

BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION

IN THE MATTER OF THE
NAVIGABILITY OF SMALL AND
MINOR WATERCOURSES IN NAVAJO
COUNTY, ARIZONA, EXCLUDING THE
LITTLE COLORADO RIVER

No.: 05-006-NAV

**REPORT, FINDINGS AND DETERMINATION
REGARDING THE NAVIGABILITY OF SMALL AND
MINOR WATERCOURSES IN NAVAJO COUNTY, ARIZONA**

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LIST OF EXHIBITS

- Exhibit "A" List of all of the small and minor watercourses in Navajo County, Arizona, both named and unnamed in report
- Exhibit "B" Copies of the Notices of Intent to Study and Receive, Review and Consider Evidence on the issue of navigability of small and minor watercourses in Navajo County
- Exhibit "C" Notices of the public hearings
- Exhibit "D" Agenda and Minutes of the public hearings
- Exhibit "E" List of Evidence and Records
- Exhibit "F" List of watercourses in Navajo County that were determined to have no characteristics of navigability or characteristics indicating susceptibility of navigability at level one
- Exhibit "G" List of the 76 watercourses that received a positive response to one or more of the characteristics of navigability or characteristics indicating susceptibility of navigability evaluated at level two
- Exhibit "H" Maps of the area showing where Chevelon Creek is located in the County and State and its watershed

Pursuant to Title 37, Chapter 7, Arizona Revised Statutes, the Arizona Navigable Stream Adjudication Commission ("Commission") has undertaken to receive, compile, review and consider relevant historical and scientific data and information, documents and other evidence regarding the issue of whether any small and minor watercourse in Navajo County, Arizona, excluding the Little Colorado River, was navigable or nonnavigable for title purposes as of February 14, 1912. Proper and legal public notice was given in accordance with law and a hearing was held at which all parties were afforded the opportunity to present evidence, as well as their views, on this issue. The Commission, having considered all of the historical and scientific data and information, documents and other evidence, including the oral and written presentations made by persons appearing at the public hearing and being fully advised in the premises, hereby submits its report, findings and determination.

There are 3,352 documented small and minor watercourses in Navajo County, of which 3,199 are unnamed. All of these watercourses, both named and unnamed, are the subject of and included in this report. Excluded from this report is the Little Colorado River which is deemed to be major watercourse and is the subject of a separate report. Attached hereto as Exhibit "A" is a list of all of the small and minor watercourses in Navajo County, Arizona, both named and unnamed, covered by this report.

I. Procedure

On March 4, 11 and 18, 2005, the Commission gave proper prior notice of its intent to consider the issue of whether small and minor watercourses in Navajo County, Arizona were navigable or nonnavigable for title purposes as of February 14, 1912, in accordance with A.R.S. § 37-1123B. Publication was in The Holbrook Tribune-News, a newspaper of general circulation published at Holbrook, in the County of Navajo, State of Arizona. Copy of the Notice of Intent to Study and Receive, Review and Consider Evidence on the issue of navigability of small and minor watercourses in Navajo County are attached hereto as Exhibit "B."

After collecting and documenting all reasonably available evidence received pursuant to the Notice of Intent to Study and to Receive, Review and Consider Evidence, the Commission scheduled a public hearing to receive additional evidence and testimony regarding the navigability or nonnavigability of small and minor watercourses located in Navajo County, Arizona. Public notice of this hearing was given by legal advertising on March 22, 2005 in the White Mountain Independent at Show Low in Navajo County, Arizona, and on March 22, 2005 in the Arizona Business Gazette, as required by law pursuant to A.R.S. §37-1126 and, in addition, by mail to all those requesting individual notice and by means of the ANSAC website (azstreambeds.com). This hearing was held on April 25, 2005, in the City of Holbrook, the county seat of Navajo County to give an opportunity for citizens and residents of Navajo County to appear and be heard, since the law requires that such hearing be held in the county in which the watercourses being studied are located. Attached hereto as Exhibit "C" are copies of the notices of the public hearing.

All parties were advised that anyone who desired to appear and give testimony at the public hearings could do so and, in making its findings and determination as to navigability and nonnavigability, the Commission would consider all matters presented to it at the hearing, as well as other historical and scientific data, information, documents and evidence that had been submitted to the Commission at any time prior to the date of the said hearing, including all data, information, documents, and evidence previously submitted to the Commission.

Following the public hearing held on April 25, 2005 in Holbrook, Arizona, all parties were advised that they could file post-hearing memoranda pursuant to the Rules adopted by the Commission. Post-hearing memoranda were filed by Salt River Project Agricultural Improvement and Power District and Salt River Valley Water Users Association. On July 14, 2005, at a public hearing in Flagstaff, Arizona, after considering all of the evidence and testimony submitted, and the post-hearing

memorandum filed with the Commission, and the comments and oral argument presented by the parties, and being fully advised in the premises, the Commission, with an unanimous vote, found and determined in accordance with A.R.S. § 37-1128 that all small and minor watercourses in Navajo County, Arizona were nonnavigable as of February 14, 1912 and were not susceptible of navigability. Attached as Exhibit "D" are the agenda and the minutes of this hearing, as well as the agenda and minutes of the earlier hearing in Holbrook held on April 25, 2005, at which evidence was presented.

II. Navajo County, Arizona

Navajo County, Arizona is located in the northeastern portion of the state and is comprised of about 9,952 square miles in land area. A substantial portion of the land in the County is held by the federal government: tribal lands (primarily Navajo and Hopi Reservations), Forest Service, and Bureau of Land Management lands. The County borders the State of Utah to the north, and the counties of Apache to the east, Coconino County to the west, and Graham and Gila Counties to the south. Navajo County lies within the following ranges: latitude 33°46'30" North to latitude 37°00'08" North and longitude 109°51'00" West to 110°45'00" West.

Arizona Revised Statutes Section 11-111 describes the boundaries of Navajo County as follows:

Navajo County, the county seat of which is Holbrook is bounded as follows:

Commencing at the northeast corner of Coconino county; thence east following the Utah and Arizona boundary to the one hundred tenth degree of west longitude; thence south to the former southwest corner of the Navajo Indian reservation, as established by presidential executive order dated January 6, 1880; thence east to the point intersecting the line between ranges twenty-three and twenty-four east of the Gila and Salt River Guide meridian; thence south along such range line to its intersection with the north boundary line of Graham county; thence west along the northern boundary line of Graham county to its intersection with the east boundary line of Gila county, which is the one hundred tenth degree of west longitude; thence north to intersect with the thirty-fourth degree of north latitude; thence west to intersect with the meridian of one hundred ten degrees forty-five minutes west longitude; thence north to the place of beginning.

Navajo County lies in the mountain and plateau range of northeastern Arizona. Its landscape is characterized as rugged mountains, deep canyons, and thick forests of pine, fir, juniper, piñon, aspen and oak. Between the mountains and canyons are high plateaus with some grasslands.

The major population centers of Navajo County are the cities of Holbrook, which is also the county seat, Snowflake, Show Low, Pinetop-Lakeside, Taylor, Joseph City and Winslow. Smaller towns or settlements located in Navajo County are Heber-Overgaard and a number of Native American villages and settlements on the Navajo and Apache Reservations. The major commercial industries of Navajo County are ranching and tourism. In earlier days, logging, timber and lumber was very important to the economy of the County, but has since decreased.

Interstate 40, Highways 260, 264 and 564 are the principal corridors running east and west, and Highways 77 and 87 are the main north-south corridors. The main line of the BNSF Railroad (Burlington Northern Santa Fe) runs east and west through the center of the County, generally paralleling Interstate 40. (This railroad was formerly known as the Atchison Topeka and Santa Fe Railroad until merging with Burlington Northern Railroad in 1996). AMTRAK has passenger stations in Winslow and Holbrook with daily service east toward Chicago and west toward Los Angeles.

III. Background and Historical Perspectives

A. Public Trust Doctrine and Equal Footing Doctrine

The reason for the legislative mandated study of navigability of watercourses within the State is to determine who holds title to the beds and banks of such rivers and watercourses. Under the public trust doctrine, as developed by common law over many years, the tidal lands and beds of navigable rivers and watercourses, as well as the banks up to the high water mark, are held by the sovereign in a special title for the benefit of all the people. In quoting the U.S. Supreme Court, the Arizona Court of

Appeals described the public trust doctrine in its decision in *The Center for Law v. Hassell*, 172 Ariz. 356, 837 P.2d 158 (App.1991), review denied October 6, 1992.

An ancient doctrine of common law restricts the sovereign's ability to dispose of resources held in public trust. This doctrine, integral to watercourse sovereignty, was explained by the Supreme Court in *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 13 S.Ct. 110, 36 L.Ed. 1018 (1892). A state's title to lands under navigable waters is a title different in character from that which the state holds in lands intended for sale. . . . It is a title held in trust for the people of the state that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties. *Id.* at 452, 13 S.Ct. at 118; see also *Martin v. Waddell*, 41 U.S. (16 Pet.) at 413 (describing watercourse sovereignty as "a public trust for the benefit of the whole community, to be freely used by all for navigation and fishery, as well for shellfish as floating fish").

Id., 172 Ariz. at 364, 837 P.2d at 166.

This doctrine is quite ancient and was first formally codified in the Code of the Roman Emperor Justinian between 529 and 534 A.D.¹ The provisions of this Code, however, were based, often verbatim, upon much earlier institutes and journals of Roman and Greek law. Some historians believe that the doctrine has even earlier progenitors in the rules of travel on rivers and waterways in ancient Egypt and Mesopotamia. This rule evolved through common law in England which established that the king, as sovereign, owned the beds of commercially navigable waterways in order to protect their accessibility for commerce, fishing and navigation for his subjects. In England, the beds of nonnavigable waterways where transportation for commerce was not an issue were owned by the adjacent landowners.

This principle was well established by English common law long before the American Revolution and was a part of the law of the American colonies at the time of the Revolution. Following the American Revolution, the rights, duties and responsibilities of the crown passed to the thirteen new independent states, thus making them the owners of the beds of commercially navigable streams, lakes and other waterways within their boundaries by virtue of their newly established

¹ *Putting the Public Trust Doctrine to Work*, David C. Slade, Esq. (Nov. 1990), pp. xvii and 4.

sovereignty. The ownership of trust lands by the thirteen original states was never ceded to the federal government. However, in exchange for the national government's agreeing to pay the debts of the thirteen original states incurred in financing the Revolutionary War, the states ceded to the national government their undeveloped western lands. In the Northwest Ordinance of 1787, adopted just prior to the ratification of the U. S. Constitution and subsequently re-enacted by Congress on August 7, 1789, it was provided that new states could be carved out of this western territory and allowed to join the Union and that they "shall be admitted . . . on an equal footing with the original states, in all respects whatsoever." (Ordinance of 1787: The Northwest Territorial Government, § 14, Art. V, 1 stat. 50. See also U. S. Constitution, Art. IV, Section 3). This has been interpreted by the courts to mean that on admission to the Union, the sovereign power of ownership of the beds of navigable streams passes from the federal government to the new state. *Pollard's Lessee v. Hagan, et al.*, 44 U.S. (3 How.) 212 (1845), and *Utah Division of State Lands v. United States*, 482 U.S. 193 (1987).

In discussing the equal footing doctrine as it applies to the State's claim to title of beds and banks of navigable streams, the Court of Appeals stated in *Hassell*:

The state's claims originated in a common-law doctrine, dating back at least as far as Magna Charta, vesting title in the sovereign to lands affected by the ebb and flow of tides. See *Martin v. Waddell*, 41 U.S. (16 Pet.) 367, 412-13, 10 L.Ed. 997 (1842). The sovereign did not hold these lands for private usage, but as a "high prerogative trust . . . , a public trust for the benefit of the whole community." *Id.* at 413. In the American Revolution, "when the people . . . took into their own hands the powers of sovereignty, the prerogatives and regalities which before belong either to the crown or the Parliament, became immediately and rightfully vested in the state." *Id.* at 416.

Although watercourse sovereignty ran with the tidewaters in England, an island country, in America the doctrine was extended to navigable inland watercourses as well. See *Barney v. Keokuk*, 94 U.S. 324, 24 L.Ed. 224 (1877); *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 434, 13 S.Ct. 110, 111, 36 L.Ed. 1018 (1892). Moreover, by the "equal footing" doctrine, announced in *Pollard's Lessee v. Hagan*, 44 U.S. (3 How.) 212, 11 L.Ed. 565 (1845), the Supreme Court attributed watercourse sovereignty to future, as well as then-existent, states. The Court reasoned that the United States government held lands under territorial navigable waters in trust for future states, which would accede to sovereignty on an "equal footing"

with established states upon admission to the Union. *Id.* at 222-23, 229; accord *Montana v. United States*, 450 U.S. 544, 101 S.Ct. 1245, 67 L.Ed.2d 493 (1981); *Land Department v. O'Toole*, 154 Ariz. 43, 44, 739 P.2d 1360, 1361 (App. 1987).

The Supreme Court has grounded the states' watercourse sovereignty in the Constitution, observing that "[t]he shores of navigable waters, and the soils under them, were not granted by the Constitution to the United States, but were reserved to the states respectively." *Pollard's Lessee*, 44 U.S. (3 How.) at 230; see also *Oregon ex rel. State Land Board v. Corvallis Sand & Gravel Co.*, 429 U.S. 363, 374, 97 S.Ct. 582, 589, 50 L.Ed.2d 550 (1977) (states' "title to lands underlying navigable waters within [their] boundaries is conferred . . . by the [United States] constitution itself").

Id., 172 Ariz. 359-60, 837 P.2d at 161-162.

In the case of Arizona, the "equal footing" doctrine means that if any stream or watercourse within the State of Arizona was navigable on February 14, 1912, the date Arizona was admitted to the Union, the title to its bed is held by the State of Arizona in a special title under the public trust doctrine. If the stream was not navigable on that date, ownership of the streambed remained in such ownership as it was prior to statehood--the United States if federal land, or some private party if it had previously been patented or disposed of by the federal government--and could later be sold or disposed of in the manner of other land since it had not been in a special or trust title under the public trust doctrine. Thus, in order to determine title to the beds of rivers, streams, and other watercourses within the State of Arizona, it must be determined whether or not they were navigable or nonnavigable as of the date of statehood.

B. Legal Precedent to Current State Statutes

Until 1985, most Arizona residents assumed that all rivers and watercourses in Arizona, except for the Colorado River, were nonnavigable and accordingly there was no problem with the title to the beds and banks of any rivers, streams or other watercourses.² However, in 1985 Arizona officials upset this long-standing assumption

² In 1865, the Arizona Territorial Legislature declared the Colorado river to be "navigable." See Memorial of the Legislature of Arizona, 38th Cong. 2nd Sess., Mis. Doc. No. 17 (January 25, 1865). The Territorial Legislature, in its first session, expressly held that "the Colorado River is the only navigable water in this Territory . . ." *Id.* (emphasis added)

and took action to claim title to the bed of the Verde River. *Land Department v. O'Toole*, 154 Ariz. 43, 739 P.2d 1360 (App. 1987). Subsequently, various State officials alleged that the State might hold title to certain lands in or near other watercourses as well. *Id.*, 154 Ariz. at 44, 739 P.2d at 1361. In order to resolve the title questions to the beds of Arizona rivers and streams, the Legislature enacted a law in 1987 substantially relinquishing the State's interest in any such lands.³ With regard to the Gila, Verde and Salt Rivers, this statute provided that any record title holder of lands in or near the beds of those rivers could obtain a quitclaim deed from the State Land Commissioner for all of the interest the State might have in such lands by the payment of a quitclaim fee of \$25.00 per acre. The Arizona Center for Law in the Public Interest filed suit against Milo J. Hassell in his capacity as State Land Commissioner, claiming that the statute was unconstitutional under the public trust doctrine and gift clause of the Arizona Constitution as no determination had been made of what interest the State had in such lands and what was the reasonable value thereof so that it could be determined that the State was getting full value for the interests it was conveying. The Superior Court entered judgment in favor of the defendants and an appeal was taken. In its decision in *Hassell*, the Court of Appeals held that this statute violated the public trust doctrine and the Arizona Constitution and further set forth guidelines under which the State could set up a procedure for determining the navigability of rivers and watercourses in Arizona. In response to this decision, the Legislature established the Arizona Navigable Stream Adjudication Commission and enacted the statutes pertaining to its operation. 1992 Arizona Session Laws, Chapter 297 (1992 Act). The charge given to the Commission by the 1992 Act was to conduct full evidentiary public hearings across the State and to adjudicate the State's claims to ownership of lands in the beds of watercourses. See, generally former A.R.S. §§ 37-1122 to 37-1128.

³ Prior to the enactment of the 1987 statute, the Legislature made an attempt to pass such a law, but the same was vetoed by the Governor. The 1987 enactment was signed by the Governor and became law. 1987 Arizona Sessions Law, Chapter 127.

The 1992 Act provided that the Commission would make findings of navigability or nonnavigability for each watercourse. See, former A.R.S. § 37-1128(A). Those findings were based upon the “federal test” of navigability in former A.R.S. § 37-1101(6). The Commission would examine the “public trust values” associated with a particular watercourse only if and when it determined that the watercourse was navigable. See, former A.R.S. §§ 37-1123(A)(3), 37-1128(A).

The Commission began to take evidence on certain watercourses during the Fall of 1993 and Spring of 1994. In light of perceived difficulties with the 1992 Act, the Legislature revisited this issue during the 1994 session and amended the underlying legislation. See, 1994 Arizona Session Laws, Ch. 178 (“1994 Act”). Among other things, the 1994 Act provided that the Commission would make a recommendation to the Legislature, which would then hold additional hearings and make a final determination of navigability by passing a statute with respect to each watercourse. The 1994 Act also established certain presumptions of nonnavigability and exclusions of some types of evidence.

Based upon the 1994 Act, the Commission went forth with its job of compiling evidence and making a determination of whether each watercourse in the State was navigable as of February 14, 1912. The Arizona State Land Department issued technical reports on each watercourse, and numerous private parties and public agencies submitted additional evidence in favor of or opposed to navigability for particular watercourses. See, *Defenders of Wildlife v. Hull*, 199 Ariz. 411, 416, 18 P.3d 722, 727 (App. 2001). The Commission reviewed the evidence and issued reports on each watercourse which were transmitted to the Legislature. The Legislature then enacted legislation relating to the navigability of each specific watercourse. The Court of Appeals struck down that legislation in its *Hull* decision, finding that the Legislature had not applied the proper standards of navigability. *Id.* 199 Ariz. at 427-28, 18 P.2d at 738-39.

In 2001, the Legislature again amended the underlying statute in another attempt to comply with the Court's pronouncements in *Hassell* and *Hull*. See, 2001 Arizona Session Laws, Ch. 166, § 1. The 2001 legislation now governs the Commission in making its findings with respect to the small and minor watercourses in Navajo County.

IV. Issues Presented

The applicable Arizona statutes state that the Commission has jurisdiction to determine which, if any, Arizona watercourses were "navigable" on February 14, 1912 and for any watercourses determined to be navigable, to identify the public trust values. A.R.S. § 37-1123. A.R.S. § 37-1123A provides as follows:

A. The commission shall receive, review and consider all relevant historical and other evidence presented to the commission by the state land department and by other persons regarding the navigability or nonnavigability of watercourses in this state as of February 14, 1912, together with associated public trust values, except for evidence with respect to the Colorado river, and, after public hearings conducted pursuant to section 37-1126:

1. Based only on evidence of navigability or nonnavigability, determine which watercourses were not navigable as of February 14, 1912.

2. Based only on evidence of navigability or nonnavigability, determine which watercourses were navigable as of February 14, 1912.

3. In a separate, subsequent proceeding pursuant to section 37-1128, subsection B, consider evidence of public trust values and then identify and make a public report of any public trust values that are now associated with the navigable watercourses.

A.R.S. §§ 37-1128A and B provide as follows:

A. After the commission completes the public hearing with respect to a watercourse, the commission shall again review all available evidence and render its determination as to whether the particular watercourse was navigable as of February 14, 1912. If the preponderance of the evidence establishes that the watercourse was navigable, the commission shall issue its determination confirming the watercourse was navigable. If the preponderance of the evidence fails to establish that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was nonnavigable.

B. With respect to those watercourses that the commission determines were navigable, the commission shall, in a separate,

subsequent proceeding, identify and make a public report of any public trust values associated with the navigable watercourse.

Thus, in compliance with the statutes, the Commission is required to collect evidence, hold hearings, and determine which watercourses in existence on February 14, 1912, were navigable or nonnavigable. This report pertains to all of the small and minor watercourses in Navajo County, Arizona and excludes the Little Colorado River. In the hearings to which this report pertains, the Commission considered all of the available historical and scientific data and information, documents and other evidence relating to the issue of navigability of the small and minor watercourses in Navajo County, Arizona, as of February 14, 1912.

Public trust values were not considered in these hearings but will be considered in separate, subsequent proceedings, if required. A.R.S. §§ 37-1123A3 and 37-1128B. In discussing the use of an administrative body such as the Commission on issues of navigability and public trust values, the Arizona Court of Appeals in its decision in *Hassell* found that the State must undertake a “particularized assessment” of its “public trust” claims but expressly recognized that such assessment need not take place in a “full blown judicial” proceeding.

We do not suggest that a full-blown judicial determination of historical navigability and present value must precede the relinquishment of any state claims to a particular parcel of riverbed land. An administrative process might reasonably permit the systematic investigation and evaluation of each of the state’s claims. Under the present act, however, we cannot find that the gift clause requirement of equitable and reasonable consideration has been met.

Id., 172 Ariz. at 370, 837 P.2d at 172.

The 2001 *Hull* court, although finding certain defects in specific aspects of the statute then applicable, expressly recognized that a determination of “navigability” was essential to the State having any “public trust” ownership claims to lands in the bed of a particular watercourse:

The concept of navigability is “essentially intertwined” with public trust discussions and “[t]he navigability question often resolves whether any public trust interest exists in the resource at all.” Tracy Dickman

Zobernica, *The Public Trust Doctrine in Arizona's Streambeds*, 38 Ariz.L.Rev. 1053, 1058 (1996). In practical terms, this means that **before a state has a recognized public trust interest in its watercourse bedlands, it first must be determined whether the land was acquired through the equal footing doctrine. However, for bedlands to pass to a state on equal footing grounds, the watercourse overlying the land must have been "navigable" on the day that the state entered the union.**

199 Ariz. at 418, 18 P.3d at 729 (also citing *O'Toole*, 154 Ariz. at 45, 739 P.2d at 1362 (emphasis added)).

The Legislature and the Court of Appeals in *Hull* have recognized that, unless the watercourse was "navigable" at statehood, the State has no "public trust" ownership claim to lands along that watercourse. Using the language of *Hassell*, if the watercourse was not "navigable," the "validity of the equal footing claims that [the State] relinquishes" is **zero**. *Hassell*, 172 Ariz. at 371, 837 P.2d at 173. Thus, if there is no claim to relinquish, there is no reason to waste public resources determining (1) the value of any lands the State **might** own if it had a claim to ownership, (2) "equitable and reasonable considerations" relating to claims it might relinquish without compromising the "public trust," or (3) any conditions the State might want to impose on transfers of its ownership interest. See, *id.*

V. Burden of Proof

The Commission, in making its findings and determinations, utilized the standard of the preponderance of the evidence as the burden of proof as to whether or not a stream was navigable or nonnavigable. A.R.S. § 37-1128A provides as follows:

After the commission completes the public hearing with respect to a watercourse, the commission shall again review all available evidence and render its determination as to whether the particular watercourse was navigable as of February 14, 1912. If the preponderance of the evidence establishes that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was navigable. If the preponderance of the evidence fails to establish that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was nonnavigable.

This statute is consistent with the decision of the Arizona courts that have considered the matter. *Hull*, 199 Ariz. at 420, 18 P.3d at 731 ("... a 'preponderance' of the evidence

appears to be the standard used by the courts. See, e.g., *North Dakota v. United States*, 972 F.2d 235-38 (8th Cir. 1992)"); *Hassell*, 172 Ariz. at 363, n. 10, 837 P.2d at 165, n. 10 (The question of whether a watercourse is navigable is one of fact. The burden of proof rests on the party asserting navigability . . ."); *O'Toole*, 154 Ariz. at 46, n. 2, 739 P.2d at 1363, n. 2.

The most commonly used legal dictionary contains the following definition of "preponderance of the evidence":

Evidence which is of greater weight or more convincing than the evidence which is offered in opposition to it; that is, evidence which as a whole shows that the fact sought to be proven is more probable than not. *Braud v. Kinchen*, La.App., 310 So.2d 657, 659. With respect to burden of proof in civil actions, means greater weight of evidence, or evidence which is more credible and convincing to the mind. That which best accords with reason and probability. The word "preponderance" means something more than "weight"; it denotes a superiority of weight, or outweighing. The words are not synonymous, but substantially different. There is generally a "weight" of evidence on each side in case of contested facts. But juries cannot properly act upon the weight of evidence, in favor of the one having the onus, unless it overbears, in some degree, the weight upon the other side.

Black's Law Dictionary, 1064 (5th ed. 1979).

The "preponderance of the evidence" standard is sometimes referred to as requiring "fifty percent plus one" in favor of the party with the burden of proof. One could imagine a set of scales. If the evidence on each side weighs exactly evenly, the party without the burden of proof must prevail. In order for the party with the burden to prevail, sufficient evidence must exist in order to tip the scales (even slightly) in its favor. See, generally, *United States v. Fatico*, 458 U.S. 388, 403-06 (E.D. N.Y. 1978), *aff'd* 603 F.2d 1053 (2nd Cir. 1979), *cert. denied* 444 U.S. 1073 (1980); *United States v. Schipani*, 289 F.Supp. 43, 56 (E.D. N.Y. 1968), *aff'd*, 414 F.2d 1262 (2nd Cir. 1969).⁴

⁴ In a recent Memorandum Decision of the Arizona Court of Appeals, the Defenders of Wildlife and others through their representative, Arizona Center for Law in the Public Interest, attacked the constitutionality of the burden of proof for navigability determination by the Commission specified in A.R.S. § 37-1128(A). In that case, the Defenders claimed that the burden of proof specified in the statute conflicts with federal law and should be declared invalid because it is contrary to a presumption favoring sovereign ownership of bedlands. In discussing and rejecting *Defenders* position the Court stated: ". . . In support of this argument, Defenders cite to our decision in *Defenders*, see 199 Ariz. at

VI. Standard for Determining Navigability

The statute defines a navigable watercourse as follows:

“Navigable” or “navigable watercourse” means a watercourse that was in existence on February 14, 1912, and at that time was used or was susceptible to being used, in its ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on water.

A.R.S. § 37-1101(5).

The foregoing statutory definition is taken almost verbatim from the U. S. Supreme Court decision in *The Daniel Ball*, 77 U.S. (10 Wall) 557, 19 L.Ed. 999 (1870), which is considered by most authorities as the best statement of navigability for title purposes.⁵ In its decision, the Supreme Court stated:

Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

77 U.S. at 563.

In a later opinion in *U. S. v. Holt Bank*, 270 U.S. 46 (1926), the Supreme Court stated:

[Waters] which are navigable in fact must be regarded as navigable in law; that they are navigable in fact when they are used, or are susceptible of

426, ¶ 54, 18 P.3d at 737, and to *United States v. Oregon*, 295 U.S. 1, 14 (1935). But neither of these decisions held that the burden of proof in a navigability determination must be placed on the party opposing navigability. Moreover, this court has twice stated that the burden of proof rests on the party asserting navigability. *Hassell*, 172 Ariz. at 363 n. 10, 837 P.2d at 165 n. 10; *O'Toole*, 154 Ariz. at 46 n. 2, 739 P.2d at 1363 n. 2. We have also recognized that a ‘preponderance’ of the evidence appears to be the standard used by the courts” as the burden of proof. *Defenders*, 199 Ariz. at 420, ¶ 23, 18 P.3d at 731 (citing *North Dakota v. United States*, 972 F.2d 235, 237-38 (8th Cir. 1992)). *Defenders* have not cited any persuasive authority suggesting that these provisions in § 37-1128(A) are unconstitutional or contrary to federal law. We agree with this court’s prior statements and conclude that neither placing the burden of proof on the proponents of navigability nor specifying the burden as a preponderance of the evidence violates the State or Federal Constitutions or conflicts with federal law.” *State of Arizona v. Honorable Edward O. Burke* 1 CA-SA 02-0268 and 1 CA-SA 02-0269 (Consolidated); Arizona Court of Appeals, Division One, (Memorandum Decision filed December 23, 2004).

⁵ *The Daniel Ball* was actually an admiralty case, but the U.S. Supreme Court adopted its definition of navigability in title and equal footing cases. *Utah v. United States*, 403 U.S. 9, 91 S.Ct. 1775, 29 L.Ed.2 279 (1971) and *United States v. Oregon*, 295 U.S. 1, 55 S.Ct. 610, 70 L.Ed.2 1263 (1935).

being used, in their natural and ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water; and further that navigability does not depend on the particular mode in which such use is or may be had—whether by steamboats, sailing vessels or flatboats—nor on an absence of occasional difficulties in navigation, but on the fact, if it be a fact, that the [water] in its natural and ordinary condition affords a channel for useful commerce.

270 U.S. at 55-56.

The Commission also considered the following definitions contained in A.R.S. § 37-1101 to assist it in determining whether small and minor watercourses in Navajo County were navigable at statehood.

11. "Watercourse" means the main body or a portion or reach of any lake, river, creek, stream, wash, arroyo, channel or other body of water. Watercourse does not include a manmade water conveyance system described in paragraph 4 of this section, except to the extent that the system encompasses lands that were part of a natural watercourse as of February 14, 1912.

5. "Navigable" or "navigable watercourse" means a watercourse that was in existence on February 14, 1912, and at that time was used or was susceptible to being used, in its ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on water.

3. "Highway for commerce" means a corridor or conduit within which the exchange of goods, commodities or property or the transportation of persons may be conducted.

2. "Bed" means the land lying between the ordinary high watermarks of a watercourse.

6. "Ordinary high watermark" means the line on the banks of a watercourse established by fluctuations of water and indicated by physical characteristics, such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris, or by other appropriate means that consider the characteristics of the surrounding areas. Ordinary high watermark does not mean the line reached by unusual floods.

8. "Public trust land" means the portion of the bed of a watercourse that is located in this state and that is determined to have been a navigable watercourse as of February 14, 1912. Public trust land does not include land held by this state pursuant to any other trust.

Thus, the State of Arizona in its current statutes follows the federal test for determining navigability.

VII. Evidence Received and Considered by the Commission

Pursuant to A.R.S. § 37-1123, and other provisions of Title 37, Chapter 7, Arizona Revised Statutes, the Commission received, compiled, and reviewed evidence and records regarding the navigability and nonnavigability of small and minor watercourses located in Navajo County, Arizona. Evidence consisting of studies, written documents, newspapers and other historical accounts, pictures and testimony were submitted. A comprehensive study entitled "Final Report - Small & Minor Watercourses Analysis for Navajo County, Arizona" prepared by Stantec Consulting Inc., in association with JE Fuller/Hydrology & Geomorphology, Inc., under supervision of the Arizona State Land Department, dated February, 2001, was submitted. The list of evidence and records, together with a summarization is attached as Exhibit "E". The Commission also heard testimony and received and considered evidence at the public hearing on small and minor watercourses located in Navajo County, Arizona, held in Holbrook, Arizona on April 25, 2005. The agenda and minutes of the hearing are attached hereto as Exhibit "D".

A. Small & Minor Watercourses Analysis for Navajo County, Arizona

1. Analysis Methods

Due to the large number of small and minor watercourses located in Navajo County, Arizona (3,352 watercourses, of which most are unnamed), it is impractical and unnecessary to consider each watercourse with the same detail that the Commission considered major watercourses. The study of small and minor watercourses developed by Stantec Consulting Inc. and its associate, J. E. Fuller Hydrology & Geomorphology, Inc., provided for an evaluation using a three-level process which contained criteria that would be necessarily present for a stream to be considered navigable.⁶ A master database listing all small and minor watercourses was developed from the Arizona

⁶ The three-level process begins with a presumption and hypothesis that each stream is navigable. Analysis at each level attempts to reject that hypothesis.

Land Resource Information System (ALRIS) with input from the U.S. Geological Survey, the U.S. Environmental Protection Agency and other agencies and sources. The final version of the master database called "Streams" includes a hydrological unit code (HUC), segment number, mileage, watercourse type and watercourse name, if available. Thus there is a hydrological unit code for each of the segments of the 3,352 small and minor watercourses in Navajo County, Arizona. In addition, the database locates each segment by section, township, and range. Some of the satellite databases discussed below also locate certain significant reference points by latitude and longitude.

Using the master database, the contractor also set up six satellite databases, each relating to a specific stream characteristic or criterion, that would normally be found in a watercourse considered to be navigable or susceptible of navigability. These stream criteria are as follows:

1. Perennial stream flow;
2. Dam located on stream;
3. Fish found in stream;
4. Historical record of boating;
5. Record of modern boating; and
6. Special status (other water related characteristics, including in-stream flow application and/or permit, unique waters, wild and scenic, riparian, and preserve).

All watercourses were evaluated at level one which is a binary (yes or no) sorting process as to whether or not these characteristics are present. For a stream or watercourse not to be rejected at level one, it must be shown that at least one of these characteristics is present. If none of these characteristics are present, the stream or watercourse is determined to require no further study and is rejected at level one as having no characteristics of navigability.

All streams and watercourses surviving the level one sorting (i.e., determined to have one or more of the above characteristics) are evaluated at level two. The level two analysis is more qualitative than level one and its assessment requires a more in-depth analysis to verify and interpret the reasons that caused a particular stream to advance from level one. Each of the above characteristics on which there was an affirmative answer at level one is analyzed individually at level two to determine whether the stream is potentially susceptible to navigation or not susceptible to navigation; for example, a watercourse that at first appears to be perennial in flow but upon further analysis is determined to have only a small flow from a spring for a short distance and therefore cannot be considered perennial for any substantial portion of the watercourse.

In addition, the level two analysis utilized a refinement with value engineering techniques analyzing watercourses with more than one affirmative response at level one and assigned values to each of the six categories mentioned above. Clearly, perennial flow, historical boating, and modern boating are more important to the issue of navigability than the categories of dam-impacted, special status, or fish. Thus, for the purpose of the value engineering study, the following rough values were assigned to each of the six categories: historical boating-10, modern boating-8, perennial stream-7, dam-impacted-4, fish-4, and special status-2. These values were arrived at after much calculation, analysis and evaluation of each stream having affirmative responses at level one. This system is a recognized tool used in value engineering studies, and seven qualified engineers from the Arizona State Land Department and consulting staff of the contractor participated in determining the values used for each category. This system establishes that a value in excess of 13 is required for a stream to survive the level two evaluation and pass to level three for consideration.⁷ Thus, a stream having both

⁷ When this procedure was first developed, a cutoff value of 11 was established for a stream to survive level two and pass to level three for evaluation. As the procedure was refined, the cutoff value of 13 was substituted for 11 as it was felt to be more accurate. In this case, it makes no difference which value is used since no stream has a value between 11 and 13.

perennial flow and historical boating (sum value of 17), or a combination of the values set for other criteria equaling more than 11, would require that the stream pass to evaluation at level three. If a stream does not have a sum value greater than 11, it is determined to require no further study and is rejected at level two as having insufficient characteristics of navigability.

If a stream survives the evaluation at level two, it goes on to level three which uses quantitative hydrologic and hydraulic analysis procedures including any stream gauge data available, as well as engineering estimates of depth, width and velocity of any water flow in the subject watercourse and comparing the same to minimum standards required for different types of vessels. Also considered is the configuration of the channel and whether it contains rapids, boulders, sand bars or other obstacles. If a stream or watercourse is not rejected or eliminated at level three, it is removed from this process and subjected to a separate detailed study similar to that performed on a major watercourse, and a separate report will be issued on that stream or watercourse. Since one stream survived the level three analysis, a separate detailed stream navigability study was performed on it and a separate report was issued.

2. Application of Analysis Methods to Small and Minor Watercourses in Navajo County

The application of the level one analysis to the 3,352 small and minor watercourses located in Navajo County resulted in 3,276 watercourses or 97.7% being determined as not having any of the six characteristics listed above, and these 3,276 were therefore rejected or eliminated and did not proceed to a further evaluation at level two. Attached as Exhibit "F" is a list of the watercourses in Navajo County which were determined to have no characteristics of navigability or characteristics indicating susceptibility of navigability at level one.

Only 76 watercourses, approximately 2.3%, received an affirmative response to one or more of the above characteristics or criteria and were evaluated at level two.

Fifty-four of these watercourses had only one positive response at level one and, after further analysis of that affirmative response, were rejected and determined not to have characteristics of navigability requiring further study. Nine of the watercourses received an affirmative response to more than one of the characteristics listed but, after analysis, were determined to have a total value of 11 or less and were rejected and determined to have insufficient characteristics of navigability or susceptibility of navigability to warrant further study. In the value engineering analysis, it was determined that only twelve of those watercourses had a sum value of more than 11 when analyzed pursuant to the value engineering techniques and therefore should be advanced for further study at level three. It was thus determined that 63 of the streams analyzed at level two could not be considered as susceptible of navigability and were therefore rejected at level two. Attached as Exhibit "G" is a list of the 76 watercourses that received a positive response to one or more of the characteristics listed above and were evaluated at level two. The twelve streams that survived the value engineering analysis at level two and were considered at level three are: Billy Creek, Black River, Diamond Creek, East Fork White River, North Fork White River, Show Low Creek, Silver Creek, Chevelon Creek, Clear Creek, White River, Cibecue Creek, and Canyon Creek.

3. Level Three Analysis for Billy Creek

Billy Creek is located in the southern portion of Navajo and Apache Counties. It received three affirmative responses in the level one analysis including perennial stream flow, fish, and dam-impacted, thus justifying it for a level three analysis. The total rating evaluated for Billy Creek using the refined approach at level two is 11.88.

Billy Creek trends its way to the north from the headwaters in the Mogollon Rim in the Sitgraves National Forest to its confluence with Show Low Creek, approximately 4.5 miles southeast of Show Low, Arizona. The total drainage area of Billy Creek at the mouth is about 36.8 square miles. Elevations in the watershed range from a maximum

of 7,725 feet at the headwaters to about 6,510 feet at the Show Low Creek confluence. It is about 18.5 miles in length. Billy Creek is not completely a perennial stream. It is perennial from its confluence with Show Low Creek to Lake of the Woods and is non-perennial from the Lake of the Woods to its headwaters. Records of hydrologic data for Billy Creek were not available, however, the U.S. Geological Survey stream gauge located at Show Low Creek could be used as a basis for estimating flow in Billy Creek. Based on this flow data, it is estimated that a two-year peak discharge of 194 cfs should not be assumed to be representative of typical flow. A two-year peak discharge represents the event that is exceeded less than about 0.50% of the time. It is estimated that the mean annual flow ranges somewhere between 8.0 and 18.5 cfs.

Comparing the boating criteria from the detailed navigability studies prepared for the Arizona Land Department (1996, 1997) with the evaluated hydrologic geometry for Billy Creek, the perennial reach at the mouth could barely support recreational watercrafts, particularly canoes and kayaks, about 10% of the time. During the site investigation, significant navigation obstructions were observed along Billy Creek that included thick vegetation, low overhanging tree branches and hydrologic structures. The site visit also confirmed that the upper segment of the watercourse is relatively dry and that the average slope of the main channel is relatively steep. In view of the foregoing, Billy Creek was considered as not susceptible to navigability during ordinary flow and was therefore rejected at level three.

4. Level Three Analysis for Black River

Black River crosses Apache, Greenlee, Navajo, Graham and Gila Counties in the mountainous areas of Central Arizona and is the boundary between Graham County and Navajo County. It received four affirmative responses in the level one analysis – modern boating, fish, special status, and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forward the watercourse to level three analysis. The total

rating evaluated for Black River using the refined approach at level two was 19.26. Black River runs in a general south by west direction from its headwaters in Williams Valley and Big Lake to its confluence with the Salt River, approximately 13 miles southwest of White River, Arizona. It is 113.4 miles long and drains a total area of about 1,252 square miles. Elevations along the watercourse range from a maximum of 7,840 feet at the headwaters to about 4,230 feet at its confluence with the Salt River. For hydrology purposes, the Black River can be divided into three reaches. At the upper reach and the lower reach, it flows through deep canyons which have only limited access to the river itself. In the middle reach, the slope flattens out, and in the lower reach, the slope and banks are much more accessible to persons desiring to go to the river.

There are three U.S. Geological Survey gauging stations along Black River which have the following mean annual flows. The upper gauging station near Maverick, Arizona has a mean annual flow of 141 cfs. The gauging station near Point of Pines below the pumping plant has a mean annual flow of 221 cfs. The gauging station near Apache, Arizona, close to where it flows into the Salt River, has a mean annual flow of 438 cfs. Near Freeze Out Creek, 8 miles north of Point of Pines, the Phelps Dodge Corporation has constructed a pumping plant to transfer water from the Black River to Eagle Creek for use in processing plants in the mines near Morenci, which reduces the average flow down the Black River and increases the flow in Eagle Creek.

The overall depth of the river averages between one and one-half to three and one-half feet, and is between 15 and 25 feet in width. The river has numerous rapids and even some waterfalls which inhibit the use of boats on the river. Notwithstanding this, due to the amount of water, canoes, kayaks and rubber rafts can be used for recreational purposes some of the time on portions of the river. Due to obstructions in the river such as rapids and waterfalls, overgrowth and rock outcrops, shallow-flow depths, and steep slopes in the canyon areas, continuous access to the river is nearly

impossible, except on a localized recreational use basis the river itself is not conducive to commercial transportation. In view of the overall condition of the river, it was determined that Black River should be rejected as a navigable river at level three and a detailed study was not conducted.

5. Level Three Analysis for Diamond Creek

Diamond Creek is located in the southern portion of Navajo County. Diamond Creek trends its way to the southwest from the headwaters of Mount Baldy Wilderness, located in Apache County, to its confluence with the North Fork White River about four miles north of White River, Arizona, located in Navajo County. Diamond Creek had three affirmative responses in the level one analysis: fish, dam-impacted, and perennial stream. According to the level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating assigned to Diamond Creek using the refined approach at level two was 15.0.

The total drainage area of Diamond Creek at its mouth is about 67.5 square miles. Elevations of the water shed range from a maximum of about 10,400 feet at the headwaters to about 5,320 feet at the confluence with the North Fork White River. Diamond Creek is about 21.4 miles long. The estimated main channel slope from the headwaters to the confluence of the North Fork White River is about 210.9 ft/mi. Diamond Creek is not entirely a perennial stream. The upper 1.75 mile segment of the headwaters is not perennial.

Hydrologic data for Diamond Creek is not available since it is an ungauged watercourse. In the absence of hydrologic data for Diamond Creek, recession analysis was used. Based on this analysis, it was estimated that the mean annual flow is 26 cfs. The median flow rate (50% duration flow) is 9.3 cfs. Comparison of the boating criteria studies prepared for the Arizona Land Department (1996, 1997) with the channel geometry and the hydrologic parameters indicated that Diamond Creek could not

support recreational watercrafts due to insufficient flows and steep slopes. The stream is predominantly steep, making it difficult to support small watercrafts and the flows within the steep, rocky channels are not sufficient enough to carry or support small watercrafts. Due to the afore-mentioned reasons, Diamond Creek was not considered to be navigable and a detailed study was not recommended for Diamond Creek.

6. Level Three Analysis for the East Fork White River

The East Fork White River is located in the southern portion of Navajo County. It received three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream classification. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total grading evaluated for the East Fork White River using the refined approach at level two is 15.00.

The East Fork White River trends its way west from its headwaters on the upper slopes on the west slope of Baldy Peak, located in Apache County, to its confluence with the White River near Fort Apache, Arizona, located in Navajo County. The total drainage area of the East Fork White River at its mouth is about 140 square miles. Elevations of the water shed range from a maximum of about 11,100 feet at the headwaters on Mount Baldy to about 4,920 feet at the White River confluence in Fort Apache, Arizona. The reach is approximately 31 miles long and the estimated average main channel slope is about 239 ft/mi. or 0.0453 ft/ft. The typical channel roughness ranges from 0.030 to 0.050.

The East Fork White River is not completely a perennial stream. It can be divided into three reaches: the first reach, being 4.54 miles from the mouth of the river to the gauging station, is non-perennial; the second reach, from the gauging station to a point near the headwaters of 25.57 miles, is perennial; and, the last 0.89 miles of the upper reach at the headwaters is non-perennial. The mean annual flow of the East Fork White River at the gauging station is approximately 37 cfs. The average monthly flow

rates are all above zero. The typical flow rate is around 20-40 cfs, with higher flows occurring the winter months and the beginning of summer (March-June).

Based on the boating criteria studies prepared for the Arizona Land Department (1996, 1997) and the hydrologic data for the East Fork White River, indications are that the reach could support canoeing and kayaking about 50%-90% of the time, 10% of the time hydrologic conditions would allow other types of non-motorized craft access along the reach. The reach would not support any type of motorized craft. It should be noted that this tributary to the White River is very steep and most likely would be difficult even for recreational craft mentioned above to transverse the reach easily, especially toward the upper ends of the water shed. For this reason, it was considered nonnavigable and a detailed study was not recommended for the East Fork White River.

7. Level Three Analysis for the North Fork White River

The North Fork White River is located in the southern portion of Navajo County. The river had four affirmative responses in the level one analysis: fish, dam-impacted, and the perennial stream classification. According to the level two criteria, the watercourse was classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating assigned to the North Fork White River using the refined approach at level two was 14.0.

The North Fork White River trends its way to the west and then south from the headwaters in Mount Ord of the Mount Baldy wilderness area to the confluence of the White River at Fort Apache, Arizona in Navajo County. The total drainage area of the North Fork White River at its mouth is about 330 square miles. Elevations of the watershed range from a maximum of 11,357 feet at the headwaters to about 4,920 feet at the White River confluence. The North Fork White River is about 50.8 miles long and can be divided into three stream reaches: 1) the lower reach is about 27.8 miles long and

extends from the confluence with the White River in Fort Apache, Arizona to Trout Creek. The average channel slope is about 51 ft/mi. or 0.0096 ft/ft; 2) the middle reach is about 9.7 miles long and extends from Trout Creek to the confluence of Paradise Creek. The average channel slope is about 153 ft/mi. or 0.0290 ft/ft.; 3) the upper reach is about 13.3 miles long and extends from Paradise Creek to the headwaters. The average channel slope of this reach is about 216 ft/mi. or 0.04091 ft/ft. The North Fork White River is not a completely perennial stream.

The hydrologic data for the North Fork White River is available from three U.S. Geological Survey stream gauges. The mean annual flow discharge at the confluence is 68.3 cfs, while the discharge at the upper two gauges is approximately 25 cfs. In the lower reach, the mean annual flow is about 68.3 cfs, with an average depth of 0.92 – 1.50 feet and an average width of the river at 10 – 20 feet. In the middle reach, the mean annual flow is 25.8 cfs, with an average depth of 0.43 – 0.68 feet and an average width of the river of 7.5 – 15 feet. The upper reach has a mean annual flow of 25 cfs with an average depth of 0.38 – 0.60 feet and the average width of the river at 7.5 – 15 feet.

Using the boating criteria prepared for the Arizona State Land Department (1996, 1997) with the hydrologic data for the North Fork White River, it would indicate that the lower reach could support recreational watercraft, particularly canoes and kayaks about 90% of the time. For the middle reach, the hydrologic conditions 50% of the time would be sufficient to allow canoes or kayaks access to the reach. 10% of the time, hydrologic conditions would allow other types of non-motorized crafts access along the reach. For the upper reach, the hydrologic conditions would allow canoes and kayaks access 50% of the time, while the other non-motorized boats and motorized boats would have access only during two-year flood flows. Considering that the middle and the upper reach are very steep with slopes of about 2.9% and 4.1%, respectively, these steep gradients allow for shallow flow depths in the channel with significant rapids occurring everywhere as the flows are super critical. With shallow depths, any watercraft cannot

navigate freely. The assessments made on the stream characteristics of the watercourse and the hydrologic characteristics of susceptibility to navigation for the North Fork White River are very weak. For the reasons described above, the river was not considered navigable and a detailed study was not recommended for the North Fork White River.

8. Level Three Analysis for Show Low Creek

Show Low Creek is located in the southern part of Navajo County above the Mogollon Rim. Show Low Creek has three affirmative responses in the level one analysis: fish, dam-impacted, and perennial stream. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse to level three analysis. The total rating evaluated for Show Low Creek using the refined approach at level two is 15.0.

Show Low Creek trends its way north from the headwaters in Mogollon Rim in the Sitgraves National Forest to its confluence with Silver Creek, approximately six miles south of Snowflake, Arizona. The total drainage area of Show Low Creek at its mouth is about 411 square miles. The main channel elevations range from a maximum of about 8,005 feet at the headwaters in the Sitgraves National Forest to about 5,670 feet at the Silver Creek confluence. Show Low Creek is about 52.7 miles long, with a main channel slope estimated at 77.2 ft/mi. or 0.0146 ft/ft. The typical roughness data for the creek is from 0.045 (grassy bed) to 0.05 (rocky channel bed). Show Low Creek is not a completely perennial stream, but an interrupted stream.

The hydrologic data for Show Low Creek is available from one U.S. Geological Survey stream gauging station located approximately 1.9 miles northwest of Lakeside. The flow data for Show Low Creek at the U.S. Geological Survey gauging station discloses a mean annual flow of 15 cfs and a two-year flood peak of 362 cfs.

Comparing the boating criteria from the detailed navigability studies prepared for the Arizona Land Department (1996, 1997) with the evaluated hydrologic geometry of Show Low Creek indicates that the creek near the gauge could barely support recreational watercrafts about 50% of the time. During the site investigation, significant navigation obstructions were observed along Show Low Creek that included thick vegetation, low overhanging trees and branches, fences, hydrologic structures and rock outcrops. The natural obstructions, particularly the rock outcrops, are assumed to have been not changed over the years, making the current channel similar to the stream condition during Arizona's statehood in 1912. The insufficient hydrologic condition in the stream to meet minimum boating criteria and the predominant channel obstructions make Show Low Creek incapable to exhibit the characteristics conducive to navigation. A detailed study was therefore not recommended for Show Low Creek.

9. Level Three Analysis for Silver Creek

Silver Creek is located in the southeastern portion of Navajo County, above the Mogollon Rim. Silver Creek had three affirmative responses in the level one analysis: fish, dam-impacted and perennial stream. According to the level two criteria, the watercourse was classified under stream category A (potentially susceptible to navigation), thus justifying the watercourse to level three analysis. The total rating evaluated for Silver Creek using the refined approach at level two is 15.0.

Silver Creek trends its way to the north from the headwaters in the Sitgraves National Forest to its confluence with the Little Colorado River, approximately three miles south of Woodruff, Arizona. The total drainage area of Silver Creek at its mouth is about 947 square miles. The elevations of the watercourse range from a maximum of about 6,134 feet at the headwaters in the Sitgraves National Forest to about 5,182 feet at the lower Colorado River confluence. Silver Creek is about 48.3 miles long, with an estimated channel slope of 35 ft/mi. or 0.00663 ft/ft. The typical roughness data for the

creek ranges from 0.030 (grassy and stony) to 0.05 (rocky channel bed). Silver Creek is a completely perennial stream.

The hydrologic data for Silver Creek is available from one U.S. Geological Survey stream gauging station located about 6 miles from the confluence with the lower Colorado River and 11 miles north of Snowflake. The elevation of the gauging station is approximately 5,204 feet above sea level. Flow data for Silver Creek at the U.S. Geological Survey gauging station indicates a mean annual flow of 19 cfs and a two-year flood peak of 2,590 cfs. The average monthly flow rates are all above zero, with typical flow rates around 4.0 to 37.0 cfs. Comparison of the boating criteria, as set forth in the detailed navigability studies prepared for the Arizona State Land Department (1996, 1997), with the hydrologic evaluation or the hydrologic geometry of Silver Creek indicates that the reach near the gauging station could barely support recreational watercrafts about 10% of the time. During the site investigation, significant navigation obstructions were observed along Silver Creek that included thick vegetation, low overhanging tree branches, fences, hydrologic structures and rock outcrops.

The natural obstructions, particularly the rock outcrops are assumed to have not changed over the years, making the current channel conditions to be similar to the stream conditions during Arizona's statehood in 1912. The insufficient hydrologic condition in the stream to meet minimum boating criteria and the predominant channel obstructions along the watercourse make Silver Creek incapable to exhibit characteristics conducive to navigation. Therefore, a detailed study was not recommended for Silver Creek.

10. Level Three Analysis for Chevelon Creek

Chevelon Creek is located in the southwestern portion of Navajo County and the lower eastern portion of Coconino County. It received six affirmative responses in the level one analysis, including perennial stream, modern boating, historical boating, fish in stream, dam-impacted and special status. According to level two criteria, the

watercourse is classified under stream category A (potentially susceptible to navigation) and thus, justifying forwarding the watercourse to a level three analysis. The total rating for Chevelon Creek using the refined approach at level two is 33.26.

Chevelon Creek has its headwaters in Willow Springs Canyon on the north slope of the Mogollon Rim between Kohls Ranch and Forest Lakes to the west of Heber and flows in a northeasterly direction to its confluence with the Little Colorado River, approximately four miles southeast of Winslow. It is 91.4 miles long and drains a watershed of 790 square miles. The elevations in the watershed range from a maximum of 7,660 feet at the headwaters in Willow Springs Canyon to approximately 4,900 feet at its confluence with the Little Colorado River.

Chevelon Creek can be divided into two stream reaches. The upper stream reach is about 22.1 miles long and extends from the headwaters in Willow Springs Canyon to Chevelon Canyon Dam. The upper reach, has a relatively steep average channel slope and flows through steep canyons. The lower reach of about 69.3 miles extends from Chevelon Canyon Dam to the confluence with the Little Colorado River. The channel slope varies considerably along the lower reach, and the floodplain is much wider. Chevelon Creek is not a totally perennial stream but is an interrupted stream. It has sections of perennial and non-perennial that alternate throughout its length. There are two U.S. Geological Survey stream gauges along the creek, both of which are near its headwaters. These stream gauges disclose a mean annual flow of between 47 and 50 cfs, with a two-year peak flood of between 2,300 and 2,400 cfs. The higher flows in Chevelon Creek are in the late winter months of February through April due to melting snow. Chevelon Canyon Dam was constructed in June of 1967 and the lake has a capacity of 6,193 acre-feet. The dam does not have a controlled spillway but does act to control floods. The depth of the stream during normal flow is between 0.64 feet to 1.35 feet and the width is between 12 and 30 feet.

Comparison of Chevelon Creek flow data with approved boating criteria in the detailed navigability studies prepared for the Arizona Land Department (1996, 1997) indicates that during its ordinary flow, recreational watercrafts can be utilized approximately 10% of the time. In the upper reach of Chevelon Creek, there are many channel obstructions such as vegetation and boulders in the stream. There are accounts of both historical and modern boating and, accordingly, a separate detailed study of this watercourse was recommended and conducted.

11. Level Three Analysis for Clear Creek

Clear Creek is located in the western central portion of Navajo County and the southeastern portion of Coconino County. It received three affirmative responses in the level one analysis, including perennial stream, fish in stream and dam-impacted. According to level two criteria, the watercourse was designated under stream category A (potentially susceptible to navigation), thus justifying forwarding the watercourse for a level three analysis. The total rating evaluated for Clear Creek using the refined level two analysis is 15.0.

Clear Creek trends to the northeast from its headwaters at the confluence with East Clear Creek in Coconino County, crossing the county line into Navajo County and flowing on to its confluence with the Little Colorado River just east of Winslow. It is 68.2 miles long and drains a watershed of 610 square miles. The elevation of the watershed ranges from a maximum of about 7,760 feet at its headwaters near Barbershop Canyon to about 4,860 feet at its confluence with the Little Colorado River.

Clear Creek can be divided into two stream reaches. The upper reach is about 42.2 miles in length and extends from the headwaters at its confluence with East Clear Creek to the border of Coconino and Navajo Counties. This reach is characterized by a relatively narrow, deep channel with lush vegetation. The lower reach is about 26 miles long and extends from the Coconino-Navajo County border to the confluence with the Little Colorado River. The channel slope varies considerably along the lower reach.

There are two U.S. Geological Survey stream gauges on Clear Creek. The data from these gauging stations disclose a mean annual flow of 79 to 82 cfs, with a two-year flood peak of between 2,360 and 2,800 cfs. The greatest flow is during the late winter and spring months of February through April, during the snow melt in the higher elevations. The flow data indicates that Clear Creek is a perennial stream for its entire length except for the last 3/4-mile segment near its confluence with the Little Colorado River. In the dry months of the year, there is no flow at all in this creek.

Typical flow rates for all months of the year for both reaches range from one to 70 cfs with exceptional flows occurring during the winter and spring months. During the normal flow, the depth is between two and nine feet and the width between nine and 54 feet. Two adjacent dam structures were built in 1929 and 1986 in Clear Creek at its lower reach. The reservoir created by these structures allows for recreational use such as boating and fishing. Comparison of the boating criteria study prepared for the Arizona Land Department (1996, 1997) with the hydrological data for Clear Creek indicates that other than the dam reservoirs, the stream in the lower reach could not support recreational watercrafts at its normal flow. There is no history of boating on this stream and no history of fishing, commercial or otherwise, except for the reservoirs behind the dam structures.

In view of the foregoing, Clear Creek was considered as not being susceptible of navigability during its ordinary flow and was therefore rejected at level three.

12. Level Three Analysis for White River

White River is located in the southern portion of Navajo County and the eastern portion of Gila County. It received four affirmative responses at the level one analysis: dam-impacted, fish, special status and perennial stream. In the level two analysis, it classified under stream category A (potentially susceptible to navigation), thus justifying forwarding it for level three analysis. The total rating assigned to White River using the refined approach at level two was 19.

White River winds its way to the west the Gila-Navajo County border near Fort Apache to its confluence with the Salt River at the Forks Bluff in the San Carlos Reservation. The total drainage area of White River at its mouth is about 637 square miles. Elevation of the watershed ranges from 4,920 at its headwaters above Fort Apache, Arizona to about 4,230 feet at its confluence with the Salt River at Forks Bluff. Vegetation on the watershed consists of ponderosa pine, oak woodland, juniper and piñon pine, and various grasses. The stream gauge station near Fort Apache, Arizona has a mean annual flow of 212 cubic feet/second, but shows a large variance between 35 cfs for 90% of the time to 567 cfs for 10% of the time, with a two-year flood peak of 3,110 cfs. The flows vary by months with January and May being the largest due to snow melt and winter cyclonic storms, and July through November being the lowest when the summer monsoon storms are not particularly heavy. In the upper part of the river, the banks are steep which limits access to the river. The bed itself has many obstructions, rocks, outcrops, dense overgrowth at certain points along the reach which would render navigation difficult or impossible. The flow, except for rapids and rocks in the stream, could possibly support non-motorized recreational watercraft at certain times, but due to the shallow flow, obstructions such as rapids and outcrops and other available information, it was determined that the river itself was not conducive or susceptible to navigability. In view of this overall condition, it was determined that White River should be rejected as navigable river or susceptible to navigability at level three, and that a detailed study was not necessary and was not conducted.

13. Level Three Analysis for Cibecue Creek

Cibecue Creek is located in southern Navajo County and eastern Gila County. It received three affirmative responses at the level one analysis, including perennial stream, fish in the stream and special status. In the level two analysis, it was classified under stream category A (potentially susceptible to navigation), thus justifying it for

level three analysis. The total rating for Cibecue Creek using the level two refined approach was 11.12.

Cibecue Creek trends south from the Mogollon Rim and flows into the Salt River. The Cibecue Creek watershed is approximately 290 square miles and ranges from an elevation of 7,462 feet at Chedeski Peak to 3,145 feet at the Salt River - Cibecue Creek confluence. Vegetation within the lower elevations of the watershed varies from piñon-juniper woodland and Arizona semi-desert shrub as mesquite and yucca, to oak woodland, walnut, jack and ponderosa pine in the upper elevations along the Mogollon Rim.

Cibecue Creek can be divided into three reaches: reach one - canyon reach from Salt River/ Cibecue Creek confluence to spring creek; reach two - the Alluvial Valley reach, from Spring Creek confluence to Salt River Creek; and reach three - Mountain Canyon reach from Salt River Creek to the headwaters. In reach one, Cibecue Creek has a single channel with cobbles and boulders, and a bed of approximately 35 feet wide. This reach generally has a narrow, deep cross-section combined by steep bedrock walls. Bedrock also crops up in the channels in the form of small chutes and waterfalls. In reach two, Cibecue Creek has a pool and riffle pattern with some step/pool reaches that have small waterfalls. In reach one, Cibecue Creek is perennial. Reach two is slightly sinuous with a single channel and braided reaches. The channel is contained with a 150-foot corridor, but the active channel is generally about 25 feet wide. Overbanks are covered with cobbles and pebbles indicating higher flows tend to spread out over the floodplain. Bedrock also crops out in the channel of reach two, though it does not form slope breaks and waterfalls. The flow in reach two has a pool and riffle pattern and is perennial. Reach three is slightly sinuous with perennial and ephemeral reaches upstream of White Spring-Cibecue Creek. The main branch is dominated by large cobbles and small boulders, and has a braided pattern characterized by frequent flow splits. The entire length of reach three is contained within the mountain canyons with

bedrocks cropping out in both banks. The average slope of the entire stream reaches about 1.8% (0.018 ft/ft).

There is a U.S. Geological Survey gauging station on Cibecue Creek which provides hydrologic data for the creek. The mean annual flow is 49 cfs. U.S. Geological Survey gauging station data indicates that the stream is perennial during the average years. Both monthly and average flows and minimum average flows exceed zero throughout the year. Field studies indicated that Cibecue Creek is perennial below White Spring. Some of the highest average flows occur during snow melt and winter storms in February through April. The boating criteria and navigability studies prepared for the Arizona State Land Department (1996, 1997), along with the hydrologic data for Cibecue Creek, shows that the stream could be boated by low draft canoes or kayaks at least 90% of the time. Reach one is most susceptible to boating with the lower portion of reach three providing adequate flow depths as well. However, obstructions such as boulders and small waterfalls would limit the boating to very short sections and would not increase the likelihood of an enjoyable boating experience. Boating by recreation craft during flood would be hazardous due to the steep slope, high velocities and occasional overhanging vegetation. Boating by larger, commercial craft would be unlikely and hazardous. No modern or historical account of any type of boating on Cibecue Creek was identified in this study. Therefore, it was determined that Cibecue Creek was not navigable or susceptible to navigability and a detailed study was not recommended.

14. Level Three Analysis for Canyon Creek

Canyon Creek lies in the central Arizona mountainous areas in Coconino, Gila and Navajo Counties. It received three affirmative responses in the level one analysis, including perennial stream, fish in stream, and special status. According to level two criteria, the watercourse is classified under stream category A (potentially susceptible to

navigation), thus justifying forwarding the watercourse to a level three analysis. The total rating for Canyon Creek using the refined approach at level two is 11.12.

Canyon Creek trends to the south from the Mogollon Rim to the Salt River. It originates in Coconino County, flows through Gila County into Navajo County and then back into Gila County, where it joins the Salt River. Canyon Creek is named because it runs through a very deep canyon. It is approximately 50 miles in length with a watershed of 317 square miles. The watershed elevation ranges from over 7,500 feet near the Mogollon Rim to 2,910 feet at the Salt River-Canyon Creek confluence. The vegetation in the watershed varies from Saguaro and Ocotillo cacti, jumper and scrub oak in the lower elevations to walnut, jack and ponderosa pine in the upper elevations. Vegetation along Canyon Creek includes willow and sycamore riparian forest, as well as various grasses, reeds and cattails. There is a U.S. Geological Survey stream gauging station near Globe, approximately one mile upstream of the Salt River confluence. The mean annual flow of Canyon Creek is 132 cfs, although it can vary from a maximum of 203 cfs to a minimum annual mean of 19 cfs.

Using the boating criteria and navigability studies prepared for the Arizona State Land Department (1996, 1997) with the hydrologic data for Canyon Creek, it indicates that a portion of the stream could be boated by canoes and kayaks less than 10% of the time. However, although reaches of the canyon closest to the Salt River confluence have depths that provide acceptable boating conditions, obstructions caused by large boulders and small waterfalls combined with steep slopes and overhanging vegetation make these reaches not susceptible to recreational boating. Boating by larger commercial craft would be even more unlikely and hazardous. There is no modern or historical account of any type of boating. Canyon Creek was not considered navigable or susceptible to navigability and, therefore, a detailed study was not recommended.

**15. Summary of Results of Small and Minor Watercourses
Analysis for Navajo County, Arizona**

All of the 3,352 small and minor watercourses in Navajo County were analyzed in the three level process developed by the State Land Department and its contractors, Stantec and J.E. Fuller Hydrology. At level one, 3,276 watercourses were determined not as having an affirmative response to any of the characteristics utilized at level one and, therefore, were rejected and eliminated at level one. At level two, 64 watercourses failed the screening process, while 12 watercourses survived and were forwarded for level three analysis. The 12 watercourses in Navajo County that were studied at level three were Billy Creek, Black River, Diamond Creek, East Fork White River, North Fork White River, Show Low Creek, Cibecue Creek, Silver Creek, White River, Canyon Creek, Chevelon Creek and Clear Creek. Based on this engineering analysis performed on the 12 watercourses evaluated, watercourse characteristics on 11 watercourses exhibited evidence of non-susceptibility to navigation as that term is defined in A.R.S. §37-1128. In summary, the only watercourse in Navajo County, Chevelon Creek, survived the three level screening process and was forwarded for a detailed study.

B. Prehistoric and Historical Conditions Affecting Small and Minor Watercourses in Navajo County, Arizona

In addition to the small and minor watercourse analysis and other evidence described above, the Commission also considered evidence of prehistoric conditions in Navajo County and the historical development of Navajo County as disclosed in the various studies, reports and testimony presented to the Commission, including the reports on the Little Colorado River and other watercourses which flow through parts of Navajo County.

1. Prehistory or Pre-Columbian Conditions

Archaeological evidence show that Navajo County has had extensive human occupation from the earliest paleoindian times (9,500 B.C. – 6,000 B.C.). Numerous archaeological sites and remains in and near the Valley of the Little Colorado River in

Navajo County have long attracted the attention of scholars and archaeologists and have provided a great deal of data and research in archaeology. Over 4,000 archaeological sites have been recorded in the Little Colorado and Puerco River valleys, and over 200 such sites have been excavated. Approximately 50 projectile points of the Clovis type have been found at one site on the upper Little Colorado River, providing evidence of use around the region and the early paleoindian period, when hunters exploited the now-extinct megafauna, such as woolly mammoths and longhorned bison.

During the Archaic period (6,000 – 500 B.C.), after the extinction of the megafauna, the occupants in the region hunted and gathered more modern species of plants and animals. Maze, or corn, was first introduced into the region as early as 1,500 B.C., which allowed for the development of sedentary settlement systems which seasonally occupied dwellings. Pottery was introduced around 500 A.D., which increased the trend toward sedentariness and by approximately 700 A.D., the population was living on small farming communities that were occupied year around. Concentrations of villages have been found in the Little Colorado River valley, and one of the largest collection of prehistoric ruins called Homol'ovi is located near Winslow, Arizona, just west of the confluence of the Puerco River and the Little Colorado River. Archaeologists have surveyed and have recorded some 280 sites in this relatively small area.

While the people in the Little Colorado River valley are closely related to or classified as part of the Anasazi culture, some influence from the Mogollon culture is indicated, which culturalized to the south of the White Mountain area. The Hopi Indian tribe of today considers Homol'ovi ruins to be an ancestral Hopi site. Small amounts of irrigated land were also found on the upper Little Colorado River and at Holbrook and at the mouth of Chevelon and Cottonwood Creeks, east of Winslow. Many of the minor ditches associated with the irrigation were still in evidence when the first modern settlers arrived.

The middle and lower reaches of the Little Colorado River watershed basin have very few trees and there is no evidence of any prehistoric intentional floating of logs down the river. There is no evidence, whatsoever, of the use of the Little Colorado River or the Puerco River by prehistoric cultures for boating or travel on the water. On the other hand, the Little Colorado River basin was a major corridor or thoroughfare for communication between the Hopi mesas, the Zuni tribes, and between Hopi, Zuni and Rio Grande pueblos. In prehistoric times, travel was exclusively by foot. Prior to the arrival of Coronado in 1540, American Indians had no horses, mules or draft animals such as oxen.

2. Historical Settlement of Apache County

Historical documentation of Apache County, the Little Colorado River and the Puerco River watersheds is extensive and covers over 450 years. The first European exploration in the area took place in 1539 and is documented as early as 1540 by the Coronado Expedition. In 1540-1542, the time of the Coronado Expedition, Hopi and Zuni Indians lived in the area. They are probably descendants of the Anasazi culture in the Four Corners and Kayenta area and the Mogollon culture of the White Mountains. Most archaeologists and anthropologists believe that the Apaches are relatively recent arrivals in the southwest, having migrated into the region after Coronado's Expedition. The Navajos and Apaches speak mutually intelligible dialects of a single language in the Athabascan family of languages. The number of Apaches increased during the 1600's and by 1700, they were a major population in the area. There was not much Spanish exploration in the southwest until 1595, when Juan de Oñate sent a small party to investigate mines described by Antonio de Espejo and they most likely followed the route of the Puerco River valley to Holbrook, the Little Colorado River to Winslow, and then south to the Mogollon Rim, and west into the Verde Valley.

In 1821, Mexico won its independence from Spain. The Mexican government sponsored a few expeditions into northern Arizona. Expeditions against the Apaches

were undertaken, but only with limited success. Mexico tried to discourage incursions into the territories by the citizens of the United States, which was rapidly expanding westward, but fur trappers began trapping in Arizona in the 1820's. In the dry desert southwest mountains, the mountainmen trappers generally rode horseback. There is little evidence of their using boats and no evidence at all of boating in Apache County. None of the accounts of mountainmen during this era refer to any trapping or any significant water flowing in the Little Colorado River or Puerco River.

The Mexican-American War culminated in 1848 by the Treaty of Guadalupe Hidalgo, with the secession of New Mexico and Arizona, north of the Gila River, from Mexico to the United States. In 1851, Lorenzo Sitgraves conducted a survey determining that reasonable route for travel from Fort Defiance to the Colorado River and, in particular, to Fort Yuma. They crossed Apache County and through the Little Colorado River basin. Little mention of the flow conditions of the Colorado River or its tributaries was made in any of his reports.

In 1863, Arizona was created as a separate territory from New Mexico and on December 29th, 1863, the new officers of the Arizona territory government took their oath at Navajo Springs near the Puerco River, just south of Interstate 40, about 39 miles east of Holbrook. These new officers traveled across what was to become Apache County on their way to the new seat of government at Fort Whipple, near Prescott, Arizona. In 1867 and in 1868, William Jackson Palmer conducted a survey along the 32nd and 35th parallels to evaluate the routes for a railroad to the Pacific Ocean. He travelled down the Puerco River and the middle reach of the Colorado until it turns north at Winslow. He described the rivers as being dry at that time.

Colonization by settlers of European descent may have begun as early as 1860, although Mormon settlements in the area began approximately a decade later. In the 1860's and 1870's, Mormon colonists sent by Brigham Young from Utah explored the area and established towns of Joseph City, St. John's, Springerville, Taylor and

Snowflake, and other locations along the lower Colorado River watershed basin. In the middle and lower reaches of the Little Colorado River, farmers complained that the water was very muddy and filled their ditches and ponds with sediment. The dams they built to contain the river and divert its waters were for irrigation and were frequently washed out due to floods.

In 1881, the Atlantic and Pacific began construction of a railroad across northeastern Arizona. Railroad construction reached the present site of Holbrook in September of 1881. The railroad generally paralleled the Puerco River from Gallup, New Mexico across Apache County to Holbrook. Cattle and sheep were driven through the area in the 1860's and 1870's, and became a major industry with the arrival of the railroad. There was little farming on the Little Colorado River, mostly by Mormon settlers who put in gardens, orchards and pasturelands.

VIII. Present Climate and Weather Conditions Same or Similar to that of 1912

Testimony presented at the hearing for all small and minor watercourses in Navajo County established that the present climate and weather conditions in Navajo County are the same or very similar to that which existed in 1912 when Arizona became a state.

IX. Separate Detailed Stream Navigability Study for Chevelon Creek

Since Chevelon Creek survived the level three analysis of the small and minor watercourse analyses for Coconino County, a separate detailed study of its navigability was conducted. The separate detailed report on Chevelon Creek is incorporated in this Report, Findings and Determination. A major portion of Chevelon Creek is located in Navajo County which is adjacent Coconino County to the east. The level three analysis for Chevelon Creek reported in Section VII A 10 of this report is incorporated by reference in this separate detailed stream navigability study for Chevelon Creek.

The headwaters of Chevelon Creek are located in Willow Springs Canyon on the northeastern slope of the Mogollon Rim near Woods Canyon Lake in Section 29,

Township 11 North, Range 14 East, Gila and Salt River Base and Meridian, latitude 34°20'00" North, longitude 110°56'00" West. It flows in a northeasterly direction through deep canyons in the Coconino National Forest past Chevelon Crossing and crosses the Navajo County line continuing in a northeasterly direction in lesser canyons until it flows into the Little Colorado River east of Winslow at Section 15, Township 18 North, Range 17 East, Gila and Salt River Base and Meridian, latitude 34°57'05" North, longitude 110°31'14" West. Chevelon Creek is 91.4 miles long and drains a watershed of 790 square miles. Elevations in the watershed range from a maximum of 7,660 at its headwaters to approximately 4,900 feet at its confluence with the Little Colorado River. The mean annual flow is approximately 50 cfs. The depth of the stream during normal flow is between .64 feet to 1.35 feet with a width of 12 to 30 feet.

The watershed is bounded by high mountains and deep canyons of the north slope of the Mogollon Rim and the canyons of the high plateau which tilt to the north as the creek runs into the Little Colorado River. A map of the area showing where Chevelon Creek is located in the County and State is attached as Exhibit "H."

A. History of Chevelon Canyon

Archaeological sites indicate that the region surrounding Chevelon Canyon has been occupied for several thousand years, although few site-specific records of ruins were found. No doubt paleoindians traveled through the area utilizing the waters in Chevelon Creek as they hunted and gathered for their sustenance. There are hardly any permanent sites that date to the archaic period in which hunting and gathering cultures also passed through and made temporary camps in the area. As the more well-known pre-Columbian cultures developed, it seems that the Chevelon Creek area was a meeting place for Anasazi and Sinagua cultures. The best known archaeological site in the area is Chevelon Ruin at Homol'ovi State Park. The Homol'ovi site is a series of eight to twelve separate buildings or ruins located at the confluence of Chevelon Creek and the Little Colorado River. The Chevelon Ruin is a 400-room village site situated on

a hilltop. The occupants of this site were thought to have used irrigated agriculture primarily from the Little Colorado and not Chevelon Creek. There is also evidence of later occupation by Zuni, Hopi, Navajo and Apache Indians which brings the archaeological record down to the mid-1800's.

The first Anglo-American explorer in the area was Col. John M. Washington's Navajo Expedition in 1849. Following the end of the Mexican American War in 1848 with the Treaty of Guadalupe Hidalgo, the United States sponsored a number of expeditions led by military officers who surveyed the northern part of this area as a railroad site for a transcontinental railroad. One of the first was Capt. Lorenzo Sitgreaves in 1851 who led an American surveying expedition down the Little Colorado River and across what would become northern Arizona, surveying the 35th parallel site which was later developed into a transcontinental railroad. In 1853, Lt. Whipple passed through the area and noted the great kivas at various of the ruins, particularly Homol'ovi. In the late 1850's, E. F. Beale developed a wagon road across northern Arizona which generally followed the present route of the railroad and Highway 66.

The first Anglo settlement in the Chevelon Creek area was a town called Sunset, which is now known as Winslow. Led by Lot Smith, Mormon colonists maintained a dairy at what was to be known as Mormon Lake and had a sawmill nearby at a place called Sawmill Springs. Other groups of Mormon settlers came from Utah and established themselves at Sunset or Mormon Crossing near Homol'ovi and Joseph City. These early settlements had a great deal of trouble irrigating and growing crops due to the lack of water part of the time and excessive flooding at other times.

Throughout the early 1900's, other settlers made their homes along Chevelon Creek or in the flatlands next to the steep canyon walls. Several ranching operations started in those years are still operating today near the creek, but they do not include permanent residences or commercial buildings within the canyon. Two pumping stations and three dams have been constructed along Chevelon Creek for water supply

and recreation, but none of these dams existed at the time of statehood. The principal economic activity in the region in the late 1800's and early 1900's was ranching. The only crop agriculture attempted along Chevelon Creek were merely gardens to provide vegetables to the ranchers. No mines or mining claims were established in the Chevelon Canyon area.

Transportation through the Chevelon Creek area was primarily by foot, horseback and horse-drawn wagon until 1882 when the Atlantic and Pacific Railroad reached Winslow. This is the track which later became the Santa Fe Railroad and, after a recent merger, is now known as the Burlington Northern Santa Fe Railroad. The railroad parallels Interstate 40, a transcontinental four-lane highway. There is no record of any boating or other attempts at travel on Chevelon Creek and no evidence of any commercial fishing. The water from the creek was used primarily for grazing of cattle, with some isolated irrigation uses.

B. Wildlife, Habitat and Hydrology

Two U.S. Geological Survey stream gauge stations are located on Chevelon Creek, one just inside the Navajo County line at the midpoint of the stream flow, and the other near the confluence with the Little Colorado River. The stream is listed as being perennial but, in fact, is intermittent and during portions of the year, some areas of the stream are dry. The mean annual flow at both stream gauge stations is approximately 50 cfs. The largest monthly flow occurs during the winter and spring months of January through April when the snow is melting on the mountains of the Mogollon Rim. The stream gauge near Winslow reported a peak occurrence during the largest flood on record of 33,600 cfs on December 18, 1978.

The vegetation on Chevelon Creek varies with the elevation. Ponderosa pine and Douglas fir dominate in the southern area in the high mountains, with some piñon-juniper communities in some areas. Further downstream, the riparian community transitions to cottonwood and walnut along with canyon grape. Near the Little

Colorado confluence, the banks are covered with dense thickets of tamarisk, a non-native tree thought to have been introduced after Anglo settlement of the west in order to halt erosion. The most downstream zone is a part of the northern desert community and is a southern extension of the Great Basin sagebrush country. Sage dominates in most of this area and is accompanied by rabbit brush and salt brush. Before Anglo settlement, the grasslands were dominated almost exclusively by antelope with occasional deer and elk. After Anglo settlement, cattle and sheep became dominant. Wolves once served as grassland predators but are now gone and replaced by coyote as the dominant predator of jackrabbits and badgers found in the area. Further south as elevation increases, beaver, elk, porcupine, wild turkey, bobcat, fox and mountain lion are found. The present elk herd in this area is wapiti which were imported from Wyoming in 1913 by the Elks Club of Winslow after the native elk population became extinct.

There are two reservoirs on Chevelon Creek, Woods Canyon Lake near its headwaters, and Chevelon Canyon Lake constructed in June 1967 with a lake capacity of 6,193 acre feet. Recreational boating and fishing are conducted on both Woods Canyon and Chevelon Canyon Lakes. The flow data indicates that during ordinary flow, recreational watercraft could be utilized on portions of the creek other than the lakes approximately 10% of the time. In the upper and middle reaches of Chevelon Creek, there are many channel obstructions such as vegetation, riffles and boulders in the stream. All reaches of Chevelon Creek are either perennial or intermittent, flowing in response to discharge of springs, interception of groundwater and, particularly, runoff responding to snow melt in the late winter and early spring.

No evidence was found to indicate that sustained trade or travel occurred in boats in either the upstream or downstream direction of Chevelon Creek at the time of statehood. Although there is some history of recreational boating during high water periods, no evidence was found to indicate any commercial enterprise being conducted

using Chevelon Creek for trade or travel by boat. Certainly, commercial boats, including keelboats, steamboats, or powered barges, were and are impossible to use on this creek. All boating or fishing was for recreational purposes and there is no record of any use of Chevelon Creek for flotation of logs or other materials. While there is some evidence of water being diverted from Chevelon Creek for irrigation at several locations prior to 1912 and after, there is no evidence that entries were made under the Desert Land Act of 1877. Likewise, Chevelon Creek was not regulated as a watercourse under the Federal Rivers and Harbors Act of 1899.

While there are currently three dams and two irrigation diversions on Chevelon Creek that would be impediments of some types of navigation, these dams and diversions did not exist at the time of statehood. Transportation in proximity to Chevelon Creek at the time of statehood was customarily accomplished by foot, horseback, wagon and railroad and later, as the road conditions improved, by automobile and truck.

In view of the foregoing, it seems clear that Chevelon Creek was neither navigable nor susceptible of navigability as of February 14, 1912.

X. Findings and Determination

The Commission has conducted a particularized assessment of the equal footing claims the State of Arizona might have to the beds and banks of the 3,352 small and minor watercourses in Navajo County, Arizona and, based on all of the historical and scientific data and information, documents, and other evidence produced, finds that none of the said small and minor watercourses, including Chevelon Creek on which separate detailed study was conducted, were used or were susceptible to being used, in their ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on the waters as of February 14, 1912.

The Commission also finds that none of the small and minor watercourses in Navajo County, Arizona, including Chevelon Creek, are or were truly perennial throughout their length and that as of February 14, 1912 and currently, they flow/flowed only in direct response to precipitation and are or were dry at all other times.

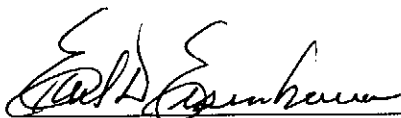
The Commission also finds that there is no evidence of any historical or modern commercial boating having occurred on any of the small and minor watercourses in Navajo County, Arizona.

The Commission also finds that there is no evidence of any fishing, except recreational fishing, having occurred on the small and minor watercourses in Navajo County, Arizona.

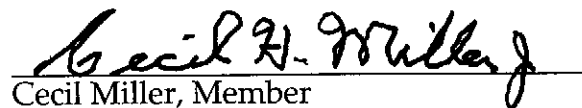
The Commission further finds that all notices of these hearings and proceedings were properly and timely given.

In view of the foregoing, the Commission, pursuant to A.R.S. § 37-1128A, finds and determines that the small and minor watercourses mentioned above in Navajo County, Arizona were not navigable nor susceptible of navigability as of February 14, 1912.

DATED this 14 day of December 2011.



Earl Eisenhower, Chair



Cecil Miller, Member

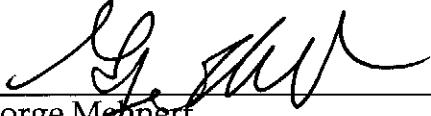


James Henness, Member

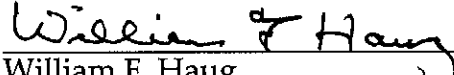
Dolly Echeverria, Vice Chair
Deceased July 1, 2010

Jay Brashear, Member
Deceased September 15, 2007

STAFF MEMBERS:



George Mehnert
Executive Director



William F. Haug
Legal Counsel to the Commission

EXHIBIT A

Table A-3
List of Small and Minor Watercourses in Navajo County

Bagnal Wash	Dodson Wash - Navajo
Bear Creek - Navajo	Dry Wash
Bear Flat Creek	East Cedar Creek
Bear Wash	East Fork White River
Begashibito Wash	East Twin Wash
Beshbito Wash	East Washboard Wash
Bidahochi Wash	El Capitan Wash
Big Bonito Creek	Ellison Creek
Billy Creek	Fern Feather Wash
Billy Wash	Firebox Creek
Black Canyon - Navajo	Fish Creek
Black River	Fivemile Wash - Navajo
Blairs Spring Wash	Foot Canyon
Bluebird Canyon	Forestdale Creek
Brookbank Canyon	Gentry Creek
Brown Creek	Gomez Creek
Bull Creek	Gooseberry Creek
Burnt Corn Creek	Gypsum Creek
C I Wash	Ha Whi Yalin Wash
Canyon Creek 1	Hay Hollow Draw
Carr L Wash	Hess Wash
Carrizo Creek	Hog Wash
Castle Creek - Navajo	Humpy Wash
Chevelon Canyon	Indian Creek
Cibecue Creek	Jacks Canyon 2
Clear Creek 1	Jadito Wash
Colbath Wash	Jim Camp Wash
Concho Flat Wash	Joseph City Wash
Cottonwood Wash 1 - Navajo	Jumpoff Canyon
Cottonwood Wash 2 - Navajo	Keams Canyon
Cottonwood Wash 3 - Navajo	Laguna Creek
Cottonwood Wash 4 - Navajo	Leroux Wash
Courduroy Creek	Linden Wash
Cow Creek - Navajo	Lithodendron Wash
Coyote Wash	Little Milky Wash
Coyote Wash 1 - Navajo	Lone Pine Creek
Cutfoot Wash	Lukai Wash
Day School Wash	Manila Wash
Day Wash	Mcdonalds Canyon
Decker Wash	Mesa Wash - Navajo
Deer Spring Creek	Mexican Hollow Wash
Deer Springs Canyon	Middle Cedar Creek
Diamond Creek	Milky Wash - Apache
Digger Wash	Moenkopi Wash
Dinnebito Wash	Mud Creek
Dinnebito Wash E	Nakai Canyon

Table A-3
List of Small and Minor Watercourses in Navajo County

Narrow Wash	Walnut Creek - Navajo
Nash Creek	Washboard Wash
Neskahi Wash	Wepo Wash
North Fork White River	West Cedar Creek
Oak Creek - Navajo	West Fork Cotton
Oljeio Wash	West Gypsum Creek
Oraibi Wash	West Turkey Creek
Oraibi Wash W Fk	West Twin Wash
Parrish Creek	Whe-Yol-Da Sah Wash
Petrified Creek	White River
Phoenix Park Wash	Wide Ruin Wash
Pierce Wash	Wildcat Canyon
Pine Creek - Navajo	Wildhorse Wash
Pinedale Wash	Willow Creek - Navajo
Plute Creek	Willow Wash - Navajo
Polacca Wash	3199 Unnamed Washes
Porter Creek	
Porter Tank Draw	
Potatoe Wash	
Pueblo Colorado	
Rock Creek - Navajo	
Rock Creek 3 - Gila	
Rocky Arroyo	
Sabito Wash	
Salt Creek - Navajo	
Scott Wash	
Sears Wash	
Sevenmile Draw	
Shonto Wash	
Show Low Creek	
Silver Creek - Navajo	
Spring Creek 1	
Squaw Wash	
Steamboard Wash	
Stinson Wash - Navajo	
Swamp Creek	
Tanner Wash - Navajo	
Tees Toh Wash	
The Canal	
Thompson Creek - Navajo	
Tse Chizzi Wash	
Tsegi Canyon	
Turkey Canyon - Navajo	
Turkey Creek 1	
Tyende Creek	
V Eighteen Wash	

EXHIBIT B

Affidavit of Publication

State of Arizona,)
)ss.
County of Navajo,)

I, Francie Payne, being duly sworn, depose and say: I am

STATEMENT OF INTENT For Navajo and Apache Counties State of Arizona

Navigable Stream Adjudication Commission
Pursuant to A.R.S. §37-1101, et. seq., the Arizona Navigable Stream Adjudication Commission (ANSAC) is planning to hold watercourse navigability hearings regarding the Little Colorado River and Puerco River in Navajo County, Arizona, the Little Colorado River and Puerco River in Apache County, Arizona and all of the small and minor watercourses in each county. There will be a hearing in Holbrook, Arizona regarding Navajo County watercourses, and a hearing in St. Johns, Arizona regarding Apache County watercourses. There will be a hearing in each county regarding the Little Colorado River and a hearing in each county regarding the Puerco River. Notice is hereby given, pursuant to A.R.S. §37-1123 (B), that ANSAC intends to receive, review, and consider evidence regarding the navigability or nonnavigability of the Little Colorado River and Puerco River in both Navajo and Apache Counties. Interested parties are requested to file all documentary and other physical evidence they propose to submit to ANSAC by April 26, 2005. All evidence submitted to ANSAC will be the property of ANSAC and the State of Arizona. Evidence submitted will be available for public inspection at the ANSAC offices during regular office hours.

Pursuant to A.R.S. §37-1101, et. seq., the Arizona Navigable Stream Adjudication Commission (ANSAC) is planning to hold a watercourse navigability hearing regarding all of the small and minor watercourses in Navajo County, Arizona and in Apache County, Arizona. Notice is hereby given, pursuant to A.R.S. §37-1123 (B), that ANSAC intends to receive, review, and consider evidence regarding the navigability or nonnavigability of all small and minor watercourses in Navajo County and in Apache County. Interested parties are requested to file all documentary evidence they propose to submit to ANSAC by April 26, 2005. All evidence submitted to ANSAC will be the property of ANSAC and the State of Arizona. Evidence submitted will be available for public inspection at the ANSAC offices during regular office hours.

The list of small and minor watercourses in Navajo County includes:
Bagnal Wash, Bear Creek - Navajo, Bear Flat Creek, Bear Wash, Begashibito Wash, Beeshbito Wash, Bidabochi Wash, Big Bonito Creek, Billy Creek, Billy Wash, Black Canyon - Navajo, Black River, Blairs Spring Wash, Bluebird Canyon, Brookbank Canyon, Brown Creek, Bull Creek, Burnt Corn Creek, C I Wash, Canyon Creek 1, Carr L Wash, Carrizo Creek, Castle Creek - Navajo, Chevelon Canyon, Cibecue Creek, Clear Creek 1, Colbath Wash, Concho Flat Wash, Cottonwood Wash 1 - Navajo, Cottonwood Wash 2 - Navajo, Cottonwood Wash 3 - Navajo, Cottonwood Wash 4 - Navajo, Courchroy Creek, Cow Creek - Navajo, Coyote Wash, Coyote Wash 1 - Navajo, Cutoff Wash, Day School Wash, Day Wash, Decker Wash, Deer Spring Creek, Deer Springs Canyon, Diamond Creek, Digger Wash, Dinnebito Wash, Dinnebito Wash E, Dodson Wash - Navajo, Dry Wash, East Cedar Creek, East Fork White, East Twin Wash, East Washboard Wash, El Capitan Wash, Ellison Creek, Fern Feather Wash, Fish Creek, Fivemile Wash - Navajo, Foot Canyon, Forestdale Creek, Gentry Creek, Gomez Creek, Gooseberry Creek, Gypsum Creek, Ha Whi Yalin Wash, Hay Hollow Draw, Hess Wash, Hog Wash, Humpy Wash, Indian Creek, Jacks Canyon 2, Jado Wash, Jim Camp Wash, Joseph City Wash, Jumpoff Canyon, Keams Canyon, Laguna Creek, Lercoux Wash, Linden Wash, Lithodendron Wash, Little Milky Wash, Lone Pine Creek, Lukai Wash, Manila Wash, McDonalds Canyon, Mesa Wash - Navajo, Mexican Hollow Wash, Middle Cedar Creek, Mounkopi Wash, Mud Creek, Nakai Canyon, Narrow Wash, Nash Creek, Nestaki Wash, North Fork White, Oak Creek - Navajo, Oljejo Wash, Oraibi Wash, Oraibi Wash W Pt, Pariah Creek, Petrified Creek, Phoenix Park Wash, Pierre Wash, Pine Creek - Navajo, Pinedale Wash, Pine Creek, Polono Wash, Puerco Creek, Puerco

General Manager of THE HOLBROOK TRIBUNE-NEWS, a newspaper of general circulation published at Holbrook, County of Navajo and State of Arizona; that the

Statement of Intent Legal #8551

attached hereto, was published in said newspaper, THE HOLBROOK TRIBUNE-NEWS, for 3 issues, and said notice was published in the regular and entire issue of every number of the paper during the period of the time of publication and was published in the newspaper proper and not in a supplement, the first

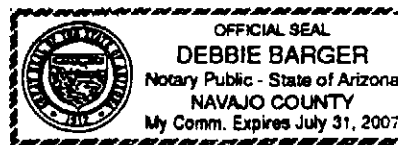
publication being dated March 4, 2005 and the last

publication being dated March 18, 2005.

Publication Dates: 3/4, 11, 18

SUBSCRIBED AND SWORN TO before me this 18th day of

March, 2005.



NOTARY PUBLIC

My commission expires July 31, 2007

EXHIBIT C

State of Arizona)
)
County of Navajo)

ss.

Affidavit of Publication

White Mountain Independent

NOTICE OF PUBLIC HEARING In Navajo County April 25, 2005 State of Arizona

Navigable Stream Adjudication Commission
Pursuant to A.R.S. § 37-1126 (A), notice is hereby given that the Navigable Stream Adjudication Commission will hold public hearings to receive physical evidence and testimony relating to the navigability or non-navigability of all watercourses in Navajo County. The hearings will be held in Navajo County on April 25, 2005 beginning at 3:00 p.m. in an order established by the chair in the Navajo County Supervisors' Chambers located at 100 E. Carter Drive (2 miles S. of Holbrook on Hwy 77 south). The following are presently the only hearings scheduled.

The Little Colorado River and the Puerco River, and all of the small and minor watercourses in Navajo County. The list of small and minor watercourses in Navajo County includes:

Bagnol Wash, Bear Creek - Navajo, Bear Flat Creek, Bear Wash, Begashbito Wash, Beehbito Wash, Bidahochi Wash, Big Bonito Creek, Billy Creek, Billy Wash, Black Canyon - Navajo, Black River, Blains Spring Wash, Bluebird Canyon, Brookbank Canyon, Brown Creek, Bull Creek, Burnt Corn Creek, C.I Wash, Canyon Creek 1, Carr L. Wash, Carrizo Creek, Castle Creek - Navajo, Chevelon Canyon, Cibecue Creek, Clear Creek 1, Colbath Wash, Concho Flat Wash, Cottonwood Wash 1 - Navajo, Cottonwood Wash 2 - Navajo, Cottonwood Wash 3 - Navajo, Cottonwood Wash 4 - Navajo, Courduruy Creek, Cow Creek - Navajo, Coyote Wash, Coyote Wash 1 - Navajo, Cutoff Wash, Day School Wash, Day Wash, Decker Wash, Deer Spring Creek, Deer Springs Canyon, Diamond Creek, Digger Wash, Dinnebito Wash, Dinnebito Wash E, Dodson

Wash - Navajo, Dry Wash, East Cedar Creek, East Fork White, East Twin Wash, East Washboard Wash, El Capitan Wash, Ellison Creek, Fern Feather Wash, Fish Creek, Fivemile Wash - Navajo, Foot Canyon, Forestdale Creek, Gentry Creek, Gomez Creek, Gooseberry Creek, Gypsum Creek, Ha Whi Yalin Wash, Hay Hollow Draw, Hess Wash, Hog Wash, Humpy Wash, Indian Creek, Jacks Canyon 2, Jadito Wash, Jim Camp Wash, Joseph City Wash, Jumpoff Canyon, Kearns Canyon, Laguna Creek, Laroux Wash, Linden Wash, Lithodendron Wash, Little Milky Wash, Lone Pine Creek, Lukai Wash, Manila Wash, McDonalds Canyon, Mesa Wash - Navajo, Mexican Hollow Wash, Middle Cedar Creek, Moenkopi Wash, Mud Creek, Nakai Canyon, Narrow Wash, Nash Creek, Neshahi Wash, North Fork White, Oak Creek - Navajo, Ojajo Wash, Oraibi Wash, Oraibi Wash W FK, Parrish Creek, Petrified Creek, Phoenix Park Wash, Pierce Wash, Pine Creek - Navajo, Pinedale Wash, Plute Creek, Polacca Wash, Porter Creek, Porter Tank Draw, Potatoe Wash, Pueblo Colorado, Rock Creek - Navajo, Rocky Arroyo, Sabito Wash, Salt Creek - Navajo, Scott Wash, Sears Wash, Sevenmile Draw, Shonto Wash, Show Low Creek, Silver Creek - Navajo, Spring Creek 1, Squaw Wash, Steamboat Wash, Stinson Wash - Navajo, Swamp Creek, Tanner Wash - Navajo, Teea Toh Wash, The Canal, Thompson Creek - Navajo, Tee Chizzi Wash, Tsagi Canyon, Turkey Canyon - Navajo, Turkey Creek 1, Tyende Creek, V Eighteen Wash, Walnut Creek - Navajo, Washboard Wash, Wepo Wash, West Cedar Creek, West Fork Cotton, West Gypsum Creek, West Turkey Creek, West Twin Wash, Whe-Yo-Da Sah Wash, White River, Wide Ruin Wash, Wildcat Canyon, Wilkhorse Wash, Willow Creek - Navajo, Willow Wash - Navajo, as well as all other named and unnamed small and minor watercourses.

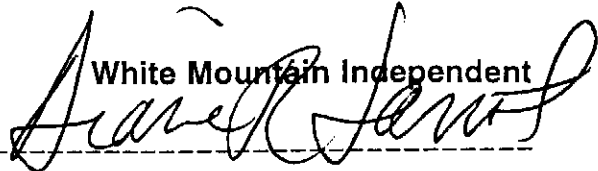
Interested parties may submit evidence to the commission office prior to the hearing and/or during the appropriate public hearing. The commission will conduct its hearings informally without adherence to judicial rules of procedure or evidence. An unbound original plus seven bound copies of documentary evidence is to be submitted. ANSAC offices are located at 1700 West Washington, Room 304, Phoenix, AZ 85007. The telephone number is (802) 542-9214. The web site address is <http://www.azstreambeds.com>. The e-mail address is streams@mindspring.com.

Evidence submitted in advance of the hearing will be available for public inspection during regular Commission office hours of 9:00 a.m. to 4:00 p.m. Monday thru Friday, except

I, Diane R. Janot, being first duly sworn, depose and say: I am the agent of the White Mountain Publishing Company, publisher of the White Mountain Independent, a semi-weekly newspaper of general circulation published at Show Low, County of Navajo, Arizona and that the copy hereto attached is a true copy of the advertisement as published in the White Mountain Independent on the following dates:

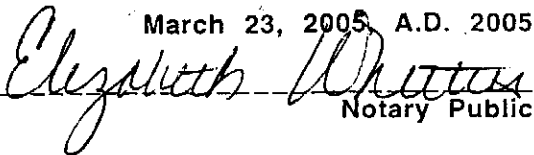
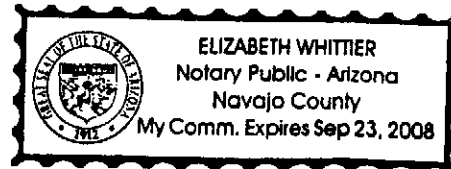
March 22, 2005

White Mountain Independent



Sworn to me this day of

March 23, 2005, A.D. 2005


Notary Public

\$ 2,495.56

State of Arizona - Navigable Stream Adjudication Commission
 Pursuant to A.R.S. § 37-1126 (A), notice is hereby given that the Navigable Stream Adjudication Commission will hold public hearings to receive physical evidence and testimony relating to the navigability or non-navigability of all watercourses in Navajo County. The hearings will be held in Navajo County on April 25, 2005 beginning at 3:00 p.m. in an order established by the chair in the Navajo County Supervisors' Chambers located at 100 E. Carter Drive (2 miles S. of Holbrook on Hwy. 77 south). The following are presently the only hearings scheduled.

The Little Colorado River and the Puerco River, and all of the small and minor watercourses in Navajo County. The list of small and minor watercourses in Navajo County includes:

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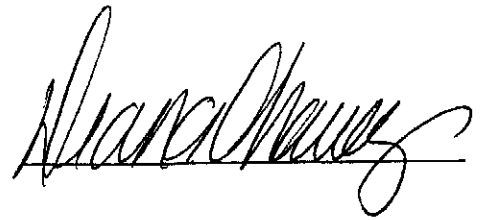
THE ARIZONA REPUBLIC

STATE OF ARIZONA }
 COUNTY OF MARICOPA } SS.

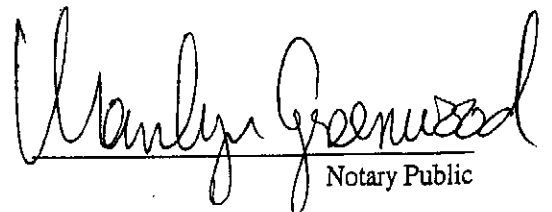
Diana Chavez, being first duly sworn, upon oath deposes and says: That she is a legal advertising representative of the Arizona Business Gazette, a newspaper of general circulation in the county of Maricopa, State of Arizona, published at Phoenix, Arizona, by Phoenix Newspapers Inc., which also publishes The Arizona Republic, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates as indicated.

The Arizona Republic

March 22, 2005



Sworn to before me this
 22ND day of
 March A.D. 2005

Notary Public

Residential Rentals
 Surprise 3703
 Tempe 3704
 by Area
 Anthem 3708
 All Areas 3708
 Avondale 3712
 Apache Junction 3712
 Buckeye 3716
 Chandler 3721
 Cave Creek 3721
 Gilbert 3721
 Fountain Hills 3721
 Mesa 3721
 Phoenix 3721
 Scottsdale 3721
 Sun Lakes 3721
 Sunnyslope 3721
 Tempe 3721
 West Valley City 3721

EXHIBIT D



STATE OF ARIZONA
NAVIGABLE STREAM ADJUDICATION COMMISSION

1700 West Washington, Room 304, Phoenix, Arizona 85007

Phone (602) 542-9214 FAX (602) 542-9220

JANET NAPOLITANO
Governor

E-mail: streams@mindspring.com Web Page: <http://www.azstreambeds.com>

GEORGE MEHNERT
Executive Director

AGENDA AND NOTICE OF A PUBLIC HEARING TO BE HELD

April 25, 2005, at 3:00 P.M., in Holbrook, Arizona

Pursuant to A.R.S. §38-431.02, notice is hereby given that the Navigable Stream Adjudication Commission will hold a meeting open to the public on April 25, 2005 at 3:00 p.m. in the Navajo County Supervisors' Chambers located at 100 E. Carter Drive (2 miles S. of Holbrook on Hwy 77 South), Holbrook, Arizona.

Pursuant to A.R.S. §38-431.03(A)(3), the Navigable Stream Adjudication Commission may vote to go into Executive Session for purposes of obtaining legal advice from the Commission's attorney on any matter listed on the agenda, or pursuant to A.R.S. §38-431.03(A) or for discussion of records exempt by law from public inspection on any matter listed on the agenda, or for personnel matters listed on the agenda.

Title 2 of the American with Disabilities Act (ADA) prohibits the Commission from discriminating on the basis of disability in its public meetings. Individuals with disabilities who need a reasonable accommodation to attend or communicate at the Commission's meeting, or who require this information in alternate format, may contact George Mehnert at (602) 542-9214 to make their needs known. Requests should be made as soon as possible so the Commission will have sufficient time to respond. For those individuals who have a hearing impairment, this Commission can be reached through the Arizona Relay Service at 1-800-367-8939 (TTY) or 1-800-842-4681 (Voice). The agenda for the meeting is as follows:

1. CALL TO ORDER.
2. ROLL CALL.
3. APPROVAL OF MINUTES (discussion and action).
A. March 29, Yavapai County.
4. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SMALL AND MINOR WATERCOURSES IN NAVAJO COUNTY, 05-006-NAV.
5. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE LITTLE COLORADO RIVER, 05-007-NAV.
6. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE PUERCO RIVER, 05-008-NAV.
7. BUDGET AND COMMISSION STATUS UPDATE.
8. HEARINGS UPDATE.
9. CALL FOR PUBLIC COMMENT (comment sheets).
(Pursuant to Attorney General Opinion No. 199-006 [R99-002]. Public Comment: Consideration and discussion of comments and complaints from the public. Those wishing to address the Commission need not request permission in advance. Action taken as a result of public comment will be limited to directing staff to study the matter or rescheduling the matter for further consideration and decision at a later date.)
10. FUTURE AGENDA ITEMS AND ESTABLISHMENT OF FUTURE HEARINGS AND OTHER MEETINGS.
11. ADJOURNMENT.

The chair reserves the right to alter the order of the agenda.

Dated this 15th day of March, 2005, George Mehnert, Director, Navigable Stream Adjudication Commission

EXHIBIT E

Evidence Log

Hearing No. 05-006-NAV

Page No.

1

Arizona Navigable Stream Adjudication Commission

Navajo County Small and Minor Watercourses
April 25, 2005

Item Number	Received Date	Source to ANSAC	Description	Entry By
1	02/18/97	Evidence on Hand at AN-SAC	Letter from David Baron dated February 18, 1997.	George Mehnert
2	9/?/98	Evidence on hand at AN-SAC	Small and Minor Watercourse Criteria Final Report.	George Mehnert
3	9/?/99	Evidence on hand at AN-SAC	Final Report, 3 County Pilot Study.	George Mehnert
4	12/2000	Evidence on hand at AN-SAC	Draft Final Report, Small & Minor Watercourses Analysis for Navajo County, Arizona.	George Mehnert
5	02/2001	Evidence on hand at AN-SAC.	Final Report, Small & Minor Watercourses Analysis for Navajo County, Arizona.	George Mehnert
6	07/20/04	Coby Muckelroy	Single Page Letter	George Mehnert

Post Hearing Memorandums

Hearing No. 05-006-NAV

Page No.

1

Arizona Navigable Stream Adjudication Commission

Navajo County Small & Minor Watercourses

Entry Number	Date	Entry	Entry By
		Opening Memorandums	
1	05/25/05	Salt River Project's Opening Memorandum.	George Mehnert
		Response Memorandums	
		None	

EXHIBIT F

Table A-1A
Watercourses in Navajo County Rejected at Level 1

No.	W_ID (2)	W_NAME (3)	SEGCOUNT (4)	W_COUNTIES (5)	W_MILES (6)	W_ADDRESS (7)	W_PER (8)	W_MBOAT (9)	W_HBOAT (10)	W_FISH (11)	W_SSTATUS (12)	W_DIMP (13)	HITS (14)
1	115	Bagnal Wash	2	Navajo	5.096	T12.ON,R19.0E,S05	No	No	No	No	No	No	0
2	139	Bear Creek - Navajo	3	Navajo	3.881	T8.ON,R15.5E,S15	No	No	No	No	No	No	0
3	148	Bear Flat Creek	3	Navajo	4.808	T7.ON,R23.0E,S23	No	No	No	No	No	No	0
4	152	Bear Wash	9	Gila/Navajo	14.758	T5.ON,R22.0E,S15	No	No	No	No	No	No	0
5	169	Beshbito Wash	9	Apache/Navajo	10.759	..S88	No	No	No	No	No	No	0
6	170	Bidahochoi Wash	12	Navajo	20.201	T22.ON,R21.0E,S88	No	No	No	No	No	No	0
7	202	Billy Wash	5	Navajo	8.076	T20.ON,R20.0E,S07	No	No	No	No	No	No	0
8	241	Blairs Spring Wash	5	Navajo	8.964	T19.ON,R19.0E,S07	No	No	No	No	No	No	0
9	254	Bluebird Canyon	2	Navajo	3.571	..S88	No	No	No	No	No	No	0
10	299	Brookbank Canyon	13	Navajo	27.062	T14.ON,R17.0E,S08	No	No	No	No	No	No	0
11	319	Bull Creek	5	Apache/Navajo	7.585	T7.ON,R23.0E,S23	No	No	No	No	No	No	0
12	329	Burnl Corn Creek	18	Apache/Navajo	27.113	..S88	No	No	No	No	No	No	0
13	351	C I Wash	5	Navajo	8.130	T7.ON,R18.0E,S06	No	No	No	No	No	No	0
14	387	Carr L Wash	5	Navajo	14.485	T18.ON,R22.0E,S07	No	No	No	No	No	No	0
15	394	Castle Creek - Navajo	8	Navajo	7.790	T18.ON,R22.0E,S12	No	No	No	No	No	No	0
16	497	Colbath Wash	3	Navajo	5.180	T11.ON,R20.0E,S28	No	No	No	No	No	No	0
17	510	Concho Flial Wash	5	Navajo	7.453	T13.ON,R22.0E,S06	No	No	No	No	No	No	0
18	561	Cottonwood Wash 1 - Navajo	25	Navajo	38.336	T19.ON,R16.0E,S33	No	No	No	No	No	No	0
19	586	Cottonwood Wash 3 - Navajo	5	Navajo	12.081	T15.ON,R23.0E,S10	No	No	No	No	No	No	0
20	587	Cottonwood Wash 4 - Navajo	6	Navajo	5.059	T7.ON,R23.0E,S22	No	No	No	No	No	No	0
21	571	Cow Creek - Navajo	1	Navajo	5.833	T10.ON,R15.5E,S33	No	No	No	No	No	No	0
22	579	Coyote Wash	2	Cocconino/Navajo	4.948	T21.ON,R15.0E,S17	No	No	No	No	No	No	0
23	588	Coyote Wash 1 - Navajo	45	Navajo	45.904	T23.ON,R15.0E,S88	No	No	No	No	No	No	0
24	611	Cutoff Wash	2	Navajo	5.817	..S88	No	No	No	No	No	No	0
25	623	Day School Wash	1	Navajo	4.397	T8.ON,R17.0E,S38	No	No	No	No	No	No	0
26	624	Day Wash	12	Navajo	22.325	T12.ON,R19.0E,S11	No	No	No	No	No	No	0
27	633	Decker Wash	4	Navajo	18.757	T13.ON,R16.0E,S15	No	No	No	No	No	No	0
28	645	Deer Spring Creek	2	Gila/Navajo	3.862	T7.ON,R22.0E,S28	No	No	No	No	No	No	0
29	646	Deer Springs Canyon	13	Navajo	11.305	T9.ON,R18.0E,S20	No	No	No	No	No	No	0
30	663	Digger Wash	17	Navajo	24.244	T20.ON,R21.0E,S24	No	No	No	No	No	No	0
31	665	Dinnabito Wash	80	Cocconino/Navajo	140.464	..S88	No	No	No	No	No	No	0
32	666	Dinnabito Wash E	7	Navajo	18.991	..S88	No	No	No	No	No	No	0
33	671	Dodson Wash - Navajo	21	Navajo	23.621	T12.ON,R21.0E,S08	No	No	No	No	No	No	0
34	697	Dry Wash	28	Apache/Navajo	27.920	T18.ON,R23.0E,S15	No	No	No	No	No	No	0
35	714	East Center Creek	18	Gila/Navajo	19.319	T7.ON,R22.0E,S03	No	No	No	No	No	No	0
36	730	East Twin Wash	2	Navajo	6.828	T18.ON,R22.0E,S15	No	No	No	No	No	No	0
37	732	East Washboard Wash	2	Navajo	8.183	T16.ON,R21.0E,S29	No	No	No	No	No	No	0
38	738	El Capitan Wash	8	Navajo	13.117	..S88	No	No	No	No	No	No	0
39	742	Ellison Creek	7	Gila/Navajo	11.062	T7.ON,R15.5E,S14	No	No	No	No	No	No	0
40	758	Fern Feather Wash	9	Navajo	20.647	T19.ON,R17.0E,S22	No	No	No	No	No	No	0
41	765	Fish Creek	1	Graham/Navajo	0.172	T3.ON,R23.0E,S28	No	No	No	No	No	No	0
42	762	Foot Canyon	3	Navajo	5.875	T10.ON,R17.0E,S34	No	No	No	No	No	No	0
43	784	Forestdale Creek	8	Navajo	8.659	T8.ON,R21.0E,S04	No	No	No	No	No	No	0
44	819	Gentry Creek	2	Gila/Navajo	9.368	T8.ON,R15.5E,S28	No	No	No	No	No	No	0
45	37800	Ha Whi Yalim Wash	31	Navajo	23.739	..S88	No	No	No	No	No	No	0

NOTES: The column headings are defined as follows:
W_ID: Unique ID number given to the watercourse
W_NAME: Name of the watercourse
SEGCOUNT: Number of segments merged together to comprise the watercourse.
W_COUNTIES: Counties) where the watercourse is located.
W_MILES: Length of the watercourse in miles.
W_ADDRESS: Township, Range and Section of the mouth of the watercourse.
[S88 - No designated Township, Range, and Section]

W_PER: Stream classification-perennial or not.
W_MBOAT: With modern boating or not.
W_HBOAT: With historical boating or not.
W_FISH: With fish or not.
W_DIMP: Impacted by dam or not.
W_SSTATUS: With special status designations or not.
HITS: Number of affirmative hits based on the six attribute data.

Table A-1A
Watercourses in Navajo County Rejected at Level 1

No.	W_ID (2)	W_NAME (3)	SEGCOUNT (4)	W_COUNTIES (5)	W_MILES (6)	W_ADDRESS (7)	W_PER (8)	W_MBOAT (9)	W_HBOAT (10)	W_FISH (11)	W_SSTATUS (12)	W_DIMP (13)	HITS (14)
46	37640	Hay Hollow Draw	16	Navajo	24.984	T15.0N,R23.0E,S14	No	No	No	No	No	No	0
47	37650	Hess Wash	6	Navajo	10.900	T12.0N,R16.0E,S36	No	No	No	No	No	No	0
48	37665	Hog Wash	1	Navajo	5.070	T10.0N,R21.0E,S02	No	No	No	No	No	No	0
49	37708	Humpy Wash	8	Navajo	17.581	T19.0N,R18.0E,S14	No	No	No	No	No	No	0
50	37715	Indian Creek	11	Gila/Navajo	16.936	T4.0N,R22.0E,S31	No	No	No	No	No	No	0
51	37748	Jadito Wash	53	Apache/Coconino/Navajo	73.688	T24.0N,R17.0E,S88	No	No	No	No	No	No	0
52	37763	Jim Camp Wash	3	Navajo	6.440	T18.0N,R23.0E,S14	No	No	No	No	No	No	0
53	37764	Joseph City Wash	7	Navajo	12.966	T18.0N,R19.0E,S21	No	No	No	No	No	No	0
54	37769	Junipoff Canyon	11	Navajo	12.019	T8.0N,R18.0E,S12	No	No	No	No	No	No	0
55	37840	Linden Wash	4	Navajo	7.632	T11.0N,R21.0E,S09	No	No	No	No	No	No	0
56	37841	Lihodendron Wash	33	Apache/Navajo	25.648	T18.0N,R23.0E,S07	No	No	No	No	No	No	0
57	37862	Little Milky Wash	7	Apache/Navajo	9.773	T15.0N,R23.0E,S13	No	No	No	No	No	No	0
58	37881	Lone Pine Creek	1	Navajo	2.067	T7.0N,R23.0E,S12	No	No	No	No	No	No	0
59	37907	Lukai Wash	4	Navajo	5.116	.S88	No	No	No	No	No	No	0
60	37921	Manila Wash	4	Navajo	8.861	T18.0N,R18.0E,S15	No	No	No	No	No	No	0
61	37947	McDonalds Canyon	15	Navajo	28.032	T18.0N,R18.0E,S17	No	No	No	No	No	No	0
62	37956	Mesa Wash - Navajo	3	Navajo	8.000	T18.0N,R19.0E,S16	No	No	No	No	No	No	0
63	37965	Mexican Hollow Wash	4	Navajo	6.863	T18.0N,R22.0E,S25	No	No	No	No	No	No	0
64	37968	Middle Cedar Creek	14	Gila/Navajo	14.416	T6.0N,R21.0E,S18	No	No	No	No	No	No	0
65	37985	Milky Wash - Apache	25	Apache/Navajo	36.646	T15.0N,R24.0E,S05	No	No	No	No	No	No	0
66	38032	Mud Creek	6	Navajo	11.631	T8.0N,R19.0E,S18	No	No	No	No	No	No	0
67	38052	Narrow Wash	5	Coconino/Navajo	17.824	.S88	No	No	No	No	No	No	0
68	38062	Neshahi Wash	1	Navajo	0.697	T7.0N,R15.5E,S24	No	No	No	No	No	No	0
69	38111	Oak Creek - Navajo	8	Navajo	13.613	.S88	No	No	No	No	No	No	0
70	38126	Ojileto Wash	7	Navajo	11.539	.SUT	No	No	No	No	No	No	0
71	38129	Oralbi Wash	81	Apache/Coconino/Navajo	133.755	.S88	No	No	No	No	No	No	0
72	38130	Oralbi Wash W Fk	7	Navajo	10.524	.S88	No	No	No	No	No	No	0
73	38176	Parrish Creek	5	Navajo	11.166	T8.0N,R22.0E,S15	No	No	No	No	No	No	0
74	38199	Peinited Creek	2	Navajo	3.209	T14.0N,R17.0E,S18	No	No	No	No	No	No	0
75	38207	Pierce Wash	8	Navajo	30.340	T17.0N,R23.0E,S23	No	No	No	No	No	No	0
76	38218	Pine Creek - Navajo	1	Navajo	3.840	T11.0N,R20.0E,S33	No	No	No	No	No	No	0
77	38229	Pinedale Wash	2	Navajo	3.350	.S88	No	No	No	No	No	No	0
78	38255	Polacca Wash	55	Apache/Coconino/Navajo	105.594	.S88	No	No	No	No	No	No	0
79	38265	Ponter Tank Draw	7	Navajo	26.044	T17.0N,R20.0E,S04	No	No	No	No	No	No	0
80	38268	Polaloo Wash	3	Navajo	26.648	T16.0N,R16.0E,S28	No	No	No	No	No	No	0
81	38359	Rock Creek - Navajo	1	Navajo	3.025	T16.0N,R17.0E,S08	No	No	No	No	No	No	0
82	38365	Rock Creek 3 - Gila	1	Gila/Navajo	4.437	T8.0N,R15.5E,S15	No	No	No	No	No	No	0
83	38367	Rocky Arroyo	10	Apache/Navajo	18.884	T11.0N,R22.0E,S10	No	No	No	No	No	No	0
84	38389	Sabito Wash	8	Apache/Navajo	24.004	T21.0N,R23.0E,S13	No	No	No	No	No	No	0
85	38400	Salt Creek - Navajo	13	Navajo	15.352	T6.0N,R17.0E,S24	No	No	No	No	No	No	0
86	38453	Scoll Wash	2	Navajo	11.845	T14.0N,R19.0E,S18	No	No	No	No	No	No	0
87	38455	Sears Wash	11	Navajo	16.222	T20.0N,R20.0E,S09	No	No	No	No	No	No	0
88	38466	Sevensmile Draw	4	Navajo	11.248	.S88	No	No	No	No	No	No	0
89	38489	Shonto Wash	17	Coconino/Navajo	26.484	T3.0N,R13.0E,S22	No	No	No	No	No	No	0
90	38591	Spring_Creek_1	18	Gila/Navajo	28.403		No	No	No	No	No	No	0

NOTES: The column headings are defined as follows:
W_ID: Unique ID number given to the watercourse
W_NAME: Name of the watercourse.
SEGCOUNT: Number of segments merged together to comprise the watercourse.
W_COUNTIES: County(ies) where the watercourse is located.
W_MILES: Length of the watercourse in miles.
W_ADDRESS: Township, Range and Section of the mouth of the watercourse.
(S88 - No designated Township, Range, and Section)
W_PER: Stream classification-perennial or not.
W_MBOAT: With modern boating or not.
W_HBOAT: With historical boating or not.
W_FISH: With fish or not.
W_DIMP: Impacted by dam or not.
W_SSTATUS: With special status designations or not.
HITS: Number of affirmative hits based on the six attribute data.

Table A-1A
Watercourses in Navajo County Rejected at Level 1

No.	W_ID (2)	W_NAME (3)	SEGCOUNT (4)	W_COUNTIES (5)	W_MILES (6)	W_ADDRESS (7)	W_PER (8)	W_MBOAT (9)	W_HBOAT (10)	W_FISH (11)	W_SSTATUS (12)	W_DIMP (13)	HITS (14)
81	38614	Steamboat Wash	38	Apache/Navajo	47.681	„S88	No	No	No	No	No	No	0
82	38620	Shinson Wash - Navajo	5	Navajo	7.636	T11.0N,R19.0E,S09	No	No	No	No	No	No	0
83	38641	Swamp Creek	1	Navajo	1.955	T9.0N,R15.5E,S04	No	No	No	No	No	No	0
84	38670	Tanner Wash - Navajo	3	Navajo	9.457	T18.0N,R20.0E,S26	No	No	No	No	No	No	0
85	38682	Tees Toh Wash	22	Navajo	26.663	T24.0N,R18.0E,S88	No	No	No	No	No	No	0
86	38681	The Canal	5	Navajo	6.570	T13.0N,R22.0E,S30	No	No	No	No	No	No	0
87	38699	Thompson Creek - Navajo	1	Navajo	1.935	T9.0N,R23.0E,S33	No	No	No	No	No	No	0
88	38749	Tse Chizti Wash	9	Navajo	15.095	„S88	No	No	No	No	No	No	0
89	38768	Turkey Canyon - Navajo	10	Navajo	16.344	T7.0N,R19.0E,S11	No	No	No	No	No	No	0
90	38767	Tyende Creek	19	Apache/Navajo	46.925	„S88	No	No	No	No	No	No	0
100	38904	V Eighteen Wash	1	Navajo	4.959	T7.0N,R18.0E,S07	No	No	No	No	No	No	0
102	38852	Wepo Wash	39	Navajo	55.359	„S88	No	No	No	No	No	No	0
103	38856	West Cedar Creek	12	Gila/Navajo	14.198	T6.0N,R21.0E,S18	No	No	No	No	No	No	0
104	38861	West Fork Collon	2	Navajo	4.653	T10.0N,R19.0E,S04	No	No	No	No	No	No	0
105	38870	West Gypsum Creek	5	Navajo	7.526	„S88	No	No	No	No	No	No	0
106	38875	West Turkey Creek	4	Apache/Navajo	7.497	T4.0N,R24.0E,S07	No	No	No	No	No	No	0
107	38878	West Twin Wash	2	Navajo	3.965	T18.0N,R22.0E,S02	No	No	No	No	No	No	0
108	38882	White-Yai-Da Sah Wash	2	Navajo	3.715	T23.0N,R15.0E,S88	No	No	No	No	No	No	0
109	38907	Wildcat Canyon	11	Coconino/Navajo	34.025	T14.0N,R15.0E,S11	No	No	No	No	No	No	0
110	38914	Wildhorse Wash	5	Navajo	6.554	T19.0N,R23.0E,S11	No	No	No	No	No	No	0
111	38922	Willow Creek - Navajo	1	Navajo	7.074	T9.0N,R15.5E,S23	No	No	No	No	No	No	0
112	38934	Willow Wash - Navajo	2	Navajo	7.306	T11.0N,R18.0E,S02	No	No	No	No	No	No	0
113	-	3184 Unnamed Washes	-	Navajo	-	Varies	No	No	No	No	No	No	0

NOTES: The column headings are defined as follows:
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(S88 - No designated Township, Range, and Section).

W_PER: Stream classification-perennial or not.
W_MBOAT: With modern boating or not.
W_HBOAT: With historical boating or not.
W_FISH: With fish or not.
W_DIMP: Impacted by dam or not.
W_SSTATUS: With special status designations or not.
HITS: Number of affirmative hits based on the six attribute data.

EXHIBIT G

4.2 LEVEL 2 ANALYSIS

The NRL1 data set resulting from Level 1 analysis contains 76 watercourses. Results from the application of the Level 2 approach to the 76 watercourses are presented and discussed in the sections that follow. Employing the first-cut screening process shown in Figure 5 for the NRL1 data set leads to the classification of the watercourses as follows:

A. Stream Category A – potentially susceptible to navigation

1. Black River
2. Chevelon Creek
3. White River

B. Stream Category B – navigation possible, not likely.

1. Billy Creek
2. Canyon Creek 1
3. Cibecue Creek
4. Clear Creek 1
5. Diamond Creek
6. East Fork White River
7. North Fork White River
8. Show Low Creek
9. Silver Creek
10. Big Bonito Creek
11. Black Canyon – Navajo
12. Brown Creek
13. Carrizo Creek
14. Courduroy Creek
15. Firebox Creek
16. Gooseberry Creek
17. Porter Creek
18. Pueblo Colorado
19. Walnut Creek – Navajo

C. Stream Category C – navigation unlikely

1. Begashibito Wash
2. Cottonwood Wash 2 – Navajo
3. Fivemile Wash – Navajo
4. Gomez Creek
5. Gypsum Creek
6. Jacks Canyon 2
7. Keams Canyon

8. Laguna Creek
9. Leroux Wash
10. Moenkopi Wash
11. Nakai Canyon
12. Nash Creek
13. Phoenix Park Wash
14. Plute Creek
15. Squaw Wash
16. Tsegi Canyon
17. Turkey Creek 1
18. Washboard Wash
19. Wide Ruin Wash
20. 35 Unnamed Washes

Employing the second-cut filter screening process shown in Figure 6 and the criteria scoring matrix presented in Figure B-1 (see Appendix B) to establish a ranking system for the watercourses leads to the identification of those watercourses rejected at Level 2 and those that are forwarded for Level 3 analysis. All watercourses with total ratings equal to or lesser than the cut-off number of 11.0 are classified under *Category C*. These watercourses comprise the RL2 data set, which are not forwarded for Level 3 analysis. On the other hand, the watercourses with total ratings more than the cut-off number of 11.0 are classified under *Category A*. These watercourses comprise those that are potentially susceptible to navigation and hence, are forwarded for Level 3 analysis.

To illustrate the use of the numerical weights for the refined approach, the case of Black River in Apache, Gila, Graham, Greenlee and Navajo Counties is considered (see Table A-2C, Appendix A). From the database, Black River exhibits the information shown in Table 2 [column (3)] on the six criteria. The rating of 1.0 for perennial is evaluated from the fact that Black River is perennial according to ALRIS (1999) and Brown et al. (1981).

The rating of 1.0 for fish is evaluated from the fact that both native and non-native fish species are documented for Black River. Weights given to fish species are: 0.75 for native fish and 0.25 for non-native species. A total weight of 1.0 for fish is evaluated from the sum of these two weights. The special status rating of 0.13 is evaluated from two special status designations described as riparian and wild & scenic.

Weights given to special status classifications are: 3.00 for instream flow (permit), 1.50 for instream flow (application), and 0.25 each for riparian, preserve, wild and scenic, and unique waters. A total weight of 4.0 is evaluated for any watercourse that has all these special status designations.

The weighted average rating for any watercourse with special status is determined by dividing the total weight by 4.0.

In the case of Black River, the weighted average rating of 0.13 is evaluated from dividing 0.50 (i.e., 0.25 + 0.25) by 4.0.

From the analysis performed in Table 2, the total rating evaluated for Black River is 19.26, which is greater than the cut-off number of 11.0. This indicates that Black River is forwarded for Level 3 analysis.

Table 2 - Evaluation of Total Rating

Criterion	Weights	Rating	Refined Rating	Notes/ Remarks
(1)	(2)	(3)	(4) = (2)x(3)	(5)
Perennial	7	1.0	7.00	Stream is perennial according to ALRIS (1999) and Brown et al (1981).
Historical Boating	10	0.00	0.00	No historical boating.
Modern Boating	8	1.00	8.00	With modern boating.
Dam-Impacted	4	0.00	0.00	Not dam-impacted.
Fish	4	1.00	4.00	Native and non-native fish species are present.
Special Status	2	0.13	0.26	Special status designations are instream flow (application), riparian, and preserve.
Total Rating		3.13	19.26	Greater than 11.00.

The listing of watercourses classified under stream *Category A* and *Category C* for the second cut filter screening process are provided as follows:

D. Stream *Category A* – potentially susceptible to navigation.

1. Billy Creek
2. Canyon Creek 1
3. Cibecue Creek
4. Clear Creek 1
5. Diamond Creek
6. East Fork White River
7. North Fork White River
8. Show Low Creek
9. Silver Creek

D. Stream Category C – navigation unlikely

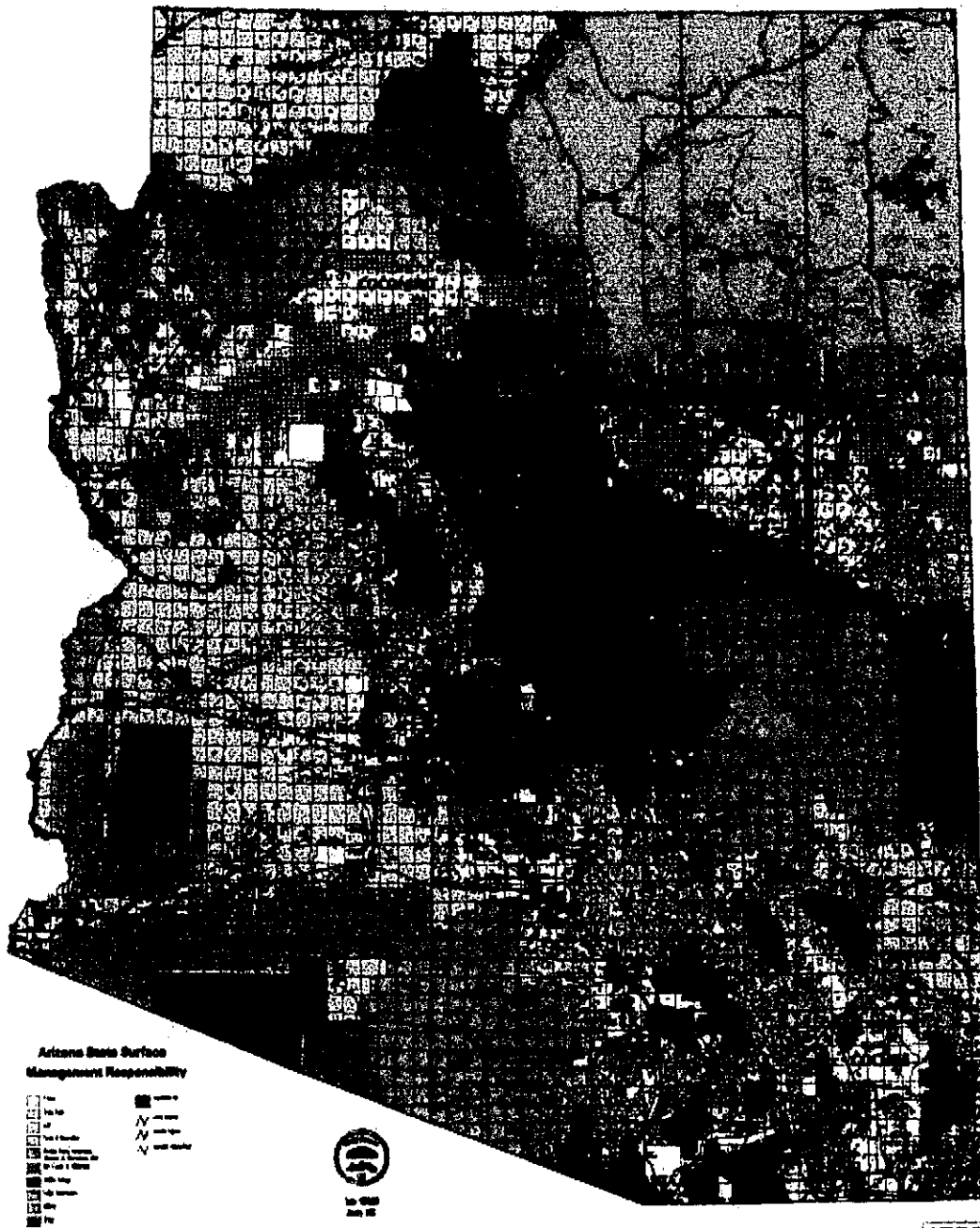
1. Big Bonito Creek
2. Black Canyon – Navajo
3. Brown Creek
4. Carrizo Creek
5. Courduroy Creek
6. Firebox Creek
7. Gooseberry Creek
8. Porter Creek
9. Pueblo Colorado
10. Walnut Creek – Navajo

A summary listing of the RL2 data set is presented in Tables A-2A (see Appendix A). The map associated with the RL2 data set evaluated from Level 2 is shown in Figure 10.

The numerical weights assigned to the six criteria were based on the average values evaluated from the use of the criteria scoring matrix. This numerical weights are used as multipliers for the six criteria in calculating the total rating associated with each watercourse. The summary table listing the numerical weights assigned to the six criteria from a pool of seven participants is shown in Table B-1 (see Appendix B - Criteria Weight Evaluation).

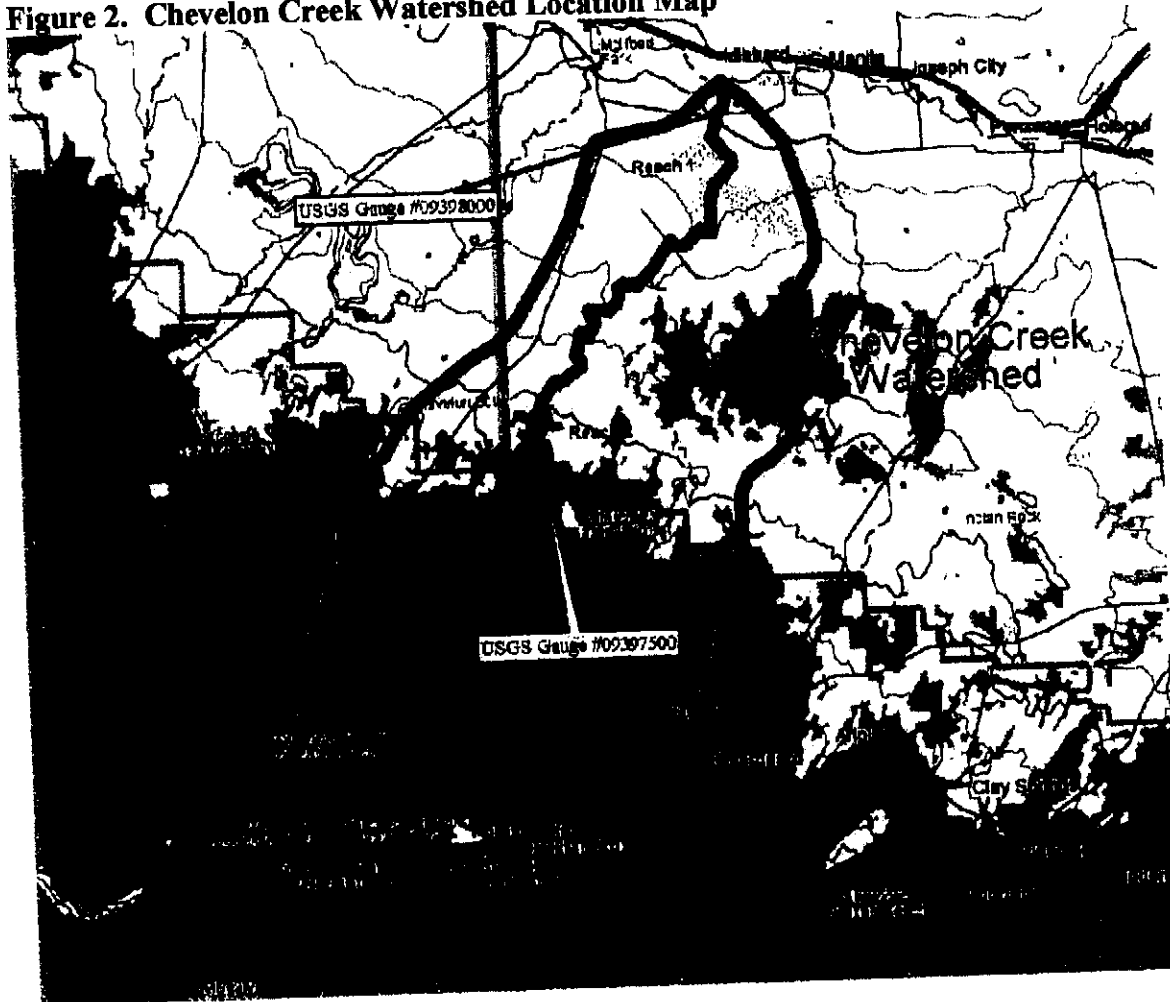
EXHIBIT H

Figure ES-1. Chevelon Creek Location Map



Hydrologic/hydraulic data are the primary source of information regarding susceptibility to navigation. These data include estimates of flow depth, width, velocity, and average flow conditions as of the time of statehood, based on the available modern records for natural stream conditions as of the time of statehood, as well as for existing stream conditions. Existing state land ownership data were compiled into a GIS database that identified the location of public vs. private land along the stream. The results of the data collection are summarized in the following paragraphs.

Figure 2. Chevelon Creek Watershed Location Map



**Table 1. Chevelon Creek Navigability Study
Stream Characteristics for Gauges on Chevelon Creek**

Watershed Characteristic	USGS Station Number	
	Chevelon Creek below Wildcat Canyon, near Winslow (#09397500)	Chevelon Creek near Winslow (#09398000)
Stream length	39.2 mi.	77.1 mi.
Main channel slope	54.4 ft./mi.	27.7 ft./mi.
Mean basin elevation	7,030 ft.	6,440 ft.
Mean annual precipitation	24.0 in.	18.4 in.
Drainage area	271 mi. ²	785 mi. ²
Period of record	1947-1970, 1979, 1982-1996	1916-1920, 1929-1979