

The Colorado River Delta and Minute 319: A Transboundary Water Law Analysis

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This paper examines The International Boundary and Water Commission's Minute 319, signed November 2012, the ecologically-focused amendment to the 1944 Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande between the United States and Mexico. Parts 1 through 4 offer overviews of the history and ecological importance of the Colorado River Delta, the history of international relations between the U.S. and Mexico along the Colorado River, and the evolution of the 1944 Treaty from a water allocation scheme to a comprehensive framework for binational cooperation. Part 5 examines Minute 319's provisions. Part 6 compares the Treaty and Minute 319 to customary international transboundary water law principles as expressed in the International Court of Justice's 1997 Gabzikovo-Nagymoros Dam decision. Part 7 examines the evolved role of the International Boundary and Water Commission and its suitability as a model for future binational organizational cooperation.

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INTRODUCTION

The purpose of this article is to examine Minute 319, the recent amendment to the Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (Treaty) signed in 1944. The Treaty was designed to be flexible; its binational oversight commission, the International Boundary and Water Commission (IBWC) makes minor amendments, conducts research, and proposes major policy changes to both governments. Even though the Treaty began as a means to monitor a shared border between former enemies, it evolved over seventy years into a framework for international cooperation and resource management of unprecedented scale and value to the environment and to the greater international community.

Minute 319 is worth special attention for several important purposes. First, it helps secure a valuable and vulnerable international environmental resource: the Colorado River Delta. Second, it allows Mexico to store water in Lake Mead, which represents an unprecedented level of trust and cooperation between the U.S. and Mexico that took decades to develop. Third, it requires participating non-governmental organizations to perform substantive duties under the Treaty,

namely donating water for environmental purposes – a rare and potentially unique occurrence in international law. Fourth, it serves as an example of international cooperation that informs emerging international water law.

Part 1 describes the history and environmental importance of the Colorado River Delta. Part 2 gives a brief overview of the “Law of the River” (as Colorado River law is often called) and international relations leading up to the 1944 Treaty. Part 3 discusses how the Treaty was amended to address several decades of unresolved water quality and groundwater pumping crises. Part 4 shows how a culture of proactive cooperation evolved even in the face of new crises. Part 5 discusses the significant provisions of Minute 319 mentioned above. Part 6 examines the Treaty in the context of customary principles of transboundary water law. Part 7 evaluates the International Boundary and Water Commission as a potential model organization for future international treaties.

I. THE COLORADO RIVER DELTA

This Part reviews the history and ecological importance of the Colorado River Delta, and outlines why its revitalization and protection is an international concern. When the Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (Treaty), was signed in 1944, environmentalism was still a nascent dream based on the work of John Muir, Aldo Leopold, and Ansel Adams. The United States, in controlling all of the Colorado River’s headwaters, was only concerned with maximizing its own “beneficial” use of the river. As a result the Colorado River Delta’s fertile wetlands, a jewel of arid Baja California’s biodiversity and fecundity, slowly withered away. Restoring it will require the trust and cooperation of both the U.S. and Mexico.

A. *A Brief History of the Delta*

The Colorado River basin spans seven U.S. states and two Mexican states: Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada, California, Sonora, and Baja California; the River drains into the Gulf of California (Sea of Cortés).¹ The 1,450 mile long river is the only dependable water supply for its 246,000 square mile basin.² Its waters are even diverted hundreds of miles outside its basin, sustaining, ultimately, much of southern California, eastern Colorado and western Utah.³ The river’s meager capacity to sustain agriculture and cities has been drastically expanded over the last hundred years through the creation of a

¹ NORRIS HUNDLEY, JR., *WATER AND THE WEST: THE COLORADO RIVER COMPACT AND THE POLITICS OF WATER IN THE AMERICAN WEST* 6, at xi (2d ed. 2009).

² J.C. Kammerer, *Largest Rivers in the United States*, USGS, <http://pubs.usgs.gov/of/1987/ofr87-242/> (last visited Apr. 13, 2013).

³ HUNDLEY, *supra* note 1, at x-xi.

network of dams, reservoirs, and canals.⁴

The Colorado River Delta originally consisted of over 1.5 million acres of tidal wetlands, formed where the flat floors of the Yuma, Imperial, and Mexicali valleys came together.⁵ The river deposited rich silt and fertile soil in the Delta, creating an alluvial paradise for its original settlers, the Cocopah Indians.⁶ The Cocopah hunted waterfowl and grew corn, melons, and beans.⁷ The Spanish explorer Hernando de Alarcón re-discovered the Delta for Europe during his 1540 expedition up the Gulf of California.⁸

When renowned American writer and settlement advocate William Ellsworth Smythe recounted his first visit to the Delta in 1900, he noted “[the] soft, sweet atmosphere, the rich, level soil, the graceful mesquite trees, the abundance of pure spring water, the warm river. . . [and] the sky, alive with ducks, geese, storks and pelicans.”⁹ A local rancher assured Smythe he could grow green corn in forty days, and Smythe saw ample opportunity for settlement and development.¹⁰ Despite Smythe’s best efforts to spur growth, conditions in the Delta remained largely the same for over two decades, as pioneering conservationist Aldo Leopold recounted in *A Sand County Almanac* after his 1922 visit.¹¹

A mere thirteen years later, the closing of Hoover Dam’s gates cut flows to the Delta. After the Morelos Dam was completed in 1950, followed by the Glen Canyon Dam in 1964, virtually no water flowed to the Delta, except in flood years. Without water, periodic flooding, or silt, the Delta shrunk to 40,000 acres. This devastated fish, wildlife, and local communities.¹² During a 1980 canoe trip

⁴ See HUNDLEY, *supra* note 1, at 334-5. Projects along the Colorado River include the Hoover Dam (1936, forming Lake Mead), All-American Canal (1940), Grand Coulee Dam (1941), Colorado River Aqueduct to Southern California (1941), Friant Dam (1942), Shasta Dam (1945), Keswick Dam (1949), Colorado-Big Thompson Project (1956), Colorado River Storage Project (ongoing since 1956), Glen Canyon Dam (1963), Flaming Gorge Dam (1964), Central Arizona Project (1968), California Central Valley Project (1992), and the California State Water Project (ongoing since 1962).

⁵ Kevin G. Wheeler, *Alternatives for Restoring the Colorado River Delta*, 47 NAT’L RESOURCES J. 917, 917 (claiming 1.5 million acres). *But see* Paul D’Amours, *The Colorado River Delta*, 2000 COLO. J. INT’L ENVTL. L. & POL’Y (YEARBOOK) 183, 184 (2000) (claiming 1.9 million acres); EVAN R. WARD, *BORDER OASIS: WATER AND THE POLITICAL ECOLOGY OF THE COLORADO RIVER DELTA, 1940-1975*, at xxii (2003).

⁶ WARD, *supra* note 5, at 136 (settling circa 1000 A.D.).

⁷ *Id.* at xx.

⁸ ALDO LEOPOLD, *A SAND COUNTY ALMANAC* 141-42 (1949).

⁹ William E. Smythe, *An International Wedding: The Tale of a Trip on the Border of Two Republics*, 5 SUNSET 286, 292 (1900).

¹⁰ *Id.* at 289. Compare with the 60-80 days it may take, depending on regional climate and type of corn.

¹¹ Robert Jerome Glennon & Peter W. Culp, *The Last Green Lagoon: How and Why the Bush Administration Should Save the Colorado River Delta*, 28 ECOLOGY L.Q. 903, 905-06 (2002) (citing LEOPOLD, *supra* note 9, at 141-42).

¹² *Id.* at 906.

down the Colorado River, Philip Fradkin saw only “a vast expanse of cracked mud and inhospitable terrain”¹³ By then, many environmentalists had given up the Delta for dead.¹⁴

The Delta then enjoyed a nearly miraculous rejuvenation, rebounding to over 150,000 acres of riparian habitat. This resulted from several unusual years of brief but substantial flooding in the early-mid 80’s, and again in the mid 90’s.¹⁵ This renaissance shocked experts and spurred renewed interest in restoring and preserving the Delta ecosystem. Even agricultural drain water, too salty and polluted for further consumptive use, continues to provide additional flows that are sustaining the Delta’s comeback.¹⁶

B. Environmental Importance and International Character of the Delta Problem

The Delta provides important brackish water that is crucial for the reproduction of numerous species of fish, shrimp, and other marine animals living in the Gulf of California.¹⁷ Some of these sea species are endangered, including the Totoaba (a six foot, 300lb fish), and the Vaquita (the smallest porpoise species, and also the most endangered marine mammal in the world).¹⁸ The Delta also provides a safe reserve habitat for riverine species, whose survival upstream is often threatened by changes in river conditions.¹⁹ Protected estuary wildlife includes the desert pupfish and the Yuma clapper rail. Finally, the Delta is a major stopover point on the Pacific Flyway, through which seventy-five percent of North American migrating birds pass each year. Mexican law protects six species of these birds.²⁰

More water is needed to sustain the Delta for the long term. Specifically, the Delta needs an annual “base flow” of at least 32,000 acre-feet of water (a.f.) and a “pulse flow” of 260,000 a.f. every four years.²¹ Implementing this plan

¹³ *Id.* (citing PHILIP FRADKIN, *A RIVER NO MORE: THE COLORADO RIVER AND THE WEST* 320 (1981)).

¹⁴ *Id.*

¹⁵ *Id.* at 907.

¹⁶ *Id.* at 907-08 (describing how hyper-saline wastewater from the Wellton-Mohawk Irrigation District has formed an emerging wetland adjacent to, and usually included as part of, the Delta); Jennifer Pitt et al., *Two Nations, One River: Managing Ecosystem Conservation in the Colorado River Delta*, 40 NAT. RESOURCES J. 819, 830 (2000) (estimating the total amount of polluted, saline agricultural runoff draining into the Delta at 200,000 a.f. annually). Drain water is generally not counted towards Mexico’s allocation of Colorado River water.

¹⁷ Glennon & Culp, *supra* note 11, at 909.

¹⁸ Frank S. Wilson, *A Fish Out of Water: A Proposal for International Instream Flow Rights in the Lower Colorado River*, 5 COLO. J. INT’L ENVTL. L. & POL’Y 249, 250, 255 (1994).

¹⁹ Glennon & Culp, *supra* note 11, at 909.

²⁰ *Id.* at 908; Pitt et al., *supra* note 16, at 829 n.38.

²¹ See, e.g., DANIEL F. LUECKE ET AL., *ENVTL. DEF. FUND, A DELTA ONCE MORE: RESTORING RIPARIAN AND WETLAND HABITAT IN THE COLORADO RIVER DELTA*, at iv (1999), available at

requires binational cooperation. Even though Mexico could fallow enough farmland to free up the annual base flow, it cannot supply a sufficient pulse flow without U.S. assistance.²² The only practical way to remove that much water from beneficial use every four years is to store 65,000 a.f. every year and release it all at once. However, Mexico does not have storage dams on the Colorado River.²³ Furthermore, the U.S. allocates less than ten percent of the Colorado's flow to Mexico, and it precisely controls the amount and timing of that flow.²⁴ Without U.S. cooperation and assistance, the future of the Colorado River Delta cannot be guaranteed.

II. THE (INTERNATIONAL) "LAW OF THE RIVER"

Water lawyers spend entire careers learning the complex interaction of laws, compacts, treaties, agreements, contracts, players, and interrelationships that make up the "Law of the River." It is not hard to understand why the U.S. has been historically protective of its interests in the Colorado River, or hostile to Mexican claims on its water. Even States bicker and argue about who has the right to what water and when. In order to put the 1944 Treaty in its proper historical context, it is necessary to review the basic principles of the "Law of the River" and the relationship between the two nations.

A. *The Treaty of Guadalupe-Hidalgo (1848)*

In 1848, The United States and Mexico signed the Treaty of Guadalupe-Hidalgo, establishing the border between the two countries and ending the Mexican-American War.²⁵ The two countries founded the first joint Commission of the two governments to survey the border (the predecessor to the International Boundary Commission).²⁶ In 1853, the U.S. and Mexico completed the

http://www.edf.org/sites/default/files/425_delta.pdf; Pitt et al., *supra* note 16, at 831 (noting a required minimum of 32,000 a.f. to support vegetation); *id.* at 830 (stating that quadrennial floods sustain vegetation, stimulate seed germination, and inundate soil). *But see* Wheeler, *supra* note 5, at 923 (recommending 50,000 a.f. to wet sufficient soil for riparian insect habitat).

²² Francisco Zamora-Arroyo, *Collaboration in Mexico: Renewed Hope for the Colorado River Delta*, 8 NEV. L.J. 871, 873 (2008) (noting that Mexican farmers' water rights can be sold voluntarily and dedicated to in-stream uses through existing Mexican water transfer mechanisms).

²³ Glennon & Culp, *supra* note 11, at 955 (explaining that Mexico's only Colorado River dam is the Morelos Dam, designed for diversion).

²⁴ Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, U.S.-Mex., art. 10, Feb. 3, 1944, 59 Stat. 1219 [hereinafter 1944 Treaty] (allocating 15M a.f. to the United States and 1.5M a.f. to Mexico); Glennon & Culp, *supra* note 11, at 955.

²⁵ See Robert J. McCarthy, *Executive Authority, Adaptive Treaty Interpretation, and the International Boundary and Water Commission, U.S.-Mexico*, 14 U. DENV. WATER L. REV. 197, 208-09 (2011).

²⁶ See J.F. Friedkin, *History and Functions of Joint Mexican-American Public Bodies Regulating and Allocating Water Resources Along the Rio Grande (Bravo)*, in INTERNATIONAL WATER LAW ALONG THE MEXICAN-AMERICAN BORDER 1, 1 (Clark S. Knowlton ed., 1968).

controversial Gadsden Purchase, establishing the contemporary border.²⁷ The original treaties did not mention any regulation of the river or use of the waters; they merely prohibited construction that would hinder navigation.²⁸ The Conventions of 1884 and 1889 recognized that the Colorado and Rio Grande rivers made up long stretches of the border, and their meandering paths needed to be jointly monitored; the result was the creation of the International Boundary Commission (IBC, later IBWC).²⁹ Further Conventions of this era dealt with disputes over the use of, allocation of, and projects on the Rio Grande.³⁰ Unfortunately, revolution in Mexico, Mexican expropriations of American oil interests, and finally World War II strained relations between 1906 and 1940 and stifled efforts to increase cooperation.³¹

B. Domestic “Law of the River”

During the early 20th Century, development in the West boomed.³² California, Colorado, and Utah began expensive development projects with the goal of removing Colorado River water from its basin, foreclosing any further potential use downstream.³³ The other southwestern riparian states were pursuing growth as well, having noticed that their fertile soil, cheap land, and long growing seasons were excellent for agriculture and pasturing.³⁴ In 1917, the seven riparian states formed the League of the Southwest to promote development along the river, and in 1921 Congress authorized the states to negotiate a compact to allocate Colorado River water.³⁵

Mexico asked to be represented during the water allocation negotiations, but

²⁷ See McCarthy, *supra* note 25, at 209 (discussing the Gadsden Purchase’s reputation as an “imperialist conquest” that formed “the basis for a continuing neocolonial relationship [with Mexico]”).

²⁸ See Friedkin, *supra* note 26, at 1.

²⁹ See McCarthy, *supra* note 25, at 210.

³⁰ See, e.g., Friedkin, *supra* note 26, at 2; David Herrera Jordán, *Historia de los Acuerdos entre México y los Estados Unidos para el Aprovechamiento de las Aguas del Río Bravo (Grande)*, in INTERNATIONAL WATER LAW ALONG THE MEXICAN-AMERICAN BORDER, at 8, 14 (discussing the crisis in 1889 when New Mexico and Texas used all of the Rio Grande; Mexico sued for \$35 million in damages and nearly 50 years passed before reaching settlement).

³¹ Jordán, *supra* note 30, at 8-9.

³² See, e.g., HUNDLEY, *supra* note 1, at 157. Denver, for example, nearly doubled in population from 1900 to 1920.

³³ *Id.* at 156-57; JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS 804 (4th ed. 2006). California’s Imperial Valley wanted an All-American canal to divert water from the Colorado that would circumvent the existing Alamo canal, which they shared with Mexico. Colorado wanted to divert more water to Denver. Utah wanted to divert more water to the Great Salt Lake Basin.

³⁴ HUNDLEY, *supra* note 1, at 159. The missing ingredient was, of course, water of which, until then, there had been an ample surplus.

³⁵ *Id.* at 55, 110-13.

its request was summarily denied.³⁶ Some participants felt that Mexico had absolutely no right to any Colorado River water; it could only enjoy whatever surpluses came its way in wet years.³⁷ Others felt that Mexico deserved some fixed amount of water in the interests of “equity and comity” based on earlier agreements and decades of reliance.³⁸

During the stalled negotiations, the Supreme Court decided *Wyoming v. Colorado* (1922), which established prior appropriation as the priority schema controlling interstate disputes.³⁹ This was excellent news for lower basin states that had established early, huge water claims. Even Mexico, which had followed the proceedings, approved, hoping the same rubric would apply when it came time to negotiate an international agreement.⁴⁰ However, northern riparian states were not ready for a water-appropriation race against fast-growing California.

The states, unable to agree on individual allocations, split the basin in half. Colorado, Utah, New Mexico, and Wyoming became the “upper basin,” and California, Arizona, and Nevada became the “lower basin.”⁴¹ Each half was allocated 7.5M a.f., evenly splitting the estimated average minimum flow.⁴² However, Arizona, which also contributes 3M a.f. to the River from its tributaries, did not want that amount counted against the lower basin’s allocation.⁴³ A compromise provision guaranteed an additional 1M a.f. for the lower basin.⁴⁴ Arizona subsequently refused to ratify the Colorado River Compact until 1944, after the U.S. had negotiated a treaty with Mexico.⁴⁵ In 1929, after years of State ratification battles and passage of the Boulder Canyon Project Act (negotiated by California to acquire Federal funds for the construction of the Hoover Dam, Boulder Dam, and the All-American Canal), the other six states finally approved the Compact over Arizona’s protests.⁴⁶

³⁶ *Id.* at 175-77.

³⁷ *See, e.g., id.* at 177. Arizona’s Carl Hayden opposed any negotiations with Mexico until the U.S. had determined that it was unable to use all the water itself.

³⁸ *Id.* at 205 (quoting Secretary of State Charles Evans Hughes’ letter of August 17, 1922 to Herbert Hoover); *see* Charles J. Meyers & Richard L. Noble, *The Colorado River: The Treaty with Mexico*, 19 STAN. L. REV. 367, 400 (1967) (discussing the Imperial Valley Irrigation District’s 1904 concession from Mexico to construct its Alamo canal through Mexican land, in exchange for a right to halve the water in the canal).

³⁹ SAX ET AL., *supra* note 33, at 804; *see Wyoming v. Colorado*, 259 U.S. 419, 496 (1922) (apportioning the Laramie River between the two states), *vacated, and modified*, 353 U.S. 953 (1957).

⁴⁰ HUNDLEY, *supra* note 1, at 179.

⁴¹ SAX ET AL., *supra* note 33, at 804.

⁴² *See* HUNDLEY, *supra* note 1, at 192, 198.

⁴³ *See id.* at 198.

⁴⁴ Colorado River Compact, art. III(b), H.R. DOC. NO. 605 (1923); *see* HUNDLEY, *supra* note 1, at 198.

⁴⁵ SAX ET AL., *supra* note 33, at 805.

⁴⁶ *Id.* The All-American Canal usurped the role of the Alamo canal, allowing the Imperial Valley to avoid its prior agreement to share water with Mexico. HUNDLEY, *supra* note 1, at 281.

However, the Boulder Canyon Project Act contained a provision specifying that the water in Lake Mead was intended for use in the U.S. only.⁴⁷ Even though binational talks about the Colorado and Rio Grande had begun as early as 1924, by 1930 they had completely broken down again.⁴⁸

C. *The Inter-American Arbitration Treaty of 1929*

At the Havana Conference of 1929, the U.S. signed, and in 1935 ratified, the Inter-American Arbitration Treaty, which provided that the Parties would submit to international arbitration for any international dispute relating to a treaty, or any right asserted by one Party against another.⁴⁹ This treaty increased Mexico's negotiating leverage, by providing another credible venue for airing its grievances. Although the U.S. may not have thought Mexico had an affirmative right to water, it generally recognized Mexico's right to force arbitration under this treaty.⁵⁰ Various older international agreements, contracts, compact language, and equitable considerations of prior reliance and prescription generally supported the *potential* existence of a Mexican water right in the Colorado River that could be recognized in arbitration. The U.S. also sought to prevent a diplomatic incident that could plague relations with Mexico and damage its general foreign relations efforts.⁵¹ By negotiating a treaty and adopting a "Good-Neighbor" policy, the U.S. hoped to settle the matter preemptively, before Mexico further developed its water use.⁵²

D. *The Mexico-U.S. Water Treaty of 1944*

Binational talks resumed in 1940, and they centered around the potential for *quid pro quo* cooperation on apportionment, management, and project construction on the Rio Grande in exchange for a formalized Mexican water right in the Colorado River.⁵³ Mexico controls three-fourths of the Rio Grande's tributaries and could deny substantial water to Texas.⁵⁴ After the dust settled, the U.S. guaranteed Mexico that it would deliver 1.5M a.f. of Colorado River water, in the river, at the international boundary, "from any and all sources."⁵⁵ Additional provisions accounted for extraordinary drought or surplus. If a drought or disaster rendered the U.S. unable to deliver Mexico's allotment, that

⁴⁷ Meyers & Noble, *supra* note 38, at 368.

⁴⁸ *Id.* at 368-69.

⁴⁹ *Id.* at 400; *see also* General Treaty of Inter-American Arbitration, Jan. 5, 1929, 49 Stat. 3153, 2 Bevans 737.

⁵⁰ Meyers & Noble, *supra* note 38, at 402.

⁵¹ *Id.* at 406.

⁵² *Id.* at 405-06.

⁵³ *Id.* at 369-70.

⁵⁴ *Id.* at 371.

⁵⁵ *See id.* at 389-90.

allotment would be reduced in the same proportion as the U.S. reduced its own consumption.⁵⁶ In years of surplus (as legally, not practically, defined — a rare occurrence), Mexico would have the right to an additional 200,000 a.f. of Colorado River water.⁵⁷

To manage this allocation scheme, the International Boundary Commission (IBC) was renamed the International Boundary and Water Commission (IBWC), and its role and authority was expanded substantially.⁵⁸ Article 24, paragraph (a) of the Treaty imbued the Commission with the authority to investigate and plan for works to be constructed or established under the Treaty or any other agreements dealing with the border zone of the river.⁵⁹ Most importantly, the IBWC has the authority to interpret and apply treaty provisions through a “Minute” system, whereby the decisions of the Commission are sent to each government, and take effect unless disapproved within thirty days.⁶⁰ Over the decades, the powers to investigate, plan, and interpret have combined and evolved to allow the IBWC to address problems outside of the scope of the original treaty.⁶¹

III. 1944 – 1979: RESPONDING TO CRISES

The 1944 Treaty did not address matters of water quality, groundwater pumping, or ecological concerns. These problems began to manifest in the 1960’s and 70’s, after newly cultivated lands in Arizona required draining hyper-saline groundwater into Mexico.⁶² The IBWC, working with its respective governments, used the “Minute” system to do more than merely interpret the Treaty; it also amended and expanded the Treaty to finally address the lingering problems of water quality and groundwater pumping.

A. *Water Quality and the Salinity Crisis*

The Treaty provides that the U.S. may deliver water to Mexico “from any and all sources.”⁶³ The provision allows the U.S. to meet its water delivery obligation by providing agricultural runoff. Mexico accepted that provision with an understanding that the runoff would be clean enough to re-use; this understanding was based on two factors. First, the Treaty stated that domestic

⁵⁶ *See id.* at 389.

⁵⁷ *See id.* at 388. The treaty also dealt with allocations, cooperation, and storage projects on the Rio Grande, and Tijuana Rivers.

⁵⁸ 1944 Treaty, *supra* note 24, art. 2.

⁵⁹ *Id.* at art. 24, (expanding IBWC authority to investigate issues and build works).

⁶⁰ *Id.* at art. 25 (authorizing IBWC to use Minutes to interpret and amend).

⁶¹ McCarthy, *supra* note 25, at 217.

⁶² Meyers & Noble, *supra* note 38, at 409.

⁶³ *Id.* at 389.

consumption and irrigation were the two highest uses, so the water should be suitable for those uses after treatment.⁶⁴ Second, the All-American Canal diverts water to the Imperial Valley from so far south that it is substantially the same water as that received by Mexico — any problems Mexico had with the water quality would be shared by California.⁶⁵ But the U.S. did not intend to be pinned down by specific requirements as to the runoff's cleanliness.⁶⁶

Consequently the first salinity crisis occurred in 1961.⁶⁷ The Wellton-Mohawk District in Arizona began draining hyper-saline groundwater (with toxic levels of dissolved solids) directly into the Colorado River, to prevent it from rising up to root-level on newly irrigated lands.⁶⁸ As a result the Colorado River water delivered to Mexico was too salty to use without harming the crops or soil pH.⁶⁹ The State Department recognized three potential avenues for litigation: a suit in the International Court of Justice, arbitration under the Inter-American Arbitration Treaty, or a lawsuit in federal court.⁷⁰

Seeking to avoid litigation, the U.S. agreed to extend the Wellton-Mohawk drain to bypass Mexico's primary diversion point (at Morelos Dam) and "pass harmlessly⁷¹ down the Colorado channel."⁷² The extended drain had its own diversion works, so that the water could be delivered either above or below the Morelos Dam diversion works.⁷³ Minute 218 (1965) codifies the U.S. obligation to extend the drain, and describes the timing and maximum allowable flows of drain-water into Morelos so the Mexicans can dilute it with Colorado River water.⁷⁴

However, the drain extension had farther-reaching political ramifications. First, the water still counted towards Mexico's allotment.⁷⁵ Mexican water authorities frequently had to mix the still saline river water with pumped groundwater to render it suitable for many crops.⁷⁶ Second, although national politicians approved the solution, to many residents it seemed to be "merely a

⁶⁴ *Id.* at 407.

⁶⁵ *Id.* at 408.

⁶⁶ *See id.* at 406-07.

⁶⁷ *Id.* at 409.

⁶⁸ *Id.*

⁶⁹ *Id.* at 407 (noting the negative effects of water salinity on soil).

⁷⁰ *Id.* at 410.

⁷¹ It is interesting to note Professor Meyer's use of "harmlessly" here, in describing the effects of hyper-saline, polluted water. Likely he is concerned only with the potential harm to human endeavors, and not ecological harm. Ironically, as mentioned above, dirty water is better than no water for the parched Delta.

⁷² Meyers & Noble, *supra* note 38, at 410.

⁷³ International Boundary and Water Commission [IBWC], *Minute No. 218* (Mar. 22, 1965), available at <http://www.ibwc.gov/Files/Minutes/Min218.pdf> [hereinafter IBWC, *Minute 218*].

⁷⁴ *Id.*

⁷⁵ *See Id.*

⁷⁶ WARD, *supra* note 5, at 93.

new form of imperialism.”⁷⁷

B. Groundwater Pumping and the Salinity Crisis: Minute 218

The Treaty of 1944 was silent on groundwater rights. This “major defect” was exposed during the Senate ratification hearings in 1945.⁷⁸ Baja California overlies the transnational Mexicali aquifer, fed by the Colorado, and no provisions allocate that water or limit its exploitation. Mexico supplemented its allocation of Colorado River water by pumping as much as it needed, regardless of the overdraft risk. Although there was a ban on sinking new Mexican wells, farmers with wells tended to have the highest crop yields, and no limits on pumping.⁷⁹ Shortly after Minute 218 was finalized, the U.S. announced its intent to drill new wells along the Yuma plateau to extract its “full share of the [ground] water.”⁸⁰ This threat to a previously uncontested, Mexican-dominated water source caused political resentment in Mexicali, against both the U.S. and Mexico City.⁸¹ Furthermore, it nearly created a race to the pump house. Local Mexican groups called for a lift on the ban, a new treaty banning new wells on both sides, or an amendment to the 1944 Treaty to codify groundwater rights.⁸² Had they occurred, the effect of each of these solutions would have been to preserve the 10 to 1 Mexican advantage in pumping capacity.⁸³ In addition to the groundwater standoff, the water was still too salty for some uses, or to support long-term soil health.

Minute 218 was only intended as a stop-gap measure to render the delivered water usable (through dilution with pumped or main-channel river water).⁸⁴ The salinity problem continued to linger for years, with Mexico alternately extending Minute 218 and threatening judicial action. From Mexico’s perspective, the U.S. was threatening the livelihoods, and potentially the very existence, of Mexicali. The U.S., eager to avoid further embarrassment and to clarify its duties so as to better plan for population growth in the southwestern states, finally responded with Minute 242 in 1973.⁸⁵

⁷⁷ *Id.* at 92.

⁷⁸ Meyers & Noble, *supra* note 38, at 415-16.

⁷⁹ WARD, *supra* note 5, at 96.

⁸⁰ *Id.* at 93.

⁸¹ *Id.* at 92.

⁸² *Id.* at 96.

⁸³ *Id.* (noting that Mexico had about 600 pumps operating, and the U.S. had only around 60).

⁸⁴ IBWC, *Minute 218*, *supra* note 73, at 3 (specifying that Resolution 8 has a five year expiration date).

⁸⁵ WARD, *supra* note 5, at 118-19 (quoting reports of diplomatic discomfort of U.S. officials travelling in Mexico).

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C. The Solution to the Salinity Crisis: Minute 242

Minute 242 is titled “Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River,” and it delivers on its claim.⁸⁶ The permanent solution strengthened and built on the recommendations in Minute 218. First, Minute 242 required the U.S. to deliver at least 1.36M a.f. of water to the Mexican Morelos Dam for diversion to Mexican farmers, and that water must not contain more than 145 parts per million salt more than the water delivered upstream at the U.S. owned Imperial Dam (averaged annually).⁸⁷ Second, the U.S. agreed to continue draining at least 140,000 a.f. of hyper-saline water straight to the sea, below Morelos Dam. If the U.S. drains less than 140,000 a.f., it must deliver the difference upstream at Morelos to ensure that Mexico gets the full 1.5M a.f.⁸⁸ Third, the U.S. agreed to extend the Wellton-Mohawk Main Outlet Drain Extension directly to the Gulf of California via the Cienega de Santa Clara (Santa Clara Wetlands), and have the right to discharge briny, desalination byproduct, non-treaty drain water.⁸⁹ The cumulative effect of these provisions is to give the U.S. control over where and when it discharges the briny drain water. Mexico must still receive 1.5M a.f. of water, at least 1.36M a.f. of which must be delivered to Morelos Dam at a known maximum salinity level (or cleaner). With this kind of control, the U.S. can release drain water to Morelos Dam up to the maximum salinity level, treated or untreated depending on how much other clean water has already been delivered that year. When salinity is already high, the U.S. can avoid making it worse by diverting drain water around Morelos Dam to the sea.

Minute 242 also has temporary provisions to resolve overdrafting the Mexicali aquifer. Minute 242 calls for each country to limit its groundwater pumping near the border and near San Luis (overlying the Mexicali aquifer) to 160,000 a.f. per year, and to consult before further developing water resources in the area, until the two governments reach a comprehensive agreement.⁹⁰ Finally, Minute 242 requires the U.S. to assist Mexico with remedying salinity problems in the Mexicali Valley.⁹¹

The U.S.’ preferred method for achieving its Minute 242 obligations was building a desalination plant in the middle of the desert near Yuma to treat water

⁸⁶ IBWC, *Minute No. 242* (Aug. 30, 1973), available at <http://www.ibwc.gov/Files/Minutes/Min242.pdf> [hereinafter IBWC, *Minute 242*].

⁸⁷ *Id.* at Resolution 1(a) (stating that the actual figure is 115 parts per million plus or minus 30 p.p.m. for a hard cap of 145 p.p.m).

⁸⁸ *Id.* at Resolution 1(c).

⁸⁹ *Id.* at Resolution 2.

⁹⁰ *Id.* at Resolutions 5 & 6; J. Medellín-Azuara et al., *Virtues of Simple Hydro-Economic Optimization: Baja California, Mexico*, 90 J. ENVTL. MGMT. 3470 fig.1 (2009) (showing the extent of the Mexicali aquifer).

⁹¹ *Id.* at Resolution 7 (includes financing help and direct assistance).

destined for Mexico.⁹² It was that, or shut down the Wellton-Mohawk irrigation district altogether (the source of the saline water).⁹³ The dream of desalination was to offer efficiency and conservation of existing freshwater resources, by developing new water resources that were otherwise too salty to use.⁹⁴ In this way, desalination offered a way for the U.S. to help Mexico by helping itself. This ultimately proved to be substantially more complicated and expensive than proposed. Project costs more than doubled, from an estimated \$120M to \$260M, and the plant took almost twenty years to complete.⁹⁵

Minute 242 is sometimes viewed as the first environmental Minute.⁹⁶ Even though its environmental benefits were unintended and incidental, the Minute benefits the ecology of the Delta. It establishes a precedent for applying otherwise unusable water to beneficial, ecological use.⁹⁷ The Cienega de Santa Clara would likely not have rebounded without that dedicated drainage flow. Minute 261, adopted in 1979, set additional sanitary standards for water, and authorized the IBWC to investigate methods to manage sanitation problems.⁹⁸ Taken together, Minutes 242 and 261 grant the IBWC wide latitude to address water quality concerns, and set a precedent for allowing otherwise unsuitable water to serve a useful ecological role in the Delta.

IV. 1980 – 2010: A NEW ATTITUDE TOWARDS ECOLOGICAL COOPERATION

As the century changed, so too did the IBWC. The Commission stopped merely responding to diplomatic crises and threats of legal action and began to proactively address challenges and cooperate with new environmental initiatives. This new millennium attitude change was a result of the culmination of over twenty years of binational economic and environmental initiatives. Minutes 306, 316, and 317 reflected the IBWC's growing role. The above sections described the IBWC's role as largely Treaty oversight, along with crisis management and limited cooperation for specific projects. As the millennium changed, the IBWC began to consider affairs beyond the border, including the environmental renaissance in the Delta, the value of proactive cooperation, and a need to get involved in traditionally sovereign affairs.

⁹² WARD, *supra* note 5, at 118.

⁹³ *See id.* at 120.

⁹⁴ *Id.* at 124.

⁹⁵ *Id.* at 118.

⁹⁶ *See, e.g.*, Stephen P. Mumme, *The Case for Adding an Ecology Minute to the 1944 United States-Mexico Water Treaty*, 15 TUL. ENVTL. L.J. 239, 251-52 (2002).

⁹⁷ *Id.*

⁹⁸ IBWC, *Minute No. 261* (Sept. 24, 1979), available at <http://www.ibwc.gov/Files/Minutes/Min261.pdf> [hereinafter IBWC, *Minute 261*].

A. Laying the Groundwork for the New Millennium

The attitude shift at the IBWC did not happen overnight. In the late 1970's, the U.S. and Mexican governments began formally discussing broader environmental cooperation along the border. The La Paz Agreement, signed in 1983, established formal grounds for coordination, cooperation, and ongoing communication between the U.S. Environmental Protection Agency (EPA) and the Mexican Secretaría de Desarrollo Urbano y Ecología.⁹⁹ Interestingly, the preamble to the La Paz Agreement noted the exhortation by the Declaration of the United Nations Conference on the Human Environment (Stockholm, 1972) to collaborate on shared environmental problems.¹⁰⁰ The North American Free Trade Agreement (NAFTA) also drew diplomatic attention to pollution and water quality along the border. NAFTA created both the Border Environment Cooperation Commission (BECC) and the North American Development Bank to support and finance binational environmental and sustainable development projects.¹⁰¹ These efforts reflected changing attitudes towards cooperation and anticipating problems in advance, instead of reacting to emergencies.

The IBWC's power to investigate, plan projects, and interpret Treaty provisions made it an excellent platform for contributing to this new spirit of cooperation. While the Commission had little ability to affect change beyond its mandate, it could study and suggest action, and coordinate international efforts. The IBWC began a landmark study of water quality in the Rio Grande in 1992 to support these initiatives and other EPA border programs.¹⁰² Minute 289, authorizing the 1992 study, specifically noted "the increased cooperation between the United States and Mexico on water quality matters"¹⁰³ This Minute marks the start of the attitude shift at the IBWC, where it recognized and contributed to the new atmosphere of binational cooperation. Six years later the IBWC implemented Minute 299, formally allowing the BECC to use IBWC resources for any wastewater infrastructure projects along transboundary waters.¹⁰⁴

⁹⁹ Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area, U.S.-Mex., arts. 2, 3, 8, 10, Aug. 14, 1983, T.I.A.S. No. 10,827 [hereinafter La Paz Agreement].

¹⁰⁰ *Id.* at 1.

¹⁰¹ Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank, U.S.-Mex., ch. I, art. I & ch. II, art. I, Nov. 18, 1993, T.I.A.S. No. 12,516.

¹⁰² IBWC, *Minute No. 289* (Nov. 13, 1992), available at <http://www.ibwc.gov/Files/Minutes/Min289.pdf> [hereinafter IBWC, *Minute 289*] (authorizing the study).

¹⁰³ *Id.* at 2.

¹⁰⁴ IBWC, *Minute No. 299* (Dec. 3, 1998), available at <http://www.ibwc.gov/Files/Minutes/Min299.pdf> [hereinafter IBWC, *Minute 299*].

B. Twenty-First Century Steps towards Delta Preservation: Minute 306

Even though Minutes 242 and 261 may have been the first minutes with positive ecological effects, by 2000 the IBWC was ready to directly address ecological issues on its own. In late 2000 the IBWC adopted Minute 306, which acknowledged the efforts each nation had been making separately to identify and study the Colorado River's riverine and estuarine ecologies. Minute 306 also authorized the Commission to create a framework for cooperating on joint ecological studies of the delta, provide a forum for discussing these findings, and begin said investigation.¹⁰⁵ As such, Minute 306 was the first explicit incorporation of purely ecological activities into the Treaty framework.

C. The All-American Canal Lining Crisis

Despite this new spirit of binational cooperation on sustainable development and environmental protection along the border, not every project and decision was left to the various international working groups. One major binational diplomatic breakdown concerned the Bureau of Reclamation's intention to line the All-American Canal. The All-American Canal is the main conveyance of Colorado River water to the Imperial Valley; the All-American Canal supplanted the Mexican-controlled Alamo Canal in 1940.¹⁰⁶ In the 1990's, the Bureau of Reclamation approved of a Congressionally mandated water-savings plan that included lining the canal with concrete to prevent nearly 68,000 a.f. of annual seepage for the benefit of Southern California water users.¹⁰⁷ Ninety percent of that volume had ultimately seeped into Mexico.¹⁰⁸ The seepage recharged the Mexicali Aquifer, a critical source of water for irrigation and domestic use for 1.3 million overlying Mexicans.¹⁰⁹ Not only is the aquifer important for livelihoods and salinity control, but its value is paramount in dry years, when pumping can be used to supplement reduced flows. This use of the aquifer water is especially important because Mexico does not have, and likely geologically cannot have, storage reservoirs on the Colorado River.¹¹⁰ Cutting off seepage would likely also harm the Andrade Mesa wetlands, part of the Delta, which provides habitat for the endangered Yuma clapper rail.¹¹¹ Thus, Mexico had several reasons to oppose the lining of the All-American Canal.

¹⁰⁵ IBWC, *Minute No. 306* (Dec. 12, 2000), available at <http://www.ibwc.gov/Files/Minutes/Min306.pdf> [hereinafter IBWC, *Minute 306*].

¹⁰⁶ See Nicole Ries, *The (Almost) All-American Canal: Consejo de Desarrollo Economico de Mexicali v. United States and the Pursuit of Environmental Justice in Transboundary Resource Management*, 35 *ECOLOGY L.Q.* 491, 491 (2008).

¹⁰⁷ See *id.* at 497.

¹⁰⁸ *Id.* at 496.

¹⁰⁹ *Id.* at 493.

¹¹⁰ Glennon & Culp, *supra* note 11, at 955.

¹¹¹ See Ries, *supra* note 106, at 503.

In early 2006, non-profit groups from Mexicali and California filed for an injunction in the Ninth Circuit to block the lining project.¹¹² After the procedural wrangling settled down, the court addressed the merits of two claims alleging that lining the canal would violate the National Environmental Policy Act (NEPA), and the Endangered Species Act (ESA).¹¹³ The result was summary judgment for Reclamation. The court held that Reclamation did not act in an arbitrary and capricious manner when it used secondary data¹¹⁴ to evaluate the potential foreign impacts of the canal-lining on the Yuma clapper rail's Mexican habitat.¹¹⁵ However, the Ninth Circuit issued a preliminary injunction preventing Reclamation from starting the lining project pending appeal.¹¹⁶ But before the court could rule, Congress enacted special legislation to render the appeal moot and mandate the canal lining project.¹¹⁷

The lining was completed in 2009, and the full extent of its economic and ecological effects is not yet known. From an international law perspective, it is unfortunate that the Ninth Circuit, and perhaps ultimately the Supreme Court, was disabled from ruling on the extra-territorial application of NEPA and the ESA in a case where the agency's action may impact Treaty obligations.¹¹⁸ Mexico could claim that its reliance on the seepage for nearly seventy years to supplement and dilute Treaty water should justify compensation on equitable principles.

D. Adaptive Treaty Interpretation: Minutes 316 and 317

In 2010, Minute 316 acknowledged the combined import of Minutes 242 and 306 by recommending steps both governments take to cooperate to get maximum benefit out of a proposed year-long pilot run at the Yuma Desalting Plant.¹¹⁹ The joint report noted that both the flow and salinity of the drainage flowing to the Cienega de Santa Clara would be erratic during the pilot run, potentially harming those wetlands. Three parties each agreed to contribute

¹¹² See *id.* at 504.

¹¹³ See *id.* at 506-07.

¹¹⁴ On the grounds that it could not gather primary data in Mexico but could permissibly rely on reports from the Mexican government and select non-governmental organizations. See *id.* at 510, 512.

¹¹⁵ See *id.* at 511-12.

¹¹⁶ See *id.* at 512.

¹¹⁷ See *id.* at 515.

¹¹⁸ See, e.g., *Env'tl. Def. Fund v. Massey*, 986 F.2d. 528, 529 (D.C. Cir. 1993) (holding NEPA may apply extra-territorially if the area is substantially under Congress' control).

¹¹⁹ Alfredo J. Riera & Luis Antonio Rascón Mendoza, IBWC, Joint Report of the Principle Engineers Concerning U.S.-Mexico Joint Cooperative Actions Related to the Yuma Desalting Plant (YDP) Pilot Run and the Santa Clara Wetland (2009), *reprinted in* IBWC, *Minute No. 316* (Apr. 16, 2010), available at http://ibwc.gov/Files/Minutes/Minute_316_w_JR.pdf [hereinafter IBWC, *Minute 316*].

10,000 a.f. to the drain during the year-long pilot run to maintain some flow to the wetlands: the U.S., Mexico, and a group of quasi-governmental American water agencies.¹²⁰ The report also said the American water agencies pledged \$250,000 to set up a monitoring program in the wetlands, and the U.S. Bureau of Reclamation pledged \$100,000 and equipment for Mexico to repair and maintain the necessary drainage channels. This commitment to quantifiable multi-party cooperation, including non-parties to the 1944 Treaty, coordinated by an international body (the IBWC), is uniquely encouraging because there is no apparent economic self-interest driving it. Until the adoption of Minute 316, ecological concerns were limited to creating frameworks, exploring possibilities, and setting up studies and plans — common themes in international environmental law. Tangible environmental benefits were merely incidental to serving the anthropocentric interests pursued under Minutes 242 and 261. For the first time, Minute 316 embodied a specific commitment to act for purely environmental benefit (in uncharacteristically enthusiastic compliance with each nation's respective environmental laws).

The next major step forward came two months later, with the adoption of Minute 317. This Minute, although not as oriented towards tangible outcomes as Minute 316, is a fine example of the use of the IBWC's adaptive treaty interpretation authority. Minute 317 is unusual and valuable in that it codifies a prospective approach to addressing future concerns. The Minute's language is deceptively filled with the usual nebulous exhortations that the IBWC will coordinate efforts, build frameworks, and study potential opportunities to cooperate.¹²¹ However, the IBWC also lists specifically that it intends to study opportunities to: mitigate the impact of future shortages, develop new sources of water through desalination, identify water for ecological uses, improve the efficiency of waterworks, conserve water through improved transportation and irrigation, and allow Mexico to store water in U.S. reservoirs.¹²² The Commission also intends to explore opportunities to cooperate in promoting "sustainable management of the water in the Colorado River Basin" and find ways to share the costs and benefits of future projects.¹²³ In fact, all of these subjects are hedges against the possibility of future shortages. While developing water sources and improving management, conservation, and efficiency all have economically practical ends, the primary focus is on mitigating and adapting to the effects of climate change — the quintessential environmental issue.¹²⁴

¹²⁰ *Id.* Led by the Metropolitan Water District of Southern California, the Southern Nevada Water Authority, and the Central Arizona Water Conservation District.

¹²¹ *See, e.g.*, IBWC, *Minute No. 317*, Resolution 1, at 3, (June 17, 2010), available at http://ibwc.gov/Files/Minutes/Minute_317_w_JR.pdf [hereinafter IBWC, *Minute 317*].

¹²² *Id.* at Resolutions 2 & 3, at 3.

¹²³ *Id.* at Resolution 4, at 3.

¹²⁴ *See, e.g.*, Douglas Kenney et al., *The Colorado River and the Inevitability of Institutional*

The environmental and economic goals listed in Minute 317 represent a drastic expansion of the role of the IBWC compared to its 20th Century authority. For decades, the IBWC was limited to managing affairs narrowly construed as under its purview, namely any issue involving Treaty water at or along the border, including disputes or problems made manifest at the border, such as poor water quality. With Minute 306 the IBWC turned its eyes south towards the Delta, into what had long been considered Mexico's sovereign domain. Minute 316 allowed the IBWC to coordinate efforts to purposefully affect the wetlands. With Minute 317, the IBWC announced its intention to become involved in traditionally local, sovereign activities on both sides of the border for the sake of environmental considerations; namely irrigation, conveyances, new source development, and modern river management practices. Furthermore, Minute 317 foreshadows Mexico storing, or banking, water in U.S. reservoirs — an eventuality the creators of the Hoover Dam and 1944 Treaty negotiators would have found anathema.

V. MINUTE 319, THE ECOLOGICAL MINUTE

Minute 319, approved in November 2012, is remarkable for several reasons. First, it permits international water banking, which requires a nearly unprecedented amount of trust and cooperation. Second, it dedicates in-stream flows for purely environmental use, a feat most U.S. states have yet to duplicate. Third, it incorporates non-governmental organizations into the Treaty as parties with affirmative duties to supply water. While many treaties have provisions allowing or requiring NGOs to monitor or report international actions, few, if any, give them such substantive responsibilities.

A. *International Water Banking*

Minute 319 extends and amends Minute 318, which allowed Mexico to bank water it could not use after an April 2010 earthquake damaged irrigation systems in the Mexicali Valley.¹²⁵ Minute 319 allows Mexico to defer water deliveries, store the water in Lake Mead, and withdraw it during dry years.¹²⁶ It also quantifies Mexico's share of surplus water in wet years and reductions in dry years.¹²⁷ The height of Lake Mead, and the Bureau of Reclamation's associated water forecasts, are the instruments for determining when surpluses or

Change, 32 PUB. LAND & RESOURCES L. REV. 103, 110-11 (2011) (citing climate change as the most likely source of future droughts in the Colorado River basin).

¹²⁵ IBWC, *Minute No. 319*, Resolution 1, (Nov. 20, 2012), available at http://ibwc.gov/Files/Minutes/Minute_319.pdf [hereinafter IBWC, *Minute 319*].

¹²⁶ *Id.* at Resolution 4.

¹²⁷ *Id.* at Resolutions 2 & 3.

reductions will happen.¹²⁸ Furthermore, the Minute provides for cooperative management of flows so that water deposits or withdraws do not adversely affect delivered water salinity.¹²⁹ To protect Lake Mead itself, Mexico cannot refuse flood control deliveries, request water when Lake Mead is too low, or bank water if Lake Mead is too high.¹³⁰

While using Lake Mead as a water bank makes practical sense, it is useful to remember that the Boulder Canyon Act that authorized Hoover Dam specified that Lake Mead was strictly intended for U.S. use.¹³¹ Thus, allowing Mexico to store water in Lake Mead is policy reversal with little obvious benefit to the U.S. Although scholarship on the background of Minute 319 is still underway, it may be fair to presume that allowing Mexico to bank water in Lake Mead is at least partly intended to end Mexico's reliance on underground storage of All-American Canal seepage into the Mexicali Aquifer.¹³² Since depleted aquifers may suffer permanent damage, water banking may help safeguard this natural international resource for future generations.¹³³

The Minute's water banking provisions reiterate one particularly important term of the 1944 Treaty, namely that Mexico shall not receive more than 1.7M a.f. of Treaty water in any one year.¹³⁴ As discussed earlier, this does not include excess water stemming from flood control releases, or drain water from desalination or sanitation operations.

B. *Water for the Environment & the Role of NGOs*

Minute 319, Section III.6, recognizes Minute 306's framework for cooperation and Minute 316's successful cooperation between the two nations and key stakeholders.¹³⁵ Building on that foundation, Section III.6 introduces an environmental pilot program that will "arrange for the means to create 158,088 a.f. . . base flow and pulse flow" to sustain the Delta.¹³⁶ The U.S. pledged \$21M to Mexico to pay for Mexican canal lining and irrigation system improvements to generate water for the project, as well as finance some of the ecological restoration programs.¹³⁷ In return, Mexico shall contribute 124,000 a.f. of water for U.S. use.¹³⁸ The U.S. and Mexico will deliver pledged environmental flow

¹²⁸ *Id.* at pts. III.2-4, at 5-10.

¹²⁹ *Id.* at Resolution 5.

¹³⁰ *Id.* at pts. III.2(b), III.4(d), III.4(g).

¹³¹ See HUNDLEY, *supra* note 1, at 280-81.

¹³² See Glennon & Culp, *supra* note 11, at 955-56.

¹³³ SAX ET AL., *supra* note 33, at 406 (referring to aquifer subsidence as "groundwater mining").

¹³⁴ IBWC, *Minute 319*, *supra* note 126, at pt. III.2(d).

¹³⁵ *Id.* at pt. III.6, at 11-12.

¹³⁶ *Id.* at 12.

¹³⁷ *Id.* at pt. III.6(d).

¹³⁸ *Id.* at pt. III.6(e)(iii), at 14. It is unclear at present what that water will be used for, but it

water to riparian habits with “the anticipated participation of a binational coalition of non-governmental organizations.”¹³⁹ Commission working groups will propose timing and locations for water deliveries by early 2014.¹⁴⁰ The Commission expects to monitor the effects of the pilot program closely, and the information it learns during implementation will “inform future decisions regarding binational cooperative efforts to address proactive actions in the Colorado River Delta.”¹⁴¹

A binational coalition of NGOs has pledged water for the base flow.¹⁴² The Minute does not list the NGOs, however the Sonoran Institute released a fact sheet listing itself, the Pronatura Noroeste, A.C., the Environmental Defense Fund (EDF), The Nature Conservancy, and the Redford Center. According to a report from the Environmental Defense Fund, these groups and others have been participating in the binational discussions leading up to the agreement, as well as working with policy experts at El Colegio de la Frontera Norte, a prestigious Mexican think-tank.¹⁴³ This coalition jointly established the Colorado River Delta Water Trust (Trust) in 2008 to raise funds, and acquire water rights.¹⁴⁴ According to the Sonoran Institute, the Trust has pledged a full one-third of the environmental flows.¹⁴⁵ The Trust’s water pledge is a departure from the usual supporting roles that NGOs play in international treaties.

Traditionally, “only States have rights and responsibilities” in public international law.¹⁴⁶ Even the modern roles of NGOs are usually to lobby, educate, observe negotiations,¹⁴⁷ and monitor domestic and international compliance.¹⁴⁸ Previous Minutes mentioned cooperation with NGOs. Minute 316, discussed above, described the three participating water-service agencies as NGOs, although by most definitions they are at least quasi-governmental entities.¹⁴⁹ Minute 319, however, recognizes the NGO coalition’s responsibility

could be either compensation for previous emergency assistance, or a good-faith deposit for future environmental flows or water-bank withdrawals.

¹³⁹ *Id.* at pt. III.6, at 12.

¹⁴⁰ *Id.* at pt. III.6(e)(ii), at 14.

¹⁴¹ *Id.* at pt. III.6, at 12.

¹⁴² *Id.* at pt. III.6(b).

¹⁴³ Chandler Clay, *US, Mexico, and Conservation Organizations Join Forces to Restore Flows to the Colorado*, ENVTL. DEF. FUND (Nov. 20, 2012), <http://www.edf.org/news/us-mexico-and-conservation-organizations-join-forces-restore-flows-colorado>.

¹⁴⁴ Zamora, *supra* note 144.

¹⁴⁵ *Id.*

¹⁴⁶ DAVID HUNTER, JAMES SALZMAN & DURWOOD ZAELEKE, *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 255 (4th ed. 2011).

¹⁴⁷ And, in rare circumstances, represent disadvantaged parties. *Id.* at 259.

¹⁴⁸ *Id.* at 257-62 (discussing the role of NGOs in lobbying, education, observation and monitoring).

¹⁴⁹ See Riera & Mendoza, *supra* note 119, at 1 (stating that these agencies are the Metropolitan Water District of Southern California, the Southern Nevada Water Authority, and the Central Arizona Water Conservation District). Water districts and agencies are normally created by statute to

to procure water, making them an active participant with responsibilities, which generally means they also have rights. In this case, the NGOs most likely have the right to see the two governments contribute the remainder of the pledged water in furtherance of their mutual goals. This is an interesting departure from tradition.

Even though monitoring, educating, and lobbying are clearly valuable contributions to an international agreement, there would seem to be something more significant about the NGOs water pledge. Normally, NGO activities are not strictly necessary to the creation or implementation of international agreements. NGOs may educate, lobby, or monitor state actors, but ultimately the state actors are the parties that have to contribute resources and perform according to the treaties. For perhaps the first time, Minute 319 acknowledged the Trust's pledge as necessary to the agreement — they are, in a tangible sense, partners and parties to the international agreement. Future scholars and practitioners will have to decide if the NGOs are treaty parties in a legal sense as well, *i.e.* how the NGOs should be treated in international arbitration or litigation if something goes wrong.

C. International Projects

Minute 319, Section III.7 describes the projects identified as good opportunities for international cooperation pursuant to Minute 317. The first project aims to complete fifty acres of habitat restoration at Mexico's Miguel Aleman site, across the border from the U.S. restoration project at Hunter's Hole.¹⁵⁰ Second are a suite of water conservation projects, which include putting a flow-regulating reservoir on the Alamo Canal, fallowing farmland, and modernizing an irrigation district. Third is a study on how to convey Mexican water through the All-American Canal to shore up the Tijuana River in an emergency. The fourth project involves evaluating potential new water sources, including desalination plants in Rosarita, Baja California and near the Gulf of California, and developing the "beneficial use of the New River."¹⁵¹ While the first three projects are clear winners, this last suggested project should be carefully evaluated before going forward; any re-purposing of New River water, which drains into the Salton Sea, will likely have adverse environmental impacts on that ecosystem, which will have to be mitigated in turn.¹⁵²

serve a public purpose. *See, e.g.*, CAL. WATER APP. § 112-2 (creating the Bighorn Mountains Water Agency).

¹⁵⁰ IBWC, *Minute 319*, *supra* note 125, at pt. III.7(a).

¹⁵¹ *Id.* at pt. III.7(d).

¹⁵² *See, e.g.*, Glennon & Culp, *supra* note 11, at 933-34; Pitt et al., *supra* note 16, at 854.

VI. CUSTOMARY LAW OF SHARED WATERCOURSES

Minute 319 and its predecessors build on the foundation of the 1944 Treaty to create a robust body of international law with unique value to the international community. Generally speaking, the 1944 Treaty was among the first of its kind — a cooperative, flexible treaty between former enemies that survived decades of political upheaval, explosive changes in economic circumstances, revolutions in scientific understanding, and even the advent of modern environmental law and awareness. Negotiation and cooperation repeatedly prevented threatened international legal action. The International Court of Justice's (ICJ) 1997 decision in the Gabzikovo-Nagymoros Dam case illustrated what happens when negotiations and cooperation fail. The ICJ decision provided formal precedent for the equitable apportionment doctrine, also reflected in the U.N. Convention on the Non-Navigational Uses of International Watercourses, which was completed shortly beforehand (1997 Convention). This evaluation of Minute 319 and the 1944 Treaty according to the equitable apportionment principle described by the ICJ decision and the 1997 Convention reveals some room for improvement.

A. *The Gabzikovo-Nagymoros Dam Decision*

In 1997, the International Court of Justice (ICJ) issued its first major decision on the allocation of water from, and environmental protection of, international rivers: the Gabzikovo-Nagymoros Dam decision.¹⁵³ The case addressed a dispute between Hungary and Czechoslovakia (later, Slovakia) over their 1977 treaty concerning cooperative construction and management of dams on the Danube River.¹⁵⁴ Political tensions within and between both nations compelled Hungary to unilaterally terminate the agreement in 1989, and Slovakia adjusted its plans to complete the project on its own, within its own territory.¹⁵⁵ The project ultimately reduced flows to Hungary, which objected.¹⁵⁶ The parties agreed to submit the matter to the ICJ.¹⁵⁷

Applying to the ICJ for mediation set a new precedent in international water management disputes. Never before had two parties agreed to submit a river dispute to ICJ arbitration and be bound by the judgment.¹⁵⁸ Hungary argued that it did not abandon the treaty altogether, but merely suspended cooperation due

¹⁵³ See HUNTER, SALZMAN & ZAELKE, *supra* note 146, at 846-47.

¹⁵⁴ *Id.* at 846 (citing the Treaty Concerning the Construction and Operation of the Gabzikovo-Nagymoros System of Locks, Czech-Hung., Sept. 16, 1977, 1109 U.N.T.S. 235).

¹⁵⁵ *Id.* For a more detailed discussion of the causes of the dispute, see Nevelina I. Pachova & Libor Jansky, *Domestic Drivers of International Water Security on the Danube*, in INTERNATIONAL WATER SECURITY 61, 66-70 (Nevelina Pachova et al. eds., 2008).

¹⁵⁶ See Pachova & Jansky, *supra* note 155, at 63.

¹⁵⁷ See HUNTER, SALZMAN & ZAELKE, *supra* note 146, at 846-47.

¹⁵⁸ Pachova & Jansky, *supra* note 155, at 71.

to unrequited environmental concerns about flow, silting, and riparian ecological protection.¹⁵⁹ Slovakia argued that Hungary overreacted and broke the treaty, and that it was within its rights to build the dams itself.¹⁶⁰

The ICJ held that both countries had acted illegally and determined the countries' 1977 Treaty still in effect.¹⁶¹ The ICJ then ordered the two countries to create a joint regime to re-investigate the environmental issues and negotiate a suitable cooperative water management program.¹⁶² Ten years later, the two countries had not finished negotiating a resolution.¹⁶³ The decision, though narrow, sets broader legal precedents.

The ICJ's decision recognized that the customary rules of international water law may incorporate principles of sustainable development, ecological risk assessment, and the precautionary principle.¹⁶⁴ The parties' original 1977 Treaty, like the 1944 Treaty, did not account for environmental considerations. Unlike the U.S. and Mexico, Hungary and Czechoslovakia did not have a geographically and politically remote binational agency with decades of experience in quiet cooperation, like the IBWC, to carry them through political upset and disagreement. Although it has had both successes and failures, the adaptive treaty interpretation permitted by the Minute system has allowed the U.S. and Mexico to incorporate risk assessment, sustainable development, and the precautionary principle at each country's level of comfort. Generally, the Minute system began incorporating principles of sustainable development, precaution, and risk assessment around Minute 306, discussed above, several years after the ICJ decision.¹⁶⁵ An investigation into the degree of influence the ICJ's decision may have had on Minute 306, the IBWC, and the diplomatic corps is outside of the scope of this analysis. Suffice it to say that, since Minute 306 and including Minute 319, the U.S. and Mexico have been making substantial progress in incorporating these principles.

B. Equitable Doctrines Analysis of the 1944 Treaty

The 1997 ICJ decision established international rivers as a shared resource, subject to principles of equitable apportionment between all riparian states, not

¹⁵⁹ HUNTER, SALZMAN & ZAEKE, *supra* note 146, at 848-49 (quoting Gabcikovo-Nagymaros Project (Hung. v. Slov.) 1997 I.C.J. 92 (Sept. 25)).

¹⁶⁰ *Id.* at 849.

¹⁶¹ *Id.* at 856-57 (quoting Gabcikovo-Nagymaros Project (Hung. v. Slov.) 1997 I.C.J. 92 (Sept. 25)).

¹⁶² *Id.* It is interesting to note that the ICJ applied the law embodied in the Convention on the Law of the Non-Navigational Uses of International Watercourses, despite the fact that it had not yet entered into force.

¹⁶³ Pachova & Jansky, *supra* note 155, at 72.

¹⁶⁴ See A. Dan Tarlock, *Safeguarding International River Ecosystems in Times of Scarcity*, 3 U. DENV. WATER L. REV. 231, 245 (2000).

¹⁶⁵ See *supra* text accompanying note 105 (discussing Minute 306).

just for the commodity value of the water, but also for its non-economic and ecological benefits.¹⁶⁶ The equitable apportionment doctrine balances the harms and benefits each disputant faces. It arose during the early 20th century to handle U.S. interstate water disputes.¹⁶⁷ The resulting U.S. water law precedents have informed international freshwater law because ideally they parallel the positions of many disputants: sovereign neighbors with legitimate grievances that must solve their disputes peacefully and abide by the resulting decision.¹⁶⁸ International agreements frequently recognize the equitable considerations codified in the 1967 Helsinki Rules: geography; hydrology; climate; past utilization; dependent populations; the economic and social needs of the basin; avoiding waste; the availability and costs of alternative sources of supply; and the international effects of unilateral action.¹⁶⁹ The ICJ decision expanded this traditional definition of equitable apportionment to include ecological uses.

The equitable apportionment doctrine, as expanded by the ICJ decision, is unique in that it recognizes both environmental value for in-stream uses and the right to develop consumptive, beneficial uses of water resources. This stands in contrast with the two historically dominant water-right rubrics: riparian natural-flow doctrines and prior-appropriation for beneficial use. The natural flow doctrine, concerned about navigability, quality, and aesthetic values almost exclusively, subordinates the interests of upstream beneficial consumptive users to downstream riparian owners, whether or not they use the water at all.¹⁷⁰ In modern international law terms, this is called a doctrine of “territorial integrity,” which acknowledges an equitable servitude in the transboundary water.¹⁷¹ Environmentally, this doctrine over-emphasizes ecological protection concerns at the expense of developing beneficial uses, by keeping more water in-stream than the local riparian ecology requires and restricting upstream uses. Prior appropriation, on the other hand, is concerned with maximizing beneficial use of the water based on first-come, first-serve principles, and particularly de-emphasizes efficiency, conservation, or the environmental value of in-stream water.¹⁷² The international law doctrine of “territorial sovereignty,” also known as the “Harmon Doctrine,” reflects prior appropriation principles.¹⁷³ The doctrine of equitable apportionment is a compromise between natural flow and prior appropriation. It allows for fair allocation of scarce resources between

¹⁶⁶ Tarlock, *supra* note 164, at 245.

¹⁶⁷ SAX ET AL., *supra* note 33, at 858, 868-71.

¹⁶⁸ Tarlock, *supra* note 164, at 237-38.

¹⁶⁹ See *id.* at 241-42; see also HUNTER, SALZMAN & ZAELEKE, *supra* note 146, at 874 (describing the Helsinki Rules on the Uses of International Rivers as an early attempt to codify the customary laws of international watercourses).

¹⁷⁰ SAX ET AL., *supra* note 33, at 38.

¹⁷¹ See HUNTER, SALZMAN & ZAELEKE, *supra* note 146, at 881.

¹⁷² SAX ET AL., *supra* note 33, at 124-26.

¹⁷³ See HUNTER, SALZMAN & ZAELEKE, *supra* note 146, at 879.

parties, and also between types of uses, by recognizing the importance of leaving an ecologically useful amount of water in-stream and upholding all parties' rights to develop water resources.

The concept of "Equitable utilization" used by Hunter *et al.* reflects the equitable apportionment principles discussed above. Equitable utilization describes the compromise between the competing international interests of territorial sovereignty (prior appropriation principles) and territorial integrity (natural flow principles).¹⁷⁴ Generally, equitable utilization requires shared sovereignty over the resource.¹⁷⁵ The 1997 Convention, Article 5, obliges parties to optimally and sustainably develop shared water resources in an equitable, reasonable manner, and cooperate in protecting those resources.¹⁷⁶ Article 6 lists equitable factors. They differ from the 1967 Helsinki rules by also considering potential future uses of the water, and the ecological character of the watercourse.¹⁷⁷ Article 7 recognizes one of the first principles of international environmental law: an obligation not to cause significant harm. If harm should occur, the offending nation should cooperate with the affected nation to eliminate, mitigate, or compensate for such harm.

Minute 319, and the 1944 Treaty generally, do not explicitly recognize the broad equitable principles found in the post-decision Helsinki Rules (including ecological needs) or under Article 6 of the 1997 Convention.¹⁷⁸ The original allocation of water was done by negotiation, adversarially, and was not based on actual or planned uses in either nation.¹⁷⁹ The only real equitable consideration by the U.S. was that it would supply at least enough water to meet Mexico's current needs.¹⁸⁰ Later capitulations about salinity and sanitation were based on fear that a lawsuit or arbitration would apply such equitable considerations in Mexico's favor.¹⁸¹ Potential Mexican arguments about past utilization, economic and social needs, and the availability of alternative supply in the U.S. would likely defeat a U.S. claim that it needs to drain salty, polluted water without treatment or dilution.

Even now, as evidenced by the All-American Canal lining dispute, it would appear that the Harmon Doctrine sometimes trumps equitable considerations in the 1944 Treaty. Specifically, the U.S. exercised sovereign authority when it

¹⁷⁴ See *id.* at 881.

¹⁷⁵ See *id.*

¹⁷⁶ Convention on the Law of the Non-Navigational Uses of International Watercourses, G.A. Res. 51/229, U.N. Doc. A/51/49 (May 21, 1997).

¹⁷⁷ See *supra* note 169 and accompanying text.

¹⁷⁸ See *supra* note 169 and accompanying text.

¹⁷⁹ The U.S. believed there was a surplus in the river that it was unlikely to ever use. See HUNDLEY, *supra* note 2, at 177. Mexico originally demanded 3.6 million a.f. in 1928, despite only using 750,000 a.f. See Meyers & Noble, *supra* note 38, at 368.

¹⁸⁰ See Meyers & Noble, *supra* note 38, at 368.

¹⁸¹ See discussion *supra* notes 70, 72.

lined the All-American Canal to “save” water within its boundaries.¹⁸² The U.S. either did not consider or ignored the social and economic effects on the dependent population in Mexico, in favor of domestic water interests and reducing “waste” from seepage. While Minute 319 and the 1944 Treaty lack formal consideration of equitable considerations, at least the U.S. abides by the Treaty and is willing to be flexible. Hopefully future Minutes will incorporate stronger equitable utilization principles to prevent further unilateral negative impacts.

VII. THE IBWC AS A MODEL FOR FUTURE JOINT REGIMES

International institutions, similar to the IBWC or the Budapest Treaty’s joint regime, will undoubtedly be formed to investigate, report, monitor, and manage implementation of numerous transboundary projects in the future. This Part examines the IBWC in comparison to the archetypal model international institution. First, it describes the influences acting on the IBWC. Then it lists the attributes of a model joint regime. Finally, it examines the past performance of the IBWC according to the model attributes, in light of its influences. This analysis will reveal opportunities for the IBWC to improve its performance over future minutes.

A. *The Structure of and Influences on the IBWC*

The IBWC consists of two sections working together: the U.S. Section and the Mexican Section.¹⁸³ The U.S. Section is part of the Department of State, which oversees budget and administrative decisions.¹⁸⁴ The U.S. Commissioner is an ambassador.¹⁸⁵ However, the U.S. Section is politically beholden to the four border states: Texas, New Mexico, Arizona, and California.¹⁸⁶ These states control ninety-six seats in the House of Representatives.¹⁸⁷ The U.S. Section receives its appropriations from a House Appropriations sub-committee that historically defers to the border states.¹⁸⁸ Furthermore, it is unlikely for the President to disregard the desires of those border states.¹⁸⁹ Effectively, the U.S. Section’s policy is set by the border state Governors and Representatives, and it is unlikely to pursue initiatives disfavored by any border state.¹⁹⁰

¹⁸² See discussion *supra* note 109.

¹⁸³ 1944 Treaty, *supra* note 24, art. 2.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ See Stephen P. Mumme, *Advancing Binational Cooperation in Transboundary Aquifer Management on the U.S.-Mexico Border*, 16 COLO. J. INT’L ENVTL. L. & POL’Y 77, 89 (2005).

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ See *id.* at 89-90.

The Mexican Section's water policies are more centrally directed from Mexico City.¹⁹¹ The Mexican Commissioner generally seeks approval from their foreign affairs office, and then an executive water policy sub-cabinet of agency Secretaries, before proceeding with an initiative. The Mexican Section is less exposed to local political pressure.¹⁹² However, the Mexican Section is also reserved in its suggestions, because it is sensitive to the myriad of pressures and delays facing the U.S. Section, and the potential political liability when an initiative fails.¹⁹³

B. *The Attributes of a Model Joint Regime*

It seems likely that the role of the IBWC, among the oldest binational water management organizations, is to inform future regime creation efforts. How does the IBWC, as a joint regime, compare to a theoretical model joint regime based on the principles described in the ICJ's Gabzikovo-Nagymoros Dam decision and Hunter *et al*?

The ICJ's 1997 decision provided two important insights into how nations should structure their future joint regimes. First, the decision implied that treaty-created joint regimes (binational entities that study, monitor, manage, and/or negotiate) cannot be unilaterally abrogated.¹⁹⁴ No party has attempted to unilaterally abrogate the 1944 Treaty or its Minutes. Although the International Boundary and Water Commission has had its fair share of criticism, it has survived and persisted in its various missions for nearly 130 years.¹⁹⁵ Second, the ICJ's 1997 decision set a very broad standard for the attributes of model joint regimes. Specifically, when the ICJ ordered Hungary and Czechoslovakia to reestablish the joint regime, it claimed that "[the regime] will also reflect *in an optimal way* the concept of common utilization of shared water resources for the achievement of [treaty objectives]." (Emphasis added). Besides not being unilaterally abrogated and optimally incorporating common utilization principles, the ICJ had little guidance about the regime's proposed role or powers.¹⁹⁶

This analysis will supplement the ICJ's two attributes with Hunter's five principles that all international institutions should uphold: (1) the duty to assess environmental impacts; (2) public participation; (3) access to information and transparency; (4) sustainable development; and (5) free, prior informed

¹⁹¹ *Id.* at 90.

¹⁹² *See id.*

¹⁹³ *Id.* at 91

¹⁹⁴ Tarlock, *supra* note 164, at 245.

¹⁹⁵ *See* discussion *supra* note 30; *see, e.g.*, McCarthy, *supra* note 25, at 239-83 (criticizing the IBWC in detail).

¹⁹⁶ Likely the ICJ refrained from commenting because the 1977 treaty, ruled effective, had its own provisions.

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C. Analysis of the IBWC

The first principle states that a model joint regime has a duty to assess environmental impacts. As shown by Minute 319, the modern IBWC is unquestionably committed to assessing environmental impacts when evaluating, implementing, and monitoring cooperative project opportunities. The second principle states that a model joint regime should support public participation. The extensive public participation of concerned NGOs is discussed at length above, and speaks to the Commission's credit. That said, the IBWC does not otherwise score perfectly in this analysis.¹⁹⁸

The third principle states that a model joint regime should support information access and transparency. As recently as 2011, some scholars publicly criticized the IBWC for being secretive, catering to special interests, and being resistant to public input.¹⁹⁹ Specifically, the IBWC may be regularly violating the Federal Advisory Committee Act (FACA).²⁰⁰ The potential moral hazard is that there is nothing to prevent the U.S. Section from stacking its internal advisory committees with "special interests." The FACA is not intended to apply to binational organizations, however, and so committees that jointly advise both U.S. and Mexican Sections are exempt.²⁰¹ The NGO's high degree of involvement in Minute 319 suggests that these complaints are not necessarily current, or that there is any actual, current harm in the IBWC's advisory process.

The fourth principle states that a model joint regime should concern itself with sustainable development. Within its limited scope of operations, the modern IBWC seems to score fairly well here. According to Hunter, *et al.* there are generally three core components to sustainable development: (1) environmental protection, (2) economic development and (3) social development.²⁰² As discussed above, Minute 319 has an unprecedented binational pilot program for environmental protection of the Delta and habitat restoration for select adjacent riparian areas. With the advent of Minute 319, the

¹⁹⁷ HUNTER, SALZMAN & ZAELKE, *supra* note 146, at 442.

¹⁹⁸ Critics may argue that this analysis paints too rosy a picture of the IBWC. The purpose of this analysis is not to evaluate whether the IBWC is, or has ever been, perfect but merely to examine its suitability as a model joint regime based on the facts and circumstances laid out earlier in this article.

¹⁹⁹ See, e.g., McCarthy, *supra* note 25, at 276-78.

²⁰⁰ Federal Advisory Committee Act § 5, 5 U.S.C. app. 2 § 5 (2012) (dictating role of special advisory committees to Federal agencies); McCarthy, *supra* note 25, at 276-78 (claiming that the "Basin Advisory Committees" membership criteria do not result in a fair balance of viewpoints). See generally CRP Public Participation: Basin Advisory Committees and More, IBWC, <http://www.ibwc.gov/crp/participation.htm> (last visited Apr. 1, 2013).

²⁰¹ McCarthy, *supra* note 25, at 278.

²⁰² HUNTER, SALZMAN & ZAELKE, *supra* note 146, at 172.

IBWC scores well on environmental protection. Skipping ahead to the third point, the IBWC supports social development by fostering joint operations and research. Overseeing guaranteed water deliveries may foster trust and goodwill between interboundary communities; or at least, failing to oversee deliveries would certainly be detrimental to social development along the border. The IBWC may have room to improve here. Simply identifying opportunities for social development would suffice to initiate a dialogue.

Returning to economic development, the second point contributing to the principle of sustainable development mentioned above, the IBWC generally does not execute economic development policy. For most of its history, the IBWC has been between a proverbial rock and a hard place, attempting to perform its water and works management duties, and respond to crises, while the diplomatic staffs of both nations treat economic development as a zero-sum game.²⁰³ Binational cooperation on economic development seems to have been largely focused on creating a stable and predictable relationship in which each country can pursue its own agendas.²⁰⁴ The recent All-American Canal lining dispute seems to indicate that the U.S. is still largely unconcerned with any Mexican right to economic development. However, the U.S., through the IBWC in Minute 319, did partially accommodate Mexico's economic development needs by allowing it to store water in Lake Mead, and by allowing it to bank water it cannot use during its earthquake repairs. Also, U.S. efforts to improve Mexican water efficiency and upgrade irrigation systems should have positive economic development effects, but investigation has focused on how much water can be saved. These positive economic effects are largely incidental to concerns about water use. However, the IBWC could become a forum for raising international concerns about local economic development related to water use.

Even without a mandate to directly foster economic development, the IBWC could ask for authorization to institute a formal consultation process whenever a national water project, such as the All-American Canal lining, may have an international impact on economic development. The IBWC could serve as a forum for international interests to raise concerns about local economic development efforts with likely international impacts. For example, if the Bureau of Reclamation had been required to consult with the IBWC, the Commission could have held open meetings in Mexico and authorized research into the likely effects lining the All-American Canal would have on Mexico —

²⁰³ See, e.g., discussion of groundwater disputes *supra* notes 79-84. Note: a “zero-sum game” means that if one player wins, the other loses. There are no win-win outcomes in a zero-sum game. Economic development, however, usually lends itself to win-win outcomes if parties have common cause to cooperate.

²⁰⁴ For a discussion of U.S. desire to formalize Mexico's water right before it developed further, see discussion, *supra* note 52, at 405-06.

actions the Bureau could not have taken on its own initiative. Ultimately this kind of open forum and consultation process could establish a framework for full cooperation on economic development projects near the border.

The final principle governing international institutions is their role in facilitating free, prior-informed consent.²⁰⁵ According to Hunter *et al.*, there are two manifestations of prior-informed consent: (1) seeking governmental permission before operating in another nation; and (2) seeking permission from indigenous communities before affecting them.²⁰⁶ The very structure of the IBWC and its Minute system of adaptive treaty interpretation satisfies the first point. The joint commission regularly seeks permission from their governments, including approving new Minutes and undertaking international research studies. Minute 306, discussed above, is about creating frameworks to study problems and implement international solutions.²⁰⁷ As a tangible example, Minute 316 references a U.S. willingness to share its toys (*e.g.*, an amphibious excavator) with Mexico.²⁰⁸ Thus, the IBWC has a good track record for seeking the informed prior consent at diplomatic and scientific levels. Unfortunately, the IBWC does not meet the second prong articulated by Hunter *et al.*; it has a poor track record for seeking permission from indigenous people before taking actions that affect them. There are 34 Indian Reservations in the Colorado River basin, twenty-seven of which have undeveloped water rights.²⁰⁹ The IBWC and Minute 319 prefer that in-stream flows dedicated for environmental purposes in the Delta come from fallowing and developing new potable water resources (from hypersaline drain water, as discussed above), which seems to have little effect on undeveloped Indian water rights at first glance. However, there is finite water in the Colorado River system, and some day those “new” sources may be needed to accommodate developing Indian water rights. Likely that will be an internal allocation problem between basin states and local appropriators, and will not impact Mexico or the IBWC. If the IBWC expanded its role to include social and economic development, cooperation with indigenous communities may consequently improve.

To summarize this analysis, the IBWC has excelled in its traditional roles of investigating, reporting, coordinating water deliveries, and jointly operating public waterworks. Its recent history shows improvements in diplomatic relations, allowing for prior consent, and in facilitating the public participation of concerned NGOs. However, its public transparency to the citizenry is still relatively low. The IBWC’s ability to create private advisory councils without independent oversight is troublesome, and potentially violative of domestic law.

²⁰⁵ HUNTER, SALZMAN & ZAELKE, *supra* note 146, at 442.

²⁰⁶ *Id.* at 495.

²⁰⁷ IBWC, *Minute 306*, *supra* note 105.

²⁰⁸ IBWC, *Minute 316*, *supra* note 119, at 6.

²⁰⁹ Pitt et al., *supra* note 16, at 840.

The Commission has little authority to consider economic development interests on its own, but it could expand its access to information by facilitating international communication on that subject. Finally, it could improve its working relationship with domestic and foreign indigenous interests, perhaps by studying ways to jointly cooperate in fulfilling their goals and safeguarding their rights.

VIII. CONCLUSION

The Colorado River Delta is a rare ecological gem, providing safe breeding grounds and habitat for threatened fish and bird species. While the Delta has proven that it can recover from drought and pollution thus far, it requires binational cooperation and dedicated in-stream flows to ensure its continued recovery. The International Boundary and Water Commission, the binational organization tasked with interpreting and executing the 1944 Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande between the United States and Mexico, recently amended the Treaty to include Minute 319. That Minute embodies a new spirit of cooperation between the two national governments, local stakeholders, and concerned environmental groups by pledging water for a pilot program to ensure water reaches the Delta.

Minute 319 represents a breakthrough for the 1944 Treaty by requiring ecological action and improving cooperative flexibility. However, more can be done to increase the Treaty's value as a role model for solving similar international watercourse challenges. In a two-part analysis, this paper compared the Treaty to customary transboundary watercourse management ideals described in the International Court of Justice's 1997 Gabzikovo-Nagymoros Dam decision, and then compared the International Boundary and Water Commission to an ideal model of a binational organization. The analysis showed that new Minutes should expressly incorporate equitable utilization principles by increasing transparency, further broadening its consultative efforts, and facilitating cooperative socio-economic development along the border.