (Tetra Tech 2007).

Unfortunately, many state water quality standards are not reflective of the waterbodies they purport to govern. Water quality standards were set in the 1970s, often without site-specific data or adequate stakeholder participation. Notwithstanding a nominal obligation to revisit the propriety of standards at least every three years (33 U.S.C. § 1313(c)(1)), regulators often assume — with some basis given their limited budgets and increasing workloads — that existing standards are adequate unless proven otherwise through stakeholder initiative or litigation. Hence, under the current system, watersheds are over or under regulated based on standards that were hurriedly cobbled together to meet EPA's regulatory deadlines over 30 years ago (when much of the science regarding water quality relationships was in its infancy). The problem is particularly acute for nutrients — perhaps the most difficult types of pollutants from which to draw conclusions of "impairment." See generally USEPA 1999.

Nutrients, typically the by-product of **p**ublicly **o**wned **t**reatment **w**orks (POTW) discharges, municipal stormwater and agricultural runoff, occur naturally in nature and are the building blocks for natural ecosystems. However, in excess concentrations they can choke a waterbody. *Id.* Nutrient loadings include nitrogen and phosphorus, and the many chemical compounds based on these two elements, such as nitrate, nitrite, ammonia, and phosphate. Except in extreme cases, nutrients alone do not impair beneficial uses. Rather, in combination with sunlight, temperature and flow volume/velocity they can cause indirect impacts to protected uses by promoting excessive algal growth and low dissolved oxygen levels. Because impairment is an indirect consequence of nutrient loading, the evaluation of impairment (and extent thereof) continues to be a very subjective and complex process (Tetra Tech 2007 at 1). NNE undertakes to remove some of the subjectivity from the nutrient characterization process (Tetra Tech 2004 at 1-2).

NNE AND ITS ORIGINS

In 1998, EPA published the *National Strategy for the Development of Regional Nutrient Criteria* — a first step for developing nutrient criteria under Section 304 of the Clean Water Act (USEPA 1998). EPA then proceeded to divide the US into ecoregions (regions of similar physical, climatic, and ecological characteristics) in order to establish ecoregional nutrient criteria. They evaluated data sets from 1990 to 1998 and then proposed that the upper 25% of all nutrient data could be assumed to represent unimpacted reference conditions (e.g., natural background levels) for each ecoregion. These 25th percentile values were characterized as criteria recommendations that could be used to protect waters against nutrient over-enrichment (USEPA 2000). The 2000 EPA report noted, however, that ecoregion spanning recommendations might not prove very predictive. EPA cautioned that States and Tribes may "need to identify with greater precision the nutrient levels that protect aquatic life and recreational uses… through development of criteria modified to reflect conditions at a smaller geographic scale than an ecoregion such as a subecoregion, the State or Tribe level, or specific class of waterbodies." *Id.*

NNE Stakeholder Info Meeting AUG 21

As we went to press, August 21st had been selected as the date for an informational meeting regarding NNE development. Members of a Santa Margarita River Basin stakeholder group (the Santa Margarita Technical Advisory Committee) will be meeting with NNE developers (Tetra Tech et al) to express concerns and receive information. Other interested parties will be welcome to attend, though direct participation may be limited to NNE presenters and stakeholder group members. The exact location of the meeting was as yet undetermined. For info, email: jbanales@lc.usbr.gov

Nutrients

Eutrophication

As previously referenced, ambient nutrient concentration data alone may not be effective in assessing eutrophication (e.g., an anoxic condition in a waterbody often caused by lack of dissolved oxygen and excessive algal growth) because algal productivity depends on additional factors such as sediment characteristics, stream gradient, temperature, light availability, flooding frequency, and biological community structure (Tetra Tech 2006). Yet, many water quality standards in the Western US are tied to a numeric nutrient limit. These numeric standards often give limited, if any, consideration to spatial or temporal variation in key drivers of nutrient loading such as precipitation, stream flow, and temperature. Is a numeric limitation appropriate for the entire watershed, or only a reach; the entire year, or only a season?

Numeric Limitations

Advisory Group

In a further step towards developing useful nutrient criteria, EPA Region IX called together a Regional Technical Advisory Group (RTAG) in 1999. RTAG included stakeholders from state water quality agencies in Region IX, Tribes, other State and federal agencies, and some representatives from industry and environmental groups. A key member of this team was Tetra Tech, which developed pilot projects and studies and facilitated development of NNE. The RTAG conducted a pilot project in 1999 and 2000 to develop a water quality database organized by ecoregion to assess the availability of existing water quality and biological data to support nutrient criteria development, and to evaluate regional reference conditions for streams and rivers in aggregated Ecoregion II (Western Forested Mountains). The results of this pilot project suggested that the proposed reference condition distributions would require refinement and supporting studies to ensure that the adopted criteria were appropriate on a site-specific basis (Tetra Tech 2006). In 2000, RTAG reviewed the findings of the pilot study using the original Level III ecoregions to evaluate the draft criteria previously completed for rivers and streams. The results suggested if the EPA reference-based values were adopted, then a large number of likely unimpaired water bodies would be misclassified as impaired. The RTAG responded by adopting a resolution to pursue development of more predictive nutrient criteria (see Tetra Tech 2006).

Pilot Study

Nutrient Concentrations

The drawbacks of using nutrient concentrations alone to predict protection of beneficial uses are reflected in a 2003 California pilot study (Tetra Tech 2003). In the study, 22,000 data points from streams and lakes were classified as minimally impacted, unimpaired, impaired by nutrients, or impaired by non-nutrients. Box plots for each available nutrient parameter were created, and the researchers performed yearly and summer-season analyses. While the researchers found that an increase in the median of each parameter across all data points correlated with degradation in use attainability, the range of concentrations found in each category overlapped across orders of magnitude, confounding the legitimacy of setting scientifically defensible state-wide or region-wide water quality criteria (Tetra Tech 2003).

NNE Approach

Unphased, EPA Region IX, in cooperation with the California SWRCB, decided to try again, this time with NNE — an approach that nominally responds to prior criticism of over-reliance on nutrient concentrations alone by focusing on "secondary response indicators." Development of the NNE approach largely occurred in the absence of regulated stakeholder participation (other than that of the RTAG), and ignored the suggestions of members of the regulated community that a site-specific, dynamic modeling approach must be undertaken in concert with NNE if the goal is to quantitatively evaluate nutrient-biomass relationships for particular river systems. Assuming impairment from nutrient biomass data in other watersheds (from other regions of the country or world) would not be helpful in the absence of a validated water quality model populated with a fair quantum of site-specific data. However, setting up models based on site-specific data for each waterbody to be studied is very expensive, and NNE's sponsors had a limited budget. As previously mentioned, the intention of NNE's approach is to select nutrient response indicators for evaluating impairment. NNE's approach requires consideration of biological indicators that it terms "response variables," in addition to measurement of nitrogen and phosphorus at representative sections of the water column. These response variables include measurement (or estimate) of benthic algal biomass, planktonic chlorophyll, dissolved oxygen, dissolved organic carbon, macrophyte cover, and water clarity. NNE then seeks to develop water quality targets for the response variables rather than targets for the nutrients themselves (e.g., how much algae can be present without impairing all designated beneficial uses). Numeric models, such as the currently unvalidated QUAL2K Model, are then used to convert the initial water quality targets for the response variables into numeric targets for nutrients (Tetra Tech 2006). These nutrient targets, once ground tested, can then be used by regulators to establish TMDLs for impaired water bodies, or can form the basis for establishing new water quality criteria that are better aligned with existing conditions in the watershed.

Site-Specific Data

"Response Variables"

Numeric Targets

Any water quality- based approach, no matter how well thought out, requires ground tested data before it can be considered predictive. NNE begins with assumptions about the current condition of a waterbody (with or without current data) to be studied, and those assumptions then drive future calculations. The current version of NNE divides water bodies into three Beneficial Use Risk Categories (BURCs) based upon the amount of chlorophyll a (from algae) anticipated to be in the water (see Figure 1, next page).

"BURCs"

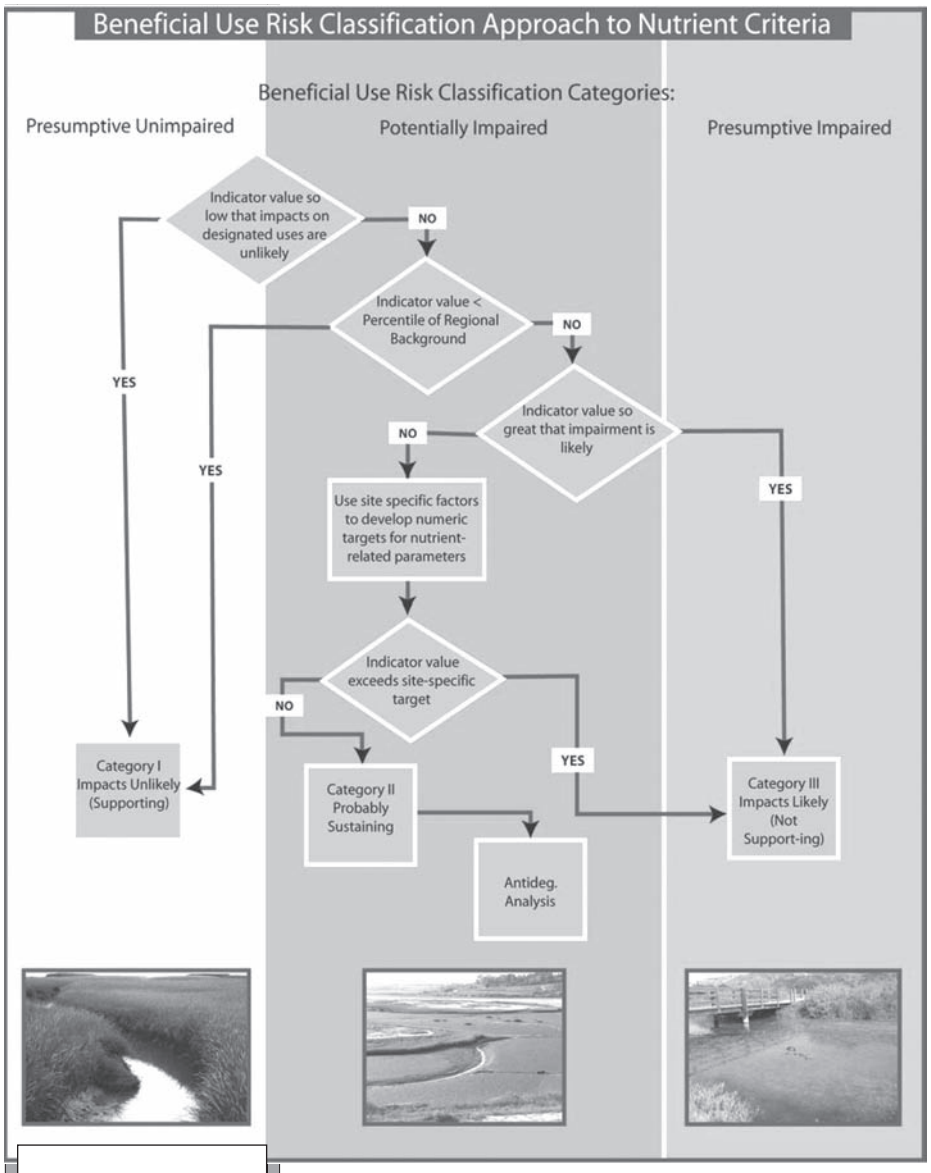


FIGURE 1: Tetra Tech BURC Graphic

BURC I waters are not expected to exhibit impairment due to nutrients, while BURC III waters have a high probability of impairment. BURC II waters are in an intermediate range where additional information and analysis may be needed to determine if a beneficial use is supported, threatened, or impaired (Tetra Tech 2006). NNE lists target levels for response indicators delineating the boundaries between BURC I/II and BURC II/III. The BURCs were developed via a literature search entirely outside of the normal regulatory process — and largely utilized data gathered outside of the arid Southwestern States. Thus, the primary assumptions that drive the remainder of NNE's process are premised upon data describing watersheds with different climate and geology. Are BURCs appropriate for arid and Mediterranean climates or for effluent-dominated streams that would be dry for most of the year in the absence of irrigation return flows, municipal stormwater and reclaimed wastewater? One suspects that the low (or no) flow conditions that prevail for much of the year in arid systems would be, at least in many cases, naturally conducive to significant algal growth irrespective of nutrient additions. High temperatures and ponding associated with low flow conditions (combined with an abundance of sunlight) are an invitation to algal growth. See CCRWQCB 2006 at 23-27 (indicating that extensive algal biomass is the "natural condition" during attenuated summertime flows in Coastal Southern/ Central California). If higher algal densities are a natural condition (for which flora and fauna in the watershed have adapted), then it would seem odd to begin NNE process with a categorization of BURC III because a high level of algal biomass (whether measured or assumed via literature searches) is likely an inaccurate predictor of a watershed's overall health — at least in Southern and Central California. In any event, the underlying assumptions regarding the BURCs must be verified for all the regions for which they are proposed before they can be used to set defensible nutrient targets or water quality standards.

Arid Climate Variables

Current TMDL Approach v. NNE Approach

NNE CASE STUDIES

Following its release of a programmatic report explaining NNE's process in 2006 (Tetra Tech (2006)), Tetra Tech, funded by EPA Region IX, began a series of four case studies intended to "validate" the NNE approach. In addition to the Santa Margarita River case study — which is discussed extensively herein — EPA also completed NNE case studies on the Klamath River in Northern California, Chorro Creek on the Central Coast of California, and Malibu Creek near Los Angeles. The regulatory status of each waterbody (e.g., its status on the 303(d) list or TMDL development) varies considerably. While the relatively unpolluted mainstem Santa Margarita is not currently slated for TMDL development (and may never be), the Klamath nutrient TMDL has been under development for several years; the Chorro Creek nutrient TMDL is currently pending approval before SWRCB; and Malibu Creek is already implementing a recently developed nutrient TMDL. It would appear that Chorro Creek may be the test case for how California will resolve differences between the current approach to TMDL setting (e.g., direct calculation of target concentration and appropriate flow or consideration of numeric nutrient measurements at different sites in combination with subjective evaluation of overall water health—such as the presence/absence of "nuisance algae"), and NNE'S approach (BURCs and measurements of secondary indicators).

Nutrients

Lower Targets for Nutrients

An examination of the nutrient targets proposed in NNE Case Studies conducted in watersheds with an existing TMDL reveals that NNE'S process produces a lower target for nutrients. Table 2 compares the TMDLs developed in Malibu and Chorro Creek with those suggested in NNE Case Studies. In both cases, following NNE's approach leads to target values for phosphorus that are two orders of magnitude more stringent than the TMDLs (developed over the course of years with extensive data and stakeholder input) for these waters. For nitrogen, the targets seem to be more closely aligned, though NNE would appear to mandate a more stringent target in most cases.

Table 2.
Comparison of NNE Case Study Results with TMDL Values Proposed or Implemented in California

Case Study	NNE Scoping Tool Range of Values (mg/L)*		TMDL Values (mg/L)	
	Total Nitrogen	Total Phosphorus	Nitrogen	Phosphorus
Chorro Creek	0.46-1.6	0.005-0.032	1.5**	0.4**
Malibu Creek	0.05-1.6	0.0014-0.028	1.0***	0.1

* The several spreadsheet models within NNE approach yield different results, hence a range of values.
** Chorro Creek TMDL targets are set differently: nitrate as N and orthophosphorus as P.
*** This is a summer value, only. The winter value is 8 mg/L total nitrogen.

As discussed in the paragraphs below, the results in the Santa Margarita River Case Study are similar to the suggestions of the Chorro and Malibu Creek studies (e.g., nutrient target recommendations that are in all likelihood lower than natural background conditions). A brief review of the SMR Case Study below provides some areas of future inquiry for stakeholders when they encounter NNE.

THE SANTA MARGARITA RIVER CASE STUDY

Undisturbed Riparian

The Santa Margarita River, located in Southern California, drains a watershed of over 740 square miles. The river reaches the Pacific Ocean at Marine Corps Base Camp Pendleton. The lower Santa Margarita watershed provides the greatest remaining expanse of largely undisturbed riparian corridor in coastal Southern California. The lower 27 miles, comprised of the main river channel and its estuary, is dominated by federal and state land ownership. The area serves as valuable habitat for federal and state listed endangered or threatened species and other wildlife.

Urban Runoff

Precipitation and urban runoff comprise a significant majority of the surface flow in the Santa Margarita River Basin. Local runoff generated by precipitation events is dependent on soil characteristics, slope, soil moisture, storm intensity, and storm duration.

Flow Variability

Due to variation in these factors, runoff quality and quantity vary greatly from year-to-year, month-to-month, and location-to-location. During extremely dry years, no surface flow reaches the ocean. In extremely wet years, the mean daily flow has reached as high as 19,500 **c**ubic **f**eet per **s**econd (cfs), making the Santa Margarita River a highly variable stream system.

Assumptions

The Santa Margarita Case Study estimated most hydrologic and ecological conditions based upon a literature search, using very limited site-specific data of recent origin. It then incorporated a number of inaccurate assumptions about interrelationships in the watershed to include the impact of solar radiation and shading on algal biomass, grazing impact upon algae, and ratios of inorganic to organic nutrients.

Beneficial Use Risk Categories (BURCs)

Rulemaking v. EPA "Policy"

As previously alluded, the first problematic assumption in NNE's Case Study was that the BURCs reflected levels of chlorophyll *a* that are protective of beneficial uses were developed based upon data from wetter regions of the United States and abroad. The concept of BURCs holds promise if developed in the proper context. However, if BURCs are to form the benchmark for assumptions about how much additional loading can be assimilated into a waterbody, they should be developed as part of a formalized rulemaking on a statewide or local basis. They should not be forced upon the regulated community as regional EPA "policy" outside of the context of formal stakeholder participation and scientific peer review.

Data Regarding Benthic Algal Biomass

Lack of Data

There was a conspicuous lack of data regarding benthic algal biomass or chlorophyll *a* for the Santa Margarita River. Having current algal biomass and chlorophyll *a* data would seem to be crucial to assessing the applicability of NNE's process in the river. Also missing was a comprehensive data set on turbidity, which is used to estimate light extinction in the water column. Only a few data points scattered across the watershed were considered.

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Watershed Extrapolation

Inferences from Oxygen and PH Measurements

Lacking algae data, the Santa Margarita Case Study used oxygen and pH data to infer algal growth by showing deviations from oxygen saturation. The Case Study stated that monitoring at one station on the river revealed that "excursions" below dissolved oxygen criteria "occur frequently in summer at the low point of the daily diurnal cycle in the Santa Margarita" thereby suggesting impairment. However, no calculation was presented regarding the actual percent of time that such excursions occurred, nor does the Case Study explain how analysis of dissolved oxygen at a single point on the river can be extrapolated to the entire watershed.

Shading Field Data

Absence of Canopy Cover and Shading Data

The Case Study did not include actual field data for canopy cover and topographic shading — an important factor (particularly in the absence of actual algal biomass data) because of the relationship between shading/canopy and temperature/photosynthesis. Generally speaking, the less canopy and shading during low flow conditions, the greater the chances of impairment associated with algae (see CCRWQCB 2006 at 23-27). Shading appears to be a key parameter within the "QUAL2K"model, upon which NNE numeric outputs are based, but in the Case Study there was no shading field data that could be plugged into the model.

Benthic Biomass

Questionable Assumptions Regarding the Ash Free Dry Weight Ratio (AFDW)

The QUAL2K model approaches predict benthic biomass based upon "**a**sh **f**ree **d**ry **w**eight" — a means of normalizing the weight calculation of the collected algae after removal of moisture. Prediction of benthic chlorophyll *a* depends upon a ratio of chlorophyll *a* to AFDW. However, no such ratio exists in the literature for Southern California streams. Meanwhile, EPA's Environmental Monitoring and Assessment Program (EMAP) database for California does include significant data pertaining to ash-free dry weight and chlorophyll *a* for benthic algae. These EMAP data were dismissed as "too low for benthic algae" by Tetra Tech (Tetra Tech 2006). The EMAP dataset is not insubstantial, containing 173 data points. The EMAP ratio of chlorophyll *a* to AFDW averages 1.673 (Tetra Tech 2006), while NNE uses a ratio of 2.5, a 49% higher estimate for anticipated benthic algae. Lacking site-specific data, it would seem to be more appropriate for NNE to have used other California data contained in EMAP, rather than substitute ratios borrowed from research on northern Rocky Mountain stream ecology.

Grazing Assumptions

Questionable Assumptions Regarding Grazing

The Santa Margarita River Case Study uses the maximum benthic algal biomass potential as assessed under typical summer conditions with no shading and no additional algal loss due to scour or grazing. This yields a theoretical upper bound on expected average biomass as a function of nutrient concentration. Tetra Tech explains that "accounting for grazing within the 'natural' death rate is problematic in general, as grazers may remove from 6 to 97 percent of algal biomass, depending on grazer density, types of algae and grazer(s), and so on. This problem is largely avoided when the intention is to predict the maximum concentration that would be present under minimal grazer pressure." Tetra Tech (2006). Grazing is a process that is likely to remove nuisance algae from a watershed through natural processes, yet it appears that NNE simply brushed past it by assuming the "worst case scenario" regarding grazing rates.

Fixed Ratio Assumption

Questionable Assumptions Regarding Ratios of Inorganic to Total Nitrogen

The NNE approach uses median ratios of **t**otal **i**norganic **n**itrogen (TIN) to **t**otal **n**utrients (TN) of 0.35 for Nitrogen and 0.65 for Phosphorus. Such fixed inorganic to organic ratios among and within diverse watersheds are unlikely to occur, but appear to have been chosen in order to simplify NNE's process. Organic nutrients are generally thought not to be as available to nuisance forms of algae as the inorganic forms. Thus, the assumption of a fixed ratio (with a higher assumption of TIN) and associated greater production of algae may have skewed the outputs from the model towards more stringent nitrogen targets. It would have been more appropriate to run NNE's model with measured inorganic nutrient concentrations rather than rely on a fixed ratio with limited statistical basis. Indeed, Tetra Tech (2006) concedes that "the large variability in actual fractions limits the applicability of a generic approach to setting total nutrient criteria based on simulation with inorganic nutrient fractions," but oddly Tetra Tech seems to have ignored its own advice in the Santa Margarita Case Study.

Natural Background

Natural Background Levels and "Existing" Beneficial Uses

Natural background levels for the Santa Margarita were not factored into NNE Case Study. Yet there is a disparity between the measured values of nitrogen and phosphorus taken from unimpaired waters region-wide versus NNE model recommendations for nitrogen and phosphorus in the Santa Margarita Case Study. While the median and mean values for total nitrogen in unimpaired waters of the region are 0.4 and 1.01 mg/L respectively (Tetra Tech 2006), NNE value for the Santa Margarita ranges from 0.23 – 0.80 mg/L — which is substantially lower than regional background. Similarly, the median and mean values for total Phosphorus in unimpaired waters are 0.07 and 0.36 mg/L respectively, while NNE value is the range

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0.0071 – 0.036 mg/L — an order of magnitude lower. No explanation is provided for the disparity between actual measured values of *unimpaired* streams and NNE target for insuring maintenance of beneficial uses. Compare CCRWQCB 2006 (indicating large scale algal growth is a natural condition for Southern California rivers during low flow conditions).

Theoretical Uses

A TMDL target that is set lower than natural background levels can, by definition, never be achieved. Nature will not permit it. Once such a TMDL is set, stakeholders must spend large sums of money to develop what amounts to a perpetual TMDL. This is not what the drafters of the Clean Water Act had in mind. 33 U.S.C. § 1313(d)(1)(D) (requiring setting of daily load capable of "implement[ing] the applicable water quality standards"). Moreover, nutrient concentration targets derived from secondary indicators are more likely to be accepted by stakeholders if they protect "existing uses" rather than those that could theoretically exist at some future date. Compare 40 C.F.R. § 131.10 (g) (allowing states the discretion to remove a designated use that is not an "existing use"). Theoretical uses may require far more stringent nutrient criteria at great cost and with limited ecological benefit. The Santa Margarita Case Study acknowledges this problem (see Tetra Tech 2007 at 4: "A major question is whether the NNE targets proposed… are appropriate to effluent-dominated streams in Southern California."), but then recommends setting unattainable nutrient targets anyway. *Id.* at 16.

Effluent Dominated Streams

FINAL THOUGHTS

EPA Memo

EPA's Assistant Administrator Benjamin Grumbles recently issued a memo to the Directors of State and Tribal water programs urging accelerated development of numeric standards and calling for development of a science-based foundation for numeric criteria in estuaries, wetlands, and large rivers. He stated that adopting numeric standards have a number of key advantages, including easier TMDL development, quantification to enable better evaluation of runoff minimization programs, and measurable, objective baselines against which to chart environmental progress (USEPA 2007). The NNE approach offers promise for how states might meet Grumble's challenge to set numeric nutrient criteria. Unfortunately, from our review of NNE Case Studies (some of which were more scientifically rigorous than others), it appears that this promise is not yet fulfilled. The early applications of NNE appear to build one conservative assumption upon the next in pursuit of protecting beneficial uses that may never exist. The result is recommended nutrient targets that are largely unachievable in the arid and effluent-dominated streams of the Southwest. Such unrealistic nutrient targets, if adopted as water quality standards or as part of a TMDL, will be extremely costly to implement — if they can be implemented at all. Perhaps of greater significance, however, is the possibility that implementation of such unrealistic standards will leave the very same watersheds without water. Beneficial uses require, above all else, a supply of water. See *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, 719 (1994): "[A] sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery." The nutrient targets for nitrogen suggested by NNE process cannot be consistently met using any currently known treatment technology. If adopted as numeric criteria under state law, there would be essentially a de facto prohibition on any kind of discharge — even those from state-of-the-art treatment facilities — for most of the watersheds in Southern California. This would preclude reclamation and remove one of the primary sources of water during the dry summer months. NNE is a good concept, but EPA and the SWRCB need to carefully consider, in consultation with impacted stakeholders, how the NNE can best achieve its objectives before formally using it in formal regulatory processes.

Unrealistic Targets

De Facto Prohibition

For Additional Information:
Jeremy N. Jungreis, Nossaman, Guthner, Knox and Elliott (Orange County, CA), 949/ 833-7800 or email: jjungreis@nossaman.com
Scott Thomas, PhD, Stetson Engineers, Inc. (Diamondhead, MS), 228/ 342-0239 or email: Scottt@stetsonengineers.com

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Nutrient Numeric Endpoints
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Jeremy Jungreis is an Of Counsel with the Orange County, CA law firm of Nossaman, Guthner, Knox and Elliott. He specializes in environmental, land use and water law — with a particular focus on water quality, water allocation and air quality compliance. He is the Programs Vice Chair of the American Bar Association Water Resources Committee, and is a frequent lecturer on environmental topics throughout the United States and abroad. He is also a Major in the United States Marine Corps Reserve — where he serves as water law counsel for Marine Corps installations in the Western United States. Until May of 2007, he represented the Marine Corps, as US Department of Justice Special Attorney and lead agency counsel, in litigation over water in the Santa Margarita River.

Scott Thomas is an ecologist with Stetson Engineers. He specializes in watershed planning, environmental planning and permitting, and water quality. His research interests include methods to improve the efficiency and effectiveness of institutional and collaborative natural resource planning and management. He has developed an operational framework for adaptive management and collaborative partnering by military bases, forests, parks, and wildlife refuges. Dr. Thomas has served as an environmental manager and Director of Water Resources for Marine Corps Base Camp Pendleton in California. Dr. Thomas is coordinator of the Santa Margarita River Water Quality Monitoring Group and facilitates the Watershed Stakeholders Advisory Committee. He obtained his PhD. in Environmental Biology and Public Policy from George Mason University, an MA in Business and Management from Webster University, and a BA in History from Hampden-Sydney College.

Colorado Water Act

"POST-APPROPRIATION" WATER MANAGEMENT

COLORADO'S WATER FOR THE 21ST CENTURY ACT

by George Sibley (Grand Gunnison, Colorado)

INTRODUCTION

The arid and semi-arid American West is entering an era of new political and economic complexity in the management of water resources. Domestic demand continues to relentlessly increase for the West's fast-growing cities, suburbs and exurbs. Except for some scattered and remote non-tributary aquifers, and some large ideas about desalinization and Canadian rivers, there are no substantial "new" water resources to develop.

Learning to Share

In the words of Colorado Supreme Court Justice Greg Hobbs, "We are no longer developing the resource; we are learning how to share the developed resource." As concerns water, learning to share does not always come easily in the American West. This is especially true of relations between cultural groups with a history of mutual tension if not outright antagonism — between farmers who control most of the water and urbanites who always need more, for instance. According to Rita Crumpton, a water manager and educator from Grand Junction, 40 percent of Colorado's homicides from the mid-1920s to 1940 were committed with irrigation shovels.

The State of Colorado is now two years into a serious legislated effort to meet the challenge of "learning how to share." It is an endeavor which intends to emphasize addressing this challenge as democratically as possible — from the grassroots up.

Supply Challenge

In most of the West today, the problem of water supply translates into the challenge of finding more water for urban and suburban growth. Often the logical, if not only, place to look is to irrigated agriculture. Agriculture still uses more than 80 percent of the water in many western basins. Under these circumstances, doubling urban-suburban use (a matter of 20 years in the faster growing areas) would only reduce agricultural water availability by around 10- to 15-percent. Such change in water use is not necessarily the emotion-laden "dry-up of farmland" one hears about in the popular media. Water "savings" of this size are often within the range of improved efficiency and conservation measures such as fallowing.

Wherever the reallocated water comes from and goes to, the process requires new political and legal infrastructure. This evolution in water management does not need to replace the West's foundational and hallowed "Prior Appropriation Doctrine" — rather, we must continue the ongoing process of refining, containing and refocusing the Doctrine's powerful engine for development.

Colorado River Compact

Refinement of the Prior Appropriation Doctrine began at least 85 years ago with the Colorado River Compact (1922). This Compact came into being to avoid an all-out "appropriation race" among the seven Colorado River states and became the model for other interstate river compacts throughout the arid region. The refining process continued through the 1960s and 70s as environmental legislation placed more controls and containments around the appropriation process in the interests of water quality and environmental sustainability.

Perhaps the transition to a "post-appropriation era" in water administration and allocation in Colorado began in earnest in 1990, when the federal government nixed the Denver metropolitan area's Two Forks project on environmental grounds, despite the thorough work Denver Water and the suburban utilities had done in lining up water rights.

Free Market Conflicts

The quest for new processes for water allocation has engendered traditional American responses. The free-enterprise contingent wants "the market" to rule, letting the flow of money in both the public and private sectors move the water toward its "highest value" — i.e. (translated) "whoever will pay the most." This process typically sets up conflict between municipal users who measure water in gallons and agriculture which measures water in acre-feet (325,380 gallons). Water law, on the other hand, generally tries to prevent outright market speculation in water, by limiting water rights to the amount of water actually put to use by a water right holder. Throughout the arid West today, large fortunes are being compiled (on paper at least) by brokers who are writing complicated lease-purchase options with farmers to gain control of water that metropolitan areas may eventually need.

Water Professionals

Another resolution, unsurprisingly favored by most of the region's water professionals, is to leave reallocation questions in the hands of the water professionals. As has been the case ever since the first irrigation societies 6,000 years ago in the Middle East, large technical and legal bureaucracies have grown up around water development and distribution in the arid West, at the federal, state and local levels. The engineers, managers, lawyers, judges and agency bureaucrats feel they are most qualified to work out the allocation of water to its best uses, driven by their knowledge of and commitment to the public interest as well as private gain.

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Power Issues

Given our political economy and the size and complexity of our water infrastructure, good arguments can be made for both of these approaches. The market and the water professionals will certainly be part of the answer for "learning to share the developed resource." However, both strategies run into power issues that make them shaky, alone or together, as primary processes for the production and distribution of water. An undirected "free market" is blind, driven by economic impulses that are not democratic, equitable or long-term in vision. Typically, bureaucracies become subject to self-preserving political impulses that put them in the service of those same undemocratic and short-term market forces.

Neither strategy gives continuity to the truly democratic and equitable impulse at the heart of the Prior Appropriation Doctrine for distributing both land and water in the American West (all the way back to when "the West" started at the Appalachians).

Distributive Justice

Legal scholar David Schor has done a brilliant job of laying out the agrarian democratic foundations of the Prior Appropriation Doctrine for arid-zone water — detailing its intent to distribute the scarce resource as broadly and equitably as possible. In his article "*Appropriation as Agrarianism: Distributive Justice in the Creation of Property Rights*" (see Ecology Law Quarterly, Vol. 32:3 at 5) Schor describes the original intent to give initiative and energy an equal footing with established wealth. In part, this was accomplished through the "beneficial use" condition, which limited a claimant to the water that one could actually put to personal or family use. Also, the seniority rule ("first in time, first in right") was established to protect that use against subsequent private or public claims — even claims of some "greater good for a greater number." While communities have reserved the right to condemn an individual's land or water resources when it becomes essential for the community's needs, they may only do so at a fair market price. Our basic political and economic infrastructures are rooted in the assumption that individual freedom, private property and the democratic process (Schor's "distributive justice") all essential to a free society.

Anti-Monopoly Roots

The West's history shows clearly how, throughout the 19th and 20th centuries, the principle of distributive justice underlying the Prior Appropriation Doctrine was often vulnerable to manipulation, exploitation and outright fraud when faced with powerful and undemocratic economic forces. This history also demonstrates how a naïve ignorance about geographic realities, especially concerning aridity, compromised even the most well-meant efforts to democratically distribute the West's land and water. Today there is precious little land or water left to appropriate. Control of water continues to pass into ever fewer hands. The Doctrine's original intent of enabling anyone with initiative and ambition to create personal wealth, rather than catering to the wealthy few, is virtually absent from most water discussions.

As Schor observes, "Whatever Colorado water law has become, its origins as a radical, anti-monopoly law are instructive" (Schor at 68). With little remaining land or water resources to appropriate, is there any way to sustain or revitalize the original democratic intent of the Prior Appropriation Doctrine?

THE COLORADO STRATEGY

1177

In 2005, the Colorado General Assembly passed House Bill 05-1177 (the "Colorado Water for the 21st Century Act" or "1177" for short). The State of Colorado is currently two years into implementing 1177. The statute's provisions incorporate a strategy that attempts to give a broader base of people a larger voice in the distribution of water — which the State's constitution does define as "the property of the public."

1177's Origin

1177 was in large part an outgrowth of the vision of a "populist Republican" from Colorado's West Slope, Russell George. "Distributive justice" has always infused George's vision in public life. He tried unsuccessfully as a legislator to get a law passed that would have required wealthy "upvalley" resort communities to distribute some of their wealth to the "downvalley" service communities where their workers had to live. That was a little too populist for Colorado, but the year after he took on the Natural Resources directorship, he began to develop the idea that materialized as the "Colorado Water for the 21st Century Act." Eric Hecox was a second important player. Hecox, formerly a Bureau of Land Management Natural Resource Specialist, was loaned to George at DNR under a Presidential Management Fellowship. Hecox helped George develop the framework for what eventually became HB05-1177.

Impetus for 1177

In a conversation with your author prior to the 2005 General Assembly met in Denver, George admitted that he did not expect 1177 to pass in its first session. It seemed too innovative, on a topic too important and too emotional. Around the State, though, events were unfolding that made "1177" seem like an idea whose time had come. Front Range entities had just spent a decade and millions of dollars pushing a proposal for developing whatever water remained in the Upper Gunnison Basin that the Upper Gunnison community (with support from both the State and the federal government) had spent millions to defeat in a bitter battle that went to the State Supreme Court twice. The Denver Water Board was engaging in negotiations with multiple entities in the Upper Colorado Basin to try to work out ways to fairly use water rights they already owned, but full use of which would be in conflict with recreational uses and values that

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their own customers embraced. The City of Aurora and other suburbs were no longer just "buying and drying" farms in the South Platte and Arkansas Basins, but had begun trying to work with agricultural users to fund fallowing programs, efficiency measures and other approaches that would gain them some water while still enabling, and even stabilizing, agricultural use of water.

There was, in other words, an extent to which 1177 ratified and raised to a more conscious level what was already beginning to happen out of a general perception of necessity. All that said, however, the level of respect George had built up in the State over the years was a factor in that passage as well. Eric Kuhn, General Manager for the West Slope's Colorado River Water Conservation District, supported that factor when he said, "Our board approached the concept with some questioning and accepted it with deference to Russ George."

Necessity + Author

1177's Focus

1177 tries to address two sets of problems that have emerged out of the efforts of Colorado's burgeoning metropolitan region to acquire water it needs to continue growing.

Interbasin Tension

The first set of problems involves some long-festering *interbasin* tensions between the metropolis surrounding Denver on the "dry side" of the State and the upper tributaries of the Colorado River on the State's "wet" West Slope. Over the course of the 20th century, federal and municipal projects were built that divert almost 500,000 acre-feet of high-quality "headwaters" water from the wet side to the dry side. For a river basin like the Colorado — which has only been running 13 to 15 million acre-feet a year on average — that large a loss from the headwaters is felt all the way down the basin.

Intrabasin Conflicts

In addition, a relatively new set of *intrabasin* problems have arisen in the South Platte and Arkansas River basins on the dry side of the State as growing cities reach out for new water supplies. Overall, high plains agriculture has always been a somewhat marginal operation for reasons of soil and climate, and there have always been farmers ready and willing to "exercise the retirement option" by selling some or all of their water. The cities have been aggressively pursuing those options. In a few places, primarily in Colorado's lower Arkansas River valley, this has had major impacts on some ditch companies and their surrounding communities. Colorado water attorney Lawrence MacDonnell examines this process in his book: *From Reclamation to Sustainability: Water, Agriculture, and the Environment in the American West* (Univ. Press of Colorado, 1999).

"No Injury" Rule

In both inter- and intrabasin situations, the destination users (buyers) have acted within the law, which requires that any change in water use demonstrate "no injury" to any other individual holders of legal water rights. There are no provisions in water law, however, for the less specific "injuries" that accrue to the larger community when significant amounts of water are removed from an area. MacDonnell's book poses questions that don't arise in water law, for instance: "What would it mean to have at least fifty thousand acre-feet less available for irrigation use? What would it mean...for the cost of their water? For the continued care of the canal? For the businesses in adjacent communities closely tied to irrigated agriculture (seed companies, farm-equipment suppliers, processors, shippers)? For the businesses that benefit more indirectly (hardware stores, clothes stores, supermarkets)? For the schools, roads, and other county services supported by property tax assessments?" (MacDonnell at 65) Because of these unconsidered concerns, the response from areas yielding water to the ever-growing metropolis has been highly emotional, including language depicting "water grabs," "dry-ups" and "theft."

Third Party Impacts

These inter- and intrabasin situations are what 1177 was created to address.

1177 COMPONENTS

Protective Language

1177 begins with a assurance that "nothing in this article shall be interpreted to repeal or any manner amend the existing water rights adjudication system," as it has evolved for everything from the basic "private usufructuary property right" to "intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decrees, or any other similar document related to the allocation or use of water" (1177 Sec. 102)

Basin Roundtables

Roundtable's Makeup

The law establishes nine "Basin Roundtables" for the State *(see map)*: eight that follow natural watershed boundaries, plus the "cultural basin" of the metropolitan area surrounding Denver. Each Roundtable is to include representatives from all county and municipal governments in the basin, representatives from all water conservancy districts within the basin, and a representative agreed on by the chairs of the Colorado House and Senate agricultural committees.

Those members then select ten at-large members from submitted nominations. The at-large members must include at least one representative each from the basin's environmental interests, recreational users, agricultural users, and domestic water providers, industrial users, and at least five holders of adjudicated water rights. The original members also choose three or more nonvoting members who represent out-

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Diversity

Needs Assessment

Basin-Wide Decisions

Interbasin Challenges

IBCC Members

of-basin parties with water-related interests within the basin. Roundtables are empowered to adjust memberships to reflect local issues. For example, the Southwest Roundtable added representatives for Native American nations in their vicinity, and the Yampa/White Roundtable invited the oil, gas and shale companies to participate as non-voting members.

The natural and cultural diversity and size differences of the basins has led to a considerable range in the size of Roundtables, from 20-some for the small and relatively unpopulated portion of the North Platte, to more than 60 for the complex and diverse Arkansas Basin. The diversity also carries over into the organization and structure of each roundtable (which is left is left up to the Roundtables). Differences may include how often to meet and how much consensus to require for reaching decisions.

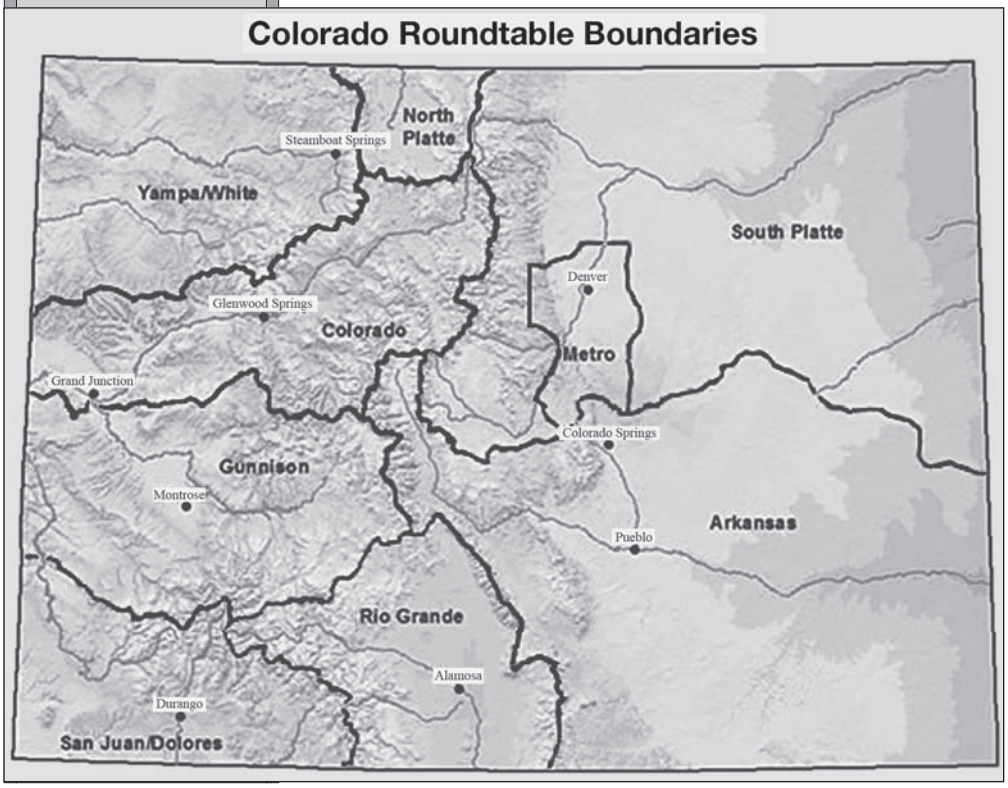
The statute outlines basic responsibilities, the most important of which is to develop a prioritized basin-wide needs assessment for the foreseeable future. The needs assessment is expected to address four things: 1) an analysis of existing consumptive water needs; 2) an analysis of existing non-consumptive water needs (environmental, recreational); 3) an analysis of available and unappropriated water supplies; and 4) proposed projects or programs to meet the Basin's identified needs. The statute also asks the Roundtables to "serve as a forum for education and debate regarding methods for meeting water supply needs." Beyond that, the focus, objectives and actions of the Roundtables are essentially left up to the Roundtables themselves (1177 Sec. 104).

The Basin Roundtables are thus an *intra*basin vehicle for inserting a more representative and more public process into the existing processes of water decision-making. They also represent a more integrated basin-wide process: it is important to remember that these watersheds, in Colorado, span a couple hundred miles of river, with cultural communities ranging from upstart high-altitude resort and recreation towns to traditional Midwestern agricultural towns. The Roundtables are the first organized effort to get disparate parts of the natural watersheds talking to each other.

Interbasin Compact Committee

To address *inter*basin challenges and opportunities, 1177 establishes an "Interbasin Compact Committee" (IBCC) to deal with situations where one Basin Roundtable decides that the only way it can meet its assessed needs is by importing unappropriated or purchased water from another basin —for example, a West Slope transfer to the metropolitan Front Range or a Denver suburb's purchase of agricultural water from Colorado's lower Arkansas Basin.

The IBCC has 27 members, one of whom is the Director of Compact Negotiations, appointed by the governor. To date, this directorship has been an additional task for the Director of the State's Department of Natural Resources, but it needn't be. If the concept of negotiation actually takes root in the State, a new official may be necessary given the amount of work that will be required.



The core of the IBCC is two members from each of the nine Basin Roundtables, chosen by the Roundtables themselves. The governor appoints six at-large members, from "geographically diverse parts of the state" and no more than three from the governor's political party. They also have to "include individuals with expertise in environmental, recreational, local governmental, industrial, and agricultural matters." The remaining two members are appointed (one each) by the chairs of the House and Senate agricultural committees.

When 1177 passed late in the spring of 2005, the IBCC was charged with creating a charter to "govern and guide all negotiations between basin roundtables," no later than July 1, 2006. The charter was to include "a negotiating framework and foundational principles to guide voluntary negotiations between

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basin roundtables," procedures for ratifying compacts or other agreements between the roundtables, and procedures for "integrating the [IBCC] processes...with existing planning, permitting, and public participation processes related to the conservation and development of water within Colorado" (1177 Sec. 105). The IBCC was also charged to develop a "public education, participation, and outreach working group" (1177 Sec. 106).

IBCC Charter

Ideally, IBCC charter had to be completed by April 2006 in order to go through the General Assembly during the 2006 January-to-May legislative session. With input and critiques from the nine Roundtables required every step of the way, this was a tall order. However, the IBCC was able to come to general agreement on their charter draft on April 5, 2006, and sent it to the General Assembly, which adopted it. [The entire Charter can be found on the Colorado Department of Natural Resources website: http://dnr.state.co.us/Home/ColoradoWaterforthe21stCentury/-Interbasin+Compact+Committee/]

IBCC - Basin Roundtables Relationship

Voluntary Participation

The IBCC has no authority to force a Basin Roundtable participate in an interbasin negotiation. Such participation is entirely voluntary. If a basin of origin were fairly certain that a destination basin could not prove the "availability" of the water it wanted to import without injury to other water right holders, then the basis of origin might decide there is no reason to participate in an interbasin negotiation. The additional factor to consider, though, is the million dollars or so it would cost to fight the claim through the water court and potential appeals.

Water Supply Reserve Account

Further indication of the basic relationship between Roundtables and the IBCC comes from following the money. When it became apparent early in 2006 that the new Roundtables and the IBCC were meeting regularly and productively (if not always amiably), the Assembly decided to put some money behind the idea. It passed Senate Bill 06-179, creating a "Water Supply Reserve Account" with $10 million in funding per year for four years raised from severance tax funds. This account is intended as incentive to the Roundtables to get their needs assessments done and put some proposals for "water activities" on the table. "Water activities" were broadly defined to include "structural and nonstructural water projects" for local consumptive or non-consumptive uses, environmental compliance programs, and studies for larger projects.

Project Analysis by CWCB

While all projects seeking "179 money" from the Water Supply Reserve Account have to originate in the Roundtables, the Roundtables take those projects to the Colorado Water Conservation Board (CBWB) for feasibility analysis and evaluation, rather than to the IBCC. The IBCC and the CWCB have worked together to develop some state-level criteria for the use of those funds, but the CWCB at least technically holds the purse strings.

The Roundtables and the IBCC thus have two similar tools for dealing with two different types of water issues: those occurring within basins, and those occurring between basins. While Colorado's water court remains available for litigation, the chance to save a million dollars or two in legal fees by utilizing a negotiating process makes a great deal of sense. Negotiation also levels the field a little for rural entities in a political and legal environment that has recently seemed to nurture the saying: water flows toward money.

Third Party Impacts

The 1177 processes also encourage discussion of the kinds of issues Lawrence MacDonnell raised, e.g. concerns about the local environment and the well-being of the local community that are not permitted in water court. For either an interbasin or intrabasin water-use change or diversion, 1177 offers equal access and footing to all stakeholders in the basins of origin and destination. As IBCC member John Porter of the Southwest Roundtable put it: "Anybody that thinks they are a stakeholder is a stakeholder." This may not simplify things, but it certainly lowers the price tag on "distributive justice."

Equal Access

OPPOSITION & SKEPTICISM

Doubts Remain

As one would expect when water is the issue, there was, and is, some opposition and a lot of skepticism remaining — some of which seemed to be people shooting themselves in the foot. Despite the fact that 1177 proposed an entirely voluntary process and gave people the opportunity to raise important issues about major projects when they had no standing in water court — not to mention the fact that it was hatched by a trusted Republican from the basin most impacted by out-of-basin diversions as noted above — many West Slopers "thought it was just another way to get water for the Front Range." (Bill Trampe, Gunnison rancher and IBCC member). Others believed that it would turn out to be an attack on their property rights. Plus, a not insignificant minority in every western state has a vested interest in expensive water conflicts laying their paper trail through water court.

Watershed Groups

More reasoned criticisms have since emerged. Despite the fact that environmental and recreational interests are granted mandatory inclusion on both the Roundtables and IBCC, there are still entities at the community and state level that feel left out. One important group of environmentally-oriented but impeccably "grassroots" organizations that were literally (although perhaps not deliberately) written out of the statute are Colorado's 22 "watershed" organizations.

Colorado Water Act

Professional Dominance

Decentralized Process

Funding Distraction

Size Matters

Credibility

CWCB Mission

Water Supply Study

Watershed groups are emphatically local organizations that make a real effort to build a broad base of community support for taking on river restoration projects, often with spectacular results. One example is the annual May community float down the North Fork of the Gunnison River, with signs posted at the projects completed by the North Fork River Improvement Association. Yet because of their local focus, which seems to fit the "spirit of 1177," they do not meet the statute's requirement that environmental representatives on the Roundtables be from "regionally, state-wide, or nationally recognized environmental conservation organizations."

Other critics point out that, despite a widening of the circle, the Roundtables are still usually dominated by the same set of water professionals — the engineers, utility and conservancy managers, lawyers, realtors and others directly involved in water development and administration. Proponents of 1177 argue that these "water buffaloes" naturally make up the majority of the constituency of the Roundtables and the IBCC — they are the ones who know water and are articulate about its use.

Proponents also point to the way the 1177 structure attempts to decentralize the way Colorado deals with water. Local water professionals have a mandate as well as a mechanism for thinking and acting more locally. There is a charge to develop a needs assessment for their own basin and a "wish list" for addressing those needs, rather than constantly being put in the position of reacting to the Front Range metropolitan conception of "the greatest good for the greatest number."

Developing a needs assessment and project list is, of course, merely an empty exercise if there is no mechanism to fund projects. The General Assembly's aforementioned SB 07-179 bill made a tentative step to address this truism. However, while the intent to show support for the unfolding process is commendable, the Assembly may have been premature. The presence of a small amount of competitive money has distracted some of the Roundtables from the basic task of developing good prioritized needs' analyses for their whole basins. Projects are being pushed forward simply because they are there and ready, not necessarily because they fit high in a basin's priorities of need. As Jenny Russell, IBCC member and environmental attorney from the Southwest Roundtable, said, "It's hard to say no to your neighbors" — especially when a clearly stated set of basin priorities and project criteria has yet to be established.

Skeptics also point to the size of some of the Roundtables — more than 60 for the Arkansas Basin — as being too large and diverse to develop a common vision and make effective decisions. Some of the Roundtables are having trouble meeting quorums for meetings due to having set a high bar for attendance, especially since the organizations depend on unpaid and often unreimbursed members.

The biggest challenge the new 1177 organizations face in gaining credibility hasn't yet fully emerged — i.e. showing constructive and creative initiative in addressing the tough issues of allocating a finite (possibly diminishing) resource in an environment of expanding demand. Ray Wright, an IBCC member from the San Luis Valley (Rio Grande) acknowledged in a meeting that "not much has come up that has been challenging." Melinda Kassen, IBCC member who directs Trout Unlimited's western water project, observed that "we have a statutory obligation to do interstate compacts, but I don't see any on the horizon."

Creative solutions will face the additional challenge of fitting the results of negotiation into the well-entrenched channels of "the way Colorado does water." This is true both on the home front for the Roundtables — where traditional ways of handling things are seldom easy to change — and for both the Roundtables and the IBCC in dealing with existing State agencies and other elements of Colorado's water establishment.

1177 & THE COLORADO WATER CONSERVATION BOARD

For the past 70 years, most of the state-level water activity in Colorado outside of municipal and federal projects, has been carried out through the Colorado Water Conservation Board (CWCB). The CWCB was created in 1937 with a mission to "Conserve, Develop, Protect and Manage Colorado's Water for Present and Future Generations." That mission, according to CWCB's website, translates into a wide range of duties: "water project planning and finance, stream and lake protection, flood hazard identification and mitigation, weather modification, river restoration, water conservation and drought planning, water information, and water supply protection" (www.cwcb.state.co.us).

The governing board of CWCB, like the IBCC, has representation from each of the major basins in Colorado appointed by the governor. During the two years before 1177 was passed, CWCB undertook a massive "Statewide Water Supply Initiative" study (SWSI) that in some respects laid the groundwork for the 1177 structure. This study collected information from local advisory "roundtables" in the same basins (minus the metro one) as have been set up under 1177. Basin Roundtables were mandated by 1177 to use the SWSI information, along with "other appropriate sources." The SWSI study tried to determine a water supply "bottom line" for each basin by determining what the basin's dependable and developable water

Colorado Water Act

Supply Gap

Perception of CWCB

Water Availability v. Project Feasibility

Study Focus

New Data

Metro's "Gap" Negotiation

West Slope Future

supply amounted to and subtracting that amount from its projected demographic needs. Gaps between predictable supply and predicted demand were found in most basins. Predictably, the largest such gap was that projected in the Front Range metropolitan area: i.e. a shortfall of around 100,000 acre-feet by 2030 (referred to as "The Gap" — see below).

Valuable as it is, SWSI study is suspect for many Roundtable members from outside of the metropolitan area. CWCB is often perceived as a top-down staff-driven agency that has historically been more focused on the "develop" part of its mission than the "conserve and protect" part and guilty of an undue focus on the needs of the Front Range metropolis at the expense of the rest of the State.

An event early in 2007 indicated how the 1177 organizations might now be changing the traditional relationships between CWCB, the metro area and the rest of the State. CWCB submitted a construction bill to the General Assembly in 2007 that requested funding for feasibility studies on several projects to move water from the West Slope to the metro area, to address "The Gap" between projected metro needs by 2030 and dependable supplies. One of these was a project to pump water from Blue Mesa Reservoir in the Upper Gunnison River basin to the metropolitan area. This is a variation on a 1980s application for water from the Gunnison basin that resulted in a denial in the district water court, which was eventually affirmed by the State Supreme Court on grounds of insufficient water availability. That case cost each side several million dollars and more than a decade in court.

Prior to 1177, the funding request for the feasibility study would have resulted in vigorous but ultimately ignorable complaints from the Upper Gunnison basin, probably a letter from the Colorado River Water Conservation District and possibly concerns expressed by other West Slope entities. This year, though, the Gunnison Basin Roundtable passed a resolution stating that all water projects originating in the Gunnison Basin should be done in the context of the Basin's needs assessment. The resolution stated that the place for CWCB to begin was with a "water availability" study, not a "project feasibility" study, for a project for which there might be no water available once the home basin's needs were met.

This issue was picked up by West Slope legislators, one of whom, Rep. Kathleen Curry, chairs the House Agriculture, Livestock and Natural Resources Committee, through which CWCB's bill had to pass. She indicated a strong interest in CWCB's response to the Gunnison Basin Roundtable. In the end, CWCB backed off and agreed that the first step should and would be a Colorado River water availability study. The legislation approving that study (Senate Bill 07-122) stated that CWCB "shall work in full consultation with, and with the active involvement of, the basin roundtables" in conducting the study.

That water availability study looms large in Colorado's water picture. CWCB's aforementioned SWSI study pulled together a lot of data on the Colorado River watersheds within the State of Colorado, but all of that data was drawn from the historic record of river flows in the 20th century. The data indicated there is substantial water available for development. West Slopers, on the other hand, want a study that takes into account the recent drought, predictions for the future based on global climate change, and the recent 500-year tree-ring studies that show a long-term river flow substantially less than 20th century records. It is difficult to imagine a study along these lines that would resolve the question of whether there is any unused West Slope water to move to the metropolis. The best result Coloradoans on either side of the Continental Divide can expect from the SB 07-122 study is that it will pull together the maximal clarifying data for the different positions Coloradoans seem ready to vigorously defend.

Ultimately, this single setback for CWCB's does not resolve who will have the power in determining what "water activities" will be going on statewide in the future. "The Gap" that the fast-growing East Slope metropolis is confronting is real enough and will probably require water from somewhere else. If the 1177 process is to be honored, addressing "The Gap" will eventually involve an "invitation" from the Metro Roundtable to one or more West Slope basins to a compact negotiation with the IBCC — which may be a defining test of the 1177 process.

Anticipating that day, the four Basin Roundtables on the West Slope have begun holding an annual rendezvous, organized by the Colorado River and Southwestern Water Conservation Districts, to consider their own strategic situation. This is a step toward reality that is at least partially due to the ongoing drought and new knowledge about the long-term history of Colorado River flows. 1177 has provided a structure for bringing the West Slope basins together. Historically, three of the West Slope basins have watched the draining of what is now 500,000 acre-feet of water a year from the Upper Colorado and been glad it wasn't from their basins. Now, however, it is more evident than ever that given the Upper Colorado River Basin's commitment to deliver a fixed amount of water to the Lower Basin under the Colorado River Compact, any water taken out of the four basins proscribes the future of all four basins, at least for consumptive uses, due to the downstream obligation. It is probable that a call to IBCC for a compact negotiation to consider additional west-to-east diversions would involve all four West Slope Roundtables — a level of regional awareness and cohesiveness that 1177 has significantly enhanced.

Colorado Water Act

Grassroots Democracy

Awareness Developing

Keys to Success

"Cross-Basin Dialogue"

CONCLUSION

BEYOND WATER RIGHTS?

Is 1177 going to work? Will adding some genuine grassroots democratic process to issues as legally convoluted and technically arcane as western water issues really help move toward resolution of the issues?

At this point, no one on the Roundtables wants to give a definitive "yes" or "no" — though most would agree that it has already had some very positive effects. Rita Crumpton, Chair of the IBCC Education Committee, observed that "people in all the basins are saying it has people talking together who have never talked together before. And people are at the table who have only been in the audience in the past."

She also noted that the Roundtables are developing new levels of awareness of the problems experienced by people in the same basin but who are so far away, physically and culturally, that they might be in different countries. From the Grand Junction area herself, she described a bus trip the lower basin Colorado River Roundtable members took up the river to Grand, Eagle and Summit Counties: "We will all have to learn to bend a little, move a little beyond the way we've tended to think about our water."

Melinda Kassen of Trout Unlimited, an environmental representative on the IBCC, says she will deem the 1177 process to be succeeding if, by its third anniversary in 2008: 1) there are "real" needs assessments in place in all basins for both consumptive and non-consumptive uses; 2) a Colorado River water availability study has been completed that everyone can live with; and 3) IBCC has prepared, with the help of the State Engineer, an acceptable draft of a statewide plan for administering a call from the Colorado River states downstream (Arizona, California and Nevada). Then, she says, "we can at long last have an informed discussion about Colorado's water future."

Eric Hecox, Manager of Interbasin Compact Negotiations, is cautiously optimistic. "We have spent the past two years building the foundation of the program on the grassroots philosophy. However, if the process is ultimately to succeed, it needs to stimulate cross-basin dialogue and understanding and address the statewide contentious issues." He points to the four-basin West Slope dialogue, and expects some other "cross-basin dialogue" to happen in the next year.

The South Platte, Metropolitan and Yampa/White Roundtables are planning to meet together to discuss ideas that have been proposed for transfering water from northwestern Colorado to the Front Range. The Arkansas, South Platte and Metro Roundtables are planning a joint meeting in October focused on the potential for Metro leasing of water from agricultural land that is being rotationally fallowed, which protects and may even improve the economic base in the agricultural areas.

For some participants, the 1177 process reflects a bigger picture. According to Ray Wright, IBCC representative from the San Luis Valley and Upper Rio Grande, "We can't deal with water as if it is simply a commodity. If we don't allow our thoughts to broaden on what water means, this won't be a very productive exercise."

History is replete with instances of alleged democracies equating a myopic perception of "majority rule" — defined as whatever is being accepted by the majority at any given time — with what is "right." A deeper issue has to do with what *truly* constitutes "the greatest good for the greatest number over the longest time."

At the heart of it — with all flaws, suspicions and historical antagonisms notwithstanding — that is the kind of issue the "Colorado Water for the 21st Century" act seeks to address in as democratic a fashion as Coloradoans can currently manage. It is a discourse not just about water, but about the kinds of ideas and lifeways that get watered in the arid West.

For Additional Information: George Sibley, 970/ 641-4340 mornings or 970/ 943-2055 afternoons, or email: george@gard-sibley.org

George Sibley recently retired from Western State College of Colorado, on Colorado's West Slope, where he had taught Journalism, Environmental and Regional Studies courses for the past two decades. He also ran the college's Colorado Water Workshop for five years, and other regional conferences hosted by the college. Last year he was appointed to the board of the Upper Gunnison River Water Conservancy District. As a writer, his most recent book is "*Dragons in Paradise*" — a collection of essays on life in post-urban mountain communities, and he is currently working on a book about the Colorado River and the "two Americas" it serves.

WATER BRIEFS

GROUNDWATER DECISION CA OIL WASTEWATER POLLUTION

On July 20, a California appellate court issued a unanimous decision supporting damages for groundwater contamination from wastewater produced from oil production activities on land owned by Aera Energy, LLC (Aera) adjacent to land owned by Starrh and Starrh Cotton Growers (Starrh). The Fifth Appellate District dealt with what the court called "a number of unique legal issues," including the nature of the "trespass," the proper amount of damages to be awarded, and attorney fees (*Slip Op.* at 2). "Causing subsurface migration of oil field wastewater into a mineral estate (groundwater pore space) of another without that landowner's consent is a trespass under California law. (*Cassinos v. Union Oil Co.* (1993) 14 Cal.App.4th 1770, 1778-1779.)" *Id.* at 6-7.

Starrh v. Aera, Case. No. F047540 and F048555 (July 20, 2007) involved wastewater or "produced water," which was pumped out of the ground in conjunction with oil production. The water is naturally high in salts and other minerals and Aera disposed of it by discharge into unlined percolation ponds. The produced water percolates down and moves into the underlying aquifers and the court found that "over time, the produced water has migrated into the aquifer underlying Starrh's property, reducing the quality of the subsurface water." *Id.*at 2.

The court held that the trespass is "continuing in nature" rather than a "permanent trespass" and thus allowed the lawsuit to go forward. A continuing trespass is an intrusion under circumstances that indicate the trespass may be discontinued or abated, while a permanent trespass is an intrusion on property under circumstances that indicate an intention that the trespass shall be permanent. The distinction is important because the "cause of action accrues and the statute of limitations begins to run at the time of entry" for a permanent trespass. "The statute of limitations for trespass to property is three years. (Code Civ. Proc., § 338.)" *Id.* at 7. "Classifying this case as a permanent trespass for purposes of the statute of limitations would bar this action completely. It would give Aera the ability to continue environmentally questionable practices with no economic incentive to employ more environmentally protective practices." *Id.* at 13.

The court remanded the case to the lower court to determine the proper amount of damages. The court held that "[A]t a minimum, the jury needs to be instructed that if it determines damages should be awarded it must 1) decide how much it will cost to restore the groundwater under Starrh's property to its original state; 2) whether the restoration costs are reasonable in light of all the competing interests (of which examples should be provided); 3) that it can deny damages if it concludes the restoration costs are unreasonable; and 4) that diminution in value may be a legitimate measure of damages where restoration costs are unreasonable. We also hold that profits can be 'benefits obtained' within the meaning of Civil Code section 3334, subdivision (b)(1), when linked to the trespass and conclude that Starrh is entitled to attorney fees under Code of Civil Procedure section 1021.9." *Id.*at 2. Under its decision regarding "benefits obtained," the court explained that the plaintiff "should be permitted to introduce evidence that some portion of Aera's profits is tied to the use of less expensive means of disposing of produced water." *Id.* at 25.

For info: Full case available at: http://california.lp.findlaw.com/ca02_caselaw/7_2007ca.html

COLORADO RIVER WEST SHORTAGES PREFERRED ALTERNATIVE

On June 15, the US Bureau of Reclamation (Reclamation) released its description of proposed interim Lower Colorado River Basin shortage guidelines and coordinated reservoir management strategies to address operations of Lake Powell and Lake Mead (particularly under low reservoir conditions). Reclamation intends to incorporate the operational elements and utilize the Preferred Alternative as its proposed action that will be analyzed in the Final Environmental Impact Statement (FEIS). Further refinement of the information presented in the Preferred Alternative will occur as the FEIS is prepared (anticipated to be published in September, 2007). Reclamation's action followed a submission of a plan by the seven Colorado River basin states which proposed various actions to be taken to address shortages (Basin States Proposal, February 3, 2006) and the Draft Environmental Impact Statement (DEIS) issued in February 2007.

Elements of the proposed action, which will be implemented through 2026, include: 1) guidelines that will identify circumstances under which the Secretary of Interior would reduce the annual amount of water available for consumptive use from Lake Mead to the Colorado River Lower Division states (Arizona, California, and Nevada) below 7.5 million acre-feet (a "Shortage") pursuant to Article II(B)(3) of the Consolidated Decree entered by the US Supreme Court in the case of *Arizona v. California* ; 2) guidelines for the coordinated operation of Lakes Powell and Mead to provide improved operation of the reservoirs, particularly under low reservoir conditions; 3) guidelines to allow for the storage and delivery, pursuant to applicable federal law, of conserved Colorado River system and non-system water in Lake Mead to increase the flexibility of meeting water use needs from Lake Mead, particularly under drought and low reservoir conditions; and 4) modification of the substance of the existing Interim Surplus Guidelines (ISG), published in the Federal Register on January 25, 2001 (66 FR 7772), and the term of the ISG from 2016 to 2026.

For info: Complete information on the Preferred Alternative, DEIS, Basin States Proposal, etc. is available on Reclamation's website: www.usbr.gov/lc/region/programs/strategies/documents.html

TRIBAL WATER QUALITY US EPA PORTAL WEBSITE

EPA has launched a portal website to help the tribal community, its supporters and the public find tribal

environmental information and data through a single web-based access point. The new cross-agency website allows EPA to consolidate and share environmental information reflecting the tribal community's perspective and needs into a central, easy-to-navigate structure. Various EPA programs, such as enforcement, waste, underground storage tanks and water, are also consolidating their tribal information through this website.
For info: EPA Tribal Portal website: www.epa.gov/tribalportal

CAFO COMPLIANCE US
EPA DEADLINES EXTENDED

EPA announced on July 18 that it issued a final rule extending certain compliance deadlines under the Clean Water Act (CWA) from July 31, 2007 to February 27, 2009 for **c**oncentrated **a**nimal **f**eeding **o**perations (CAFOs). The extension was made to respond properly to citizen comment on a federal court order. The action announced does not affect other aspects of the CAFO water permitting program since it solely addresses timing issues associated with the court ruling.

One extension applies to water pollution permit application deadlines for certain facilities that EPA defined as CAFOs for the first time in 2003. The other extension relates to when CAFOs that have a CWA permit are required to develop and implement their **n**utrient **m**anagement **p**lans (NMPs). An NMP is a plan that specifies the amount of manure that can be applied to crops so the potential for nutrient runoff to water bodies is minimized. Until NMPs and other aspects of the regulation can be implemented in accordance with the court ruling, state and existing federal rules unaffected by the court ruling will continue to apply.

EPA has been regulating CAFOs for more than 25 years. In response to a February 2005 federal court decision vacating some portions of a 2003 CAFO rule, EPA proposed a revised rule in 2006. The 2006 rule has not yet become final. The extensions are necessary to ensure that EPA finalizes the 2006 CAFO rule in response to the court decision before the compliance dates come into effect. These extensions will allow EPA time to respond adequately to a wide array of public comments on the court decision and will also provide time for states and the agricultural community to adjust to the new requirements of the 2006 proposal once it goes final.
For info: EPA's Animal Feeding Operations Web page: www.epa.gov/npdes/caforulechanges

MIGRATING PLUME AZ
GROUNDWATER ORDER

On July 13, EPA ordered the Raytheon Company and the US Air Force (USAF) to clean up a migrating plume of contaminated groundwater at the Tucson International Airport Area Superfund Site. Under the order, Raytheon, formerly Hughes Aircraft, and USAF are required to treat two solvents, trichloroethylene (TCE) and 1,4-dioxane (DX), in groundwater coming from the 1,365-acre Air Force Plant 44 facility at the southern end of the Superfund site. Raytheon and the Air Force face penalties of up to $32,500 per day, per violation if they fail to comply with the order.

The extraction and treatment system at Air Force Plant 44 is not effectively containing the contaminated groundwater plume from the facility, allowing TCE and DX to migrate north and into a drinking water treatment plant operated by the city of Tucson. The treatment plant, located at the northern end of the plume, serves approximately 50,000 Tucson residents. EPA's order requires Raytheon and USAF to install and operate an advanced oxidation process system to treat the solvents in the plume.

Sampling data from 2006 detected TCE in groundwater as high as 3,400 parts per billion and DX up to 298 parts per billion. Raytheon and USAF are required to treat contaminated groundwater to below 5 parts per billion for TCE and 3 parts per billion for DX. Currently, the city-operated drinking water plant treats TCE and is able to safely blend DX so that the water is safe to drink, according to EPA.

The Tucson International Airport Area Superfund Site, listed in 1983, has a 50-year history of chemical contamination due to its aircraft and electronics facilities and unlined landfills. Raytheon used and disposed of metals, chlorinated solvents and other substances at the Air Force Plant 44 facility since 1951. The company collected waste solvents from the manufacturing area and disposed of them in drums, which were then put into uncontrolled landfills, and also discharged liquid solvent wastes into unlined drainage channels and pits at the facility. The waste solvents and other substances migrated from disposal areas into groundwater.

EPA is currently working with several federal organizations, including USAF at Plant 44, to complete interagency agreements (also known as federal facility agreements) that establish federal Superfund cleanup and long-term operations and maintenance procedures at all National Priority List sites. To date, the agency has signed 135 of these enforceable agreements, and seeks to establish enforceable arrangements for the remaining 16 sites without agreements.
For info: Wendy Chavez, EPA, 415/760-5422; Administrative Order is available at EPA's website: www.epa.gov/region09/water/drinking/dw-enforcement.html

CALIFORNIA 303(d) LIST CA
EPA FINAL DECISION

On November 30, 2006, EPA partially approved California's 2004-2006 303(d) list submission of impaired waters. On March 8, 2007, EPA partially disapproved California's 2004-2006 303(d) List. EPA identified 36 additional waters bodies and associated pollutants for 34 waters to be added to the state's 303(d) list. The basis for these decisions and case-specific water body information is provided in the partial disapproval letter (see website). EPA provided public notice and the opportunity for public comment on their proposed additions which ended April 16, 2007.

On June 28, 2007, EPA issued its final decision regarding the waters it added to California's 2004-2006 Section 303(d) List. After reviewing

comments submitted, EPA concluded that one water body, North Fork Feather River, does not show impairment due to copper and thus is not included on the list of waters and pollutants added to the State's 2004-2006 303(d) List. The final transmittal letter with enclosures and responsiveness summary, and other related information, are available at EPA's Region 9 website.
For info: Peter Kozelka, EPA, 415/ 972-3448 or email: kozelka.peter@epa.gov; EPA website: www.epa.gov/region09/water/tmdl/303d.html

CHINATOWN REVISITED CA
OWENS RIVER AGREEMENT

A new chapter has been added to the well-known saga of the diversion of water from the Owens Valley for use in Los Angeles. On July 11, an agreement by the Los Angeles Department of Water and Power (LADWP), Inyo County, Department of Fish and Game, State Lands Commission, Owens Valley Committee (OVC) and Sierra Club that ensures the Lower Owens River will flow in perpetuity was approved by Inyo County Superior Court Judge Lee F. Cooper. The agreement, which was forged by the parties over the last several months, resolves legal issues surrounding implementation of the Lower Owens River Project (LORP), and also recognizes that LADWP has established water flows in the river.

The agreement was contained in a "stipulation and order" submitted to the Inyo County Superior Court for consideration on July 9. At a July 11th hearing, Judge Cooper approved the agreement, which spells out the criteria to determine if permanent base flows in the river are being maintained, and establishes data reporting requirements and a monetary fine structure if requirements are not met.

Under the 1991 Inyo County/Los Angeles Water Agreement, LADWP and Inyo County agreed to implement the Lower Owens River Project (LORP) as compensatory mitigation for impacts related to LADWP's groundwater pumping in the Owens Valley from 1970 to 1990. LORP provides for the release of permanent water flows in 62 miles of the Lower Owens River that was diverted to Los Angeles in 1913,with a base flow of 40 cfs. In December 2006, more than 500 people gathered at the Los Angeles Aqueduct Intake to witness the first release of permanent water flows into the Lower Owens River in almost 100 years.
For info: Carol Tucker, LADWP, 213/ 367-1815 or LADWP website: www.ladwp.com/ladwp/cms/ladwp004409.jsp

TMDL OPTIONS US
DRAFT TECHNICAL DOCUMENT

On June 22, EPA issued a draft technical document for the development of **t**otal **m**aximum **d**aily **l**oads (TMDLs) called, "*Options for the Expression of Daily Loads in TMDLs*." This document provides options for developing "daily load expressions" as a routine process in TMDLs calculated using allocation timeframes greater than daily (e.g., annual, monthly, seasonally). The document is written for TMDL practitioners who are familiar with the relevant technical approaches and regulatory requirements pertaining to TMDLs. Related to this, in November 2006, EPA issued a memorandum entitled, "*Establishing TMDL: Daily Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA et. al.*, No. 05-5015 (April 25, 2006) and Implications for NPDES Permits." The memorandum clarified EPA's expectations concerning the appropriate time increment used to express TMDLs in light of the recent decision.
For info: Memorandum is posted at EPA's website: www.epa.gov/owow/tmdl/dailyloadsguidance.html; Draft technical document at: www.epa.gov/owow/tmdl/draft_daily_loads_tech.pdf

ANTIDEGRADATION RULE NM
AMENDMENTS FOR RESTORATION

In June, New Mexico's Water Quality Control Commission (Commission) adopted amendments to the state's antidegradation policy as it applies to Outstanding National Resource Waters (ONRWs). The policy guards against degradation in all surface waters and provides special protection for ONRWs. The amendments are to allow for watershed protection and restoration projects in ONRWs, even though temporary disruptions in water quality may result.

The Commission was responding to concerns expressed during deliberations on the ONRW designation of the waters of the Valle Vidal, in particular, the strict prohibition of degradation in waters designated as ONRWs. Some ONRWs would benefit from restoration efforts. Restoration projects, however, may create temporary water impacts. For example, reintroducing meanders on a channelized stream may disturb sediment. The prohibition of any degradation was viewed as a possible barrier to implementing beneficial projects.

The amendments allow for temporary and short-term degradation of water quality, but only if it "can be shown to result in restoration or maintenance of the chemical, physical or biological integrity of the ONR…" Approval must be obtained from the Surface Water Quality Bureau (SWQB) or a designated management agency, or from the Commission directly if the project includes use of a FIFRA and New Mexico Pesticide Control Act registered piscicide. Such degradation is to be limited to the shortest time possible and may not exceed 12 months, unless approval is obtained from the Commission. Appropriate best management practices must be implemented.

Waters eligible for ONRW designation include waters that are part of a national or state park, wildlife refuge or wilderness areas, special trout waters, waters with exceptional recreational or ecological significance, and high quality waters that have not been significantly modified by human activities.

The amendments take effect August 1, 2007. The full text of the changes is available on the SWQB website at www.nmenv.state.nm.us/SWQB/Standards
For info: SWQB's ONRW website: http://www.nmenv.state.nm.us/swqb/ONRW/

CALENDAR

August 14-15 WA
Introduction to ArcHydro: Managing and Mapping Hydrologic Data with ArcGIS Workshop, Olympia, Evergreen State College, 2700 Evergreen Parkway NW. For info: Renata Sobol, NWETC, 206/ 762-1976, email: rsobol.nwetc.org, or website: www.nwetc.org/

August 14-16 WA
Northwest Power & Conservation Council Meeting, Spokane. For info: NWPPC, 800/ 452-5161 or website: www.nwcouncil.org

August 15 OR
Recycled Water Rule Amendments ODEQ Hearing, Medford, Community Justice Center, 1101 W. Main, Ste. 101, 6pm. RE: Use of Recycled Water & Wastewater Treatment Technologies. For info: Judy Johndohl, ODEQ, 503/ 229-6896 or website: www.deq.state.or.us/wq/reuse/reuse.htm

August 16 OR
Recycled Water Rule Amendments ODEQ Hearing, Bend, Health & Human Services Building, 1300 NW Wall St., Ste. 101, 6pm. RE: Use of Recycled Water & Wastewater Treatment Technologies. For info: Judy Johndohl, ODEQ, 503/ 229-6896 or website: www.deq.state.or.us/wq/reuse/reuse.htm

August 16 OR
Oregon Environmental Quality Commission Meeting, Portland. For info: Helen Lottridge, ODEQ, 503/ 229-6725, or website: www.deq.state.or.us/about/eqc/EQCagendas.htm

August 17-24 American Samoa
US Coral Reef Task Force Meeting, Pago Pago. For info: Beth Dieveney, NOAA, email: Beth.Dieveney@noaa.gov or website: www.coralreef.gov

August 20 TX
Conservation Easements Conference, Austin. For info: CLE Int'l, 800/ 873-7130 or website: www.cle.com

August 20 CA
CEQA and Global Warming: Latest Developments, Requirements & Approaches, Los Angeles, Hyatt Regency Century Plaza. For info: CLE International, 800-873-7130 or website: www.cle.com

August 20 IL
The Business of Greenhouse Gas: A Program for Business & Industry, Chicago, Mid-America Club. RE: Regulation of GHG, Resources Available for Carbon Management Strategy. Presented by Electric Utility Consultants, Inc. (EUCI) and Co-Sponsored by Perkins Coie Law Firm and URS Corporation. For info: EUCI, 303/ 770-8800 or website: www.euci.com/conferences/0807-greenhouse-gas/register.php

August 20 OR
Recycled Water Rule Amendments ODEQ Hearing, Portland, ODEQ Headquarters, 811 SW Sixth Ave., (SW Sixth & Yamhill), Room EQC-A (10th floor), 6pm. RE: Use of Recycled Water & Wastewater Treatment Technologies. For info: Judy Johndohl, ODEQ, 503/ 229-6896 or website: www.deq.state.or.us/wq/reuse/reuse.htm

August 20-22 HI
Water Resources Management 2007 Conference, Honolulu. Sponsored by the International Association of Science & Technology for Development. For info: IASTED website: www.iasted.org/conferences/home-578.html

August 20-23 AZ
North American Surface Water Quality Conference & Exposition, Phoenix, JW Marriott Desert Ridge. RE: NPDES Phase II Training, Stormwater Management for Municipalities, Consultants, Highway & Heavy Construction Contractors, Developers, & Regulated Industries. For info: For info: Steve Di Giorgi, StormCon, 805/ 682-1300 x129 or website: www.stormcon.org/sc.html

August 21 OR
Recycled Water Rule Amendments ODEQ Hearing, Pendleton, City Hall, 501 SW Emigrant Ave., 6pm. RE: Use of Recycled Water & Wastewater Treatment Technologies. For info: Judy Johndohl, ODEQ, 503/ 229-6896 or website: www.deq.state.or.us/wq/reuse/reuse.htm

August 21 CO
Pre-Summit Workshop: Environmental Health for Tribal Health Care Professionals, Denver. For info: Kris Larson, Center for Disease Control, email: Kil1@cdc.gov

August 21-23 WA
Microsoft Access Series: Managing Environmental Data with MS Access Training, Olympia, Evergreen State College. For info: Renata Sobol, NW Environmental Training Center, 206/ 762-1976, email: rsobol@nwetc.org or website: www.nwetc.org

August 22 MT
"What the Heck Is a Phreatophyte? A Field Investigation of Ecohydrologic Processes in Stream-Aquifer Systems" Lecture, Butte, Montana Tech. RE: 2007 Darcy Lecturer Dr. James J. Butler, Jr. For info: John LaFave, Montana Tech, 406/ 496-4306 or email: jlafave@mtech.edu

August 22 CA
The Business of Greenhouse Gas: A Program for Business & Industry, Oakland, URS Offices Conference Center. RE: Regulation of GHG, Resources Available for Carbon Management Strategy. Presented by Electric Utility Consultants, Inc. (EUCI) and Co-Sponsored by Perkins Coie Law Firm and URS Corporation. For info: EUCI, 303/ 770-8800 or website: www.euci.com/conferences/0807-greenhouse-gas/register.php

August 22-23 CO
2007 Tribal Nations Children's Environmental Health Summit, Denver. Organized by EPA & Pediatric Environmental Health Specialty Units (PEHSUs) from Region 6, Region 8, and WY), and Region 10 and planned in partnership with the Agency for Toxic Substances and Disease Registry (ATSDR) and Indian Health Service (IHS). For info: Alicia Aalto, EPA, 303/ 312-6967 or email: aalto.alicia@epa.gov

August 23 CA
California Water Plan Update 2009 Regional Workshop, Red Bluff. RE: Sacramento River, North Coast Region Outreach for Water Issues & Management Strategies for Water Plan's Regional Reports. For info: California Dept. of Water Resources website: www.waterplan.water.ca.gov

August 23 MT
"Getting the Information Ground Water Modelers Need: A Report from the Field," Missoula, University of Montana. . RE: 2007 Darcy Lecturer Dr. James J. Butler, Jr. For info: John LaFave, Montana Tech, 406/ 496-4306 or email: jlafave@mtech.edu

August 23-24 CA
California Climate Change Law, San Francisco. For info: CLE Int'l, 800/ 873-7130 or website: www.cle.com

August 23-24 CA
California Wetlands, San Diego, Loews Coronado Bay Resort, 4000 Coronado Bay Road. For info: CLE International, 800-873-7130 or website: www.cle.com

August 23-24 CO
Eminent Domain, Denver. For info: CLE International, 800-873-7130 or website: www.cle.com

August 24 WA
The Business of Greenhouse Gas: A Program for Business & Industry, Seattle, Perkins Coie Conf Center. RE: GHG Regulation, Resources for Carbon Management Strategy. Presented by Electric Utility Consultants, Inc. and Co-Sponsored by Perkins Coie Law Firm and URS Corporation. For info: EUCI, 303/ 770-8800 or website: www.euci.com/conferences/

August 26-30 TX
15th National Nonpoint Source Monitoring Workshop, Austin, Driskell Hotel. RE: BMPs, Modeling for NPS Monitoring & Strategies, TMDLs, River Restoration, 319 Projects. For info: Annette Paulin, Conference Coordinator, 512/ 754-9179 or website: www.rivers.txstate.edu/NPS07/

August 27 HI
NEPA & Hawai'i EIS Law Conference, Honolulu. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

August 27-29 NM
Indian Water Right Claims Settlement Symposium, Albuquerque, Hyatt Regency. Sponsored by the Native American Rights Fund and the Western States Water Council. For info: WSWC, 801/ 561-5300 or email: credding@wswc.state.ut.us

August 28-30 WA
Introduction ArcGIS 9 and Environmental Applications of GIS Training, Olympia, Evergreen State College. For info: Renata Sobol, NW Environmental Training Center, 206/ 762-1976, email: rsobol@nwetc.org or website: www.nwetc.org

August 28-30 VA
Wetlands 2007 National Symposium, Williamsburg, Colonial Williamsburg Lodge and Conference Center. RE: Watershed-Wide Strategies to Maximize Wetland Ecological & Social Services. For info: Laura Burchill, Association of State Wetland Managers, 207/ 892-3399, email: laura@aswm.org, or website: www.aswm.org/calendar/wetlands2007/wetlands2007.htm

August 29-30 OR
Oregon Water Resources Commission Meeting, Location/Agenda TBA. For info: Cindy Smith, OWRD, 503/ 986-0876, or website: www.wrd.state.or.us/OWRD/COMMIS/calendar.shtml

August 29-September 1 AZ
2007 Regional Water Symposium & 20th Annual Arizona Hydrological Society Symposium, Tucson, Westin La Paloma Resort & Spa. RE: Sustainable Water, Unlimited Growth, Quality of Life. For info: Betsy Woodhouse, Southwest Hydrology, 520/ 626-1805, email: mail@swhydro.arizona.edu, or website: www.swhydro.arizona.edu/symposium/

August 30 AZ
Innovative Strategies for Achieving Sustainable Water Use Lecture, Tucson, Temple Emanu-El, 225 N. Country Club, 7:30pm. Lecturer: Peter Gleick, Pacific Institute for Studies in Development, Environment, and Security. For info: www.watersymposium.org

August 30 OR
Oregon Task Force on Land Use Planning Meeting, Albany. RE: Review of Oregon Statewide Planning Program & Recommendations on Land-Use Policy. For info: Becky Steckler, DLCD, 503/ 373-0050 x286 or website: http://centralpt.com/pageview.aspx?edit=1&id=15666

September 2-6 CA
American Fisheries Society Annual Meeting, San Francisco. For info: AFS website: www.fisheries.org/html/index.shtml

September 3-6 Finland
Third International Congress on Climate and Water, Helsinki. RE: Impacts, Adaptation & Mitigation in Water Sector Facing Climate Change. For info: www.environment.fi/default.asp?contentid=226056&lan=EN

September 3-6 Australia
10th International Riversymposium and Environmental Flows Conference, Brisbane. For info: Emily Smigrod, +61 (0)7 3034 8230, email: emily@riverfestival.com.au, or website: www.riversymposium.com/index.php?page=Symposium2007

September 6-7 OR
Department of Fish & Wildlife Commission Meeting, Klamath Falls. For info: Director's Office ODFW, 503/ 947-6044, email: odfw.commission@state.or.us, or website: www.dfw.state.or.us/agency/commission/minutes/

September 9-14 OR
Pacific Fishery Management Council Meeting, Portland. RE: Groundfish, Highly Migratory Species, Salmon, Pacific Halibut, Habitat Measures & More. For info: Sandra Krause, PFMC, 866/ 806-7204, email: Sandra.Krause@noaa.gov or website: www.pcouncil.org

September 10 CA
CEQA: Latest Updates on Caselaw, Legislation & Policy Issues, Sacramento, Sheraton Grand. For info: CLE International, 800-873-7130 or website: www.cle.com

September 10-11 TX
Texas Water Law SuperConference, Austin. For info: CLE Int'l, 800/ 873-7130 or website: www.cle.com

September 10-11 TX
Eminent Domain, Dallas, Fairmount Hotel. For info: CLE Int'l, 800/ 873-7130 or website: www.cle.com

September 10-12 CA
California Stormwater Quality Association 3rd Annual Conference, Costa Mesa, Hilton Hotel. For info: Association website: www.casqua.org

September 11-13 OR
Northwest Power & Conservation Council Meeting, Portland, Council Offices: 851 SW Sixth Avenue, Ste. 1100. For info: NWPPC, 800/ 452-5161 or website: www.nwcouncil.org

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September 11-14 CO
Colorado Association of Stormwater and Floodplain Managers Conference & Arid Regions Conference, Breckenridge, Beaver Run Resort. For info: CASFM website: www.casfm.org/

September 12 CO
Contaminant Forensics of Petroleum, Chlorinated Hydrocarbons, and Metals: Geochemical Applications for Assessing Contaminant Transport, Risk, and Apportioning Liability, Workshop, Denver. For info: Kristine Robson, NW Environmental Training Center, 206/ 762-1976 or email: krobson@nwetc.org or website: www.nwetc.org

September 12-13 WA
NEPA Compliance: Writing the perfect EA/ FONSI or EIS Training, Seattle, NWETC Headquarters. For info: Renata Sobol, NW Environmental Training Center, 206/ 762-1976, email: rsobol@nwetc.org or website: www.nwetc.org

September 13 OR
Permitting Strategies, Portland. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 15-20 CA
Ground Water Protection Council 2007 Annual Forum, San Diego, Bahia Resort Hotel. For info: www.gwpc.org/meetings/meetings_forum/meetings_forum.htm

September 16-19 MT
Wild Trout 9, "Sustaining Wild Trout in a Changing World," Conference, West Yellowstone, Holiday Inn. RE: Balancing Native & Introduced Trout, Habitat Enhancement & Restoration, Catch-and-Release Fisheries, Genetic Conservation, & Invasive Species. For info: Dirk Miller, 307/ 777-4556, email: dirk.miller@wgf.state.wy.us, or website: www.wildtroutsymposium.com

September 17-18 CA
Energy in California 2007, San Francisco, Parc Fifty Five Hotel. For info: Law Seminars Int'l, 800/ 854-8009 or website: www.lawseminars.com/seminars/07RESCA.php

September 17-18 WA
Introduction to Engineered Log Jam Technology and Applications for Erosion Control and Fish Habitat, Workshop, La Push. For info: Kristine Robson, NW Environmental Training Center, 206/ 762-1976 or email: krobson@nwetc.org or website: www.nwetc.org

September 17-18 OR
Oregon Task Force on Land Use Planning Meeting, Salem. RE: Review of Oregon Statewide Planning Program & Recommendations to Land-Use Policy to the 2009 Legislature. For info: Becky Steckler, Dept. of Land Conservation & Development, 503/ 373-0050 x286 or website: http://centralpt.com/pageview.aspx?edit=1&id=15666

September 17-18 NV
Fourteenth Annual Western Water Law Conference, Las Vegas, Mandalay Bay Hotel and Casino. Includes Speakers from: Army Corps; Bureau of Reclamation; US Dept of Justice; Pacific Legal Foundation; Colorado River Commission of Nevada; New Mexico Office of the Attorney General; U of Kansas; More. For info: CLE International, 800-873-7130 or website: www.cle.com

September 18 MA
Implementing Sustainable Development Programs, Boston. RE: How Companies Can Achieve Competitive Business Advantage Through Sustainable Business Approaches. Successful Programs Presented and Discussed. For info: Trinity Consultants, 800/ 613-4473 or website: www.trinityconsultants.com/Training/

September 18-19 CO
Colorado Water Conservation Board Meeting, Grand Junction, Doubletree Inn. For info: www.cwcb.state.co.us/

September 18-19 CA
"California's Water Future: Expanding the Role of Groundwater," Conference, Sacramento, Sacramento Convention Center. Groundwater Resources Association of California 16th Annual Meeting. For info: GRAC, 916/ 446-3626 or website: www.grac.org/am07.asp

September 18-19 OR
Oregon Watershed Enhancement Board (OWEB) Meeting, La Grande. (See Article, ***Insider*** #412/413) For info: Monte Turner, OWEB Communications Coordinator, 503/ 986-0195 or website: www.oregon.gov/OWEB

September 20-21 CA
2007 Continuing Legal Education Workshop for Water Law Professionals, Pasadena, Pasadena Hilton. Sponsored by: Association of California Water Agencies. For info: www.acwa.com//events/acwa_events.asp

September 24-26 WA
Water Information Management Systems Workshop, Seattle, Courtyard by Marriott. Sponsored by the Western States Water Council. For info: Cheryl Redding, WSWC, 801/ 561-5300, email: credding@wswc.state.ut.us or website: www.westgov.org/wswc/meetings.html

September 24-26 CO
4th International Conference on Phytotechnologies, Denver, Mark Adams Hotel. RE: Which Technologies Using Plants for Environmental Goals are Currently Effective; Integrating Research Science and Field Application; More. For info: Steven Rock, EPA, 513/ 569-7149 or email: rock.steven@epa.gov; Lee Newman, U of SC, 803/ 777-4795 or email: newman2@gwm.sc.edu; or website: www.phytosociety.org/

September 24-25 CO
Climate Change Law Conference, Denver. For info: CLE Int'l, 800/ 873-7130 or website: www.cle.com

September 26-27 OR
Global Warming and the Effects on Environmental Laws Conference, Portland. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 27-28 CO
Colorado Ground Water Management Policy Conference, Colorado Springs, DoubleTree Hotel. RE: Legal & Administrative Opportunities for Aquifer Recharge & Storage. For info: American Ground Water Trust, 800/ 423-7748 or website: www.agwt.org/workshops.htm

September 27-28 MT
3rd Annual Montana Agriculture Legal Issues Conference, Billings. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 28 CA
Desalinization Conference, Santa Barbara. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

September 28 CA
Conservation Easements, San Francisco. For info: CLE Int'l, 800/ 873-7130 or website: www.cle.com

September 28 CA
California Environmental Quality Act (CEQA) Conference, Santa Monica. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

September 28-October 1 UT
2007 Theis Conference — Conjunctive Management of Ground Water and Surface Water: Application of Science to Policy, Park City. Sponsored by National Ground Water Association. For info: NGWA, 800/ 551-7379, email: customerservice@ngwa.org, or website: www.ngwa.org

September 30 - October 6 CA
Fourth International Conference on Irrigation and Drainage & 58th ICID International Executive Council Meeting, Sacramento. Sponsored by the International Commission on Irrigation & Drainage. For info: ICID website: www.icid2007.org

October 1-2 UT
Utah Water Law SuperConference, Salt Lake City. For info: CLE Int'l, 800/ 873-7130 or website: www.cle.com

October 2 WA
Shoreline Permitting Conference, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

The Water Report
Water Rights, Water Quality & Water Solutions in the West
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