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RENEWABLE ENERGY ON TRIBAL LAND & WATER RESOURCES: JEMEZ PUEBLO

JENNY SMALL*

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I. INTRODUCTION

As the Walatowa (Jemez Pueblo) journeyed from their world towards the sun, they endured cold and hunger, nearly vanishing, but the Sun saved them.¹ As they confronted their enemies, the Sun then granted them a means to save themselves with a hero.² They settled in a valley surrounded by springs, a soda dam, and a stream.³ Lifetimes later, they now implore the Sun to empower them to avoid ever needing to be saved again.⁴ This time around, Jemez Pueblo wishes to harness the power of the sun for community development through renewable energy.⁵ Jemez Pueblo exemplifies the potential of tribal renewable energy for Native Nations and the United States despite significant challenges stemming from the scarcity of water.⁶

Through a discussion of tribal renewable energy potential for Native Nations and the United States, an evaluation of federal Indian reserved water rights, and a study of Jemez Pueblo's project, this article addresses just one

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1. *The Origin Story and the Mythical History of the Jemez People*, 29 AM. ANTHROPOLOGIST 722, 723 (1927).

2. *Id.* at 723-24.

3. *Id.* at 725.

4. See Susan Montoya Bryan, *N.M. Tribe Hopes to Profit from Solar Energy*, DENVER POST, Jan. 18, 2010, http://www.denverpost.com/search/ci_14212689.

5. *Id.*

6. See Debbie Leonard, *Doctrinal Uncertainty in the Law of Federal Reserved Water Rights: The Potential Impact on Renewable Energy Development*, 50 NAT. RESOURCES J. 611, 635 (2010).

facet of the many legal complexities facing Native Nations in one of their most significant development endeavors. Briefly, tribal renewable energy bestows benefits upon native communities, including a reduction of man's footprint on the environment and greater independence through community development.⁷ Despite the potential benefits of renewable energy, however, each Native Nation must secure access to an already scarce supply of water.⁸ A nation's best chance to obtain its needed water supply is through the federal reservation doctrine.⁹ Native Nations then must physically obtain and deliver the water for their renewable projects.¹⁰ They resolve their rights through adjudication, litigation, and water compacts.¹¹ While natural resources, like the sun, can impart upon a nation a promising future, other natural resources, like water, possess the means.¹²

At this intersection of natural resources, Jemez Pueblo struggles to define its future.¹³ Its energy endeavor emblemizes the opportunities and challenges for all Native Nations.¹⁴ Jemez Pueblo hopes to create the first tribal solar energy project.¹⁵ Its struggle to realize its project educates all Native Nations about reconciling their rights, quantity, and access to water.¹⁶

II. TRIBAL RENEWABLE ENERGY POTENTIAL: WATER DEMAND

Tribal renewable energy allows Native Nations to utilize their locations to empower their communities.¹⁷ While Native Nations have yet to fully capitalize on renewable energy, they aggregately own five percent of the land in the United States and ten percent of the United States' "renewable energy potential."¹⁸ According to one consultant, if the Navajo Nation were to employ just one-third of its solar energy potential, it could provide the entire United States with

7. Clarence D. Council et al., U.S. Dep't of Energy, Paper Presented at the 2000 Annual Conference of the American Solar Energy Society: Using Renewable Energy on Native American Lands (June 16-21, 2000), available at http://apps1.eere.energy.gov/tribalenergy/report_native_lands.cfm.

8. See Lee Herold Storey, Comment, *Leasing Indian Water Off the Reservation: A Use Consistent with the Reservation's Purpose*, 76 CALIF. L. REV. 179, 179-80 (1988).

9. See Robert T. Anderson, *Indian Water Rights, Practical Reasoning, and Negotiated Settlements*, 98 CALIF. L. REV. 1133, 1133 (2010).

10. See generally *Promoting the Negotiation and Implementation of Water Settlements in Indian Country: Hearing on Indian Water Rights Before the S. Comm. on Indian Affairs*, 112th Cong. 26 (2012) [hereinafter *Hearing on Indian Water Rights*] (statement of Maria O'Brien, Legal Comm. Chair, W. States Water Council).

11. *Id.*

12. See Reid Peyton Chambers & John E. Echohawk, *Implementing the Winters Doctrine of Indian Reserved Water Rights: Producing Indian Water and Economic Development Without Injuring Non-Indian Water Users?*, 27 GONZ. L. REV. 447, 454 (1991).

13. See Bryan, *supra* note 4.

14. See *id.*

15. Megan Kamerick, *Jemez Solar Plant Would Sell to Grid*, N.M. BUS. WEEKLY., Aug. 17, 2008, <http://www.bizjournals.com/albuquerque/stories/2008/08/18/story3.html?page=all>.

16. See Leonard, *supra* note 6, at 611.

17. See *Renewable Energy on Native Lands*, HOUSE DEMOCRAT COMM. ON NAT. RESOURCES, <http://democrats.naturalresources.house.gov/issue/renewable-energy-native-lands> (last visited Oct. 15, 2013).

18. *Id.*

energy “through the rest of this century.”¹⁹ Native Nations and others are beginning to recognize such potential through the development of approximately twenty-five renewable energy projects on tribal lands.²⁰ These tribal projects pioneer a growing market of renewable energy that can benefit Native Nations and the United States.²¹

As Native Nations exploit their resources to develop their economies, they strive for greater empowerment to fulfill their spiritual obligations to protect the land and to secure their own long-term survival. Income from renewable energy will allow Native Nations to focus on needed services, such as basic infrastructure.²² For example, Jemez Pueblo’s project could provide the money to improve the treatment of wastewater and provide sanitary water.²³ Leaders with the Jemez Pueblo also indicate that without a better drainage system, their community will not be able to pursue agriculture.²⁴ Its impoverishment contributes to its lack of basic services, which in turn, perpetuates its poverty.²⁵

Renewable energy also enables Native Nations to satisfy their duties to protect the land and nature as its “guardians.”²⁶ Because land and resources, such as the sun, hold prominent places in some indigenous cultures, many Native Nations have a vested interest in pursuing renewable energy.²⁷ Some Native Nations focus on sustainability because they have a “spiritual connection[]” with the land.²⁸ For example, the Navajo Nation has an environmental charter expressing a desire to “promote harmony and balance between the natural environment and the people of the Navajo Nation.”²⁹ Navajo peoples believe that they must preserve the lands they inhabit “as trustee[s] of the environment for succeeding generations.”³⁰ Similarly, in a request for the Department of Energy funding for a biomass project, the Quinault Indian Tribe de-

19. Heather Scofield, *Tribes Power Up*, DURANGO HERALD, Apr. 3, 2012, <http://www.durangoherald.com/article/20120401/NEWS01/704019915/1001/Tribes-power-up>.

20. HOUSE DEMOCRAT COMMITTEE ON NAT. RESOURCES, *supra* note 17.

21. See Justin Gerdes, *Obama Administration Clears Barriers Holding Up Tribal Renewable Energy*, FORBES (Nov. 29, 2012, 12:49 PM), <http://www.forbes.com/sites/justingerdes/2012/11/29/obama-administration-clears-barriers-holding-up-tribal-renewable-energy/>.

22. See Bryan, *supra* note 4.

23. *Id.*; Tammy Belone et al., Pueblo of Jemez Dep’t of Resource Protection, PowerPoint presented at the EPA Region VI Summit: Pueblo of Jemez Renewable Energy Projects, (Dec. 3, 2009), available at www.tribesandclimatechange.org/docs/tribes_138.ppt.

24. Heather Scofield, *Hope for a Bright Future*, DURANGO HERALD (Apr. 1, 2012, 9:03 PM), <http://www.durangoherald.com/article/20120402/NEWS01/704029947/0/News05/Hope-for-a-bright-future>.

25. See *id.*

26. Elizabeth Ann Kronk, *Alternative Energy Development in Indian Country: Lighting the Way for the Seventh Generation*, 46 IDAHO L. REV. 449, 456 (2010); NAT’L WILDLIFE FED’N, THE NEW ENERGY FUTURE IN INDIAN COUNTRY: CONFRONTING CLIMATE CHANGE, CREATING JOBS, AND CONSERVING NATURE 5 (2010), http://www.nwf.org/~media/PDFs/Global-Warming/Reports/03-23-10_NWF_TribalLands_LoRes.ashx.

27. NAT’L WILDLIFE FED’N, *supra* note 26, at 4.

28. Kronk, *supra* note 26, at 456; see generally *The Origin Story and the Mythical History of the Jemez People*, *supra* note 1.

29. Navajo Nation Environmental Policy Act, NAVAJO NATION CODE ANN. tit. 4, § 902 (2012), available at <http://www.navajonationepa.org/Pdf%20files/NN%20EnvPolicy.pdf>.

30. *Id.* § 903(A).

scribed its peoples' objective as "fulfill[ing] the role of caretakers of the land as their ancestors did."³¹

Tribal renewable energy also helps to secure Native Nations' long-term survival.³² Reportedly, climate change disproportionately affects Native Nations.³³ Numerous Native Nations must cope with the fish and wildlife species that have been part of their communities since "time immemorial" disappearing and altering the nation's sustenance.³⁴ Furthermore, some communities, like the Inuit in Alaska, have begun to experience physical changes to their homelands because of rising sea levels overtaking the coastline.³⁵ Tribal renewable energy enables Native Nations to develop their economies while also realizing their traditional duties and protecting their lands.

III. TRIBAL RENEWABLE ENERGY CHALLENGES: WATER SUPPLY

Although ripe with potential, tribal renewable energy often depends on water.³⁶ Even the least exhaustive option imposes additional burdens on fresh water sources.³⁷ Many sources already serve state-permitted water users.³⁸ Regardless, Native Nations can secure a paramount claim to water under federal water rights doctrines.³⁹ Their ability to use reserved water rights, however, depends upon the scope and quantity of their reserved federal water rights.⁴⁰

A. RENEWABLE ENERGY AS AN ADDITIONAL USE OF SCARCE WATER

Tribal renewable energy imposes an additional demand on scarce water resources.⁴¹ Water is rare, only renews in limited quantities throughout the hydrological process, and already caters to many life-sustaining functions.⁴² Although 70% of the earth is water, only 2.5% is fresh water, 70% of which is

31. *Quinault Indian Nation - 2011 Project*, U.S. DEPT OF ENERGY, http://apps1.eere.energy.gov/tribalenergy/projects_detail.cfm/project_id=185 (last visited Oct. 12, 2013).

32. See NAT'L WILDLIFE FED'N, *supra* note 26, at 17.

33. *Id.* at 2.

34. *United States v. Adair*, 478 F. Supp. 336, 343 (D. Or. 1979); Kronk, *supra* note 26, at 452.

35. Kronk, *supra* note 26, at 455.

36. See Leonard, *supra* note 6, at 614.

37. See discussion *infra* Part III.A.

38. See Gina McGovern, Note, *Settlement or Adjudication: Resolving Indian Reserved Rights*, 36 ARIZ. L. REV. 195, 196 (1994); see also Richard B. Collins, *The Future Course of the Winters Doctrine*, 56 U. COLO. L. REV. 481, 481 (1985).

39. See discussion *infra* Part III.B.

40. See discussion *infra* notes 160-197 and accompanying text.

41. See Chambers & Echohawk, *supra* note 12, at 454; Leonard, *supra* note 6, at 635; Storey, *supra* note 8, at 179.

42. See John A. Folk-Williams, *The Use of Negotiated Agreements to Resolve Water Disputes Involving Indian Rights*, 28 NAT. RESOURCES J. 63, 64 (1988); Christopher L. Kukk & David A. Deese, *At the Water's Edge: Regional Conflict and Cooperation over Fresh Water*, 1 UCLA J. INT'L L. & FOREIGN AFF. 21, 27 (1996).

in the ice caps.⁴³ Accordingly, only 0.007% of all water is a fresh source that humans can access.⁴⁴ This scarce resource serves a variety of needs, with agriculture monopolizing most fresh water.⁴⁵ Water is even scarcer in locations likely to host a renewable project.⁴⁶ For instance, water accounts for only 0.2% and 0.3% of New Mexico and Arizona, respectively.⁴⁷

In general, renewable energy water consumption is on par with, or exceeds, water consumption for fossil fuels-generated energy.⁴⁸ Therefore, water scarcity might negate the gains of sustainable energy.⁴⁹ Geothermal and hydroelectric power require the most water.⁵⁰ Solar energy can use more water than coal or nuclear energy.⁵¹ Solar photovoltaic systems, however, require less water than traditional power sources.⁵²

Even if solar energy consumes less water than alternative energy sources, it still depletes a limited resource.⁵³ Solar energy requires large quantities of water both for constructing the facility and for cleaning the panels during operation.⁵⁴ On the scale of a project like the one Jemez Pueblo proposed, the operation would involve 16,689 gallons of water per megawatt per year (about 59,000 gallons for Jemez Pueblo's 3.5 megawatt project).⁵⁵ At the very minimum, the project would use water for maintaining the solar panels with four washings per

43. Leah Sandbank, Note, *Dirty Laundry: Why International Measures to Save the Global Clean Water Supply Have Failed*, 13 FORDHAM ENVTL. L.J. 165, 169 (2001); *Human Appropriation of the World's Fresh Water Supply*, UNIV. OF MICH.: GLOBAL CHANGE (Jan. 4, 2006), http://www.globalchange.umich.edu/globalchange2/current/lectures/freshwater_supply/freshwater.html.

44. UNIV. OF MICH., *supra* note 43.

45. Sandbank, *supra* note 43, at 170.

46. See H. David Gold & Jason Bass, *The Energy-Water Nexus: Socioeconomic Considerations and Suggested Legal Reforms in the Southwest*, 50 NAT. RESOURCES J. 563, 567 (2010).

47. *How Much of Your State is Wet?*, U.S. GEOLOGICAL SURVEY, <http://ga.water.usgs.gov/edu/wetstates.html> (last visited Nov. 2, 2012).

48. Gerard Wynn, *Renewable Energy Water Use May Be Higher Than Conventional Methods*, HUFFINGTON POST (Mar. 15, 2012, 5:12 AM), http://www.huffingtonpost.com/2012/03/15/renewable-energy-water-use_n_1347054.html; *Water in a Low-Carbon Economy: Resource Scarcity, Climate Change and Business in a Finite World*, STOCKHOLM ENV'T INST. (2012), <http://www.sei-international.org/mediamanager/documents/Publications/Climate-mitigation-adaptation/SEI-PB-2012-3C-Water-for-Energy.pdf>.

49. See STOCKHOLM ENV'T INST., *supra* note 48.

50. Diana Glassman et al., *The Water-Energy Nexus*, WORLD POL'Y INST. 13, 15-16 (Mar. 2011), http://www.worldpolicy.org/sites/default/files/policy_papers/THE%20WATER-ENERGY%20NEXUS_0.pdf.

51. *Id.* at 5.

52. Wendy Wilson et al., *Burning Our Rivers: The Water Footprint of Electricity*, RIVER NETWORK 28-29 (Apr. 2012), http://www.rivernetwork.org/sites/default/files/BurningOurRivers_0.pdf.

53. See Leonard, *supra* note 6, at 634-35.

54. U.S. DEP'T OF ENERGY, FES 12-24 DOE/EIS-0403, FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (PEIS) FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES (2012), http://solareis.anl.gov/documents/fpeis/Solar_FPEIS_Volume_5.pdf; Stephanie Tavares, *Dirty Detail: Solar Panels Need Water*, LAS VEGAS SUN, Sept. 18, 2009, <http://www.lasvegassun.com/news/2009/sep/18/dirty-detail-solar-panels-need-water/>.

55. Belone et al., *supra* note 23, at 13-14 (describing initially a 4 megawatt design); Tavares, *supra* note 54.

year.⁶⁶ For another solar photovoltaic project, the *Las Vegas Sun* reported that in desert areas, like Las Vegas or New Mexico, companies wash their panels more than advertised because of the dirt build-up that reduces their efficiency by about 3%.⁶⁷ A block of solar panels could use more water per year than a residential block.⁶⁸ Such an amount is relatively small compared to the total withdrawals from the Rio Jemez.⁶⁹ Nevertheless, while the sun represents a renewable resource, fresh water might not regenerate quickly enough to sustain the demands of renewable energy projects.⁶⁹ Thus, Native Nations should be aware of their projects' minimal impacts on water. Because all renewable energy projects require some water, Native Nations must find a source to supply their new demand.⁶¹

B. SOURCES OF WATER RIGHTS

Based on already existing allocations of water, Native Nations hoping to pursue renewable energy projects likely need to displace current users.⁶² Although most users secure their rights under state law through the riparian doctrine or prior appropriation theory, Native Nations can base their claims on a federal reservation of water.⁶³ These reserved rights often provide Native Nations superiority over state users because they pre-date state permitted claims.⁶⁴ Thus, water rights under federal law may provide Native Nations the means to achieve their renewable projects if they can navigate the uncertainties of federal common law.⁶⁵

States maintain primary responsibility for allocating water.⁶⁶ Each state has its own laws governing water distribution, usually modeled after either the riparian or prior appropriation systems.⁶⁷ Generally, eastern states adopt the

56. PUEBLO OF JEMEZ DEP'T OF RES. PROF., DRAFT ENVIRONMENTAL ASSESSMENT FOR 3.5-MEGAWATT SOLAR GENERATING FACILITY AT THE PUEBLO OF JEMEZ SANDOVAL COUNTY, NEW MEXICO 3 (2009).

57. Tavares, *supra* note 54.

58. *Id.*

59. CUBA SOIL & WATER CONSERVATION DIST., RIO PUERCO & RIO JEMEZ SUBREGIONAL WATER PLAN 2000-2050 12-10-14 (2004), <http://www.ose.state.nm.us/water-info/NMWaterPlanning/regions/MiddleRioGrande/SEC12-10-QuantifyingFutureWaterDemand.pdf>.

60. See Kukuk & Deese, *supra* note 42, at 27.

61. See Storey, *supra* note 8, at 179.

62. See Leonard, *supra* note 6, at 613-14.

63. See Robert T. Anderson, *Indian Water Rights, Practical Reasoning, and Negotiated Settlements*, 98 CALIF. L. REV. 1133, 1139 (2010).

64. See, e.g., Leonard, *supra* note 6, at 617; see also Chambers & Echohawk, *supra* note 12.

65. See Judith V. Royster, *A Primer on Indian Water Rights: More Questions than Answers*, 30 TULSA L.J. 61, 63 (1994); see also Storey, *supra* note 8, at 180.

66. CHRISTINE A. KLEIN ET AL., NATURAL RESOURCES LAW: A PLACE-BASED BOOK OF PROBLEMS AND CASES 843 (2d ed. 2009).

67. Christopher L. Len, *Synthesis - A Brand New Water Law*, 8 U. DENV. WATER L. REV. 55, 55-56 (2004).

riparian doctrine of proximity to water, while western states opt for the prior appropriation doctrine of first-come, first-serve.⁶⁸

The riparian system confers water rights based on appurtenance to a water source.⁶⁹ The eastern states adopted the riparian doctrine from England.⁷⁰ Under this system, an individual must buy property connected to the water source to acquire the rights.⁷¹ Many states, however, have begun implementing a modified riparian system requiring water users to acquire a permit.⁷² Generally, under the regulatory riparian system, state agencies distribute a common property right.⁷³ The water user must apply for a license from the state agency.⁷⁴ The agency evaluates the collective uses of the water sources and determines which applicants merit a permit.⁷⁵ This regulated riparian method allows permits for non-appurtenant land.⁷⁶ The permit user can only receive unallocated water, and often for only a temporary period.⁷⁷ Thus, Native Nations in a riparian state might be able to obtain water permits for their renewable projects for a temporary time period, but have no guarantee and must compete with other possible users.⁷⁸

Alternatively, the prior appropriation doctrine dominates most western states.⁷⁹ In the late nineteenth century, the federal government encouraged exploration and exploitation of resources, as exemplified by the 1872 Mining Act.⁸⁰ Under this system, the government prompted miners to discover resources by granting them land for locating and patenting a claim to a valuable mineral resource.⁸¹ This philosophy of resource exploitation contributed to the water right allocation system in the western United States.⁸² Particularly, mining was profitable because the miners possessed the mineral rights without the burdens of land ownership.⁸³ In addition, with a priority system for the first user, miners did not have to worry as much about subsequent upstream users diverting all the water.⁸⁴ Similarly, the federal government's desire to promote

68. *Id.*

69. Joseph W. Dellapenna, *The Evolution of Riparianism in the United States*, 95 MARQ. L. REV. 53, 65 (2011).

70. *Id.* at 64.

71. *See id.* at 65.

72. Dellapenna, *supra* note 69, at 85; KLEIN ET AL., *supra* note 66, at 844.

73. *See* Dellapenna, *supra* note 69, at 54; Olivia S. Choe, *Appurtenancy Reconceptualized: Managing Water in an Era of Scarcity*, 113 YALE L.J. 1909, 1912 (2004).

74. Dellapenna, *supra* note 69, at 54-55.

75. *Id.* at 87-88.

76. *See* Choe, *supra* note 73, at 1912.

77. *See* Dellapenna, *supra* note 69, at 87-88.

78. *See id.*

79. Reed D. Benson, *Alive but Irrelevant: The Prior Appropriation Doctrine in Today's Western Water Law*, 83 U. COLO. L. REV. 675, 676 (2012).

80. 30 U.S.C. § 22 (2012); Michael Graf, *Application of Takings Law to the Regulation of Unpatented Mining Claims*, 24 ECOLOGY L.Q. 57, 59 (1997).

81. Graf, *supra* note 80, at 60.

82. Dana Smith, Note, *Doctrinal Anachronism?: Revisiting the Practicably Irrigable Acreage Standard in Light of International Law for the Rights of Indigenous Peoples*, 22 ARIZ. J. INT'L & COMP. L. 691, 694 (2005).

83. Leonard, *supra* note 6, at 615.

84. *Id.*

agriculture in the United States also contributed to devising the prior appropriation doctrine.⁸⁵ Farmers could hardly pursue agriculture under the riparian system because in the western states, surface water was too far away to be put to use without an irrigation system.⁸⁶

Under the prior appropriation doctrine, the first person to put a quantity of water to a beneficial purpose has the senior right to the continued use of that water.⁸⁷ During droughts, senior users get first priority on existing flows and can exhaust all the water to satisfy their right.⁸⁸ Consequently, a junior user might not receive any water regardless of his potential superior purpose.⁸⁹ If the senior appropriator, however, is not currently using the water beneficially, then the junior user can appropriate it.⁹⁰ Although many Native Nations may have used the water prior to settlers in the west, they would have a hard time staking a senior claim for the water because they might not be able to prove a continual beneficial use and likely do not have the required state permits.⁹¹ Thus, native nations pursuing renewable energy projects likely cannot secure a dependable supply of water under the prior appropriation doctrine and would also have to compete with other users under the regulatory riparian system.

Rather than having to ascertain their rights from the states, Native Nations can redeem their water rights under federal law.⁹² These federal water rights are often superior to those of state-permitted users, partially because of their date of reservation.⁹³ In the case of a conflict, federal reserved water rights can displace state users.⁹⁴ The federal government recognized a Native Nation's water rights as they existed prior to conquest, known as aboriginal rights.⁹⁵ Aboriginal rights can include water rights to sustain traditional practices such as fishing.⁹⁶ Such rights can also support pre-conquest domestic activities like irrigation for the Pueblos.⁹⁷ In expanding upon Indian-reserved rights, the Supreme Court also recognized reserved water rights for non-traditional practices, such as activities to sustain the treaty-created Indian homelands.⁹⁸ The reservation of water for broader purposes is known as *Winters* rights, after *United States v. Winters*.⁹⁹ Although the concept is still evolving, Native Nations

85. See KLEIN ET AL., *supra* note 66, at 843.

86. See *id.*

87. Alexandra B. Klass, *Property Rights on the New Frontier: Climate Change, Natural Resource Development, and Renewable Energy*, 38 *ECOLOGY L.Q.* 63, 65 (2011).

88. Smith, *supra* note 82, at 694-95.

89. *Id.*

90. Collins, *supra* note 38, at 481.

91. See Anderson, *supra* note 63, at 1137.

92. McGovern, *supra* note 38, at 196.

93. See Royster, *supra* note 65, at 63.

94. *Id.*; see Martha C. Franks, *The Uses of the Practicably Irrigable Acreage Standard in the Quantification of Reserved Water Rights*, 31 *NAT. RESOURCES J.* 549, 551 (1991).

95. See Richard W. Hughes, *Indian Law*, 18 *N.M. L. REV.* 403, 437 (1988).

96. See *United States v. Winans*, 198 U.S. 371, 381-82 (1905).

97. See Hughes, *supra* note 95, at 437.

98. See *Winters v. United States*, 207 U.S. 564, 565 (1908).

99. See *id.*

may be able to realize superior claims to water under the *Winters* doctrine for their renewable projects.¹⁰⁰

The Supreme Court first recognized a separate doctrine of water rights for native nations for their traditional uses of water.¹⁰¹ A native nation can establish limited water rights under the aboriginal doctrine, which reserves water for Native Nations for traditional practices.¹⁰² When the conquerors adopted Native Nations as their “wards,”¹⁰³ they did not abrogate the water rights that they then possessed and continued to use.¹⁰⁴

In the 1905 foundational case *United States v. Winans*, the federal government sued a state-permitted water user on behalf of its ward, the Yakima Nation of Indians.¹⁰⁵ Two brothers, the Winans, received a license from Washington State to operate fish wheels on the Columbia River.¹⁰⁶ Through their fish wheels and operations, the brothers blocked the Yakima Nation from their traditional access to fish.¹⁰⁷ The federal government endeavored to restore the Yakima’s privileges.¹⁰⁸ Modern technology had left the Yakima and other native peoples without fish.¹⁰⁹

Winans emblemized the conflict between industrialization and traditional practices, while also pitting Native Nations against state-permitted businesses.¹¹⁰ As the trustee of the Yakima (and many other native nations facing a loss of their ways), the United States argued that the state-granted water rights conflicted with the Yakima’s aboriginal rights.¹¹¹ The wheels effectively eliminated the common rights the Yakima and others had to fish.¹¹² The federal government had reserved these rights in a treaty founding a reservation for the Yakima Nation “not [as] a grant of rights to the Indians, but [rather as] a grant of right from them, – a reservation of those not granted.”¹¹³ According to the government’s interpretation, the treaty never abrogated the Yakima’s fishing rights.¹¹⁴

100. See Anderson, *supra* note 63, at 1136–37, 1139–44.

101. See *Winans*, 198 U.S. at 382–83.

102. Taylor Henderson, *Five Tribes’ Water Rights: Examining the Aamodt Adjudications’ Mechem Doctrine to Predict Tribal Water Rights Litigation Outcomes in Oklahoma*, 36 AM. INDIAN L. REV. 125, 131 (2012); Hughes, *supra* note 95, at 437–38.

103. See *Cherokee Nation v. Georgia*, 30 U.S. 1, 4 (1831).

104. See Mary Christina Wood, *The Tribal Property Right to Wildlife Capital (Part II): Asserting A Sovereign Servitude to Protect Habitat of Imperiled Species*, 25 VT. L. REV. 355, 432 (2001).

105. *Winans*, 198 U.S. at 377.

106. Judy Dworkin, *Indian Water Rights, Relevant Case Law*, SACKS TIERNEY (Oct. 2011), <http://www.sackstierney.com/articles/indian-water-rights.htm>.

107. *Id.*

108. *Winans*, 198 U.S. at 382–83.

109. Michael C. Blumm & James Brunberg, *‘Not Much Less Necessary . . . than the Atmosphere They Breathed’: Salmon, Indian Treaties, and the Supreme Court—A Centennial Remembrance of United States v. Winans and Its Enduring Significance*, 46 NAT. RESOURCES J. 489, 508 (2006).

110. See *id.* at 489.

111. See *Winans*, 198 U.S. at 380.

112. Blumm & Brunberg, *supra* note 109, at 529–30.

113. *Winans*, 198 U.S. at 381; Henderson, *supra* note 102, at 131.

114. *Winans*, 198 U.S. at 381; see also Blumm & Brunberg, *supra* note 109, at 530.

The Court agreed with the government.¹¹⁵ The Court reasoned that any ambiguous language must be construed in favor of the Indians because of their unequal bargaining position.¹¹⁶ Accordingly, the treaty's silence on fishing rights indicated that those rights would continue to endure.¹¹⁷ In the eight-to-one majority opinion, Justice McKenna acknowledged that the Yakima Nation had "a servitude upon every piece of land as though described therein" to accomplish their fishing rights.¹¹⁸ Consequently, those treaty-protected rights were valid against the federal government, the states, and any of their grantees.¹¹⁹

By recognizing a right to the fish, the Court also acknowledged a reservation of water to sustain the fish.¹²⁰ *Winans* confirmed water rights for traditional activities regardless of the language in the treaties.¹²¹ To achieve water rights based on the *Winans* theory, a native nation must demonstrate that the activity requiring water conforms to a traditional practice.¹²² Although the rights date from "time immemorial,"¹²³ they only exist to fulfill that traditional practice.¹²⁴ Accordingly, native nations have the rights to preserve a resource with the necessary amount of water.¹²⁵ *Winans* water rights for fishing, therefore, cannot serve another pursuit.¹²⁶ *Winans* rights do not afford water for modern needs, such as renewable energy.¹²⁷

During the twentieth century, however, at least one court recognized arguably broader aboriginal water rights for the Pueblos.¹²⁸ Pueblos are an "ancient people whose history goes back into the farthest reaches of time."¹²⁹ Although Spain recognized the Pueblos as sovereigns, Mexico identified them as ordinary citizens.¹³⁰ Upon acquiring the territory that was home to the Pueblos, the

115. See *Winans*, 198 U.S. at 381-82, 384.

116. See *id.* at 380-81.

117. See *id.*

118. *Id.* at 381.

119. *Id.* at 381-82.

120. See Blumm & Brunberg, *supra* note 109, at 538-39.

121. See *Winans*, 198 U.S. at 381-84.

122. See Wood, *supra* note 104, at 365-66.

123. See *United States v. Adair*, 723 F.2d 1394, 1399 (9th Cir. 1983); see generally Daniel G. Kelly, Jr., Note, *Indian Title: The Rights of American Natives in Lands They Have Occupied Since Time Immemorial*, 75 COLUM. L. REV. 655, 655 (1975) (stating non-treaty possessory rights exist based on continuous occupation since time immemorial and that possession under the treaties also considers Indian habits and modes of life).

124. See Hope M. Babcock, *Reserved Indian Water Rights in Riparian Jurisdictions: Water, Water Everywhere, Perhaps Some Drops for Us*, 91 CORNELL L. REV. 1203, 1227 (2006).

125. See *Winans*, 198 U.S. at 384; see also Peter C. Monson, Case Note, *United States v. Washington (Phase II): The Indian Fishing Conflict Moves Upstream*, 12 ENVTL. L. 469, 477 (1982) (stating the "reserved rights doctrine" implicitly provides the right to protect fishing habitat with the right to take fish).

126. See generally *Winans*, 198 U.S. at 382-83.

127. See Babcock, *supra* note 124, at 1227.

128. See *New Mexico ex rel. Reynolds v. Aamodt*, 618 F. Supp. 993, 1000 (D.N.M. 1985) (explaining the Pueblo's rights to the Rio de Lucero), *motion granted*, 582 F. Supp. 2d 1313 (2007).

129. Robert L. Lucero, Jr., Note, *State v. Romero: The Legacy of Pueblo Land Grants and the Contours of Jurisdiction in Indian Country*, 37 N.M. L. REV. 671, 672 (2007) (citation omitted).

130. *Aamodt*, 618 F. Supp. at 1000; see also Lucero, *supra* note 129, at 675-76.

United States had to decide whether it would treat them as “wards,” similar to its treatment of other indigenous peoples, or govern them as new citizens along with the rest of the new inhabitants from Mexico.¹³¹ The federal government perceived the Pueblos as different from other native peoples because they held land in fee simple and had homelands.¹³²

The United States struggled to categorize the Pueblos in its web of Indian policies.¹³³ An early abrogated Supreme Court case, *United States v. Joseph*, determined the Pueblos were not entitled to federal protection.¹³⁴ However, in 1910 Congress passed the New Mexico Enabling Act, granting New Mexico statehood.¹³⁵ Subsequently, the Supreme Court determined the Pueblos merited federal protection in *United States v. Sandoval*.¹³⁶

Consequently, the United States District Court for the District of New Mexico in *State of N.M. ex rel. Reynolds v. Aamodt* tackled several issues, including whether the Pueblos had aboriginal water rights.¹³⁷ Because the Pueblos used irrigation systems prior to conquest, the District of New Mexico held that their domestic water use constituted a traditional practice protected under the aboriginal water reservation doctrine.¹³⁸ In 1985, Nambe Pueblo secured its water rights for domestic and irrigation needs after nine years in court.¹³⁹ These Pueblo aboriginal water rights, like *Winans* rights, probably cannot supply water for renewable energy.¹⁴⁰ Nonetheless, *Aamodt* demonstrates the possibility for a court to consider broader traditional uses, especially for the Pueblos.¹⁴¹ A reservation of water for aboriginal practices, whether fishing or irrigation, endures from time immemorial, but the water rights are subordinate to the exercise.¹⁴²

Three years after the *Winans* Supreme Court recognized that federal Indian land reservations were not a grant *to* Native Nations, but *from* them, it addressed the issue of a reservation of water rights for non-traditional practices.¹⁴³ The federal government reserved water rights for Native Nations through initial treaties, as first formally recognized in the case *Winters v. United States*.¹⁴⁴ In this 1908 case, the United States, as trustee for the Gros Ventre and Assiniboing bands, sued Henry Winters and his affiliate companies.¹⁴⁵

131. *Aamodt*, 618 F. Supp. at 1001; see also Lucero, *supra* note 129, at 677.

132. Lucero, *supra* note 129, at 677.

133. *See id.*

134. *United States v. Joseph*, 94 U.S. 614, 617-18 (1876); see also *id.* at 678.

135. Henderson, *supra* note 102, at 135.

136. *United States v. Sandoval*, 231 U.S. 28, 47 (1913); see also Lucero, *supra* note 129, at 678.

137. *New Mexico ex rel. Reynolds v. Aamodt*, 618 F. Supp. 993, 1005 (D.N.M. 1985).

138. *Id.* at 1009-10.

139. *Id.*

140. *See id.* at 1010.

141. *See id.*

142. *See Blumm & Brunberg, supra* note 109, at 538-40.

143. *United States v. Winans*, 198 U.S. 371, 381 (1905); see *Winters v. United States*, 207 U.S. 564, 576-78 (1908).

144. *Winters*, 207 U.S. at 576-78; see also A. Dan Tarlock, *Tribal Justice and Property Rights: The Evolution of Winters v. United States*, 50 NAT. RESOURCES J. 471, 477-82 (2010).

145. *Winters*, 207 U.S. at 565.

Winters owned land upstream from the reservation on the Milk River and diverted the river's water.¹⁴⁶ Using the prior appropriation theory of first-in-time, Winters and his colleagues claimed a superior right to the water.¹⁴⁷

The United States challenged Winters' claim on the basis that it had reserved water for the bands.¹⁴⁸ The United States argued that it granted a "tract of land" in 1888 to the Gros Ventre and Assiniboing peoples for them to become productive members of an agricultural society, and impliedly included water rights as a means to achieve this goal in the treaty.¹⁴⁹ The federal government argued that this reservation of water independently provided native nations water rights.¹⁵⁰

In accepting this theory, the Court reasoned the tribes would never have abdicated their land without receiving something in return from the federal government.¹⁵¹ Even if the treaties did not delineate water rights, the Court determined the language of the treaties was ambiguous and therefore, applied a canon of construction dictating that ambiguities be construed in favor of the tribes.¹⁵² Through this recognition, the Court carved out an exception to state appropriation laws.¹⁵³ The case created an opportunity for Native Nations to establish superior water rights as long as they had a treaty with the federal government for a permanent homeland.¹⁵⁴

Even if Native Nations did not have a treaty, *Winters* established a reservation of water rights for nations pursuant to any federal policy promoting an Indian homeland.¹⁵⁵ Under this logic, in the adjudication of the Tesuque & Nambe/Pojoaque Stream System in *Aamodt*, the New Mexico District Court determined that Nambe Pueblo had *Winters* water rights because an executive order designated a reservation of land, and therefore a reservation of water.¹⁵⁶ The executive order recognized that Spain reserved certain rights for the Pueblos and that the United States honored that reservation.¹⁵⁷ Because the United States recognized the Pueblos as its wards, the district court reasoned that the Treaty of Guadalupe Hidalgo, which designated land for the Pueblos, could also reserve water rights for them.¹⁵⁸ So long as a Native Nation has some

146. *Mission 2012: Clean Water*, MASS. INST. OF TECH., <http://web.mit.edu/12.000/www/m2012/finalwebsite/problem/waterrights.shtml> (last visited Nov. 8, 2013).

147. *Id.*

148. *See Winters*, 207 U.S. at 565-67; *see also* Robert T. Anderson, *Indian Water Rights and the Federal Trust Responsibility*, 46 NAT. RESOURCES J. 399, 409-10 (2006).

149. *Winters*, 207 U.S. at 565-67.

150. *See Winters*, 207 U.S. at 565-67; *see also* Tarlock, *supra* note 144, at 477-82.

151. *Winters*, 207 U.S. at 576.

152. *Id.*; *see also* Anderson, *supra* note 63, at 1141.

153. *See Winters*, 207 U.S. at 576-77.

154. Anderson, *supra* note 148, at 411; *see also* *Hearing on Indian Water Rights*, *supra* note 10, at 28 (indicating that tribal water rights are "federal enclaves").

155. *See generally* Royster, *supra* note 65, at 71.

156. *New Mexico ex rel. Reynolds v. Aamodt*, 618 F. Supp. 993, 1010 (D.N.M. 1985).

157. *Id.* at 1000-01.

158. *Id.*

kind of federal agreement reserving land for it, the nation should be able to establish *Winters* rights.¹⁵⁹

While a Native Nation seeking a claim for scarce water for a renewable project ought to try to establish its federal water rights under the *Winters* doctrine, case precedent is divided as to whether *Winters* rights can support modern water uses.¹⁶⁰ Within a short three years' time, the Supreme Court extended water rights from traditional practices to non-traditional practices, but within one hundred years' time, it has failed to explain the scope of non-traditional practices.¹⁶¹ The implicit reservation of water with a federal agreement must accompany a reservation of land to promote a federal objective.¹⁶² The ambiguity regarding the scope of the water rights resides in the understanding of the federal purpose.¹⁶³ While each treaty or agreement might be unique, federal land reservations generally aimed to sustain Indian homelands.¹⁶⁴ The uncertainty about the breadth of *Winters* rights rests with understanding which water uses sustain the homelands.¹⁶⁵

At the time of *Winters*, the Supreme Court conceived of the federally-created homelands as agricultural societies.¹⁶⁶ An agricultural purpose, however, may no longer be reasonable for sustaining these communities.¹⁶⁷ The Court also believed the accords endowed nations with a reservation of water for "present and future needs."¹⁶⁸ Subsequent courts have struggled to determine whether the idea of "present and future" uses only accounts for the original purpose evolved for modern day use, or whether it can include modern purposes as well.¹⁶⁹ Several courts, including the Ninth Circuit in *United States*

159. See generally *Winters v. United States*, 207 U.S. 564, 576-77 (1908); Anderson, *supra* note 148, at 408.

160. See generally Royster, *supra* note 65, at 71-72. See also Ruth Langridge, *The Right to Habitat Protection*, 29 PUB. LAND & RESOURCES L. REV. 41, 47 (2008); Jessica Lowrey, Note, *Home Sweet Home: How the 'Purpose of the Reservation' Affects More Than Just the Quantity of Indian Water Rights*, 23 COLO. J. INT'L ENVTL. L. & POLY 201, 203-04 (2012).

161. See generally Royster, *supra* note 65, at 71-72. See also discussion *infra* notes 162-182 and accompanying text.

162. See generally *Winters*, 207 U.S. at 576. See also Nicole C. Salamander, *A Half Full Circle: The Reserved Rights Doctrine and Tribal Reacquired Lands*, 12 U. DENV. WATER L. REV. 333, 343 (2009).

163. See Lowrey, *supra* note 160, at 203-05.

164. See *Winters*, 207 U.S. at 566, 575-77; see also Storey, *supra* note 8, at 193.

165. See Robert T. Anderson, *Indian Water Rights: Litigation and Settlements*, 42 TULSA L. REV. 23, 26-27 (2006).

166. *Winters*, 207 U.S. at 576; see also Hughes, *supra* note 95, at 434.

167. Erica Shively, Note, *The Future of Quantifying Tribal Water Rights in North Dakota*, 84 N.D. L. REV. 455, 466 (2008); see also Babcock, *supra* note 124, at 1226 ("Beginning with *Winters*, federal and state courts have almost universally agreed that the purpose of Indian reservations is to provide places where tribes can sustain themselves."); Chambers & Echohawk, *supra* note 12, at 460 ("In addition, irrigation is not the exclusive measure of reserved rights, where a reservation requires other uses of water to fulfill its purposes and function as a homeland for a tribe.")

168. *United States v. Ahtanum Irrigation Dist.*, 236 F.2d 321, 327 (9th Cir. 1956); *Winters*, 207 U.S. at 577; Anderson, *supra* note 148, at 418.

169. *Ahtanum*, 236 F.2d at 327; Anderson, *supra* note 148, at 418.

v. Adair, have rejected the narrow reading and determined that the federal government did not create reservations solely for agriculture.¹⁷⁰

The Ninth Circuit is leading the way to a broader interpretation of Indian water rights for non-traditional purposes.¹⁷¹ It recognized that a treaty creating a reservation for "present and future needs" should not be read to limit the reservation's existence to the realities at the time of the treaty.¹⁷² Courts should not read the purpose of a reservation in a manner that disfavors the Native Nation because such reading would conflict with the interpretive canon of construction the Court applied in both *Winans* and *Winters*.¹⁷³ While agriculture once represented the means to be a productive society, this limited interpretation of reserved rights could relegate Native Nations to living in the past.¹⁷⁴

Even if agriculture was the primary purpose for the reservation of water rights, an additional federal purpose could be enough to secure water for an energy project.¹⁷⁵ Many of the treaties provided a second federal goal, such as "other pursuits," that buttressed Native Nations' claims for use of their water rights beyond agriculture.¹⁷⁶ For example, the Ninth Circuit, although vacated on other grounds and interpreting the treaty for other natural resource activities, recognized the "other pursuits" language in the treaty as including non-static purposes.¹⁷⁷

Although the treaties and case law are susceptible to various interpretations, the fact that other areas of federal water law have clearly distinguished between primary and secondary purposes for water rights while federal Indian water law has not should further substantiate any claim that a secondary purpose yields water rights.¹⁷⁸ In *United States v. New Mexico*, the Supreme Court considered the federal government's allocation of water to sustain the federally-protected Gila National Forest for public enjoyment.¹⁷⁹ The Court recognized the legislation's primary purpose for the reservation was to preserve timber, and it perceived wildlife preservation and other activities as only secondary aims.¹⁸⁰ The Court only designated federal water rights for the primary purpose, while concluding that state law would govern water rights for the other purposes.¹⁸¹ Because courts have not extended *United States v. New Mexico's* reasoning to Indian reserved water rights,¹⁸² a secondary purpose should suffice for the Native Nation to have access to reserved water. Thus, a *Winters* reser-

170. *United States v. Adair*, 723 F.2d 1394, 1409 (9th Cir. 1983); Anderson, *supra* note 165, at 28.

171. *See generally Adair*, 723 F.2d at 1409.

172. *Ahtanum*, 236 F.2d at 327; Anderson, *supra* note 148, at 418.

173. *See Winters*, 207 U.S. at 576-77; *United States v. Winans*, 198 U.S. 371, 380-81 (1905).

174. *See* Anderson, *supra* note 148, at 418.

175. *See generally Salamander*, *supra* note 162, at 344.

176. Storey, *supra* note 8, at 191-92 (citing *United States v. Finch*, 548 F.2d 822, 832 (9th Cir. 1976), vacated on other grounds, 433 U.S. 676 (1977)).

177. *See id.*

178. *See Royster*, *supra* note 65, at 71-72.

179. *United States v. New Mexico*, 438 U.S. 696, 696 (1978).

180. *Id.* at 707-08.

181. *Id.* at 716.

182. Royster, *supra* note 65, at 72.

vation of water might be able to sustain a claim for superior water rights for a renewable energy project.

C. QUANTITY OF WATER

Similar to determining its water rights, the Native Nation also must labor to quantify the amount of water needed for its renewable project.¹⁸³ Native Nations securing their water rights under the *Winters* doctrine usually reserve as much water as needed to fulfill the federal purpose.¹⁸⁴ To date, the only quantification standard that the Supreme Court itself has used, although it has affirmed others, is the “practicably irrigable acreage” (“PIA”) measure¹⁸⁵ that would likely be useless for quantifying water for renewable energy. In 1963, in *Arizona v. California*, the Supreme Court concluded that Native Nations reserved water in the amount of the PIA.¹⁸⁶ This calculation involves a “benefit/cost analysis” of the land’s ability to sustain crops, irrigation, and profitability.¹⁸⁷

Even though the PIA standard provides little guidance for quantifying water for modern needs, it is an optional evaluation.¹⁸⁸ In the pivotal 1988 case, *In re Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys.*, the Wyoming Supreme Court concluded that the state retained “oversight of reserved water rights” and could defer to an expert’s quantification.¹⁸⁹ Accordingly, the court deferred to Wyoming’s special master who determined the purpose for the reservation and calculated the necessary amount of water.¹⁹⁰ Although the Supreme Court of Wyoming abrogated its decision on other grounds, the U.S. Supreme Court affirmed the deference to a special master to calculate the amount of water rights.¹⁹¹

183. See Charles Carvell, *Indian Reserved Water Rights: Impending Conflict or Coming Rapprochement Between the State of North Dakota and North Dakota Indian Tribes*, 85 N.D. L. REV. 1, 25 (2009).

184. *Cappaert v. United States*, 426 U.S. 128, 138 (1976); see also Chambers & Echohawk, *supra* note 12, at 453 (quoting *Arizona v. California*, 373 U.S. 546, 600–01 (1963)) (providing an example where the Supreme Court upheld a reservation to supply water for “all practically irrigable acreage”).

185. Langridge, *supra* note 160, at 46; Jennele Morris O’Hair, *The Federal Reserved Rights Doctrine and Practicably Irrigable Acreage: Past, Present, and Future*, 10 BYU J. PUB. L. 263, 273 (1996); see *Arizona v. California*, 373 U.S. 546 (1963). See generally Leonard, *supra* note 6, at 623.

186. *Arizona*, 373 U.S. at 600.

187. See Barbara A. Cosens, *The Measure of Indian Water Rights: The Arizona Homeland Standard, Gila River Adjudication*, 42 NAT. RESOURCES J. 835, 836 (2002); Franks, *supra* note 94, at 553.

188. Storey, *supra* note 8, at 198. See generally *In re Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys.*, 753 P.2d 76, 114 (Wyo. 1988) *aff’d*, *Wyoming v. United States*, 492 U.S. 406 (1989).

189. *In re Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys.*, 753 P.2d at 114.

190. See *id.* at 94.

191. *Wyoming*, 492 U.S. at 406.

Other state courts have followed suit and begun adopting different quantification methods.¹⁹² These state-level quantification standards can account for water used for modern purposes like renewable energy.¹⁹³ For instance, in 2001, *In re General Adjudication of All Rights to Use Water in Gila River System and Source*, the Arizona Supreme Court opted for a different quantification standard.¹⁹⁴ It rejected the PIA standard because it believed the Wind River Indian Reservation's federal purpose is broader than agriculture.¹⁹⁵ The *Gila River* approach effectively eliminates any efficiency and reliability for adjudicating water rights while liberating Native Nations to use their water rights beyond agricultural purposes.¹⁹⁶ Despite the boon that the *Gila River* quantification gives to Native Nations pursuing water for renewable energy, it is not controlling precedent and therefore, not reliable.¹⁹⁷

IV. WATER SETTLEMENTS: SUPPLY MEETS DEMAND

Despite the landmark *Winans* and *Winters* decisions over one-hundred years ago, Native Nations have had little actual access to their reserved water.¹⁹⁸ The unused reservation of water is known as "paper" water" because many Native Nations still lack the means for actually reaching and exploiting the water.¹⁹⁹ Native Nations' main options for securing their water rights include litigation, adjudication, and settlement.²⁰⁰ Water litigation is expensive and slow.²⁰¹ Adjudication can also last decades, as occurred with the Pojoaque case.²⁰² Alternatively, Native Nations can pursue a water settlement.²⁰³

Water settlements navigate many of the complexities of reserved water rights.²⁰⁴ In March 2012, the U.S. Senate Committee on Indian Affairs held a hearing about Indian water rights.²⁰⁵ According to the testimony at the hearing,

192. See Smith, *supra* note 82, at 692.

193. See, e.g., *In re Gen. Adjudication of All Rights to Use Water in Gila River Sys. & Source (Gila)*, 35 P.3d 68, 76 (Ariz. 2001). After Congress passed the McCarran Amendment in 1952, state courts have the authority to determine the scope and amount of federal Indian reserved water rights. 43 U.S.C. § 666 (2012); see also Scott B. McElroy & Jeff J. Davis, *Revisiting Colorado River Water Conservation District v. United States - There Must Be A Better Way*, 27 ARIZ. ST. L.J. 597, 599 (1995) (discussing the effect of the McCarran Amendment).

194. See *Gila*, 127 P.3d at 79.

195. *Id.* at 81.

196. See *id.*

197. See *id.*; Smith, *supra* note 82, at 692.

198. Smith, *supra* note 82, at 692.

199. Stephen A. Walker & Keri-Ann C. Baker, *Working with Native Americans on Water Issues*, AM. WATER WORKS ASSOC. 18 (May 2012), http://www.llw-law.com/files/presentations/Working_with_Native_Americans_on_Water_Issues_May_2012_A_WWA_00095817.PDF.

200. Shively, *supra* note 167, at 468.

201. *Id.*

202. See Olen Paul Matthews et al., *Marketing Western Water: Can A Process Based Geographic Information System Improve Reallocation Decisions?*, 41 NAT. RESOURCES J. 329, 341 (2001).

203. *Hearing on Indian Water Rights*, *supra* note 10, at 28.

204. *Id.*; Chambers & Echohawk, *supra* note 12, at 460.

205. *Hearing on Indian Water Rights*, *supra* note 10, at 1.

negotiations and settlements are the “preferred” method for all stakeholders.²⁰⁶ The cost, delays, and uncertainty of adjudication and litigation lend towards settlement as a resolution.²⁰⁷ Native Nations began negotiating their water rights in the 1980s.²⁰⁸ To date, Congress has authorized twenty-nine settlements.²⁰⁹

Settlements can offer Native Nations quicker and more reliable determinations of their water rights, while also including means to improve infrastructure.²¹⁰ All parties suffer from the uncertainty surrounding water that may be reserved for a Native Nation.²¹¹ Settlement offers a company at least an opportunity to defend its claims and possibly receive some water rights.²¹² Similarly, settlements afford Native Nations the opportunity to turn their reservations of water into practical uses more quickly.²¹³ Because of the uncertainty of whether a Native Nation can use its reservation of water for purposes other than agriculture, some nations may prefer the settlement route. Such a strategy provides better leverage to wield their argument that the reservation of water includes water for modern needs.²¹⁴

The negotiated terms of the settlements can also benefit Native Nations because the provisions can explicitly include the means to access the water.²¹⁵ Many Native Nations do not have the infrastructure to even utilize their water rights, especially if the source of the water is far away from a remote community.²¹⁶ For example, the Navajo Nation and Hopi Tribe in Arizona conflicted with coal companies and farmers over water.²¹⁷ Their water rights involved the water in aquifers.²¹⁸ Neither Native Nation had the infrastructure to transport the water from the aquifers to serve their communities.²¹⁹ The settlement proposed to accord the nations water pipes with potable water.²²⁰

206. *Id.* at 28.

207. Press Release, United States Senate Comm. on Indian Affairs, Indian Affairs Oversight Hearing Explores the Benefits of Settling Indian Water Rights Claims (Mar. 16, 2012), available at <http://www.indian.senate.gov/news/press-release/indian-affairs-oversight-hearing-explores-benefits-settling-indian-water-rights>.

208. Tarlock, *supra* note 144, at 497–98.

209. *Hearing on Indian Water Rights*, *supra* note 10, at 1 (statement of Sen. Daniel K. Akaka); Bruce Finley, *Federal Settlements Give Colorado Tribes a Share of Water Rights*, DENVER POST, Nov. 10, 2011, http://www.denverpost.com/news/ci_19303196.

210. *Hearing on Indian Water Rights*, *supra* note 10, at 1 (statement of Sen. Daniel K. Akaka).

211. *Id.* at 2.

212. *See* Chambers & Echohawk, *supra* note 12, at 468.

213. *See id.* at 460.

214. Leonard, *supra* note 6, at 630.

215. *Hearing on Indian Water Rights*, *supra* note 10, at 2 (statement of Sen. Daniel K. Akaka).

216. Shively, *supra* note 167, at 471.

217. Leslie MacMillan, *A Difficult Choice on Water*, N.Y. TIMES (Apr. 6, 2012, 3:39 PM), <http://green.blogs.nytimes.com/2012/04/06/a-difficult-choice-on-water/>.

218. *Id.*

219. *Id.*

220. *Id.*

Because many native nations lack infrastructure, the federal government has initiated a program that will help turn paper water into real water.²²¹ In 2007, federal agencies formed the Infrastructure Task Force to design water infrastructure projects for native nations in order to promote potable water.²²² While the federal program equips Native Nations with one option for improving their infrastructure, water settlements can further facilitate such infrastructure.²²³

Despite the advantages of water settlements, they too can be unpalatable for Native Nations.²²⁴ Settlements can be costly and require expert attorney negotiation teams.²²⁵ Many Native Nations rely on the federal government to represent them with negotiation teams who have the expertise to carry out the settlements.²²⁶ Yet, the federal government has discretion on whether to furnish such teams.²²⁷ Furthermore, because the federal government holds water rights in trust for Native Nations, Congress and the President must approve each settlement, adding to delay.²²⁸

Finally, settlements are a negotiation and Native Nations often must compromise and relinquish some of the water they believe belongs to them to reach an agreement for immediate water rights and the necessary infrastructure.²²⁹ These agreements are binding, and once a Native Nation agrees to a reduced amount of water, future generations must live with the terms.²³⁰ These settlements are analogous to the treaties that appropriated Indian lands and forced Native Nations to give up what they rightfully possessed to meet immediate needs.²³¹ Nonetheless, Native Nations' experience with water settlements has been monumentally more positive because these settlements can promise

221. U.S. ENVTL. PROT. AGENCY, OVERVIEW OF TRIBAL WATER INFRASTRUCTURE FUNDING APPLICATION PROCESSES AND RECOMMENDED PAPERWORK STREAMLINING OPPORTUNITIES (2011), <http://www.epa.gov/tp/pdf/itf-paperwork-streamlining-recomm.pdf>.

222. *Id.*

223. Merianne A. Stansbury, *Negotiating Winters: A Comparative Case Study of the Montana Reserved Water Rights Compact Commission*, 27 PUB. LAND & RESOURCES L. REV. 131, 135 (2006).

224. See generally Erin B. Agee, Note, *In the Federal Government We Trust? Federal Funding for Tribal Water Rights Settlements and the Taos Pueblo Indian Water Rights Settlement Act*, 21 CORNELL J.L. & PUB. POL'Y 201, 212 (2011).

225. *Id.* at 213-14.

226. *Id.* at 203-04.

227. *Id.* at 222.

228. *Hearing on Indian Water Rights*, *supra* note 10, at 29.

229. Agee, *supra* note 224, at 212.

230. See generally Folk-Williams, *supra* note 42, at 74.

231. See Jeff Candrian, Note, *Building with Blinders on: How Policymakers Ignored Indian Water Rights to the Colorado, Setting the Stage for the Navajo Claim*, 22 COLO. J. INT'L ENVTL. L. & POL'Y 159, 187 (2011) ("Water settlements, therefore, represent a 'second treaty-making era.'"); Chambers & Echohawk, *supra* note 12, at 469 ("Because Indians were left with too little land and other resources, and usually paid less than fair market value for the lands that were taken, generations of Indian poverty resulted. . . . However, that has not been the apparent outcome of Indian water adjudications and settlements so far, which is evidence that the sorry lesson of the historic interaction between Indians and the rest of American society during the 1880-1930 period has at last been learned. Actual Indian water use has increased substantially as water rights have been quantified, rather than being diminished or held constant to protect non-Indian economies.") (citations omitted).

each nation's survival for future generations.²³² Thus, while tribal renewable energy hosts complex water challenges, Native Nations still have the power to control their futures.²³³

V. JEMEZ PUEBLO

Although it is but one of a myriad of communities hoping to convert renewable energy into empowerment, Jemez Pueblo is a bellwether community.²³⁴ Throughout history, this Pueblo has inspired explorers.²³⁵ Jemez Pueblo, along with other communities, helped provoke Francisco Coronado's search for the City of Gold in the 1500s.²³⁶ Coronado, however, never found the mythical city, but his contact with Jemez Pueblo inspired the Franciscans to begin some of their first missions.²³⁷ Like the myth of the City of Gold, renewable energy at Jemez Pueblo offers great potential but is still just a dream.²³⁸

As with the City of Gold, tribal renewable energy appeals to many because it begets wealth.²³⁹ For Jemez Pueblo, tribal renewable energy could transform the community because its only current source of income is a convenience store and a gas station, bringing in a meager \$50,000 a year for a community of 2,500 members.²⁴⁰ Renewable energy, on the other hand, could yield \$25 million over twenty-five years.²⁴¹ Usually, only gaming tribes have seen such riches, and the Pueblo never has belonged to such a class despite twice requesting permission from the federal government to build gaming facilities.²⁴² With over five hundred tribes in the United States - twenty-one of which are Pueblos, and nineteen of those Pueblos are in the poorest state in the country, New Mexico - few tribes receive federal permission to join the class of gaming moguls.²⁴³ The federal government rejected Jemez Pueblo's request for a gaming

232. Chambers & Echohawk, *supra* note 12, at 469; see also *Hearing on Indian Water Rights*, *supra* note 10, at 469-70.

233. See generally discussion *supra* Parts II, III, IV.

234. See Bryan, *supra* note 4 ("The 3,000 members of the Jemez Pueblo are on the verge of building the nation's first utility-scale solar plant on tribal land...").

235. Henderson, *supra* note 102, at 132.

236. See *id.*

237. See *id.*; L. BRADFORD PRINCE, SPANISH MISSION CHURCHES OF NEW MEXICO 183 (1915), available at http://southwest.library.arizona.edu/spmc/body.1_div.14.html.

238. See generally Bryan, *supra* note 4.

239. *Id.*

240. *Draft Environmental Assessment*, *supra* note 486, at 4; Bryan, *supra* note 4; WELCOME TO THE WALATOWA VISITOR CENTER, <http://www.jemezpuablo.com> (last visited Nov. 10, 2013).

241. Bryan, *supra* note 4.

242. *Id.*; Jeri Clausing, *Feds Reject Jemez Pueblo Plan for Anthony Casino*, NATIVE AMERICAN TIMES, Sept. 6, 2011, <http://www.nativetimes.com/business/gaming/5971-feds-reject-jemez-pueblo-plan-for-anthony-casino>.

243. See Agee, *supra* note 224, at 214; Clausing, *supra* note 242; *New Mexico Takes the Top Spot For Poorest State In the Nation*, KOAT7 ALBUQUERQUE, Sept. 18, 2012, <http://www.koat.com/news/new-mexico/albuquerque/New-Mexico-takes-the-top-spot-for-poorest-state-in-the-nation/-/9153728/16650398/-/ggybiy/-/index.html>;

Southwest Culture Map, MITCHELL MUSEUM OF THE AM. INDIAN, <http://www.mitchellmuseum.org/education/documents/5SouthwestLessonPlanFINAwithheaders>

facility in Anthony, New Mexico in 2011.²⁴⁴ The government denied the gaming permit because of its concerns about the location's remoteness and difficulties with supervising the gaming activities.²⁴⁵

Native Nations, like Jemez Pueblo, must conjure riches from thin air, or at least the sun.²⁴⁶ Such a scheme seems ideal with the sun conferring upon the Pueblo its presence 310 days each year.²⁴⁷ For the past four years, Jemez Pueblo has been innovating a way to harvest their main resource.²⁴⁸ The Pueblo envisions placing over 14,000 solar photovoltaic panels in rows on thirty acres of its trust land in northern New Mexico.²⁴⁹ Unlike other solar energy initiatives that directly supply energy to a singular connected structure, Jemez Pueblo plans to create a utility grid to deliver the energy to its customers.²⁵⁰ It received funding from the Department of Energy as part of a grant to install nineteen renewable energy projects on tribal land.²⁵¹ Jemez Pueblo, however, declined the award with the explanation that it could not find a buyer.²⁵² Because of its location, the only three potential buyers are Los Alamos County Utilities, the Department of Energy, or the Jemez Mountains Electrical Cooperative.²⁵³ Four years of planning succumbed to market realities, but the uncertainty surrounding water supply also likely undermined the project's feasibility.²⁵⁴ Even if Jemez Pueblo's solar project withers, the Pueblo envisions other projects like geothermal energy; hundreds of other Native Nations also work to conjure riches from natural resources, but all projects will need water.²⁵⁵

Jemez Pueblo's attempt to deploy a renewable energy project in a desert epitomizes the difficulties a Native Nation faces as it plans for the future while accounting for present challenges such as water scarcity.²⁵⁶ To venture even one of the least water-consuming renewable projects - solar power - Jemez Pueblo still must ensure a supply of water.²⁵⁷

L.pdf (last visited Nov. 2, 2012); *Who We Are*, U.S. DEP'T OF THE INTERIOR: BUREAU OF INDIAN AFFAIRS, <http://www.bia.gov/WhoWeAre/index.htm> (last updated Aug. 20, 2013).

244. *Feds Reject Plans for Jemez Pueblo Casino*, KOB4 SANTA FE - N. NM, Sept. 2, 2011, <http://santafe.kob.com/news/news/92286-feds-reject-plans-jemez-pueblo-casino>.

245. Clausing, *supra* note 242.

246. *See generally* Bryan, *supra* note 4.

247. *See* Larissa Sommer, *Pueblo of Jemez: Leading the Way to a Renewable Future*, TRIBES AND CLIMATE CHANGE, (Jul. 25, 2013), www4.nau.edu/tribalclimatechange/tribes/southwest_jemez.asp.

248. Bryan, *supra* note 4.

249. *Id.*; *Draft Environmental Assessment*, *supra* note 56, at 3.

250. Bryan, *supra* note 4.

251. Nancy J. Appleby, *Tribal Renewable Energy Projects: Balance Opportunity with Caution*, RENEWABLE ENERGY WORLD.COM, Feb. 20, 2012, <http://www.renewableenergyworld.com/rea/news/article/2012/02/tribal-renewable-energy-projects-balance-opportunity-with-caution1>.

252. Email from John Jediny, Envtl. Prot. Specialist, U.S. Dep't of Energy, to author (Oct. 23, 2012, 14:26 EST) (on file with *Water Law Review*); Email from Greg Kaufman, Natural Res. Dir., Jemez Pueblo, to author (Nov. 5, 2012, 10:52 EST) (on file with *Water Law Review*).

253. Belone, *supra* note 23, at 21.

254. Bryan, *supra* note 4; *see discussion supra* Part III.

255. *See generally* Bryan, *supra* note 4; Email from Greg Kaufman, *supra* note 252.

256. *See generally* discussion *supra* Parts II, III.

257. *See generally* discussion *supra* Part III.

Other than buying water, Jemez Pueblo looks to the river sharing its name, the Rio Jemez, as its water source.²⁵⁸ The river is a tributary of the Rio Grande, one of the few water resources in New Mexico.²⁵⁹ It provides water for Jemez Pueblo, two other Pueblos, and many upstream users.²⁶⁰ The Pueblos, including Jemez Pueblo, already use the water for many activities including irrigation.²⁶¹ Each use, whether withdrawn from the ground water or directly from the surface water, reduces these tributaries and impacts the larger Rio Grande.²⁶² Current water supply cannot meet all the needs, whatever such needs may be.²⁶³ For example, during a drought in 1996, the Jemez and Zia Pueblos pursued an injunction against other irrigation water users because there simply was not enough water for all uses.²⁶⁴

Jemez Pueblo, like many other Native Nations, still has not established its water rights to this river despite decades of patience.²⁶⁵ Since 1983, Jemez Pueblo and other water users have been quibbling over the scarce water resources in the region.²⁶⁶ In that year, the United States filed a complaint for the allocation of water from the Jemez River, known as the Abouseman adjudication.²⁶⁷ Nearly thirty years later, the case continues as litigation because the efforts to reach a settlement could not satisfy all parties.²⁶⁸ In July 2011, the U.S. District Court of New Mexico ordered the parties to reach a settlement or submit a “discovery plan” by April 2012.²⁶⁹ By March 2012, it appeared that the parties would opt for the latter option.²⁷⁰

Following the breakdown of efforts to reach a settlement, the parties will litigate two issues.²⁷¹ The Special Master separated the Pueblo’s historic and

258. CUBA SOIL & WATER CONSERVATION DIST., MIDDLE RIO GRANDE REG’L WATER PLAN: RIO PUERCO & RIO JEMEZ: SUBREGIONAL WATER PLAN 2000-2050 SUMMARY 8 (2004), <http://www.waterassembly.org/archives/MRG-Plan/C-Summaries/Rio%20Puerco%20and%20Rio%20Jemez%20Summary.pdf>.

259. *Id.* at 9; PAUL BOSSERT, ET AL., UNIV. OF N.M. UTTON TRANSBOUNDARY RESOURCES CENTER, THE RIO JEMEZ BACKGROUND PAPERS ON THE ADJUDICATION PROCEEDING AND WATER ISSUES, 49 (2004), available at http://uttoncenter.unm.edu/pdfs/Rio_Jemez_Background_Papers.pdf.

260. CUBA SOIL & WATER CONSERVATION DIST., *supra* note 59, at 12-10-1, 12-10-9.

261. BOSSERT, *supra* note 259, at 23-26, 50.

262. *See generally id.* at 52.

263. *See* CUBA SOIL & WATER CONSERVATION DIST., *supra* note 258, at 25.

264. BOSSERT, *supra* note 259, at 8.

265. *See generally id.* at 3.

266. *New Mexico Federal District Court Issues Memorandum and Order in Jemez River Adjudication on the Indian Pueblos’ Water Use Claims*, W. WATER L. & POL’Y REP. 50 (Dec. 2004), available at <http://www.argentco.com/hun/f20041214.888790.htm>.

267. *Id.*

268. *See generally* BOSSERT, *supra* note 259, at 3; Letter from Ignacia S. Moreno, Assistant Attorney Gen., Department of Justice: Office of the Assistant Attorney Gen., to Martha Vazquez, Judge, United States District Court of N.M. (Mar. 15, 2012), <http://www.ose.state.nm.us/Adjudication/Jemez%2083CV1041/2012/3-March/4234%2003-15-12%20STATUS%20REPORT%20Joint%20Letter%20to%20Honorable%20Martha%20Vasquez.pdf>.

269. *See* Letter from Ignacia S. Moreno, *supra* note 268.

270. *Id.*

271. *Id.*

existing water rights from its future rights.²⁷² In a 2012 order, the New Mexico District Court described the course of litigation as determining Jemez Pueblo's water rights under various doctrines including the riparian doctrine, the *Winters* doctrine, and aboriginal rights.²⁷³ The litigation will also quantify the water rights.²⁷⁴

While the solar energy project was unprofitable without a market, it also was probably not feasible in the long run without resolving the Jemez Pueblo's water rights.²⁷⁵ Although the project was but one opportunity for the community, its troubles could plague future endeavors as well if not resolved.²⁷⁶ Even if Jemez Pueblo's solar ambition has died, it is not willing to give up on its community development.²⁷⁷ Other endeavors include pursuing a geothermal exploration project.²⁷⁸ Jemez Pueblo has high hopes for its geothermal project because it received Department of Energy funding.²⁷⁹ Any renewable energy project that Jemez Pueblo pursues requires a resolution of its water rights through the Abousleman litigation. While the Sun may have saved the Walatowa in the past, water will define their future.

VI. CONCLUSION

After centuries of impoverishment, Native Nations yearn to build a different future. They look towards the resources that are the foundations of their origins. Whether the sun, wind, or streams impart power, Native Nations need to establish their water rights under federal law to displace the current users of the needed scarce resource that will enable them to initiate and maintain these power projects. Until Native Nations secure their water rights and have the actual means to use the water, including infrastructure, their futures remain uncertain. Jemez Pueblo endeavors to define its future; if it is successful, other Native Nations may follow suit.²⁸⁰

272. *Id.*

273. *United States ex rel. Pueblos of Jemez v. Abousleman*, No. 83cv01041 MV/WPL (D. N.M. 2012) (Order granting and denying Joint Motion of United States and Pueblos of Jemez, Zia, and Santa Ana Requesting Court to Permit the Parties to Engage in Fact-Finding and Related Discovery Prior to Submitting Briefs on Critical Threshold Issues).

274. *Id.*

275. *See generally* discussion *supra* Part III; *see also supra* notes 251-254 and accompanying text.

276. *See generally* discussion *supra* Part III.

277. *See* Email from Greg Kaufman, *supra* note 252.

278. *See generally id.*; Sommer, *supra* note 247.

279. *See* Kevin Robinson-Avila, *Feds Finance Geothermal Exploration at Jemez Pueblo*, ALBUQUERQUE BUS. FIRST (Nov. 22, 2009, 10:00 PM), <http://www.bizjournals.com/albuquerque/stories/2009/11/23/story4.html?page=all>; *Pueblo of Jemez - 2002 Project*, U.S. DEP'T OF ENERGY: TRIBAL ENERGY PROGRAM, http://apps1.eere.energy.gov/tribalenergy/projects_detail.cfm/project_id=47 (last visited Sep. 26, 2013).

280. Bryan, *supra* note 4.