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## Unanswered Prayers: The Upper Missouri River Basin States Take on the U.S. Army Corps of Engineers

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# UNANSWERED PRAYERS: THE UPPER MISSOURI RIVER BASIN STATES TAKE ON THE U.S. ARMY CORPS OF ENGINEERS

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## INTRODUCTION

In the late 1880s and early 1890s, a Paiute Indian named Wovoka preached a new religion to the Indians of the American West. Wovoka taught the Indians to perform a Ghost Dance that would lift them up to the heavens with their fallen comrades while the whites were destroyed by a great flood which swept across the

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land. The Indians would then return to earth to reclaim their land and once again the slaughtered buffalo would roam the plains.

Nowhere was the Ghost Dance better received than on the Sioux lands in present-day South Dakota. The Sioux readily took to the new religion and began performing Ghost Dances across their reservations. The Seventh United States Cavalry, sent to restore order, intercepted a ragged band of cold and hungry Sioux, mostly women and children, led by Big Foot fleeing to safety in the Pine Ridge agency on December 28, 1890.<sup>1</sup> The out-numbered Sioux surrendered and began the forced march to Wounded Knee, South Dakota. Confusion erupted the next morning while the soldiers disarmed the Sioux. The soldiers responded with brutal force, gunning down the defenseless prisoners. In the end, nearly 300 of the 350 Sioux lay dead.<sup>2</sup> The soldiers lost twenty-five men, most of them struck by their own bullets and shrapnel.<sup>3</sup>

In a strange way, it seems that Wovoka may have been a century ahead of his time, but now the gods wear the uniform of the Army Corps of Engineers (Corps). Residents of the upper basin states of Montana, North Dakota and South Dakota feel that the Corps deprives them of economic opportunities and that this deprivation speeds the departure of white residents from the region. The Corps' management policies on the reservoirs of the Missouri River Basin System favor the relatively small and localized navigation industry in the lower basin over the growing recreation industry in the upper basin states. These policies leave upper basin states with few opportunities for sustained economic development. The Missouri River Basin System, authorized by the Pick-Sloan Plan of 1944, promised economic prosperity to the upper basin through numerous irrigation projects for parched farmers in the arid region and cheap hydroelectric power produced from the planned dams on the river. Figure 1 shows the Missouri River Basin and the location of the main stem reservoirs. Most of the irrigation projects failed to materialize due to budget constraints and much of the electricity produced by the dams on the system is shipped out of the region.

Surprisingly, the recreation industry on the reservoirs backed up behind the huge dams in the upper basin developed as a consolation prize for these states. Sport fishing and other water sports

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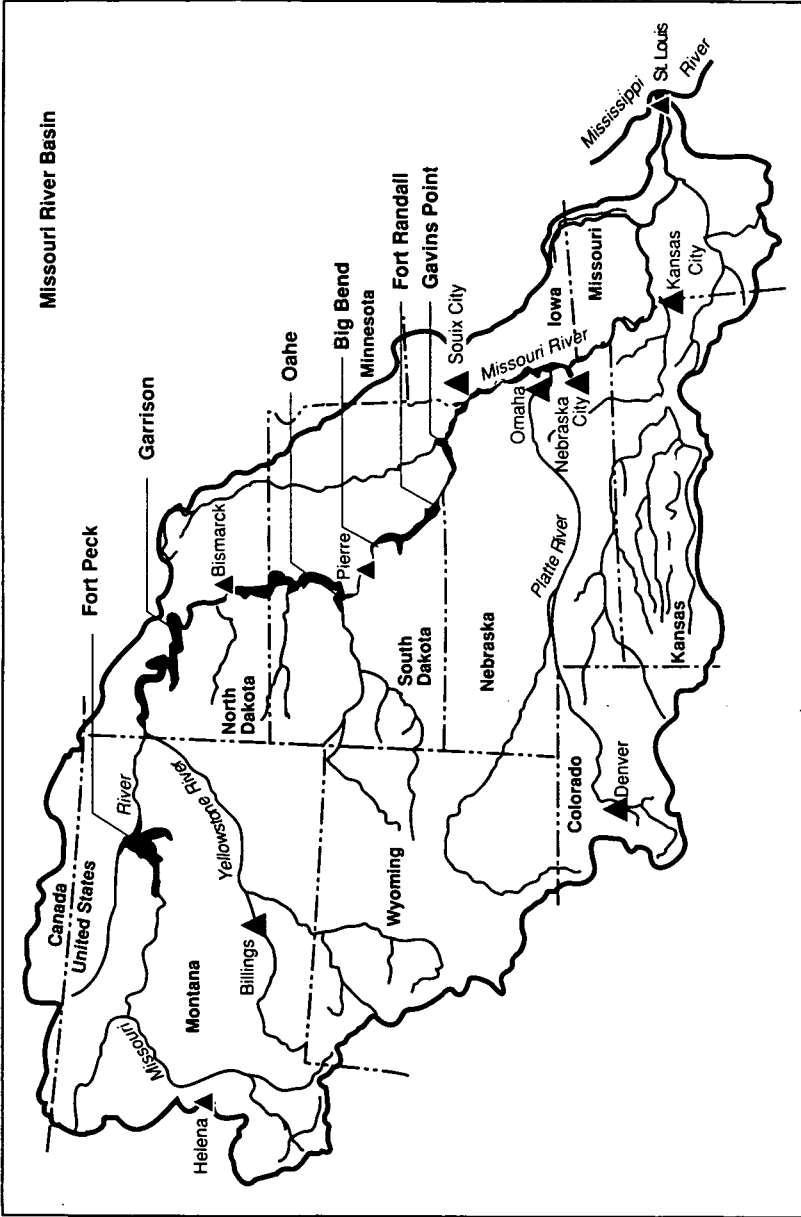
1. DEE BROWN, BURY MY HEART AT WOUNDED KNEE, AN INDIAN HISTORY OF THE AMERICAN WEST 440 (1970).

2. *Id.* at 444.

3. *Id.*

FIGURE 1

Figure 1 Map of the Missouri River Basin and Location of Missouri River Reservoirs



Source: U.S. Army Corps of Engineers.

bring tourists to the reservoirs and jobs to the sparsely-populated upper basin states. But now, a six-year drought that lowered reservoir levels threatens the future viability of this consolation prize. The Corps' adherence to a policy that discharges water from the reservoirs faster than it is being replenished in order to keep barges afloat in the lower basin exacerbates the threat. The discharges led to massive fish kills, marinas and boat ramps suffered, and water-users found their intake pipes high and dry. The continuing loss of family farms and now the threat to the recreation industry only accelerates the exodus of people from the upper basin states. The population in parts of western Nebraska has fallen by half since 1930, and fewer people live in North Dakota today than in 1920.<sup>4</sup> The Ghost Dance prayers of the Sioux may finally be answered.

The upper basin states filed a lawsuit in federal district court in Billings, Montana, to prevent these prayers from being answered. The suit challenges the Corps' management priorities set out in its Master Manual.<sup>5</sup> The Master Manual places a higher priority on navigation than recreation despite the huge disparities in value of the activities to the basin.<sup>6</sup> The Corps has repeatedly claimed that it lacks statutory authority to modify project operations to benefit recreation at the expense of navigation and power.<sup>7</sup> The projected outcome in the courts is murky due to the inherent dangers involved in discerning legislative intent from the cold pages of the congressional debate. Regardless of the suit's outcome, the time has come for the Corps to face economic reality and develop management policies that favor those activities that benefit the greatest number of people in the basin.

Part I of this article describes the geography, climate and resources of the Missouri River Basin. Part II examines the background of the Pick-Sloan Plan, both as envisioned by its proponents in 1944, and the actual results of that plan today. Part III analyzes the current lawsuit filed by the upper basin states against the Corps and attempts to unravel the legislative intent of the pro-

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4. *The Missouri River, Back to Nature?*, THE ECONOMIST, Oct. 13, 1990, at 29 [hereinafter *Missouri River*]. The 1990 population estimates in the upper basin states rank as follows: North Dakota — 639,000, South Dakota — 696,000, and Montana — 799,000. U.S. DEP'T OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES 1991 20 (111th ed. 1991).

5. U.S. GEN. ACCOUNTING OFFICE, GAO-RCED-92-4, WATER RESOURCES: CORPS' MANAGEMENT OF ONGOING DROUGHT IN THE MISSOURI RIVER BASIN 32 (Jan. 1992) [hereinafter CORPS' MANAGEMENT].

6. *Id.*

7. *Id.*

ponents of the Pick-Sloan Plan through a brief review of the legislative history. Part IV offers an alternative view on how the Corps should operate the Missouri River system. Finally, the article concludes with a possible explanation behind the Corps' apparent unwillingness to face economic realities in its management of the Missouri River system and other waterways throughout the nation.

## I. BACKGROUND

### A. GEOGRAPHY OF THE MISSOURI RIVER BASIN

The Missouri River Basin encompasses parts of ten states and two nations<sup>8</sup> that form the heart of the Great Plains of North America. The drainage basin is bound on the west by the Continental Divide and formed by the Rocky Mountains; on the north by a less dramatic elevation separating it from the Hudson Bay drainage, including the Red River; on the east by the Mississippi River drainage; and on the south by the Ozark Uplift and an east-west ridge across central Kansas that separates it from the Arkansas River drainage.<sup>9</sup> The Missouri rises in Three Forks in southwestern Montana at the confluence of the Jefferson, Madison and Gallatin Rivers and begins its 2,500 mile journey to the Mississippi River near St. Louis, Missouri.<sup>10</sup> The Missouri, with the lower Mississippi River which it joins in St. Louis, Missouri, is the longest river in the United States and the fourth longest in the world.<sup>11</sup>

The Missouri flows north to Fort Benton, Montana before turning east for a 400 mile run to Garrison, North Dakota.<sup>12</sup> Near the Montana-North Dakota border, almost 1,000 miles from its source, the Missouri picks up the waters of Yellowstone River and becomes formidable. From Garrison the river moves south to Sioux City, Iowa and Kansas City after it captures the Platte and Niobara Rivers in Nebraska and the Kansas and James Rivers in Kansas.<sup>13</sup> The Missouri again heads east at Kansas City, across the State of Missouri, to its confluence with the Mississippi River sev-

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8. U.S. ARMY ENG'R DIV., WATER RESOURCES DEVELOPMENT BY THE U.S. ARMY CORPS OF ENGINEERS IN MISSOURI 19 (Jan. 1985) [hereinafter WATER RESOURCES]. It drains all of Nebraska, large parts of North Dakota and South Dakota, all of Montana and Wyoming east of the Continental Divide, parts of Colorado, Iowa, Kansas and Missouri, and a small part of Minnesota. The Basin also includes parts of Alberta and Saskatchewan, Canada. *Id.*

9. *Id.*

10. MICHAEL C. ROBINSON, WATER FOR THE WEST, THE BUREAU OF RECLAMATION 1902-1977 83 (1979).

11. *Missouri River*, *supra* note 4, at 28.

12. ROBINSON, *supra* note 10, at 83.

13. *Id.*

enteen miles north of St. Louis.<sup>14</sup> Along the way the Missouri drains an area covering roughly 530,000 square miles, nearly one-sixth of the surface area of the continental United States, including 9,715 miles in Canada.<sup>15</sup>

Narrow canyons and rugged mountains characterize the upper Missouri Basin from Three Forks to Fort Benton, with elevations of the surrounding lands ranging from 13,000 feet on the highest mountain peaks to 3,320 feet on the valley floors near the end of this section.<sup>16</sup> The Missouri enters the Great Plains province near Great Falls, Montana, where it flows through the physiographic subdivisions known as the Glaciated and Unglaciated Missouri Plateau. The topography features smoothly sloping terrace lands and local badlands, with elevations that range from 5,000 feet to 1,210 feet. At a point about forty miles above Yankton, South Dakota the river enters a region that features dissected till plains of the central lowlands until it reaches Kansas City. There the river flows east along the northern edge of the Osage Plains and the Ozark Plateau. Finally, at a point near St. Charles, Missouri it re-enters the central lowlands to join the Mississippi River.<sup>17</sup>

Rainfall levels along the basin vary dramatically with the changing landscape as the Missouri makes its way downstream. The ninety-seventh meridian marks the dividing line between the Middle West's humid areas and the West's semi-arid and arid areas, as well as between the upper basin and lower basin.<sup>18</sup> Near the eastern boundaries of the Dakotas, the meridian divides about one-fourth of Nebraska and Kansas from their western portions, while Missouri and Iowa lie wholly to the east of the line.<sup>19</sup> The lower basin incorporates all of these regions east of the ninety-seventh meridian.<sup>20</sup> Rainfall levels in the lower basin region can reach as high as forty-four inches annually.<sup>21</sup> This wetter climate facilitates crop production and makes irrigation a much lower priority for farmers in the lower basin region. By contrast, some regions of the upper basin receive as little as six inches of annual

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14. *Id.*

15. WATER RESOURCES, *supra* note 8, at 19. In addition, the Missouri River Basin contains 113 million acres or 25% of the nation's cropland, 175 million acres of grassland, 45 million acres of forest and woodland and 7 million acres used for cities, towns and roads. *Id.*

16. *Id.*

17. *Id.*

18. MARIAN E. RIDGEWAY, THE MISSOURI BASIN'S PICK-SLOAN PLAN 48 (1955).

19. *Id.*

20. *Id.*

21. WATER RESOURCES, *supra* note 8, at 19.

precipitation,<sup>22</sup> with none of the upper basin states averaging more than fourteen inches annually.<sup>23</sup> Most crops require a minimum of fifteen inches of rain per year to produce and this rain must fall almost wholly within the growing season for it to be effective. Due to these paltry rainfall amounts, most regions of the upper basin require irrigation in order to sustain agriculture. Another fact further dramatizes the aridity of the region. Despite being the twelfth longest river in the world, the Missouri ranks only seventh in the United States in terms of annual flow.<sup>24</sup>

The agriculture practiced in the two regions before the building of the Pick-Sloan projects reflected the differing availability of water between the upper and lower basin states. Farmers in the lower basin grew corn, wheat and a variety of small grains, while farmers in the arid upper basin were limited to range livestock and some wheat and small grains.<sup>25</sup> Thus, it seems nearly inevitable that the varied geography, climate and landscape of the basin would lead to disputes over which activities should have higher priorities in this massive region.

## B. COMPETING AGENCIES

### 1. *U.S. Army Corps of Engineers*

The civilian branch of the Corps began clearing driftwood and sunken ships out of the nation's waterways right after the Revolutionary War. The Corps surveyed land and waterways throughout the nineteenth century.<sup>26</sup> By the end of the century, the Corps concentrated its activities on navigation and flood control. The Corps dredged and straightened rivers and deepened harbors to accommodate barge and ship traffic and to facilitate deep-draft ships.<sup>27</sup> Originally the Corps controlled floods by building levees and dikes rather than dams and reservoirs, in part because the Corps confined most of its activities to the East and Middle West until the Depression in the 1930s.<sup>28</sup> The East offered very few steep canyons or natural basins in which to site dams and

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22. *Id.*

23. MONT. DEP'T OF AGRIC., MONTANA AGRICULTURAL STATISTICS 8 (1990). Annual precipitation levels in central Montana, the highest in the upper basin, average 13.72 inches. *Id.*

24. MARC REISNER, CADILLAC DESERT, THE AMERICAN WEST AND ITS DISAPPEARING WATER 189 (1986).

25. RIDGEWAY, *supra* note 18, at 57.

26. *Id.* at 19.

27. REISNER, *supra* note 24, at 179-80.

28. *Id.* at 180.



reservoirs.<sup>29</sup>

The Corps broke out of its self-imposed confinement to the East in the 1930s and soon discovered the virtues of dams and reservoirs as part of comprehensive flood control programs. The dams built by the Corps possessed a distinct advantage for irrigators in the West over those built by its rival, the Bureau of Reclamation: the irrigation water from a dam built chiefly for flood control by the Corps was free.<sup>30</sup>

Today the Corps engages in a dizzying array of tasks. It continues to promote navigation by straightening and deepening rivers and harbors. Its flood control tools now include building dams and reservoirs, as well as riprapping rivers and constructing levees. In addition, the Corps builds fish hatcheries and regulates private dredging and filling of waterways.<sup>31</sup>

## 2. *Bureau of Reclamation*

The 1902 Reclamation Act<sup>32</sup> authorized the federal government to develop water storage facilities in promising locations throughout the West. The government agreed to deliver water to irrigators under contract, and "recover its costs through payments that the irrigators would make over time from the profits of their newly irrigated land."<sup>33</sup> According to the once popular phrase, "reclamation would pay its own way."<sup>34</sup>

The Reclamation Act authorized the Secretary of Interior to administer the development, but it established no program to do the work.<sup>35</sup> The former Division of Hydrography was expanded and transformed into the Reclamation Service within the U.S. Geological Survey. In 1907, the Reclamation Service became an independent agency within the Department of Interior.<sup>36</sup> There it remains.

The Bureau of Reclamation (Bureau) completed its first major project, Roosevelt Dam, on the Salt River in southern Arizona in 1911.<sup>37</sup> Today, the Bureau's vast empire extends across the West with over 300 dams, 7000 miles of canals and aqueducts, 50 hydro-

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29. *Id.* at 181.

30. *Id.*

31. *Id.* at 179-81.

32. 43 U.S.C. § 371 (1988).

33. JOSEPH L. SAX ET AL., *LEGAL CONTROL OF WATER RESOURCES* 644 (2d ed. 1991).

34. *Id.*

35. ROBINSON, *supra* note 10, at 19.

36. *Id.*

37. *Id.*

electric generators, and 140 pumping stations.<sup>38</sup> The Bureau currently supplies irrigation water to over twenty percent of all irrigated acreage in the West, and drinking water to an additional twenty million domestic users.<sup>39</sup>

While partial subsidization of the water projects to benefit small farmers may have been envisioned at the time of the Bureau's inception, even the program's strongest congressional supporters would be surprised to discover the magnitude of the subsidies that exist today. The original 1902 Act required that irrigators repay the costs of a project interest-free within ten years. The Act also prohibited the sale of water from the projects to any tract of land greater than 160 acres held by one owner, and required farmers receiving water to live within 50 miles of the irrigated land.<sup>40</sup> Little remains of these initial repayment plans.

Congress significantly loosened all of these requirements throughout the intervening years. It extended the payback period to fifty years, with the first ten years considered a "development period," requiring no payments.<sup>41</sup> This revision amounted to a ninety percent subsidy at today's interest rates.<sup>42</sup> In addition, the Reclamation Act of 1939 permitted the Bureau to shift any project costs exceeding the irrigator's "ability to pay" to other project beneficiaries, such as power consumers and recreation.<sup>43</sup> This policy led to the "multiple-purpose" concept used to justify later projects. By the 1930s, the Bureau also ignored the residency requirement and stopped objecting when farmers managed to circumvent the 160-acre limitation.<sup>44</sup>

With all of the prime projects built by the 1930s, even these concessions could not justify the construction costs of more major reclamation projects.<sup>45</sup> "[T]he Bureau devised the plan of considering an entire river basin development program as an integrated project."<sup>46</sup> In this way, the Bureau could offset construction and development costs of inefficient projects with revenue from power

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38. SAX, *supra* note 33, at 621 n.3.

39. *Id.*

40. *Id.* at 645.

41. *Id.* at 645 & n.3.

42. *Id.* at 645.

43. SAX, *supra* note 33, at 645.

44. *Id.* at 646. Farmers managed to avoid the acreage limitations through a series of disingenuous efforts. These efforts included simply leasing land from small farmers who qualified for the subsidized federal water. In addition, farmers resorted to family trusts and multi-party ownership devices that granted title to separate 160-acre parcels to different parties, but operated by the same entity. By 1979, these farms constituted over 75 percent of the total acreage furnished with water by the Bureau. *Id.*

45. ROBINSON, *supra* note 10, at 77.

46. *Id.*

production, flood control, and recreational resources at other more profitable dams on the same system.<sup>47</sup> The advent of multiple-purpose development allowed the Bureau to move ahead with basin-wide plans for several western rivers—the Missouri River among them. One caveat should be noted regarding multiple-purpose river development: the operation of one component of the system, such as hydroelectric power production, may be subject to constraints imposed by successful operation of other components of the system, such as flood control and navigation.<sup>48</sup> This constraint can, and often did, lead to conflicts between users of competing components of the system.

### C. FLOODING ON THE MISSOURI RIVER BEFORE THE PICK-SLOAN PLAN

The Missouri River ran almost completely uncontrolled before 1940 when the Corps completed the 140-mile-long Fort Peck Reservoir in eastern Montana. Fort Peck, originally designated as a flood control reservoir, marked the Corps' first major attempt to ease the recurring cycles of drought and flooding that plagued the basin. Discharge from the Missouri at Herman, Missouri, where it enters the Mississippi, had been measured as low as 4,200 cubic feet per second (cfs).<sup>49</sup> By contrast, in June 1944, this same discharge measured 892,000 cfs—enough water in a day to satisfy New York City for seventy years.<sup>50</sup> Additionally, prior to the construction of reservoirs on the main stem under the Pick-Sloan Plan, the lack of a confining canyon exacerbated potential flooding problems as the Missouri rolled across the plains.<sup>51</sup> Instead, low bluffs as far apart as ten miles held the river in check. These bluffs did little good and the river made lateral migrations of a half mile in a single day.<sup>52</sup> The unpredictable river flooded throughout its course about once a decade, and localized flooding occurred more

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47. *Id.*

48. JOHN V. KRUTILLA & OTTO ECKSTEIN, MULTIPLE PURPOSE RIVER DEVELOPMENT 66 (1958). In contrast to the conflicts between competing uses created by multiple-purpose river development, similar uses can actually benefit from the system. For example, hydroelectric power production at dams that are part of an integrated system can be greater than if the dams were separate power producers. Coordinating storage releases from upstream dams can increase power production at downstream hydroelectric facilities by increasing the minimum flow of water to the downstream dam, and extending the critical period of the system beyond the normal spring run-off season. *Id.* at 67.

49. Cubic feet per second is the "quantity of water flowing at a velocity of one foot per second through a box one foot wide and one foot deep. [I]t is equivalent to 448.8 gallons per minute or slightly more than 646,000 gallons per day." SAX, *supra* note 33, at 972.

50. REISNER, *supra* note 24, at 189-90.

51. *Id.* at 190.

52. *Id.*

frequently.<sup>53</sup> By 1940, some estimates set the flood damage caused by the Missouri and its tributaries as high as \$77 million per year.<sup>54</sup> This flooding hit the upper and lower basin states in different degrees. According to the Department of Agriculture's estimates in 1945, the lower basin states were hit with seventeen times more average annual flood damage than the upper basin states.<sup>55</sup>

Despite the heavy flood damage caused by the Missouri, only small-scale projects had been undertaken to alleviate the pressure on lower basin communities imperiled by the high waters. The government did not build any dams on the main stem Missouri River prior to the Fort Peck Reservoir due to the high costs and discouraging economic projections for such projects. First, irrigation farming in cold, high-altitude terrain seemed to be a losing proposition for the Bureau of Reclamation; therefore, reservoirs built for storing irrigation water could not survive cost-benefit analysis. The Bureau often justified inefficient water storage projects with hydroelectric power production from the dams, but that option did not exist on the Missouri. The volume of water available and the height of the drop of the water before it passes through the turbines, known as the head, determine hydroelectric power output. Plenty of water flowed in the Missouri during good years, but the lack of suitable canyons made the high dams—necessary for efficient hydroelectric power production—impossible to build. Further, the shallow, wildly meandering Missouri that snaked its way across the Great Plains did not offer much potential for the navigation industry and barge traffic within the bailiwick of the Corps. In fact, one commentator wryly noted that “[t]he trouble with going up the Missouri in a boat is that you have to take the boat along.”<sup>56</sup> Prospects for any large-scale flood control projects within the Missouri River Basin seemed bleak before Congress passed a major flood control act in 1936.<sup>57</sup> The act provided funds and refocused attention on the needs of the often neglected Basin.

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53. RIDGEWAY, *supra* note 18, at 50.

54. ROBINSON, *supra* note 10, at 83.

55. RIDGEWAY, *supra* note 18, at 51. Average annual flood damage in the lower basin states totalled approximately \$12,371,000, compared to about \$736,000 in the upper basin states. *Id.*

56. STANLEY VESTAL, *THE MISSOURI* 11 (1945).

57. RIDGEWAY, *supra* note 18, at 72-73. The omnibus rivers and harbors laws authorized the construction of flood control and navigation projects throughout the nation. Thirty-eight reservoirs, including Fort Peck, and ninety-two local flood protection plans were completed under the acts. Fort Peck, completed in 1940 as a flood control project, was the only major flood control project built on the Missouri during this period. *Id.*

## II. PICK-SLOAN PLAN

### A. COMPETING PLANS

Three big floods during March, May and June of 1943 inundated the Missouri River Basin and riveted public attention to the flooding problems. The June flood left the streets of Omaha and Kansas City navigable by boat. These disasters provided the final impetus for Congress to appropriate money for public works projects along the Missouri. Colonel Lewis Pick, director of the Corps' regional office in Omaha who was chased to higher ground during the last flood, quickly dispatched a twelve-page report on harnessing the Missouri to Washington. This report became known as the "Pick Plan." The original Pick Plan emphasized flood control and navigation, with some accommodation for hydroelectric power to be produced at major dams. The plan proposed construction of a 9-foot-deep, 300-foot-wide navigation channel in the river from Sioux City, Iowa to its mouth, and 1,500 miles of levees along the river's main stem in the same area.<sup>58</sup> In addition, the Corps' plan called for five enormous reservoirs in the upper basin between Fort Peck in eastern Montana and Yankton, South Dakota.<sup>59</sup> "Eight hundred miles of the Missouri would be transformed into a chain of shallow, turbid reservoirs."<sup>60</sup> The six main stem dams, the five in the plan plus the already constructed Fort Peck,<sup>61</sup> proposed the back-up of almost 90 million acre-feet of water, an amount sufficient to cover an area the size of Pennsylvania in a foot of water.<sup>62</sup> The Corps placed the price tag for the plan at a seemingly low \$660 million in 1944 dollars.<sup>63</sup> The plan's focus on flood control can be seen in the report outlining the project which was submitted to Congress by the Secretary of War. The report stated:

In addition to providing flood-control benefits on the Missouri and Mississippi Rivers, the comprehensive plan

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58. *Id.* at 74.

59. REISNER, *supra* note 24, at 191.

60. *Id.*

61. *Id.* at 191-92. Fort Peck Reservoir alone extends 134 miles west from the dam and covers 249,000 acres when the lake is full. The dam, which stretches four miles across the Missouri River Valley, is the largest hydraulic fill dam in the world. Earth was pumped from the Missouri River bottom to fill the dam. *Quest for Water: Interests Battle for Waters of Fort Peck*, BILLINGS GAZETTE, June 3, 1990, at E1 [hereinafter *Quest for Water*].

62. REISNER, *supra* note 24, at 191-92. An acre-foot is the "quantity of water required to cover 1 acre to a depth of 1 foot, or 325,851 gallons." SAX, *supra* note 33, at 971.

63. REISNER, *supra* note 24, at 192. The Corps' price was about one-half of that projected by the Bureau for nearly the same system. RIDGEWAY, *supra* note 18, at 81. Initial estimates were even more optimistic. Brigadier General John J. Kingman summarized the total costs of the Pick Plan to be about \$490 million. *Id.* at 79 & n.26.

would also provide for the most efficient utilization of the waters of the Missouri River Basin for all purposes, including irrigation, navigation, power, domestic and sanitary purposes, wildlife, and recreation.<sup>64</sup>

To get the process started, Colonel Pick and other Corps officials, at the behest of the Corps' lobbying staff, undertook an ambitious campaign to promote the Pick Plan throughout the basin states. The lobbyists set up meetings and programs with local farm groups, chambers of commerce and other potential beneficiaries of the plan. This "spade work," which promised different benefits depending on the audience, persuaded local communities to pressure their congressional representatives for action on the plan.<sup>65</sup>

The Bureau of Reclamation frantically completed the "Sloan Plan," its own Missouri River plan, after hearing about the Pick Plan prepared by the Corps. Not surprisingly, the Sloan Plan, prepared by W.G. Sloan, an assistant engineer in the Bureau's Billings, Montana office, gave heavy emphasis to reclamation and irrigation.<sup>66</sup> The Bureau saw the whole future of the West directly or indirectly dependent on irrigation. With 21,000,000 acres of reclaimed land already under irrigation, the Bureau felt that the West had possibilities for the development of an additional 22,000,000 acres.<sup>67</sup> The hastily prepared Sloan Plan was nearly as ambitious as its rival. Despite the previously cited drawbacks associated with irrigation farming in cold, high-altitude climates, the final plan proposed a catch basin of ninety dams and several hundred individual irrigation projects concentrated in the upper basin states.<sup>68</sup> The Bureau hoped to provide enough water to irrigate a total of 4.7 million acres of land. This was an ambitious goal for the 1940s considering that today, even with modern pumps and irrigation systems available, Montana manages to irrigate just slightly more than 2.8 million acres in the entire state.<sup>69</sup> The Bureau planned to offset these costs by building 17 power plants having an aggregate installed capacity of 758,000 kilowatts capable of gener-

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64. H.R. DOC. NO. 475, 78th Cong., 1st Sess. 28 (1943), *reprinted in* U. S. SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, 87TH CONGRESS, 1ST SESS., AN ANALYSIS OF THE LEGISLATIVE HISTORY AND INTERPRETATION OF THE O'MAHONEY-MILLIKIN AMENDMENT TO THE FLOOD CONTROL ACT OF 1944 AND CERTAIN OTHER PUBLIC LAWS 5 (1961) [hereinafter COMMITTEE ON INTERNAL AND INSULAR AFFAIRS].

65. RIDGEWAY, *supra* note 18, at 10-16.

66. *Id.* at 9.

67. *Id.* at 61.

68. REISNER, *supra* note 24, at 193.

69. Matthew J. McKinney, et al., *The Protection of Instream Flows in Montana: A Legal-Institutional Perspective*, INSTREAM FLOW PROTECTION IN THE WEST 287, 287 (Lawrence J. MacDonnell et al. eds., 1989).

ating 3.8 billion kilowatt-hours of firm electricity annually.<sup>70</sup> The Bureau set the price for the Sloan Plan at the slightly more realistic figure of \$1.2 billion, with \$200 million to be spent on the initial construction.<sup>71</sup>

By contrast, the Corps eschewed power production in the Pick Plan in favor of flood control. Its proposed dams were all too low or poorly situated to draw the power potential out of the river. This omission was quickly caught up in the public power controversy that had generated heated debate throughout the first half of this century. Proponents of public power, including the Bureau of Reclamation, advocated that power produced at dams built by the United States be made available to public entities at the lowest possible cost in order to speed rural electrification.<sup>72</sup> While electricity served only thirty-seven percent of all farms in the seventeen western states by 1944, an even grimmer situation existed in the Missouri River Basin.<sup>73</sup> Electricity served only seven percent of the farms in North Dakota, ten percent in South Dakota, twenty-five percent in Montana, twenty-six percent in Nebraska, twenty-five percent in Kansas, and twenty-three percent in Missouri.<sup>74</sup> These numbers contrasted sharply with California at eighty-seven percent, and Oregon and Washington with seventy-five percent.<sup>75</sup> All of these west coast states sat in close proximity to major hydroelectric power sources on the Columbia and Colorado rivers.

The Bureau also objected to the Corps' proposed storage facilities which were far down river from the lands that the Bureau wanted to irrigate, and many of them were located in what the Bureau felt were wastelands unsuitable for irrigation.<sup>76</sup> Further, the Bureau took exception with the Pick Plan's call for flooding some of the most valuable winter cattle range in North Dakota

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70. COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, *supra* note 64, at 4. A kilowatt, or one thousand watts, is "[a] unit of measure for the amount of electricity needed to operate given equipment." CAL. ENERGY COMM'N, ENERGY GLOSSARY 25 (1990). A kilowatt hour is one kilowatt of electricity supplied for one hour. *Id.* at 26.

71. RIDGEWAY, *supra* note 18, at 86. The Bureau enumerated the annual benefits which would reimburse the government as follows: Irrigation—\$130 million, power—\$17.1 million, flood control—\$16.5 million, navigation—\$4.1 million, and municipal water—\$500,000. *Id.*

72. John P. Guhin, *The Law of the Missouri*, 30 S.D. L. REV. 346, 437 (1985). Public power proponents in rural areas often advocated that revenues produced by the power should be deposited in a special account to benefit irrigation projects associated with the power project. *Id.*

73. RIDGEWAY, *supra* note 18, at 61.

74. *Id.*

75. *Id.* at 61-62.

76. REISNER, *supra* note 24, at 192.

that happened to be on the Fort Berthold Indian Reservation.<sup>77</sup> The Bureau reacted similarly unimpressed with the Corps' ambitious plans for flood control. W.G. Sloan testified before Congress that "'the 1943 flood could have been regulated to a safe capacity . . . at Sioux City, Omaha, and Kansas City with only 2 million acre-feet in storage'."<sup>78</sup> The Pick Plan called for 90 million acre-feet of storage capacity.<sup>79</sup>

Neither agency ever showed that sufficient water existed within the Missouri River Basin to satisfy all the purposes named. The two agencies based their respective estimates upon different precipitation cycles. The Sloan Plan chose a dry cycle of years to demonstrate what the minimum rainfall expectation might be, while the Corps, with their focus on flood control and navigation, selected a wet year cycle for its computations.<sup>80</sup> Nevertheless, by 1943, the issue was not a matter of whether to develop some sort of development plan for the Missouri River Basin, but choosing which one to develop. Interest groups in the region could be roughly divided into four camps: those who favored the Pick Plan and its emphasis on flood control and development of navigation, those favoring the Sloan Plan with its focus on irrigation, proponents of a compromise of the two competing plans, and finally, those who felt that neither plan alone was adequate, and that a centralized agency having complete control, similar to the Tennessee Valley Authority (TVA) ought to be created. Proponents of the latter group saw it as a vehicle for insuring development of public power to speed rural electrification.<sup>81</sup>

## B. RECONCILIATION OF THE PLANS

### 1. *Shotgun Wedding*

Congress faced the challenge of choosing between two irreconcilable large public works projects, each championed by a powerful bureaucracy with a sophisticated lobbying mechanism and backed by enthusiastic support throughout the Basin.<sup>82</sup> Forced to choose, Congress picked both. With the two plans stalemated in Congress, President Roosevelt attempted to break the impasse.

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77. *Id.* The reservation was home to the Mandan, Hiditsa and Arikara tribes. Lewis and Clark spent their first winter with the Mandan tribe in North Dakota and later their adopted Shoshone-Mandan interpreter, Sacajawea, probably saved their lives. *Id.* at 194.

78. *Id.* at 192.

79. *Id.* at 191-92.

80. RIDGEWAY, *supra* note 18, at 9-10.

81. *Id.* at 10.

82. REISNER, *supra* note 24, at 193.



Roosevelt sent Congress a strongly worded letter stating that the solution to developing the Missouri Basin was to create a regional authority, similar to the TVA, and take development out of both agencies' hands.<sup>83</sup> Senator James E. Murray of Montana championed the considerable congressional support for this type of regional authority. Faced with the possible loss of control of any part of the project, the Bureau and the Corps quickly met to hammer out the differences in the two plans. In a series of meetings over two days, the two sides "reconciled" the competing plans into a comprehensive Pick-Sloan Plan for development of the entire Basin.<sup>84</sup> The alleged reconciliation entailed nothing more than an agreement to combine the two plans lock, stock and barrel, with each side responsible for constructing and operating those portions of the project it favored.<sup>85</sup> Thus, the Corps would build and operate projects primarily useful for flood control and navigation, and the Bureau would be responsible for those projects devoted primarily to irrigation and power production.<sup>86</sup> One significant point of the reconciliation proved to have far reaching consequences. The Bureau decided to let the Corps build its huge main stem reservoirs first while the money was available, and postpone its own projects in the upper basin until after these main stem reservoirs were in place. It was a fateful decision for the Bureau, because little money proved to be available when it was finally ready to go ahead with its projects. The Bureau's acquiescence prompted one lobbyist to dryly state that "[t]he Corps got the here and now, . . . [t]he Bureau got the then and later'.<sup>87</sup>

## 2. *O'Mahoney-Millikin Amendment*

The proposed reconciliation, by itself, failed to overcome the fears of the western state members of Congress who worried that their water and hopes of economic development would be washed downstream to float the barges favored by the Corps. Only the adoption of the O'Mahoney-Millikin Amendment assured congressional approval of the combined development plan. Senators Joseph O'Mahoney of Wyoming and Eugene Millikin of Colorado introduced a series of amendments designed to protect the interests of arid western states in this and future projects contemplated

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83. *Id.*

84. *Id.*

85. *Id.*

86. *Id.*

87. REISNER, *supra* note 24, at 194.

by the Bureau and Corps.<sup>88</sup> The most important provision for our purposes dealt with the priority of uses in the operation of the system. An amendment to the Flood Control Act of 1944 stated:

(c) The use for navigation, in connection with the operation and maintenance of such works herein or hereafter authorized for construction, of waters arising west of the ninety-seventh meridian shall be subordinate to and shall not adversely affect at any time the *beneficial consumptive use*, west of the ninety-seventh meridian, of such waters for domestic, irrigation, mining, or industrial purposes.<sup>89</sup>

The "beneficial consumptive use" phrase proved to be enough to win support from the concerned western members of Congress, but their failure to define the term caused problems later. To insure passage, however, the Corps continued to lobby heavily and promised all things to all parties. For example, in response to a question before the House Committee on Flood Control of whether the construction of the main stem reservoirs could conflict with the vested rights of water users in the upper basin, Colonel Miles Reber of the Corps responded emphatically: "I do not see how they possibly could, Mr. Chairman. They are below the general region in which water rights exist and there is absolutely no priority of water use set up in the [Pick Plan] in any way whatsoever. . . ."<sup>90</sup>

Accordingly, one could argue that because of these vague promises made by representatives of the Corps, Congress envisioned broad-scale development based on whatever needs would arise in the area to be served and that any preference between conflicting uses should be determined based on which use would make the greatest contribution to the well-being of the people and the areas of greatest need.<sup>91</sup> The vague language in the two

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88. RIDGEWAY, *supra* note 18, at 91.

89. *Id.* at 335 (emphasis added).

90. *Hearings on H.R. 4485 Before the Committee on Flood Control*, 78th Cong., 1st Sess. 1060 (1943). The ability of the parties to lobby successfully behind the scenes in addition to testifying before congressional committees and the readiness of the members of Congress to accept the vague language of the reports is perhaps best illustrated by the fact that the entire Senate floor debate on the O'Mahoney-Millikin Amendment occupies little more than one page in the Congressional Record and most of it took place after its acceptance. COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, *supra* note 64, at 9.

91. H.R. DOC. NO. 475, 78th Cong., 1st Sess. 3 (1943). The Chief of Engineers of the Corps stated that "[i]t is evident that all the Federal agencies concerned agree that the maximum feasible multiple-purpose use of the water and the broadest economic program of reservoirs for that type of use are the primary principles on which the planned development of the water resources of the Missouri River Valley should be based." *Id.*

reports and the postponing of specifics allowed both sides to argue comfortably that all could benefit from adoption of the combined programs. Along these lines, the Chief of Engineers of the Corps reiterated the evolving nature of the plan to a congressional committee. He stated:

Due allowance must be made for any changed conditions that may arise in the future. . . . The adjustment of water use to meet the changing needs of the Missouri Basin as a whole can and will be made as the comprehensive development proceeds step by step toward ultimate accomplishment. When completed the basin plan will be operated for maximum multiple purpose use. Thus preference can be given to the functions which contribute most significantly to the welfare and livelihood of the people of various parts of the basin, and at the same time adequate steps can be taken to meet new economic situations that may arise in the future.<sup>92</sup>

The agencies labeled all reservoirs included in the joint plan "multi-purpose," which included "flood control, navigation, irrigation, power, domestic and sanitary purposes, wildlife and recreation. . . ."<sup>93</sup> Even the Fort Peck Reservoir which had been built by the Corps primarily to aid navigation would be converted to a multiple-purpose dam operated primarily for irrigation.<sup>94</sup> This multi-purpose designation allowed the Corps and the Bureau to allocate the costs of the system to all of the different uses to enhance its cost effectiveness.

When Congress finally enacted the Flood Control Act of 1944 which included both the Pick and Sloan Plans for comprehensive development of the Missouri River Basin, it did not bother setting out the plan in the words of the statute. Rather, Congress adopted by reference the Pick Plan<sup>95</sup> and the Sloan Plan<sup>96</sup> as revised and coordinated by a third document, the Joint Report.<sup>97</sup> They left the details of the daily operation of the reservoirs on the system to be worked out later. Congress directed the Secretary of the Army to promulgate "regulations for the use of storage allocated for flood control or navigation at all reservoirs constructed wholly or in part

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92. *Id.*

93. S. Doc. No. 247, 78th Cong., 2d Sess. 2 (1944).

94. *Id.*

95. H.R. Doc. No. 475, 78th Cong., 2d Sess. (1944).

96. S. Doc. No. 191, 78th Cong., 2d Sess. (1944).

97. S. Doc. No. 247, 78th Cong., 2d Sess. (1944).

with Federal funds provided on the basis of such purposes, and the operation of any such project shall be in accordance with any such regulations . . . ."<sup>98</sup> The Secretary's regulations provided that "[w]ater control plans developed for specific projects and reservoir systems will be clearly documented in appropriate water control manuals."<sup>99</sup>

It appears now that the upper basin states made a terrible miscalculation by accepting the vague language of the reports and relying on the assurances of the Corps that the system would evolve to meet the changing needs of the basin. Fears that their small populations and limited congressional clout would make getting their own development programs authorized nearly impossible may have led them to sign on to the Pick-Sloan Plan despite its obvious lack of specifics and potential drawbacks for their region.

### C. MISSOURI RIVER BASIN SYSTEM AFTER PICK-SLOAN

#### 1. *Results of the Legislation*

The plan that Congress envisioned when it approved the Pick-Sloan Plan for development of the Missouri River Basin in 1944 and what exists in the Basin today after more than \$7 billion has been spent are two different things.<sup>100</sup> The Corps went ahead with its plans to build the navigation channel below Sioux City, Iowa and to construct the 1,500 miles of levees. But projected barge traffic failed to materialize. Only six tows that push thirty-five barges operate on the Missouri below Sioux City. Navigation tonnage on the Missouri peaked in 1977 at a disappointingly low 3.3 million tons, far below the 12 to 20 million ton capacity.<sup>101</sup> The volume had slipped to only 1.5 million tons by 1990.<sup>102</sup> In contrast, Mississippi River barges carry over 380 million tons per year and those on the Ohio River move at least 150 million tons each year,<sup>103</sup> and even the Tennessee River carries more than five times the cargo shipped on the Missouri.<sup>104</sup> The Corps estimates

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98. 33 U.S.C. § 709 (1988).

99. 33 C.F.R. § 222.7(f)(3) (1991).

100. Byron L. Dorgan, *Water in the West*, WASH. POST, Apr. 24, 1991, at A20.

101. Peter Carrels, *Missouri River Feud Could Dry up Navigation*, CHI. TRIB., Aug. 15, 1991, at C1.

102. *Id.*

103. *Id.*

104. DIANA C. GIBBONS, *THE ECONOMIC VALUE OF WATER* 82 (1986). An even greater disparity exists in the average water value for navigation in dollars per acre-foot on the Missouri. The average water value for navigation on the Ohio River was \$275 per acre-foot, while it was less than \$1 per acre-foot on the Missouri. The average water value for navigation is calculated by subtracting the operation and maintenance costs from the savings over railroad rates for cargo shipped on each of the rivers. *Id.*

that the navigation industry on the Missouri in the lower basin generates only about \$14 million annually.<sup>105</sup> In defense of the barge industry, the Corps claims that the mere presence of the barge alternative forces the trucking industry and railroads in the lower basin states to adopt lower "water-compelled rates."<sup>106</sup> The impact of water-compelled rates on the Missouri River region shipping rates must be questioned when it is discovered that the 1989 grain carried by the Missouri River equaled only 0.7 percent of the grain carried by competing Class I railroads in the region.<sup>107</sup> Whether spending billions of dollars on navigation improvements to subsidize shipping rates for commodities' brokers constitutes a good investment remains an open question.

In addition to building the navigation channel, the Corps completed construction of the six planned reservoirs on the river's main stem in 1967. The dams are Fort Peck in Montana, Garrison in North Dakota, Oahe on the North Dakota/South Dakota border, Big Bend in South Dakota, and Fort Randall and Gavins Point on the South Dakota/Nebraska border.<sup>108</sup> The dams and reservoirs are an impressive lot. Lake Oahe is the largest reservoir, followed by Lake Sacajawea behind Garrison Dam, and Fort Peck Reservoir with its 1,520-mile shoreline.<sup>109</sup> Garrison Dam and Fort Peck are the two largest earth filled dams in the world.<sup>110</sup> The six reservoirs have a combined storage capacity of approximately 74 million acre-feet of water, below the 90 million acre-feet originally envisioned by the Pick Plan, but still monstrous in size.<sup>111</sup>

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105. *Quest for Water*, *supra* note 61, at E1.

106. Carrels, *supra* note 101, at C1 (quoting Paul Johnston, spokesman for the Corps' Missouri River Division). Water-compelled rates result when railroad routes that run parallel to barge routes are forced to compete with the lower-priced barge rates. A 1980 study reveals that barge rates averaged about 10 mills per ton-mile, while railroad rates averaged around 38 mills per ton-mile. A rather significant 34 percent of railroad revenues were received at rates of less than 20 mills per ton-mile. These rates probably represent most closely those routes with barge competition. It should be noted, however, that barge rates exclude consideration of the cost of time since barge traffic moves much slower than rail traffic. The rate differential can be attributed to the water. While rail rates reflect the fixed and variable costs of investment, operation and maintenance, barge rates reflect only barge company, not waterway, costs since waterways generally have no user fees. These rate differentials have led to calls by environmental groups and railroads for waterway user fees to correct the perceived economic inefficiencies resulting from the government subsidization of navigation and the "free" use of water. GIBBONS, *supra* note 104, at 79-80.

107. C. Phillip Baumel, A Review of the Impact of Lowering the Water Level on the Missouri River on Missouri Agriculture, University of Missouri—Columbia, College of Agriculture, Food and Natural Resources, May 16, 1991, and the Impact of Reduced Missouri River Waterflow on Inland Barge Transportation, by Temple Barker and Sloan, Inc., Nov. 21, 1990, at 14-15 (Oct. 1991) [hereinafter Review] (copy on file with the North Dakota Attorney General's office).

108. WATER RESOURCES, *supra* note 8, at 8.

109. *Quest for Water*, *supra* note 61, at E1.

110. REISNER, *supra* note 24, at 191.

111. *Missouri River*, *supra* note 4, at 28.

The flood control component of these reservoirs has been much more effective than their use for facilitating navigation in the lower basin states according to the Corps' own estimates. Spending \$1.2 billion has avoided flood damage of \$2.7 billion, most of it in the lower basin states.<sup>112</sup> That sum is \$600 million more than the Corps originally claimed to be the cost of the entire Pick Plan in 1944.<sup>113</sup> While the flood control benefits represent a partial success story for the system, these numbers obscure hidden costs. For instance, the Corps fails to account for the environmental costs of the dam projects in its analysis. The arid upper basin states were forced to give up much of their most valuable river bottom land to serve as storage sites for the reservoirs. The dams flooded 530,000 acres, or 828 square miles, of prime land in South Dakota alone.<sup>114</sup>

The Bureau has not fared much better at fulfilling its ambitious promises to the residents of the upper basin. Money for most of its planned dams on tributaries in the upper basin states was not appropriated by Congress. In South Dakota, for example, Congress did not appropriate money for irrigation of more than 24,000 acres, "[a]lthough the legislation envisioned potential development of more than 900,000 acres for irrigation in the state."<sup>115</sup> Plans to build irrigation projects in Nebraska ended up being shelved due to costs in excess of \$1,000 per acre-foot of water delivered to the dry land farmers.<sup>116</sup> Similarly, Congress cancelled an already scaled-down version of the irrigation projects associated with the Garrison Dam in North Dakota when cost estimates reached \$1,650,000 per farm.<sup>117</sup> Besides the exorbitant cost of some of the irrigation projects, Congress scrapped others due to the high cost of productive land lost. The original Garrison Diversion Project required losing 220,000 acres for canals and reservoirs versus 250,000 new acres irrigated,<sup>118</sup> a net gain of 30,000 acres, but much of the flooded land was more fertile than that slated to receive irrigation water.

Even the planned hydroelectric power production on the sys-

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112. *Id.* Cf. *Quest for Water*, *supra* note 61. The system provides \$95 million worth of flood control annually. *Id.*

113. See REISNER, *supra* note 24, at 192.

114. William Robbins, *States Turn to the Courts for Water As the Rain-Starved Missouri Falls*, N.Y. TIMES, June 7, 1990, at A16. One acre is equal to 43,560 square feet and 640 acres compose a section. One section is equal to one square mile.

115. *Id.*

116. REISNER, *supra* note 24, at 200.

117. *Id.* at 201.

118. *Id.* at 200.

tem's dams disproportionately benefits the lower basin states. Admittedly, the electricity produced at the dams fully satisfies most of the electricity needs for the upper basin states, yet once again at a higher cost to the upper basin states than to the lower basin states. For example, the six main stem dams produce about \$85 million a year in electrical power, including \$55 million in South Dakota, but very little stays in the region.<sup>119</sup> A majority of the electricity produced on the main stem dams is sent out of the upper basin states, with most of the exports going to lower basin states.<sup>120</sup> The upper basin states paid dearly for this electricity as evidenced by the loss of farm land behind the dams.<sup>121</sup> By contrast, the lower basin states now have a cheap source of electricity in the main stem dams in addition to the flood control and navigation benefits.

With little to show for irrigation projects and most of the electricity shipped out of the region, one of the upper basin states attempted to salvage something from the projects by selling its one plentiful resource—water. Even this effort failed, however, when the Supreme Court ruled that the State of South Dakota could not sell 20,000 acre-feet of Missouri River water to a coal-slurry pipeline company on the grounds that the river had no water to spare.<sup>122</sup> The Court found that while Section 8 of the Flood Control Act of 1944 specifically allowed the use of water from Lake Oahe and other main stem reservoirs to be diverted for irrigation through federal projects, there were no Section 8 federal irrigation projects in operation at Lake Oahe.<sup>123</sup> Congress has not yet funded the irrigation projects proposed under Section 8 for Lake Oahe. Therefore, South Dakota cannot divert water until such a federal irrigation project is in place at Lake Oahe.<sup>124</sup>

Despite these setbacks and disappointments, a surprising consolation prize developed for the upper basin states. The huge amounts of stored water behind the six main stem dams gave birth to a flourishing recreation industry. Sport fishing that includes salmon, northern pike and walleye fishing, boating, water sports

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119. Robbins, *supra* note 114, at A16.

120. See WESTERN AREA POWER ADMINISTRATION, STATISTICAL APPENDIX TO THE ANNUAL REPORT 45-52 (1991) [hereinafter WAPA STATISTICAL APPENDIX].

121. See generally REISNER, *supra* note 24, at 200.

122. ETSI Pipeline Project v. Missouri, 484 U.S. 495, 498-99 (1988).

123. *Id.* at 506-07.

124. The company wanted to use the water to pipe coal from Wyoming to Arkansas. The railroad interests, who stood to lose important coal traffic to the proposed pipeline, urged the lower basin states to bring the suit. The lower basin states feared that such water sales could eventually lower the system water level to the point that it could harm the lower basin navigation industry. *Missouri River*, *supra* note 4, at 29.

and tourism have all benefited from the presence of the reservoirs. North Dakota and South Dakota claim that recreation on the main stem reservoirs brings in more than \$67 million to their states.<sup>125</sup> One economist increases the number for South Dakota to \$125 million annually when he includes money spent on boats, trailers and fishing licenses.<sup>126</sup> Regardless of the exact figures, the recreation industry brings in desperately needed money and the accompanying jobs to the underdeveloped region.

## 2. *Corps' Operation of the System*

The Corps' Missouri River Division operates the Reservoir Control Center in Omaha, Nebraska which regulates the six main stem dams and reservoirs. The Corps operates the reservoir system on an annual cycle. Each year the reservoirs accumulate an average of about 23.3 million acre-feet of water from melting snow and rainfall.<sup>127</sup> The Corps releases water from the reservoirs during the spring, summer and fall to generate hydroelectric power and support navigation below Sioux City, Iowa.

The length of the normal 245-day navigation season is adjusted to meet changing flow levels. Navigation releases begin in late March and run through the late fall, with gradually increasing flows during the summer and fall to compensate for decreased natural inflows from other Missouri River tributaries below the main stem dams. Water is released from Lake Oahe at a relatively high rate during the navigation season. In addition, these releases generate hydroelectric power and replace the water released from the reservoirs at Big Bend, Fort Randall and Gavins Point, where the water supply is smaller. Releases from Fort Peck and Garrison reservoirs are relatively low during the navigation season.<sup>128</sup>

The Corps bases the specific release rate from Gavins Point for navigation on three factors: (1) the navigation streamflow targets; (2) the streamflow at the monitoring points in Sioux City, Iowa, Omaha and Nebraska City, Nebraska, and Kansas City, Missouri experiencing the lowest level in relation to its target; and (3) inflows from tributaries below the reservoir system.<sup>129</sup> The Corps adjusts the release rate during the navigation season to compensate for shortfalls in flow from the tributaries. These adjustments

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125. *Quest for Water, supra* note 61, at E1.

126. Robbins, *supra* note 114, at A16 (quoting Dr. Michael K. Madden, University of South Dakota).

127. CORPS' MANAGEMENT, *supra* note 5, at 12.

128. *Id.* at 13.

129. *Id.* at 14.



can be made daily if necessary.<sup>130</sup>

During the winter months, by contrast, the Corps reduces releases from Big Bend, Fort Randall, Gavins Point and Lake Oahe. Increased releases from Fort Peck and Garrison maintain hydroelectric power generation during this period. These winter releases also prepare Fort Peck and Garrison for the spring floods by drawing down their storage levels.<sup>131</sup>

After the enactment of the Endangered Species Act of 1973, the Corps has increased water release rates in the early spring to control the nesting of endangered and threatened species of birds. Two endangered species, the least tern and the piping plover, nest along the lower Missouri River. These birds nest on sandbars close to the river's edge in the spring. Once these nests are in place, any increase in release rates could swamp them. Consequently, the Corps wants to make that edge as high as possible in the spring to keep the nests above the water level later in the summer, although they are not above occasional releases to "bump" the nesting birds to higher ground.<sup>132</sup> Thus, when releases are needed later in the summer to accommodate barge traffic impaired by low flows in the late summer, these nests will not be washed away. But these increased release rates earlier in the spring leave less water available in the reservoirs for other purposes later in the summer.<sup>133</sup>

The increased release rates that facilitate navigation on the lower basin authorized by the Master Manual now threaten the recreation industry that developed as a consolation prize for the upper basin states. A lingering six-year drought, plummeting water levels in the reservoirs, and a Corps policy that favors navigation over recreation in operation of the reservoirs imperils the recreation industry. The Corps continues to release water at rate of 30,000 cfs when the inflow replenishes the reservoirs at a rate of only 22,000 cfs.<sup>134</sup> Releases late in the spring, after the walleye have laid their eggs along the shorelines of the reservoirs, prove to be particularly harmful. The releases drop the reservoir levels and leave the eggs high and dry, endangering the future walleye popu-

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130. *Id.*

131. *Id.* at 13.

132. Robbins, *supra* note 114, at A16.

133. CORPS' MANAGEMENT, *supra* note 5, at 30. The Corps' forced conversion to concern for wildlife habitat seems a bit ironic given the havoc wreaked by the Corps on wildlife habitat with construction of the Missouri River system. The millions of acres of secluded bottomlands and oxbow pools and marshes lost by the building of dams surely did more to put the least tern and piping plover on the Endangered Species list than anything the Corps could do now to harm them. REISNER, *supra* note 24, at 199.

134. *State of South Dakota v. Hazen*, 914 F.2d 147, 148 (8th Cir. 1990).

lation. The loss of an entire spawning season, such as in 1989 and 1990, can have repercussions for years to come.

The extended drought has taken its toll on water levels throughout the basin. The reservoirs currently hold 43 million acre-feet of their 74 million acre-feet capacity—the lowest levels since the system first filled in 1967.<sup>135</sup> Some reservoir levels have dropped by thirty feet, leaving boat marinas and domestic water intake pipes miles from the water. The drought forced municipal and industrial water users on the Missouri to spend about \$4.5 million in 1989 and 1990 to modify intake systems or operations to cope with the lower water surface elevations.<sup>136</sup> Even with abnormally heavy precipitation levels it would take four to six years for the reservoirs to refill if the Corps continues its present policy of discharging water to aid navigation.<sup>137</sup>

The low reservoir levels and early season discharges also have cut hydroelectric power production. Hydroelectric power output is a function of the volume of water available and the height of the drop of the water before it passes through the turbines. The Corps has continued to discharge water at rates faster than it is being replenished, and consequently, the reservoir levels were lower than normal throughout the summer which reduced the height of the drop of the water before it passed through the turbines. Granted, the drought would have lowered reservoir levels anyway, but the Corps' increased release rates in the spring to aid navigation have exacerbated the lower water levels, particularly in the late summer when the intake rate is the lowest. The hydroelectric industry lost an estimated \$40 million in 1990 as a result of low lake levels brought about by the drought and the increased release rates.<sup>138</sup> The system generated over 12.2 billion kilowatt hours of electricity in 1987 compared to only 9.5 billion kilowatt hours in 1990.<sup>139</sup> Thus, the nearly twenty-five percent drop in electricity production can be attributed mainly to the Corps' management policies which unnecessarily lowered the water levels in the reservoirs and reduced the height of the water before it passed through the turbines.

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135. *Missouri River*, *supra* note 4, at 28. The water impounded by the six reservoirs necessary to support barge traffic is released beginning in late March and continues until November. CORPS' MANAGEMENT, *supra* note 5, at 12.

136. CORPS' MANAGEMENT, *supra* note 5, at 23.

137. *Id.* at 22.

138. Dorgan, *supra* note 100, at A20. See WAPA STATISTICAL APPENDIX, *supra* note 120, at 34 (estimating its 1991 operating loss at \$46 million).

139. WAPA STATISTICAL APPENDIX, *supra* note 120, at 25.

### 3. *The Master Manual*

The Corps has repeatedly responded to criticism of its main stem operation by claiming that it is bound by the priorities established in its Missouri River Main Stem Reservoir System Reservoir Regulation Manual (Master Manual). Congress and the Secretary of Interior directed the Corps to prepare a Master Manual to guide operation of the Missouri Basin system at the time of the approval of the Flood Control Act of 1944. The Corps insists that congressional authorization would be required to adjust the priorities set forth in it. The Corps' legal counsel claims that "any revision involving a long term or permanent change in the operation of the system that would serve as a significant deterrent to one or more of the actual purposes or the currently settled priorities of the system would suggest the need for prior congressional authorization."<sup>140</sup> A closer look reveals that this has not always been the case.

The Master Manual, first published in 1960, ranks the activities in the following order: "First, flood control; second, all irrigation and other upstream water uses for beneficial consumptive purposes; third, downstream municipal and industrial water supply and water quality requirements; fourth, equitable service to navigation and power; [and] fifth, [hydroelectric] power generation efficiency consistent with other uses . . ."<sup>141</sup> Last on the list the Master Manual states, "[i]nsofar as possible, without serious interference with the foregoing functions, the reservoirs will be operated for maximum benefit to recreation, fish and wildlife."<sup>142</sup>

It is constructive to note that the priorities enumerated in the Master Manual do not coincide precisely with the priorities set out in the Flood Control Act of 1944, upon which the Corps relies as a basis for buttressing the authority of its Master Manual. The Master Manual "places greater emphasis on domestic and industrial water supply" than provided for in the Flood Control Act of 1944, even though the Act simply lists them as "other purposes," along with recreation and fish and wildlife.<sup>143</sup> The Corps' motives for raising the priority of domestic and industrial water supply

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140. OFFICE OF COUNSEL, DEP'T OF THE ARMY, THE ROLE OF RECREATION IN THE REGULATION OF THE CORPS OF ENGINEERS CONSTRUCTED AND OPERATED MAIN STEM RESERVOIRS OF THE MISSOURI RIVER 25 (Aug. 16, 1990) [hereinafter *ROLE OF RECREATION*].

141. *Id.* at 16 (citing MISSOURI RIVER MAIN STEM RESERVOIR SYSTEM REGULATION MANUAL IX-1 (1979)).

142. *Id.*

143. *Id.*

probably stems from a desire to avoid the uproar that would result if a drought threatened the water supplies of large cities such as Omaha or Kansas City. This seems like a wise policy decision, but what prevents the Corps from exercising similar discretion by raising the priority of recreation to match the superior economic position that it occupies for the residents of the Basin?

The Corps justifies this reordering of priorities by relying on 1957 congressional hearings in which the Chief of Engineers told committee members of the Corps' planned long-range operation priorities for the main stem reservoirs. The Chief listed the purposes of the main stem dams as flood control, irrigation, navigation and hydroelectric power.<sup>144</sup> In addition, the Chief also testified that "[o]ther functions, such as recreation and fish and wildlife, are also a definite factor in operation planning, but *are necessarily lower in priority*."<sup>145</sup> It should be noted, however, that it was the Corps' own reports, prepared in 1952, that relegated recreation to this "secondary purpose."<sup>146</sup> Placing a higher priority on navigation than recreation may have been appropriate in 1952, especially since most of the reservoirs had not even been built, but little basis exists for retaining that priority today. Particularly since the preamble to the Flood Control Act of 1944 states that it is the purpose of the legislation "to limit the authorization and construction of navigation works to those in which a substantial benefit to navigation will be realized therefrom and which can be operated consistently with appropriate and economic use of the waters of such rivers by other users."<sup>147</sup>

The Master Manual also sets streamflows, measured in cubic feet per second, that are required to support navigation because the volume of water released for navigation normally exceeds the amount required for any other purposes. The Master Manual does provide contingency plans for drought conditions that permit the Corps to shorten the navigation season as an alternative to reducing streamflows.<sup>148</sup> The Corps actually implemented these drought contingency plans during 1988, 1989 and 1990. Despite the 10.5 million acre-feet saved through the contingency plan, the Corps' operation of the system harmed all other uses, except flood

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144. *Id.* at 17 (citing *Joint Hearing on Missouri Basin Water Problems*, 85th Cong., 1st Sess., 419-431 (1957) (statement of the Chief of Engineers, Army Corps of Engineers)).

145. *Id.* at 18 (emphasis added).

146. Memorandum from Assistant Attorney General Julie Krenz to Attorney General, Regarding the Status of Recreation Under the Flood Control Act of 1944 26 (Dec. 18, 1990).

147. *Id.* at 18.

148. CORPS' MANAGEMENT, *supra* note 5, at 14.

control.<sup>149</sup>

The upper basin states have lobbied unsuccessfully to change the priorities established in the Master Manual. The Corps finally relented to the demands of the upper basin states, however, and began its first comprehensive update of the Master Manual in late 1989. Following much foot-dragging, the Corps accepted a 1993 deadline to complete its review of the Master Manual following threats from Senator Max Baucus of Montana and Senator Kent Conrad of North Dakota to delay the confirmation of Nancy P. Dorn for the position of Assistant Secretary of the Army for Civil Works in the summer of 1991.<sup>150</sup> The Corps has conducted public hearings throughout the Basin as part of its review process.

### III. COURT CHALLENGES TO THE CORPS

#### A. UPPER BASIN LAWSUITS

Faced with the continued threat to the only benefits they receive from the Missouri River system, and for some the economic future of their states, the upper basin states are fighting back. The upper basin states of Montana, North Dakota and South Dakota have twice challenged the Corps' management policy that favors navigation at the expense of recreation and hydroelectric power production in federal court. First, the upper basin states sought a preliminary injunction to halt the discharge of water from the reservoirs during the spring spawning season of the walleye in 1990.<sup>151</sup> The Corps claimed that failure to maintain the level of the Missouri below Lake Oahe through the discharges would halt downstream navigation, including barge traffic. The Corps countered that reducing discharges from Lake Oahe, even temporarily, would halt navigation for the entire summer due to the presence of two endangered species of birds, the least tern and the piping plover.<sup>152</sup> Increased releases from Oahe after the June 1st date sought by the upper basin states would inundate their nests in violation of the Endangered Species Act.<sup>153</sup> Thus, argued the Corps,

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149. *Id.* at 22.

150. Tom Ichniowski and Hazel Bradford, *Dorn Confirmed by Senate: Baucus, Conrad Gain Concessions*, ENGINEERING NEWS REC., July 29, 1991, at 7. In addition, the Army promised to heed the recommendations of a General Accounting Office report on the management of the reservoirs. The Army also promised to draft a new environmental impact statement for the Upper Basin and to send Dorn to visit the region after her confirmation. Elizabeth Lesly, *Army Practice of Draining Fort Peck Lake May Stop After Parliamentary Wrangle*, STATE NEWS SERV., July 17, 1991.

151. *South Dakota v. Hazen*, 914 F.2d 147, 148 (8th Cir. 1990).

152. *Id.* at 149.

153. *Id.*

halting the discharge now would effectively halt it for the entire summer and with it halt the barge traffic for the rest of the season.<sup>154</sup> Despite stating its “‘very serious doubts about [its] power’” to issue an injunction, on May 9, 1990, a federal district court in North Dakota enjoined the Corps from releasing water from Lake Oahe reservoir into the Missouri River at a rate greater than that at which water is flowing into the reservoir until June 1, 1990.<sup>155</sup>

The Corps quickly appealed the lower court ruling by filing an emergency motion for stay pending appeal of the preliminary injunction to the Eighth Circuit. The Eighth Circuit granted the stay on May 11, 1990, and heard oral argument of the appeal on an expedited basis on May 16, 1990.<sup>156</sup> The Eighth Circuit panel entered an order reversing the district court, specifically holding that the Corps’ actions were not arbitrary and capricious, and questioned whether the Corps’ actions were reviewable at all.<sup>157</sup> Following the submittal of supplemental briefs by the parties, the Eighth Circuit panel finally released its written opinion in the case on September 12, 1990. In a two-to-one opinion that split along regional lines,<sup>158</sup> the court articulated its reasons for the reversal of the lower court ruling. The court accepted the Corps’ argument that there is no “law to apply” in either the statutes or the regulations.<sup>159</sup> The court found that the only plausible law to apply was the Corps’ own Master Manual, a document that the Corps claims was intended for internal use in goals set forth by Congress.<sup>160</sup> The Master Manual places navigation as one of the primary purposes of the project, with recreation relegated to a secondary purpose.

The upper basin states argued that a finding of unreviewability would give the Corps “unbridled discretion over Lake Oahe and the main stem reservoirs, a result Congress surely could not have intended.”<sup>161</sup> Given the high stakes involved, the panel did the only politically prudent thing—postpone the reviewability issue until another day. The court found that since the dis-

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154. *Id.*

155. *Id.*

156. *Hazen*, 914 F.2d at 148.

157. *Id.* at 150. The standard of review under the Administrative Procedure Act (APA) is whether the decision is arbitrary or capricious. 5 U.S.C. § 706(2)(A) (1988).

158. Judge George C. Fagg of Iowa and Judge Pasco G. Bowman of Missouri voted in the majority, and Judge Roger L. Wollman of South Dakota dissented.

159. *Id.* at 149.

160. *Id.*

161. *Id.*

strict court's preliminary injunction would have expired on June 1, 1990, and that the walleye spawning season had ended, the question before them was moot.<sup>162</sup> "[T]he question sought to be adjudicated has been mooted by subsequent developments."<sup>163</sup> The court did state in dicta, however, that even if it had power to review the Corps' actions, those actions in this case were not arbitrary and capricious.<sup>164</sup> While acknowledging the likely reoccurrence of the same issue given the lingering drought in the Basin, the court passed on resolving the reviewability issue. As predicted, the same situation presented itself in the spring of 1991 and again the upper basin states responded with a lawsuit.

This time, however, the upper basin states filed their suit in a federal district court in Billings, Montana, a court within the purview of the Ninth Circuit Court of Appeals.<sup>165</sup> The pending suit alleges similar causes of action as the first. The upper basin states allege that the Corps operates the Missouri River main stem dams in violation of the Flood Control Act of 1944 by failing to treat uses, other than flood control and upstream beneficial consumptive uses, equally and by failing to regularly balance the competing uses of the water to develop a plan of operation that reflects contemporary uses and economic needs of the Missouri River Basin.<sup>166</sup> The second cause of action claims that the Corps' operation of the system abuses the discretion vested in it by the Flood Control Act of 1944. The upper basin states argue that even if the Corps is correctly interpreting the Flood Control Act, the continued drawing down of the water levels in the basin reservoirs to support incidental navigation traffic in the Basin with disregard for the substantial harm to the reservoirs as fisheries and recreation centers violates the arbitrary and capricious standard of the APA.<sup>167</sup>

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162. *Id.* at 150-51.

163. *Hazen*, 914 F.2d at 150 (quoting *Gilligan v. Morgan* 413 U.S. 1, 9 (1973)).

164. *Id.* at 149.

165. *South Dakota v. Needham*, (No. CV-91-26-BLG) (D. Mont. filed Feb. 4, 1991). Although the desire to avoid another Eighth Circuit panel with a majority of judges from lower basin states seems obvious, one of the proponents, North Dakota Attorney General Nicholas Spaeth, would not publicly acknowledge the strategy.

166. *Id.* at 9.

167. *Id.* at 9-10. The Corps' initial response to the latest suit was a motion for summary judgment filed on April 14, 1992. Brief for Defendant, *South Dakota v. Bornhoft*, (D. Mont.) (No. CV-91-26-BLG) (filed Apr. 14, 1992). The motion states that there has been no final agency action within the scope of the APA, that the plaintiffs lack standing to bring the suit, and that the Corps' operation is not judicially reviewable since such matters are committed to agency discretion. The court has yet to rule on the motion.

## B. LEGISLATIVE HISTORY

The outcome of the lawsuit may depend in large part on the willingness of the court to engage in a time-consuming and ultimately subjective review of the legislative history of the Pick-Sloan Plan. Analyzing legislative history often entails an exhaustive search for that elusive document, committee hearing record, or quote from congressional debate by the bill's sponsor that explicitly explains a bill's purpose, the proper interpretation of ambiguous language or intent. Even under the best of circumstances it can be a rather dubious affair to glean the intent of a bill's proponent from the cold pages recording the heated debate. But in the case of the Flood Control Act of 1944, the endeavor is even more dubious than most. Much of the debate and haggling over the contents and thrust of the program took place behind the scenes, as evidenced by the scant Senate floor debate on the O'Mahoney-Millikin Amendment, which occupies slightly more than one page in the Congressional Record—and most of this debate took place after it had already passed.<sup>168</sup> Moreover, in the case of the Flood Control Act of 1944, the project proponents, both the Corps and the Bureau, seemed willing to promise all things to all parties. Their lobbying efforts, both in the Missouri River Basin states before the competing plans were submitted and within Congress, demonstrated the resourcefulness and determination of the two agencies to get the measures authorized and to expand their own empires rather than to promote sound public policy. Nevertheless, a brief analysis of the complexity of the debate helps elucidate this point.

First, the O'Mahoney-Millikin Amendment, designed to appease the fears of the upper basin states that their irrigation water could be washed downstream to float barges, does not appear to provide any basis for the upper basin states' claim regarding recreation. The issue of whether recreation and hydroelectric power production qualify as "beneficial consumptive uses" warranting priority under Section 1(b) of the O'Mahoney-Millikin Amendment<sup>169</sup> appears to be resolved. The terms "beneficial use" and "consumptive use" are often found in the statutes of western states that follow the prior appropriation doctrine for allocating water rights. Traditionally, states limited beneficial uses to those that involved diverting the water from a stream or lake and con-

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168. See note 64 *supra*.

169. RIDGEWAY, *supra* note 18, at 335.



suming for productive purposes such as irrigation, domestic use or mining.<sup>170</sup> Today, however, some western states have broadened their list of beneficial uses specifically to include recreation.<sup>171</sup> The "consumptive use" requirement proves more problematic for the upper basin states. Consumptive use is generally defined as "the amount of water consumed by a particular use and thus unavailable for further use."<sup>172</sup> While possibly being beneficial, surely water used for recreation is still available for further use and thus not within the general definition of consumptive use. Nowhere in its internal memoranda regarding the case does the North Dakota Attorney General's Office claim that recreation qualifies as a beneficial consumptive use.

A similar controversy arose in the late 1950s involving a dispute over whether hydroelectric power production in the upper basin states qualified as a beneficial consumptive use. Senator James E. Murray of Montana, the Chairman of the Committee on Interior and Insular Affairs at the time, commissioned a legal opinion that declared that the O'Mahoney-Millikin Amendment granted the upper basin states priority for "all beneficial uses, including the generation of electric power, as against the use of those waters for navigation."<sup>173</sup> The untimely death of Senator Murray provided an opening for the lower basin states to challenge this favorable interpretation for the upper basin states. Not even intervention by Senator O'Mahoney himself to claim that he had intended to include hydroelectric power production under the protective umbrella of Section 1(b) of the Flood Control Act of 1944 convinced the committee to add hydroelectric power to the list of protected activities. Senator O'Mahoney's cosmic response to a colleague's question during debate on the issue as to whether there was a distinction between beneficial use and beneficial consumptive use and whether hydroelectric power production consumes water failed to persuade many. He answered:

In the process of getting through the [turbine] structures that are built, there is evaporation. There must be some loss. Of course, I think strictly speaking, the water passes through a giant circle, from the land, through the power of the sun, to the clouds, and then to the rainfall again in

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170. SAX, *supra* note 33, at 165.

171. See, e.g., CAL. WATER CODE § 1243 (West 1971 & Supp. 1992); WASH. REV. CODE § 90.54.020(1) (West Supp. 1992).

172. SAX, *supra* note 33, at 971.

173. COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, *supra* note 64, at iii.

some other place. There is a continuous circle. The water is not eventually consumed. It is returned to the surface of the land some way.<sup>174</sup>

The outcome from that dispute may help explain why the upper basin states omitted this argument in their current lawsuit.<sup>175</sup>

Further analysis reveals a trend that developed during the legislative process that works to the great disadvantage of the upper basin states today: reasonable assurances of flexible priorities to the upper basin states in the lobbying stage, followed by vague language leaving room for maneuvering in the Joint Report approved by Congress, and finally, operation guidelines developed by the Corps that clearly favor the interests of the lower basin states. Project proponents emphasized the flexibility of the development and operation of the system as part of the total economic development of the Basin. Statements by representatives of various federal agencies who were asked to comment on the proposed system indicate that the plan was forward looking and flexible to accommodate changed circumstances. For example, the Commissioner of the Bureau on the Pick Plan stated, "[t]o the extent, however, that several functions of water control and utilization are conflicting, preference should be given to function which contribute most significantly to the welfare and livelihood of the largest number of people."<sup>176</sup> The fledgling recreation industry did not pose a threat to any other activities preferred by the Corps at that time, but now the situation has changed dramatically. The \$67 million a year recreation industry benefits far more residents of the Basin than the \$14 million a year navigation industry.<sup>177</sup> Additionally, the Land Use Coordinator of the Department of Agriculture added that, "[the] ultimate basin-wide plan can progressively be developed, with full recognition given to the best utilization of the waters of the main stream and its tributaries in accordance with the multiple-purpose principle."<sup>178</sup> The preliminary reports and statements by interested parties in lobbying for the the plan demonstrate great discretion and flexibility to adapt the system to changing needs.

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174. *Id.* at 15.

175. *See also* *Spillway Marina, Inc. v. United States*, 330 F. Supp. 611, 612 (1970) ("statute, on its face, does not include recreational purposes as one of the beneficial consumptive uses . . .").

176. H.R. DOC. NO. 475, 78th Cong., 2d Sess. 7. *See supra* text accompanying notes 90-94.

177. *See supra* notes 100-05.

178. H.R. DOC. NO. 475, 78th Cong., 2d Sess. 12-13 (1944).

The vague language of the Pick Plan, the Sloan Plan, and the Joint Report accepted by the upper basin states leaves plenty of room for discretion. The Joint Report merely listed the purposes of the reservoirs as "flood control, irrigation, navigation, hydroelectric power, and other uses," with no delineation of priorities.<sup>179</sup> The decision by the upper basin states to accept these preliminary assurances and the vague language of the Joint Report contribute to today's conflict. The Corps took control of the system after congressional authorization of the Joint Report. The implementation of the legislation and development of programs for daily operation of the system solidified this control. Not surprisingly then, the Corps established preferences for those activities for which it had traditionally been responsible: flood control and navigation.<sup>180</sup>

These ambiguities make the outcome of the pending lawsuit, *South Dakota v. Needham*,<sup>181</sup> difficult to predict. The courts must pick their way through the two interpretations of the legislative history of the Pick-Sloan Plan offered by the plaintiffs and the Corps. The massive, behind-the-scenes lobbying effort undertaken by the Corps and the Bureau to ensure congressional approval, compounds the ordinarily difficult task. The seemingly vague language of the Joint Report offers the court much room to maneuver. The statements made by officials of the various federal agencies involved in the planning of the system could cast some light on the language of the Joint Report. Whether the court accepts these statements as evidence of the plan's intent could be the deciding factor.

#### IV. HOW THE SYSTEM SHOULD BE OPERATED

Regardless of the outcome in the lawsuit filed by the upper basin states, it is time for the Corps to adjust its operating priorities for the Missouri River system. The losses suffered by all activities on the system during the drought drive home the point that the time is long past when the Corps should heed the mandate of the Flood Control Act of 1944, and stop operating navigation projects in the Missouri River Basin that do not make economic use of the waters of the river at the expense of a healthy and viable recreation industry.

The priorities and the drought contingency plan currently being followed by the Corps are based on economic projections for

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179. S. DOC. NO. 247, 78th Cong., 2d Sess. 3 (1944).

180. REISNER, *supra* note 24, at 179.

181. *South Dakota v. Needham*, No. CV-91-26-BLG (D. Mont. filed Feb. 4, 1991).

the uses of water for navigation and irrigation made in 1944, at the time that Congress approved the Joint Report.<sup>182</sup> Both of the primary purposes authorized for the system have disappointed the Corps. First, the navigation industry on the lower basin has not lived up to its potential. The 12 million tons of cargo to be shipped on the Missouri River that was projected by the Corps in 1944 has never climbed above 3.3 million tons. In fact, commercial navigation has declined in recent years to about 2.2 million tons in 1988 and, still further, to 1.4 million tons in 1990 after three years of drought management on the system.<sup>183</sup> In addition to the disappointing navigation industry, irrigation and consumptive uses from the reservoirs have also not developed as extensively as projected by the Corps in 1944. The Bureau expected to irrigate about 2.2 million acres through its diversions from Garrison and Oahe alone. Congress later completely withdrew authorization of irrigation projects at Oahe and scaled back Garrison to 130,940 acres, which the Bureau has not even managed to place in full operation due to disputes with Canada stemming from the 1909 Boundary Waters Treaty.<sup>184</sup>

The Corps should finish its review of the Master Manual and project operations that it began in 1989. The review will consider the economic, environmental, social and other benefits of all authorized purposes. Preliminary results of the review indicate that by increasing storage levels on the reservoirs and decreasing release rates, the Corps could increase net economic development benefits in the basin by about \$36.1 million annually.<sup>185</sup> The higher storage levels would increase economic benefits derived mainly from recreation on the reservoirs, hydroelectric power production in the upper basin, and flood control in the lower basin. Conversely, navigation would be adversely affected by these changes in system operations.

The Corps and Bureau manipulated the multiple-purpose idea and basin-wide accounting schemes to make construction of the Missouri River Basin System seem economically viable. It seems

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182. S. Doc. No. 247, 78th Cong., 2d Sess. (1944).

183. CORPS' MANAGEMENT, *supra* note 5, at 29; Carrels, *supra* note 101, at 1. A Corps analyst involved in evaluating the system's benefits to navigation users concedes that the recent drops in cargo shipped have more to do with changes in railroad freight rates and export markets for agricultural commodities than with the drought. CORPS' MANAGEMENT, *supra* note 5, at 23-24.

184. CORPS' MANAGEMENT, *supra* note 5, at 30. Negotiations with the Canadian government continue, but immediate resolution of the issues appears unlikely. The future operation of any irrigation diversions from Garrison remains uncertain. *Id.*

185. *Id.* at 33.

appropriate then, to use the same basin-wide principles to guide the contemporary operation of the system. The Corps' own report reveals that potential economic benefits for the basin are being washed downstream with the increased release rates in the spring to facilitate navigation. The economic projections of the 1940s must be reconciled with the economic realities of the 1990s. Consequently, the Corps must adjust the priority of water uses according to the total economic benefit to the entire basin region derived from the various uses.

To meet this objective, first, the Corps should immediately implement the findings of its system operations review. Adjustments should be made in the next operating season to incorporate these findings. Barge operators would need to alter their operations during the four- to six-year period that it would take to bring the reservoirs back to their pre-drought levels. Some operators would undoubtedly be forced out of business, but it becomes increasingly difficult to justify the continued subsidization of the barge industry at the expense of other more economically beneficial activities. It also remains exceedingly difficult to rationalize the subsidy on the Missouri when maintenance costs to the navigation channel are compared to those on other rivers. A study from the early 1970s revealed that taxpayers spent 13.9 mills per ton mile maintaining the Missouri navigation channel, compared with only 0.13 mills per ton mile on the lower Mississippi—more than 100 times greater.<sup>186</sup> On the other hand, barge operations would be affected only during drought periods when insufficient water would be available for release downstream during the late summer. It should be noted that the Missouri River has a very minor impact on grain transportation and rail rates nationwide due to the relatively high barge rates charged by Missouri River shippers and the low quantity hauled on the river.<sup>187</sup>

An alternative system would be to offer cash payments from a collective insurance fund to the barge operators during those drought years to help offset their losses from insufficient water levels. The Corps could raise revenue for the insurance fund through a river user fee imposed on barge operators during years of normal operation. Barge operators currently use the river free of charge, except for a small fuel tax imposed on barges operating

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186. Guhin, *supra* note 72, at 435.

187. Review, *supra* note 107, at 14. The Missouri River carried less than six-tenths of one percent of the 1989 total United States grain exports. *Id.*

on the inland waterway system.<sup>188</sup> This system could assist barge operators in amortizing the investments that they have made in time and equipment.<sup>189</sup> Admittedly, this system would be highly controversial and may drive away potential shippers unwilling to gamble whether the barges will be operating in a given year. But barge operators enjoy a nearly 400 percent price advantage over their railroad competitors; this price advantage should entice some shippers to risk the availability of sufficient water flows.<sup>190</sup> Moreover, navigation season water levels normally can be determined in the spring based on winter snow pack levels, so shippers could discount their risk significantly by making their choices in the spring. Further, barge operators unable to survive with a user fee should provide an additional sign to the Corps that the time has come to reorder its operating priorities on the Missouri.

Reordering the system's priorities could also alleviate the endangered species problem and other environmental concerns. Danger to the least tern and the piping plover that nest on sandbars along the banks of the river in the lower basin during the spring is caused by increased release rates from the main stem reservoirs after the nests are in place. The increased release rates raise the river level and flood the nests. Establishing uniform release rates throughout the navigation season would maintain the rivers at a relatively constant level and leave the nesting birds secure in their original nests throughout the navigation season. Alternatively, the walleye lay their eggs along the shores of the reservoirs in the upper basin during the spring. Increased release rates in the spring to aid the navigation season drop the reservoir levels and expose the eggs along the shoreline. These increased releases destroyed the entire walleye spawn during 1989 and 1990. Once again, discharging water from the reservoirs at the same rate at which they are being replenished would keep the reservoir levels relatively constant. This would permit the eggs to hatch safely along the relatively constant shoreline protect the fish populations in the reservoirs.

Finally, the Corps should make its current review of system operations a regular undertaking. Continued evolution of the sys-

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188. The tax on fuel is scheduled to be \$0.15 per gallon in 1992. A total of \$48.1 million in fuel taxes was collected in 1989, compared with the \$689 million the Corps spent on navigation related expenditures during the same period. This resulted in about a \$1.29 per ton subsidy for commodities shipped in 1989. Review, *supra* note 107, at 15-16.

189. For a more extensive discussion of economic and equity solutions to entitlement disputes, see A. MITCHELL POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS (1983).

190. See GIBBONS, *supra* note 104, at 82.

tem could force additional changes in the priorities in the years ahead. The Corps should establish a regular ten-year review schedule of its operations to evaluate maximizing basin-wide economic benefits from the system. The reviews should be announced as part of the regular system operation. In this way, the Corps could provide security of at least a ten-year period for those industries that benefit from the existing priorities, while adding flexibility to the system. The Corps would then have a systematic method for hearing the grievances of parties unhappy with their operating priorities, and objective standards for supporting changes to these priorities.

### CONCLUSION

The tremendously diverse geography, climate and needs of the residents of the Missouri River Basin resulted in nearly inevitable conflicts over the appropriate priorities to be granted to specific uses in a basin-wide system. The mammoth size and economic infeasibility of the chosen Pick-Sloan Plan made conflict a certainty. The Corps' rigidity in managing the system and the lingering drought brought this conflict barely twenty years after the system became fully operational in 1967. The Corps' insistence upon granting the localized navigation industry in the lower basin a higher priority than the fast-growing recreation industry on the reservoirs in the upper basin states has now brought the conflict to a head. The many unfilled promises made by the Corps and the Bureau to the residents of the upper basin states left them with only a growing recreation industry to show for the millions of acres of lost farm land and wildlife habitat that was sacrificed for the reservoirs. Lacking political clout in Congress to pressure the Corps to change its management policies, the upper basin states have resorted to the federal courts for help.

The Corps' reluctance to grant recreation a higher priority may stem more from an objective view of politics and economics than legal constraints. The Corps' recalcitrance in the face of economic realities may be fear of diminished future congressional appropriations that could follow such a change. The Corps may feel it is too risky to admit that a change in operating procedures is needed during a time of government budget deficits. Reordering priorities with recreation in ascending position would be an admission by the Corps that the Missouri River system and many of its other projects in the West were not economically viable. Most of the irrigation projects proposed for the Missouri River System

were never developed. It would have been cheaper simply to give direct cash payments to the potential irrigators rather than go through with the projects. Irrigation development cannot be relied upon to justify future projects to an increasingly budget-conscious Congress.

The same can be said for the other rationales that the Corps has traditionally relied upon in proposing massive public works projects on the nation's waterways. Power production from the system has never been great, given the low height of the dams. Finally, the moribund barge industry on the Missouri below Sioux City, Iowa, fails to justify the cost of the basin system allocated to navigation. Cargo tonnages are small and declining. The Missouri does not even begin to approach the level of barge traffic found on the Mississippi and Ohio Rivers. The trucking industry and the railroads have priced out barge competition except in a few commodities in isolated regions. Without the help from the Corps, even these remaining barges would likely go under given the uncertainty of flow levels and the length of the season available on the Missouri.

The Corps would be left to admit that after over \$7 billion in spending, controlling flood damage in the lower basin and the inadvertent development of a sport fishing industry on the reservoirs of the upper basin states are the major accomplishments of the Pick-Sloan Plan. Even some members of Congress would be unwilling to appropriate money for pork-barrel water projects if the Corps admitted ahead of time that recreation would be a chief beneficiary. Such local economic development projects surely could be accomplished for less cost and without the widespread environmental destruction that traditionally has accompanied projects undertaken by the Corps. Perhaps now with a little more help from the Corps the Ghost Dance prayers of the Sioux sent to them by Wovoka will finally be answered. The white population in the upper basin states will continue to decline and once again buffalo will roam the Great Plains.



