

Mark Brnovich
Attorney General
Firm Bar No: 14000
Edwin W. Slade, III (029807)
Laurie A. Hachtel (015949)
Assistant Attorneys General
Natural Resources Section
1275 West Washington Street
Phoenix, Arizona 85007-2997
Phone No: (602) 542-7783
Fax No: (602) 542-4084
Email: NaturalResources@azag.gov
Attorneys for the Arizona State Land Department

**BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION**

IN THE MATTER OF THE
NAVIGABILITY OF THE VERDE
RIVER FROM ITS HEADWATERS
AT SULLIVAN LAKE TO THE
CONFLUENCE WITH THE SALT
RIVER, YAVAPAI, GILA AND
MARICOPA COUNTIES, ARIZONA.

No. 04-009-NAV

**ARIZONA STATE LAND
DEPARTMENT'S OPENING POST-
HEARING BRIEF ON THE
NAVIGABILITY OF THE
VERDE RIVER**

I. Introduction: The Verde Is a Navigable River.

The Arizona State Land Department (“ASLD” or the “State”) respectfully files this Brief in response to the Arizona Navigable Stream Adjudication Commission’s (“ANSAC” or “Commission”) question as to whether the Verde River (“Verde” or the “River”) was navigable in its natural and ordinary condition such that title passed to the State at statehood. The Verde River begins at Sullivan Lake near Paulden, Arizona, and travels 190 miles south to its confluence with the Salt River. It is the last of the major Arizona rivers that still flows perennially throughout its course. The State presented credible experts and substantial evidence that supports the River’s navigability. Based upon the facts and the well-established principles of the law of navigability-for-title, the Verde River meets the test for navigability. The Commission should find that Segments 1 through 5 of the Verde were navigable in their ordinary and natural conditions.

II. The Legal Test for Navigability Requires a Finding That the Verde River Is Navigable.

The overwhelming weight of the evidence establishes that the Verde is navigable based on the holdings of 150 years of navigability cases. The State’s burden, however, is only to establish by a preponderance that each segment of the River was navigable or was susceptible to navigation in its natural and ordinary condition. *State ex rel. Winkleman v. Arizona Navigable Stream Adjudication Comm’n.*, 224 Ariz. 230, 236, 229 P.3d 242, 248 (App. 2010).

The test for navigability for title purposes is a federal test that has its origin in *The Daniel Ball*, 77 U.S. (10 Wall.) 557 (1870), a case that is paraphrased in the Arizona statutes:

“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.

Arizona Revised Statutes (“A.R.S.”) § 37-1101(5). At its core, the test requires a determination of whether a river in its ordinary and natural condition was used or susceptible to being used as a highway for commerce. *PPL Montana LLC v. Montana*, 132 S.Ct. 1215, 1228 (2012); *Winkleman*, 224 Ariz. at 239, 229 P.3d at 251. The test is one of “navigability-in-fact.” *PPL Montana*, 132 S.Ct. at 1227. “[A]ll waters are deemed navigable which are really so.” *Id.* (quoting *Barney v. Keokuk*, 94 U.S. 324, 336 (1877)); see also *United States v. Utah*, 283 U.S. 64, 76 (1931).

The Arizona Court of Appeals determined that the ordinary condition of a river is the usual condition of the river absent major flooding or drought; the natural condition of a river is the river untouched by civilization, absent man-made dams, canals, or other diversions. *Winkleman*, 224 Ariz. at 241, 229 P.3d at 253. With respect to the Salt River, the court found that the Salt was in a natural condition after the Native American diversions had ceased to affect the river and prior to modern-era settlement and farming in the Salt River Valley that diverted water. *Id.* at 242, 229 P.3d at 254. The Verde River did not have significant

Native American diversions, Tr. 12/15/14, at 119 (Fuller), but beginning in 1864 with the Perkins ditch, modern-era settlement began diverting water for irrigation. 031, at 7-23. Therefore, the natural condition of the Verde would be before 1864. “Evidence from that early period should be considered by ANSAC as the best evidence of the River’s natural condition.” *Winkleman*, 224 Ariz. at 242, 229 P.3d at 254. The Verde is boated today; it would be even easier to boat in its natural condition with more water. X035-167, at 35; Tr. 12/15/14, at 45-46 (Fuller).

Throughout the history of navigability case law, several well-established fundamental legal principles can be found that directly apply to the River. These principles have previously been misstated or avoided by some Opponents¹ in briefings or arguments before ANSAC, so what follows is a substantial discussion of those principles and then a detailed analysis of the facts and how the principles apply to those facts.

A. The Susceptibility of the River as a Highway for Commerce Is the Crucial Question When Determining Navigability.

The test for title navigability is a disjunctive test that allows a finding of navigability for rivers either actually used or susceptible of being used for trade and travel; it does not require a showing of actual historical commercial use. *The Daniel Ball*, 77 U.S. (10 Wall.) at 557; *accord PPL Montana*, 132 S.Ct. at 1233; *Winkleman*, 224 Ariz. at 239, 229 P.3d at 251. This is not a new concept; courts have consistently found rivers navigable based on their susceptibility for use as a highway for commerce rather than their actual use. *See United States v. Utah*, 283 U.S. at 89; *State of Alaska v. Ahtna, Inc.*, 891 F.2d 1401, 1404 (9th Cir. 1989), *cert. denied*, 495 U.S. 919 (1990) (Ninth Circuit finding lower Gulkana river navigable based on its susceptibility as a highway for commerce as proven by commercial recreational use such as guided fishing and sightseeing trips); *Nw. Steelheaders Ass'n, Inc. v. Simantel*, 112 P.3d 383, 393 (2005), *review denied*, 339 Or. 407 (2005), *cert. denied*, 547 U.S. 1003 (2006) (Oregon Court of Appeals determining John Day River navigable based on the susceptibility of the river to navigation proven by post-statehood accounts of pleasure boating by sternwheeler on ten mile stretch, one log drive and the recreational use of the river today).

In *United States v. Utah*, the United States argued – similar to Opponents in this matter – that the rivers were nonnavigable because of “the absence of historical data showing the early navigation of these waters by Indians, fur traders, and early explorers” 283 U.S. at 81. The Court ultimately rejected that argument and stated, “[t]he question of that susceptibility in the ordinary condition of the rivers, rather than of the mere manner or extent of actual use, is the *crucial question*. . . . It is, indeed, the susceptibility to use

¹ “Opponents” will be used to collectively refer to the Salt River Project (SRP), Freeport Minerals Corporation (FMI), the Yavapai-Apache Nation, and the City of Phoenix. “Proponents” will be used to collectively refer to the State or ASLD and the Center for Law in the Public Interest or the Center.

as highways of commerce which gives sanction to the public right of control over navigation upon them” *Id.* at 82-83 (quoting *Packer v. Bird*, 137 U.S. 661, 667, 11 S. Ct. 210, 211, (1891)) (emphasis added). The Supreme Court held that susceptibility is the test because “[t]he possibilities of growth and future profitable use are not to be ignored. . . . [b]ecause the location of the rivers and the circumstances of the exploration and settlement of the country through which they flowed had made recourse to navigation a late adventure or because commercial utilization on a large scale awaits future demands.” *Id.* at 83. Commercial utilization of the Verde River is now a reality, and its use is only increasing.

The River must be susceptible for use as a “highway of commerce.” Highway of commerce is defined in the Arizona Revised Statutes as “a corridor or conduit within which the exchange of goods, commodities or property or the transportation of persons may be conducted.” A.R.S. § 27-1101(3). The definition does not require the transport of goods; the transportation of persons alone is sufficient. *Id.* This definition is consistent with federal decisions. In *United States v. Appalachian Electric Power Company*, a case that addressed federal title navigability, the Supreme Court stated:

It is obvious that the uses to which the streams may be put vary from the carriage of ocean liners to the floating out of logs; that the density of traffic varies equally widely from the busy harbors of the seacoast to the sparsely settled regions of the Western mountains. The tests as to navigability must take these variations into consideration.

311 U.S. 377, 405-06, 61 S. Ct. 291, 298 (1940) (emphasis added). The Court stated “[n]or is a lack of commercial traffic a bar to a conclusion of navigability where personal or private use by boats demonstrates the availability of the stream for the simpler types of commercial navigation.” *Id.* at 415; accord *PPL v. Montana*, 132 S.Ct. at 1233. “[T]he central theme remains the movement of people or goods from point to point on the water.” *State of Alaska v. United States*, 754 F.2d 851, 854 (9th Cir. 1985) (finding remote lake nonnavigable because floatplane use did not fall within the meaning of using a river as a highway or channel). “It is not the size of the articles transported in commerce that establishes the navigable character of a waterway. Navigability depends upon the stream's usefulness as a transportation mechanism for commerce.” *Puget Sound Power & Light Co. v. Fed. Energy Regulatory Comm'n*, 644 F.2d 785, 789 (9th Cir. 1981). Thus, in assessing the River's navigability, ANSAC should account for the “complexities in the circumstances” of a desert river. *Appalachian Elec. Power Co.*, 311 U.S. at 404 (Navigability “is not to be determined by a formula which fits every type of stream under all circumstances and at all times.”).

B. Susceptibility Can Be Demonstrated by Present Day Recreational Use of a River.

In *PPL Montana*, the Supreme Court's most recent title navigability case, the Court placed two requirements on the use of present-day recreational evidence to prove susceptibility: (1) the watercraft used are “meaningfully similar to those in customary use for trade and travel at the time of statehood; and (2) the river's post-statehood condition is not materially different from its physical condition at statehood.” *Id.* The

Supreme Court expounded upon what it wanted to avoid: present-day evidence that would merely indicate a river could have been used by “[e]xplorers or trappers, who may have dragged their boats in or alongside the river despite its nonnavigability in order to avoid getting lost, or to provide water for their horses and themselves...” 132 S.Ct. at 1233. That has never been the reality of the use of the Verde River. Additionally, the Supreme Court does not require the evidence of present-day use be “commercial” in nature. *Id.* at 1233 (citing *Appalachian Elec. Power Co.*, 311 U.S. at 416 (“[P]ersonal or private use by boats demonstrates the availability of the stream for the simpler types of commercial navigation”); *United States v. Utah*, 283 U.S. at 82 (fact that actual use has “been more of a private nature than of a public, commercial sort [c]annot be regarded as controlling.”)).

The Supreme Court’s *PPL Montana* decision supports prior case law. The Ninth Circuit similarly concluded that guiding fishing and sightseeing trips on the Gulkana River in Alaska were relevant to determining navigability: such trips provide “conclusive evidence of the lower Gulkana’s susceptibility for commercial use at statehood.” *Alaska v. Ahtna*, 891 F.2d at 1405. In that case, the appellant, Ahtna, argued that the principal uses of the Gulkana have always been recreational, and that recreational uses do not support a finding of navigability. *Id.* The Ninth Circuit rejected that argument, finding it “unpersuasive.” *Id.* “To deny that this use of the River is commercial because it relates to the recreation industry is to employ too narrow a view of commercial activity.” *Id.* The Verde is utilized extensively for commercial and personal recreation. *See infra* Part III.A.

C. Small Boats in Existence at Statehood That Were Capable of Useful Commerce, as Well as All Post-Statehood Watercraft That Are Meaningfully Similar, May Prove a River’s Navigability.

Courts have recognized that navigation for title purposes may be shown by evidence of small boat use. In *United States v. Holt*, the Supreme Court stated that “navigability does not depend on the particular mode in which such use is or may be had – whether by steamboats, sailing vessels or flat boats.” 270 U.S. 49, 56 (1926); *see also Econ. Light & Power Co. v. United States*, 256 U.S. 113, 117 (1921) (Court found the Desplaines river navigable where it was used by canoes or other light draft boats common to early fur trading days); *The Montello*, 87 U.S. 430, 441 (1874) (finding Fox River navigable for use by fur trade and stating “[i]t would be a narrow rule to hold that in this country, unless a river was capable of being navigated by steam or sail vessels, it could not be treated as a public highway.”); *Alaska v. Ahtna*, 891 F.2d at 1403 (Ninth Circuit affirmed that the Gulkana is navigable where actual use was by hunters and fishermen in 16-24 foot flat-bottomed or rounded aluminum boats); *Puyallup Tribe of Indians v. Port of Tacoma*, 523 F. Supp. 65,71-72, *aff’d*, 717 F.2d 1251 (9th Cir. 1983) (district court declared the Puyallup River navigable based on the Indians’ use of fishing boats and canoes); *North Dakota ex rel. Bd. of Univ. and State Lands v. Andrus*, 671 F.2d 271, 278 (8th Cir.1982), *rev’d on other grounds sub nom. Block v. North Dakota ex rel. Bd.*

of *Univ. and State Lands*, 461 U.S. 273 (1983) (Eighth Circuit found that “[c]anoes travel at the time of North Dakota's statehood represented a viable means of transporting persons and goods.”); *Nw. Steelheaders*, 112 P.3d at 392 (Oregon Court of Appeals found the John Day river navigable and concluded that, “[i]n its ordinary condition in 1859, the John Day River . . . would have provided ample capacity for travel and trade by means of dugout canoes” which typically drafted six to eight inches).

No court has disqualified small boats like flatboats, canoes or kayaks from demonstrating a river's navigability. The United States Supreme Court has cautioned that there may be some “*lightweight* canoes or kayaks” that could navigate waters that historical watercraft could not. *PPL Montana*, 132 S.Ct. at 1233-34 (emphasis added). The Montana Supreme Court had erred by relying on modern boating evidence without being provided *any* information about the types of modern boats being used. *Id.* at 1234. The State has provided the only detailed expert testimony from two experts who agree that small boats used today on the River are meaningfully similar to small boats used at statehood. *See infra* Part III.B.

Applying these standards, the River is navigable because evidence of recreational use demonstrates that the River could have been used as a highway for commerce when it was in its ordinary and natural condition.

III. The Verde River Was Susceptible to Navigation in Its Ordinary and Natural Condition.

The susceptibility of the River to navigation is proven by the current navigation by boats that are meaningfully similar to historical boats and by the physical characteristics of the River that demonstrate it was even more navigable in its natural and ordinary condition.

A. The Verde Is a Navigated River Today Even in Its Non-Natural, Depleted Condition.

The Verde is boated year-round, by various types of boats, commercially and recreationally, in water levels that are substantially less than those that existed when the River was in its natural condition. Tr. 12/17/14, at 555 (Farmer); Tr. 12/15/14, at 116, 255 (Fuller). The boats that navigate the River today include those that are meaningfully similar to boats that existed at statehood. Tr. 12/15/14, at 255 (Fuller); Tr. 3/31/15, at 2850-51 (Dimock). Today's further developed use of the River as a navigable watercourse establishes its susceptibility to navigation when it was in its ordinary and natural condition. The Supreme Court stated that: “[s]usceptibility . . . is the crucial question. . . . [A state] . . . is not to be denied title to the beds of such of its rivers . . . because commercial utilization on a large scale awaits future demands.” *United States v. Utah*, 283 U.S. at 82-83. Future demands have arrived, and the Verde River is being utilized to meet those demands. The Verde's navigability is a central driver for the local economy. Its importance as a public navigable watercourse cannot be overstated.

1. Verde River Adventures Operates a Successful Commercial Operation with 5000-6000 Customers a Year.

The main commercial boating operator on the Verde, Mr. Richard Lynch, who owns Verde River Adventures in Clarkdale, AZ, testified to his commercial operation. Tr. 12/16/14, at 283-378, 284 (Lynch). Since 2007, Mr. Lynch has successfully operated his commercial outfit on all of Segment 2, including above Clarkdale by Sycamore Canyon and down through Camp Verde to Beasley Flats. *Id.* at 285. He is commercially permitted with the U.S. Forest Service, Arizona State Parks, and the Town of Clarkdale. *Id.* at 285. During the summer, Verde River Adventures employs between 18-25 people. *Id.* at 329. Each year, Verde River Adventures provides 5,000 to 6,000 customers with boating services, guided tubing and kayaking, boat rentals, and general advice about boating the Verde. Tr. 12/16/14, at 285-86, 372. Guided trips cost between \$65 and \$87 per person. *Id.* at 287. Most of the business occurs from March to October during the warmer weather, with the busiest time period from May to September.² *Id.* at 285-86, 290.

During much of the commercial season, the River is at its lowest levels due to irrigation withdrawals. Tr. 12/16/14, at 290 (Lynch). According to Mr. Lynch, irrigation withdrawals significantly lower the River from six inches to one foot below non-withdrawal levels. *Id.* at 300. In some places directly below the irrigation dams, the River completely dries up until farther downstream where groundwater begins to seep back into the river channel. *Id.* at 290. Furthermore, in answering questions from Proponents and Opponents about boating in shallower depths, boats occasionally hitting rocks, or mandatory portages, Mr. Lynch reminded his questioners that he was referring to boating during lower flows due to irrigation withdrawals. *Id.* at 290-93, 299-300, 305-06, 309, 313-15, 376. Once the irrigation stops, the water level rises significantly. *Id.* at 300. Even with significantly lower water levels during the irrigation withdrawal season, the River's depths are great enough to support a successful commercial boating operation. The Commission should give great weight to Mr. Lynch's testimony because ANSAC is charged with examining the navigability of the River without irrigation withdrawals, *i.e.*, the test for navigability requires that a river be examined in its "ordinary and natural condition." A.R.S. § 37-1101.

Mr. Lynch uses inflatable kayaks, also known as duckies or IKs, because he tailors his trips for unskilled kids and families. Tr. 12/16/14, at 293, 324 (Lynch). He chooses to use IKs because they're safe and stable:

[Y]ou need absolutely no skill whatsoever to use them. That's why we - - you know, most of our customers, they're just interested in a river experience. They're not out there to become expert boaters or do anything way too technical. So the inflatable kayaks, the duckies, are just perfect for what we do.

² Mr. Lynch's testimony contradicts Opponent's expert Mr. Burtell who states "most trips occur in the winter and spring..." X009 at 5. Mr. Burtell did not talk to any boaters before writing his navigability determination. Tr. 4/1/15, at 3032 (Burtell). Nothing Mr. Lynch said supports Mr. Burtell's assertion. *Id.* at 3047-51.

Id. at 293-94; *see also* Tr. 12/16/14, at 324 (“For our customers they’re great.”). Mr. Lynch acknowledges, however, that the dominant craft on the Verde is the canoe. Tr. 12/16/14, at 297. “Canoes are a huge part of the Verde River. It’s very canoeable.” *Id.* Mr. Lynch speaks from experience: he grew up canoeing in Missouri. *Id.* at 324-25. In fact, Mr. Lynch sees canoes “every day” on the River. *Id.* at 297. He has seen canoes fully loaded for five to seven-day trips, and canoes without much gear boating the day stretches of the Verde. *Id.* at 350-51.

In addition to canoes, Mr. Lynch sees flatboats with motors on the Verde, used for duck hunting and fishing. Tr. 12/16/14, at 356, 373-76. By his estimate, he has seen boats that measured about 15 ft. long by 6 ft. wide with “everything they need to get into their little spot and shoot ducks.” *Id.* at 374. Mr. Don Farmer also testified to seeing flatboats on the River. Tr. 12/16/14, at 386. Mr. Jon Fuller testified to seeing a fully loaded flatboat traveling downstream from Segment 2 through 5. *See infra* p. 9. *See also* X035-167, at 180, 183, 186, 189, 192; X053-174, at 177 (Mr. Fuller’s estimates for what percentage of the time flatboats can be used on each segment of the Verde). By contrast, SRP’s expert, Dr. Robert Mussetter, has never even seen the River from the ground in Segments 1, 2, or 3 but he nevertheless concludes that those Segments would not have been navigable based on “general knowledge” and “evidence presented by others in this case (e.g., Burtell, 2014).” Tr. 2/23/15, at 2045 (Mussetter); X016, at 3, 9 n.5. Mr. Rich Burtell, on whom Dr. Mussetter relies, has never crossed the River anywhere or spoken with any boaters. Tr. 3/31/15, at 2989; Tr. 4/1/15, at 3032.

Mr. Lynch acknowledged that in the stretches that he commercially boats routinely, when irrigation withdrawals have reduced the water level, he and his crew have sometimes made improvements in the River, such as cutting back strainers, creating more obvious channels by moving rocks, and dealing with fallen trees. Tr. 12/16/14, at 293, 309. He does this to provide a better and safer experience for his unskilled customers who include kids and families. *Id.* at 309-10, 376. These improvements are unnecessary for an experienced boater: “[S]omeone who knows how to read water can pretty successfully boat it all the time, even with a little water, even if we weren’t doing things out there” *Id.* at 376.

When he was asked specifically about the viability of the Verde for commercial navigation by skilled boatman, without any improvements being made to the River, Mr. Lynch answered unequivocally and unconditionally that the Verde is navigable:

- Q. But could you personally or someone who’s wanting to go down in a canoe with commercial goods, could they go down that river without those improvements?
- A. Oh, sure. Yeah, someone who knows what they’re doing, you bet.
- Q. So a skilled boatman?
- A. You bet.

Tr. 12/16/14, at 310 (Lynch).

2. The Verde Supports Other Commercial Boating Operations, and Communities Tout the Navigability of the River and Rely on Its Commercial Draw.

Verde River Adventures is not the only current commercial outfitter on the River. Mr. Lynch identified a young man named Caleb who recently started his commercial boating operation using hard shell kayaks and canoes. Tr. 12/16/14, at 297-98. Mild to Wild Rafting also operates on the Verde. X035-167, at 210. Commercial boating on the River is not new. Before Mr. Lynch and Caleb, Red Rock Jeep Tours and River Otter Canoe both ran commercial canoe operations. Tr. 12/16/14, at 330 (Lynch). John Colby, with Cimarron River Company, testified before ANSAC in 2006 about his commercial trips on the River that included the stretch from Childs to Horseshoe Reservoir (Segment 4) and from Bartlett Reservoir to the Salt River (Segments 4 and 5). Tr. 1/18/06, at 55-56. He had as many as 150 commercial guests for single day trips. *Id.* at 55-57. The multi-day trips were from Childs to Horseshoe Reservoir for up to seven days and with up to twelve commercial guests, at water levels ranging from about 32 cfs to up to 3500 cfs as measured at the Camp Verde gauge. *Id.* at 56. Mr. Colby used inflatable rafts, catarafts, canoes, and inflatable kayaks. *Id.* at 57. The boats carried “everything that a person might conceivably need for a camping expedition over several days . . .” including a toilet system, kitchen facilities, campfire facilities, sleeping gear, personal gear, and rescue equipment. *Id.* at 58, 60-61. The multi-day trips were conducted from March through May and in October and November. *Id.* at 57. One multi-day trip utilized nine canoes to carry all the people and the equipment, with each boat carrying both people and equipment. *Id.* at 56. Dave Weedman, a fishery biologist with Arizona Game and Fish, also testified (in 2005) that he conducted fish surveys on the River during low flow months, with cfs at 75-80, completing at least eleven trips from the Childs Power Plant to Sheep Bridge (Segment 4) in canoes loaded with equipment and people. Tr. 1-18-06, Exhibit A, Weedman testimony on Gila and Verde Rivers 11-16-05, at 212-13; X011-51.

In addition to commerce being conducted directly on the River, the surrounding communities and government entities are profiting from the permitting of boating access points. The U.S. Forest Service permits commercial rafting and boating and receives revenue for those trips. Tr. 12/15/14, at 232 (Fuller). The Forest Service has a dedicated employee charged with managing boating and river issues. *Id.* at 233. The Forest Service also has its own boating guide, “A Boater’s Guide to the Verde River,” that covers Segments 3 and 4. X001-29. Arizona State Parks charges commercial operators to use its Dead Horse State Park access point in Segment 2, as does the Town of Clarkdale. Tr. 12/16/14, at 285 (Lynch). Arizona State Parks has at least two published boating guides: the “Verde River Paddle Trail” covering parts of Segment 2, X001-28; an accompanying guide that covers the rest of Segment 2, X001-30; and the “Arizona Rivers and Streams Guide” covering the entire River, from Segments 1 through 5, X001-02, X035-163. In 2014, the Town of Clarkdale had so many commercial customers boating the River that the Town Council was

presented with a plan to limit permitted commercial use of the River to protect the resources. X056-189. Shuttle services that charge boating customers to drop them off and pick them up are well-established. Tr. 12/15/14, at 232 (Fuller). Two other substantial guides exist for boating the River: Jim Slingluff's "Verde River Recreation Guide," X035-162 (*see also* Tr. 1/18/06, at 102 [Slingluff]); and Bob Williams' "A Floater's Guide to the Verde River," X035-155. Thus, there are no fewer than six Verde River boating guides advocating for boating on the River. X035-167, at 204-206.

Verde River communities boast of the River's boatability and invite boaters to the River in order to boost their economies with events like Verde RiverFest, Verde River Days, and Verde River Runoff, all of which feature boating-related activities. Tr. 12/15/14, at 237 (Fuller); X035-167, at 200. Towns and Cities, including Sedona, Scottsdale, Camp Verde, Clarkdale, and Cottonwood, tout boating the Verde as a community asset. X035-167, at 202. The Camp Verde webpage has the following to say about the River:

Over the last 25 years, the Verde River's reputation as a destination for canoers and kayakers of all levels of expertise has grown. The 18 miles of river passing through Camp Verde consists of a series of deep pools and riffles, perfect for beginners. For those who prefer a more exhilarating ride, Camp Verde is the jumping off spot for a 41 mile long Wild and Scenic stretch, running from Camp Verde to the Sheep Bridge upstream of Horseshoe Lake.

X035-167, at 203. Camp Verde promotes boating in Segment 2 and then Segments 3 and 4. *Id.* The annual Verde River Canoe Challenge, typically sponsored by the Salt River Project, is enjoyed by experienced and non-experienced boaters alike. Tr. 12/15/14, at 234 (Fuller). The race has been so popular that the participants were capped at 200 to avoid overcrowding. *Id.* These activities draw all levels of paddlers, some of whom come from other states to enjoy the River. *Id.* at 237-38.

The 2015 Verde River Race (in Segment 2) was run at 123 cfs, Tr. 4/3/15, at 3501 (Fuller) (*see* Exhibit X102-211 for photos), which according to Opponent's expert Mr. Burtell, is only one-third of what the natural median would measure for that gage. X009, Table 5. Still, depths were more than sufficient for a boat race and even for fully loaded flatboats and rafts seen on the River that day. Tr. 4/3/15, at 3501-03 (Fuller) (testifying that he passed two people in an aluminum flat-bottomed boat, loaded two feet over the gunnels with gear, with a woman sitting on top of the gear, and a dog carrier with a dog in it, traveling from Segments 2 through 5); *see also Id.* at 3502 (Fuller testifying that he was passed by a rubber raft containing eight people and having no problems at 123 cfs). Those who know the River testified that this type of use is commonplace.

The law supports a finding of navigability based on the commercial use of a river. *See Alaska v. Ahna*, 891 F.2d at 1403 (recreational guided trips on inflatable rafts carrying five passengers and guide held to support navigability determination); *Defenders of Wildlife v. Hull*, 199 Ariz. 411, 424, 18 P.3d 722, 735 (App. 2001). ("guided fishing and sightseeing trips, although merely recreational, are 'transportation for

profit' and can be considered commercial activity under the *Daniel Ball* test.”). Testimony clearly establishes that commercial activities are conducted on the River; those activities support a finding of navigability.

3. The Testimony and Evidence from Every Boater Who Has Come Before ANSAC Supports the River’s Navigability Today and at Statehood.

In the recent ANSAC hearings the State presented expert testimony from four knowledgeable Verde boaters who confirmed the River’s navigability: Jon Fuller, Don Farmer, Brad Dimock, and Richard Lynch. In the past, other boaters have testified to the River’s use, which supports navigability. *See* Tr. 1/18/06, at 55 (Colby); Tr. 1/18/06, Exhibit A, Weedman testimony 11-16-05, at 212-13 (Weedman); Tr. 1/18/06, at 104 (Slingluff). The evidentiary record has numerous letters from boaters to ANSAC testifying about their uses of the River for travel. *See e.g.*, 001, 003, 024-029, 033, X012-X013, X018-X021, X025-X034, X049, X052. One letter reads: “It is my belief that the Verde River, which courses through central Arizona is indeed navigable now and certainly was navigable at the time of statehood. I have personally been boating all reaches of this river for over 45 years.” X034.

Opponents presented absolutely no testimony or evidence from Verde boaters. This is remarkable, especially considering the test for navigability is “navigability-in-fact” not theory. *See PPL Montana*, 132 S.Ct. at 1227.

(a) Mr. Farmer’s Testimony Provided Compelling Evidence on the Verde River’s Navigability Based on His Vast Amount of Experience on the River.

Don Farmer, a Phoenix native, proficient boater, and true expert on the Verde testified that the Verde River is unquestionably navigable. Tr. 12/16/14 at 379-540 – 12/17/15, at 547-574, 555-56. Mr. Farmer has boated the Verde about three to five times a year on and off since 1973; that is a total of between 50 and a hundred times. *Id.* at 381, 556. He has boated most of Segment 1 and all of Segments 2-5, at all times of the year, from the lowest flows of 20 cfs to flows as large as 10,000 cfs. *Id.* at 380-81. Mr. Farmer’s experience and expertise in boating the Verde in all flow rates, throughout the year, for decades provides ANSAC with an invaluable factual basis for understanding the River, as opposed to the theoretical ideas proffered by Opponents.

Almost all of Mr. Farmer’s 40-plus years of boating on the Verde have been in canoes that are meaningfully similar to those used at statehood. Tr. 12/16/14, at 382; *see infra* Part III.B. (modern canoes meaningfully similar to historical canoes). “The canoe is a craft that’s very suited for travel up or down the Verde River, in my opinion.” *Id.* at 382. Mr. Farmer’s canoes range from 12 feet to 17.5 feet, and he has taken his 17.5 ft. canoe out on trips for 10 days with approximately 600-700 pounds of weight, and experienced no trouble navigating the River. *Id.* at 384-87. Mr. Farmer also testified that four friends built traditional wooden canoes and boated them successfully through Segment 5 with absolutely no trouble. *Id.*

After testifying about his Verde River boating experiences in general terms, Mr. Farmer then described the specifics of navigating each segment of the River, including specific depths of each segment, areas inexperienced boaters should look out for, and conditions corresponding to different amounts of water due to seasonal changes or irrigation withdrawals. Tr. 12/16/14, at 393-436. His impressive recollection of navigation detail is similar to what one might expect from an established commercial operator on the Verde, and in fact, Mr. Lynch exhibited a similar command of the River. *See supra* III.A.1.

Testimony from experts does not mean, however, that the River can only be boated by experts. Mr. Farmer repeatedly stated that most of the Verde River is easy to boat for beginner boaters, and no stretch of the River presents any significant problems for experienced boaters. Tr. 12/16/14, at 401, 404, 408, 410-11. Sections of the Verde River “are perfect for a beginner and a novice” and at any place on the River, “if the beginner or the novice is intelligent enough to seek out the help of an experienced boater and tag along with them, they will get along just fine.” *Id.* at 445. In all of his extensive boating on the River, he has never seen anybody hurt on the River. *Id.* at 410, 440-41. In Mr. Farmer’s estimation, 99 percent of boaters have been successful on the River, meaning they’ve gotten from point A to point B with their equipment, persons and boat intact. *Id.* at 425.

Concerning the River’s depths, Mr. Farmer stated “I never have trouble on the river.” Tr. 12/16/14, at 383. Given the context of Mr. Farmer’s experience, with countless trips in canoes, with various loads, in different sections, and in non-natural conditions of reduced flow and depth, the fact that Mr. Farmer has never had trouble is compelling. When asked by the Chairman of ANSAC about descriptions of a shallow river, Mr. Farmer replied flatly: “Walking a boat down the river has not been my experience. . . . I would categorize that as being fairly inaccurate.” *Id.* at 570. In Segment 2, where Mr. Lynch runs most of his commercial operation, Mr. Farmer almost never needs to get out of his boat for any reason. *Id.* at 404.

Regarding obstacles to boating, Mr. Farmer said there was “nothing that can’t be overcome.” Tr. 12/16/14, at 390. The largest and only natural impediment on the Verde, which is commonly called Verde Falls, can either be run by a boat or is a ten minute drag or portage. *Id.* at 391-92, 408. Mr. Fuller stated the Falls is four to six feet tall and is not really a fall but instead a rapid. Tr. 4/3/15, at 3514; Tr. 12/15/14, at 41. *Compare* Verde Falls ten minute portage, *with PPL Montana*, 132 S.Ct. at 1223-24, 1230-31 (Supreme Court finding 17-mile Great Falls reach nonnavigable where succession of rapids and falls included five falls of 87, 19, 48, 7, and 26 feet, and section was at least an 11 day portage). After gaining experience, Mr. Farmer has had no difficulties on any of the four Class III rapids on the Verde, and he testified that “any experienced boater is not going to find problems with any rapids in [Segment 3].” Tr. 12/16/14, at 396, 408. As the Bill Williams Guide confirms, “[g]enerally speaking, the Verde is a mild Class I/II river.” X035-155, at v. Mr. Farmer has encountered only two beaver dams, both in Segment 1: one he boated past and the other he

pushed his boat over without issue. Tr. 12/16/14, at 399-400. Although Mr. Farmer boated the Verde successfully for 20 years before ever reading a guidebook, he recommends the latest Forest Service Guide, X001 Part 29, for a description of Segment 3's rapids that is concise and helpful. Tr. 12/17/14, at 572. The Verde has no significant obstacles and any occasional minor obstacles do not defeat navigability. See *Econ. Light & Power Co.*, 256 U.S. at 122 (“[n]avigability, in the sense of the law, is not destroyed because the water course is interrupted by occasional natural obstructions or portages; nor need the navigation be open at all seasons of the year, or at all stages of the water.”); see also *United States v. Holt State Bank*, 270 U.S. 49, 56 (1926) (occasional difficulties do not render a river otherwise navigable as non-navigable).

Mr. Farmer has earned his credibility, and he was again unwavering when asked by the Chairman of ANSAC what he means by the term navigable:

It's my opinion that I could get a variety of different watercraft down the river unimpeded, heavily loaded, without problem, and I can do this at all times of the year because that river is perennial in nature.

Tr. 12/17/14, at 555 (Farmer). The Commission should place great weight on the testimony of those who actually know the River.

B. Modern Boats That Navigate the River Today Are Meaningfully Similar to Those That Existed at Statehood.

The U.S. Supreme Court has approved modern evidence of boating to show a river's susceptibility to use as a highway of commerce if “(1) the watercraft are meaningfully similar to those in customary use for trade and travel at the time of statehood; and (2) the river's post-statehood condition is not materially different from its physical condition at statehood.” *PPL Montana*, 132 S.Ct. at 1233. In that case, the State of Montana provided absolutely no evidence on what types of boats were presently used and how those boats related to historical boats at statehood. *Id.* at 1234. The Arizona State Land Department, in stark contrast, has presented the only detailed expert testimony and abundant evidence regarding the boats that existed at statehood, modern boats that are used on the River today, and how modern boats are meaningfully similar to boats used at statehood.³

Mr. Jon Fuller prepared a detailed report “Boating in Arizona,” and testified about that Report during the Gila navigability hearings; both the Report and his testimony were submitted as evidence for the Verde. X035-166; X035-160, Gila Tr. 6/16/14. Mr. Fuller grew up boating and has substantial experience boating in Arizona and throughout the United States. X035-160, Gila Tr. 6/16/14, at 18. Mr. Fuller was part of a team of historians, hydrologists, and geomorphologists who wrote the comprehensive and objective fact-

³ The extent of Opponent's witness Mr. Burtell's research regarding meaningfully similar boats was to assume that boats used on the Verde today are the boats that the Supreme Court talked about in *PPL Montana*. Tr. 4/1/15, at 3043. Opponent's witness Dr. Mussetter did no research on the types of boats commonly used for trade and travel at statehood. Tr. 2/23/15, at 2036.

finding reports about the major rivers in Arizona for the State in 1993. *Id.* at 10-12. Mr. Fuller has not changed his mind that boats used on the Verde today are meaningfully similar to those at statehood. *Compare* 031, at 8-3 with X035-160, Gila Tr. 6/16/14 (Fuller) at 84-89.

Mr. Brad Dimock, an Arizona historical boat builder, author of several books about historical boating in Arizona, experienced Verde boater, professional Grand Canyon rafting guide, and resident of Flagstaff, AZ, testified that he has built a few dozen boats, including exact replicas of historical AZ boats used at statehood, and is intimately familiar with boats used and available in Arizona. Tr. 3/31/15, at 2817-28. After a detailed explanation of boat characteristics, Mr. Dimock concluded that modern kayaks, canoes, duck boats, dories, rowboats, and flatboats are meaningfully similar to boats that existed around 1912 in Arizona and throughout the United States. *Id.* at 2850-51. In addition, Mr. Dimock testified that historical boats that existed at statehood, like his replica boat the Edith, could have been used on the Verde. *Id.* at 2833-40.

1. Various Types of Boats Were Used and Available for Use in Arizona at Statehood.

To determine if modern boats used on the Verde are meaningfully similar to boats that existed at statehood, it is first necessary to know what boats were used and available for use at statehood. Boats in use and available for commercial purposes in Arizona in 1912 included steamboats, flatboats, skiffs, canoes, rowboats, ferries, canvas folding boats, kayaks, canvas canoes, various wooden boats, dugout canoes, steel boats, inflatable boats, and various Native American disposable boats made from more primitive materials. X035-166 at 7-59. Tr. 3/31/15 at 2835-37 (Dimock). Mr. Fuller included several photographs from around or before statehood of those boats actually being used in Arizona, including on the Verde. X035-166 at 43; X035-160; Tr. 6/16/14 at 41; X035-167 at 110, 120. Historical accounts of boating on the Verde also confirm such use. *See infra* Part IV.A.

Although there was not an abundance of lumber and other materials along the River from which settlers or travelers could build a boat on the spot, small boats in Arizona were commonly homemade from lumber or driftwood. X035-160, Gila Tr. 6/16/14, at 171 (Fuller); Tr. 3/31/15, at 2837 (Dimock); X035-152, at 30-31. Boats were also available for purchase through mail order and delivery from Sears and Montgomery Ward catalogues or by special order from boat building companies, including boats like the Peterborough freight canoes, canvas and wood boats, folding boats, kayaks that held cargo, and steel boats. Tr. 3/31/15, at 2835-38, 2860-63 (Dimock); X001-01; X001-13; X035-160, Tr. 6/16/14, at 39 (Fuller). The famous Kolb brothers, who made the film about the Grand Canyon, had their boat Edith built in Wisconsin and shipped out West. Tr. 3/31/15, at 2829-30 (Dimock). Freight canoes were delivered to the southwest by train. *Id.* at 2907. The Klepper folding kayaks were available to be shipped throughout the United States in the early 1900s, and those boats, similar in design to kayaks from the 1960s and 1970s were well suited to

carrying cargo and running on Arizona's rivers, including the Verde. *Id.* at 2860-63.⁴

Boats were used or could have been used in Arizona for commercial trade and travel for hauling goods or passengers, trapping, river guiding, military use, fishing, surveying, traveling, and exploration. X035-166 at 6, 17, 27, 30, 36, 46, 49; X035-160, Gila Tr. 6/16/2014, at 20-21 (Fuller). Guided recreational river touring existed in 1912 in Arizona. X035-166, at 119; X035-160, Gila Tr. 6/16/2014, at 91 (Fuller). In the late 1800s and early 1900s, Julius Stone hired Nathaniel Galloway to guide recreational trips down the Colorado. X001-09 at 55; X001-12; 021 at 26-27. The Kolb brothers used modified Galloway-Stone boats to make a scenic travel film about the Grand Canyon that was shown commercially for 60 years at the South Rim of the Grand Canyon. Tr. 3/31/15, at 2829-2832 (Dimock). On the Verde, specifically, there is historical evidence of boats being used to support military forts, to transport people and their goods, and for hunting, trapping, and fishing. X035-167, at 127-47.

Collectively, these are the boats and the uses that “as a realistic matter, might have occurred at the time of statehood.” *PPL Montana*, 132. S.Ct. at 1233.

2. Modern Boats Used for Recreational Purposes Are Meaningfully Similar to Historical Boats and Demonstrate the Verde Could Sustain Historical Commercial Uses.

The Verde is the most frequently boated river in Arizona. 031, at 8-4. The only experts to testify about meaningfully similar boats – Mr. Fuller and Mr. Dimock – have said that all of the types of boats available today, except for inflatable rafts, were available at statehood and are meaningfully similar to historical boats. X035-160, Gila Tr. 6/16/14, at 84-89 (Fuller); Tr. 3/31/15, at 2850-52 (Dimock). In offering his opinion, Mr. Dimock considered the draw, handling, weight, durability and cargo capacity of both historical and modern boats. Tr. 3/31/15, at 2841-51 (Dimock). Based on his expertise as a historical boat builder, a scholar of historical boats, and a modern boater, Mr. Dimock concluded that kayaks, canoes, duck boats, and flatboats used on the Verde today are meaningfully similar to versions of those boats that existed at statehood. *Id.* at 2850-51. With regards to kayaks that could carry cargo, Mr. Dimock stated “[t]he kayak that we have in the driveway, which is a 1910 style, is very similar to what I was paddling in 1970.” *Id.* at 2850. Modern canoes are “even more” meaningfully similar to historical canoes, and flatboats and other hard boats used today are meaningfully similar to historical hard boats, although inflatable rafts used today are not meaningfully similar. *Id.* at 2851.

Mr. Fuller did a similar in-depth comparison of historical and modern boats. X035-166, at 109-117;

⁴ Even Opponent's witness Dr. Mussetter agrees that: most, if not all, of these boats were available at statehood (Tr. 2/23/15, at 2032-33); “you can use a canoe for commercial purposes, sure” (*Id.* at 2028); Segments 2-5 are boated by canoes (*Id.* at 2045); thousands of canoes used on Verde points to the fact that it is navigable (*Id.* at 2046); and historical canoes loaded with two people could go over a riffle with a rock 8 inches from the water line (*Id.* at 2116-18).

X035-160, Gila Tr. 6/16/14, at 84-89. Mr. Fuller concluded that the draw, weight, and design of modern boats are essentially the same as historical boats. *Id.* at 85. River depth requirements for historical boats are similar for modern boats. A modern canoe requires a minimum river depth of six to eight inches or less. *Id.* at 88–89. A traditional dugout canoe required eight inches and a historical canvas canoe required about three inches. *Id.* A modern drift boat requires eight inches. X035-166, at 117. Historical flat bottomed and round bottomed boats required four and six inches, respectively. 031, at 8-3. A duck boat from the 1910 Sears Catalog required about three inches. *Id.* Even today, the River’s depths are more than sufficient to support both modern and historical boats. *See infra* Part V. Segments.

Both Mr. Dimock and Mr. Fuller addressed how advances in technology have made some modern boats more durable than historic boats. Tr. 3/31/15 at 2835 (Dimock) (modern rafts more durable than wood boats); X035-160, Gila Tr. 6/16/14, at 86-87 (Fuller) (plastics and modern materials are more durable); Tr. 12/15/14 at 57-58 (Fuller) (canoes more durable today). Although boat building technology has improved, just as it has for cars and in all facets of life, an argument that only modern improvements in durability make the Verde boatable today is contrary to the evidence and defies logic.

First, the Verde *was* boated historically. *See infra* Part IV.A. Second, an advance in technology does not mean the old technology was inadequate; the Supreme Court did *not* define “meaningfully similar” as “the same.” *See PPL Montana*, 132 S.Ct. at 1233-34. Historical boats made from wood, like the Edith, are “tremendously resilient” in rocky rivers and the “[b]ottoms are made to be scraped.” Tr. 3/31/15 at 2833-34 (Dimock). As Herbert Gordon’s “The Complete Book of Canoeing” states: “Wooden canoes are superbly useful. They can sustain a great deal of punishment. They can be repaired if injured and, if properly cared for, will last for decades.” X056-192 at 14. Boaters at statehood, whether on the Verde or the Colorado or any other river in the U.S., anticipated and prepared to repair boats as necessary. Tr. 12/15/14 at 75-76 (Fuller); Tr. 3/31/15 at 2862, 2910-12 (Dimock). Mr. Dimock provided the example of the 1911 trip of the Kolb brothers, who bashed a large hole in the side of their boat in the Grand Canyon. Tr. 3/31/15, at 2830-31. On Christmas Day, with only the tools and materials they had on hand, they repaired the boat and continued on their journey. *Id.* at 2831. This was a typical expectation of historical boaters. *Id.* at 2862, 2910-11; Tr. 12/15/14, at 75-76 (Fuller). Third, depths on the Verde *today* are more than sufficient for both the use of historical boats and modern boats that are meaningfully similar to historical boats, as discussed previously. *Compare supra* Part III.A. (Verde is navigated today in depleted conditions by kayaks, canoes, and flatboats), *and* Tr. 12/16/14, at 300 (Lynch) (diversions lower depths on River six inches to one foot), *with* Tr. 3/31/15, at 2833, 2841 (Dimock) (historical wood flatboat Edith could be used on Verde today and draw of historical kayaks and canoes very similar to today), *and* Tr. 12/15/14, at 228 (Fuller) (draw differences between modern and historical boats not significant). Logically, where rivers are deep enough,

durability becomes less important because boats are floating in the water. The Verde is not a river where boats must be dragged and subjected to constant shallow water that threatens the integrity of boats. *See* Tr. 12/17/14, at 553-54, 569-70 (Farmer).

Mr. Dimock and Mr. Fuller stated that “canoes, kayaks, [and] rowboats” were available at statehood and could have been used on the Verde, Tr. 3/31/15 at 2840 (Dimock); X035-160, Gila Tr. 6/16/14, at 93 (Fuller). They then testified that those historical craft are meaningfully similar to boats that navigate the River for commercial and recreational purposes today. The evidence meets the test for use of modern recreational evidence as outlined in *PPL Montana*. The Commission must consider evidence of modern boating in determining whether the River was susceptible to navigation. Furthermore, the substantial modern boating evidence demonstrates that the Verde is navigable today and was susceptible to navigation at statehood.

C. The Physical Characteristics of the River Demonstrate It Is Navigable Today and Was Susceptible to Navigation at Statehood.

A determination of navigability must be made on a “segment-by-segment basis, to assess whether the segment of the river . . . is navigable or not.” *PPL Montana*, 132 S.Ct. at 1229. “Physical characteristics and experimentation” may be used to demonstrate a river’s capacity to meet the needs of commerce. *United States v. Utah*, 283 U.S. at 83. In its ordinary and natural condition, the Verde, from its headwaters at Sullivan Lake to its confluence with the Salt River, is naturally varied based on its hydrology, geomorphology, and navigability characteristics. Tr. 12/15/14, at 47-48 (Fuller). The State segmented the Verde into six distinct segments based on the River’s diverse physical characteristics, and all segments are navigable except Segment 0. Maps of the segments can be found in X017-74 through X017-80. Segments 1 through 5 are not subject to any significant insurmountable physical characteristics such that any part should be found nonnavigable. *See PPL Montana*, 132 S.Ct. at 1222-24, 1230-31 (Great Falls reach of the Missouri took 11 days to portage around five major waterfalls and a succession of rapids).

Mr. Fuller, the State’s chief expert witness, presented each segment’s physical characteristics comprehensively by utilizing the following: Google fly-overs, historical photos, historical descriptions, historical boating accounts, historical USGS maps, historical hydrology data, modern photos, Verde boating videos, boating guides, rating curves showing depths corresponding to specific flows, graphs showing changes in flow across a year, and, perhaps most importantly, field work on the River. X035-167 (Fuller PPT); Tr. 12/15/14, at 46-256. Unlike any of the Opponents’ expert witnesses, Mr. Fuller has paddled the River from its headwaters to its confluence with the Salt during summer, fall, winter, and spring, over the course of several dozen trips. Tr. 12/15/14, at 13. He has been to every road crossing and to every River access point. *Id.* at 13-14. Mr. Fuller’s analysis of the River’s physical characteristics, including depths and

general geomorphological characteristics for each segment, are detailed later in Part V (Segments of the Verde River: Physical Description and Boating Characteristics), *infra* Part V.

All scientific experts agree that the River would contain more water but for the significant diversions. *See, e.g.*, X035-167, at 34 (Fuller); X015, at 5 ¶6 (Hjalmarson); X009, at 15 (Burtell); X016, at 13 (Mussetter). The additional water would obviously make the River more navigable today than it was historically. *See* Tr. 12/15/14, at 192-93 (Fuller). Moreover, the depths estimated by experts, Proponents and Opponents alike, are more than sufficient for small boats to navigate, now or historically. *Compare* X035-167, at 166-170 (Fuller non-natural depths of Verde), *and* X009, Table 5 (Burtell reconstructed natural depths of Verde), *and* X015, 101, Appendix G, at 78 (Hjalmarson reconstructed natural depths of Verde), *with* X035-166, at 116-117 (depth requirements of small boats). Additionally, the River's geomorphology is relatively unchanged and demonstrates that a single, low-flow channel has always existed on the River. 031, at iv; Tr. 12/15/14, at 187-88 (Fuller).

IV. Historical Boating Accounts and Descriptions of the River Clearly Demonstrate That the River Was Actually Used as a Highway of Commerce and Was Susceptible for Such Use in Its Ordinary and Natural Condition.

A. Historical Boating Accounts Show That the River Was a Highway for Commerce.

The historical boating accounts demonstrate that the River was generally successfully navigated for a variety of uses and by a variety of boats. X035-167, at 127-144, X053-174, at 144. The River was repeatedly used for commercial trapping by the Day Brothers in their small boat, X001-18, and by Fogel and Gireaux in their flat-bottomed boat, X017-125. These trapping accounts demonstrate the use of the River as a highway for commerce, consistent with navigability case law that recognizes trapping as proof of navigability. *See supra* II.C. Even Opponent's expert Mr. Burtell candidly admitted that canoes used for trapping in a repeated fashion support a determination of navigability. Tr. 4/1/15, at 3161. The River was used for travel by several parties. Willcox and Andrews traveled from Fort McDowell to the Salt River Canal in 1883 using a canvas skiff. X017-22. In 1888, two military men canoed from Ft. McDowell to the Salt without any boating problems. X017-23.

Boats also had local uses. The military kept a collapsible U.S. Army boat for transporting couriers during high water and for fishing. X035-167, at 127, 129; X053-174, at 140. Dr. Palmer and Mr. Crain borrowed a steel boat from what was likely the Camp Verde general store and boated 16 miles downriver to duck hunt. X017-97, at 26, 29. Apparently this type of trip happened with some frequency because the horse that hauled the boat was trained to return to its stable downriver, and the general store had a boat to rent. *Id.*

Of the total boating accounts that are in evidence (*see* Part V, *infra*, for detailed historical boating accounts) 13 reached their destination and four did not. X053-174, at 144. There was no single place that stopped all of the accounts; several accounts indicated repeated boating; and no accounts listed any problems

with portages or beaver dams. *Id.*; Tr. 12/15/14, at 177. These are obviously only the known accounts in evidence. Each time the State has had an opportunity to present evidence before the Commission, new boating accounts have been located as technology makes searching easier. General descriptions like “boats used in the Verde Valley from 1910 to 1920” may serve to support that the Verde was used more than was recorded. 031, at 8-3. Certainly, it was navigable in its ordinary and natural condition, as the abundance of modern boating evidence demonstrates. More details about the boating accounts are discussed in Part V.

B. Limited Use of the River at Statehood Does Not Preclude Its Navigability

Historical evidence explains why there was limited, reported actual use of the River before statehood. The River has experienced two recent settlement periods: the Yavapai-Apache communities and modern western settlement.

Mr. Randall, a leader of the Yavapai-Apache Nation, testified that his people did not boat the Verde River, and he listed several reasons why before stating that it could have been done. Tr. 2/20/15 First Corrected, at 1786, 1818 (Randall). First, he explained that his people traded almost exclusively with the Hopis who lived up by Winslow, far away from the Verde River and inaccessible by water. *Id.* at 1792-94. He then stated that the Verde meandered, so it was faster to walk or run along the River than it was to boat. *Id.* at 1789-90. Although boating downstream was possible, boating upstream would not have been easy. *Id.* at 1795. Lastly, his people built their homes away from the flood-prone Verde, closer to the tributaries and springs, so boating on the Verde would not have been effective for the Tribe to move between living areas. *Id.* at 1776, 1781.

Although Mr. Randall was called as a witness by the Yavapai-Apache Nation, which opposes a finding of navigability, he admitted that the River would have been navigable at least in the Camp Verde area:

[I]f I was thinking about moving goods and so forth and taking a look at the river itself and I was above Camp Verde and I wanted to move things south, maybe it would be feasible...because all I would have to do was float down.

Tr. 2/20/15, at 1818. Mr. Randall then stated that if one could have gotten a Mississippi River boat to the Verde, it may have been possible to paddle up the River. *Id.* at 1818-19. No court, however, has ever held that upstream travel is needed to prove navigability. *See Defenders*, 199 Ariz. at 422, 18 P.3d at 733 (Arizona Court of Appeals struck down non-navigability presumption that required sustained trade and travel both upstream and downstream).

Modern western settlement in the Verde Valley began in about 1865. X017-124, at 25. Almost immediately, relations between the western settlers and the Native American populations turned hostile, as western settlers sought to control from what Mr. Randall called “the heart of Yavapai and Apache territory” and the birthplace of his people. *Id.*; Tr. 2/20/15 First Corrected, at 1762-63, 1769 (Randall). Fort Verde and

Fort McDowell, both located on the Verde, were established specifically to protect settlers from the Yavapai-Apache threat, and an extensive campaign to hunt and conquer the Apaches was run from the late 1860s to the early 1880s, until the closing of Fort Verde in 1888. X017-124, at 25-32; X055-7, at 544; Tr. 2/20/15 First Corrected, at 1770, 1775-76 (Randall).

Numerous primary sources talk about the war that was being fought between the white settlers and Native Americans, and ground zero was the Verde Valley. X009 Attachment C, at 68 (“this sort of warfare is not likely to make the country very safe for white men”); X017-128, (“One hundred Indians Attack Eleven White Men...citizens will do well to look out for them”). Transporting goods along the Verde was not a safe option, and alternative transportation methods were developed accordingly.

By the time the Apache war ended in the 1880s, a number of alternatives to boating the River had developed for travelers and those engaged in commerce. An 1866 map shows wagon roads were built that avoided the hostile area east of the Black Hills and through the Verde Valley. X009, Figure 3; *see also* X017-124, Map of Black Hills; Tr. 2/20/15 First Corrected, at 1823, 1826, 1761 (Randall) (explaining that his people were located from Perkinsville to Fossil Creek on the east side of the Black Hills). It was not until Fort Verde had been established that a road came through Camp Verde in 1876. X009, Figure 4. By the 1880s, the Stoneman road had been improved at least once and was being used by the military. Tr. 3/30/15, at 2631 (Burtell). In addition, the railroad reached northern Arizona by 1882 and Prescott by 1886. X035-167, at 83. Prior to the use of the roads and railroads, explorers, trappers, and the military arrived by wagon and horseback; abandoning their valuable horses and wagons for a boat would have been nonsensical. X035-160, Gila Tr. 6/16/14, at 169–70 (Fuller).

Many other reasons exist why the Verde wasn't the transportation method of choice for early settlers, including difficulty in navigating upstream, difficulty in carrying major tonnage, and early diversions of water from the Verde. X035-166, at 61-71. By the time the Apache war ended, most of the major ditches and diversions had been installed on the River, and the River's perennial flow was substantially altered and its depths shallower; it was no longer in its ordinary and natural condition. 031, at 7-23, Table 7-16 (Historical Irrigation Diversions). At that point, with alternative transportation methods in place, and with a depleted River, it would be unreasonable to expect that the Verde would become a major transportation corridor. In addition, even at the time of statehood, the Verde Valley still had a relatively small population: in 1910, the population of Camp Verde was 269, compared with 11,134 in Phoenix. X035-167, at 86. Eventually, as population levels increased in the Verde Valley, commercial recreation took hold, and now boating the Verde is a major driver for the economy of the region.

When, as a consequence of regional patterns of settlement, established trade routes, and the depletion of the River's ordinary and natural flows, there is little historical evidence of a river being used for trade and

travel at the time of statehood, “susceptibility in the ordinary condition of the rivers, rather than of the mere manner or extent of actual use, is the crucial question.” *United States v. Utah*, 283 U.S. at 81-82; *see also Alaska v. Ahtna*, 891 F.2d at 1405 (“The test is whether the river was susceptible of being used as a highway for commerce at statehood, not whether it was actually so used.”); *Winkleman*, 224 Ariz. at 243, 229 P.3d at 255; *see also Appalachian Elec. Power Co.*, 311 U.S. 377, 404 (1940) (stating that there is no “formula which fits every type of stream under all circumstances and at all times”). The unique circumstances of the Verde Valley’s settlement and development must be taken into consideration in determining the River’s navigability.

V. Segments of the Verde River: Physical Descriptions and Boating Characteristics.

A. Segment 0: Sullivan Lake to Forest Road 638.

The State does not assert that any portion of Segment 0 was navigable, from the headwaters of Sullivan Lake to FR 638, 7.1 River Miles [“RM”]. Tr. 12/15/14, at 48-49,57-60 (Fuller). Segment 0 was broken up into two sub-segments: Segment 0-A (from Sullivan Lake to Granite Creek) is rocky and steep with a pool and drop pattern; Segment 0-B (from Granite Creek to Forest Road [“FR”] 638) has a pool and riffle pattern and is partially located in a narrow bedrock canyon. Tr. 12/15/14, at 48-61 (Fuller); X035-167, at 40-45. Segment 0 used to have reliable, perennial flow fed by springs. 031, at 7-5; Tr. 12/15/14, at 190 (Fuller). Mr. Win Hjalmarson calculated that human causes have depleted the Upper Verde watershed from its natural condition by 30 cfs.⁵ X059, at 2. Mr. Hjalmarson has been a professional river engineer for the past 53 years, is a former United State Geological Survey (“USGS”) hydrologist who personally selected the Clarkdale Verde River gage site, and is a fourth generation resident of the Verde Valley. X015, at 2.

Although Mr. Fuller successfully canoed Segment 0-B without long drags, current flows may require some dragging in this Segment. 12/15/14, at 58-59 (Fuller). There is no evidence of historical or frequent modern boating, and indeed modern boating guides indicate that this Segment is not navigable. *Id.* at 59; X035-155.

B. Segment 1: FR 638 to Sycamore Canyon.

Segment 1 (from FR 638 to Sycamore Canyon [30 RM]) has perennial flow in a pool and riffle pattern within a moderately deep bedrock canyon, and is 20-30 feet wide. Tr. 12/15/14, at 61-62, 67 (Fuller); X035-167, at 46-52. Its flow is diminished by upstream withdrawals and a small diversion at Perkinsville.

⁵ When questioning Mr. Hjalmarson’s Upper Verde depletion estimates, Opponent SRP submitted an exhibit claiming that a 23 cfs depletion was more likely. X061. In contrast to both SRP and Mr. Hjalmarson, Mr. Burtell found only a 4 cfs depletion. X009-Table 6.

Tr. 12/15/14, at 62 (Fuller). It has two Class II rapids comprising less than 1% of the segment's length⁶, and one Class III rapid (perhaps man-made) comprising less than 0.2% of the segment's length. *Id.* at 65-66. Mr. Fuller explained one of the Class II rapids called Guv Drop is so minor he missed noting it. *Id.* at 66. Mr. Farmer stated there are no rapids worth listing in this Segment. Tr. 12/16/14, at 420-21 (Farmer). The surrounding land is mostly National Forest land with some in-holdings. Tr. 12/15/14, at 66 (Fuller).

Modern (non-natural) USGS data at the Paulden gage indicate a median flow rate of 26 cfs, and 90% of the time the flow is more than 22 cfs. Tr. 12/15/14, at 196-97 (Fuller); X053-174, at 159. Mr. Hjalmarson determined the natural median flow at Paulden would have been 60 cfs, and would have corresponded to a thalweg depth of 2.4 feet.⁷ X015, at 41, 101; X059, at 3. Mr. Burtell did not calculate depths at this gage. The flow rate is relatively constant with a wintertime boost to 120 cfs, and can be boated by canoes and kayaks 99% of the time (360 days a year) and by flatboats 30% of the time (110 days). Tr. 12/15/14, at 218-220, X035-167, at 178.

This area of the Verde was remote at the time of Arizona's statehood, and even today remains sparsely settled. Tr. 12/15/14, at 66:16 (Fuller). One account from the 1890s states the River's flows above Perkinsville were impeded by beaver dams, and extensive marshes occupied the floodplains near Perkinsville, but the river was deep enough to discourage livestock from swimming in it. X001-20, at 95; Tr. 12/15/14, at 135-36 (Fuller). In 1891, the Prescott Weekly Journal-Miner published an account of trade and travel use on the River that recounted T. Carrigan constructing a raft out of railroad ties that fell apart when he tried to cross the river to repair railroad track and telegraph wires. *Id.* at 157-58 (citing Littlefield); X035-167, at 131; X035-154. Boats or rafts were also allegedly used to transport rock for the building of a rock dam near Perkinsville in June 1899. 031, at 8-3; Tr. 12/15/14, at 162 (Fuller); X035-167, at 134.

Segment 1 is commonly boated from Perkinsville, where the River has a steady base flow of 20-50 cfs. Tr. 12/15/14, at 69 (Fuller). Mr. Fuller has boated this Segment at 24 cfs. Mr. Farmer took a three-day trip in this stretch with two women from the Audubon Society and a 400-lb load, at 26 cfs with a depth ranging from six inches to four to five feet. Tr. 12/16/14, at 399-401 (Farmer). Game and Fish also boat this Segment and carry surveying equipment like electroshockers. Tr. 12/15/14, at 77 (Fuller); X011-51. The Williams guide notes that this Segment, as well as all the others below it, is boatable, and lists it as a Class I or II run with no significant rapids. X035-155, at 13, 25. Arizona Rivers and Streams Guide describes the trip from Perkinsville to Clarkdale (23 RM) as best in spring and late summer. X001-2.

⁶ Because Class I rated water is just "moving water," for his navigability determination, Mr. Fuller only considers water rated Class II and above in his percentages of total length of rapids. Tr. 12/15/14, at 64.

⁷ Mr. Hjalmarson's thalweg depth is the maximum channel depth at median flow, also known as the boating channel depth, the channel where small boats would navigate. Tr. 12/18/14, at 1023 (Hjalmarson).

C. Segment 2: Sycamore Creek to Beasley Flat (the Verde Valley).

Segment 2 (Sycamore Creek to Beasley Flat [49 RM]) has a pool and riffle pattern within an alluvial valley, is perennial, and has a predominately single channel. Tr. 12/15/14, at 79-92 (Fuller); X035-167, at 53-58. It has only two Class II rapids (one of which is man-made), comprising only .3% of its length. *Id.* Land ownership is mainly private. *Id.* Large tributaries are Sycamore Canyon, Oak Creek, Beaver Creek, Wet Beaver Creek, and West Clear Creek. *Id.*

In the late 1500s, early Spanish explorers Espejo and Farfan described the River as “large and copious” and as “a large river, carrying a great volume of water;” they speculated that the River's water was easily sufficient to run water wheels. 031, at 3-11; X011-58, at 27. Mr. Randall stated in his testimony that Espejo arrived just below where the Verde Ditch is now. Tr. 2/20/15, at 1766. K.S. Woolsey, Lt. Col. of Commanding Volunteers from the Weaver and Walker mines, said in 1864 that the Verde River was once called the San Francisco River, and then was only fifty feet wide and two feet deep. X035-150, at 5.

The first [Euro-American] permanent settlers arrived in the Verde Valley near the mouth of Clear Creek [Segment 2] in January 1865 and began cattle ranching to meet the local needs of the Army and of the settlers. X001-25, at 44; X011-58, at 34. At Camp Verde, irrigation began in the mid-1860s. Tr. 12/19/14, at 1184 (Hjalmarson). Surveys in 1873 and 1877 in the Verde Valley (Segment 2) document a through-going stream about two feet deep and 50 to 100 feet wide with a sandy bottom. 031, at 5-15. A 1923 USGS topographical map of the Camp Verde quadrant shows the River in Segment 2 as a solid line, meaning a continuous perennial river. Tr. 12/15/14, at 137-38 (Fuller); X035-167, at 100. This map lists no rapids and shows several ford crossings. *Id.*

Government surveyor C. Burton Foster, who conducting a survey in T13N, R5E in December 1873, noted that the River was about one chain wide [66 feet] and had a gentle current and sandy bottom. X002, at 34-35. He described the River as “a stream with banks about 3 feet high and of uniform width. *Id.* The amount of water flowing with gentle current through its channel at an average depth of about 3 feet varies but little during the different seasons of the year and seldom overflows its banks.” X002, at 34-35. A survey of T16N, R3E stated that the average depth was three feet for the entire township. X059, at 29. Daniel Drummond, another government surveyor, working in this Segment in late 1892 to early 1893, meandered both banks of the River in T13N, R5E. X002, at 36-37; Tr. 2/19/15, at 1597 (Littlefield). Meandering both banks indicates that the surveyor either felt that the river was “navigable” under their personal definition of the term, or that the river was more than three chains wide, or both. Tr. 2/18/15, at 1467 (Littlefield); X017-87, at 568. Hiram Hodge wrote of the River in 1877: “It becomes a fine river eighty feet in width about 50 miles northeast of Prescott.” 031, at 3-13; X001-25, at 40; X056-191, at 39.

Residents of Camp Verde reported the presence of squawfish (“salmon”) in the River in the early

1900s, indicating the River was large and deep enough for these big water fish. X001-20, at 94. There were likely marshes in this Segment but a single channel still flowed through as demonstrated by historical photographs of the area. Tr. 12/15/14, at 131, 143 (Fuller); X035-167, at 91, 106-119; Tr. 2/20/15, First Corrected, at 1832 (Randall). There were also likely beavers in this Segment, but the beavers are generally bank dwelling and the River is too big for consistent, mid-stream beaver dams. Tr. 12/15/14, at 184-187 (Fuller).

Boats were used in the Verde Valley starting in the 1860s, near the time Fort Verde was established. 031, at 8-3. Both troops at Fort Verde and civilians used boats as ferries around 1878 during periods of high flow. *Id.* Betty Tome, historian for the Camp Verde Historical Society, related that soldiers at Fort Verde used a boat for fishing. 031, App. D-4; X035-167, at 140. A photo, "Soldiers in a Boat Photo" (the original of which is in the Library of Congress) was probably taken about ten miles downstream of Camp Verde, and shows two men, one wearing an Army uniform, in a boat on the River in 1885, at a time when the River was not in high water. Tr. 12/15/14, at 145-46 (Fuller). Bob Munson of the Fort Verde State Historical Park explained that the boat was a "collapsible U.S Army issue boat" and that the Fort used it to take couriers across the Verde during periods of high water and for fishing. 031, at 3-20, 4-2; 017, at 134.

J.K. Day and his brother George left Camp Verde on September 1, 1891, in a small boat on a trapping expedition to take their beaver and otter furs to market in Yuma, where they arrived six months later. X001-18. It was J.K. Day's fifth trip; he and his brother planned to repeat the trip the following year. *Id.* They travelled slowly, likely setting traps, travelling several times between their camp and the traps to check for beaver, then skinning and drying any beaver hides before once again travelling downriver. Tr. 2/25/15, at 2511 (August); X011-52. J.K. Day was a well-known hunter in Arizona, who in October 1898, was appointed one of the territorial game commissioners. X102-213.

In early 1903, Dr. Palmer and Joe Crain boated about sixteen miles on the River in a borrowed steel boat, duck-hunting all the way. X017-97, at 29; 031, at 3-21. The boat had been borrowed from the man who ran the Camp Verde general store. *Id.* It was hauled upriver on a two-wheeled axle drawn by a horse that apparently had done this enough times it could be relied upon to return the empty axle to the corral. *Id.*

A correspondent in Jerome reported that Miller, Hooker, Cox, and Smith started down the Verde on May 21, 1905, in sailboats (iron with canvas seats), from the Jerome area, likely Clarkdale. The trip had been previously postponed because their shipped iron boats were lost in transit. A fifth man, Armstrong, joined them in his own boat at Camp Verde. The boats were "shooting boats," carrying fishing tackle, guns, and ammunition. Downstream of Camp Verde, the water had become low and some of the party ended the trip. X017-126; X001-19; X017-127. Mr. Burtell admitted that he "wouldn't consider it an optimal time" to be boating in iron boats, in May, during irrigation season. Tr. 4/1/15, at 3076 (Burtell).

In 1910, four hunters in a boat loaded with guns and supplies started from the Verde Valley at about RM 75 on their way to Mesa. They successfully navigated through this Segment and Segment 3, but they later wrecked on a rock at about Red Creek (RM 130) or at the East Verde River, both in Segment 4. X035-164; Tr. 12/15/14, at 166-69 (Fuller). A photograph, probably taken at Beasley Flat, depicts Fred Stevens and his wife, Jessie, in a wooden rowboat on the Verde during spring runoff in 1917. X017-121; Tr. 12/15/14, at 169-70 (Fuller). Fred and his friend Jake boated successfully through this Segment, but did not make it beyond Brown Springs Falls/Verde Falls in Segment 3. *Id.* Fred Fogel and Karl Gireaux launched a flat-bottomed boat at Clarkdale in 1931, intending to trap their way down to Granite Reef Dam, on the Salt River. 031, at 3-21; X017-125. They noted that the River became easier to navigate the farther south they went and they exited the River 18 miles north of the old Fort McDowell-to-Payson road after five weeks on the River. *Id.* Jim Byrkit, an Environmental Professor, NAU, recalled that in 1958 logs were floated down the River for use in building the Verde House Spring Lodge. 031, App. D-8. Overall, no historical boater recalled having any difficulty in this Segment, which is unsurprising considering that the River here meanders relatively quietly through the Verde Valley.

The River currently has experienced diminished flow and significant human impacts in this Segment because of diversions, bridges, erosion protection, farms, dams, fences, encroachment, sand and gravel mining, and roads, all of which have changed the morphology and decreased boatability. Tr. 12/15/14, at 80, 221-22, 920-21 (Fuller); X035-167, at 182. Most of the irrigation that takes place on the River is in this Segment. *See* 031 at 7-23, Table 7-16. In its ordinary and natural condition, the River would have had deeper flow with similar channel conditions. Tr. 12/15/14, at 222 (Fuller); X035-167, at 183. Modern (non-natural) USGS data at the Clarkdale gage show a median flow rate of 86 cfs, and 90% of the time the flow is more than 70 cfs. Tr. 12/15/14, at 197 (Fuller); X053-174, at 159. Mr. Hjalmarson calculated that natural median flow would have been 116 cfs, with a corresponding depth at the thalweg of 3.1 feet. X015, at 101. Mr. Burtell calculated the natural median flow at Clarkdale would have been 93 cfs, with a corresponding mean depth of 1.6 feet. X009, Table 5. This Segment is boatable by canoes 99% of the time (360 days) and by flatboats 85% of the time (310 days). Tr. 12/15/14, at 84, 222 (Fuller); X035-167, at 183. Mr. Dimock opined that he could use his 1911, 18-foot historical-replica cargo boat “Edith” in this Segment. Tr. 3/31/15, at 2830-33.

Modern low flow in Segment 2 is in May and June due to irrigation diversions; higher flow due to snow-melt begins around the last week in January or the first three weeks in February and may continue to mid-April depending on the year. Tr. 12/16/14, at 290, 320 (Lynch). In the upper stretch of this Segment, the deeper pools are from two to four feet and the chutes are mid-calf to knee; in the lower stretch, pool depths are from four to six feet, and chutes are from knee to hip deep. *Id.* at 299. When the irrigation is

turned off in October, water levels rise six inches to 1 foot. *Id.* at 300.

Even with the human impacts, this Segment is the most frequently boated and supports multiple commercial recreational boating operations, including Mr. Lynch's operation. *See supra* Part III.A.1. This is the segment that contains the Verde River Greenway, an official state paddle trail. Tr. 12/15/14, at 84 (Fuller). In the late 1980s Harry King operated a commercial pleasure boat on the River at Camp Verde (a two-mile stretch) on a boat drawing two feet of water and capable of carrying 32 passengers. X001-17. It is in this Segment that Apache elder Vincent Randall testified that one could have boated the River, and could even have boated upstream if a paddlewheel boat had been available. Tr. 2/20/15 First Corrected, at 1794-95 (Randall). Indeed, the Apache name for this portion of the River is Tu Cho Lii, which means "big wide river." *Id.* at 1753-54; 1782-84. Mr. Randall also testified that the River in historical times was deep enough that small children (under age 10) needed to be carried across. *Id.* at 1786.

Modern boating guides generally describe this Segment as Class I whitewater, well-suited for beginner boaters. X001-2, at 160; X035-155, at 45; X035-165, at 27; 018, at 11-12; X009, Table 4. This means that rapids in this Segment are generally described as Class I, *i.e.* "Class I Rapids: Fast moving water with riffles and small waves. Few obstructions, all obvious and easily missed with little training. Risk to swimmers is slight; self-rescue is easy." X044-169. There are no rapids worth listing in this Segment. Tr. 12/16/14, at 402, 404, 421 (Farmer).

D. Segment 3: Beasley Flat to Childs.

Segment 3 (Beasley Flat to Childs [16.5 RM]) is a "whitewater reach" that is predominantly a pool (85%) and riffle pattern and lies in a bedrock canyon. Tr. 12/15/14, at 92-99 (Fuller); X035-167, at 59-64, 185. The rapids are mostly Classes I and II (10% of the segment), a couple of IIIs (1%), and one IV (Verde Falls) (0.2%), depending on the River's flow. *Id.* There were no major pre-statehood diversions within the segment, but upstream diversions and tributary diversions affect baseflow in this Segment. *Id.* Land ownership is mostly public. *Id.* Under the 1968 National Wild and Scenic Rivers System, 16 U.S.C. § 1271, Congress designated the River in this Segment as a Scenic River in 1984. X001-29.

Two Anglo-American descriptions of the Verde in this Segment were submitted into evidence. Having descended either Gap Creek or Chasm Creek Canyon, Judge Allyn described the River as "a fine rushing stream, some fifty yards wide, and not fordable; it is dammed just below with drift wood." X009, Attachment C, at 87. In late December 1902, Dr. Ralph Palmer waded across the River on his way back to Camp Verde from conducting an autopsy at Bloody Basin (about 45 miles south of Camp Verde); he described the River there as about fifty feet wide and "not over waist deep." X017-97, at 26. In addition, two historical photographs can be seen of this area, one from 1920 that shows Verde Falls, and the other from perhaps the late 19th century that shows the River near Childs. X035-167, at 122-24; Tr. 12/15/14, at

150 (Fuller). Mr. Randall testified that the Apache name for the River above Beasley Flat, Tu Cho Lii, means a big wide river, and below Beasley Flat, the River is named Tu Cho Linii, meaning a “real big river, swift and hard – a lot more water and it moves faster.” Tr. 2/20/15 First Corrected, at 1753-54; 1782-84.

The Day brothers continued through this Segment, successfully trapping in their small boat on their way to Yuma to sell their skins. X001-18. The four hunters who had started from the Verde Valley on their way to Mesa in 1910, in a boat loaded with guns and supplies, successfully navigated through this Segment. X035-164. Mr. and Mrs. Stevens, having boated through Segment 2 in their wooden rowboat during spring runoff in 1917, ended their trip before Brown Springs Falls/Verde Falls. X017-121. Fred Fogel and Karl Gireaux, having launched their flat-bottomed boat at Clarkdale in 1931 in Segment 2, passed through this Segment on their way down the River finding “the river becomes easier to navigate the farther south they go and that they are thoroughly enjoying the trip.” X017-125.

Modern (non-natural) USGS data at the near Camp Verde gage indicate that the segment's median flow rate is 188 cfs, and that 90% of the time the flow is at least 82. Tr. 12/15/14, at 197-98 (Fuller); X053-174, at 159. Mr. Hjalmarson calculated that the natural median flow at this gage would have been 272 cfs, with a corresponding thalweg depth of 3.1 feet. X015-Appendix G, at 73, 78. Mr. Burtell calculated that the natural median flow at this gage would have been 360 cfs, with a mean depth of 1.9 feet. X009, Table 5. It is boatable by canoes 99% of the time (360 days) and by flatboats 80% (290 days). Tr. 12/15/14, at 222-23 (Fuller); X035-167, at 184-86.

The only rapid where lining or dragging around is often done is Verde Falls in this Segment. Mr. Farmer sometimes runs the Falls and sometimes drags his boat around it 15-20 feet, which takes about ten minutes. Tr. 12/16/14, at 391-92, 408 (Farmer). An experienced boater has no problem with rapids here. *Id.* at 408. Mr. Fuller has never run the falls at low water and described the easy drag as follows: “you pull over, you pull your boat 20, maybe 30 feet, drop it back in the water, and you’re on your way again.” Tr. 12/15/14, at 96-97 (Fuller). Mr. Dimock testified that he had run Verde Falls and that if he had a historical boat he might line Verde falls, which would not require unloading the boat. Tr. 3/31/15, at 2819, 2883-84 (Dimock).

Thousands of people boat this reach, throughout the year, in many different kinds of boats, including commercial operators. Tr. 12/15/14, at 92-99 (Fuller); X035-167, at 59-64. Mr. Fuller has paddled from Beasley Flat to Childs at below 300 cfs mostly, and has done this Segment a couple of dozen times. Tr. 12/15/14, at 95-96, 249 (Fuller). Mr. Farmer has boated this Segment with 400 lbs of gear in a canoe, at 60 cfs (in June) and as high as 6,000 cfs in early February. At 60 cfs, the depth is one foot but holes could be 20 feet deep. Tr. 12/16/14, at 404-07 (Farmer).

The USFS has a voluntary sign-in for boaters for this Segment and recorded 863 boaters in 728 boats

(canoes, inflatable kayaks, rafts, catarafts, and kayaks) from Beasley Flat to Horseshoe Dam between January 2001 to March 2005. Tr. 12/15/14, at 248-49 (Fuller); X035-167, at 208. Although Mr. Fuller has boated this Segment a couple of dozen times, he has never signed in, and there are undoubtedly many more boaters who boat this reach than are recorded by the USFS. *Id.* Mr. Farmer suggests the USFS guide, submitted as evidence X001-29, for accurate information about boating this reach. Tr. 12/17/14, at 572.

E. Segment 4: Childs to Needle Rock.

Segment 4 (Childs to Needle Rock [70 RM]) has a pool and riffle pattern, is contained mainly in a bedrock canyon and has two major post-statehood dams. Tr. 12/15/14, at 97-113 (Fuller); X035-167, at 65-70. It has 29 Class II rapids (4% of the segment). Land ownership is mainly National Forest. *Id.* Its major tributaries are Fossil Creek, East Verde River, and some small streams. There were no major diversions at the time of statehood, but Horseshoe and Bartlett dams were built post-statehood in this Segment, so flow rates are now controlled. *Id.* This stretch of River is also part of the National Wild and Scenic River designation, some of it in the Scenic stretch and some in the Wild stretch. X056-189, at 6. Access to the River is difficult because it is located in rough terrain that is difficult to access, but the River has very reliable and sufficient flows for boating. X035-167, at 187-189.

Surveys in T4N R7E listed depths of three, four and five feet in this Segment. X059, at 29. The Day brothers continued their fifth trip down the Verde in their small boat, trapping along the way to Yuma in 1891. X001-18. The four hunters who started in the Verde Valley wrecked on a rock at about Red Creek (RM 130) or at the East Verde River, having successfully navigated the “whitewater reach.” X035-164; Tr. 12/15/14, at 166-69 (Fuller); X035-167, at 137. Fred Fogel and Karl Gireaux continued down the River through this Segment, finding it easier the farther south they traveled. X017-125.

Upstream from Horseshoe Dam the channel is similar to its ordinary and natural condition; downstream of the Dam, there has been encroachment by vegetation from smaller floods and the altered flow. Tr. 12/15/14, at 223-25 (Fuller); X035-167, at 187-89. Modern (non-natural) USGS gage data at Tangle Creek show a median flow rate above the reservoirs of 240 cfs and 90% of the time it is greater than 123 cfs. Tr. 12/15/14, at 198 (Fuller); X053-174, at 159. Mr. Hjalmarson calculated that the median natural flow at this gage would have been 500 cfs, with a corresponding thalweg depth of over 3.5 feet. X015-Appendix G, at 71. Mr. Burtell calculated that at the East Verde gage, upstream from the Tangle Creek gage, the natural median flow would have been 440 cfs, with a corresponding mean depth of 1.8 feet. X009, Table 5. This Segment is boatable by canoes 99% of the time (360 days), and by flatboats 90% of the time (330 days). Tr. 12/15/14, at 224 (Fuller); X035-167, at 187, 189.

Small boats, canoes, kayaks, inflatables, and rafts boat this Segment recreationally and commercially. Tr. 12/15/14, at 97-113 (Fuller); X035-167, at 65-70. This is where John Colby ran commercial canoeing

trips. *See supra* III.A.2. The voluntary sign-in records kept by the USFS include this Segment. Mr. Farmer has boated the upper part of this Segment many times with a canoe loaded with equipment. Tr. 12/16/14, at 410-12. He has boated it at base flow in June at 125 cfs, and at much higher flows. *Id.* The depth can vary from greater than 20 feet to one foot in the boating channel. *Id.* Mr. Farmer, along with Mr. Fuller, has seen many other boaters in this Segment, from families with boats full of people and equipment and kids sitting on top, to fishing buddies on canoe trips. *Id.* at 413; Tr. 12/15/14, at 105-107 (Fuller). The Arizona Rivers and Streams Guide describes Childs to Horseshoe Reservoir (35 miles) (federally designated Wild River area), as having a short big-water season in the spring, and offering low-water almost year round. X001-2, at 166.

F. Segment 5: Needle Rock to the Salt River Confluence.

Segment 5 (from Needle Rock to the Salt River confluence [19.7 RM]) is in an alluvial valley and has a pool and riffle pattern. Tr. 12/15/14, at 113-16 (Fuller); X035-167, at 71-76. Segment 5 has one Class II rapid. *Id.* Land ownership is mostly National Forest and Indian Reservations. *Id.* Its major tributaries are Camp Creek and Sycamore Creek. There are some irrigation diversions and some aggregate mining. *Id.* This Segment is boatable throughout the year, depending on dam releases, by small boats, canoes, kayaks, inflatables, and rafts. *Id.* Boating is mainly recreational, but there has been some commercial boating. *Id.* at 225 (Fuller). In a prior pleading, ASLD offered the opinion that the upstream boundary of this Segment was Granite Reef Dam. Tr. 12/15/14, at 50 (Fuller). After further consideration, however, Mr. Fuller determined that the upstream boundary was more appropriately Needle Rock because the geomorphic character of the River changes at this point. Tr. 12/15/14, at 97-98 (Fuller). The channel in this Segment is compound, with a defined low-flow channel where boating occurs. Tr. 12/15/14, at 111-16; 225 (Fuller); X035-167, at 72-76, 193. This Segment is not braided – there are some areas where there are multiple channels, but not to the extent that he would consider the River braided. Tr. 12/15/14, at 28 (Fuller).

The U.S. Surgeon General remarked in 1870 that the “river is thus well confined and its bottom lands free from marshes. The strip of easily irrigated bottom land is very narrow, yet much good soil could be reclaimed by irrigation from large acequias.” Tr. 12/15/14, at 130-31; X035-167, at 90. Martha Summerhayes, wife of an army officer stationed at Fort McDowell described in 1877 how she and others at the Fort swam in the River daily in the summer heat. Thick clumps of mesquite trees provided their dressing room. 031, at 3-13; X017-99, at 207-08. Dan Huntington, upon arrival at Fort McDowell in 1885, found:

[t]hat the river was full of beaver dams with plenty of fish behind dams where the water was deep. Game was so plentiful we did not bother with it. We noticed that most of the officers' wives were out shooting quail, doves and rabbits. The Cavalrymen would take their horses to have a swim. They certainly enjoyed it as they came out of the deep water and rolled around on the sand and kicked up as playful as a kitten.

X035-146, at 7; X053-174, at 96.

Federal land surveys of the Fort McDowell reach at T3N R7E show average depths of between 2.5 and 4 feet, with a 250-foot wide main channel. X059, at 29. Government surveyor Philip Contzen noted in 1902 that the land in T3N, R7E “is well watered by the Verde River, which carries an abundance of water, making irrigation successful...There are quite a number of settlers in the Verde Valley who have made substantial improvements and have land under cultivation.” X002, at 29. Robert Farmer, surveying in T3N, R7E in February 1911, recorded the depths of the River's main channel as “very low,” from two to four feet, and he remarked that it was “impractical to [survey] up the channel on account of high water.” X054-38; 032, at 66-69; X002, at 27-29. Mr. Farmer meandered both banks in T2N R7E in 1911. X002, at 27.

Soldiers at the Fort rafted across the River in 1868. Tr. 12/15/14, at 153 (Fuller); X035-167, at 127. In 1885, a ferry boat was upset at McDowell but no lives were lost. X017-134. The presence of a ferry indicates that the River was deep and wide enough to impede crossing on foot or horseback and big enough for larger boats. X035-160, Gila Tr. 6/16/14, at 34 (Fuller). Other than these two accounts, both of which involved crossing the River rather than boating down it, no historical boater had difficulty in this Segment.

Beginning in this Segment, in February 1883 North Willcox and Dr. G.E. Andrews, both of Fort McDowell, boated down the Verde from the Fort to the Salt River Valley Canal in a canvas skiff and had a pleasant trip except for some rain while they were camping. X017-122. They experienced no boating difficulties. *Id.* In December 1888, Major Spaulding and Captain Hatfield canoed from Fort McDowell, duck hunting as they traveled to Phoenix. After successfully navigating the Verde perhaps for military travel, the Major accidentally shot himself dead while lifting the boat over the Mesa Dam, on the Salt River. X017-123. The account does not mention any boating difficulties. *Id.* The Day brothers continued on their fifth trapping trip from Camp Verde and successfully passed through this Segment on their way to Yuma. X001-18. Fogel and Gireaux continued trapping through part of this Segment in their flatboat, until they exited at the Fort McDowell to Payson road. 031, at 3-21. Wood from the abandoned Fort McDowell was planned to be floated down the Verde and Salt to Mesa; when about 300 cords had been unloaded in the Verde, the plan was abandoned because of the threatened danger to the downstream Arizona Dam. X035-151.

The historical USGS gage at McDowell recorded non-natural average annual flows from 1905 to 1909 of 781 cfs; median flows are not available. 031, at 7-20. Ninety percent of the time the flow rate is greater than 123 cfs. Tr. 12/15/14, at 225 (Fuller); X035-167, at 190. Mr. Hjalmarson calculated that the natural median flow would have been 558 cfs at the Bartlett gage, which corresponds to a thalweg depth of 4.0 feet. X015-Appendix G, at 73, 78. Mr. Burtell calculated that the natural median flow would have been 437, which would correspond to a mean depth of 1.5 feet. This Segment is boatable by canoes 99% of the

time (360 days) and by flatboats 90% (330 days). Tr. 12/15/14, at 225-26 (Fuller); X035-167, at 190, 192.

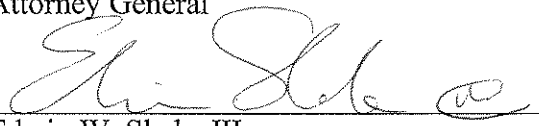
Significant modern boating occurs in this Segment throughout the year below Bartell dam, and through the Fort McDowell Nation land when permitted by the Tribe. Tr. 12/15/14, at 112-116 (Fuller). Mr. Fuller has boated this Segment. *Id.* Mr. Colby ran commercial trips on this Segment in canoes. *See supra* III.A.2. Mr. Farmer testified to boating this Segment in canoes in high school and said he encountered only one rapid. Tr. 12/16/14, at 415 (Farmer). Because natural flooding no longer occurs due to the dam controls, Mr. Farmer testified that the brush can be thicker, but he has had no trouble finding the boating channel. *Id.* at 414. *The Arizona Rivers and Streams Guide* describes both the stretch from Horseshoe Reservoir to Bartlett Lake (20 miles) and from Bartlett Dam to the Salt (24 miles) (both sections depended on dam releases) as popular with boaters. X001-2; X035-155, at 121; X035-162, at 118.

VI. Conclusion.

For the reasons stated herein, the Commission should find that the Verde River, Segments 1 through 5, was both navigated and susceptible to navigation in its natural and ordinary condition.

DATED: September 28, 2015.

MARK BRNOVICH
Attorney General

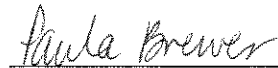


Edwin W. Slade, III
Laurie A. Hachtel
Assistant Attorneys General
Attorneys for the Arizona State Land Dept.

ORIGINAL AND SEVEN COPIES of the foregoing hand-delivered for filing this 28th day of September, 2015, to:

Arizona Navigable Stream Adjudication Commission
1700 W. Washington
Suite B-54
Phoenix, AZ 85007

A COPY in pdf format of the foregoing e-mailed with delivery receipt this 28th day of September, 2015, to each party listed on the ANSAC website, <http://www.ansac.az.gov/parties.asp>, with "SERVICE OF ANSAC DOCUMENT, No. 04-009-NAV (Verde)" written in the subject line.



Paula Brewer
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