

## A WATERSHED MOMENT: REFORMING THE “REASONABLE USAGE” STANDARD OF WATER EXTRACTION RIGHTS IN ILLINOIS

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*In the coming decades, Illinois’s government will be called upon to solve serious water-management issues. At the same time that demand for water is projected to increase, government agencies predict that lower rainfall and present overuse will lead to a lower water supply. Securing and stabilizing the water supply under such conditions will be extremely difficult absent substantial reforms. To put itself in the best position to address these challenges, Illinois must reform its laws governing the extraction of both surface water and groundwater.*

*This Note argues that Illinois’s current water-usage statutes are ill-equipped to deal with current and future problems created by increased demand and decreased supply. It examines statutory schemes enacted by other states to sketch a comprehensive plan for reforming Illinois’s water-extraction laws. Specifically, it looks at states that are hydrologically similar to Illinois by virtue of their proximity to the Mississippi River and the Great Lakes. It compares and contrasts these varying approaches and discusses their relative strengths and weaknesses. Finally, it recommends a permitting scheme that declares all water to be property of the public and provides that, where there is conflict between industrial and residential users, preference should be given to human consumption.*

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## I. INTRODUCTION

On February 9, 2016, President Barack Obama's administration submitted a formal budget proposal to Congress that contained something unprecedented: a section devoted to investment in water innovation.<sup>1</sup> The administration recommended setting aside nearly \$260 million to boost water sustainability through the use of more efficient technologies.<sup>2</sup> The administration also sought to promote investment in research and development aimed at reducing the costs of new water technology.<sup>3</sup> No other presidential administration has ever allocated money for these purposes.<sup>4</sup> Such action highlights the increasing importance of water supplies and water conservation in today's world and represents a shift in the way the government thinks about water usage.<sup>5</sup>

The individual states, particularly Illinois, would be wise to follow the federal government's lead on this issue. In the coming decades, Illinois's government will be called upon to solve serious water management issues. At the same time that demand for water is projected to increase, due to factors such as population growth and industrial development,<sup>6</sup> government agencies predict that lower rainfall and present overuse will

1. Jessica Lyons Hardcastle, *Obama's Spending Plan Pumps \$260M into Water Technology R&D*, ENVTL. LEADER (Feb. 10, 2016), <https://www.environmentalleader.com/2016/02/obamas-spending-plan-pumps-260-into-water-technology-rd/>; Steven Mufson, *Obama's Final Budget Proposal Calls for \$4.15 Trillion in Spending*, WASH. POST (Feb. 9, 2016), [https://www.washingtonpost.com/business/economy/obamas-final-budget-proposal-calls-for-an-almost-5-percent-spending-boost/2016/02/09/0286da7e-cf3a-11e5-b2bc-988409ee911b\\_story.html?utm\\_term=.66281e8ae857](https://www.washingtonpost.com/business/economy/obamas-final-budget-proposal-calls-for-an-almost-5-percent-spending-boost/2016/02/09/0286da7e-cf3a-11e5-b2bc-988409ee911b_story.html?utm_term=.66281e8ae857).

2. Hardcastle, *supra* note 1.

3. *Id.*

4. Charles Fishman, *The White House Wants to Spend \$300 Million on a Water Revolution*, FAST CO. (Feb. 8, 2016, 6:30 AM), <https://www.fastcompany.com/3056430/the-white-house-is-investing-in-water-innovation-for-the-first-time>.

5. *Id.*

6. See, e.g., *Increased Demand Threatens Aquifer Water Supplies in Northeastern Illinois*, DAILY REC., <http://www.lawdailyrecord.com/main.asp?SectionID=14&SubSectionID=16&ArticleID=10407> (last visited Aug. 7, 2017).

lead to a lower water supply.<sup>7</sup> Securing and stabilizing the water supply under such conditions will be extremely difficult absent substantial reforms. Financial reform is just one piece of the puzzle, however. In order to put itself in the best position to address these challenges, Illinois must reform its laws governing the extraction of both surface water and groundwater.

This Note argues that Illinois's current water-usage statutes are ill-equipped to deal with current and future problems created by increased demand and decreased supply. It aims to examine statutory schemes enacted by other states to sketch a comprehensive plan for reforming Illinois's water extraction laws. Specifically, it will look at states that are hydrologically similar to Illinois by virtue of their proximity to the Mississippi River and the Great Lakes. States in this region that have moved away from the basic "reasonable use" system currently implemented in Illinois include Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.<sup>8</sup>

Part II of this Note will discuss the background of Illinois's legal and environmental challenges. It will trace the evolution of the "reasonable use" standard from the common law through codification, and it will detail some of the stressors on Illinois's water supply. Part III argues that Illinois's current statutory scheme is inadequate and provides an in-depth look at the statutory water-extraction schemes of other states. It compares and contrasts their approaches and discusses their relative strengths and weaknesses. Part IV recommends a permitting scheme that declares all water to be property of the public and provides that, where there is conflict between industrial and residential users, preference should be given to human consumption. Finally, Part V provides a concise summary of this issue and reinforces its importance.

## II. BACKGROUND

The subject matter of this Note sits at the intersection of legal history, current events, and future challenges. To provide the proper context for Parts III and IV, this Part is broken down into three Sections. It shows how legal history has dictated the government's response to current events, narrowly focuses in on that legal history, and presents hardships that the state will face in the future.

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7. *Water Supply Management Options*, ILL. ST. WATER SURV., <https://web.archive.org/web/20170505002425/http://www.isws.illinois.edu/wsp/watermgmtopns.asp> (last visited Aug. 7, 2017) [hereinafter *Water Supply Management*].

8. Prairie Rivers Network, *Illinois Water Supply Management: An Assessment and Critique* 10–11 (Apr. 15, 2011) (unpublished manuscript) (on file with the author).

*A. Factual Background*

Beginning in March of 2005 and extending through the end of that year,<sup>9</sup> the state of Illinois experienced drought conditions that rivaled any the state had experienced in the previous 112 years.<sup>10</sup> The drought, one of the three most severe on record, came at an especially dangerous time for the people of Illinois.<sup>11</sup> The spring and summer are traditionally times of high water use for both the industrial and domestic sectors, and the lack of rainfall placed Illinois's water resources under substantially more stress than usual.<sup>12</sup> By late summer, the U.S. Drought Monitor classified much of the state as experiencing "Extreme Drought."<sup>13</sup>

The drought affected almost all aspects of life in Illinois. It limited the harvest of crucial corn and soybean crops, and it was difficult to transport the crops that could be harvested by barge due to low water levels in rivers.<sup>14</sup> Officials rated 55% of Illinois's corn as being in very poor or poor condition, contributing to a 16% drop in nationwide corn production.<sup>15</sup> This corn shortage affected everything from making sweeteners for soda to feeding livestock.<sup>16</sup> Low water levels also affected the shipment of petroleum and construction materials to major urban centers that rely on aquatic transportation, including Chicago.<sup>17</sup> The Kishwaukee River flowed at sixty cubic feet per second rather than the usual 300 cubic feet per second, denying ordinary citizens the opportunity to participate in recreational activities such as boating and fishing.<sup>18</sup> Reservoir levels dropped, leading municipalities to restrict residential water use; citizens that depended on well water were also heavily affected.<sup>19</sup>

The state's initial response was swift. In January 2006, then-Governor Rod Blagojevich signed Executive Order 2006-10 to establish a comprehensive plan for statewide water supply management.<sup>20</sup> The

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9. JAMES R. ANGEL ET AL., ILL. DEP'T NAT. RES., THE 2005 ILLINOIS DROUGHT 15 (Kenneth E. Kunkel ed., 2006), <http://www.isws.illinois.edu/pubdoc/IEM/ISWSIEM2006-03.pdf>.

10. *Id.* at 1.

11. *Id.*

12. See Tom Skilling, *What Will it Take to Break Illinois' 2005 Drought?*, CHI. TRIB. (July 25, 2005), [http://articles.chicagotribune.com/2005-07-25/news/0507250068\\_1\\_wgn-deficit-rainfall-illinois](http://articles.chicagotribune.com/2005-07-25/news/0507250068_1_wgn-deficit-rainfall-illinois).

13. Jeffrey Muniz, *The Impact of a Record Drought in 2005 on Illinois Farmers*, WEATHER PREDICTION, <http://www.theweatherprediction.com/weatherpapers/038/index.html> (last visited Aug. 7, 2017).

14. *Worst Midwest Drought in 17 Years is Wilting Crops*, USA TODAY (Aug. 5, 2005, 3:44 PM), [http://usatoday30.usatoday.com/weather/news/2005-08-04-midwest-drought\\_x.htm](http://usatoday30.usatoday.com/weather/news/2005-08-04-midwest-drought_x.htm).

15. *Id.*

16. *Id.*

17. *Id.*

18. Arthur Hirsch, *Serious Drought Affects Economy Across Midwest*, BALT. SUN (Aug. 21, 2005), [http://articles.baltimoresun.com/2005-08-21/news/0508210007\\_1\\_barge-drought-ohio-river](http://articles.baltimoresun.com/2005-08-21/news/0508210007_1_barge-drought-ohio-river).

19. Prairie Rivers Network, *supra* note 8, at 1.

20. STATE OF ILL. EXEC. DEP'T., 2006-01 EXECUTIVE ORDER FOR THE DEVELOPMENT OF STATE AND REGIONAL WATER-SUPPLY PLANS (2006), <https://www2.illinois.gov/Documents/ExecOrders/2006/execorder2006-1.pdf>.

state also created two regional water planning groups to focus on areas that could be hit hardest by future droughts.<sup>21</sup>

These efforts, unfortunately, produced little in the way of meaningful results, leaving Illinois with “more questions than answers” about the security of its water supply.<sup>22</sup> One major reason for this issue is that Illinois’s system of water extraction rights is based on a legal framework developed in the nineteenth century.<sup>23</sup> Known as the riparian doctrine, this common law system states that water users are limited to withdrawals that constitute “reasonable use.”<sup>24</sup> The doctrine greatly influences Illinois’s Water Use Act of 1983, which defines “reasonable use” as “the use of water to meet natural wants and a fair share for artificial wants.”<sup>25</sup> The fact that the law was passed in 1983, however, is deceiving; its wording is based on language found in the 1842 Illinois Supreme Court case of *Evans v. Merriweather*.<sup>26</sup>

Having a system of water rights based on the riparian doctrine has not historically been a major issue for states east of the Mississippi River. Unlike some western states characterized by a dry climate and heavy agricultural use, the eastern half of the country has traditionally enjoyed a plentiful water supply free from frequent drought.<sup>27</sup> Increases in population and the effects of climate change threaten to change that paradigm, however.<sup>28</sup> Though some states have worked to address the problem, Illinois has not.

Luckily, many legislatures in the eastern half of the United States have already blazed a more modern trail for Illinois to follow. In the early nineteenth century, much of the eastern half of the country, Illinois included, adopted a common law riparian system in an effort to encourage industrialization.<sup>29</sup> This lenient system generally allowed for greater consumption and pollution, ignored aquatic ecosystems, and disregarded any

21. Kevin P. Craver, *Water Experts Seeking Answers*, NW. HERALD, <http://www.nwherald.com/articles/2008/05/13/news/local/doc48295b559ffcc590537111.txt> (last visited Aug. 7, 2017).

22. *Beyond Showerheads and Sprinklers: Is the State of Illinois Prepared for Water Shortages?*, WBEZ 91.5 CHI. (May 16, 2008), <http://www.wbez.org/episode-segments/beyond-showerheads-and-sprinklers-state-illinois-prepared-water-shortages>.

23. Prairie Rivers Network, *supra* note 8, at 15.

24. Xuetao Hu, *Fair Allocation and Trading of Surface Water Rights Under the Riparian Doctrine 1* (2009) (unpublished Ph.D. dissertation, University of Illinois at Urbana-Champaign) (on file with the Graduate College of the University of Illinois at Urbana-Champaign), [https://www.ideals.illinois.edu/bitstream/handle/2142/14708/hu\\_xuetao.pdf?sequence=2](https://www.ideals.illinois.edu/bitstream/handle/2142/14708/hu_xuetao.pdf?sequence=2).

25. 525 ILL. COMP. STAT. 45/4 (2016).

26. 4 ILL. (3 Scam.) 492, 495–96 (1842); *see also* ILL. DEP’T. OF TRANSP. DIV. OF WATER RESOURCES, ILLINOIS GROUNDWATER LAW: THE RULE OF REASONABLE USE 14 (1985), <http://www.isws.illinois.edu/iswsdocs/wsp/illinoisgroundwaterlaw.pdf>.

27. *See The Best Locations for Plentiful Water*, WALDEN LABS (Aug. 30, 2013), <http://waldenlabs.com/the-best-locations-for-plentiful-water/> (“The eastern United States is an excellent example of a climate zone that typically does not experience drought conditions.”).

28. *See* U.S. CLIMATE CHANGE SCI. PROGRAM & THE SUBCOMM. OF GLOB. CHANGE RESEARCH, ABRUPT CLIMATE CHANGE 92 (John P. McGreehin et al. eds., 2008) (“[T]he normally well-watered Eastern United States is also vulnerable to severe droughts, both historically and in tree-ring records . . .”) (internal citations omitted).

29. Prairie Rivers Network, *supra* note 8, at 3.

connection between surface water and groundwater.<sup>30</sup> In recent decades, however, many of these states began to recognize issues caused by excessive water extraction. From the 1970s onward, virtually every state east of the Mississippi River began to draft laws and regulations aimed at demystifying the “reasonable use” of water.<sup>31</sup> These laws are generally schemes of allocation or permitting that give governments the ability to control which entities get to use certain quantities of water and for what purposes they get to use it.<sup>32</sup>

A clear and well-defined statutory system for regulating water usage carries with it many benefits. First, it can help to preserve aquatic life and vegetation by regulating minimum flow rates in surface water.<sup>33</sup> Second, it helps to alleviate problems with pollution by ensuring that low water levels do not lead to high concentrations of pollutants.<sup>34</sup> Third, it protects local economies that depend on fishing, aquatic navigation, and aquatic tourism.<sup>35</sup> Fourth, it helps resolve conflicts between users in a way that is more predictable and efficient than going through the court system.<sup>36</sup> Fifth, reporting requirements for major water users ensure that states have concrete data with which to monitor usage and adjust regulations accordingly.<sup>37</sup> Sixth, it provides standing for local governments and public interest groups to enforce regulations against users violating the statutes.<sup>38</sup> Taken together, these factors can lead to a more stable future for Illinois’s water supply.

### B. Legal Background

The riparian doctrine is best seen as a basic template upon which states build their laws as they respond to changes in society.<sup>39</sup> Thus, it will be helpful to begin by examining the baseline legal standard of the riparian doctrine before moving on to how Illinois’s water law has developed over time.

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30. *Id.*

31. PAUL G. FORAN ET AL., SURVEY OF EASTERN WATER LAW: A REPORT TO THE ILLINOIS DEPARTMENT OF NATURAL RESOURCES 17–20 tbl.3 (1995).

32. Prairie Rivers Network, *supra* note 8, at 11.

33. See Cecily Smith, “Reasonable Use” Definitions that Incorporate Ecological Considerations 1 (Oct. 9, 2006) (unpublished manuscript) (on file with the author) (“[Some states] list the preservation of aquatic life and vegetation as one of many factors to consider when determining minimum flows.”).

34. Prairie Rivers Network, *supra* note 8, at 2.

35. *Id.*

36. *Id.* at 19.

37. *Id.* at 21.

38. Eric T. Freyfogle, A Critical Look at Illinois Water Law and Comments on Reform Options 7 (2015) (unpublished manuscript) (on file with the author).

39. STEPHEN A. THOMPSON, WATER USE, MANAGEMENT, AND PLANNING IN THE UNITED STATES 74 (1998).

### 1. *Riparian Doctrine*

The riparian doctrine is simple in its formulation. If a person owns land that touches a stream or lake, he has the right to use its water.<sup>40</sup> It does not matter how much land touches the water or whether he owns any of the land underneath the water.<sup>41</sup> As long as a landowner owns the land, he can never lose the right to draw from the adjacent water source.<sup>42</sup>

The story of the riparian doctrine and the search for a way to allocate extraction rights among users of a common waterway begins in the wake of the Norman Conquest of England in the eleventh century.<sup>43</sup> Courts did not begin to seriously consider the issue of competing rights to water, however, until the close of the eighteenth century.<sup>44</sup> That time period marks the onset of the Industrial Revolution, an era that brought many issues of first impression before the courts of both England and America.<sup>45</sup> Growth in both population and manufacturing created new demands for water that had not previously existed, and factory pollution became a serious issue.<sup>46</sup>

Though the riparian doctrine has deep roots in English Common Law,<sup>47</sup> it is undisputed that the first legal formulation occurred in the fledgling United States.<sup>48</sup> The doctrine first came about in 1827 as a result of a dispute between mill owners on the Pawtucket River in Rhode Island.<sup>49</sup> The ensuing court case, *Tyler v. Wilkinson*, established the principle “that each riparian owner has a right to a reasonable use of the water, provided such use is not ‘positively and sensibly injurious’ to the rights of other riparian owners.”<sup>50</sup> One year later, the jurist James Kent effectively cemented this into law when he published a treatise of American Law that included the following passage:

All that the law requires of the party, by and over whose land a stream passes, is, that he should use the water in a reasonable manner, and so as not to destroy, or render useless, or materially dimin-

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40. *Id.* at 75.

41. *Id.*

42. *Id.*

43. For an in-depth discussion of the history and development of the Riparian Doctrine from the Norman Conquest through the 1960s, see generally T.E. Lauer, *The Common Law Background of the Riparian Doctrine*, 28 MO. L. REV. 60 (1963).

44. *Id.* at 99.

45. *Id.* at 96.

46. *Id.* at 99.

47. *Id.* at 62 (“In addition to their knowledge of the civil law, Story and Kent drew heavily upon centuries of common law experience and development. It must, of course, be kept in mind that these American jurists did not simply adopt an English common law doctrine. The reasonable use test was decidedly not English in its origin.”).

48. *Id.* at 61 (“Taken together, then, Story’s opinion and Kent’s treatise mark the inception of the ‘reasonable use’ doctrine of riparian rights . . .”).

49. *Id.*

50. *Id.* at 61.

ish, or affect the application of the water by the proprietors below on the stream.<sup>51</sup>

The eastern United States adopted this formulation into law almost immediately.<sup>52</sup> Unlike in the western states, where more arid conditions led states to adopt a “first developer” standard that rewarded those who tapped a water source first,<sup>53</sup> the eastern half of the country enjoyed plentiful rainfall that enabled them to implement a more lax standard of usage.<sup>54</sup> Since water was easy to come by and seemingly in no danger of disappearing, there was little reason to create a system of laws limiting its usage in any significant way. Disputes over water supply were bound to occur, however, and courts further refined the riparian doctrine to deal with such issues.

Among the eastern states, two dominant interpretations of the riparian doctrine arose: natural-flow theory and reasonable use.<sup>55</sup> Both interpretations are based on the principle that one’s water use should not harm others, but they reach that premise in different ways. Natural-flow theory is based on the egalitarian principle that all riparian landowners have coequal rights.<sup>56</sup> Under this interpretation, a landowner must preserve the quantity and quality of the water source; if he fails to do so, he diminishes the rights of all other riparian landowners.<sup>57</sup> Put another way, natural-flow theory makes it illegal to hurt the waterway itself.<sup>58</sup> States that conform to the reasonable-use interpretation, on the other hand, make it illegal to harm other users of the waterway.<sup>59</sup> In reasonable-use states, landowners have the right to make reasonable use of their water.<sup>60</sup> This interpretation considers the relative needs of the user and the benefits to society in order to determine whether a landowner should be allowed to infringe upon the usage rights of a fellow landowner.<sup>61</sup>

To illustrate the difference between natural flow and reasonable use, consider a river upon which five mills are located. In a natural-flow state, each of the five mill owners has a duty to use the stream in a way that will not diminish the other four mill owners’ use. If one mill owner causes the water level of the stream to drop, the other owners will be able to recover against him for harming the water supply. In a reasonable-use state, if one mill owner causes the water level to drop, a court will consider the reasonableness of that owner’s use. Perhaps the offending owner’s mill produced ten times more flour than the other four mills

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51. *Id.* (quoting 3 JAMES KENT, COMMENTARIES ON AMERICAN LAW 354 (1st ed. 1828)).

52. *See id.*

53. Tony A. Freyer, *Legal Innovation and Market Capitalism, 1790–1920*, in 2 THE CAMBRIDGE HISTORY OF LAW IN AMERICA 449, 462–63 (Michael Grossberg & Christopher Tomlins eds., 2008).

54. *Id.*

55. *See* THOMPSON, *supra* note 39, at 76.

56. *Id.*

57. *See id.*

58. *Id.*

59. *Id.*

60. *Id.*

61. *Id.*



combined; in light of this fact, his increased water use might be deemed reasonable. It is easy to see why the reasonable-use interpretation came to be so widespread in the nineteenth century.<sup>62</sup> This entrepreneurial balancing test facilitated the young United States' rapid population growth and industrial expansion by enabling virtually unlimited consumption of resources.<sup>63</sup> Theoretically, the amount of water one can use is limited only by the economic utility one can provide.

The riparian doctrine is a template upon which law is to be built. It developed over a period of centuries before being formalized in the early nineteenth century as a response to society's changing needs in the wake of the Industrial Revolution. Courts recognized the need to balance competing owners' rights against one another, and economic needs led them to the reasonable-use standard. This brings us to an examination of Illinois law.

## 2. *Illinois Law*

Illinois is one of only twelve states that adhere to the reasonable-use, rather than natural-flow, standard of the riparian doctrine.<sup>64</sup> It is important to note at the outset that the riparian doctrine and the reasonable-use standard evolved as common law principles.<sup>65</sup> Prior to 1983, Illinois did not have any legislative statutes on the books that addressed the issue of water-extraction rights.<sup>66</sup> This means the state relied exclusively on the court system for enforcement and interpretation of its water-usage laws. As a result, the courts were the only entity that had a say in determining which uses of water were "reasonable."<sup>67</sup> Unfortunately, the difficulty of bringing suit under this system of laws means that Illinois courts have had very few opportunities to examine what types of uses are reasonable.<sup>68</sup> Due to this lack of guidance, legal scholars, water professionals, and residents alike have expressed concern at the unsettled state of water rights in Illinois.<sup>69</sup> Nevertheless, this subsection attempts to track those developments that have occurred.

The history of riparian doctrine in Illinois begins with the 1842 case of *Evans v. Merriweather*.<sup>70</sup> That case involved two mill owners fighting for the right to use a stream in a time of drought.<sup>71</sup> When one owner di-

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62. See *id.* at 74 fig.3.1.

63. *Id.* at 76 ("Reasonable use is a relative test based on the need (mainly economic) of the user and the larger (economic) benefits to society. Reasonable use means sharing the resource, and the limit of a right is determined by the impact of the use on others.").

64. See *id.* at 74 fig.3.1.

65. Lauer, *supra* note 43, at 60–61.

66. GARY R. CLARK, ILL. DEP'T. OF TRANSP., ILLINOIS GROUNDWATER LAW: THE RULE OF REASONABLE USE (1985) <http://www.isws.illinois.edu/iswsdocs/wsp/IllinoisGroundwaterLaw.pdf>.

67. Freyfogle, *supra* note 38, at 1.

68. *Id.*

69. CLARK, *supra* note 66, at 1.

70. 4 Ill. (3 Scam.) 492 (1842); CLARK, *supra* note 66, at 14–15 ("This is considered to be a landmark case in which the Illinois Supreme Court first subscribed to the doctrine of riparian rights . . .").

71. *Evans*, 4 Ill. at 493–94.

verted the stream such that it cut off all water to the second owner's mill, the court was forced to consider the extent to which one riparian owner could interfere with the rights of another.<sup>72</sup> After establishing that a landowner's interest in water lies not in the water itself but rather in how that water can be used and enjoyed,<sup>73</sup> the court turned to the foundational principle of *Tyler v. Wilkinson*,<sup>74</sup> discussed above. The court quoted extensively from Justice Story's opinion in that case, and it was here that Illinois formally adopted the doctrine that "[t]here may be, and there must be, of that which is common to all, a reasonable use."<sup>75</sup>

Importantly, the *Evans* court worked to define what it means for a use to be reasonable. The question must be considered in light of the wants of man, and such wants divide into two categories: natural and artificial.<sup>76</sup> Natural wants of man are those that are "absolutely necessary to be supplied in order to his existence[.]" and include personal consumption, household purposes, and watering of cattle.<sup>77</sup> Artificial wants are those that merely increase man's "comfort and prosperity[.]" notably, the court explicitly placed irrigation and the operation of machinery in this category.<sup>78</sup> In determining reasonableness, a person can use as much water for natural purposes as he likes.<sup>79</sup> When it comes to artificial purposes, however, it is up to the jury to decide when a person has used "more than his just proportion."<sup>80</sup> The jury's power to do so was reinforced by the Illinois Supreme Court's 1867 decision in *Bliss v. Kennedy*.<sup>81</sup> In yet another dispute between two mills, the court held that damages would be appropriate "if the jury should find that [a] factory has used more than its reasonable share, or has diverted the water . . . to such a degree as to cause material injury."<sup>82</sup>

The practical effect of the court's decisions in these foundational cases was to bestow upon juries the power to define reasonableness. This means that judgments as to which uses are reasonable will be almost entirely dependent on the facts of a specific case.<sup>83</sup> Setting aside concerns

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72. *Id.*

73. *Id.* at 492.

74. 24 F. Cas. 472, 474 (C.C.D.R.I. 1827) ("There may be, and there must be allowed of that, which is common to all, a reasonable use. The true test of the principle and extent of the use is, whether it is to the injury of the other proprietors or not.").

75. *Evans*, 4 Ill. at 494–95 (quoting *Tyler*, 24 F. Cas. at 474).

76. *Id.* at 495.

77. *Id.*

78. *Id.*

79. *See id.*

80. *Id.* at 496 ("Where all have a right to . . . a common benefit . . . no rule . . . can be laid down, as to how much each may use without infringing upon the rights of others. [The jury must decide], whether the party complained of has used, under all the circumstances, more than his just proportion.").

81. 43 Ill. 67 (1867).

82. *Id.* at 76.

83. FORAN ET AL., *supra* note 31, at 22 ("[R]eliance primarily on common law litigation, where evidentiary presentations and outcomes are controlled primarily by the litigants and fact specific situations, and where different courts can render different and contradictory results provides little consistent basis or guidance for resolving disputes between competing but equally beneficial and reasonable uses."); Freyfogle, *supra* note 38, at 2.

about the unpredictability of such an approach, this method is also worrisome because juries rarely get to hear these types of cases.

Illinois courts have heard cases concerning reasonable use issues only four times since the Illinois Supreme Court decided *Evans* in 1842, with just two of those cases actually dealing with whether or not a certain use was reasonable.<sup>84</sup> In a 1959 case, *Behrens v. Scharringhausen*, the appellate court clearly indicated that it was conflicted over whether the reasonable-use rule was even the established law in Illinois.<sup>85</sup> The court then held that the plaintiff was not irreparably harmed when the defendant drained his land and forced the plaintiff to expend time and money installing a deeper well and larger pumps, and thus the plaintiff was not eligible to receive damages.<sup>86</sup> This leads to the inference that a plaintiff must show that it has been irreparably harmed before a defendant's use will be deemed unreasonable.

A second case, *Lee v. City of Pontiac*, came before the appellate court in 1981.<sup>87</sup> There, the court considered whether to award damages to the owner of a trucking business after the city caused his well to dry up by expanding a drainage ditch adjacent to his land.<sup>88</sup> Though the court recognized the reasonable-use rule, it stated that “[s]uch a rule raises a host of imponderables” and openly wondered how the city's actions, which serve the common good, could be weighed reasonably against the plaintiff's interests.<sup>89</sup> Once again, the court had a rare opportunity to set parameters for reasonable use and failed to do so.

In an attempt to clear up confusion in the courts, the Illinois legislature passed the Water Use Act of 1983.<sup>90</sup> Basically, the statute served to codify the court's decision in *Evans*. The Act's stated purpose is “to establish a rule for mitigating water shortage conflicts by . . . [e]stablishing a ‘reasonable use’ rule for groundwater withdrawals.”<sup>91</sup> It goes on to define reasonable use as “the use of water to meet natural wants and a fair share for artificial wants.”<sup>92</sup> Instead of solving a major issue, the statute seems to do little more than codify vagueness. The first and, to date, only case addressing reasonable use as it appears in that statute is the 1987

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84. See generally CLARK, *supra* note 66 (providing a survey of Illinois water law, including a recap of the significant court cases).

85. 161 N.E.2d 44, 46 (Ill. App. Ct. 1959) (commenting that language from an 1899 Illinois Supreme Court case “may carry the implication that, in a proper case, our Illinois Supreme Court might announce a doctrine of reasonable use in relation to the needs of adjoining owners”).

86. *Id.* at 45.

87. 426 N.E.2d 300 (Ill. App. Ct. 1981).

88. *Id.* at 301–02.

89. *Id.* at 302. Even though the court's holding in this case was consistent with the rule of reasonable use, it still entertained arguments from the plaintiff that a different standard should be applied. *Id.* at 301–02.

90. 525 ILL. COMP. STAT. 45/3 (2016) (“The general purpose and intent of this Act is to establish a means of reviewing potential water conflicts before damage to any person is incurred and to establish a rule for mitigating water shortage conflicts by . . . [e]stablishing a ‘reasonable use’ rule for groundwater withdrawals.”).

91. *Id.*

92. *Id.* § 45/4.

case of *Bridgman v. Sanitary District*.<sup>93</sup> Unfortunately, that case merely dealt with a challenge to the applicability of the statute and did not offer any interpretive guidance.<sup>94</sup>

Having reviewed all relevant statutory and common law developments, it is now appropriate to give a more concise recap of water rights in Illinois. Our laws are built on a platform known as the riparian doctrine. This doctrine holds that all owners of land along a waterway have a right to the water therein, subject to the restriction that an owner cannot use the water in a way that materially diminishes another's use. Illinois builds on this by creating an exception known as reasonable use. An owner may materially diminish another's water usage if his own usage is reasonable in light of the situation. Personal consumption aimed at fulfilling natural wants is usually always reasonable, while consumption aimed at merely furthering one's comfort or prosperity is subject to scrutiny. It is the responsibility of a jury to decide what constitutes reasonable use on a case-by-case basis. Juries rarely do this, however, because these types of cases rarely come before the courts. As a result, the "reasonableness" standard is underdefined and Illinois's system is characterized by vagueness and unpredictability.

### C. Challenges Facing Illinois's Water Supply

Illinois's adherence to such an antiquated regime of both surface and groundwater extraction puts it in an especially troubling position. The reasonable-use standard is exceedingly vague and provides little certainty or guidance.<sup>95</sup> It relies primarily on the court system for interpretation, exacerbating the uncertainty.<sup>96</sup> It also ignores the distinction between groundwater and surface water, makes it impossible to institute quantitative limits on water use, impedes investment and economic development, and contributes to the deterioration of water quality and wildlife habitats.<sup>97</sup> The Mahomet Aquifer Consortium, a group contracted under the aforementioned Executive Order 2006-01, found that "[i]n the absence of improved water supply planning and management . . . future generations in the region face increased threats of water conflicts, crisis management, degradation of the environment, and threats to public welfare and economic development."<sup>98</sup>

All of this is especially concerning in light of Illinois's long-term climate and water-usage forecasts. The state can expect to see water us-

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93. 517 N.E.2d 309, 314 (Ill. App. Ct. 1987) ("Rather, we conclude that the [Water Use Act of 1983], and specifically the first clause of that provision, relied upon by the defendants, applies only to the Lake Michigan watershed area, and is totally inapplicable to the instant case.").

94. *Id.* at 312–14.

95. FORAN ET AL., *supra* note 31, at 21–22.

96. *Id.* at 22.

97. *Id.* at 23–24.

98. MAHOMET AQUIFER CONSORTIUM, A PLAN TO IMPROVE THE PLANNING AND MANAGEMENT OF WATER SUPPLIES IN EAST-CENTRAL ILLINOIS xiv (2009), [http://www.rwspc.org/documents/ECI-WaterPlan\\_062909.pdf](http://www.rwspc.org/documents/ECI-WaterPlan_062909.pdf).

age increase in the future, while factors such as increased drought, climate change, and withdrawals lead to lower supply in the first place.<sup>99</sup> A 2005 study predicted that eleven townships in the Chicago metro area are at risk of running short of water by 2020.<sup>100</sup> Water demands in central and east-central Illinois, where underground aquifers are already showing signs of hydrologic stress, are projected to increase up to 60% by 2050.<sup>101</sup> All told, Illinois can expect population and economic growth to lead to a 20–50% increase in demand for water.<sup>102</sup> At the same time, however, the Illinois State Water Survey warns that climate change could lead to a 40% decrease in average precipitation by the end of the century.<sup>103</sup> Even without accounting for anthropogenic climate change, climate models show that future droughts are likely to be more severe than those that we have seen in the past thirty years.<sup>104</sup>

Water shortages have wide-ranging effects on all aspects of society, including some that are not immediately apparent. This Section previously noted various human costs associated with low water levels, from poor crop growth to difficulty transporting goods by barge.<sup>105</sup> Those are the issues that readily spring to mind, but low water levels also carry environmental costs that must not be discounted. First, lower water levels lead to increased levels of pollution.<sup>106</sup> Bodies of water help absorb, degrade, and dilute the pollutants that constantly flow into them, from automotive liquids and wastewater to fertilizer and other chemicals.<sup>107</sup> When there is less water, these pollutants are more concentrated, which raises the cost of treating the water and affects its availability.<sup>108</sup> Second, aquatic life suffers greatly in times of low water levels. Decreased oxygen levels caused by an increase in pollutants can lead to mass fish deaths.<sup>109</sup> It can also affect the ability of certain species to access areas that are necessary for reproduction or for escaping from predators.<sup>110</sup>

The riparian doctrine has its roots in nineteenth century common law written to further industrial interests. As Illinois moves into a new era marked by increased population growth and decreased water supply, the state may find itself ill-served by this antiquated standard.

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99. *Id.* at viii.

100. Craver, *supra* note 21.

101. *What is the Future of Our Water Supply?*, PRAIRIE RIVERS NETWORK (July 23, 2009), <http://prairierivers.org/articles/2009/07/what-is-the-future-of-our-water-supply/>.

102. Prairie Rivers Network, *supra* note 8, at 2.

103. *Water Supply Management*, *supra* note 7.

104. *Id.*

105. See *supra* notes 14–19 and accompanying text.

106. Prairie Rivers Network, *supra* note 8, at 2.

107. *Id.*

108. *Id.*

109. *Id.* at 1.

110. See, e.g., Rebecca Seales, *The Salmon that Can't Jump!*, DAILY MAIL (Dec. 1, 2011, 6:02 PM), <http://www.dailymail.co.uk/news/article-2068620/The-salmon-jump-Desperate-rescue-effort-save-fish-low-water-levels-prevent-swimming-upstream-breed.html>.

### III. ANALYSIS

Before making a serious commitment to changing the law, Illinois must evaluate its current system and identify alternatives. This Part first discusses the practical and theoretical problems plaguing Illinois's current system of water rights. It then weighs the pros and cons of some alternative statutory schemes used in neighboring states.

#### A. *Inadequacy of Illinois's Current Statutory Regime*

Without a more modern and comprehensive system of laws in place, "Illinois' future could be a dry one."<sup>111</sup> One issue with the regional planning bodies formed pursuant to Executive Order 2006-01 and their associated plans is that they depend on voluntary participation.<sup>112</sup> Even the groups themselves recognize this fact, saying that "[a] plan with no new laws or regulations and voluntary participation is perhaps more challenging to implement than having to comply with new laws or regulations."<sup>113</sup>

Illinois's statutory scheme suffers from problems related to funding and enforceability.<sup>114</sup> For example, if a person constructs a well capable of withdrawing more than 100,000 gallons of water in a twenty-four hour period, the Water Use Act of 1983 requires that person to notify the local Soil and Water Conservation District.<sup>115</sup> The District is then supposed to conduct a review of the proposed withdrawal within thirty days.<sup>116</sup> The review shows what effects the proposed withdrawal will have upon other users of the water, and the District releases its findings to the public.<sup>117</sup> In practice, however, this may not happen. When Curt Shields built a high-capacity well on his farm in Fisher, Illinois, he notified the government that he was building a well but did not include the fact that it could withdraw over 100,000 gallons per day.<sup>118</sup> Because of this, the government did not notify the proper authorities and failed to conduct a review.<sup>119</sup> Even if that process had gone smoothly, the Soil and Water Conservation District admitted that it "couldn't have done anything about it" due to lack of funding from the Illinois General Assembly.<sup>120</sup> Shields's neighbors now blame his high rate of withdrawal for disrupting the water supply of thirteen surrounding families.<sup>121</sup>

111. Craver, *supra* note 21.

112. MAHOMET AQUIFER CONSORTIUM, *supra* note 98, at xiv, 1.

113. *Id.*

114. Dave Hinton, *Residents Blame Irrigation for Wells Going Dry*, RANTOUL PRESS (Dec. 4, 2012, 4:33 PM), <http://www.rantoulpress.com/news/agriculture/2012-12-04/residents-blame-irrigation-wells-going-dry.html> ("The law, though, has one flaw . . . the General Assembly has not provided the funding to enforce it.").

115. 525 ILL. COMP. STAT. 45/5 (2016).

116. *Id.*

117. *Id.*

118. Hinton, *supra* note 114.

119. *Id.* ("In this case, on the original application it did not have that it was going to be over 100,000 gallons a day, so the health department did not pass the information on to us . . .").

120. *Id.*

121. *Id.*

It is easy to identify additional problems by looking at the reasonable-use standard from a more theoretical standpoint. When a state uses a vague standard that is rarely subjected to any sort of clarifying interpretation, it makes it impossible to predict ahead of time whether a particular use will be reasonable.<sup>122</sup> What is reasonable will vary depending on whether the body of water is a lake, river, or aquifer.<sup>123</sup> It might vary depending on what region of the state the usage occurs in—is it residential or agricultural? It can even vary based on time period; a century ago, nobody would have thought it unreasonable to dump untreated sewage into lakes or streams.<sup>124</sup> This sort of unpredictability is bad for investment, development, and individual health.

The riparian doctrine opens its adherents to conflict because it creates a private right to water while treating the body of water as a whole as a common property resource.<sup>125</sup> It requires established users to adjust their use when new users come into the picture, effectively allowing new users to change the existing private rights of established users simply by showing up.<sup>126</sup> When demand for a source of water increases, supply necessarily decreases.<sup>127</sup> This means that as more users tap into a water supply, the likelihood of harming another user increases and the window of reasonable uses for existing users becomes smaller and smaller. Given that demand for Illinois's water supply is expected to increase in coming years as supply decreases,<sup>128</sup> users can expect to see fewer and fewer uses of water that are theoretically reasonable. The result will be an increase in conflicts between users as they fight for scarce resources.

As it stands, the Illinois government is unable to prevent this potential increase in conflicts because the riparian doctrine provides no public enforcement mechanism.<sup>129</sup> It is not possible for public entities to stop unreasonable use before it takes place; the only way to police unreasonable use of water is by bringing a suit after harm has occurred.<sup>130</sup> Even in cases of harm, it is only the private owner of the water right that is allowed to bring suit.<sup>131</sup> In practice this means that unreasonable users cannot be stopped until they have identifiably harmed another private user and that user chooses to bring a lawsuit.<sup>132</sup> This also means when the public in general is harmed by unreasonable usage, such as where withdrawals eliminate access to recreational activities or where the body of water or its aquatic life is harmed, there is essentially no recourse.<sup>133</sup>

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122. THOMPSON, *supra* note 39, at 77.

123. *See id.* (“What is reasonable on one stream may be judged unreasonable on another.”).

124. *Id.*

125. *Id.*

126. *Id.*

127. *Id.*

128. *See supra* notes 100–05 and accompanying text.

129. Freyfogle, *supra* note 38, at 4.

130. *Id.*

131. *See, e.g.,* Behrens v. Scharringhausen, 161 N.E.2d 44, 44 (Ill. App. Ct. 1959).

132. *See id.*; Freyfogle, *supra* note 38, at 4.

133. Freyfogle, *supra* note 38, at 4.

The negative implications of adhering to reasonable use and an unregulated riparian doctrine are both practical and theoretical, and state officials have urged the legislature to explore other options.

### *B. Exploring Alternatives*

If Illinois wants to get serious about securing its future water supply, preserving its natural ecosystems, and protecting its citizens from costly legal disputes, it needs to implement a new system of water laws rooted in a clear statutory framework. Water-law scholars generally recognize three basic goals that inform the implementation of new water laws: maximizing efficient use of existing supplies, making use of more sophisticated and less environmentally damaging ways to develop new supplies, and restoring hydrologically degraded ecosystems.<sup>134</sup> Most states in the eastern half of the country have already moved away from the common law scheme and towards a system of statutory regulation in an effort to meet these goals.<sup>135</sup> Before recommending a particular plan of action, it will be necessary to examine the various examples of statutory schemes implemented in these states.

Of the thirty states located east of the Mississippi River, eighteen of them have evolved from a basic riparian reasonable-use standard to a more complex statutory scheme.<sup>136</sup> Due to differences in hydrologic makeup and political atmosphere, these states differ greatly in their statutory approaches. Water law scholars recognize that geographic boundaries are the main factor in deciding what type of legal regime will work in a given location.<sup>137</sup> To provide a more precise analysis, therefore, this Section focuses on states that are hydrologically similar to Illinois by virtue of their connections to the Mississippi River or the Great Lakes. It looks at two main approaches taken by Illinois's neighbors in the Great Lakes region: a registration system and a permitting system.<sup>138</sup> After providing a broad description of registration systems, this Section shows how statutory schemes in Missouri and Indiana work to implement a registration system. It also evaluates the relative strengths and weaknesses of each approach. It then performs the same analysis with permitting systems, using Iowa and Wisconsin as examples. The ultimate aim is to identify a statutory role model for Illinois to follow.

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134. A. Dan Tarlock, *Water Law Reform in West Virginia: The Broader Context*, 106 W. VA. L. REV. 495, 500 (2004).

135. FORAN ET AL., *supra* note 31, at 10.

136. THOMPSON, *supra* note 39, at 74.

137. Tarlock, *supra* note 134, at 538 (“Water law reform must first define the geographical scope of the jurisdiction’s important, potential water use impacts and then craft appropriate regulatory responses to the problem at hand.”).

138. See FORAN ET AL., *supra* note 31, at 15 (explaining that while many systems of water law classification advocate for adding a third “hybrid” category, most states’ systems can realistically be described as hybrid systems).



### 1. Registration Systems

The fundamental characteristic of a registration system is that it is used to monitor water use rather than control it.<sup>139</sup> Registration generally requires major water users to report significant withdrawals to the state on a regular basis.<sup>140</sup> Since these systems merely inform the government of a water user's activities rather than prevent excessive water withdrawals, they are seen as a first step, or a weaker form of regulation than permitting systems.<sup>141</sup> Some states do not see them as a primary tool for restriction, but rather as a way of gathering data for soil and environmental scientists.<sup>142</sup> Underscoring this notion is the fact that states generally implement rather weak versions of registration requirements. In Missouri, for example, users are only required to register new groundwater withdrawals of over 100,000 gallons per day.<sup>143</sup> Existing groundwater withdrawals are exempt from the registration requirements, as are any surface water withdrawals.<sup>144</sup>

#### a. Missouri

Of the states that are similarly situated to Illinois, only Missouri uses a strictly registration-based system.<sup>145</sup> The statutorily defined purpose of Missouri's water law is to provide information regarding current and future water use or consumption.<sup>146</sup> The main component of Missouri's registration system is mandatory annual renewal for "major water users"<sup>147</sup>—any person or entity with the ability to withdraw or divert more than 100,000 gallons of water per day.<sup>148</sup> This applies to users of both surface and groundwater.<sup>149</sup> Importantly, Missouri's statute does not regulate or monitor the usage of water; rather, it simply regulates users that have the *potential* to withdraw a certain amount of water.<sup>150</sup> In the event that an entity conducts such diversion or withdrawal without registering with the state, the statutory scheme provides a mechanism for public enforcement.<sup>151</sup> The unregistered user is declared a *per se* nuisance, allowing

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139. *Id.* at 11.

140. *Id.* at 12.

141. *Id.* at 14.

142. *Id.*

143. *Id.* at 11.

144. *Id.*

145. FORAN ET AL., *supra* note 31, at 19 tbl.3.

146. MO. REV. STAT. § 256.405 (2016) ("It is intended to provide an important part of the information required in the technical assessment of current and future requirements for the regulation of water use or consumption, or both, on a regional or statewide basis, as may be required.").

147. *Id.* § 256.400.

148. *Major Water Users - Forms*, MO. DEP'T NAT. RESOURCES, <http://dnr.mo.gov/geology/wrc/mwu-forms.htm> (last visited Aug. 7, 2016) [hereinafter MO. DEP'T NAT. RESOURCES] ("Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons or more per day (70 gallons per minute) from any stream, river, lake, well, spring or other water source is considered a major water user in Missouri.").

149. *Id.*

150. *Id.*

151. MO. REV. STAT. § 256.415.

the director of the Missouri Department of Natural Resources to ask the Attorney General to file an injunction in the name of the state.<sup>152</sup> The user is free to continue making withdrawals from the water source while the action is pending.<sup>153</sup>

This system has some advantages over both purely reasonable-use systems and permitting systems. First, it provides for a heightened level of state involvement in the water supply compared with reasonable-use systems, while avoiding the high enforcement costs generally associated with permitting systems.<sup>154</sup> It relies on a simple online form filled out by the water user, and state agencies only come into play in the event that an unregistered user is declared a nuisance and court proceedings begin.<sup>155</sup> There are no state employees tasked with ferreting out unregistered users, and the statutory scheme seems set up to discourage such actions; the state geologist or his agents may only inspect a property after obtaining either permission or a court order.<sup>156</sup>

The second advantage it has over a reasonable-use system is that it provides for a public right of action against excessive water usage. Whereas reasonable-use schemes only provide for suit by an affected user,<sup>157</sup> Missouri law allows the state to bring suit against any major water users found to be in violation of the registration requirements.<sup>158</sup> By establishing this public right of action, the legislature makes it marginally easier to enforce its laws. The court does not have to wait for a private user to be directly harmed by another user before bringing a case, allowing the state to curtail excessive uses in a more timely fashion.<sup>159</sup>

The system has an advantage over a permitting system in that it is open to adaptation. Because the regulatory scheme is so minimal and has not required any significant investment from either the state or the users, it provides ample opportunity for future legislatures to change it or build on it.<sup>160</sup> The system is both lax and narrow in scope, making it only incrementally different from a pure reasonable-use system. By taking a small step in one direction, Missouri can be seen as simply testing the waters of regulation. Its bare-bones approach offers the government the opportunity to gather information on water usage without committing any long-term bureaucratic resources to the issue.

Missouri's scheme comes with a number of drawbacks, however. While it is cheap to maintain, it is so to a fault. By state law, no more

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152. *See id.*

153. *Id.*

154. FORAN ET AL., *supra* note 31, at 27 (“[C]omprehensive regulation of water resources is costly and states must be willing to commit resources and funding to such systems if they are to be effective.”).

155. MO. REV. STAT. § 256.415.

156. *Id.* § 256.420.

157. *See* 525 ILL. COMP. STAT. 45/3 (2016).

158. MO. REV. STAT. § 256.415.

159. *See* Freyfogle, *supra* note 38, at 3.

160. *See* Tarlock, *supra* note 134, at 516.

than three persons may be employed to carry out its provisions.<sup>161</sup> Paired with the fact that the statute prohibits the state geologist from entering onto property without permission or a court order,<sup>162</sup> this makes the regulation fairly toothless. The statute allows the Attorney General to bring suit when a user is found to be in violation of the registration requirements,<sup>163</sup> but the system is set up in a way that makes it extremely unlikely that a state agent would discover such a user. In practice, this means the system ultimately relies on private parties to report violations. This enforcement mechanism is only marginally better than that found in a reasonable-use system.

A second drawback is that the system has the potential to be woefully inaccurate for a system that has a purported main purpose of gathering information.<sup>164</sup> The statute only requires users that have the means to extract 100,000 gallons or more per day from a water source to register with the state.<sup>165</sup> The state compiles a database of potential users, but stops short of actually monitoring what they use.<sup>166</sup> On paper, a user that has facilities capable of extracting 100,000 gallons per day but only uses 15,000 gallons per day looks the same as a user that extracts 1,500,000 gallons per day. This system is not useful for either monitoring current water use or predicting future use.

The fact that the system is flexible and adaptable is also a detriment. States establish statutory schemes primarily to avoid the uncertainty created by reliance on common law standards.<sup>167</sup> By making only a small modification to the reasonable-use baseline, the Missouri legislature gives the impression that it is unsure of the direction in which it is heading. Is the legislature taking a step towards regulation and looking to increase the scope of its restrictions if the move is successful? Or is it merely taking a small step away from reasonable use, ready to jump back to safety if it does not work out? A good regulatory scheme will provide some signal one way or the other to users.<sup>168</sup> Solid schemes help facilitate both private and public investment by giving their participants the stability and confidence necessary to make predictions about future conditions.<sup>169</sup> This system lacks that feature.

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161. MO. REV. STAT. § 256.425.

162. *Id.*

163. *Id.* § 256.415.

164. *Id.* § 256.405.

165. *Id.* § 256.400.

166. MO. DEP'T NAT. RESOURCES, *supra* note 148 ("The Department of Natural Resources does not regulate the use of water – only the amount of water a major water user has the potential to use.").

167. FORAN ET AL., *supra* note 31, at 62 ("An effective water resource system should provide clear legislative guidance as to use priorities in times of shortage and encourage primary reliance on alternatives to litigation and the common law to resolve disputes.").

168. ASIAN DEV. BANK, GUIDANCE NOTE: URBAN WATER SUPPLY SECTOR RISK ASSESSMENT (2009), <https://www.adb.org/sites/default/files/institutional-document/31321/guidance-note-urban-water-supply-secter-risk-assessment.pdf> ("A good regulatory system has several attributes: (i) coherence, (ii) predictability, (iii) independence, (iv) transparency, and (v) accountability.").

169. *See* Tarlock, *supra* note 134, at 518.

Registration schemes generally enjoy the same benefits and suffer from the same shortcomings as Missouri's. They are cheap to implement and enforce, but that can also lead to ineffectiveness. They are flexible and allow the legislature to respond to new information, but that also makes them unpredictable. It is good that Missouri's scheme provides a public right of action, but there is room for concern about its overall usefulness.

Missouri's scheme fails to advance any of the three stated goals of water law.<sup>170</sup> It does not encourage efficient use of current supplies, does not offer more sophisticated ways to access new supplies, and gives no consideration to environmental concerns. Still, such a scheme may be attractive to a state that is looking for a more restrictive standard than reasonable use but does not have the financial or political capital to develop a full permitting system.<sup>171</sup>

b. Indiana

Indiana also utilizes a registration system, but it augments its water management through the use of a permit system as well.<sup>172</sup> Though it couples its registration system with a permitting system, the registration system is the only part of the scheme that operates on all water resources statewide.<sup>173</sup> The permitting system, on the other hand, is implemented only in so-called "restricted use areas."<sup>174</sup> The Department of Natural Resources has the ability to declare a restricted use area when "the withdrawal of ground waters exceeds or threatens to exceed natural replenishment" and it "has reason to believe it is necessary and in the public interest."<sup>175</sup> In such areas, an entity must apply for a permit if it wishes to withdraw more than 100,000 gallons of water per day<sup>176</sup> and is required to provide a certified statement of its average daily use.<sup>177</sup>

Indiana's registration system applies throughout the state and requires the registration of any "significant water withdrawal facility."<sup>178</sup> If the aggregate sources and methods used by any one person are capable of withdrawing more than 100,000 gallons per day from any groundwater or surface water source, it constitutes such a facility.<sup>179</sup> The registration must include the source of the water supply, the total capability of the facility, the amount to be withdrawn from each source, the use to be made

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170. *See id.* at 500.

171. FORAN ET AL., *supra* note 31, at 31 ("[It is difficult to establish permitting systems] because diverse state interests prevent the coalescing of political will necessary to achieve such comprehensive systems, [and] creating large agencies in fiscally conservative times is difficult.").

172. *Id.* at 18.

173. *Id.*

174. IND. CODE. § 14-25-3-4 (2016).

175. *Id.*

176. *Id.* § 14-25-3-7.

177. *Id.* § 14-25-3-11.

178. *Id.* § 14-25-7-15.

179. *Id.*

of the water, and the place of discharge.<sup>180</sup> It also requires the registrant to submit a verified report of the amount of water withdrawn at the end of each year.<sup>181</sup>

A key feature of Indiana's registration system is its built-in dispute resolution policy. If the owner of a nonsignificant groundwater withdrawal facility—that is, any facility capable of withdrawing less than 100,00 gallons per day—delivers a formal complaint to the Department of Natural Resources alleging that the facility failed to furnish its normal supply of water or failed to furnish potable water, the Department conducts a mandatory onsite investigation within twenty-four hours.<sup>182</sup> If the investigation finds that the well's failure is due to the lowering of groundwater caused by a significant groundwater withdrawal facility, the Department declares a ground-water emergency.<sup>183</sup> This is a commonly used process: from June to July of 2012, the Department conducted approximately 150 investigations.<sup>184</sup>

If the significant withdrawal facility is reasonably believed to have caused the failure and there is a reasonable belief that continued withdrawals will exceed the area's recharge capacity, the state has the ability to restrict the facility's withdrawals.<sup>185</sup> Further, the offending significant withdrawal facility must provide "timely and reasonable" compensation to the affected nonsignificant withdrawer.<sup>186</sup> Such compensation is limited to the temporary provision of an adequate supply of potable water and reimbursement of expenses reasonably incurred to obtain that supply.<sup>187</sup>

The statutory scheme also offers a mediation process in the event of a dispute among users of surface water. If a dispute arises between users, they may request that a Commission at the Department of Natural Resources mediate the dispute.<sup>188</sup>

Indiana's registration system carries a number of advantages over Missouri's more basic registration system and Illinois's reasonable-use system. To start, its permitting requirements are much more thorough than those of Missouri.<sup>189</sup> Registration systems are usually aimed at gathering information for the use of scientists and other government workers,<sup>190</sup> and Indiana's system does a good job of producing vital data. By

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180. *Id.*

181. *Id.*

182. *Id.* § 14-25-4-8.

183. *Id.* § 14-25-4-9.

184. IND. DEP'T OF NAT. RES., BRIEF OVERVIEW OF INDIANA'S WATER USE PROGRAM AND IMPLEMENTATION OF THE GROUND WATER RIGHTS LAW AND WATER SHORTAGE PLAN IN 2012, at 11 (2012), <http://msue.anr.msu.edu/uploads/235/67987/association/MIA-WUWRupdateBaschMann12.14.12.pdf>.

185. IND. CODE. § 14-25-4-12.

186. *Id.* § 14-25-4-17.

187. *Id.* § 14-25-4-18.

188. *Id.* § 14-25-1-8.

189. *See id.* § 14-25-7-15; MO. REV. STAT. § 256.405 (2016).

190. *Water Withdrawal Facilities Registration*, OHIO DEP'T NAT. RESOURCES, <http://water.ohiodnr.gov/water-use-planning/water-withdrawal-facilities-registration> (last visited Aug. 7, 2017) ("Registration is not intended to regulate use of ground water, but only to gather additional information for resolving conflicts and guiding or advising new users.").

providing state officials with the source of each significant water withdrawal and the body of water to which that water will return, the system offers a good picture of where water is coming from and where it is going.<sup>191</sup> Missouri's system does neither. Indiana's system also improves over Missouri's by requiring registrants to report the average amount of water used at the end of each year<sup>192</sup>—creating a record of usage and giving officials a clearer picture of the state's demand.

The second advantage of Indiana's system is that it strikes a good balance between a pure registration system and a pure permitting system. Registration systems are usually seen as a way to monitor water rather than a way to control its use.<sup>193</sup> Permitting systems can require significant cost and manpower to maintain,<sup>194</sup> and thus might be greeted with skepticism among lawmakers or the general public. Indiana found a way to implement a robust and informative registration system, and then coupled it with a permitting system to be used only on an as-needed basis. This combination allows the state to comprehensively monitor its water supplies and use the information gained to deploy its permitting system more efficiently.<sup>195</sup> Such an arrangement is good for the state because it can save costs over a permanent, statewide permitting system.<sup>196</sup> It is also good for water users because it saves them from having to fill out and submit a more cumbersome permit application.

Finally, Indiana's dispute resolution system is a welcome alternative to the formal legal process. In Illinois, all disputes over water must be solved through the courts.<sup>197</sup> Missouri's system also requires disputes to be resolved through the courts; if a registered user is found to be in violation of the registration requirements, the Attorney General will file for an injunction against the user as a public nuisance.<sup>198</sup> Indiana's formal complaint, investigation, and limitation process occurs entirely outside the court system.<sup>199</sup> Combined with the fact that it offers a default remedy,<sup>200</sup> this process gives users an incentive to avoid the time and expense of the courts. By keeping the dispute resolution process within the Department of Natural Resources, it also allows the Department better insight into how significant water users affect other users.

Indiana's hybrid system involves some negative aspects as well. Though the dispute resolution process is a more streamlined option than going through the courts, it does not represent a purely public right of ac-

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191. See IND. CODE. § 14-25-7-15.

192. *Id.*

193. FORAN ET AL., *supra* note 31, at 14.

194. See *infra* notes 250–53 and accompanying text.

195. See generally IND. DEP'T OF NAT. RES., DIV. OF WATER, INDIANA'S WATER SHORTAGE PLAN (2015), <http://www.in.gov/dnr/water/files/watshplan.pdf> [hereinafter INDIANA'S WATER SHORTAGE PLAN].

196. *Id.*

197. Freyfogle, *supra* note 38, at 4.

198. MO. REV. STAT. § 256.415 (2016).

199. See IND. CODE. §§ 14-25-4-8, 14-25-4-16 (2016).

200. *Id.* § 14-25-4-17.

tion. As in Illinois, the process is only triggered when a private user can show that some harm occurred as the result of another user's actions.<sup>201</sup> The Missouri statute empowered its Department of Natural Resources to conduct its own investigations and initiate its own legal proceedings;<sup>202</sup> no such ability exists on the part of Indiana. As a result, the state's ability to protect the public's interests is limited.

The dispute resolution system could also prove to be more costly for the state than if it simply made disputants go through the courts. In Illinois, the time and expense associated with initiating a legal proceeding might deter a user from bringing suit unless it is absolutely sure another user is harming its rights. If a user thinks its rights are being harmed in Indiana, all it has to do is file a complaint and a Department inspector will be at the property in under twenty-four hours. The ease of the process might lead to abuse of the system, tying up Department resources in frivolous inspections. As mentioned above, the Department performed around 150 inspections over the course of two months.<sup>203</sup> It is highly doubtful that the citizens of Illinois filed 150 lawsuits related to water in that same time period.

The permitting aspect of Indiana's system also presents a potential issue. Permits to withdraw water are only required when certain areas are subjected to extreme drought and the water sources are at risk of failure.<sup>204</sup> The problem is that these are the times when people in those areas need water the most. The permitting system effectively works to shut off the water supply in the areas that most desperately need it. The Indiana legislature recognized this conundrum,<sup>205</sup> and the Department responded by saying that it would have to consider expediting the permit process in order to install new public water supply wells in such cases.<sup>206</sup>

Indiana's scheme represents a marked increase over Missouri's when it comes to furthering the three main goals of water law.<sup>207</sup> It promotes efficient use of current water supplies by gathering substantial amounts of information on use patterns and by restricting the use of supplies that are under stress. Its hybrid approach also represents a more sophisticated way to access new supplies compared to the schemes in place in Missouri and Illinois. Finally, it gives a modicum of consideration to environmental concerns by allowing the Department to establish minimum flow levels.<sup>208</sup> Had it offered a public right of action so that the Department could protect environmentally sensitive areas, it would have fared better in this category.

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201. *Id.* § 14-25-4-9.

202. MO. REV. STAT. § 256.415.

203. IND. DEP'T OF NAT. RES., *supra* note 184, at 11.

204. IND. CODE. § 14-25-3-4.

205. INDIANA'S WATER SHORTAGE PLAN, *supra* note 195, at 23 ("IDNR was asked by the Legislature to consider provisions authorizing increased ground-water withdrawals . . . when a water shortage threatens the environment or the health, safety, welfare or economic well-being of the citizens.").

206. *Id.*

207. *See* Tarlock, *supra* note 134, at 500.

208. IND. CODE. § 14-25-7-14.

In general, any registration system could be considered an improvement over Illinois's current scheme. The state would do well to follow closer to Indiana's lead than Missouri's. Indiana's scheme offers much more comprehensive information about water usage in the state. The dispute resolution system could benefit from a higher barrier to entry for disputants, but it is a noble idea to borrow. Likewise, Missouri's public right of action is flawed but enlightened. If Illinois could take the idea and expand on it, it would be a step in the right direction.

## 2. *Permitting Systems*

Permitting systems are generally viewed as being a step up from registration systems, as they allow the government much greater control over who uses water and for what purposes.<sup>209</sup> A defining characteristic of these systems is that they allow the government to determine whether a given use is reasonable *prior* to any water usage.<sup>210</sup> The government, acting under its power to regulate health and safety, gets to set and enforce its own standards for deciding whether a use is reasonable in light of any public concerns it might cause.<sup>211</sup>

The implications of such a system are significant. If a state implements a permitting scheme, it means the government has to have full ownership and control over any water supply within the state's boundaries.<sup>212</sup> Unlike a riparian system, where private citizens own the water and the government's role is limited to resolving disputes, a permitting system essentially puts ownership in the government's hands and gives them the ability to distribute the resource.<sup>213</sup> In a reasonable-use system, the right to water flows from the user's relationship to the water; in a permitting system, the right flows from the user's relationship to the government.<sup>214</sup>

In general, permitting systems share a number of advantages over the basic reasonable-use system. Since they do not rely primarily on the courts to provide guidelines, interpretation, or dispute resolution, they impose fewer costs on society at large.<sup>215</sup> The heightened degree of certainty arising from these systems serves to cut costs while also adding value by facilitating long-term planning, investment, and economic development.<sup>216</sup> Permitting systems also give enforcement authorities a clearer picture of how much water remains in a given source, which can be an extremely important metric when deciding whether or not a state

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209. FORAN ET AL., *supra* note 31, at 14.

210. THOMPSON, *supra* note 39, at 91.

211. *Id.*

212. *See id.*

213. *Id.*

214. FORAN ET AL., *supra* note 31, at 24.

215. *Id.* at 22–24.

216. *Id.* at 23 (“[R]iparian doctrines fail to protect existing or proposed reasonable uses, thereby impeding planning, investment or economic development that requires more assured water supplies.”).



has the ability to enter into water management with other governments.<sup>217</sup> Finally, they help authorities understand the relationship between groundwater and surface water, helping to avoid a tragedy-of-the-commons situation where a large number of “reasonable” uses in a particular sector end up being detrimental to the system as a whole.<sup>218</sup>

Since permitting systems are a more complex form of regulatory scheme, they tend to differ greatly in scope and substance from state to state. Factors commonly involved in permitting schemes include whether they apply to groundwater or surface water, whether they apply to capacity for use or actual use, whether they apply everywhere or only in special use areas, and whether or not they have a threshold that triggers permitting.<sup>219</sup> The remainder of this subsection provides an overview of the permitting systems currently in use by the states of Iowa and Wisconsin and examines their relative strengths and weaknesses.

a. Iowa

Iowa’s permitting system is robust and comprehensive. In 1986, the state legislature of Iowa vested broad powers in the state’s Department of Natural Resources to map, plan, and control the state’s water resources.<sup>220</sup> The relevant statute, Iowa Code § 455B.262, begins with a declaration of public policy that the “orderly development, wise use, protection, and conservation” of the state’s water is of paramount importance to the general population.<sup>221</sup> It then requires the state geological survey to monitor and assess the needs of all water users at five-year intervals for a period of twenty years, with the goal of creating an allocation system that will consider the quantity and quality of the state’s water.<sup>222</sup> The stated purposes of this plan are to ensure that all water resources are put to beneficial use and to protect against waste or unreasonable use.<sup>223</sup> Drawing upon the idea that the government’s ownership and control of the water gives the state the power to issue permits, the statutory section ends with a proclamation that any body of water occurring within the state is public water to be used for the public wealth of the people.<sup>224</sup> The statute specifically mentions that these measures are aimed at ensuring the long-term viability of the state’s water supply.<sup>225</sup>

With such a strong statement of governmental purpose, it comes as no surprise that the state’s permitting system is equally comprehensive.

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217. *Id.*

218. *Id.* at 24–25.

219. *Id.* at 13.

220. *See* IOWA CODE § 455B.262 (2016).

221. *Id.*

222. *Id.*

223. *Id.*

224. *Id.*

225. *Id.* (“The measures shall include the protection of specific surface and groundwater sources as necessary to ensure long-term availability in terms of quantity and quality to preserve the public health and welfare.”).

The Iowa Code requires a permit for anyone who wishes to divert, store, or withdraw water from either surface or groundwater sources for non-domestic use.<sup>226</sup> Permits for such activities are granted only after a Department of Natural Resources investigation determines that the requested use is in line with the principles and policies of beneficial use.<sup>227</sup> The statute also gives the director of the Department full discretion over the duration of the permit, as well as the frequency and quantity of any permitted use.<sup>228</sup> Even after granting a permit, the state reserves the right to curtail a user's activities for a number of reasons.<sup>229</sup> These include: receipt of a petition signed by twenty-five affected persons demonstrating a local water shortage, information indicating an imminent drought, proclamation by the governor, or the existence of a local crisis affecting the availability of water.<sup>230</sup> In the event that one of these occurs, the state may implement a priority allocation plan that gives priority to certain uses.<sup>231</sup> The lowest priority use is water being conveyed across state borders, which will be the first activity curtailed in the event of an emergency.<sup>232</sup> In increasing order of priority are: use of water for crops, use of water for manufacturing or industrial processes, use of water for livestock production, and use of water for human consumption and sanitation.<sup>233</sup>

Iowa's system has long been considered the platonic ideal of a comprehensive permitting system,<sup>234</sup> and it carries with it a number of advantages. The primary benefit is that it provides clarity and predictability to its users.<sup>235</sup> When a user receives a permit from the state of Iowa, it knows exactly how much water it is allowed to withdraw from a particular source and the purposes for which it is authorized to use that water. This holds true even in times of severe shortage, since the system provides a hierarchy of use priorities.<sup>236</sup> Since Iowa's system is proactive and regulates all of its users prior to their usage of water,<sup>237</sup> the grant of a permit represents a sound assurance that the user will have access to the resources that it expects. This is in contrast to a reasonable-use system, where state regulation of water (a court proceeding) comes *after* harm has been done to another user. This means that a user is always at risk of having its water rights impaired by the unreasonable use of another. Iowa's proactive approach allows private water users to make investments

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226. *Id.* § 455B.268.

227. *Id.* § 455B.265.

228. *Id.*

229. *Id.* § 455B.266.

230. *Id.*

231. *Id.*

232. *Id.*

233. *Id.*

234. See generally Robert H. Abrams, *Water Allocation by Comprehensive Permit Systems in the East: Considering a Move Away From Orthodoxy*, 9 VA. ENVTL. L.J. 255 (1990).

235. *Id.* 262 ("The second advantage of regulatory intervention is the ability to overcome riparianism's lack of specificity regarding the extent of a water right.").

236. IOWA CODE § 455B.266.

237. Abrams, *supra* note 234, at 263.

with confidence, and it enables state agencies to develop forward-looking plans for water management.

Iowa's permitting system is advantageous because it provides a large amount of information to state agencies. Information is perhaps the most important tool in the fight to conserve water and avoid under- or over-regulation.<sup>238</sup> Iowa's system not only provides for the collection of data, but it gives a specific time frame in which the data will be collected and lays out exactly how state agencies should use that data.<sup>239</sup> Having accurate information on water usage lets the state balance supply and demand, allowing it to avoid placing too much stress on any particular water supply.<sup>240</sup> The state alone gets to decide which supplies should be open to consumptive use, allowing it to balance supply and demand unencumbered.

A third advantage of Iowa's system is that it gives the state the power to regulate water supplies in new and sophisticated ways. Systems like Missouri's registration scheme seek to conserve water by regulating consumer behavior.<sup>241</sup> Iowa's system, on the other hand, seeks to regulate the water itself. Whereas other systems focus on regulating the amount of water that a user can remove from a source, Iowa can regulate the amount of water that must be present in a particular source.

Consequently, Iowa has established the most robust in-stream flow program in the eastern United States.<sup>242</sup> In-stream flow requirements are regulations that set a minimum water level within a particular body of water.<sup>243</sup> If the water level falls below the prescribed minimum flow, water extraction is severely curtailed or prohibited.<sup>244</sup> Many states limit the scope of these provisions to particular conservation areas or hydroelectric projects, or allow their passage only upon executive order.<sup>245</sup> In contrast, Iowa vests an executive agency with the power to set in-stream flow requirements for any body of water within the state.<sup>246</sup>

This in-stream flow program allows Iowa to address environmental, recreational, and cultural concerns. By setting minimum flow levels, the

238. Tarlock, *supra* note 134, at 518 ("The first step in rational water planning is good data that includes the state's average annual supply and the amount of consumptive and non-consumptive use."); see Alissa Walker, *Why The Data On California's Biggest Water Hogs Isn't Public*, GIZMODO (Apr. 21, 2015, 6:00 PM), <http://gizmodo.com/why-the-data-on-californias-biggest-water-hogs-isnt-pub-1698484864> ("Information equals conservation").

239. IOWA CODE § 455B.262.

240. Tarlock, *supra* note 134, at 518.

241. See *infra* Section III.B.1.a.

242. Berton L. Lamb & Harvey R. Doerksen, *Instream Water Use in the United States—Water Laws and Methods for Determining Flow Requirements*, in NAT. WATER SUMMARY 1987 – WATER SUPPLY AND USE: INSTREAM WATER USE 109, 112 (1987), <https://www.fort.usgs.gov/sites/default/files/products/publications/124/124.pdf> ("Iowa's instream-flow program is the most comprehensive of any Eastern State and has had long-standing success").

243. *Id.* at 109.

244. DAN MERRIMAN & ANNE M. JANICKI, COLORADO'S INSTREAM FLOW PROGRAM—HOW IT WORKS AND WHY IT'S GOOD FOR COLORADO, <http://cwcb.state.co.us/environment/instream-flow-program/documents/whysisfprogramworksgoodforcopdf.pdf> (last visited Aug. 7, 2017).

245. Lamb & Doerksen, *supra* note 242, at 111 tbl.17.

246. *Id.*

state can achieve ecological goals such as preservation of aquatic life and vegetation.<sup>247</sup> Minimum flow provisions help states adhere to the Safe Drinking Water Act and the Clean Water Act by ensuring that low water levels do not lead to unlawfully high concentrations of contaminants.<sup>248</sup> The laws also accommodate aquatic recreation and navigation of waterways, and help maintain the aesthetic value of waterside communities.<sup>249</sup>

Iowa's broad system of water regulation does not come without pitfalls though. Maintaining such a comprehensive system is very costly. Enforcing Iowa's broad network of water laws requires a large amount of bureaucratic oversight and produces costs associated with employees and the physical space that comes with them.<sup>250</sup> In 2014, the Missouri Department of Natural Resources allocated \$3.5 million to Water Resources.<sup>251</sup> That same year, Iowa allocated \$4.91 million to its Groundwater Fund alone.<sup>252</sup> Add in \$494,000 for "Water Quantity," \$500,000 for "Water Supply," \$1.72 million for "Water Quality Monitoring," and "\$575,000 for "Lake Water Quality Improvement," and Iowa spent around \$9.2 million on water resources in 2014.<sup>253</sup>

Though the size of the system is a virtue in some regards, it comes with caveats of its own. Having been established in 1957,<sup>254</sup> the state's water law bureaucracy has experienced nearly sixty years of expansion.<sup>255</sup> It would be very difficult at this point for the state to change its overall approach to water law. This point was illustrated back in 1980 when, after a prolonged drought, citizens widely criticized Iowa's permit system for an inability to respond to the change in conditions.<sup>256</sup> In 1987, one commentator found that Florida, the only real rival to Iowa's system in size and scope, faced "significant problems" in trying to coordinate the actions of local water management agencies with those of the state.<sup>257</sup>

Size also has the unfortunate effect of making any bad regulatory decision exponentially worse. Bad administrative judgments can produce lasting effects across the entire state, making it imperative that bureaucratic personnel make the right call. In a sort of catch-22, however, it becomes more difficult to select an outcome that will satisfy all of the organization's goals when the organization grows larger. Systems that rely

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247. Smith, *supra* note 33, at 1.

248. FORAN ET AL., *supra* note 31, at 24.

249. Lamb & Doerksen, *supra* note 242, at 109.

250. Abrams, *supra* note 234, at 264.

251. MO. DEP'T OF NAT. RES., FY 2014 BUDGET REQUEST: GOVERNOR'S RECOMMENDATIONS 37, <https://ia801004.us.archive.org/12/items/2014DNRBudgetRequestGovRecs/2014DNRBudgetRequestGovRecs.pdf>.

252. IOWA DEP'T OF NAT. RES., BUDGET REFERENCE FY 2014, at 9, <https://www.legis.iowa.gov/docs/publications/SD/24851.pdf>.

253. *Id.* at 9.

254. M.K. Tenny, *Water Rights Law in Iowa*, 51 J. AM. WATER WORKS ASS'N 329 (1959).

255. JERRY E. CARR ET AL., U.S. GEOLOGICAL SURVEY, NATIONAL WATER SUMMARY 1987–HYDROLOGIC EVENTS AND WATER SUPPLY AND USE 256 (1987) (stating that a 1987 amendment to Iowa's Water Law "significantly increased" the size of the permit system).

256. Abrams, *supra* note 234, at 269.

257. *Id.* at 268.

on the government to allocate resources rather than the free market are more likely to see those resources allocated in a less efficient manner.<sup>258</sup> This effect grows with the size of the organization, imposing costs on the system that are difficult to assess or even identify.<sup>259</sup>

Iowa's comprehensive permitting system is a rarity in the Eastern United States, and likely for good reason. The system undeniably fulfills the three main goals of water law.<sup>260</sup> It helps to allocate the current water supply more efficiently by gathering and processing large amounts of information about water usage and by tightly controlling new uses. It aids in the development of more sophisticated approaches to resource control, as seen in its use of in-stream flow provisions. Those same provisions also aid in the restoration of environmentally degraded aquatic habitats. On top of all that, it provides clarity and guidance to its users.

Nevertheless, Iowa presents a difficult example to follow because it is in the unique position of being an early adopter. The state adopted its permitting system in the 1950s, when the country was prosperous and big government was *en vogue*.<sup>261</sup> The system has had the opportunity to work out kinks over time, and no new system could hope to run as smoothly as Iowa's does now. Additionally, the amount of economic, social, and political capital it would take to implement such a system today would be prohibitive. In today's economic and political climate, it would be exceedingly difficult to convince a state legislature to come together and pass a major water-law reform that would require significant public investment. Though Iowa's system seems to have it all, it is not likely a realistic option.

#### b. Wisconsin

Wisconsin's version of a permitting system is refreshingly simple, yet it demonstrates the high degree of state control that is the hallmark of these systems.<sup>262</sup> It requires a permit for any property on which the collective facilities are capable of withdrawing over 100,000 gallons per day.<sup>263</sup> As with Indiana's scheme, the permitting system is paired with a registration system: users must also register withdrawals that will average 100,000 gallons per day in any thirty-day period.<sup>264</sup>

Many conditions and limitations spring from this simple baseline. In deciding whether to grant a permit, the relevant statute lists sixteen factors to take into consideration;<sup>265</sup> Indiana's statute governing permits lists

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258. *Id.* at 264–65.

259. *Id.*

260. Tarlock, *supra* note 134, at 500.

261. See Hines, *supra* note 234, at 505–06.

262. FORAN ET AL., *supra* note 31, at 11 (“A fundamental distinction can be made between registration (used to *monitor* water use) and permitting (used to *control* water use).”).

263. See WIS. STAT. §§ 281.17, 281.34 (2016).

264. *Id.* § 281.35(3)(a).

265. *Id.* § 281.35(5)(a).

a mere six.<sup>266</sup> This lengthy list likely results from the fact that Wisconsin has engaged in extensive water management and planning.<sup>267</sup> The state statute requires the Department of Natural Resources to “establish a continuing water quality management planning process . . . [which] shall result in plans for all waters of the state . . . .”<sup>268</sup> Since the state’s water planning program is so thoroughly codified, navigating the regulations becomes a rabbit hole of cross-references to different statutes.<sup>269</sup> This process also gives rise to a number of limitations on permits. In granting a permit, the Wisconsin Department of Natural Resources reserves the right to limit the location, depth, capacity, rate of flow, or ultimate use.<sup>270</sup> Under no circumstances will the Department issue a permit if it determines that the use will diminish the water supply of any public utility.<sup>271</sup>

One distinctive feature of Wisconsin’s statute is the degree to which it recognizes that its waters are part of a greater system. The statute codifying the water planning process requires the Department to take into consideration procedures for intergovernmental cooperation, as well as incorporating elements of “area wide” and “basin” plans.<sup>272</sup> Whereas other states are concerned only with the waters within their own borders,<sup>273</sup> Wisconsin realizes that water naturally crosses state lines. In fact, the state must consider the effect that a withdrawal will have on the greater ecosystem when determining whether to grant a permit. The Department takes into account “[t]he anticipated effects, if any, that the withdrawal will have on existing uses of water resources and related land uses both within and outside of the Great Lakes basin or the upper Mississippi River basin.”<sup>274</sup>

Wisconsin’s scheme shares many advantages with Iowa’s. When a system is extensively codified, it gives rise to clarity and assuredness in both its users and enforcers.<sup>275</sup> Wisconsin offers this at all stages of the permit application process. State statute describes exactly who needs to apply for a permit, what is necessary for a successful application, the grounds for approval or denial, grounds for appeal, what happens when an application is approved, and what an applicant must do after it receives a permit and begins withdrawing water.<sup>276</sup> The registration aspect of the system also provides state officials with vital information regarding water usage.

The fact that Wisconsin’s laws contemplate the effects of its users beyond the borders of its own state is also advantageous. It represents a

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266. IND. CODE § 14-25-3-8 (2016).

267. WIS. STAT. § 283.83(1).

268. *Id.*

269. *See generally id.* §§ 281.17, 281.34, 281.35, 283.83.

270. *Id.* § 281.17(1)(b).

271. *Id.*

272. *Id.* § 283.83(1).

273. *See, e.g.,* INDIANA’S WATER SHORTAGE PLAN, *supra* note 195, at 23.

274. WIS. STAT. § 281.35(5)(a)(8).

275. Abrams, *supra* note 234, at 283–85.

276. *See generally* WIS. STAT. § 281.35.

giant leap in the way that states think about water law. When drafting early water law, state legislatures did not even realize that groundwater and surface water were connected to each other.<sup>277</sup> Many states are still confused about whether the two should be unified under one body law; Illinois did not do so until 1983.<sup>278</sup> In recognizing that its waters do not stop at its borders, Wisconsin demonstrates the kind of innovative thinking that it took to recognize that surface water does not stop at the surface. It shows that there is a shift away from the mindset that water is merely a commodity used to fuel industrial advancement and represents a more environmentally conscious approach to managing water law.

Wisconsin's decision to consider out-of-state effects, while innovative, could ultimately work to the detriment of its citizens. The job of managing water supplies across an entire state is a daunting task in itself.<sup>279</sup> By expanding the scope of its water management beyond state lines, the Department of Natural Resources makes an already challenging task even more challenging. Some cities in Wisconsin are already feeling the effects of the state's decision to look beyond its borders.<sup>280</sup> The city of Waukesha, Wisconsin, recently received an order from the federal government to find a new source of drinking water due to contamination of its aquifer.<sup>281</sup> The city is less than two miles from Lake Michigan, and drawing water from the lake would be an easy and economical solution.<sup>282</sup> The problem is that Wisconsin is a party to the Great Lakes Compact, a 2008 agreement signed by eight states bordering the lakes which governs the ability to extract water from the Great Lakes.<sup>283</sup> Under this compact, the city must obtain permission from the governors of all eight states before drawing from the lake.<sup>284</sup> This illustrates the problems associated with expanding water management policies beyond state lines. Though intergovernmental water management agreements might be ecologically beneficial, the bureaucracy involved can ultimately present great complications for a state's own citizens.

Wisconsin's scheme has an interesting quirk that, while not necessarily a drawback, could use improvement. The other statutory schemes examined in this Section use registration as a baseline, while permits op-

277. Joe Gelt, *Managing the Interconnecting Waters: The Groundwater-Surface Water Dilemma*, UPPER AGUA FRIA WATERSHED PARTNERSHIP, <http://www.uafwp.org/html/WL2%20Interconnecting%20Waters.pdf> (last visited Aug. 7, 2017).

278. FORAN ET AL., *supra* note 31, at 8.

279. See *Flow Chart of Proposed CPP Overview*, WIS. DEP'T NAT. RESOURCES, [http://dnr.wi.gov/topic/surfacewater/cpp/cpp\\_diagram.html](http://dnr.wi.gov/topic/surfacewater/cpp/cpp_diagram.html) (last visited Aug. 7, 2017) (depicting an extensive flow chart used by the Department of Natural Resources to comply with the mandatory Continuous Planning Process).

280. See Stateside Staff, *Waukesha's Water Request Will Be First Test of Great Lakes Compact*, MICH. RADIO (Sept. 9, 2015), <http://michiganradio.org/post/waukeshas-water-request-will-be-first-test-great-lakes-compact#stream/0>.

281. *Id.*

282. *Id.*

283. *Great Lakes Water Resources Compact*, NAT'L WILDLIFE FED'N, <https://www.nwf.org/What-We-Do/Protect-Habitat/Waters/Great-Lakes/Great-Lakes-Compact.aspx> (last visited Aug. 7, 2017).

284. Stateside Staff, *supra* note 280.

erate as a heightened requirement.<sup>285</sup> In Indiana, for example, registration is the default setting for significant water users, and permits are required only when a water source is particularly stressed.<sup>286</sup> Wisconsin's scheme turns this upside down: permits seem to be the baseline, and registration is reserved for more significant users.<sup>287</sup> Every user with the mere capacity to withdraw over 100,000 gallons per day is required to apply for a permit.<sup>288</sup> Those that expect to withdraw an average of 100,000 gallons per day over any thirty-day period must also register.<sup>289</sup> This is not a bad system *per se*, but the registration requirement seems redundant. The permitting system requires regular reporting of the volume and rate of withdrawal, and any entity that plans on averaging 100,000 gallons per day necessarily has the capacity to withdraw that amount; anyone required to register will have already been required to obtain a permit. States should aim to avoid this type of regulatory bloat.

#### IV. RECOMMENDATION

Illinois's current system of water rights puts its citizens and its economic interests in a perilous position. As demand for water increases and the amount of available water decreases, the "reasonable use" standard will prove to be an inadequate mechanism for protecting water quality, resolving conflicts between water users, and preserving natural habitats.<sup>290</sup>

Illinois should act to replace its current system by passing legislation that enacts a comprehensive hybrid system of permitting and registration. The scheme should be rooted in the concept that all waters within the boundaries of the state belong to the people of Illinois. The legislature should identify individual consumption<sup>291</sup> and maintenance of in-stream flow levels as the highest priority uses. The registration system should be required for any water users that have the capacity to withdraw over 50,000 gallons per day. The permitting system should apply to extraction of both groundwater and surface water for uses that average in excess of 100,000 gallons per day over a given thirty-day period. The overall scheme should provide for public enforcement and a dispute resolution process.

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285. See generally *supra* Part III.

286. See IND. CODE. § 14-25-3-4 (2016); *supra* notes 171–73 and accompanying text.

287. See WIS. STAT. §§281.34, 281.35(1)(b) (2016).

288. *Id.* § 281.34.

289. *Id.* § 281.35.

290. See Freyfogle, *supra* note 38, at 5–7.

291. See generally VA. CODE ANN. § 62.1-44.36 (2016) (declaring "that all of the state waters belong to the public for use by the people for beneficial purposes without waste" and that "[a]dequate and safe supplies should be preserved and protected for human consumption").



### *A. Registration*

As illustrated by Missouri's scheme, sole reliance on a registration system is not a desirable solution for Illinois. Registration systems have the advantage of being cheap and easy to implement, but those benefits come at the expense of any meaningful reform. In the hierarchy of regulation, commentators see registration as a much weaker alternative to permits. Registration systems often lack the financial and human capital needed to enforce the law. Additionally, a poorly drafted or poorly enforced registration system can end up being more damaging than no regulation at all. In the case of Missouri's system, the legislature set out to gather data on water usage and ended up with nothing more than a list of names that provides no real insight into the state's water usage. The system is also difficult to enforce, leading to uncertainty among both users and state agencies. This type of legislation is nothing more than a nuisance, and it is the sort of thing that leads citizens to feel apathy or anger towards regulation.

That is not to say that registration does not have a place in a broader statutory scheme, however. In the context of a system that is well-conceived and properly enforced, it can help deal with lower-volume users who might not warrant the full attention and expense of a permitting scheme. Introducing registration for lower-volume users could help make the scheme more palatable for those who are politically opposed to a purely permit-based system. This graduated approach marks a compromise whereby lower-volume users, who are more likely to be small businesses, bear less of a regulatory burden than higher-volume users. Illinois could benefit from incorporating a graduated registration approach into its statutory scheme.

The threshold for registrants should be set at 50,000 gallons per day. If an entity has the capability to extract more than 50,000 gallons per day from any water source, it should be required to register annually with the state. This registration should include a monitoring provision that requires the user to provide a daily average-use report to the state. Such a requirement provides the state with valuable data regarding how much water is taken, where it is taken from, and when it is taken. The registration should also give information about the source from which the water is drawn and the location of any discharged wastewater. The state could use this data to allocate resources more efficiently. The state should also have the ability to inspect the user's facility at any time, much the same way the health inspector is allowed to inspect restaurants.

### *B. Permitting*

These registration requirements should be supplemented by a permit requirement for higher-volume users. Though the expense and logistics of implementing a pure permit system would be impractical, permitting is an excellent tool for dealing with higher-volume users. Users that

anticipate extracting an average of over 100,000 gallons within any thirty-day period should be required to obtain a permit from the Department of Natural Resources. The Department will analyze the beneficial use and determine the amount of water potentially available to the user. Unlike Iowa's permitting system, the Department will not retain full discretion over the quantity and duration of the permit. Such a provision opens private investors to the whims of an unaccountable government agency and leads to uncertainty. Once Illinois issues a permit, the user's rights should be curtailed only in the event that the governor declares a state of emergency in the area containing the user's water supply. This inability to modify the terms of a permit will force the Department to consider carefully the merits of each permit and will provide security and stability to the user.

The permit system should be clear about which users need permits, what information the users need to submit, and what criteria the state considers in approving or denying a permit. Illinois should steer clear of Wisconsin's interstate approach and instead focus on the effects that a withdrawal will have on the immediate area. Although Wisconsin's system is probably a better reflection of how water flow actually works, it does not necessarily do a great job of making water accessible to its own residents. It is important that the legislature find the right balance between protecting resources and facilitating the public's use of those resources. In light of this principle, Illinois should adopt Indiana's criteria when considering permit applications.<sup>292</sup> The six factors include: the effect of withdrawal on future supplies and present users, the intended use, the future demands and whether natural replenishment is likely, and the health and best interest of the public.<sup>293</sup>

### *C. Public Enforcement*

A good statutory scheme includes strong enforcement provisions. If any users are found to be operating without a permit or registration, the Illinois Attorney General should have the ability to declare the user a public nuisance and file for an injunction. Unlike Missouri's statute, which allows the user to continue operations while the action is pending, Illinois should grant an immediate injunction against extraction operations.

Public enforcement is an important piece of the puzzle. Illinois must move away from the requirement that only private citizens who have been directly harmed can challenge another person's water use. One way to do this would be to allow any citizen the ability to bring a suit against a water user. This Note has already established that the state should declare all water as belonging to the people of the state.<sup>294</sup> From there, it

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292. See IND. CODE § 14-25-3-8 (2016).

293. *Id.*

294. See *supra* Part III.

follows that any citizen should have standing to bring suit in the case of unreasonable use.

One criticism of providing standing to any citizen is that it, like Indiana's inspection system, creates a low bar to entry. Citizens could potentially clog the courts and stymie the efforts of water users by filing frivolous lawsuits. A different approach, then, would be to place the determination in the hands of the Department of Natural Resources. The state could follow Indiana's lead and allow any citizen the ability to file a formal complaint with the Department, which would then trigger an investigation or hearing. Alternatively, the Department could adopt Missouri's approach of conducting random inspections and then allow the Attorney General to file suit against any potential offenders.<sup>295</sup>

#### *D. Dispute Resolution*

Illinois should adopt Indiana's approach and codify a dispute resolution system. A good dispute resolution system can save time and money for both the state and its citizens by diverting disputes away from the formal court system. Funneling water-usage disputes through the Department of Natural Resources would have the added advantage of having disputes adjudicated by persons with intimate knowledge of the subject area. A regulator at the Department is almost certainly more familiar with environmental issues than a standard state court judge and can provide a more thorough and accurate ruling. Another advantage of administrative dispute resolution is that it allows the Department to keep track of where, when, and why disputes occur. Gathering this information ultimately helps the Department manage the state's water resources more efficiently.

Under this proposal, Illinois's system would function like Indiana's; it would start with a formal complaint to the Department that one's water rights were being infringed upon. The Department would then conduct an investigation to examine the harm and determine who was responsible. As part of this process, Illinois should codify a definition of "reasonable use" to be used both in the informal dispute resolution and in any formal court proceedings.

Illinois can work to secure its future water supplies if it follows these recommendations. It should first declare that all surface and groundwater belongs to the people of the state, with the highest purposes for that water being individual consumption and maintenance of in-stream flow levels. The state should implement a hybrid system that utilizes both registration and permitting. Users that are capable of withdrawing more than 50,000 gallons per day should be required to register with the state and provide extensive information regarding their water use. Users that plan to withdraw more than 100,000 gallons per day over any thirty-day period should be required to obtain a permit. In considering these per-

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295. MO. REV. STAT. § 256.420 (2016).

mits, the state should only take into account the effects that the withdrawal will have on the surrounding area. This scheme needs to offer public citizens or government agencies the ability to police unreasonable uses before they occur. Finally, the system should offer an avenue for dispute resolution beyond the formal court process and offer a statutory definition of “reasonable use.”

## V. CONCLUSION

The issue of water security is set to play an increasing role in the future of this country. By allocating federal dollars towards water innovation for the first time in history, the Obama Administration signaled that the government cannot afford to ignore this matter any longer. But a long-term, substantive solution will require more than simply throwing money at the issue. State and local governments must implement legal regimes that are compatible with forward-looking, water-management plans. Many states currently lack a solid legal framework when it comes to water law, leaving them poorly equipped for the task of allocating development funds in efficient and innovative ways.

Illinois is one state with water laws that are ripe for reform. The central tenet of Illinois’s water law is a vestige of the Industrial Revolution. When the principle of reasonable use originated in 1827, America appeared to be a bountiful land with limitless resources. Though that perception has changed substantially over the ensuing centuries, Illinois’s water law has not. Illinois adopted the reasonable-use principle as common law in 1842, codified it in 1983, and has failed to make any substantive changes since.<sup>296</sup> As a period of rising demand and falling supply looms on the horizon, and the federal government begins to push for water innovation, now is the time to bring Illinois’ water law into the twenty-first century.

Illinois should follow in the footsteps of its neighboring states and implement a statutory system to govern water rights. Water is an incredibly vital resource, and the state should take steps to secure that resource for its citizens. By adopting a system of permitting and registration, providing an avenue for dispute resolution, and offering greater clarity to its citizens, the state can position itself to face the challenges ahead.

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296. See 525 ILL. COMP. STAT. 45/3 (2016).