



The Big Chino Pipeline: Fact vs. Fiction

Countering 12 water claims promoted by pipeline proponents

The City of Prescott and Town of Prescott Valley continue with plans to construct a pipeline that would transport from 8,000 to 11,500 acre-feet of water per year from the Big Chino Sub-basin of the Verde River Watershed into the Prescott Active Management Area. To garner support for their project, the municipalities and other proponents have made a number of unsupportable claims. The following are some of these claims and the facts you need to know.

Claim #1: State water laws will protect the Verde River.

FACT: There are no Arizona laws that require maintaining a minimum flow in a river. Over the years, many rivers in Arizona have been severely depleted; the Salt River is one notable example. The Verde is one of the last continuous flowing rivers in the state, and citizens must fight for its protection. At the heart of the problem is the fact that Arizona statutes do not recognize the physical relationship between surface water and groundwater. Predictably, conflicts arise when withdrawal of groundwater reduces surface water flow. State laws concerning water rights must be revised to reflect the reality of the connection between groundwater and surface water.

Claim #2: No scientific studies prove that pumping will impact the Verde River.

FACT: The US Geological Survey (USGS) and others have performed descriptive studies of the hydrogeology of the upper and middle Verde. These studies were designed to show the relationship between the aquifer and the river and not to directly answer the question of whether pumping of a specific amount at a particular location impacts the river. However, the reports do show that the only outlet for Big Chino groundwater is the Verde River and that 80 to 86 percent of the water in the upper Verde comes from the Big Chino Sub-basin. Consequently, these independent studies lead to the scientific conclusion that the Big Chino pipeline project will eventually reduce the baseflow of the upper Verde.

At a presentation to the Verde Watershed Association on June 21, 2007, John Hoffman, Director of the US Geological Survey Arizona Water Science Center and an author of the report Hydrogeology of the Upper and Middle Verde River Watersheds, Central Arizona (2006), asked and answered the following question: "Will groundwater pumpage from the Big Chino Sub-basin reduce groundwater outflow from the Big Chino Sub-basin to the Verde River? And the answer of course is 'Yes.' It is not a matter of if. It is just a matter of when."

Claim #3: A geologic barrier known as the "clay plug" separates the upper part of the Big Chino aquifer from the lower part of the aquifer and from the Verde River. This feature severely restricts groundwater flow, similar to kinking a hose. Thus pumping at the Big Chino Water Ranch won't impact the Verde headwaters.

FACT: The clay plug “theory” was discredited years ago by independent government scientists who have studied the hydrogeology. What exists is a deposit of fine-grained materials that extends into a portion of the aquifer. These fine-grained materials do not create two separate aquifers and do not prevent pumping in the upper portion of the aquifer from impacting the rest of the basin. Gravity causes water to flow slowly through the fine-grained deposits and more rapidly under and around them. If the fine-grained deposits were actually a barrier, there would be a lake or wetland in the upper portion of the basin.

Claim #4: Farmers have pumped groundwater from the Big Chino Water Ranch area for decades without impacting the Verde River or causing notable declines in the local groundwater table.

FACT: The relationship between early farming and upper Verde River flow is not known because river flow was not measured until the USGS gauge at Paulden was installed in 1964. Anecdotes and hearsay about the amount of irrigation and the Verde River flow are unreliable. We do know that crop irrigation began to decline in the 1970s, and that this decline correlates with an increase in upper Verde baseflow as measured at the Paulden gauge. This correlation is an indication that withdrawal of irrigation water affected the Verde River

Claim #5: The municipalities have spent millions of dollars to locate the pumping site farther from the River’s headwaters than initially considered and this will avoid impacting the Verde baseflow.

FACT: Pumping at a greater distance from the river will delay, but not eliminate the reduction in baseflow. Delaying an inevitable impact is not mitigation and is not acceptable. Furthermore, if the municipalities wait for measurable flow reduction, mitigation or reversal of water use will be very difficult and may no longer be possible, particularly if in the meantime, numerous subdivisions that depend on the water have already been built.

Claim #6: The amount of water that will be imported is only a small fraction of the amount of water in the Big Chino aquifer.

FACT: Investigators have estimated the volume of water in the Big Chino to range from about 6 to 15 million acre-feet. This is large in comparison to the 8,000 to 11,500 acre-feet per year that the two municipalities intend to withdraw; however, it is the amount of natural recharge and not the volume of the aquifer that determines the amount of water that can be withdrawn before the aquifer no longer provides flow to the river. When withdrawals exceed natural recharge, eventually there will be no outflow irrespective of the volume of the aquifer. Natural recharge has been estimated to be about 24,000 acre-feet per year. Consequently, the importation water for Prescott and Prescott Valley alone will use a substantial portion of the natural recharge and have a significant effect on the upper Verde River.

Claim #7: The municipalities have committed to monitoring the aquifer in the area and to respond promptly to any demonstrated impacts. This is part of their 140-year-long history of stewardship of the upper Verde River.

FACT: The municipalities have stated that a mitigation plan prior to construction is not necessary and may never be needed. It is important to realize that remediation after effects

are demonstrated may be impossible and would certainly be more difficult than actions taken before widespread development and use of the water occurs. A mitigation plan is needed prior to pumping. Monitoring is not mitigation.

It should be noted that the City of Prescott's 140-year-long history of so-called stewardship of the upper Verde River includes the mining of the Little Chino aquifer and the continued dewatering of Del Rio Springs. This dewatering has effectively eliminated about four miles of perennial stream flow to the upper Verde.

Claim #8: Any additional expenditure to obtain a "take" permit is unnecessary unless there were evidence that pumping impacts the flows in the upper Verde and those reductions adversely affect an endangered species.

FACT: The Endangered Species Act protects endangered species from "future take," meaning that if the best available science leads to the conclusion that an action will result in a future harm to listed species, the action can be covered by an Incidental Take Permit (ITP) or face injunction. An ITP requires that a Habitat Conservation Plan (HCP) be in place to provide for long-term survival of listed species. Without an HCP and ITP, or some other legally-enforceable mitigation plan, the pipeline is in jeopardy of being shut down by the courts following lengthy and expensive litigation. It is in the best interest of the municipalities and their citizens that a comprehensive mitigation plan or HCP and ITP are in place prior to construction of the pipeline.

Claim #9: The Big Chino aquifer contributes less than five percent of the River's flow. It is not a significant source of supply for the Verde Valley or Phoenix.

FACT: The five-percent figure refers to the middle section of the Verde River at the Camp Verde gage, and the five-percent figure represents total flow, including stormwater runoff. Private and government ecological organizations are particularly concerned with the upper portion of the River, the first 24 miles, and with baseflow, which is the stream flow when stormwater is absent. A river that loses its baseflow is a dry wash most of the time and is no longer a vibrant riparian habitat. The Big Chino Sub-basin provides 80 to 86 percent of the baseflow in the upper Verde River. Thus depleting the contribution from the Big Chino Sub-basin will leave little baseflow in the upper Verde River.

The Big Chino Sub-basin does provide a small fraction of the water supply for the Verde Valley or Phoenix area, but that statistic is not relevant to the environmental issue with which many are concerned

Claim #10: A conservation easement, which would prohibit residential development on lands associated with the BCWR purchase, is mitigation.

FACT: A conservation easement is certainly desirable and essential to prevent further harm to the River; however, it does not offset the municipalities' pumping. It merely prevents their detrimental activity from becoming worse. Furthermore, the claim that preventing residential development is needed clearly contradicts their claim that withdrawals at the Big Chino Water Ranch will not affect the Verde. It is absurd to claim that the partnering municipalities can remove water from the basin and not affect the Verde, but that residential wells at the same location would!

Claim #11. The Big Chino Project is essential to the economic vitality of Prescott and Prescott Valley. Without this project, the two municipalities will lose billions of dollars of revenue. If we don't grow the population, the communities will die.

FACT: The need to grow a community's population or have it suffer death is contrary to economic theory and fact. Economic growth and economic vitality must be distinguished from population growth. For instance, during the past quarter century, per capita personal income in the fastest growing ten percent of US counties was slower than per capita personal income growth in the slowest growing ten percent of US counties, all of which had substantial population declines over that period. It should also be noted that the municipalities of Prescott and Prescott Valley have enough water in their portfolios to continue population growth for many years, such that there is enough time to properly evaluate and resolve the issues surrounding the Big Chino pipeline.

In September, the Central Arizona Partnership released the Elliot D. Pollack and Company study on the financial impacts of the Big Chino water pipeline. Pollack's report, funded by the development group, maintained that a shutdown in growth in 2014 would cause the two municipalities to lose more than \$15 billion in economic activity over the next 25 years. But three independent economic experts have reviewed the study, and each has questioned both the statistical foundation of the study and its conclusions. Indeed, each of these experts points out a large number of major analytical shortcomings in the report and concludes that its conclusions are misleading and worthless as a basis for decision-making.

One major and obvious shortcoming is the study's presentation of the revenue side of the pipeline project, but not the costs associated with the growth. The Courier questioned Pollack on this deficiency and reported that Pollack said the study makes it clear that it is a "gross impact study," which looks "at the revenue side and not the cost side." While he suggested that a cost analysis should take place, Pollack said, "That was beyond the purview of the study."

Claim #12: The Big Chino pipeline project presents no financial risk to current water users.

FACT: The pipeline project has the potential for generating taxpayer risk in at least three areas. One risk concerns obtaining payments through development impact fees. Prescott has proposed that 80% of the project will be funded by impact fees and 20% by ratepayers. However, if annexations and home or commercial development do not occur or do not occur in a timely manner, impact fees will not be available and taxpayers will have to foot the bill. In addition to placing current ratepayers at financial risk, this need for impact fees will place pressure on Prescott to agree to annexations that are bad deals for the city.

A second risk concerns ongoing litigation. If the pipeline is built before current lawsuits are resolved, there is a risk that litigation would delay, prematurely halt, or constrain the flow of water to Prescott and Prescott Valley. If Prescott funded the pipeline, taxpayers would be obligated to pay for an unused pipeline. If the pipeline were financed with or by a private company, it is unlikely they would be willing to assume the litigation risk and more likely would require taxpayer guarantees.

There is a third risk, which is related to the second. If after pumping begins, it is determined to have adversely affected the Verde River, the municipalities may be required to mitigate those effects. The cost of this mitigation could be a huge addition to the \$200 million project price tag. If mitigation costs are incurred after properties are developed, state law will not allow those costs to be paid through impact fees. Under those circumstances, taxpayers or ratepayers would have to pay the bill for mitigation.

In summary, the financing of the pipeline has the potential for considerable taxpayer risk. These risks should not be borne by taxpayers, but rather by the developers who stand to profit considerably from the availability of assured municipal water. The financing arrangement for the pipeline needs to be described early and transparently and then carefully scrutinized by taxpayers.

CWAG and You:

As a nonprofit organization of volunteers whose sole mission is the achievement of a sustainable water future, CWAG works to present objective information to help the public understand our complex water issues and make wise choices. We will continue to offer our members and the interested public materials to help them separate fact from fiction backed by scientific studies from impartial agencies such as the USGS, Arizona Department of Water Resources, and Bureau of Reclamation. We encourage the public to continue following these issues, ask questions of us, our elected officials and be a voice with CWAG in maintaining a perennial flow in the Verde River. Please visit our web site at www.cwagaz.org for additional information.

References:

References for the technical issues presented in this document are provided below along with the Fact Numbers to which they apply. These references can be found at www.cwagaz.org with the exception of Corkhill, Frank, 2007. Our web site includes other useful documents related to the Big Chino and Verde River.

Blasch et al., 2006. Hydrogeology of the Upper and Middle Verde River Watersheds, Central Arizona. US Geological Survey. **Fact #s 2, 3, 6 and 9**

Ewing D. B., J.C. Osterberg, W.R. Talbot, 1994. Groundwater study of the Big Chino Valley: Technical Report, United States Bureau of Reclamation. **Fact #s 2, 3, and 6**

ADWR, 2000. Verde River Watershed study: Arizona Department of Water Resources. **Fact #6**

Wirt et al., 2005. Geologic Framework of Aquifer Units and Ground-Water Flowpaths, Verde River Headwaters, North Central Arizona. US Geological Survey. **Fact #2**

Corkhill, Frank, 2007. Groundwater Storage Estimates in the Big Chino Sub-Basin. Arizona Department of Water Resources. **Fact #6**

Elliott D. Pollack & Company, 2008. Big Chino Water Ranch Project Impact Analysis, Prescott & Prescott Valley, Arizona" **Fact #11**

Danforth et al., 2008. Comments on "Big Chino Water Ranch Project Impact Analysis, Prescott and Prescott Valley, Arizona" **Fact #11**

Danforth, John. January 2009, "Questioning the Economic Case for the Big Chino Pipeline." **Fact #11**

Those interested in learning more about local water issues and how our citizen-based group is working with area officials are encouraged to visit our web site at www.cwagAZ.org. Please join with us by attending our meeting held on the second Saturday of each month, 10am-Noon at the Granite Peak Unitarian Universalist Congregation, 882 Sunset Ave in Prescott.