

## Interbasin Transfers

### Scope

### Climate Change & Adaptation

### Transfer Requirements

# NEW ERA OF INTERBASIN WATER TRANSFERS

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## INTRODUCTION

An interbasin transfer of water is the diversion of water from one water source basin to another. How many of these occur depends on the scale one considers. An interbasin water transfer can take place on the scale of a transfer of water from one small stream to another, or to a transfer from water sources draining to the Pacific Ocean to water sources draining to the Gulf of Mexico. Even if you consider only large-scale transfers, trillions of gallons of water are transferred among basins each year to serve hundreds of thousands of farmers and millions of municipal residences. As noted by the US Environmental Protection Agency (EPA), in announcing its rule on the National Pollutant Discharge Elimination System and water transfers (discussed below):

Water transfers are administered by various federal, State, and local agencies and other entities. The Bureau of Reclamation administers significant transfers in western States to provide approximately 140,000 farmers with irrigation water. With the use of water transfers, the Army Corps of Engineers keeps thousands of acres of agricultural and urban land in southern Florida from flooding in former areas of Everglades wetlands. Many large cities in the west and the east would not have adequate sources of water for their citizens were it not for the continuous redirection of water from outside basins. For example, both the cities of New York and Los Angeles depend on water transfers from distant watersheds to meet their municipal demand. In short, numerous States, localities, and residents are dependent upon water transfers, and these transfers are an integral component of U.S. infrastructure.<sup>1</sup>

Water transfers may become increasingly important in the face of climate change. Scientists now tell us that even if we take measures to reduce emission of greenhouse gases, the delay in effect from past activities means that impacts will be irreversible for the next 1000 years.<sup>2</sup> Thus, while reductions in greenhouse gas emissions are important in the long-term, adaptation to climate change will also require a multi-generational focus of our efforts.

It is important to understand at the outset that climate change will not alter the total global volume of water. It will merely redistribute it on both a temporal and spatial scale. To adapt, the question will be — do we move people to water, or do we move water to people? History tells us it will be the latter. The fact that water flows, has allowed us to engineer interbasin water transfers to conform to where people live and work. Interbasin transfers have fueled the development of many major cities in the US. Adaptation to climate change is likely to drive greater interest in water transfers. Even now, climate change and population growth in arid regions are leading to new projects.

Efforts to develop major interbasin water transfers, however, face a growing list of state water law requirements, in addition to federal and state environmental law requirements. In contemplating such transfers, it is useful to understand the history of challenges to interbasin transfers. In the case of state water law, this will provide a perspective on why there is increasing scrutiny of application of the “no injury” rule in interbasin transfers from existing agricultural use to municipal use, and also why a growing number of states have adopted “area of origin protection” laws. This historic perspective can help explain what at times may seem to be disproportionate requirements. In the case of federal and state environmental laws, although generally enacted without particular focus on water transfers, the discussion of past challenges to interbasin water transfers under state and federal environmental laws can aid in careful planning to address these issues from the outset. In fact, environmental planning statutes such as the National Environmental Policy Act (NEPA) and its state law equivalents can provide both the information and the public forum to address many issues prior to construction. History informs us that environmental issues will continue to be raised if not addressed in a timely fashion.

This article begins by discussing state water laws, followed by federal and state environmental laws, in the context in which they have been enacted or used. Given the fact that most proposed interbasin transfers move water to high value municipal use, addressing these issues in the environmental compliance and design phases will reduce the likelihood of future costly challenges. A sampling of current proposals for major interbasin water transfers in the United States serves to illustrate both the increasing demand for water for municipal use and the fact that extensive environmental compliance should be undertaken prior to construction. (See Part II — in next months TWR)

## REGULATION OF INTERBASIN WATER TRANSFERS: STATE WATER LAWS

This section describes the historic context for the development of state source area protection laws and the use of the “no injury” rule, public interest criteria, and the public trust doctrine to scrutinize or limit interbasin water transfers.

## Interbasin Transfers

### Owens Valley Syndrome

### Continuing Impacts

### Basin-of-Origin Protection

### Economic Costs

### Environmental Concerns

### Subordination

### Existing Rights Protection

#### Source Area Protection Laws

Between 1905 and 1935, the Los Angeles Water Board undertook a major effort to acquire water from the Owens Valley, over 200 miles to the north.<sup>3</sup> By 1935, it owned 95% of the private farmland and 88% of the town property in the valley, and with the addition of groundwater pumping in the 1970's, envisioned serving its two aqueducts at full capacity of 666 cubic feet per second.<sup>4</sup> Even the most positive analysis of the economic benefits of the transfer describes its legacy as having a significant impact on the willingness of western rural agricultural interests to transfer water. For example, Gary Libecap's economic analysis views the purchase of land and water as good for the people of the valley, when analyzing the direct transactions and avoiding the third party impacts. His discussion of the legacy of Owens Valley, on the other hand, illustrates the much less positive impact on rural perceptions: "the Owens Valley transfer has a very negative legacy and has hindered subsequent efforts to reallocate water from agriculture to urban and environmental uses."<sup>5</sup> Libecap also quoted *The Economist* of July 19, 2003: "farmers remain suspicious of the 'Owens valley syndrome'...The 'theft' of its water...in the early 20th century has become the most notorious water grab by any city anywhere...The whole experience has poisoned subsequent attempts to persuade farmers to trade their water to thirsty cities."<sup>6</sup>

While Libecap may be correct that the short-term property values in Owens Valley rose in the face of a single relatively wealthy buyer, the story of the valley paints a picture of David versus Goliath that sometimes rises to mythological proportions in the minds of rural western water users. Not only did the water transfer alter the potential economic vision of the valley from a future based on irrigated agriculture supported by a reclamation project to one based on tourism (not a preferred economy for many rural westerners), but the litigation over environmental effects, such as air quality due to dust, continues to impact both the valley and the city of Los Angeles. One judge noted "the interminability of the [environmental] litigation, despite final judgment."<sup>7</sup>

The legacy of the real and imagined third-party and environmental effects of the "Owens Valley Syndrome" plays out today in enactment of area-of-origin protection statutes by many states. In a recent review of local area protection laws in all 50 states and the Canadian Provinces, Lawrence MacDonnell summarized the efforts to address social and economic impacts in the basin of origin through criteria for both transfer of existing water rights and development of new water rights to be diverted from the basin of origin.<sup>8</sup> The following information relies on his efforts.

Most of the criteria on third-party impacts from *change in use* of an existing water right can be found in legislation from western states, whereas criteria focused on *new* water rights are found throughout the US and Canada. This may simply reflect that with the relative scarcity of water in the West and the fact that most sources are fully appropriated, greater attention is paid to change in use. It may also reflect the Owens Valley Syndrome in which the focus is on potential loss of the economic benefits in the source basin from existing water use.

Most state water law criteria reflect concerns with the social and economic cost of water transfers. These statutes range from vague requirements to protect the local economy,<sup>9</sup> to specific limitations on the amount of land that can be fallowed in order to transfer water out of the source area.<sup>10</sup> While the economic benefits to the receiving basin often outweigh these harms in the source basin, an examination of the law indicates that in many states the legislature has nevertheless sought to assure local area economic protection. Some states even provide for mitigation of transfer impacts on tax revenue in the source area.<sup>11</sup>

Increasingly, environmental concerns are reflected in state water laws addressing water transfer. In addition to documenting loss of jobs, income, and tax revenue, third-party impacts of water transfers in the area of origin include soil erosion, blowing dust, and reduced stream flow.<sup>12</sup> MacDonnell's study shows that requirements on change in use of existing water rights include protections for fish and wildlife,<sup>13</sup> and re-vegetation and weed control for fallowed land.<sup>14</sup>

Requirements imposed on acquisition of new water rights for interbasin transfer include consideration of the future water needs within the basin of the source<sup>15</sup> and even subordination of the transferred rights to future water rights obtained for use in the source basin.<sup>16</sup> Subordination means that future water rights are given seniority in use over the transferred right, despite a later priority date (contrary to the norm of the Prior Appropriation Doctrine). In addition, many states require environmental review of interbasin transfers,<sup>17</sup> including review of impacts on water quality.<sup>18</sup> Finally, interstate compacts — concerning shared water resources that apply to the source basin — may require additional levels of review.<sup>19</sup>

#### The No Injury Rule

The rule that transfer of an existing water right can only be made if there is no injury to other existing water rights, whether junior or senior, is a basic tenant of western water common law. The incorporation of that common law concept into state water law statutes does not alter the principle in theory. For example, the Idaho Code states that "the director of the department of water resources shall examine all the evidence and available information and shall approve the change in whole, or in part, or upon conditions, provided no other water rights are injured thereby..."<sup>20</sup> The California code states that "the board...may approve such a petition for a long-term transfer where the change would not result in substantial injury to any legal user of water..."<sup>21</sup> What has changed is that with the establishment of administrative agencies, the no injury rule is more uniformly enforced with an opportunity for notice, objection, and a hearing prior to approval of a transfer.

## Interbasin Transfers

### Consumptive v. Paper Rights

#### Mono Lake Case

#### Idaho Rejection

#### Balancing Needs

#### Public Interest Criteria

#### Conservation Requirements

#### Climate Change Considerations

It is useful to consider what this means in the context of a transfer of irrigation water rights to a municipal use. First, only the amount consumptively used may be transferred. Although part of the common law of Prior Appropriation, statutes now state this expressly. Thus, the Idaho Code requires that “the change does not constitute an enlargement in use of the original right... .”<sup>22</sup> Irrigation efficiencies range considerably with irrigation method, soil type, crop type and climate. However, on average 50% of the water diverted for agricultural use is consumed, while the remainder serves to either recharge groundwater or comes back to the river as return flow. Following a water transfer, the unconsumed portion of the water right would remain in the source for diversion by junior water users. Thus, the impact of the no injury rule is to reduce the amount of water available for transfer from what would appear to be available on paper, and to require consideration of the objections of other water users from the source prior to approval of a transfer.

#### Public Trust Doctrine and State Public Interest Considerations

Although only invoked to date in California, the Public Trust Doctrine remains a potential challenge to interbasin transfers due to environmental impacts. In 1983, the California Supreme Court ruled that the state had an ongoing duty to modify water rights to protect a public trust resource.<sup>23</sup> That case involved an interbasin diversion of water from the Mono Lake watershed by the Los Angeles Department of Water and Power that was causing the lake level to drop, salinity to increase, and exposing rookeries on former islands to predators. Other states have rejected application of the doctrine. For example, the Idaho legislature enacted the following statute:

Limitations to the Application of the Public Trust Doctrine. (1)The public trust doctrine as it is applied in the state of Idaho is solely a limitation on the power of the state to alienate or encumber the title to the beds of navigable waters as defined in this chapter... (2) The public trust doctrine shall not be applied to any purpose other than as provided in this chapter. Specifically, but without limitation, the public trust doctrine shall not apply to:...

(b) The appropriation or use of water, or the granting, transfer, administration, or adjudication of water or water rights as provided for in article XV of the constitution of the state of Idaho and title 42, Idaho Code, or any other procedure or law applicable to water rights in the state of Idaho;<sup>24</sup>

It is not entirely clear that the doctrine is a product of state rather than federal common law.<sup>25</sup> If the Public Trust Doctrine is a matter of federal common law, states may not unilaterally reject its application.

Nevertheless, even if a court someday rules that the Public Trust Doctrine is a matter of federal common law and is applicable to water diversions, its application in California since 1983 has not had a substantial impact on water development and use. The California Supreme Court in *National Audubon* ruled that the application of the doctrine requires a balancing between the public interest in continued use of the diverted water and the needs of the trust resource.<sup>26</sup> The court acknowledged that the need for use may, at times, win out. Thus, the consideration of environmental and human impacts during the environmental compliance stage of project planning (discussed below), should preempt any future modification based on application of the Public Trust Doctrine.

In addition, many states would consider the Public Trust Doctrine, if applicable, to be embodied in their water codes in the form of public interest criteria. The Idaho Code, for example, prohibits development of new water rights and transfer of existing water rights “that will conflict with the local public interest... .”<sup>27</sup> In New Mexico, the state engineer may deny an application for a new water right if it is “contrary to the conservation of water within the state or detrimental to the public welfare of the state.”<sup>28</sup> Nevertheless, recent studies have shown that state agencies tend not to address the public interest criteria on the record.<sup>29</sup>

#### The Receiving Basin Conditions

Although state law criteria generally apply to the basin of origin, conservation requirements have been imposed on the receiving basin as a condition of federal assistance. For example, before the Department of Interior would support the Central Arizona Project — long proposed to bring Arizona’s share of Colorado River water to its growing cities — Arizona had to undertake management of its over-drafted groundwater basins. It did so through enactment of the Arizona Groundwater Management Act.<sup>30</sup>

Only recently has the potential for climate change to impact the receiving basin been fully recognized. The laws and institutional structures needed to address these issues are not yet in place or not yet applied, yet the impact on basins considered as sources for some proposed projects are already apparent. Tree ring studies indicate that the average annual flow of the Colorado River over the past 400 years is about 13 million acre-feet (AF),<sup>31</sup> two million AF less than the 15 million AF used to allocate the river among the upper and lower basin states in 1922.<sup>32</sup> In addition to its in-basin uses, the Colorado River serves agricultural and municipal use in southern California to the tune of at least 4.4 million AF per year.<sup>33</sup> Because the Boulder Canyon Act states the allocation as a delivery to the lower basin on a ten-year average, extended drought (regardless of climate change) would result in a call for water from the upper basin states by the lower basin states.<sup>34</sup> In 2007, the Secretary of the Interior signed an agreement with the seven Colorado River Basin states to provide guidelines for handling lower basin water shortages until 2026.<sup>35</sup> Reaching this agreement when faced with a potential crisis was a major accomplishment. Naturally, allocation decisions for shortages are best considered upfront. Interbasin water transfer projects of the future would be wise to include contingencies for climate change.

## Interbasin Transfers

### Design Life

In the Milk River basin of Montana, one of the nation's first reclamation projects serves roughly 10 percent of Montana's irrigated agriculture, or about 120,000 acres.<sup>36</sup> The project relies on a major interbasin water transfer. However, the facilities built to transfer water from the St. Mary River can no longer be operated at the original capacity. Restoration of the facilities exceeds the ability of the valley farmers to pay and ongoing efforts to seek federal assistance to restore the transfer capacity have not received approval.<sup>37</sup> Estimates of annual benefits range from \$7.7 million in agriculture and up to \$28 million in other benefits including municipal water supply, recreation, and wetlands,<sup>38</sup> yet the project cost is estimated at \$153 million. The problem facing the Milk River Valley will be present anytime a project relies on substantial public subsidy. Since the design life of the project bears no relation to the design life of the community that relies on it, the end result will be either continuing public subsidy or substantial social displacement. Publically funded interbasin transfers in the future would be wise to include contingencies for this inevitable outcome.

### Federal Regulation

#### FEDERAL AND STATE LAWS ADDRESSING THE ENVIRONMENTAL ISSUES

Environmental impacts — though considered in some state law criteria for water allocation — are primarily addressed by federal environmental law, and in some states, state environmental law. This section discusses the interaction between interbasin water transfers and federal regulation of water quality and endangered species. The section concludes with a discussion of federal and state level environmental review through the National Environmental Policy Act (NEPA)<sup>39</sup> and the state so-called mini-NEPAs which can be viewed as providing the forum for exchange of information with the public and an opportunity to address social and environmental concerns prior to construction.

#### Water Quality - Source Basin

Water quality issues resulting from interbasin transfers continue long after construction of the project. One ongoing effort serves to illustrate the far reaching implications and the need to address water quality concerns during the environmental review phase of a project.

In 1986, a California Appellate court ruled that the State Water Resources Control Board, the entity charged with both allocation of water and regulation of water quality under California law, had the authority to modify water permits to meet water quality standards. The court held that this authority extended to the federal Central Valley Project and the State Water Project, which transfer water from the Sacramento River basin to the San Joaquin River basin (*Racanelli* Decision).<sup>40</sup> Interbasin water transfer to southern California, along with other diversions, led to increased intrusion of saline water in the San Francisco Bay/Delta.<sup>41</sup> This decision was the first in a long series of efforts to address the impact of water use and transfer on water quality in the S.F. Bay/Delta and its aquatic species. The ongoing efforts to achieve the goals upheld in that decision<sup>42</sup> have imposed a substantial cost on both state and federal taxpayers, with what some have described as a failure to achieve results.<sup>43</sup>

The substantial economic, social, and political obstacles to altering major projects after completion and reliance on their continued availability suggests again that *upfront* consideration of environmental and social impacts will be the least costly approach.

#### Receiving Basin – Water Quality

In addition to impacts on the basin of origin, water quality impacts on the receiving basin have also been raised. In 2001 and again in 2006, the Second Circuit ruled that a transfer of water from a reservoir in one water basin to a creek in another basin, as part of the diversion for the municipal water supply of the city of New York, is a “discharge of a pollutant” requiring a permit under the Clean Water Act (CWA).<sup>44</sup> The water from the source basin carried a high level of sediment to an otherwise clear trout spawning stream. The basis of the court's ruling was the plain language of the CWA.<sup>45</sup> The court rejected the August 5, 2005 interpretation by EPA that a water transfer does not constitute an “addition” of a pollutant to “waters of the United States” and is therefore exempt from the National Pollutant Discharge Elimination System (NPDES) permit requirements for point sources of discharge. In doing so, it refused to grant “*Chevron* deference” to the agency interpretation because it was not done as part of rulemaking.<sup>46</sup>

In response, EPA issued a final rule on July 13, 2008, stating that “through today's rule, the Agency concludes that water transfers, as defined by the rule, do not require NPDES permits because they do not result in the ‘addition’ of a pollutant.”<sup>47</sup> This NPDES exemption applies provided the transfer has no “intervening industrial, municipal, or commercial use.”<sup>48</sup> Although interpreting precisely the same language in the CWA addressed by the Second Circuit, EPA reached the opposite result, relying on the fact that once its interpretation was promulgated as a final rule, it would be entitled to *Chevron* deference.<sup>49</sup>

Given the differences between EPA's and the Second Circuit's interpretation of the applicability of NPDES permit requirements of the CWA to water transfers, it is not surprising that EPA's rule was immediately challenged. Nine states — Minnesota, New York, Connecticut, Delaware, Illinois, Maine, Michigan, Missouri, and Washington — and the Canadian province of Manitoba, the Florida Wildlife Federation, and Earthjustice, all filed suit.<sup>50</sup> The 11th Circuit deferred to EPA's interpretation in a challenge seeking an injunction against a transfer without an NPDES permit.<sup>51</sup> Whether the Obama Administration will reconsider the rule remains to be seen. In the meantime, proponents of proposed

### Water Quality Impacts

### NPDES Permits

### EPA Transfers Rule

### Agency Deference

## Interbasin Transfers

### State Authority

transfers that will use a waterbody in the receiving basin for storage or conveyance prior to treatment and use, may want to consider the cost of removing pollutants such as sediment, components added in the source watershed, species foreign to the receiving water body, and any temperature differential between the receiving water body and the source. EPA made it clear that nothing in the rule prevents a state from imposing water quality requirements on water transfers: “[t]he Act reserves the ability of States to regulate water transfers under State law and this proposed rulemaking was not intended to interfere with this State prerogative.”<sup>52</sup>

### Dewatering

#### AQUATIC SPECIES CONSIDERATIONS

Water transfers may also affect aquatic species in either the source or receiving basin. In the receiving basin, the issues are quite similar to those discussed in the context of water quality and will not be repeated here. In the source basin, the impact on aquatic species is primarily an issue of dewatering. A review of challenges to past water transfers, arising after transfers have taken place, indicates that it would have been preferable to address the social and environmental issues upfront.

### Science v. Litigation

The science of natural and social systems is a search for the truth, whereas civil litigation is a search for finality.<sup>53</sup> Scientific inquiry has no statute of limitations, no concept of *res judicata* (principle that a final judgment of a competent court is conclusive upon the parties in any subsequent litigation involving the same cause of action). Scientific methodology is a process of disproving what we formerly thought to be true, of re-investigating questions thought solved, or of re-interpreting information in light of new discoveries.<sup>54</sup> In contrast, civil litigation is designed to close the book on a dispute, to provide a forum where no matter how flawed the inquiry, we can achieve peaceful final resolution of a dispute. In environmental and natural resource disputes, finality serves those with economic interests in the resource, whereas science serves those concerned with sustaining the resource or social system itself. The fact that one side of the litigation equation in a typical environmental or natural resource dispute seeks a goal that is not served by the forum provided helps explain why these disputes often face endless gridlock within the judicial system, or alternatively, once the judicial system provides a final answer, are revisited with new legislation.

#### Pyramid Lake Litigation

### Tribal Battle

The reality that environmental issues will continue to be visited until solved is illustrated by the ongoing battle of the Pyramid Lake Paiute Tribe (Tribe) to restore the health of the cutthroat and cui-ui fishery in Pyramid Lake.<sup>55</sup> The Truckee River takes its water supply from the snowpack of the Sierra Nevada Mountains in California, has its terminus in Pyramid Lake in the desert of Nevada, and is regulated by five major federal reservoirs and several private reservoirs.<sup>56</sup>

Pyramid Lake is located within the Pyramid Lake Paiute Indian Reservation. When viewed by John C. Fremont in 1844, the Lake and the mouth of the river were teeming with Pyramid Lake cutthroat trout (a subspecies of the Lahontan cutthroat trout) and a sucker known as the cui-ui. Diversions of the river to satisfy the irrigation project resulted in lowering of lake levels, blocking passage of fish to spawning grounds.<sup>57</sup> The Pyramid Lake cutthroat trout disappeared entirely from the Lake in the late 1930's or early 1940's, though a similar strain of Lahontan cutthroat trout was subsequently introduced.<sup>58</sup>

### Fishery Impacts

Years of challenges to the diversion of water from the Truckee River by the Tribe ultimately upheld the dominance of appropriative water rights for irrigation.<sup>59</sup> Reserved water rights for the Tribe were asserted by the United States in the Orr Ditch litigation beginning in 1913.<sup>60</sup> The United States sought reserved water rights solely for irrigation on the Reservation.<sup>61</sup> The Orr Ditch litigation spanned the period of 1913 to 1944, and fairly early in that timeframe it became clear that diversions to the Carson Basin were reducing lake levels and threatening the survival of the Pyramid Lake fishery.<sup>62</sup>

In 1921, the Acting Commissioner of Indian Affairs and the Reno Indian Agency debated their obligation to seek additional reserved water rights to preserve the fishery. The Acting Commissioner concluded that whereas the fishery was of mere local importance, the development of irrigated farmland in the arid West was of national concern and must take precedence.<sup>63</sup> The final Orr Ditch Decree awarded the Tribe reserved water rights only for the irrigation of 5875 acres.<sup>64</sup>

The level of Pyramid Lake and its unique fishery continued to decline. In December 1973, the United States filed suit in federal court seeking to open the Orr Ditch Decree to provide “sufficient waters from the Truckee River [for] the maintenance and preservation of Pyramid Lake [and for] maintenance of the lower reaches of the Truckee River as a natural spawning ground for fish.”<sup>65</sup> The Tribe was permitted to intervene. The US Supreme Court concluded that the Orr Ditch litigation already allowed consideration of the full measure of the Tribe's reserved water right, and that the doctrine of *res judicata* precluded the assertion of the new claim.<sup>66</sup> The Orr Ditch litigation addressed only water use in Nevada. In 1981, the Tribe sued California asserting reserved water rights for Pyramid Lake.<sup>67</sup>

### Increasing Demands

Meanwhile, the nearby urban areas of Reno and Sparks in Nevada grew, placing an increasing demand on Truckee River water for municipal needs. Probably not coincidentally, recreational interests focused on use of the headwaters of the Truckee River around Lake Tahoe (a lake dissected by the California-Nevada border) and use of the basin's many reservoirs grew.

## Interbasin Transfers

### ESA Impact

### Settlement Act

### Changing National Interest

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Passage of the federal Endangered Species Preservation Act of 1966, followed by the Endangered Species Act,<sup>68</sup> gave the Tribe a tool to change the engineered flow of the river. The Lahontan cutthroat trout was listed as threatened in 1975 and the cui-ui was listed as endangered in 1967.<sup>69</sup> The need for a firm municipal water supply in the Reno-Sparks area gave the tribe a powerful position. Since the proposed water transfer and some of the reservoirs are federal projects, the operation is subject to Section 7 of the Endangered Species Act, which prohibits jeopardy to a listed species by a federal activity.<sup>70</sup>

In 1990, after years of litigation and less-than-comprehensive negotiated agreements, Congress passed the Truckee-Carson-Pyramid Lake Water Rights Settlement Act.<sup>71</sup> Among other things, the Act required a process to revise the operating criteria for the Truckee River for the restoration of endangered species and to provide a drought water supply for urban areas, authorized changes to the operation of federal dams for those purposes, and provided for the purchase (from willing sellers) of water from agricultural uses served by the water transfer.<sup>72</sup> On December 5, 2008, the US Bureau of Reclamation (Reclamation) published the final rule adopting the Truckee River Operating Agreement entered into on September 6, 2008.<sup>73</sup>

Freshwater fish are considered by the Biological Resources Division of the US Geological Survey to be the single most endangered vertebrate group in the country.<sup>74</sup> Nearly two-thirds of the native fish in the Great Basin are either listed under the ESA or considered of concern by the US Fish and Wildlife Service.<sup>75</sup> Studies show a strong correlation between the location of listed species and water development, noting that water development is second only to the introduction of non-native species in posing a threat to native fish.<sup>76</sup>

Not surprisingly, the first major battle to determine just how far Congress intended to go to prevent destruction of a species when it enacted the ESA was between a dam and a fish. In a stroke of the pen the US Supreme Court gave us the full measure of the change in national interest which had occurred since the early 1900's.<sup>77</sup> Whereas policy battles between fish and consumptive use of water in the early twentieth century viewed Reclamation development for irrigation as a national interest and fish as of merely local concern,<sup>78</sup> by 1970, this had changed.<sup>79</sup>

#### FORUM FOR ADDRESSING CONCERNS: ENVIRONMENTAL REVIEW

In current plans for interbasin water transfers, the environmental review required by NEPA and its state level equivalents, such as the California Environmental Quality Act (CEQA),<sup>80</sup> provide an initial forum to identify and address the problems previously found and/or challenged after construction. NEPA is triggered by federal involvement or funding.<sup>81</sup> With one notable exception, the proposals discussed in this section have federal involvement either through direct participation, funding, or permitting. This discussion focuses on NEPA, which imposes procedural requirements during the planning stages of a project. However, it is important to note that some state level equivalents also include substantive requirements to mitigate identified impacts.<sup>82</sup>

Although NEPA does not include substantive requirements, the development of an Environmental Impact Statement (EIS) will identify many of the issues discussed above, including water quality, endangered species, invasive species, dust from fallowed land, and economic impacts, based on the science available at the time.

In addition to compiling and analyzing scientific information in light of the proposed project, the agency involved must take and respond to public comments.<sup>83</sup> In this stage, many of the concerns can be addressed. Despite the absence in NEPA of a substantive requirement to modify plans in the face of identified human and environmental impact, the political reality of the cost (frequently requiring federal funding), generally public nature (frequently requiring approval by elected officials), and magnitude of the proposed transfers means that real issues raised by legitimate opposition must be addressed.

#### CONCLUSION

It is very likely that in the face of climate change, reliance on interbasin water transfers to serve municipal needs will not only continue, but will increase. The history of opposition to the impacts of past water transfers, informs us that careful, upfront assessment and design will pay off in the long run. The environmental review and permitting stages offer the appropriate forums to accomplish these tasks.

Part II of this article will be presented in The Water Report #73 (March 15, 2010). Part II will examine several examples of pending plans for interbasin water transfers in the US.

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This article is a revision of a paper by Barbara Cosens entitled *The Eternal Quest for Water: Historical Overview and Current Examination of Interbasin Transfers of Water*, originally published by the Rocky Mountain Mineral Law Foundation in the Proceedings of the 55th Annual Rocky Mountain Mineral Law Institute (2009).