



Supreme Court of Arizona,
En Banc.
In re the GENERAL ADJUDICATION OF ALL
RIGHTS TO USE WATER IN the GILA RIVER
SYSTEM AND SOURCE.

Nos. WC-90-0001-IR, WC-90-0004-IR,
WC-90-0007-IR, WC-90-0002-IR,
WC-90-0005-IR, WC-79-0001, WC-90-0003-IR,
WC-90-0006-IR, WC-79-0002-IR.
Nov. 26, 2001.

Action was brought to determine extent and priority of rights of all persons to use water in river system and source. The Superior Court, Maricopa County, Stanley Z. Goodfarb, Retired Judge, entered order stating amount of water to which each Indian reservation was entitled. Issue was accepted for interlocutory review. The Supreme Court, [Thomas A. Zlaket](#), C.J., held that a “practicably irrigable acreage” standard should not have been used to determine Indian reservations' water rights.

Order vacated.

West Headnotes

[1] Appeal and Error 30  893(1)

30 Appeal and Error

30XVI Review

30XVI(F) Trial De Novo

30k892 Trial De Novo

30k893 Cases Triable in Appellate

Court

30k893(1) k. In general. [Most Cited](#)

[Cases](#)

Supreme Court would utilize de novo standard to review trial court's determination, in general stream adjudication, of the amount of water to which Indian reservations were entitled.

[2] Water Law 405  1589

405 Water Law

405VII Appropriation of Waters

405VII(A) Nature and Elements in General

405k1588 Nature and Extent of Rights

Acquired

405k1589 k. In general. [Most Cited](#)

[Cases](#)

(Formerly 405k142)

An appropriator's legal right to surface water remains secure so long as utilization for a beneficial use continues. [A.R.S. § 45-141](#), subd. B.

[3] Water Law 405  1580

405 Water Law

405VII Appropriation of Waters

405VII(A) Nature and Elements in General

405k1578 Priorities

405k1580 k. First in time, first in right.

[Most Cited Cases](#)

(Formerly 405k140)

Water Law 405  1581

405 Water Law

405VII Appropriation of Waters

405VII(A) Nature and Elements in General

405k1578 Priorities

405k1581 k. Date of appropriation.

[Most Cited Cases](#)

(Formerly 405k140)

Doctrine of prior appropriation, which is used to determine rights in surface water, adheres to a seniority system determined by the date on which the user initially puts water to a beneficial use. [A.R.S. § 45-151](#), subd. A.

[4] Water Law 405  1580

405 Water Law

405VII Appropriation of Waters

405VII(A) Nature and Elements in General

405k1578 Priorities

[405k1580](#) k. First in time, first in right.
[Most Cited Cases](#)
 (Formerly 405k140)

In times of surface water shortage, preference is given according to the appropriation date, allowing senior holders to take their entire allotments of water before junior appropriators receive any at all. [A.R.S. § 45-175](#).

[5] Indians 209 ☞ 189

[209](#) Indians
[209IV](#) Real Property
[209k188](#) Water Rights and Management
[209k189](#) k. In general. [Most Cited Cases](#)
 (Formerly 209k16.5)

Under *Winters* and its progeny, a federal water right vests on the date an Indian reservation is created, not when water is put to a beneficial use.

[6] Indians 209 ☞ 189

[209](#) Indians
[209IV](#) Real Property
[209k188](#) Water Rights and Management
[209k189](#) k. In general. [Most Cited Cases](#)
 (Formerly 209k16.5)

Although an Indian reservation's federal water right remains subordinate to rights acquired under state law prior to creation of the reservation, it is senior to the claims of all future state appropriators, even those who use the water before the federal holders.

[7] Indians 209 ☞ 189

[209](#) Indians
[209IV](#) Real Property
[209k188](#) Water Rights and Management
[209k189](#) k. In general. [Most Cited Cases](#)
 (Formerly 209k16.5)

Indians 209 ☞ 190

[209](#) Indians
[209IV](#) Real Property

[209k188](#) Water Rights and Management
[209k190](#) k. Amount, measure, and allowable purposes. [Most Cited Cases](#)
 (Formerly 209k16.5)

Creation of a federally reserved water right in an Indian reservation is not dependent on beneficial use, and the reservation retains its priority despite non-use.

[8] Indians 209 ☞ 190

[209](#) Indians
[209IV](#) Real Property
[209k188](#) Water Rights and Management
[209k190](#) k. Amount, measure, and allowable purposes. [Most Cited Cases](#)
 (Formerly 209k16.5)

The government, in establishing Indian or other federal reservations, impliedly reserves enough water to fulfill the purpose of each such reservation; in so doing, the United States acquires a reserved right in unappropriated water which vests on the date of the reservation and is superior to the rights of future appropriators.

[9] Water Law 405 ☞ 1704

[405](#) Water Law
[405VIII](#) Reserved Water Rights
[405k1701](#) Incident to Reservation or Withdrawal of Lands from Public Domain
[405k1704](#) k. Implied reservation of water rights. [Most Cited Cases](#)
 (Formerly 405k2)

Generally, the purpose of a federal reservation of land defines the scope and nature of impliedly reserved water rights.

[10] Water Law 405 ☞ 1009

[405](#) Water Law
[405I](#) In General
[405k1006](#) Ownership Of, and Title To, Waters
[405k1009](#) k. Title to waters and water rights in lands of the United States. [Most Cited Cases](#)
 (Formerly 405k2)

The government may exercise total dominion

over water rights on federal non-Indian lands.

[11] Water Law 405 ☞1727

[405](#) Water Law

[405VIII](#) Reserved Water Rights

[405k1725](#) Quantity of Water Reserved

[405k1727](#) k. Sufficiency to accomplish purposes of land reservation; primary and secondary purposes. [Most Cited Cases](#)
(Formerly 405k2)

Water Law 405 ☞1728

[405](#) Water Law

[405VIII](#) Reserved Water Rights

[405k1725](#) Quantity of Water Reserved

[405k1728](#) k. Time for determination of purposes. [Most Cited Cases](#)
(Formerly 405k2)

Federal government's reserved water rights in non-Indian lands are narrowly quantified to meet the original, primary purpose of the reservation, unlike those attached to Indian lands, which have reserved water rights for future needs and changes in use; water for secondary purposes must be acquired by the federal government under state law.

[12] Water Law 405 ☞1703

[405](#) Water Law

[405VIII](#) Reserved Water Rights

[405k1701](#) Incident to Reservation or Withdrawal of Lands from Public Domain

[405k1703](#) k. Waters necessary for primary purpose of federal reservation. [Most Cited Cases](#)
(Formerly 405k2)

The primary purpose for which the federal government reserves non-Indian land is strictly construed after careful examination, for purposes of determining government's water rights.

[13] Water Law 405 ☞1700

[405](#) Water Law

[405VIII](#) Reserved Water Rights

[405k1700](#) k. In general. [Most Cited Cases](#)

(Formerly 405k2)

For each federal claim of a reserved water right, the trier of fact must: examine the documents reserving the land from the public domain and the underlying legislation authorizing the reservation; determine the precise federal purposes to be served by such legislation; determine whether water is essential for the primary purposes of the reservation; and finally determine the precise quantity of water required for such purposes.

[14] Indians 209 ☞119

[209](#) Indians

[209I](#) In General

[209k119](#) k. Status and disabilities of Indians in general. [Most Cited Cases](#)
(Formerly 209k2)

In its role as trustee of Indian reservations, the government must act for the Indians' benefit.

[15] Indians 209 ☞109

[209](#) Indians

[209I](#) In General

[209k107](#) Constitutional and Statutory Provisions

[209k109](#) k. Purpose and construction. [Most Cited Cases](#)
(Formerly 209k3(3))

Indians 209 ☞124

[209](#) Indians

[209II](#) Treaties in General

[209k124](#) k. Construction and operation. [Most Cited Cases](#)
(Formerly 209k3(3))

Indian treaties, statutes, and executive orders are construed liberally in the Indians' favor.

[16] Indians 209 ☞189

[209](#) Indians

[209IV](#) Real Property

[209k188](#) Water Rights and Management

[209k189](#) k. In general. [Most Cited Cases](#)

(Formerly 209k16.5)

The purposes of Indian reserved water rights are given broader interpretation in order to further the federal goal of Indian self sufficiency.

[17] Indians 209 190

[209](#) Indians

[209II](#) Treaties in General

[209k124](#) k. Construction and operation. [Most Cited Cases](#)

(Formerly 209k3(3))

Courts construe Indian treaties according to the way in which the Indians themselves would have understood them.

[18] Indians 209 190

[209](#) Indians

[209IV](#) Real Property

[209k188](#) Water Rights and Management

[209k190](#) k. Amount, measure, and allowable purposes. [Most Cited Cases](#)

(Formerly 209k16.5)

The *Winters* doctrine, which determines an Indian tribe's water rights, retains the concept of "minimal need" by reserving only that amount of water necessary to fulfill the purpose of the Indian reservation, no more; however, the method utilized in arriving at such an amount must satisfy both present and future needs of the reservation as a livable homeland.

[19] Indians 209 190

[209](#) Indians

[209IV](#) Real Property

[209k188](#) Water Rights and Management

[209k190](#) k. Amount, measure, and allowable purposes. [Most Cited Cases](#)

(Formerly 209k16.5)

Trial court should not have used the "practicably irrigable acreage" standard to determine Indian reservations' water rights, as it limited a reservation's purpose to agriculture, rather than acknowledging that a reservation's purpose was to serve as a permanent home and abiding place to the Native American peo-

ple living there.

[20] Indians 209 190

[209](#) Indians

[209IV](#) Real Property

[209k188](#) Water Rights and Management

[209k190](#) k. Amount, measure, and allowable purposes. [Most Cited Cases](#)

(Formerly 209k16.5)

Determining the amount of water necessary to accomplish an Indian reservation's purpose is a fact-intensive inquiry that must be made on a reservation-by-reservation basis.

[21] Indians 209 190

[209](#) Indians

[209IV](#) Real Property

[209k188](#) Water Rights and Management

[209k190](#) k. Amount, measure, and allowable purposes. [Most Cited Cases](#)

(Formerly 209k16.5)

Factors to be considered when quantifying an Indian tribe's federally reserved water rights include: tribe's history; tribal culture; tribal land's geography, topography, and natural resources, including groundwater availability; tribe's economic base; past water use on reservation; and tribe's present and projected future population.

[22] Indians 209 190

[209](#) Indians

[209IV](#) Real Property

[209k188](#) Water Rights and Management

[209k190](#) k. Amount, measure, and allowable purposes. [Most Cited Cases](#)

(Formerly 209k16.5)

When an Indian reservation is created, the government impliedly reserves water to carry out its purpose as a permanent homeland; the court's function is to determine the amount of water necessary to effectuate this purpose, tailored to the reservation's minimal need.

[23] Indians 209 190

209 Indians209IV Real Property209k188 Water Rights and Management

209k190 k. Amount, measure, and allowable purposes. Most Cited Cases
(Formerly 209k16.5)

A trial court, when determining an Indian tribe's federally reserved water rights, may consider information it deems relevant, and the only requirement is that the proposed purposes be reasonably feasible, which entails a two-part analysis: first, development projects need to be achievable from a practical standpoint, i.e., they must not be pie-in-the-sky ideas that will likely never reach fruition, and second, projects must be economically sound.

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201 Ariz. 307, 35 P.3d 68, 32 Envtl. L. Rep. 20,361, 361 Ariz. Adv. Rep. 3
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OPINION

[ZLAKET](#), Chief Justice.

¶ 1 We are presented with another issue in the Gila River general stream adjudication. The facts and procedural history of this matter**71 *310 are well documented. See [Arizona v. San Carlos Apache Tribe of Arizona](#), 463 U.S. 545, 557–59, 103 S.Ct. 3201, 3209–10, 77 L.Ed.2d 837 (1983) (subsection entitled “The Arizona Cases”); [In re Rights to the Use of the Gila River](#), 171 Ariz. 230, 232–33, 830 P.2d 442, 444–45 (1992); [United States v. Superior Court](#), 144 Ariz. 265, 270–71, 697 P.2d 658, 663–64 (1985) (subsection entitled “The Controversy”). On December 11, 1990, we granted interlocutory review of six issues decided by the trial court. Four of these have been resolved. See [In re the General Adjudication of all Rights to Use Water in the Gila River System and Source](#), 198 Ariz. 330, 9 P.3d 1069 (2000) [*Gila IV*] (deciding issue 2 following remand); [In re the General Adjudication of all Rights to Use Water in the Gila River System and Source](#), 195 Ariz. 411, 989 P.2d 739 (1999) [*Gila III*] (issues 4 & 5); [In re the General Adjudication of all Rights to Use Water in the Gila River System and Source](#), 175 Ariz. 382, 857 P.2d 1236 (1993) [*Gila II*] (issue 2); [In re Rights to the Use of the Gila River](#), 171 Ariz. 230, 830 P.2d 442 (1992) [*Gila I*] (issue 1). Today the court addresses issue 3: “What is the appropriate standard to be applied in determining the amount of water reserved for federal lands?”

PROCEDURAL HISTORY

¶ 2 In its September 1988 decision, the trial court stated that each Indian reservation was entitled to

such water as is necessary to effectuate the purpose of that reservation. While as to other types of federal lands courts have allowed controversy about what the purpose of the land is and how much water will satisfy that purpose, as to Indian reservations the courts have drawn a clear and distinct line. It is that the amount is measured by the amount of water necessary to irrigate all of the *practicably irrigable acreage* (PIA) on that reservation.

Order, Sept. 9, 1988, at 17 (emphasis in original). We review this determination utilizing a de novo standard. See [Hall v. Lalli](#), 194 Ariz. 54, 57, ¶ 5, 977 P.2d 776, 779, ¶ 5 (1999).

DISCUSSION

A. Prior Appropriation and the Winters Doctrine

¶ 3 In Arizona, surface water is subject to the doctrine of prior appropriation. [Ariz.Rev.Stat. § 45–141\(A\)](#) (Supp.2000). An appropriator acquires a legal right to water by putting it to a beneficial use, which is “the basis, measure and limit” of any such entitlement. [Id. § 45–141\(B\)](#). So long as utilization continues, the right remains secure. However, when an owner “ceases or fails to use the water appropriated for five successive years, the right to the use shall cease, and the water shall revert to the public and shall again be subject to appropriation.” [Id. § 45–141\(C\)](#).

¶ 4 Prior appropriation adheres to a seniority system determined by the date on which the user initially puts water to a beneficial use. According to state law, the person “first appropriating the water shall have the better right.” [Id. § 45–151\(A\)](#). This chronological staging becomes important in times of shortage because preference is given according to the appropriation date, allowing senior holders to take their entire allotments of water before junior appropriators receive any at all. In short, “[t]he oldest titles shall have precedence.” [Id. § 45–175](#).

¶ 5 Federal water rights are different from those acquired under state law. Beginning with [Winters v. United States](#), 207 U.S. 564, 28 S.Ct. 207, 52 L.Ed. 340 (1908), the Supreme Court has consistently held

that “when the Federal Government withdraws its land from the public domain and reserves it for a federal purpose, the Government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation.” *Cappaert v. United States*, 426 U.S. 128, 138, 96 S.Ct. 2062, 2069, 48 L.Ed.2d 523 (1976).

[5][6][7] ¶ 6 According to *Winters* and its progeny, a federal right vests on the date a reservation is created, not when water is put to a beneficial use. *Arizona v. California*, 373 U.S. 546, 600, 83 S.Ct. 1468, 1498, 10 L.Ed.2d 542 (1963) [*Arizona I*]. Although this entitlement remains subordinate to rights acquired under state law prior to creation**72 *311 of the reservation, it is senior to the claims of all future state appropriators, even those who use the water before the federal holders. *Cappaert*, 426 U.S. at 138, 96 S.Ct. at 2069. In this sense, a federally reserved water right is preemptive. Its creation is not dependent on beneficial use, and it retains priority despite non-use.

¶ 7 Our task is to determine the manner in which water rights on Indian lands are to be quantified. Consideration of this subject necessarily begins with the *Winters* case. The Fort Belknap Indian reservation in Montana was created by Congress on May 1, 1888 as a “permanent home and abiding place” for the Gros Ventre and Assiniboine tribes. *Winters*, 207 U.S. at 565, 28 S.Ct. at 208. According to treaty, the government reserved 600,000 acres of land for Indian use, which was a small fraction of the tribes' original holdings. The agreement, however, was silent as to tribal water rights. Within a short period of time, white settlers began to dam or otherwise divert water from the Milk River, which bordered the reservation. In 1905, a federal reservation superintendent wrote to the Commissioner of Indian Affairs protesting these diversions and imploring the government to take “radical action” on the tribes' behalf. Monique C. Shay, *Promises of a Viable Homeland, Reality of Selective Reclamation: A Study of the Relationship Between the Winters Doctrine and Federal Water Development in the Western United States*, 19 Ecology L.Q. 547, 566 (1992) (citation omitted). Relief came in a lawsuit filed by the government to enjoin *Winters* and other homesteaders, who claimed senior rights under the doctrine of prior appropriation, from “interfering in any manner with the use by the reservation of 5,000 inches of the water of the river.” *Winters*, 207 U.S. at

565, 28 S.Ct. at 208.

¶ 8 The Supreme Court, recognizing the “lands were arid, and, without irrigation, were practically valueless,” *id.* at 576, 28 S.Ct. at 211, held that Congress, by creating the Indian reservation, impliedly reserved “all of the waters of the river ... necessary for ... the purposes for which the reservation was created.” *Id.* at 567, 28 S.Ct. at 208. As noted by the Court, the purpose for creating the Fort Belknap reservation was to establish a permanent homeland for the Gros Ventre and Assiniboine Indians. The Court further declared that this reservation of water was not only for the present needs of the tribes, but “for a use which would be necessarily continued through years.” *Id.* at 577, 28 S.Ct. at 212.

[8] ¶ 9 Granted, *Winters* was not a general stream adjudication. Moreover, congressional intent to reserve water was not expressed in the Fort Belknap treaty; it was found by the Court to be implied. The principle outlined in *Winters*, however, is now well-established in our nation's jurisprudence: the government, in establishing Indian or other federal reservations, impliedly reserves enough water to fulfill the purpose of each such reservation. See *United States v. New Mexico*, 438 U.S. 696, 700, 98 S.Ct. 3012, 3014, 57 L.Ed.2d 1052 (1978); *Cappaert*, 426 U.S. at 138, 96 S.Ct. at 2069; *Arizona I*, 373 U.S. at 599–601, 83 S.Ct. at 1497–98. “In so doing the United States acquires a reserved right in unappropriated water which vests on the date of the reservation and is superior to the rights of future appropriators.” *Cappaert*, 426 U.S. at 138, 96 S.Ct. at 2069.

¶ 10 Since *Winters*, the Supreme Court has strengthened the reserved rights doctrine. In *Arizona I*, the government asserted rights to Colorado River water on behalf of five Indian reservations in Arizona, California, and Nevada. Arizona claimed that because each of the reservations was created or expanded by Executive Order, rather than by treaty, water rights were not retained. This argument was expressly rejected by the Court. *Arizona I*, 373 U.S. at 598, 83 S.Ct. at 1496–97. It noted that when these reservations were established, the federal government was aware “that most of the lands were of the desert kind—hot, scorching sands—and that water from the river would be essential to the life of the Indian people and to the animals they hunted and the crops they raised.” *Id.* at 599, 83 S.Ct. at 1497. As such, the Court found that

the United States reserved water rights “to make the reservation[s] livable.” *Id.* This allocation was intended to “satisfy the future as well as the **73 *312 present needs of the Indian Reservations.” *Id.* at 600, 83 S.Ct. at 1498.

¶ 11 The Supreme Court has further clarified the reserved rights doctrine in two non-Indian cases. In *Cappaert*, the government brought a lawsuit to declare its rights to an underground pool of water appurtenant to Devil’s Hole in the Death Valley National Monument. 426 U.S. at 131, 96 S.Ct. at 2066. The Cappaerts, by pumping groundwater, were threatening the amount of water available to an endangered species of desert fish. Nevada argued that the *Winters* doctrine was an equitable one which called for a “balancing of competing interests.” *Id.* at 138, 96 S.Ct. at 2069. The Court disagreed, stating that the central issue was “whether the Government intended to reserve unappropriated and thus available water. Intent is inferred if the previously unappropriated waters are necessary to accomplish the purposes for which the reservation was created.” *Id.* at 139, 96 S.Ct. at 2070 (citations omitted). Because the Devil’s Hole Monument had been established in part to conserve natural and historical objects and the wildlife therein, the Court found a reserved water right to fulfill this purpose. In an important caveat, however, the Court stated that this right “reserves only that amount of water necessary to fulfill the purpose of the reservation, no more.” *Id.* at 141, 96 S.Ct. at 2071. Thus, the allocation must be tailored to the “minimal need” of the reservation.^{FNI} *Id.*

^{FNI}. This limitation makes good sense because federally reserved water rights are implied, *see supra* ¶ 9, *infra* ¶ 19, uncircumscribed by the beneficial use doctrine, and preemptive in nature. *See supra* ¶ 6.

¶ 12 In *United States v. New Mexico*, 438 U.S. at 697, 98 S.Ct. at 3012–13, the issue before the Court was whether the New Mexico Supreme Court, in an adjudication concerning the Rio Mimbres, properly quantified the federally reserved water right associated with the Gila National Forest. After reiterating *Cappaert*’s limiting principle, that the “implied-reservation-of-water doctrine” applies only to that amount of water necessary to fulfill a reservation’s purpose, the Court emphasized that “both the asserted water right and the specific purposes for which the

land was reserved” must be examined to ascertain “that without the water the purposes of the reservation would be entirely defeated.” *New Mexico*, 438 U.S. at 700, 98 S.Ct. at 3014. Because federally reserved water rights are implied, the Court also determined that

[w]here water is necessary to fulfill the very purposes for which a federal reservation was created, it is reasonable to conclude, even in the face of Congress’ express deference to state water law in other areas, that the United States intended to reserve the necessary water. Where water is only valuable for a secondary use of the reservation, however, there arises the contrary inference that Congress intended ... that the United States would acquire water in the same manner as any other public or private appropriator.

Id. at 702, 98 S.Ct. at 3015. This is now known as the “primary-secondary purposes test,” and its application to federal Indian reservations is one of the issues before us today.

B. Purpose

[9] ¶ 13 Generally, the “purpose of a federal reservation of land defines the scope and nature of impliedly reserved water rights.” *United States v. Adair*, 723 F.2d 1394, 1419 (9th Cir.1983). However, when applying the *Winters* doctrine, it is necessary to distinguish between Indian and non-Indian reservations.

[10][11][12][13] ¶ 14 The government may exercise total dominion over water rights on federal non-Indian lands. *State of Montana ex rel. Greely v. Confederated Salish & Kootenai Tribes*, 219 Mont. 76, 712 P.2d 754, 767 (1985) (“[T]he United States can lease, sell, quitclaim, release, encumber or convey its own federal reserved water rights.”). But unlike those attached to Indian lands, which have reserved water rights for “future needs and changes in use,” *id.*, non-Indian reserved rights are narrowly quantified to meet the original, primary purpose of the reservation; water for secondary purposes must be acquired under state law. *See* **74*313 *New Mexico*, 438 U.S. at 702, 98 S.Ct. at 3015. Thus, the primary purpose for which the federal government reserves non-Indian land is strictly construed after careful examination. The test for determining such a right is clear.

For each federal claim of a reserved water right, the

trier of fact must examine the documents reserving the land from the public domain and the underlying legislation authorizing the reservation; determine the precise federal purposes to be served by such legislation; determine whether water is essential for the primary purposes of the reservation; and finally determine the precise quantity of water—the minimal need as set forth in *Cappaert* and *New Mexico*—required for such purposes.

Greely, 712 P.2d at 767 (quoting *United States v. City & County of Denver*, 656 P.2d 1, 20 (Colo.1982)).

[14][15][16] ¶ 15 Indian reservations, however, are different. In its role as trustee of such lands, the government must act for the Indians' benefit. See *United States v. Mitchell*, 463 U.S. 206, 225–26, 103 S.Ct. 2961, 2972–73, 77 L.Ed.2d 580 (1983). This fiduciary relationship is referred to as “one of the primary cornerstones of Indian law.” Felix S. Cohen, *Handbook of Federal Indian Law* 221 (1982). Thus, treaties, statutes, and executive orders are construed liberally in the Indians' favor. *County of Yakima v. Confederated Tribes & Bands of the Yakima Indian Nation*, 502 U.S. 251, 269, 112 S.Ct. 683, 693, 116 L.Ed.2d 687 (1992) (citations omitted). Such an approach is equally applicable to the federal government's actions with regard to water for Indian reservations. “The purposes of Indian reserved rights ... are given broader interpretation in order to further the federal goal of Indian self sufficiency.” *Greely*, 712 P.2d at 768 (citations omitted).

¶ 16 The parties dispute the purposes of the several Indian reservations involved in this case. The United States and the tribal litigants argue that federal case law has preemptively determined that every Indian reservation was established as a permanent tribal homeland. The state litigants disagree, contending instead that the trial court must analyze each tribe's treaty or enabling documentation to determine that reservation's individual purpose. We need not decide whether federal case law has preemptively determined the issue. We agree with the Supreme Court that the essential purpose of Indian reservations is to provide Native American people with a “permanent home and abiding place,” *Winters*, 207 U.S. at 565, 28 S.Ct. at 208, that is, a “livable” environment. *Arizona I*, 373 U.S. at 599, 83 S.Ct. at 1497.

¶ 17 While courts may choose to examine historical documents in determining the purpose and reason for creating a federal reservation on non-Indian lands, the utility of such an exercise with respect to Indian reservations is highly questionable.^{FN2} This is so for a variety of reasons.

FN2. One commentator, in fact, suggests that “the effort to inform the quantification of federal [Indian] reserved rights with historical considerations is futile and should be abandoned.” Martha C. Franks, *The Uses of the Practicably Irrigable Acreage Standard in the Quantification of Reserved Water Rights*, 31 Nat. Resources J. 549, 563 (1991). While we generally agree with this observation, see *infra* ¶¶ 18–22, we believe that tribal history may play an important role in quantifying the amount of water necessary to fulfill an Indian reservation's purpose as a permanent homeland. See *infra* ¶ 42.

¶ 18 First, as pointed out by the state litigants, many Indian reservations were pieced together over time. For example, the boundaries of the Gila River Indian Community changed ten times from its creation in 1859 until 1915, resulting in overall growth from 64,000 to 371,422 acres. But some of the changes along the way actually decreased the size of the reservation or limited the scope of previous additions. If these alterations had different purposes, as the state litigants suggest, it might be argued that water reserved to a specific parcel could not be utilized elsewhere on the same reservation, or that water once available could no longer be accessed. Such an arbitrary patchwork of water rights would be unworkable and inconsistent with the concept of a permanent, unified homeland.

**75 *314 ¶ 19 A second problem lies in the fact that congressional intent to reserve water for tribal land is not express, but implied. As Franks points out, “because the intent is merely imputed—that is, its historical reality is irrelevant for purposes of establishing reserved rights—it seems strained to impute an historical definition to that imputed intent for the purpose of quantifying an extremely valuable right to a scarce resource.” Franks, *supra* note 2, at 563.

[17] ¶ 20 Courts construe Indian treaties according to the way in which the Indians themselves would

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have understood them. [Minnesota v. Mille Lacs Band of Chippewa Indians](#), 526 U.S. 172, 196, 119 S.Ct. 1187, 1201, 143 L.Ed.2d 270 (1999) (citations omitted); [Greely](#), 712 P.2d at 763 (citations omitted). But the historical search for a reservation's purpose tends to focus only on the motives of Congress—tribal intent is easily and often left out of the equation. It is doubtful that any tribe would have agreed to surrender its freedom and be confined on a reservation without some assurance that sufficient water would be provided for its well-being.

¶ 21 The most recognizable difficulty with the historical approach is that many documents do not accurately represent the true reasons for which Indian reservations were created. It is well known that in the nineteenth century, the federal government made conflicting promises. On one hand, it offered white settlers free land, an abundance of resources, and safety if they would travel to and inhabit the West. The government also assured Indians that they would be able to live on their lands in peace. The promises to the tribes were not kept. As recognized in 1863 by the Superintendent of Indian Affairs, M. Steck, the invasion of white settlement caused the Apache Indian people to be

divested ... of all their peculiar and former means of subsistence, in contending with a race who, under the circumstances, can feel no sympathy with them, [such that] the Indian must soon be swept from the face of the earth. If every red man were a Spartan, they would find it impossible to withstand this overpowering influx of immigration. Humanity and religion, therefore, demand of us that we interpose a barrier for their safety....

[S. Rep. 102–133, at 2 \(1991\)](#). Even after this humanitarian “barrier” was imposed, however, General William T. Sherman made clear that “if [the Indians] wander outside they at once become objects of suspicion, liable to be attacked by the troops as hostile.” *Id.* at 3. In a November 9, 1871 letter to the Secretary of War, Sherman closed by stating that General Crook ^{FN3}, head of the Army in Arizona, “may feel assured that whatever measures of severity he may adopt to reduce these Apaches to a peaceful and subordinate condition will be approved by the War Department and the President.” *Id.*

[FN3](#). General George Crook served as the

commanding officer for the Department of Arizona from 1871–1875 and again from 1882–1886. A large part of Crook's job was to force Indians onto reservation lands and hunt down those who dared step off, in order to transform the Indians into “docile inhabitants of the reservation.” *General George Crook: His Autobiography* 214 (Martin F. Schmitt ed., 1960). Even Crook recognized that “the greed of the white man for reservation land and the remarkably short-term views of the Indian Bureau observed no promises made in the past.” *Id.* at 241.

¶ 22 Despite what may be set forth in official documents, the fact is that Indians were forced onto reservations so that white settlement of the West could occur unimpeded. See Walter Rusinek, Note, [A Preview of Coming Attractions? Wyoming v. United States and the Reserved Rights Doctrine](#), 17 *Ecology L.Q.* 355, 406 (1990) (“Cynical motives aside, the goals of the reservation system were to move Indian tribes out of the path of white settlement, provide them a homeland, and ‘civilize’ individual tribal members, often by attempting to transform them into yeoman farmers.”). As recognized by former Arizona Congressman Morris K. Udall, the federal government “can be kindly described as having been less than diligent in its efforts to secure sufficient water supplies for the [Indian] community to develop its arable lands and achieve meaningful economic self-sufficiency and self-determination.” 134 Cong. Rec. E562–02 (Mar. 8, 1988) (statement of Rep. Udall).

**76 *315 ¶ 23 The trial court here failed to recognize any particular purpose for these Indian reservations, only finding that the PIA standard should be applied when quantifying tribes' water rights. It is apparent that the judge was leery of being “drawn into a potential racial controversy” based on historical documentation. Order, *supra*, at 17. But it seems clear to us that each of the Indian reservations in question was created as a “permanent home and abiding place” for the Indian people, as explained in [Winters](#), 207 U.S. at 565, 28 S.Ct. at 208. This conclusion comports with the belief that “[t]he general purpose, to provide a home for the Indians, is a broad one and must be liberally construed.” [Colville Confederated Tribes v. Walton](#), 647 F.2d 42, 47 (9th Cir.1981). Such a construction is necessary for tribes to achieve the twin goals of Indian self-determination and economic

self-sufficiency. See Yavapai–Prescott Indian Tribe Water Rights Settlement Act of 1994, [Pub.L. 103–434, § 102\(a\) \(1\)](#), 108 Stat. 4526, 4526; Fort McDowell Indian Community Water Rights Settlement Act of 1990, [Pub.L. 101–628, § 402\(a\)\(1\)](#), 104 Stat. 4469, 4480; [Greely, 712 P.2d at 768](#).

¶ 24 Limiting an Indian reservation's purpose to agriculture, as the PIA standard implicitly does,

assumes that the Indian peoples will not enjoy the same style of evolution as other people, nor are they to have the benefits of modern civilization. I would understand that the homeland concept assumes that the homeland will not be a static place frozen in an instant of time but that the homeland will evolve and will be used in different ways as the Indian society develops.

[In re General Adjudication of All Rights to Use Water in the Big Horn River System, 753 P.2d 76, 119 \(Wyo.1988\)](#) (Thomas, J., dissenting) [*Big Horn I*]; see also [Walton, 647 F.2d at 47](#) (stating that courts consider Indians' “need to maintain themselves under changed circumstances” when determining a reservation's purpose).^{FN4}

^{FN4}. Even where reservations were created so that tribes could engage in agricultural pursuits, Congress only envisioned this as “a first step in the ‘civilizing’ process.” [Walton, 647 F.2d at 47 n. 9](#) (citing 11 Cong. Rec. 905 (1881)).

¶ 25 Other right holders are not constrained in this, the twenty-first century, to use water in the same manner as their ancestors in the 1800s. Although over 40% of the nation's population lived and worked on farms in 1880, less than 5% do today. U.S. Census Bureau, *Historical Statistics of the United States, Colonial Times to 1970*, 240, 457 (1975). Likewise, agriculture has steadily decreased as a percentage of our gross domestic product. See U.S. Census Bureau, *Statistical Abstract of the United States*, 881, 886 (1999) (demonstrating that agricultural output as a percentage of GDP has declined from 10.7% in 1930 to 2.84% in 1997). Just as the nation's economy has evolved, nothing should prevent tribes from diversifying their economies if they so choose and are reasonably able to do so. **The permanent homeland concept allows for this flexibility and practicality. We**

therefore hold that the purpose of a federal Indian reservation is to serve as a “permanent home and abiding place” to the Native American people living there.^{FN5}

^{FN5}. We are aware that in *Gila III*, we stated: “To determine the purpose of a reservation and to determine the waters necessary to accomplish that purpose are inevitably fact-intensive inquiries that must be made on a reservation-by-reservation basis.” [195 Ariz. at 420, ¶ 31, 989 P.2d at 748, ¶ 31](#). In that case, however, a determination of purpose was not squarely before the court. Having now received oral and written argument dealing specifically with the issue, and upon further consideration, we find that Indian reservations were created as permanent homelands. The need for individualized, fact-based quantifications of their water rights, however, remains unchanged. See *infra* ¶ 39.

C. Primary–Secondary Purpose Test

¶ 26 Next arises the question of whether the primary-secondary purpose test applies to Indian reservations. In *New Mexico*, a case dealing with a national forest, the Supreme Court reaffirmed that “[w]here water is necessary to fulfill the very purposes for which a federal reservation was created,” it is implied that the [United States reserved water for it, 438 U.S. at 702, 98 S.Ct. at 3015](#). However, where the “water is only valuable for a secondary use of the reservation,” any right must be acquired according to state law. *Id.* All parties agree that this distinction applies to non-Indian federal reservations. The trial court here rejected the primary-secondary test, finding that the “rule is a little different for entrusted lands, Indian reservations.” Order, *supra*, at 16–17. We agree.

¶ 27 It is true that some courts have utilized the primary-secondary purpose test or looked to it for guidance when dealing with [Indian lands. See Adair, 723 F.2d at 1408](#) (stating that *New Mexico* is not directly applicable, but establishes “several useful guidelines”); [Walton, 647 F.2d at 47](#) (applying the test); [In re the General Adjudication of all Rights to Use Water in the Big Horn River System, 835 P.2d 273, 278–79 \(Wyo.1992\)](#) [*Big Horn II*] (following the test). Nevertheless, we believe the significant differ-

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ences between Indian and non-Indian reservations preclude application of the test to the former.^{FN6} As Judge Canby has noted, “[w]hile the purpose for which the federal government reserves other types of lands may be strictly construed, the purposes of Indian reservations are necessarily entitled to broader interpretation if the goal of Indian self-sufficiency is to be attained.” W. Canby, *American Indian Law* 245–46 (1981) (citation omitted); see also Yavapai–Prescott Indian Tribe Water Rights Settlement Act of 1994, Pub.L. 103–434, § 102(a)(1), 108 Stat. 4526 (declaring United States’ policy “to promote Indian self-determination and economic self-sufficiency”); *Greely*, 712 P.2d at 767–68 (distinguishing Indian and non-Indian federally reserved rights, stating that Indian rights “are given broader interpretation in order to further the federal goal of Indian self-sufficiency”). Parenthetically, even if the *New Mexico* test were to apply, tribes would be entitled to the full measure of their reserved rights because water use necessary to the establishment of a permanent homeland is a primary, not secondary, purpose.

FN6. By our rejection of the primary-secondary test in matters dealing with Indian reservations, we do not suggest that other principles articulated in the non-Indian federally reserved water rights cases are similarly inapplicable. See *supra* ¶ 11; *infra* ¶¶ 29, 37, 49; see also *Gila III*, 195 Ariz. at 422, 989 P.2d at 750, ¶ 38.

D. Quantifying Winters Rights

[18] ¶ 28 The *Winters* doctrine retains the concept of “minimal need” by reserving “only that amount of water necessary to fulfill the purpose of the reservation, no more.” *Cappaert*, 426 U.S. at 141, 96 S.Ct. at 2071. The method utilized in arriving at such an amount, however, must satisfy both present and future needs of the reservation as a livable homeland. See *Arizona I*, 373 U.S. at 599–600, 83 S.Ct. at 1497–98; *Winters*, 207 U.S. at 577, 28 S.Ct. at 212.

E. The PIA Standard

[19] ¶ 29 The trial court in this matter held that each Indian reservation was entitled to “the amount of water necessary to irrigate all of the *practicably irrigable acreage* (P.I.A.) on that reservation.” Order, *supra*, at 17 (emphasis in original). The PIA standard was developed by Special Master Rifkind in *Arizona I*, 373 U.S. 546, 83 S.Ct. 1468, 10 L.Ed.2d 542 (1963).

That case dealt with the water rights of similarly-situated tribes in Arizona, California, and Nevada. Without much amplification, the Supreme Court declared:

We also agree with the Master’s conclusion as to the quantity of water intended to be reserved. He found that the water was intended to satisfy the future as well as the present needs of the Indian Reservations and ruled that enough water was reserved to irrigate all the practicably irrigable acreage on the reservations.

Id. at 600, 83 S.Ct. at 1498. Other courts have since adopted the PIA standard in quantifying reserved water rights for Indian tribes. See *Walton*, 647 F.2d at 47–48 (applying PIA “to provide a homeland for the Indians to maintain their agrarian society”); *Greely*, 712 P.2d at 764 (utilizing PIA to fulfill a reservation’s agricultural purpose).

¶ 30 PIA constitutes “those acres susceptible to sustained irrigation at reasonable costs.” *Big Horn I*, 753 P.2d at 101. This implies a two-step process. First, it must be shown that crops can be grown on the land, considering arability and the engineering practicality of irrigation. See *id.* Second, **78 *317 the economic feasibility of irrigation must be demonstrated. See generally *Arizona v. California*, 460 U.S. 605, 103 S.Ct. 1382, 75 L.Ed.2d 318 (1983) [*Arizona II*] (adopting the Special Master’s PIA analysis requiring this methodology); Andrew C. Mergen & Sylvia F. Liu, *A Misplaced Sensitivity: The Draft Opinions in Wyoming v. United States*, 68 U. Colo. L.Rev. 683, 696 (1997) (acknowledging that, since *Arizona II*, the economic feasibility requirement in PIA analysis has “become the norm”); Rusinek, *supra*, at 371 (detailing the PIA process utilized by the *Arizona II* Special Master). This is accomplished by subjecting proposed irrigation projects to a cost-benefit analysis, “comparing the likely costs of the project to the likely financial returns. If the latter outweighs the former, the project can be found economically feasible, and the underlying land ‘practicably irrigable’....” Franks, *supra*, at 553.

¶ 31 The United States and tribal litigants argue that federal case law has preemptively established PIA as the standard by which to quantify reserved water rights on Indian reservations. We disagree. As observed by Special Master Tuttle in his *Arizona II* re-

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port, “the Court did not necessarily adopt this standard as the universal measure of Indian reserved water rights...” *Id.* at 556 n. 40 (quoting Special Master's Report at 90 (Feb. 22, 1981)). Indeed, nothing in *Arizona I* or *II* suggests otherwise.

¶ 32 On its face, PIA appears to be an objective method of determining water rights. But while there may be some “value of the certainty inherent in the practicably irrigable acreage standard,” *Big Horn I*, 753 P.2d at 101, its flaws become apparent on closer examination.

¶ 33 The first objection to an across-the-board application of PIA lies in its potential for inequitable treatment of tribes based solely on geographical location. Arizona's topography is such that some tribes inhabit flat alluvial plains while others dwell in steep, mountainous areas. This diversity creates a dilemma that PIA cannot solve. As stated by two commentators:

There can be little doubt that the PIA standard works to the advantage of tribes inhabiting alluvial plains or other relatively flat lands adjacent to stream courses. In contrast, tribes inhabiting mountainous or other agriculturally marginal terrains are at a severe disadvantage when it comes to demonstrating that their lands are practicably irrigable.

Mergen & Liu, *supra*, at 695. Tribes who fail to show either the engineering or economic feasibility of proposed irrigation projects run the risk of not receiving any reserved water under PIA. *See, e.g., State ex rel. Martinez v. Lewis*, 116 N.M. 194, 861 P.2d 235, 246–51 (Ct.App.1993) (denying water rights to the Mescalero Apache Tribe, situated in a mountainous region of southern New Mexico, for failure to prove irrigation projects were economically feasible). This inequity is unacceptable and inconsistent with the idea of a permanent homeland.

¶ 34 Another concern with PIA is that it forces tribes to pretend to be farmers in an era when “large agricultural projects ... are risky, marginal enterprises. This is demonstrated by the fact that no federal project planned in accordance with the Principles and Guidelines [adopted by the Water Resources Council of the Federal Government] has been able to show a positive benefit/cost ratio in the last decade [1981 to 1991].”

Franks, *supra* note 2, at 578. A permanent homeland requires water for multiple uses, which may or may not include agriculture. The PIA standard, however, forces “tribes to prove economic feasibility for a kind of enterprise that, judging from the evidence of both federal and private willingness to invest money, is simply no longer economically feasible in the West.” *Id.*

¶ 35 Limiting the applicable inquiry to a PIA analysis not only creates a temptation for tribes to concoct inflated, unrealistic irrigation projects, but deters consideration of actual water needs based on realistic economic choices. We again agree with the analysis of Justice Richard V. Thomas in *Big Horn I*:

I would be appalled ... if the Congress ... began expending money to develop water projects for irrigating these Wyoming lands when far more fertile lands in the midwestern states now are being removed**79 *318 from production due to poor market conditions. I am convinced that ... those lands which were included as practicably irrigable acreage, based upon the assumption of the construction of a future irrigation project, should not be included for the purpose of quantification of the Indian peoples' water rights. They may be irrigable academically, but not as a matter of practicality....

753 P.2d at 119 (Thomas, J., dissenting).

¶ 36 The PIA standard also potentially frustrates the requirement that federally reserved water rights be tailored to minimal need. Rather than focusing on what is necessary to fulfill a reservation's overall design, PIA awards what may be an overabundance of water by including every irrigable acre of land in the equation.

¶ 37 For the foregoing reasons, we decline to approve the use of PIA as the exclusive quantification measure for determining water rights on Indian lands.

F. Proper Factors for Consideration

[20] ¶ 38 Recognizing that the most likely reason for PIA's endurance is that “no satisfactory substitute has emerged,” Dan A. Tarlock, *One River, Three Sovereigns: Indian and Interstate Water Rights*, 22 Land & Water L.Rev. 631, 659 (1987), we now enter essentially uncharted territory. In *Gila III*, this court stated that determining the amount of water necessary

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to accomplish a reservation's purpose is a “fact-intensive inquir[y] that must be made on a reservation-by-reservation basis.” [195 Ariz. at 420, 989 P.2d at 748, ¶ 31](#). We still adhere to the belief that this is the only way federally reserved rights can be tailored to meet each reservation's minimal need.

¶ 39 When *Big Horn I* went before the Supreme Court, one of the present state litigants, in an amicus brief, argued that there should be a “balancing of a myriad of factors” in quantifying reserved water rights. Rusinek, *supra*, at 397 (quoting Brief of Amicus Curiae Salt River Project Agric. Improvement & Power Dist. at 19, [Wyoming v. United States, 492 U.S. 406, 109 S.Ct. 2994, 106 L.Ed.2d 342 \(1989\)](#)). During oral argument in the present case, counsel for the Apache tribes made a similar argument. Considering the objective that tribal reservations be allocated water necessary to achieve their purpose as permanent homelands, such a multi-faceted approach appears best-suited to produce a proper outcome.

¶ 40 Tribes have already used this methodology in settling water rights claims with the federal government. One feature of such settlements has been the development of master land use plans specifying the quantity of water necessary for different purposes on the reservation. *See, e.g., S. Rep. 101-479 (1990)* (Fort McDowell Indian Community utilized a land use plan in conjunction with its water rights settlement based on agricultural production, commercial development, industrial use, residential use, recreational use, and wilderness).

[21] ¶ 41 While we commend the creation of master land use plans as an effective means of demonstrating water requirements, tribes may choose to present evidence to the trial court in a different manner. The important thing is that the lower court should have before it actual and proposed uses, accompanied by the parties' recommendations regarding feasibility and the amount of water necessary to accomplish the homeland purpose. In viewing this evidence, the lower court should consider the following factors, which are not intended to be exclusive.

¶ 42 A tribe's history will likely be significant. Deference should be given to practices requiring water use that are embedded in Native American traditions. Some rituals may date back hundreds of years, and tribes should be granted water rights necessary to

continue such practices into the future. An Indian reservation could not be a true homeland otherwise.

¶ 43 In addition to history, the court should consider tribal culture when quantifying federally reserved rights. Preservation of culture benefits both Indians and non-Indians; for this reason, Congress has recognized the “unique values of Indian culture” in our society. [25 U.S.C. § 1902 \(1994\)](#) (recognizing the importance of culture when placing Indian children in foster care); *see also* [20 U.S.C. § 7801 \(1994\)](#) (finding that education**80 *319 should “build on Indian culture”). Water uses that have particular cultural significance should be respected, where possible. The length of time a practice has been engaged in, its nature (e.g., religious or otherwise), and its importance in a tribe's daily affairs may all be relevant.

¶ 44 The court should also consider the tribal land's geography, topography, and natural resources, including groundwater availability. As mentioned earlier, one of the biggest problems with PIA is that it does not allow for flexibility in this regard. It has also been observed that “irrigation is one of the most inefficient and ecologically damaging ways to use water.... [I]ncreasing the use of water for irrigation runs counter to a historic trend in western water use—the transition from agricultural to less consumptive and higher-valued municipal and industrial uses.” Rusinek, *supra*, at 410. This does not mean that tribes are prohibited from including agriculture/irrigation as part of their development plans. However, future irrigation projects are subject to a PIA-type analysis: irrigation must be both practically and economically feasible. Tribes should be free to develop their reservations based on the surroundings they inhabit. We anticipate that any development plan will carefully consider natural resources (including potential water uses), so that the water actually granted will be put to its best use on the reservation.

¶ 45 In conjunction with natural resources, the court should look to a tribe's economic base in determining its water rights. Tribal development plans or other evidence should address, and the court should consider, “the optimal manner of creating jobs and income for the tribes [and] the most efficient use of the water....” *Id.* at 397 (citing Brief of Amicus Curiae Salt River Project Agric. Improvement & Power Dist. at 19, [Wyoming v. United States, 492 U.S. 406, 109 S.Ct. 2994, 106 L.Ed.2d 342 \(1989\)](#)). Economic de-

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velopment and its attendant water use must be tied, in some manner, to a tribe's current economic station. Physical infrastructure, human resources, including the present and potential employment base, technology, raw materials, financial resources, and capital are all relevant in viewing a reservation's economic infrastructure.

¶ 46 **Past water use** on a reservation should also be considered when quantifying a tribe's rights. The historic use of water may indicate how a tribe has valued it. Logically, tribal prioritization of past water use will affect its future development. For example, a tribe that has never used water to irrigate is less likely to successfully and economically develop irrigation projects in the future. This does not mean that Indians may not use their water allocations for new purposes on a reservation. However, any proposed projects should be scrutinized to insure that they are practical and economical. Such projects should also be examined to determine that they are, in fact, appropriate to a particular homeland.

¶ 47 **While it should never be the only factor, a tribe's present and projected future population may be considered in determining water rights.** We recognize that the Supreme Court has rejected any quantification standard based solely on the "number of Indians." [Arizona II](#), 460 U.S. at 617, 103 S.Ct. at 1390. However, if a federally reserved water right is to be tailored to a reservation's "minimal need," as we believe it must, then population necessarily must be part of the equation. To act without regard to population would ignore the fact that water will always be used, most importantly, for human needs. Therefore, the number of humans is a necessary element in quantifying water rights. Such consideration is not at odds with the need to satisfy tribes' "future as well as ... present needs." [Arizona I](#), 373 U.S. at 600, 83 S.Ct. at 1498. Population forecasts are common in today's society and are recognized and relied upon by the legal system. See [Hernandez v. Frohmler](#), 68 Ariz. 242, 257, 204 P.2d 854, 864 (1949) (taking judicial notice of census population data); [State ex rel. Corbin v. Sabel](#), 138 Ariz. 253, 256, 674 P.2d 316, 319 (App.1983) (relying on a population estimate to find that a town could not file for incorporation). It is therefore proper to use population evidence in conjunction with other factors in quantifying a tribe's *Winters* rights.

**81 *320 [22] ¶ 48 The state litigants argue that

courts should act with sensitivity toward existing state water users when quantifying tribal water rights. See [New Mexico](#), 438 U.S. at 718, 98 S.Ct. at 3023 (Powell, J., dissenting in part) (concurring that the *Winters* doctrine "should be applied with sensitivity to its impact upon those who have obtained water rights under state law"). They claim that this is necessary because when a water source is fully appropriated, there will be a gallon-for-gallon decrease in state users' water rights due to the tribes' federally reserved rights. See [Arizona II](#), 460 U.S. at 621, 103 S.Ct. at 1392; [New Mexico](#), 438 U.S. at 705, 98 S.Ct. at 3016. When an Indian reservation is created, the government impliedly reserves water to carry out its purpose as a permanent homeland. See [Winters](#), 207 U.S. at 566-67, 577, 28 S.Ct. at 208-09, 212. The court's function is to determine the amount of water necessary to effectuate this purpose, tailored to the reservation's minimal need. We believe that such a minimalist approach demonstrates appropriate sensitivity and consideration of existing users' water rights, and at the same time provides a realistic basis for measuring tribal entitlements.

[23] ¶ 49 Again, the foregoing list of factors is not exclusive. The lower court must be given the latitude to consider other information it deems relevant to determining tribal water rights. We require only that proposed uses be reasonably feasible. As with PIA, this entails a two-part analysis. First, development projects need to be achievable from a practical standpoint—they must not be pie-in-the-sky ideas that will likely never reach fruition. Second, projects must be economically sound. When water, a scarce resource, is put to efficient uses on the reservation, tribal economies and members are the beneficiaries.

CONCLUSION

¶ 50 We wish it were possible to dispose of this matter by establishing a bright line standard, easily applied, in order to relieve the lower court and the parties of having to engage in the difficult, time-consuming process that certainly lies ahead. Unfortunately, we cannot.

¶ 51 In a quote attributed to Mark Twain, it is said that "in the west, whiskey is for drinkin' and water is for fightin'." Nicholas Targ, [Water Law on the Public Lands: Facing a Fork in the River](#), 12 Nat. Resources & Env't 14 (Summer 1997). While this remains true in parts of Arizona, it is our hope that interested parties

will work together in a spirit of cooperation, not antagonism. “Water is far too ecologically valuable to be used as a political pawn in the effort to resolve the centuries-old conflict between Native Americans and those who followed them in settling the West.” Rusinek, *supra*, at 412. This is especially so now, when the welfare and progress of our indigenous population is inextricably tied to and inseparable from the welfare and progress of the entire state.

¶ 52 The relevant portion of the September 9, 1988 order is vacated and the trial court is directed to proceed in a manner consistent with this opinion.

CONCURRING: [STANLEY G. FELDMAN](#), Justice, [NOEL A. FIDEL](#), Judge, [WILLIAM E. DRUKE](#), Judge and [JOHN PELANDER](#), Judge.
Vice Chief Justice [CHARLES E. JONES](#) and Justices [FREDERICK J. MARTONE](#) and [RUTH V. MCGREGOR](#) recused themselves; pursuant to Ariz. Const. art. VI, [3](#), Judge [NOEL A. FIDEL](#) of Division One, Arizona Court of Appeals, Judge [WILLIAM E. DRUKE](#), and Judge JOHN PELANDER of Division Two, Arizona Court of Appeals, were designated to sit in their stead.

Ariz., 2001.

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