

Introduction

Not Just Tilting at Windmills

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In the fall of 2014, Arizona State University’s Morrison Institute for Public Policy (MI) convened a group of water experts from across the state to explore whether there was a role for a dedicated water policy center housed within the Institute. Established in 1982, Morrison Institute is the state’s leading non-partisan policy think tank. Water, sustainability and growth have been focal areas for the Institute for many years.¹

The consensus of the experts was that there would be work for a neutral water policy center dedicated to promoting research, analysis, collaboration and dialogue to build consensus for water stewardship solutions in Arizona and the West.² Accordingly, the Kyl Center for Water Policy was launched.

The experts also weighed in on priorities for the Kyl Center, the major consideration being matters on which the Center’s efforts could make a difference. Among the highest priorities identified was finding ways to promote progress in Arizona’s two general stream adjudications, which will determine the nature and relative priority of every claim of right to use water from its two largest ins-state river systems, the Gila River and the Little Colorado.³

* The Kyl Center thanks members of the Adjudication Reform Committee and the Water Managers Subcommittee for their time, wisdom and dedication.

¹ See, e.g., M. Byron Lewis, *New Era of Water Challenges*, MORRISON INSTITUTE (May 2014), <https://morrisoninstitute.asu.edu/products/new-era-arizona-water-challenges>; Grady Gammage Jr., *Sustaining Phoenix – Valley of the Sun: Beyond Desert Survival*, MORRISON INSTITUTE (Apr. 2013), <https://morrisoninstitute.asu.edu/products/sustaining-phoenix-valley-sun-beyond-desert-survival>; Grady Gammage Jr., *Watering the Sun Corridor: Managing Arizona’s Megapolitan Area*, MORRISON INSTITUTE (Aug. 2011), <https://morrisoninstitute.asu.edu/products/watering-sun-corridor-managing-arizonas-megapolitan-area>; Grady Gammage Jr., John Stuart Hall et al., *Megapolitan: Arizona’s Sun Corridor*, MORRISON INSTITUTE (May 2008), <https://morrisoninstitute.asu.edu/products/megapolitan-arizonas-sun-corridor>; Rick Heffernon, Nancy Welch et al., *Sustainability for Arizona: The Issue of Our Age*, MORRISON INSTITUTE (Oct. 2007), <https://morrisoninstitute.asu.edu/products/sustainability-arizona-issue-our-age>; Rick Heffernon, Mark Muro et al., *Growth on the Coconino Plateau: Potential Impacts of a Water Pipeline for the Region*, MORRISON INSTITUTE (Mar. 2001), <https://morrisoninstitute.asu.edu/products/growth-coconino-plateau-potential-impacts-water-pipeline-region>.

² Jon Kyl & Grady Gammage, *Seeking Water Solutions Through Consensus*, MORRISON INST. BLOG, <https://morrisoninstitute.asu.edu/content/seeking-water-solutions-through-consensus> (“Hayden, Rhodes, Udall, Babbitt and Goldwater all understood the fundamental reality of life in the desert: private citizens and organizations along with the state and federal government must work together to ensure reliable water supplies for the people of Arizona.”) (last visited May 31, 2018).

³ See Ariz. Rev. Stat. Ann. §§ 45-141 & 45-151 (2012) (recognizing right to appropriate unappropriated surface water); see also *id.* §§ 45-251 – 45-264 (setting forth general stream adjudication procedures).

The Gila River adjudication began in 1974.⁴ Reputedly one of the most complex lawsuits in U.S. history,⁵ it involves 83,876 claims⁶ brought by over 38,000 parties⁷ asserting rights to use water from the Gila River and all its tributaries, including the Verde, Salt, San Pedro, Santa Cruz and Agua Fria rivers. The Little Colorado adjudication commenced in 1978 and involves over 14,000 claims asserted by more than 5,800 parties.⁸ Parties to the adjudications include various state law claimants – municipalities, private water companies, mines, conservation districts, irrigation districts, state agencies and individual water users – as well as federal claimants, including military installations, tribes, wilderness areas, parks, forests, and monuments.⁹

Their sheer complexity is one reason the adjudications have consumed so much time.¹⁰ In the Gila adjudication one of the main sources of this complexity arises out of Arizona’s bifurcated regime for surface water and groundwater rights. Rights to use water from in-state rivers and streams are regulated by the doctrine of prior appropriation, meaning that the first person to divert and put the water to beneficial use has a right that takes precedence over subsequent users.¹¹ Groundwater rights are more complicated. In some designated areas of the state known as Active Management Areas, the pumping of groundwater is regulated by the 1980 Groundwater Management Act.¹² Outside of those areas, groundwater may be withdrawn without limitation as long as it is put to beneficial use.¹³

But in reality groundwater and surface water are rarely hydrologically distinct. In the Gila Adjudication, the question arose whether well owners should be made parties if they are alleged to be pumping subsurface flow – or subflow – the underground water that runs beside and underneath a riverbed. In a landmark decision in 2000, the Arizona Supreme Court affirmed the definition of the “subflow zone” as the “saturated floodplain Holocene alluvium,” which generally speaking is the geological unit directly beneath or in the floodplain of the stream.¹⁴ The Court further ruled that a well located within the

⁴ *In re Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source*, No. W-1, W-2, W-3, W-4 (Consolidated) (Ariz. Super. Ct. Maricopa County).

⁵ Joseph M. Feller, *The Adjudication that Ate Arizona Water Law*, 49 Ariz. L. Rev. 405, 406 (2007).

⁶ MARICOPA CTY SUPER. CT., *Overview of General Stream Adjudications*, <http://www.superiorcourt.maricopa.gov/SuperiorCourt/GeneralStreamAdjudication/faq.asp#1> (last visited Apr. 18, 2018).

⁷ Ariz. Dept. of Water Res., *General Description of Adjudications Program*, <http://www.azwater.gov/AzDWR/SurfaceWater/Adjudications/default.htm> (last visited Apr. 18, 2018).

⁸ *In re Gen. Adjudication of All Rights to Use Water in the Little Co. River Sys. & Source*, No. 6417 (Ariz. Super. Ct); Maricopa Cty Super. Ct, *supra* note 7; Ariz. Dept. of Water Res., *supra* note 8.

⁹ Ariz. Dept. of Water Res., *supra* note 8.

¹⁰ As discussed below, this article focuses on the subflow issue. Among other factors that add to the adjudications’ complexity is the presence of federal tribal and non-tribal water rights claims, which are determined according to standards different from those that apply to state law water rights claims.

¹¹ Ariz. Rev. Stat. Ann. §§ 45-141(A) & 45-151.

¹² *Id.* at Title 45, Ch. 2 (Groundwater Code).

¹³ *Id.* at § 45-453.

¹⁴ *In re Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source*, 9 P.3d 1069, 1073 (Ariz. 2000).

lateral limits of the subflow zone should be included in the adjudication if the cone of depression caused by its pumping draws subflow in an “appreciable amount.”¹⁵

The Supreme Court charged the Arizona Department of Water Resources (ADWR) with delineating a subflow zone for every river and stream at issue – no easy task.¹⁶ Almost two decades later, the adjudication court has approved one subflow zone, that of the Upper San Pedro River watershed.¹⁷ Defining the subflow zone is technically complex, and for the parties the stakes are high. ADWR’s first iteration of the Upper San Pedro subflow zone was met with strong opposition, which took years of evidentiary hearings to work through.¹⁸

In the spring of 2013, the adjudication court held a hearing “to discuss potential improvements to the adjudications.” In a subsequent minute entry, the court observed:

It is clear that the parties are frustrated with the pace of the adjudications. The Court shares that sentiment; the cases have gone on longer than most thought possible at their inception. This Court’s perception is that *the law surrounding ‘subflow’ has proven to be the root cause of the delay* – whatever one might think of that concept from a philosophical perspective, it has proven to be extraordinarily difficult to apply in practice. But at this juncture, there is no going back.¹⁹

With this history in mind, lawyers and water experts often ask us, “Why?” Why in the world would we want to work on trying to repair legal proceedings that are so intractable that they have kept lawyers gainfully employed for over forty years, with no end in sight?

Our answer: Because lack of resolution of the adjudications threatens Arizona’s water resilience. And as time goes by and the claims go unresolved, the situation will only grow worse.

Uncertainty about water rights hinders water resource planning. When individuals, businesses, and communities don’t know how much water they have, the right mechanisms for prompting and investing in resource planning for the future are

¹⁵ *Id.* at 1082.

¹⁶ *See id.* at 35-36. The Supreme Court optimistically noted that “the record reflects that the saturated floodplain Holocene alluvium is readily identifiable [and] that DWR can quickly, accurately, and relatively inexpensively determine the edge of that zone.”

¹⁷ *In re the Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source*, Contested Case No. W1-103, Order Entered Pending Objections (Ariz. Super. Ct 2017).

¹⁸ *See generally* Arizona Department of Water Resources (May 22, 2018), <http://www.azwater.gov/AzDWR/SurfaceWater/Adjudications/default.htm>; *see also* Arizona Geology E-Magazine, *Important San Pedro River Subflow Adjudication Ruling!* (Aug. 10, 2017), <http://blog.azgs.arizona.edu/2017-08/important-san-pedro-river-subflow-adjudication-ruling>.

¹⁹ *In re the General Adjudication of All Rights to Use Water in The Gila River Sys. & Source*, Case No. W-1, W-2, W-3, W-4 (Consolidated), *In re the General Adjudication of All Rights to Use Water in The Little Colorado River Sys. & Source*, Case No. CV 6417, Minute Entry, (Ariz. Super. Ct. 2013) (*emphasis added*).

simply not present. For this reason, ADWR has identified resolving the adjudications as a top strategic priority:

Completion of a general stream adjudication will result in the Superior Court issuing a comprehensive final decree of water rights. Until that process is complete, uncertainty regarding the nature, extent and priority of water rights will make it difficult to identify all the strategies necessary for meeting projected water demands. ADWR believes that options need to be developed by the State to accelerate this process.²⁰

Since the adjudications were filed, increasing numbers of people have become reliant on the very water supplies at issue. This phenomenon is most acute in two areas of the Gila adjudication: the Verde Valley and the Upper San Pedro, where population growth in the last four decades has led to increased reliance on water supplies that may well be deemed subflow.²¹ By the Kyl Center's calculations, since the Gila adjudication commenced, the number of wells in the Verde Valley has more than tripled, from 1,900 in 1974 to around 7,600 today. Likewise, the number of wells in the Upper San Pedro watershed has increased from under 1,500 when the adjudication commenced in 1974 to over 8,700 today. And more than 2,000 wells were drilled after ADWR issued its first subflow zone delineation, in 2002.²² As the latest appropriators in their watersheds, the owners of these wells are likely to be assigned extremely junior priority and are vulnerable to being left without water at the end of the adjudication.

²⁰ Ariz. Dept. of Water Res., *Arizona's Next Century: A Strategic Vision for Water Supply Sustainability*, 67 (2014), http://www.azwater.gov/AzDWR/Arizonas_Strategic_Vision/documents/ArizonaStrategicVisionforWaterResourcesSustainability_May2014.pdf

²¹ See USGS, Bradley D. Garner, D.R. Pool et al., SIR 2013-5029, *Human Effects on the Hydrologic System of the Verde Valley, Central Arizona, 1910-2005 and 2005-2110, Using a Regional Groundwater Flow Model* 22-23 (2013), <https://pubs.usgs.gov/sir/2013/5029/sir2013-5029.pdf> (concluding that groundwater pumping had reduced base flow in the Middle Verde by over ten percent from pre-development rates and is projected to decrease base flow an additional five to ten percent by 2110); USGS, Bruce Gungle, J.B. Callegary et al., SIR 2016-5114, *Hydrological Conditions and Evaluation of Sustainable Groundwater Use in the Sierra Vista Subwatershed, Upper San Pedro Basin, Southeastern Arizona* 78 (2017), <https://doi.org/10.3133/sir20165114> (“[Sites] downgradient from the pumping centers of Sierra Vista and Fort Huachuca. . . can generally be seen as expressions of the cone of depression and capture of water that would otherwise have discharged to the riparian area and near-stream alluvial aquifer near the San Pedro River”).

²² These estimates are based on the Kyl Center's analysis of ADWR's Wells 55 database. Prior to drilling a new well, a person must submit a completed Notice of Intent (NOI) form to ADWR and receive authorization to drill. The NOI form states that "the Department's issuance of an authorization to drill a well is not a determination of whether water withdrawn from the well is legally surface water or groundwater," and that "the legal nature of the water withdrawn from the well may be the subject of court action in the future as part of a determination of surface water rights in your area." We know of no evidence that this limited notice has deterred the drilling of new wells. After a well is drilled in an area subject to the adjudication, the Department also sends a "new use summons" to the well owner that directs the owner to assert any water rights claims it has by filing with the adjudicating court.

Finally, as detailed by the late Joseph Feller in his 2007 article *The Adjudication that Ate Arizona Water Law*, the adjudications have thwarted ADWR's orderly administration and enforcement of water rights as contemplated in Title 45:

Of course, the question of whether and how water rights would be administered and enforced were the two adjudications not pending cannot be answered definitively, because there is simply no relevant modern experience. The adjudications have been pending since 1974, which was six years *before* the statutory creation of ADWR and its administrative authority. The areas of the state that lie outside of the watersheds under adjudication are mostly remote, sparsely populated, and have little water. We therefore simply do not know how Arizona water law would work in the absence of the adjudications. ADWR's enforcement powers have not been tried or tested, no enforcement regulations have been issued, no water superintendents have been appointed, and no body of interpretive case law has developed. In this sense, the adjudications have, as suggested by the title of this Article, "eaten" Arizona water law.²³

In recognition of these facts and with the encouragement of our expert advisors, the Kyl Center convened party representatives from the adjudications to work on developing consensus supported proposals that might help drive the adjudications to the finish line.

The consensus of our Adjudications Reform Committee (ARC) is that resolving the Gila Adjudication through negotiated settlement is preferable to litigating the case to the bitter end. Therefore, from the outset, the ARC has focused primarily on proposals to facilitate settlement of claims.

But for a settlement proposal to be viable, it must ensure that when all is said and done current water users continue to have access to water supplies, and it must work for those who will live with the results. With the ARC's encouragement, the Kyl Center convened a small group of water managers with working knowledge of Verde River water issues and representing a range of stakeholders to develop concepts that might help shape a lasting and equitable solution to the subflow conundrum.

Through a series of discussions and a review of hydrological data, the subcommittee arrived at a concept in which existing wells in sensitive groundwater basins would be identified in a timely manner, and ADWR would determine the quantity of water that may be pumped from each of these wells based on a formula that relies on the use of the water pumped. For each well, ADWR would issue a "Certificate of Historical Withdrawals" specifying the amount of water that may be pumped from that well. Municipal and large private water providers would be allocated an amount of water

²³ Feller, *supra* note 6 (citing Ariz. Rev. Stat. Ann. §§ 45-105, 45-109, 45-110, 45-112 (2006), which in the Westlaw Notes of Decisions there is only one case, and no cases since 1969, interpreting or applying these sections). Since Feller's article was published, no additional opinion has been issued interpreting the statutes.

above current demand in acknowledgement of water conservation gains over the last two decades and to accommodate for growth.

The certificate would constitute the basis of a water right for purposes of the Gila adjudication. Well owners who have another basis of a water right could opt out of the Certificate program. Certificates of Historical Withdrawals would be transferrable to another use, and new wells in these basins would be allowed only pursuant to a permit issued by ADWR.

Using criteria previously adopted by the adjudication court, ADWR would identify the subflow zone for these basins. A new well within the subflow zone would require the acquisition of a Certificate of Historical Withdrawals within the subflow zone, or the storage of a like amount of water underground in the area of the proposed new well. The water managers group emphasized that programs for augmenting the water supply of these basins and facilitating the voluntary transfer of surface water rights should be integrated into the plan.

The ARC is currently evaluating these concepts. Along with other measures, such as mitigation programs for new wells and recharge projects, creative ideas like these may help move the adjudications to a quicker resolution. The ARC has also identified a need for a special procedural order governing settlement of state law claims, similar to an extant order governing the settlement of federal and tribal claims.²⁴ Enabling smaller and relatively non-controversial claimants to settle and exit the litigation could simplify and speed up the proceedings.

Any settlement proposal will require public support. In the spring of 2018, in an effort to promote public awareness of the adjudications and their impacts on current and future water resilience, the Kyl Center published a new report, *The Price of Uncertainty*.²⁵ The report contains the results of a quantitative survey to find out what questions developers and corporate site location consultants ask when considering investments in Arizona. While their responses contained few surprises, they confirmed that water is a bigger concern to investors than it has been in the past and that they have zero tolerance for uncertainty about the legal availability of water supplies in connection with real estate investments or location decisions. Uncertainty about water rights, which the adjudication is meant to resolve, stands in the way of Arizona communities' future prosperity. It also prevents sustainable management of their water resources.

The Gila and Little Colorado watershed adjudications are necessarily complex proceedings, but much has already been accomplished in them. Numerous federal claims have been resolved. Arizona has achieved more tribal water rights settlements than any other state. Important questions of jurisdiction and federal reserved water rights have

²⁴ Special Procedural Order Providing for the Approval of Federal Water Rights Settlements, Including Those of Indian Tribes, In re the General Adjudication of the Rights to Use Water in the Gila River System and Source, (Arizona Supr. Ct. Nos. WC-79-0001 OF through WC-79-0004 (consolidated) (May 16, 1991).

²⁵Kathleen Ferris et. al, *The Price of Uncertainty* (2018), <https://morrisoninstitute.asu.edu/projects/kyl-center-water-policy>.

been determined. And the court has approved a subflow zone for the Upper San Pedro, paving the way for the identification of wells that must be included in the adjudication.²⁶ Arizona needs the water certainty that concluding the adjudications will bring, and there is reason for optimism that the adjudications can be concluded.

²⁶ George A. Shade, Jr., *Soundoff: Water at a Simmer*, ARIZ. ATTORNEY 8-9 (Apr. 2010) (“I spoke with Professor Glennon and reminded him that much more of significance and substance had been decided in the adjudication . . . than your article mentioned. . . . The case may seem to be overly ambitious, but many decisions of historic significance and future importance have been made.”).