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# Will the Minute System Work to Modernize the International Boundary and Water Commission?

Annelia Tinklenberg

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# **Will the Minute System Work to Modernize the International Boundary and Water Commission?**

**by**

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A Professional Project Report Submitted in Partial Fulfillment of the  
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for the Degree of  
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## **Abstract**

The International Boundary and Water Commission (IBWC), in its current form, was created in 1944 by the Treaty Regarding Utilization of Waters of Colorado and Tijuana Rivers and of the Rio Grande. The IBWC was given the authority to manage surface water along the US-Mexico border. Recent changes along the border have exposed a number of weaknesses in both the 1944 Water Treaty and the IBWC, making it difficult to resolve disputes. The challenges of administering the 1944 Water Treaty have escalated as population continues to grow, environmental concerns increase, water quality is jeopardized by sanitation inadequacies, groundwater resources are depleted, and the region deals with drought. Recent drought and Mexico's water debt have revealed vague language in the 1944 Water Treaty and its subsequent Minutes. Most critics suggest that the current mandate, structure, and jurisdiction of the IBWC are not adequate to handle the complexities involved with water management on the border. Some critics of the IBWC suggest resolution could occur with a new Minute, and the Minute system of the 1944 Water Treaty is seen by critics and supporters alike as an avenue through which treaty reform and extensions can be legally made. An analysis of the Minute system, and of the limitations of the institutional and political structures surrounding the IBWC, was conducted to determine if it is indeed an adequate reform mechanism. Even though the Minute system may be able to make treaty-compatible reforms, other factors limit their success or even the possibility of their creation. The *Berlin Rules*, the most recent and comprehensive set of customary international water law written by the International Law Association, provide sufficient guidelines for changes the IBWC can take. The IBWC can modernize itself through its Minute system by utilizing the *Berlin Rules* and its principles that are necessary for achieving sound binational management of an international watercourse.

## **I. Introduction**

Water resource disputes are often difficult to resolve, even more so when the dispute occurs across an international border. Numerous water disputes have occurred

along the United States-Mexico border, heightened by the arid climate and recent population growth. The 1944 Treaty Regarding Utilization of Waters of Colorado and Tijuana Rivers and of the Rio Grande<sup>1</sup> (1944 Water Treaty) has solved some of the water disputes between the U.S. and Mexico. Ongoing issues can be resolved through the treaty's "Minute system" which enables binational water management to evolve in the ever-changing environments of the border. The 1944 Water Treaty also gave authority to the International Boundary and Water Commission (IBWC) to manage the surface water on the border.<sup>2</sup> The Minute system allows the IBWC Commissioners to fulfill their management functions by extending the provisions of the treaty to keep up with changing realities along the border. Recent changes have exposed a number of weaknesses within the 1944 Water Treaty and a lack of initiative in the IBWC making it difficult to resolve disputes. The recent drought and Mexico's water debt reveals vague language within the 1944 Water Treaty and subsequent Minutes. Other criticisms of the IBWC suggest resolution could occur with a new Minute.

The challenges of administering the 1944 Water Treaty on the border have escalated as population continues to grow, environmental concerns increase, water quality is jeopardized by sanitation inadequacies, groundwater resources are depleted, and the region deals with drought. The border population grew to almost 12 million in 2000, an increase of about 400 percent since 1945.<sup>3</sup> This growth demands more water along the border not only for municipal needs but also for industrial and agricultural needs. Growth has also resulted in more environmental problems and greater sanitation

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1 Treaty Regarding Utilization of Water of Colorado and Tijuana Rivers and of the Rio Grande, Feb. 3, 1944, U.S.-Mex., 59 Stat. 1219 [hereinafter 1944 Water Treaty].

2 *Id.*, at art. 2.

3 Vivienne Bennett and Lawrence A. Herzog. *U.S.-Mexico Borderland Water Conflicts and Institutional*

needs. Environmental awareness has increased pressures on the IBWC that did not exist in 1944, when the treaty was written and the mandate created. The growing population has begun to look more and more to groundwater resources for new uses since the surface water is completely allocated. The recent dispute arising from drought and decreased water in Chihuahua shows that the IBWC and the 1944 Water Treaty are not adequate for the challenges of the present and future.

The Minute system of the 1944 Water Treaty is seen by critics and supporters alike as an avenue through which treaty reform and extensions can be legally made. An analysis of the Minute system is needed to determine if it is an adequate reform mechanism. A brief look at recent Minutes that went beyond technical, construction agreements will reveal possibilities that exist within the system. The Minute systems has not been utilized to address the numerous criticisms of the IBWC that have been revealed over time. The criticisms can be summarized as; the internal structure, collaboration with other border agencies, public participation, problem solving abilities, and failures of the mandate and jurisdiction of the IBWC. Some of the criticisms point to more complex institutional and political structures hindering the Commission which also need to be analyzed. These include differing water law structures between the US and Mexico, entrenched political sovereignty, a lack of collaboration and participation, and the limited jurisdiction of the IBWC. Even though the Minute system may be able to make treaty-compatible reforms, other factors may limit their success or even the possibility of their creation. The Minute system has some successes, but it also has had a number of failures. This inconsistency requires an analysis of the Minute system, criticisms, and institutional and political impediments.



New Minutes that actively address the criticisms of the IBWC are needed to improve binational water management between the U.S. and Mexico. A mechanism for change that will provide internationally recognized principles for sound binational management is needed. The *Berlin Rules* may be an appropriate mechanism with specific guidelines for the needed changes within the IBWC. The *Berlin Rules* are the most recent and comprehensive set of customary international water law, written by the International Law Association. The *Berlin Rules* follow the *Helsinki Rules* of 1966 and the *U.N. Convention on the Law of the Non-Navigational Uses of International Watercourses* from 1997<sup>4</sup>. International water law has been a slowly evolving field. Using the *Berlin Rules*, the most recent evolution of international water law, as a guideline for the creation of Minutes may be an advantageous method to address the failures of the IBWC as well as the institutional and political impediments. The *Berlin Rules* could provide internationally recognized guidelines for the IBWC to follow in the formation of new Minutes that will actively address its criticisms. A complete analysis of the criticisms of the IBWC, the institutional and political structure surrounding the IBWC, and the Minute system itself are all necessary to determine applicability of the *Berlin Rules* through the Minute system to modernize the IBWC and the 1944 Water Treaty.

## **II. Background**

### **A. International Boundary and Water Commission**

The International Boundary and Water Commission was created by the 1944 Water Treaty between the United States and Mexico as a continuation and expansion of

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<sup>4</sup> See generally International Law Association, Report of the Fifty -Second Conference, Helsinki, 1966; see also UN Doc. A/RES.51/869, 21 May 1997, 36 ILM 700 (1997), Article 18 [hereinafter UN

the existing International Boundary Commission (IBC). The IBC was first set up in 1853, by the Gadsden Treaty, as a temporary joint commission charged with demarcation of the land boundary between the U.S. and Mexico.<sup>5</sup> The Commission surveyed and set land markers along the border from El Paso, Texas west to the Pacific Coast. In 1889 the IBC became a permanent agency and in 1906 the International Water Commission (IWC) was created to administer the rules of the 1906 Convention.<sup>6</sup> The 1944 Water Treaty, extended authority to all boundary waters and the settlement of boundary disputes; the IBC and IWC were combined and named the International Boundary and Water Commission.<sup>7</sup>

The 1944 Water Treaty is very specific about many aspects of the organization and authority of the IBWC, though not everything. The IBWC has two sections, one in each country, that have the standing of an international body.<sup>8</sup> The Commissioner of both sections must be an engineer,<sup>9</sup> though the remaining structure of each section was left up to each country. Jurisdiction of the IBWC was limited, by Article 2, to the “limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado Rivers, to the land boundary between the two countries, and to works located within the limits of its own country.”<sup>10</sup> The IBWC has use preferences as a guide for resolving disputes and managing the joint water resources as specified in Article 3 of the treaty.<sup>11</sup> Article 3 gives the following preferential list as a guide; “1). Domestic and municipal uses, 2). Agriculture and stock raising, 3). Electric power, 4).

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Convention].

5 International Boundary and Water Commission , *The Boundary and Water Treaties*, available at <http://www.ibwc.state.gov/html/treaties.html>.

6 The 1906 Convention for Equitable Distribution of the Waters of the Rio Grande

7 1944 Water Treaty, *supra* note 1, at art. 2.

8 *Id.*

9 *Id.*

10 *Id.*

11 *Id.*, at art. 3.

Other industrial uses, 5). Navigation, 6). Fishing and hunting, 7). Any other beneficial uses which may be determined by the

Commission.”<sup>12</sup> Article 4 of the 1944 Water Treaty distributes the waters of the Rio Grande and also includes a controversial drought clause.<sup>13</sup> Article 4 stipulates that, “In the event of extraordinary drought...any deficiencies existing at the end of the aforesaid five-year cycle shall be made up in the following five-year cycle.”<sup>14</sup> The waters of the Colorado River are allocated in Article 10.<sup>15</sup>

“The mission of the IBWC is to apply the rights and obligations which the Governments of the United States and Mexico assume under the numerous boundary and water treaties and related agreements, and to do so in a way that benefits the social and economic welfare of the peoples on the two sides of the boundary and improves relations between the two countries.”<sup>16</sup>

The rights and obligations of the IBWC include distribution of the waters; regulation of allocations; conservation; operation and maintenance of international dams, reservoirs and hydroelectric plants; protection from floods; solutions to sanitation and water quality problems; and preservation of and demarcation of the international boundary.<sup>17</sup> These duties become more challenging as border issues grow more complex.

While the highly technical, engineering position of the IBWC does encourage construction of projects to resolve some of the border problems, an integrative and holistic approach may help the IBWC respond to border problems in a more proactive manner.<sup>18</sup> The IBWC has recognized this problem and has begun reforming some of its actions in response to the changes occurring along the border, though a more structured

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<sup>12</sup> *Id.*

<sup>13</sup> *Id.*, at art. 4.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*, at art. 10.

<sup>16</sup> International Boundary Water Commission (IBWC), *The International Boundary and Water Commission, Its Mission, Organization and Procedures for Solution of Boundary and Water Problems*, available at [http://www.ibwc.state.gov/html/about\\_us.html](http://www.ibwc.state.gov/html/about_us.html).

<sup>17</sup> *Id.*

commitment is needed. Critics have identified a number of changes that need to happen and the method through which the IBWC could achieve more successful bi-national water management.

### **B. The Minute System**

The 1944 Water Treaty provides the IBWC with the authority to interpret, apply and extend the provisions of the treaty through the Minute system.<sup>19</sup> The Minute system is a unique system designed to allow the management agency to create legally binding rules within the constraints of the treaty. The U.S. and Mexican sections meet weekly to discuss water management and border issues. Some decisions between the Commissioners are recorded as Minutes in English and Spanish. These Minutes must be sent to each government within three days of signature by the Commissioners.<sup>20</sup> Each government, the Department of State of the United States and the Secretariat of Foreign Relations of Mexico, must approve the Minute within thirty days of receiving it.<sup>21</sup> If no objection is found the Minute becomes a binding agreement and extension of the treaty between the two countries.<sup>22</sup> 311 Minutes have been signed since 1944.

### **III. Criticisms of the International Water and Boundary Commission**

Criticism of the IBWC is not new, and as the population, economics, politics, and environment changes new criticisms arise. Most critics suggest that the current mandate, structure, and jurisdiction of the IBWC are not adequate to handle the complexities involved with water management on the border.<sup>23</sup> The major criticisms can be

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18 Steven G. Ingram, *In a Twenty-First Century "Minute,"* 44 Nat. Resources J. 163, 182 (2004).

19 1944 Water Treaty, *supra* note 1, at Article 25.

20 *Id.*

21 *Id.*

22 *Id.*

23 See generally Mary Kelly and Alberto Szekely, *Modernizing the International Boundary and Water Commission, Policy Paper No. 1*, Univ. Of Calif. at Berkely Center for Latin American Studies, (2004);

summarized as: the IBWC's limiting internal structure, poor collaboration with other agencies and inadequate public participation, insufficient problem solving abilities, and the need to change the mandate and jurisdiction of the IBWC.

### **A. Internal Structure**

Article 2 of the 1944 Water Treaty stipulates that the Commissioners of both the U.S. and Mexican sections, must be licensed engineers.<sup>24</sup> This requirement limits the IBWC to a technical bias<sup>25</sup> and promotes the criticism that the Commission is overly concerned with construction. It also restricts the “agency's diplomatic flexibility and responsiveness to public constituencies.”<sup>26</sup> A strictly technical based Commission may not be able to handle the increasingly diplomatic requirements for water management along the border. The Mexican section of the IBWC has a weaker engineering division, deferring construction to Mexico's other federal agencies who already carry out these functions.<sup>27</sup> This leads into yet another criticism of the IBWC; the separate U.S. and Mexican sections.<sup>28</sup> Although the Commissioners of the two sections meet weekly, separate offices and staffs inhibits data sharing, limits fact finding for current disputes, and increases the imbalance of resources.<sup>29</sup> Combining the two sections would increase communication and collaboration in water management between the two countries.

### **B. Collaboration with Other Agencies and Public Participation**

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*see also* Stephen Mumme, *Innovation and Reform in Transboundary Resource Management: A Critical Look at the International Boundary and Water Commission, United States and Mexico*, 33 Nat. Resources J. 93 (1993); *see also* Bennett and Herzog, *supra* note 3.

24 1944 Water Treaty, *supra* note 1, at art. 2.

25 Roberto Sanchez, *Public Participation and the IBWC: Challenges and Options*, 33 Nat. Resources J. 283 (1993).

26 Stephen Mumme, *Improving Binational Water Management*, Center for U.S.-Mexican Studies, University of California, San Diego, 9 (ND) *available at* [http://usmex.ucsd.edu/research/conf\\_pdfs/mumme.pdf](http://usmex.ucsd.edu/research/conf_pdfs/mumme.pdf).

27 *Id.* at 8.

28 Kelly and Szekely, *supra* note 19, at 14.

Both sections of the IBWC have been criticized for being highly insular and secretive.<sup>30</sup> A lack of transparency and a failure to disclose information to the public has resulted in a negative view of the IBWC for some stakeholders along the border. Others along the border view the IBWC as an authority set up to protect their countries' sovereign water rights.<sup>31</sup> Much of the problem is that the 1944 Water Treaty does not define how the IBWC should interact with stakeholders and other border agencies or how it should release information to the public. Because the public lacked knowledge about the IBWC and their powers, they did not pressure the IBWC to make needed reforms. Recently though, the IBWC has emphasized improving its public relations and public participation.<sup>32</sup> In 2006, the U.S. Section of the IBWC put out its 2006-2011 Strategic Plan which includes the objective to “balance and evaluate the needs of all stakeholders.”<sup>33</sup> However, the Mexican section is not making similar changes. Local communities on the Mexican side of the border often do not know what the IBWC is planning or investigating.<sup>34</sup> This highlights the imbalance of advances made between the U.S. Section and the Mexican Section.

### **C. Problem Solving**

The ad hoc problem solving is another criticism addressed in the U.S. Section 2006 Strategic Plan. The IBWC will strive to “take innovative approaches to

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29 *Id.*

30 Stephen Mumme, *Managing Acute Water Scarcity on the U.S.-Mexico Border*, 39 Nat. Resources J. 149, 156 (1999).

31 Sanchez, *supra* note 21, at 293.

32 Stephen Mumme and Nicolas Pineda, *Water Management on the U.S.-Mexico Border: Mandate Challenges for Binational Institutions*, (presentation for *The Future of the U.S.-Mexico Border: Population, Development, Water, Environmental Change and Security Program*) available at [http://www.wilsoncenter.org/index.cfm?topic\\_id=1413&fuseaction=topics.documents&doc\\_id=19022&group\\_id=15619](http://www.wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topics.documents&doc_id=19022&group_id=15619) (2001).

33 U.S. Section, International Boundary and Water Commission (IBWC), *Strategic Plan: Fiscal Years 2006-2011*, 4 (2006) available at [http://www.ibwc.state.gov/Files/FY06\\_Strategic\\_Plan.pdf](http://www.ibwc.state.gov/Files/FY06_Strategic_Plan.pdf).

anticipating...” border water problems.<sup>35</sup> The agency has been accused of being highly reactive to border problems, often waiting for political responses to issues before reacting.<sup>36</sup> This criticism includes the lack of proactive management of groundwater resources and the environment as well as ad hoc management during drought conditions. The 1944 Water Treaty does not include groundwater or ecological considerations in the IBWC’s mandate. This has made it difficult for the agency to incorporate all aspects of water management without explicit authority. Minute 242 does provide for mandatory consultation on any construction that would affect groundwater.<sup>37</sup> And though this did bring groundwater into the realm of the IBWC, nothing more has happened to extend authority over groundwater management. Ecological considerations have also been largely ignored by the 1944 Water Treaty. Article 3 of the 1944 Water Treaty gives a guideline of priorities for the IBWC and ecological concerns are not included except under the category of “other uses.”<sup>38</sup>

A greater hydraulic understanding of groundwater and surface water connections and a more acute concern for the environment are necessary for the IBWC to proactively address water resource issues on the border. The recent Mexican water debt, and difficulty for the two sections to come to a common understanding of the issues involved, is an example of the reactive characteristic of the IBWC. The 1944 Water Treaty does stipulate rationing rules for drought conditions but it does not include a definition of what drought conditions are nor does it give authority to the IBWC to decide when those

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34 Sanchez, *supra* note 21, at 285.

35 U.S. Section, *supra* note 29, at 4.

36 Mumme and Pineda, *supra* note 28, at 3.

37 International Boundary and Water Commission, *Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River*, Minute No. 242 (1973), available at <http://www.ibwc.state.gov/Files/Minutes/Min242.pdf>.

38 1944 Water Treaty, *supra* note 1, at art. 3.

conditions have been met.<sup>39</sup> The term “extraordinary drought” in the Treaty<sup>40</sup> is severely inadequate to assist the IBWC to determine drought conditions.

#### **D. Mandate and Jurisdiction**

The lack of groundwater, ecological needs, and defined drought management in the 1944 Water Treaty reveals the next criticism: an outdated mandate. The water management issues on the border have become more complex and political than the authors of the 1944 Water Treaty could have anticipated.<sup>41</sup> A number of critics see the mandate of the IBWC as too narrow. Another Treaty deficiency identified is the jurisdiction of the IBWC. The jurisdiction is limited to surface water directly on the border. Because groundwater is excluded and surface water needs and connections go well beyond the border area, comprehensive water management is impossible under the current institutional framework.<sup>42</sup>

#### **E. Suggestions: The Minute system as a Tool for Modernizing the IBWC**

The criticisms of the IBWC are overwhelming, and the suggestions are not always as comprehensive as the criticisms. Some have recommended eliminating the requirement of an Engineer Commissioner altogether<sup>43</sup> while others recommend incorporating a second, non-engineer, Commissioner who is responsible for integrated river management.<sup>44</sup> The imbalance of resources and differences in the two sections has

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39 Mumme and Pineda, *supra* note 28, at 3.

40 1944 Water Treaty, *supra* note 1, at art. 4.

41 Bennett and Herzog, *supra* note 3, at 974.

42 Helen Ingram and David R. White, *International Boundary and Water Commission: An Institutional Mismatch for Resolving Transboundary Water Problems*, 33 Nat. Resources J. 153, 155 (1993); Mumme, *supra* note 26, at 156; Sanchez, *supra* note 21, at 283.

43 Kelly and Szekely, *supra* note 19, at 3.

44 Jurgen Schmandt, *Bi-National Water Issues in the Rio Grande/Rio Bravo Basin*, 4 Water Policy 135, 152 (2002).



been addressed with recommendations to combine the sections into one.<sup>45</sup> To improve its public participation and transparency, the IBWC could hold more public meetings, include other agencies in the management process, maintain a transparent operation, and make technical data available to the public.<sup>46</sup> To solve the ad hoc response to water problems the IBWC will need to work more closely with other agencies along the border<sup>47</sup> and to build up a larger database of the water resources, both surface water and groundwater, along the border. It has also been suggested that the IBWC incorporate a policy-based Minute to revitalize the IBWC's mandate.<sup>48</sup> Incorporating into the treaty new concerns and problems of ecological, groundwater, and drought management will require the IBWC to take the initiative and create new legally binding Minutes that further define ambiguous treaty language and extend the authority of the agency.<sup>49</sup> The Minute system of the 1944 Water Treaty could, most critics believe, create treaty reform and make the management of the IBWC more effective. However, numerous political and institutional barriers exist that slow the implementation of new Minutes as well as the enforcement and adherence to the Minutes themselves.

#### **IV. Criticisms of the Institutional and Political Structure**

Most agree that the Minute system has allowed the 1944 Water Treaty, and its regulating agency the IBWC, to change over time. Whether the Minute system has been utilized to its full potential or not, however, is a matter of concern for many. Areas of ambiguity within the treaty and the IBWC's mandate and jurisdiction leave room for

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<sup>45</sup> Kelly and Szekely, *supra* note 19, at 3.

<sup>46</sup> Sanchez, *supra* note 21, at 292-293.

<sup>47</sup> Stephen Mumme, *Developing Treaty Compatible Watershed Management Reforms for the U.S.-Mexico Border: The Case for Strengthening the International Boundary and Water Commission*, 30 North Carolina Journal of Int'l Law & Com. Reg., 948 (2005).

<sup>48</sup> Ingram, *supra* note 18.

<sup>49</sup> *Id.*, at 934.

improvement. New Minute agreements could continue to modernize and improve the bi-national management of water resources between the U.S. and Mexico as treaty compatible reforms. However, “treaty-compatibility does not mean political feasibility.”<sup>50</sup> Political pressures and responses do play a significant role in the border management and the IBWC's responses. Institutional structures also limit the success of Minutes. For example, protecting sovereignty and differences in perspective in the recent Mexican debt had direct affects on the failure of Minute 293. An analysis of the institutional and political structures that appear to limit bi-national water management and successful Minutes is needed.

### **A. Differing Perspectives**

One of the political setbacks to successful Minute reforms is the difference in perspectives and water management structures between the U.S. and Mexico. The recent Mexican water debt conflict illustrates this point. Minute 234, passed in 1969, lays out cycle guidelines for resolving deficit problems.<sup>51</sup> However, the Mexican and U.S. governments interpreted and applied Minute 234 very differently. From the U.S. Deputy Commissioner's perspective, Carlos Marin;

“The U.S. is working with Mexico to try to adhere to Minute 234 in order to provide U.S. farmers an adequate amount of water. In contrast, Mexico considers that in the event of continued extraordinary drought, water deliveries required in the current cycle under the U.S. understanding of Minute 234 can continue to be deferred until the subsequent cycle.”<sup>52</sup>

Three more Minutes (293, 307 and 308) attempted to resolve the Mexican water debt.

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50 Mumme, *supra* note 43, at 948.

51 International Boundary and Water Commission, *Waters of the Rio Grande Allotted to the U.S. from the Conchos, San Diego, San Rodrigo, Escondido, and Salado Rivers and the Las Vacas Arroyo*, Minute 243, (Dec 19, 1969), available at <http://www.ibwc.state.gov/Files/Minutes/Min234.pdf>.

52 Carlos Marin, *Bi-National Border Water Supply Issues from the Perspective of the IBWC*, 11 U.S.-Mex.

None of the three water debt Minutes have addressed the larger problem of differing perspectives between the governments or even resulted in complete resolution for future drought management.

Cooperation is also limited by the greatly varying water law systems of the U.S. States and Mexico. U.S. States are wary of federal involvement in groundwater issues, management changes, and even data sharing.<sup>53</sup> However, federal involvement in State water management is necessary for the IBWC to effectively manage the transboundary resource. Data sharing among U.S. States has improved but stakeholders and State officials are sensitive about protecting their sovereignty. In Mexico, water law and water management is highly centralized creating a very different regime for the IBWC to coordinate with local stakeholders. The Mexican States authority over water management is limited to ensuring sustainable management and allocating water resources in each State.

### **B. Political Entrenchment**

Another setback is that the political feasibility of a reform are changes in political will. The two sections of the IBWC are deeply entrenched in the “domestic administrative and political processes of their respective governments.”<sup>54</sup> The agencies do not push beyond the political fences to achieve sustainable, bi-national water management. Minute 306, initiating studies of the Colorado River Delta, did push the IBWC into the realm of ecological considerations. However, as long as the issue remains highly controversial, and politically hot, it is unlikely that the IBWC will take a larger step toward prioritizing ecological uses for water without the support of government.

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L.J. 36, 35-39 (2003).

<sup>53</sup> *Id.*, at 39.

The IBWC, historically, has preferred not to assert its authority to adopt Minutes that deal with sensitive issues rather it tends to wait for government initiative or a technical, temporary solution.<sup>55</sup>

Although the Minute system of the 1944 Water Treaty has been praised for its success in allowing treaty interpretation and extensions, the IBWC's slow diplomatic process in creating new Minutes in response to problems has been a source of frustration for many along the border.<sup>56</sup> This is especially true when the IBWC is waiting for political support, since the politics on both sides of the border continuously change and respond to different stakeholders and different pressure groups. As a result, many environmental groups have looked to other institutions and agreements to achieve environmental protection and pollution mitigation along the border. The Border 2012 program of the Environmental Protection Agency and the La Paz Agreement are examples of these cross-border institutions.<sup>57</sup>

### **C. Lack of Collaboration and Participation**

When the IBWC was established by the 1944 Water Treaty it was one of the only federal agencies working for binational cooperation on the U.S.-Mexico border. In 2006, this is no longer the case. Numerous institutions exist on the border to manage binational resources and work for greater cooperation between the two countries; Border 2012 Program, Border Environment Cooperation Commission (BECC), North American Development Bank (NADB), Good Neighbor Environmental Board (GNEB), and many others. The increasing complexity of border issues requires more cooperation between

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54 Mumme, *supra* note 43, at 948.

55 Mumme, *supra* note 22, at 4.

56 *Id.* at 35; Eileen Zorc, *The Border 2012 U.S.-Mexico Environmental Program: Will a Bottom-Up Approach Work?*, 16 *Geo. Int'l Env'tl. L. Rev.* 533, 536 (2004).

the binational, national, state, tribal, and local institutions to reach sustainable responses and plans. The various mandates of all these institutions demand “a greater degree of formal articulation between existing agencies...”<sup>58</sup> The IBWC is just beginning to work with some of the other binational agencies. It is also necessary for the IBWC to direct and distribute authority and resources to other agencies working on the border. This is not a role the IBWC has taken.<sup>59</sup>

Another institutional problem that decreases the success of Minute reforms is the lack of public participation in the IBWC process. Since the 1970s the IBWC has had to work increasingly on urban supply services and sanitation problems.<sup>60</sup> These problems require a greater understanding of the social, political and economic dynamics along the border which necessitates that the IBWC improve its public participation.<sup>61</sup> Because it is usually the public that pressures politicians and because the IBWC often waits for political support for Minute responses to water problems, it is imperative that the public is involved. The IBWC cannot operate as the mediator between the border and the federal governments without public involvement.

#### **D. Limited Jurisdiction**

The limited jurisdiction of the IBWC also severely inhibits the success of Minutes. Water management is only partially successful if it considers only a small land unit and ignores the reality of the hydrologic cycle. The drought conditions in Mexico in the 1980s and 90s is an example of the need to extend IBWC jurisdiction. Minute 308

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<sup>57</sup> Zorc, *supra* note 52, at 536.

<sup>58</sup> Mumme, *supra* note 43, at 948.

<sup>59</sup> Christopher P. Brown and Stephen Mumme, *Applied and Theoretical Aspects of Binational Watershed Councils (Consejos de Cuencas) in the U.S.-Mexico Borderlands*, 40 Nat. Resources Journal 895, 912 (2000).

<sup>60</sup> Sanchez, *supra* note 21, at 288.

<sup>61</sup> *Id.*, at 288-289.

authorized funding of irrigation improvements in the Rio Conchos Basin.<sup>62</sup> The Rio Conchos, in Chihuahua, flows into the Rio Grande and is included in the allocation quantities enumerated in the 1944 Water Treaty. However it does not lie within the IBWC jurisdiction. Minute 308 does temporarily extend jurisdiction to the IBWC, but only for the construction of irrigation improvements. A more permanent and broad extension of the IBWC jurisdiction is needed for successful binational management.

The numerous institutional and political barriers to resolutions along the border seem to be the greatest hurdle in using the Minute system to modernize the IBWC and the 1944 Water Treaty. New Minutes may modernize border water management, but only if they can overcome the IBWC's political and institutional barriers. For now the barriers outside the Minute system have been stronger and more limiting than the potential achievements of the Minutes themselves.

## **V. Analysis of the Minute System**

Minutes can create treaty based extensions, define ambiguous language, and modernize the treaty itself. However, extensions do not equal action or the resolution of problems. The success of a Minute can be limited by internal, IBWC, factors or external factors. Even if a Minute is a realistic measure to use to interpret the treaty or extend authority, other variables may not allow for the Minute system to achieve its potential. It is important to analyze some of the Minutes that have been agreed upon to determine the system's success. The Minutes chosen for analysis are Minutes that went beyond a technical, construction agreement. The more technical, construction Minutes have largely been successful while Minutes that attempt to extend IBWC authority or

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<sup>62</sup> International Boundary and Water Commission, *United States Allocation of Rio Grande Waters During the Last Year of the Current Cycle*, Minute 308, (June 28, 2002), available at

modernize the treaty have not been as productive.

### **A. Minute 242**

In 1973 Minute 242 was passed to find a solution to the salinity problem of the Colorado River. This Minute also extended the IBWC's authority by providing for mandatory consultation for any construction that would affect surface water or groundwater resources along the border.<sup>63</sup> Salinity levels in the Colorado River had increased drastically because of agricultural return flows from an irrigation district in Southern Arizona. Crops in Mexico's Calexico Valley, downstream, began dying due to the increased salt. Minute 242 set a salinity level for the Colorado River before it crossed the border that the U.S. has been able to meet to the satisfaction of Mexico.<sup>64</sup> The U.S. redirected the agricultural return flows that were the most obvious contributors to the salinity in the Colorado River and built a desalting plant. The desalting plant has never operated, other than a short test phase, because the redirected return flows have successfully decreased salinity in the Colorado River crossing the border. The salinity problem was solved, however groundwater impacts have largely been ignored.

The inclusion of groundwater in the mandate of the IBWC broadened the scope of the 1944 Water Treaty by bringing groundwater into the picture for the first time. As surface water resources are stretched thin and the population continues to grow, pressures on groundwater are increasing. In 2000, Stephen Mumme proposed that there were at least 18 regions with current or potential groundwater disputes on the border (see Appendix A).<sup>65</sup> The necessity for comprehensive, bi-national groundwater management

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<http://www.ibwc.state.gov/Files/Minutes/Minute308.pdf>.

<sup>63</sup> International Boundary and Water Commission, *supra* note 33.

<sup>64</sup> *Id.*

<sup>65</sup> Stephen Mumme, *Minute 242 and Beyond: Challenges and Opportunities for Managing Transboundary*

is greater now than it ever has been, and it will only become more and more essential for the IBWC. The IBWC needs to compile complete data on the groundwater resources along the border as well as improve, and unify, management of these resources. Minute 242 has not lead to further Minutes concerning groundwater nor has it encouraged the two sections of the IBWC to attempt more than limited consultation. Little discussion about groundwater management has occurred since 1973 and little has been done to identify when consultation is necessary; both causing the agreement to have little lasting effect on groundwater management.<sup>66</sup>

### **B. Minute 293, 307 and 308**

In 1995 the U.S. loaned 81,000 acre-feet of water to Mexico through Minute 293 to alleviate drought stress in Northern Mexico.<sup>67</sup> This is the first of three Minutes passed recently that attempts to alleviate drought-related problems. Minute 293 also emphasized the need for further data sharing and cooperation on management of the Rio Grande. This Minute does little to solve more than an immediate water shortage in Mexico by loaning U.S. allocated water. The Minute does not define the ambiguous term of “extraordinary drought,” nor does it offer guidance or protocol for future drought situations or a longer range plan for proactive drought management.<sup>68</sup>

Minute 307, signed in March 2001, attempted to ensure Mexican repayment of its water debt by delivering 600,000 acre-feet to the U.S. by July 2001.<sup>69</sup> This Minute goes

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*Groundwater on the Mexico-U.S. Border*, 40 Nat. Resources Journal 341, 344 (2000).

<sup>66</sup> Kelly and Szekely, *supra* note 19, at 16.

<sup>67</sup> International Boundary and Water Commission, *Emergency Cooperative Measures to Supply Municipal Needs of Mexican Communities Located Along the Rio Grande Downstream of Amistad Dam*, Minute 293, (Oct. 4, 1995) available at <http://www.ibwc.state.gov/Files/Minutes/Min293.pdf>.

<sup>68</sup> Mumme, *supra* note 26, at 160.

<sup>69</sup> International Boundary and Water Commission, *Partial Coverage of Allocation of the Rio Grande Treaty Tributary Water Deficit from Fort Quitman to Falcon Dam*, Minute 307, (March 16, 2001), available at <http://www.ibwc.state.gov/Files/Minutes/Min307.pdf>.



further than Minute 293 by including a commitment to “work jointly to identify measures of cooperation on drought management and sustainable management of this basin,”<sup>70</sup> in order to prevent a recurrence of the situation. However, Mexico was not able to meet the water delivery requirements of Minute 307 and in June 2002 Minute 308 was signed, committing Mexico to deliver 90,000 acre-feet to the U.S.<sup>71</sup> The IBWC also recognized the need and possibility to conserve water in Mexico to help alleviate the current water shortages and lessen future drought deficits. Minute 308 recommended infrastructure financing to improve irrigation efficiencies in the Rio Grande Basin in Mexico.<sup>72</sup> Through this Minute the two sections of the IBWC indicated the will to continue to find long-term, bi-national drought management measures. Section G of Minute 308 authorized the IBWC to set up an Advisory Council to enhance sustainable drought management and increase the exchange of data and information.<sup>73</sup>

Although Minutes 293 and 307 do little more than meet short-term water supply issues, Minute 308 does move the IBWC closer to agreement on longer term drought management plans. However, Minute 308 still does not define “extraordinary drought” nor does it improve parameters for future drought mitigation. The IBWC needs to develop a more proactive drought response with more flexibility for water sharing and rationing.<sup>74</sup>

### **C. Minute 306**

In 2000 the IBWC signed its first Minute relating to ecosystem concerns beyond

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<sup>70</sup> *Id.*, at 3.

<sup>71</sup> International Boundary and Water Commission, *supra* note 58.

<sup>72</sup> *Id.*, at Section B.

<sup>73</sup> *Id.*, at Section G.

<sup>74</sup> Stephen Mumme, *Revising the 1944 Water Treaty: Reflections on the Rio Grande Drought Crises and Other Matters*, 45.4 *Journal of the Southwest*, 649, 655 (2003).

ancillary benefits from sanitation improvements. Minute 306 authorized a binational investigation of the ecology of the Colorado River Delta.<sup>75</sup> The binational advisory group first met in 2003 and is concerned about water availability for ecological purposes in the delta.<sup>76</sup> Although Minute 306 is a very timid step toward incorporating ecology into the jurisdiction of the IBWC, it does finally bring it into the realm of binational water management under the 1944 Water Treaty. Water availability for ecological purposes is a very controversial topic and politically delicate in a river system that is already over allocated, but the IBWC has taken a tentative step without rearranging the priority guidelines in the 1944 Water Treaty.<sup>77</sup>

#### **D. Minute Analysis Conclusion**

Although 311 Minutes have been signed since 1944, not all have achieved their stated purpose. The successful Minutes seem to predominately be the more technical agreements for construction of sanitation plants, reservoirs, and other infrastructure. Small steps have been made using the Minute system to quell some of the criticisms and enable the IBWC to address changing issues on the border. Most of these Minutes seem to be more ad hoc responses to issues rather than proactive creations for long term modernization. The IBWC needs to integrate Minutes that will extend its authority and better articulate its mission. This can be done by using newly developed international standards for water management given in the *Berlin Rules*.

#### **VI. The *Berlin Rules***

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<sup>75</sup> International Boundary and Water Commission, *Conceptual Framework for United States-Mexico Studies for Future Recommendations Concerning the Riparian and Estuarine Ecology of the Limitrophe Section of the Colorado River and Its Associated Delta*, Minute No. 306, (Dec. 12, 2000), available at <http://www.ibwc.state.gov/Files/Minutes/Min306.pdf>.

<sup>76</sup> *Id.*

<sup>77</sup> Mumme, *supra* note 26, at 157.

The Water Resources Committee of the International Law Association first presented a compilation of international water law in 1966 at the Helsinki Conference.<sup>78</sup> Following the *Helsinki Rules*, the UN Convention of the Non-Navigational Uses of International Watercourses was adopted in 1997 and was the only other form of international water law until the *Berlin Rules* in 2004.<sup>79</sup> The *Berlin Rules* were presented, at the 2004 Berlin Conference, as a comprehensive revision of the *Helsinki Rules*.<sup>80</sup> The *Berlin Rules* “present a comprehensive collection of all the relevant customary international law that a water manager or a court or other legal decision maker would have to take into account in resolving issues relating to the management of water resources.”<sup>81</sup> While the *Berlin Rules* do not yet have political endorsement, they are a consolidated set of internationally accepted customary international water laws and principles of international water law. “These *Rules* set about to provide a clear, cogent, and coherent statement of the customary international law that applies to waters of international drainage basins...”<sup>82</sup>

“These *Rules* also undertake the progressive development of the law needed to cope with emerging problems of international or global water management for the twenty-first century.”<sup>83</sup> The *Berlin Rules* include guidelines and principles for such factors as the international cooperation and administration between States, information exchange, the rights of the public, importance of impact assessments, droughts, floods, inclusion of groundwater, conjunctive management of surface waters and groundwater,

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78 International Law Association, Berlin Conference (2004): Water Resources Law, *available at* <http://www.asil.org/ilib/WaterReport2004.pdf>.

79 UN Doc, *supra* note 4.

80 International Law Association, *supra* note 78.

81 *Id.*

82 *Id.*, at 3, Preface to the *Berlin Rules*.

83 *Id.*

protection of the aquatic environment, and sustainability. The *Rules* address these issues and a number of other aspects of international water law in 73 articles (see Appendix B).

Incorporating the *Berlin Rules* in transboundary water management allows for States to create a system of management for present and future issues. “The *Berlin Rules 2004* appreciates and embodies the priorities of today and ventures to map the priorities of tomorrow.”<sup>84</sup> It is important for States participating in transboundary water management to analyze treaties, transboundary institutions, and management policies within the context of the *Berlin Rules*. As Joseph Dellapenna points out, “The *Berlin Rules* speak in terms of a new paradigm of international water law that focuses on ecological integrity, sustainability, public participation, and minimization of environmental harm;”<sup>85</sup> a number of the criticisms of the IBWC. An analysis of the *Berlin Rules* may prove beneficial to identify solutions to the criticisms of the IBWC and the 1944 Water Treaty.

### **A. Information Exchange and Cooperation**

It has been noted that the separate sections of the IBWC do not collaborate enough.<sup>86</sup> According to Article 11 of the *Berlin Rules*, “States shall cooperate in good faith in the management of waters of an international drainage basin for the mutual benefit of the participating States.”<sup>87</sup> Increasing active cooperation and communication between the two sections of the IBWC would increase binational management of the border water for “mutual benefit,” rather than sovereign protectionism and a lack of

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84 Abu Raihan M. Khalid. *Interlinking of Rivers Project in India and International Water Law: An Overview*, The Development. Chinese Journal of International Law. 3:553-570 (2004).

85 Joseph Dellapenna. *The Berlin Rules on Water Resources: The New Paradigm for International Water Law*, available at <http://www.ualg.pt/5cigpa/comunicacoes/Berlin%20Rules%20Summary.doc>.

86 Kelly and Szekely, *supra* note 19, at 14.

87 International Law Association, *supra* note 78, at art. 11.

bilateral communication. The active exchange of information is imperative for the two sections to manage their resources jointly. “Basin States shall regularly provide to other basin States all relevant and available information on the quantity and quality of the waters of a basin or aquifer...”<sup>88</sup> This binational data and information exchange, though suggested in Minute 308, has not been fully utilized as the continued drought controversy suggests.<sup>89</sup>

In an effort to increase communication and information exchange the IBWC could implement Article 60. This article of the *Berlin Rules* confirms the rights of a State to request impact assessments and other relevant information.<sup>90</sup> A more proactive exchange of information and assessments between the U.S. and Mexico would help the IBWC to carry out its binational water management mission. A similar provision to the request for impact assessments is found in Article 18 of the *UN Convention*.<sup>91</sup>

### **B. Treaty and Political Structure: Harmonizing Laws and Use Preferences**

The U.S. and Mexico have different perspectives on water management and different laws governing management. Article 62 of the *Berlin Rules* suggests that “harmonizing the laws and policies regarding the equitable use and sustainable development of waters”<sup>92</sup>...is absolutely essential if conjunctive and integrated management are to be realized.”<sup>93</sup> Provisions in the *UN Convention* support this article and require States to cooperate toward this goal.<sup>94</sup>

Another constraint on binational water management are the use preferences

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<sup>88</sup> *Id.*, at art. 56.

<sup>89</sup> Mumme, *supra* note 74.

<sup>90</sup> International Law Association, *supra* note 78, at art. 60.

<sup>91</sup> UN Doc, *supra* note 4.

<sup>92</sup> International Law Association, *supra*, note 78, at art. 62.

<sup>93</sup> *Id.* at art. 62 commentary.

<sup>94</sup> *Id.*

outlined in Article 3 of the 1944 Water Treaty.<sup>95</sup> Article 3 gives the following preferential list as a guide; “1). Domestic and municipal uses, 2). Agriculture and stock raising, 3). Electric power, 4). Other industrial uses, 5). Navigation, 6). Fishing and hunting, 7). Any other beneficial uses which may be determined by the Commission.”<sup>96</sup> However, the *Berlin Rules* in Article 14, suggest that “States shall first allocate waters to satisfy vital human needs” but that “No other use or category of uses shall have an inherent preference over any other use or category of uses.”<sup>97</sup> The 1944 Water Treaty places agriculture above all uses except domestic and municipal uses. This preference guide shows very little concern for the environment.

### **C. Collaboration, Transparency and Stakeholder Involvement**

The IBWC has been criticized for a lack of collaboration with other agencies along the border to achieve integrated management. This has resulted in the unnecessary duplication, as well as gaps, of functions.<sup>98</sup> Article 6 of the *Berlin Rules* emphasizes the importance of integrated management of water resources along with the management of other boundary resources.<sup>99</sup> The IBWC must collaborate with other border agencies dealing with the environment, air quality, pollution, and other natural resources to avoid unnecessary negative impacts from, and to, non-water resources and to fully achieve sustainable management while minimizing environmental harm.<sup>100</sup> Another process to increase collaboration with local constituents and other border agencies is to improve transparency and stakeholder involvement.

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95 1944 Water Treaty, *supra* note 1, at art 3.

96 *Id.*

97 International Law Association, *supra* note 78, at art 14.

98 Sanchez, *supra* note 21, at 285; and Mumme, *supra* note 22, at 4.

99 International Law Association, *supra* note 78, at art. 6.

100 *Id.*, at art. 6 commentary.

The International Law Association recognizes that it is a “human right for people who are to be affected by decisions to participate in those decisions.”<sup>101</sup> Article 4 stipulates that the States must “take steps to assure that persons likely to be affected are able to participate in the processes whereby decisions are made concerning the management of waters.”<sup>102</sup> The IBWC must begin to incorporate public participation and transparency into its discussions and actions. Inclusion of stakeholders will move the IBWC to more proactive management.<sup>103</sup> Article 18 also emphasizes the importance of public participation, “...States shall assure that persons...likely to be affected by water management decisions are able to participate, directly or indirectly, in processes by which those decisions are made and have a reasonable opportunity to express their views on plans, programs, projects, or activities relating to waters.”<sup>104</sup> The commentary to this article adds that, “...legitimacy largely depends on the consent of the governed, and...without a sense of legitimacy, attempts to govern founder on popular resistance, whether active or passive.”<sup>105</sup> The *Berlin Rules* do recognize that States have the discretion in structuring public participation and transparency, but that without public access to information and public participation transboundary water management will not be successful.

Article 18 continues on by stating that “States shall provide access to information relevant to the management of waters without unreasonable difficulty or unreasonable charges” including access to impact assessments.<sup>106</sup> Access to information should also

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101 *Id.*, at art. 4 commentary.

102 *Id.*, at art. 4.

103 Mumme, *supra* note 65, at 347; Kelly and Szekely, *supra* note 19, at 16-17.

104 International Law Association, *supra* note 78, at art. 18.

105 *Id.*, at commentary.

106 *Id.*

include education. Article 19 encourages “education at all levels to promote and encourage understanding of the issues that arise under these *Rules*.” The IBWC has the duty to apply the rules of the treaties and agreements between the two States “in a way that benefits the social and economic welfare of the peoples...”<sup>107</sup> The people on the border must be actively educated about binational water management, water issues, and the role of the Commission to inform the IBWC what will benefit their social and economic welfare.

#### **D. Droughts**

The drought in the late 1990's in Northern Mexico increased tension between the U.S. and Mexico over water distribution and binational management. Although Minutes 293, 307, and 308 were attempts to improve drought-related problems, these Minutes fail to give the IBWC authority to declare imminent drought or provide for preventative conservation measures.<sup>108</sup> The *Berlin Rules*, in Article 35, address the need for States to “cooperate in the management of waters to prevent, control, or mitigate droughts.”<sup>109</sup> The *Rules* define cooperation with respect to drought prevention and control to include:

“an integrated strategy for addressing the physical, biological, and socio-economic aspects of the drought; the definition of criteria that activate the provisions of this Article; an integrated strategy for mitigating the effects of drought and moving towards the sustainable use of waters; the development or strengthening necessary legislation and appropriate institutions for achieving these goals; and the allocation of adequate resources to achieve these goals...”<sup>110</sup>

The IBWC must work on preventative measures for dealing with future drought to lessen the negative impacts and tensions between the countries. The two sections of the IBWC

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107 International Boundary and Water Commission, *supra* note 16.

108 Mumme and Pineda, *supra* note 28, at 3.

109 International Law Association, *supra* note 78, at art. 35(1).

110 *Id.*, at art. 35(2).



should communicate prior to a drought situation to create the necessary strategies for proactive management of the water resources. Definition of the term “extraordinary drought” in the 1944 Water Treaty would further enable the IBWC to take the necessary steps when these drought conditions are met.<sup>111</sup>

### **E. Conjunctive Management and Groundwater**

In 1983 Minute 242 was the first, and last, agreement addressing groundwater management between the two sections of the IBWC. Minute 242 authorized mandatory consultation on any construction that would impact surface or groundwater resources.<sup>112</sup> However, the Minute has lead to “negligible progress towards sustainable management of transboundary groundwater aquifers.”<sup>113</sup> Article 5 of the *Berlin Rules* emphasizes “States shall use their best efforts to manage surface waters, groundwater, and other pertinent waters in a unified and comprehensive manner.”<sup>114</sup> The mandatory consultation given in Minute 242 falls short of “unified and comprehensive” management stressed in Article 5 of the *Berlin Rules*.<sup>115</sup> Article 37 also reiterates the importance of managing “groundwater conjunctively with the surface waters...taking into account any interconnections between aquifers or between an aquifer and a body of surface water.”<sup>116</sup> The two States have continued to protect their sovereign right to pump as much of their border aquifers as possible while informing the other of groundwater development.<sup>117</sup> The importance of conjunctive management of surface waters and groundwater is indispensable to effective, sustainable management of the resources.

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111 Mumme and Pineda, *supra* note 28, at 3.

112 International Boundary and Water Commission, *supra* note 33.

113 Stephen Mumme, *Advancing Binational Cooperation in Transboundary Aquifer Management on the U.S.-Mexico Border*, 16 *Colo. J. Int'l Env'tl. L. & Policy*, 83 (2005).

114 International Law Association, *supra* note 78, at art. 5.

115 *Id.*

116 *Id.*, at art. 37.

Further guidelines are given in Articles 38-42 for sustainable, transboundary groundwater management. Article 38 requires States to “take early action and develop long-term plans to ensure the sustainable use of groundwater.”<sup>118</sup> Mandatory consultation of sovereign actions does not lead to developing a binational, long-term plan for use of groundwater. The lack of binational groundwater management, along with a lack of complete knowledge of the groundwater resources on the border, “contribute to user uncertainty and, in turn, strengthen the incentives to deplete the resource.”<sup>119</sup> Article 40 takes into account the importance of sustainability for managing aquifers.<sup>120</sup> “In order to assure sustainability, States will have to establish a maximum allowable drawdown for each aquifer.”<sup>121</sup> Sustainability, or a maximum drawdown, cannot be established without more complete data about the transboundary aquifers, transparent information exchanges of aquifer withdrawals by each State, and the development of a long-term, binational management plan. Article 42 gives guidelines for attaining this sustainable management of groundwater resources.<sup>122</sup> States shall “manage an aquifer in its entirety,”<sup>123</sup> “consult and exchange information and data,”<sup>124</sup> “cooperate in the collection and analyzing additional needed information,”<sup>125</sup> “set drawdown rates in order to assure the equitable utilization of the waters,”<sup>126</sup> “cooperate in managing the recharge of the aquifer,”<sup>127</sup> and “refrain from and prevent acts or omissions within their territory

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117 Mumme, *supra* note 112.

118 International Law Association, *supra* note 78, at art. 38.

119 Mumme, *supra* note 65, at 347.

120 International Law Association, *supra* note 78, at art. 40.

121 *Id.*, at art. 40 Commentary.

122 *Id.*, at art. 42.

123 *Id.*, at art. 42 (2).

124 *Id.*, at art. 42 (3).

125 *Id.*

126 *Id.*, at art. 42 (4).

127 *Id.*, at art. 42 (5).

that cause significant harm to another basin State.”<sup>128</sup>

## **F. Sustainability, Environment, and Ecology**

Sustainability, according to the *Berlin Rules*, must apply to all transboundary waters, surface water and groundwater. Article 7 says that “States shall take all appropriate measures to manage waters sustainability.”<sup>129</sup> The *Rules* continue to advise that sustainability usually needs both integrated management (Article 6) and conjunctive management (Article 5).<sup>130</sup> “Determining sustainability must remain a highly fact-specific analysis of the proper uses of a particular resource in a particular setting.”<sup>131</sup> In this manner all of the *Rules* should be followed to achieve sustainable management on the US-Mexico border.

The 1944 Water Treaty relegates environmental and ecological concerns to last place on its list of use preferences, under “any other beneficial uses.”<sup>132</sup> In contrast, the *Berlin Rules* propose that “States shall take all appropriate measures to prevent or minimize environmental harm.”<sup>133</sup> The IBWC has repeatedly been criticized for failing to address or include ecological and environmental concerns in their management.<sup>134</sup> Minute 306 was a small advancement for the IBWC and did authorize a binational study of the ecology of the Colorado River Delta.<sup>135</sup> This timid Minute does not come close to fulfilling Article 22 of the *Berlin Rules*; “States shall take all appropriate measures to protect the ecological integrity necessary to sustain ecosystems dependent on particular

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128 *Id.*, at art. 42 (6).

129 *Id.*, at art. 7.

130 *Id.*, at art. 7 Commentary.

131 *Id.*

132 1944 Water Treaty, *supra* note 1, at art. 3.

133 International Law Association, *supra* note 78, at art. 8.

134 *See generally* Bennet and Herzog, *supra* note 3; *see also* Ingram and White, *supra* note 38; *see also* Mumme and Pineda, *supra* note 28.

135 International Boundary and Water Commission, *supra* note 75.

waters.”<sup>136</sup> It is evident by the decrease in size of the Colorado River Delta, now less than one tenth its original size,<sup>137</sup> and the increase of endangered species that the IBWC has not always taken measures to protect the integrity of the ecosystem.

The *Berlin Rules* also include an obligation to assess environmental impacts by monitoring programs, projects, and activities that may harm the river ecosystems in Article 29.<sup>138</sup> “Impacts to be assessed include, among others: effects on human health and safety; effects on the environment; effects on existing or prospective economic activity; effects on cultural or socio-economic conditions; and effects on the sustainability of the use of waters.”<sup>139</sup> Following the *Berlin Rules*, the IBWC would need to incorporate environmental and sustainability effects into assessments along side the human and economic impacts. Further, the IBWC would need to carry out on-going assessments of all these impacts to achieve sound and sustainable environmental management.<sup>140</sup>

## **VII. Minutes Required to Implement the *Berlin Rules***

Minutes can be created to incorporate all of the various aspects of the *Berlin Rules* that are missing from the 1944 Water Treaty and authority of the IBWC. Some of the Minutes would be very difficult, such as a Minute altering of the use preferences and elevating ecological and environmental uses. Changing the language of the 1944 Water Treaty may be impossible. However, the actions of the IBWC can incorporate new ideas and guidelines within the constraints of the 1944 Water Treaty. In other cases, a Minute

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136 International Law Association, *supra* note 78, at art. 22.

137 Environmental Defense. *Once a Mighty Delta: History*. March 2003. Available at <http://www.environmentaldefense.org/article.cfm?ContentID=2642>.

138 International Law Association, *supra* note 78, at art. 29.

139 *Id.*, at art. 29 (2).

140 *Id.*, at art. 29 Commentary.

may not be necessary for the IBWC to adhere more closely to the *Berlin Rules*. This may be the case for following Article 6 on integrated management. The IBWC has made progress collaborating with other agencies along the border.<sup>141</sup>

A number of Minutes could be agreed upon by the two sections of the IBWC to help modernize and extend authority of the Commission. A Minute incorporating Article 11, “States shall cooperate...for mutual benefit,”<sup>142</sup> of the *Berlin Rules* along with Article 60, “requests for impact assessments or other information,”<sup>143</sup> would set up a formal step-by-step process for both sections and ensure full communication and collaboration between the States. The U.S. section of the IBWC has taken the initiative to form strategic plans that enables the Mexican section and stakeholders to see a long-term plan of action.<sup>144</sup> A new Minute supporting collaboration between the sections of the IBWC could require a binational strategic plan, which would also benefit stakeholders.

Another Minute should agree to guidelines and requirements for transparency and stakeholder involvement by integrating Article 4, 18, and 19. Article 4 sets the priority that “persons likely to be affected are able to participate in the process..,”<sup>145</sup> while Article 18 requires States to “provide access to information relevant,” including impact assessments,<sup>146</sup> and Article 19 requires the promotion of education.<sup>147</sup> The Minute should give explicit guidelines for the IBWC to follow while increasing public participation. The U.S. section of the IBWC emphasized the need to “balance and evaluate the needs of

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141 Steve Mumme. *Advancing Binational Cooperation in Transboundary Aquifer Management on the U.S.-Mexico Border*. Colorado Journal International Environmental Law and Policy, 16:101 (2005).

142 International Law Association, *supra* note 78, at art. 11.

143 *Id.*, at art. 60.

144 U.S. Section, International Boundary and Water Commission, *supra* note 29.

145 International Law Association, *supra* note 78, at art. 4.

146 *Id.*, at art. 18.

147 *Id.*, at art. 19.

all stakeholders”<sup>148</sup> in its most recent Strategic Plan.

The ongoing drought conflict between the two States, despite Minutes on the issue, is evidence that the current drought strategies are not working. A Minute adhering to the rules of Article 35; “to prevent, control, or mitigate droughts” by cooperation between States for “an integrated strategy, definition of criteria, development or strengthening necessary legislation, and allocation of adequate resources;”<sup>149</sup> would assist the IBWC in dealing with drought situations in a proactive and cooperative manner. The Minute would need to create cooperation between the States on integrated strategies, long-term planning, definition of “extraordinary drought,” prompt communication when the situation arises, and allocation of resources during drought.<sup>150</sup> The IBWC would also need to step beyond protectionist attitudes and push for stronger support of drought mitigation and cooperation at the federal and local levels.

The IBWC should agree on a Minute that would encourage conjunctive management of surface waters and groundwater such as Articles 5 and 37 advise.<sup>151</sup> Including ideas from Article 38, to “take early action and develop long-term plans to ensure the sustainable use of groundwaters,”<sup>152</sup> would assist the IBWC to broaden its jurisdiction and secure future groundwater supplies. This Minute could also contain guidelines from Articles 40, 41 and 42 to establish specific guidelines for the sustainable management and protection of the aquifers.<sup>153</sup>

And finally, building on Minute 306, a Minute is needed to protect ecosystems

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148 U.S. Section, International Boundary and Water Commission, *supra* note 29.

149 International Law Association, *supra* note 78, at art. 35.

150 *Id.*, at art. 35.

151 *Id.*, at art. 5 and 37.

152 *Id.*, at art. 38.

153 *Id.*, at art. 40, 41 and 42.

along the border by incorporating Article 7 and 22. The need for an ecological Minute has been voiced by many critics.<sup>154</sup> A Minute requiring States “take all appropriate measures to protect the ecological integrity necessary to sustain ecosystems...”<sup>155</sup> would strengthen the IBWC's authority and take the necessary precautions for sustainable water management. This would include incorporating the impacts of projects and programs on the environment and on the sustainability of water resources in impact assessments.<sup>156</sup>

By incorporating “new principles of international law in addition to emphasizing well-settled international principles...” the IBWC can modernize itself and resolve a number of the recent criticisms.<sup>157</sup> While it is apparent that there are a number of institutional and political barriers to the implementation and enforcement of Minutes, formal Minutes can strengthen the IBWC and binational water management. The IBWC must become a more assertive border institution, pushing for the political changes rather than being pulled by them.

### **VIII. Evaluation**

The *Berlin Rules* can serve as guidelines for the IBWC to incorporate modern customary international water law. “The *Rules* presented here present a comprehensive collection of all the relevant customary international law that a water manager or a court or other legal decision maker would have to take into account in resolving issues relating to the management of water resources.”<sup>158</sup> Adherence to the *Berlin Rules* would enable the IBWC to create a more collaborative, transparent, participatory, proactive and

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154 See generally Stephen Mumme, *The Case for Adding an Ecology Minute to the 1944 United States-Mexico Water Treaty*, Tulane Environmental Law Journal, 15: 239-256 (2001-2002).

155 International Law Association, *supra* note 78, at art. 22.

156 *Id.*, at art. 29.

157 Ingram, *supra* note 18, 193.

158 International Law Association, *supra* note 78, at 2.

modern institution to manage the binational water resources between the U.S. and Mexico.

Minutes do successfully interpret treaty language, extend authority and modernize a treaty. The 1944 Water Treaty and the IBWC have the potential to improve binational water management through the Minute system. However, institutional inadequacies and limited political leadership restrict the success of Minutes and the creation of more progressive Minutes. The IBWC's entrenchment in the political process and responses, lack of coordination with other agencies and the public, limited jurisdiction, and the differences in government perspectives and water law structures have made modernization of the 1944 Water Treaty very difficult. It seems that all of these factors are limiting the Minute system, but also, it is imperative that each of these factors is resolved. This can be done through the Minute system. Minutes incorporating ideas and guidelines from the *Berlin Rules*, as discussed above, would address most of the inadequacies and failures of the IBWC.

The IBWC, through incremental changes over time, can modernize itself by turning planning goals, that incorporate guidelines from the *Berlin Rules*, into formal Minutes. Utilizing Strategic Plans from both sections, the IBWC can take issues that are recognized as important aspects of improvement and move them from an informal level into a formal agreement. This would require full cooperation and coordination for both sections. The 2006 Strategic Plan of the US IBWC recognizes the importance of stakeholders' interests, expectations, and role in the mission of the IBWC.<sup>159</sup> Strategic Objective 4.3, Stakeholder Outreach and Response, could easily be turned into a Minute in which both sections of the IBWC would agree to “strive to keep the general public and



its stakeholders informed of all its plans and on-going activities.”<sup>160</sup> The goal goes further by identifying that the agency will hold public meetings in various regions to ensure the achievement of outreach and response.<sup>161</sup> For the IBWC to turn this sort of informal goal into a formal agreement between the two sections would be manageable, especially when using the *Berlin Rules* as guidelines. The Strategic Plans are usually, in part, responses to political pressures and criticisms. The US Commissioner stated that, “Our commitment through strategic planning is not only to conform with the law but also to the spirit of improving program performance and being accountable to our stakeholders.”<sup>162</sup> The inclusion of the *Berlin Rules* in planning strategies, and then formal Minute agreements, would enable the IBWC to overcome political and institutional hurdles and make significant changes that still adhere to customary international water law.

<b>Criticisms</b>	<b>Impacts</b>	<b>Berlin Rules</b>
Internal Structure / Problem Solving	Overly technical, sovereign protectionism, retroactive responses, lack of integrated management.	Articles 3, 11, 14, 60, 62
Collaboration with other Agencies	Unnecessary duplication of and gaps in border management.	Articles 4, 6, 18
Public Participation / Transparency	Negative view and lack of trust in the IBWC as well as lack of pressure from stakeholders.	Articles 4, 18, 19
Mandate / Jurisdiction	Lack of groundwater and environmental concerns and inadequacies of drought management.	Articles 5, 6, 7, 22, 29, 35, 37, 38, 40, 42

159 U.S. Section, International Boundary and Water Commission, *supra* note 29, at 4.

160 *Id.*, at 20.

161 *Id.*

162 *Id.*, in “A Message to Stakeholders.”

## VII. Conclusion

The IBWC is limited by entrenchment in the political processes, differing water law structures, a lack of coordination with other agencies and public participation, restricted jurisdiction, limited proactive management, and a lack of an assertive political posture. As so many critics suggest, most of these problems could be resolved by the Minute system. However, there are numerous institutional and political problems the IBWC must overcome before the Minute system can successfully achieve resolution. Minutes have failed, not because the system itself is flawed, but because of the internal and external problems surrounding the Minute system. The *Berlin Rules* do contain principles that are necessary for achieving sound binational management of an international watercourse. The IBWC and the 1944 Water Treaty follow some of the principle obligations concerning an international watercourse stated in the *Berlin Rules*, but there are a number of guidelines the IBWC should incorporate. The 1944 Water Treaty continues to hold to the allocation regime of 1944, however there are many political barriers that would not allow a change to this regime. The IBWC can step into 21<sup>st</sup> Century water management by utilizing the *Berlin Rules* and by turning the informal goals of the Strategic Plans of the IBWC and CILA into legally binding Minutes. This approach would allow for both sections to identify needed goals and then approach discussion and negotiation to reach a formal agreement. A modernization is possible if the Minute system is fully utilized. The greatest barrier to this will continue to be external political pressures.

The Good Neighbor Environmental Board made a number of recommendations

for the management of water resources in its Eighth Report to the President and Congress of the United States including: “Clarify current responsibilities held by the U.S.-Mexico border-region institutions responsible for managing its water resources. Identify jurisdictional gaps and overlaps, interpret missions to reflect changing circumstances, and leverage opportunities for stronger cross-institutional collaboration.”<sup>163</sup> The Good Neighbor Environmental Board also suggested that the U.S. and Mexico develop and sign an agreement about water resources data which should support collection, analysis, sharing, and collaboration of data to increase binational water management.<sup>164</sup> Along with clarification of responsibilities, identification of jurisdiction, interpretation of mission, and data sharing the report emphasized the importance of public participation in border resource management. “Using a stakeholder-driven watershed approach, will enable the IBWC to address immediate concerns in critical areas while pursuing collaborative longer-term strategies.”<sup>165</sup>

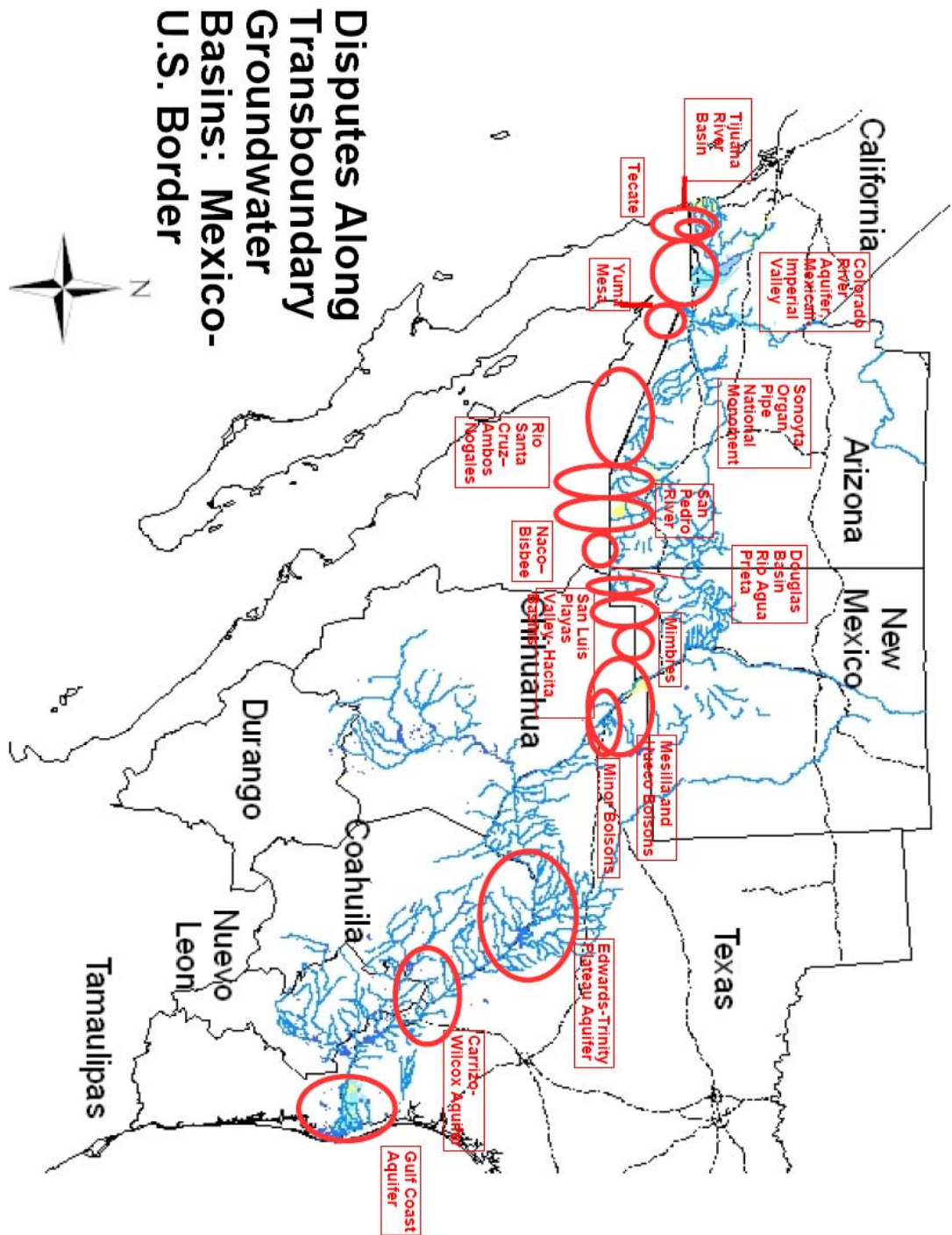
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163 Good Neighbor Environmental Board, Fifth Report of the Good Neighbor Environmental Board to the President and Congress of the United States, December 2001, <http://www.epa.gov/ocem/gneb/pdf/english2001gneb.pdf>.

164 *Id.*

165 *Id.*

## Appendix A



## Appendix B

### INTERNATIONAL LAW ASSOCIATION

### BERLIN CONFERENCE (2004)

#### WATER RESOURCES LAW

*Members of the Committee:*

Dr Gerhard Loibl (Austria): *Chair*  
Professor Joseph W Dellapenna (USA): *Rapporteur*  
Professor Malgosia Fitzmaurice (UK): *Secretary*  
Dr Slavko J Bogdanovic (HQ)  
Professor Charles B Bourne (Canada)  
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HE Ambassador Robbie Sabel (Israel)  
Dr Salman Salman (HQ)  
Professor Surya P Subedi (UK)  
Professor Christoph Vedder (Germany)  
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**Article 4**

***Participation by Persons***

States shall take steps to assure that persons likely to be affected are able to participate in the processes whereby decisions are made concerning the management of waters.

**Article 5**

***Conjunctive Management***

States shall use their best efforts to manage surface waters, groundwater, and other pertinent waters in a unified and comprehensive manner.

**Article 6**

***Integrated Management***

States shall use their best efforts to integrate appropriately the management of waters with the management of other resources.

**Article 7**

***Sustainability***

States shall take all appropriate measures to manage waters sustainably.

**Article 8**

***Minimization of Environmental Harm***

States shall take all appropriate measures to prevent or minimize environmental harm.

**Article 11**

***Cooperation***

Basin States shall cooperate in good faith in the management of waters of an international drainage basin for the mutual benefit of the participating States.

**Article 14**

***Preferences among Uses***

1. In determining an equitable and reasonable use, States shall first allocate waters to satisfy vital human needs.
2. No other use or category of uses shall have an inherent preference over any other use or category of uses.

## **Article 18**

### ***Public Participation and Access to Information***

- 1. In the management of waters, States shall assure that persons subject to the State's jurisdiction and likely to be affected by water management decisions are able to participate, directly or indirectly, in processes by which those decisions are made and have a reasonable opportunity to express their views on programs, plans, projects, or activities relating to waters.**
- 2. In order to enable such participation, States shall provide access to information relevant to the management of waters without unreasonable difficulty or unreasonable charges.**
- 3. The information subject to access under this Article includes, without being limited to, impact assessments relating to the management of waters.**
- 4. In providing information consistently with this Article, States need not provide access to information that would compromise:**
  - a. Intellectual property rights, including commercial or industrial secrets;**
  - b. Rights of individual privacy;**
  - c. Criminal investigations or trials;**
  - d. National security; and**
  - e. Information that could endanger ecosystems, historic sites, and other naturally or culturally important objects or locations.**

## **Article 19**

### ***Education***

**States shall undertake education at all levels to promote and encourage understanding of the issues that arise under these Rules.**

## **Article 22**

### ***Ecological Integrity***

**States shall take all appropriate measures to protect the ecological integrity necessary to sustain ecosystems dependent on particular waters.**

## **Article 29**

### ***The Obligation to Assess Environmental Impacts***

- 1. States shall undertake prior and continuing assessment of the impact of programs, projects, or activities that may have a significant effect on the aquatic environment or the sustainable development of waters.**
- 2. Impacts to be assessed include, among others:**
  - a. Effects on human health and safety;**
  - b. Effects on the environment;**
  - c. Effects on existing or prospective economic activity;**



- d. Effects on cultural or socio-economic conditions; and
- e. Effects on the sustainability of the use of waters.

## Article 31

### *The Impact Assessment Process*

Assessment of the impacts of any program, project, or activity shall include, among others:

- a. Assessment of the waters and the environments likely to be affected;
- b. Description of the proposed activity and its likely effects, with particular emphasis on any transboundary effects;
- c. Identification of ecosystems likely to be affected, including an assessment of the living and non-living resources of the relevant water basin or basins;
- d. Description of mitigation measures appropriate to minimize environmental harm;
- e. Appraisal of the institutional arrangements and facilities in the relevant drainage basin or basins;
- f. Assessment of the sources and levels of pollutants in the relevant drainage basin or basins, and of their effects on human health, ecological integrity, and amenities;
- g. Identification of human activities that are likely to be affected;
- h. Explanation of predictive methods and underlying assumptions as well as the relevant data used, including identification of gaps in knowledge and uncertainties encountered in compiling the required information, including assessment of the risk of major accidents;
- i. Where appropriate, an outline for monitoring and management programs and plans for post-project analysis;
- j. A statement of the reasonable alternatives, including a non-action alternative; and
- k. An adequate non-technical summary.

## Article 35

### *Droughts*

1. States shall cooperate in the management of waters to prevent, control, or mitigate droughts, having due regard to the interests of other basin States.
2. Cooperation with respect to drought shall, by agreement between affected States and when appropriate with international organizations, include among other matters:
  - a. An integrated strategy for addressing the physical, biological, and socio-economic aspects of the drought;
  - b. The definition of criteria that activate the provisions of this Article;
  - c. An integrated strategy for mitigating the effects of drought and moving towards the sustainable use of waters;
  - d. The development or strengthening necessary legislation and appropriate institutions for achieving these goals; and
  - e. The allocation of adequate resources to achieve these goals in accordance with their circumstances and capabilities.
3. States likely to be affected by drought shall promptly communicate among themselves and with competent international organizations whenever the criteria specified pursuant to paragraph 2(b) are met.

4. Nothing in this Article limits the rights of States to protect themselves unilaterally from the effects of droughts so long as the measures taken do not violate obligations under these Rules or otherwise violate the rights of other States.

#### **Article 37**

##### *Managing Aquifers Generally*

States shall manage groundwater conjunctively with the surface waters of any basin of which it is a part, taking into account any interconnections between aquifers or between an aquifer and a body of surface water, as well as any impact on aquifers caused by activities within the State's jurisdiction or control.

#### **Article 38**

##### *Precautionary Management of Aquifers*

States, in accordance with the precautionary approach, shall take early action and develop long-term plans to ensure the sustainable use of groundwater and of the aquifers in which the groundwater is contained.

#### **Article 40**

##### *Sustainability Applied to Groundwater*

1. States shall give effect to the principle of sustainability in managing aquifers, taking into account natural and artificial recharge.
2. The rule in paragraph 1 does not preclude the withdrawal of groundwater from an aquifer that is receiving no significant contemporary recharge.

#### **Article 42**

##### *Transboundary Aquifers*

1. The Rules applicable to internationally shared waters apply to an aquifer if:
  - a. It is connected to surface waters that are part of an international drainage basin; or
  - b. It is intersected by the boundaries between two or more States even without a connection to surface waters that form an international drainage basin.
2. Whenever possible and appropriate, basin States sharing an aquifer referred to in paragraph 1 shall manage an aquifer in its entirety.
3. In managing the waters of an aquifer referred to in paragraph 1, basin States shall consult and exchange information and data at the request of any one of them and shall cooperate in the collection and analyzing additional needed information pertinent to the obligations under these Rules.
4. Basin States shall cooperate according to the procedures in Chapter XI to set drawdown rates in order to assure the equitable utilization of the waters of an aquifer

referred in paragraph 1, having due regard for the obligation not to cause significant harm to other basin States and to the obligation to protect the aquifer.

5. Basin States sharing an aquifer referred to in paragraph 1 shall cooperate in managing the recharge of the aquifer.

6. Basin States sharing an aquifer referred to in paragraph 1 shall refrain from and prevent acts or omissions within their territory that cause significant harm to another basin State, having due regard to the right of each basin State to make equitable and reasonable use of the waters.

#### **Article 60**

##### ***Requests for Impact Assessments or Other Information***

1. A basin State, at the request of another basin State likely to be affected by a program, plan, project, or activity envisaged to occur or occurring within the requested State, shall undertake an impact assessment of the program, plan, project, or activity on an ongoing basis.
2. A basin States, at the request of another basin State likely to be affected by a program, project, or activity envisaged to occur within the requested State, shall provide all relevant information in the requested State's possession or which the requested State can acquire through reasonable efforts, limited as in Article 56(2).
3. A basin State requested by another basin State to provide information or to conduct an impact assessment pursuant to this Article shall employ its best efforts to comply with the request but may condition its compliance upon reciprocal exchanges by the requesting State or upon reimbursement for the reasonable costs of collecting and processing the information.

#### **Article 62**

##### ***Harmonization of National Laws and Policies***

In enacting national laws pursuant to this Article, basin States shall consult other interested States with a view to harmonize the laws and policies regarding the equitable use and sustainable development of waters and of the aquatic environment.

## **Glossary of Terms**

**Ad Hoc** – A solution that has one specific purpose with connotations for inadequate planning and responses.

**Beneficial Use** – A term used in U.S. Western water law to emphasize that the use of water must be 'beneficial' or it is considered waste. Each state defines or does not define what constitutes a beneficial use.

***Berlin Rules*** – Customary international water law principles and guidelines written by the Water Resources Committee of the International Law Association in 2004.

**Border Environment Cooperation Commission (BECC)** – Established in 1993 to identify and fund environmental infrastructure projects along the U.S.-Mexico border.

**Border 2012 Program** – A binational environmental program for the U.S.-Mexico border implemented by the La Paz Agreement.

**Customary International Water Law** – Water law that has arisen from a majority acceptance and adherence to particular laws.

**Comision Internacional de Limites Y Aguas (CILA)** – The Mexican section of the International Boundary and Water Commission. (See below, International Boundary and Water Commission).

**Gadsden Treaty** – International treaty between the U.S. and Mexico to demarcate the land boundary between the U.S. and Mexico in 1853.

**Good Neighbor Environmental Board (GNEB)** – An advisory council set up to advise the President and Congress of the U.S. about environmental infrastructure needs on the U.S.-Mexico border.

***Helsinki Rules*** – Customary international water law principles and guidelines written by the International Law Association in 1966.

**International Boundary Commission (IBC)** – A temporary joint commission set up by the 1853 Gadsden Treaty to demarcate the U.S.-Mexico border.

**International Boundary and Water Commission (IBWC)** – The binational commission set up by the 1944 Water Treaty between the U.S. and Mexico to manage the waters along the international boundary. (Mexican counterpart: Comision Internacional de Limites Y Aguas, CILA).

**International Water Commission (IWC)** – A permanent agency set up to administer the rules of the 1906 Convention.

**International Law Association** – A worldwide organization set up to study and clarify public and private international law.

**La Paz Agreement** – An agreement signed in 1983 between the U.S. and Mexico concerning the environment on the border. The agreement set up the Border 2012 Program.

**Limotrophe Section** – The reach of the rivers that creates the international boundary between the U.S. and Mexico.

**Mandate** – An obligation given by a government body.

**Minutes** – Legally binding extensions between the IBWC and CILA.

**North American Development Bank (NADB)** – A binational financial institution governed by the U.S. and Mexico to finance environmental projects.

**Sustainability** (*Berlin Rules* definition) - “The integrated management of resources to assure efficient use of and equitable access to waters for the benefit of current and future generations while preserving renewable resources and maintaining non-renewable resources to the maximum extent reasonably possible.”<sup>166</sup>

**UN Convention** – The UN Convention on the Non-Navigational Uses of International Watercourses codifies customary international water law by the UN General Assembly in 1997.

**Use Preferences** – An order of uses to serve as a guide for preferential attention.

**1906 Convention** – Provides for distribution of the Rio Grande between the U.S. and Mexico.

**1944 Treaty Regarding Utilization of Waters of Colorado and Tijuana Rivers and of the Rio Grande (1944 Water Treaty)** – An international treaty between the U.S. and Mexico that established the IBWC and binational water management.

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