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The hydrology science plan (scope of work) developed by the USGS in cooperation with the Partnership offers a carefully designed plan to (1) fulfill the requirements of Title II and (2) to optimize the information and tools that water managers need for their decisions affecting long-term sustainability of the Verde River Basin's water resources.

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VERDE RIVER BASIN PARTNERSHIP HISTORY, CURRENT STATUS, AND FUNDING CAMPAIGN

The Verde River Basin Partnership (Partnership) was authorized by federal legislation under Title II of Public Law No. 109-110, the Northern Arizona Land Exchange, Title II and Verde River Basin Partnership Act of 2005 (see http://www.verderiverbasinpartnership.org/). The legislation was passed by Congress and signed into law by the President in November 2005. Specifying hydrologic analysis by the U.S. Geological Survey (USGS), it mandates the identification of the water resources within the Verde River Basin. Title II documents the Congress's recognition that, in the face of a burgeoning population and the potential impact of a warmer and drier climate in the southwestern United States, the water resources of the Verde River Basin are threatened as never before. It also documents Congress's recognition of the importance of critical new scientific work to guide water-management decisions in the Verde River Basin.

Congress created the Partnership in specific response to an intense outpouring of public concern expressed about the long-term health of the Verde Basin water resources during a series of meetings held by Senator John McCain on the Northern Arizona Land Exchange. The concern expressed by thousands of citizens over this issue was recognized by Senator McCain in his Cottonwood Journal (12/10/2003) statement: *"I have never been involved with a more complex issue or more emotional issue than this for the State."* Senator McCain responded by creating and adding Title II to the Northern Arizona Land Exchange legislation. Title II to date is an unfunded promise to the citizens of Arizona to determine the extent and sustainability of Verde River Basin water resources.

Why is the Partnership's mandate important? The Verde Basin's surface-water resources are critically connected to its groundwater supplies, local economies, citizen quality of life, and private property values. They are also a visual reminder of the condition of groundwater supplies the eye cannot see. Besides providing surface and groundwater supplies presently to about 150,000 Verde River Basin residents (or a substantially larger number if the Town of Prescott Valley adds imported Big Chino Valley groundwater to its portfolio), wildlife, riparian habitat, and our national forests, the Verde River Basin contributes directly to the water delivered to more than 2.7 million people in the Phoenix area. In an Arizona Republic Article (12/2003) Arizona Department of Water Resources (ADWR) Director Herb Guenther asked and answered: *"Will there be an overdraft situation in the Verde River Basin if we continue the way we are? YES."* Doubtless all communities within the Verde Basin agree that overdraft—drawing more water from surface or groundwater than nature can replenish—will inevitably diminish both the economy and the lifestyle of the Verde River Basin.

Title II calls for *"...a collaborative and science-based water resource planning and management partnership for the Verde River Basin in the State of Ari-*

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zona, consisting of members that represent (1) Federal, State, and local agencies; and (2) economic, environmental, and community water interests in the Verde River Basin". Accordingly, the Partnership sought membership from the counties and incorporated cities and towns within the Verde River Basin, Native American Nations within the basin, relevant state and federal agencies, the Salt River Project, and numerous agricultural, economic, environmental, and community groups active within the Verde River Basin. With the exception of Yavapai County and the Prescott-area city and towns, the Partnership effectively assembled the broad stakeholder representation mandated in Title II.

As far back as 2006, the City of Prescott and the Towns of Prescott Valley, Chino Valley, and Dewey-Humboldt declined to participate in the Partnership. Yavapai County joined the Partnership conditionally for six months but then withdrew consequent to the negative votes of two of the three County Supervisors. The continuing demands of the Prescott-area governments and Yavapai County were: (1) that voting representation must exclude members other than elected officials of the County and the incorporated communities within the basin; and (2) that the voting power of the incorporated communities must be proportional to their respective populations, assuring that the representatives of the Prescott-area city and towns would have more than double the voting power of their counterparts in the Verde Valley.

Attempting to ameliorate the Prescott-area concerns that *"economic, environmental, and community water interests"* might have disproportionate voting strength, the Partnership revised its structure. The economic, environmental, and community water interest groups, representing

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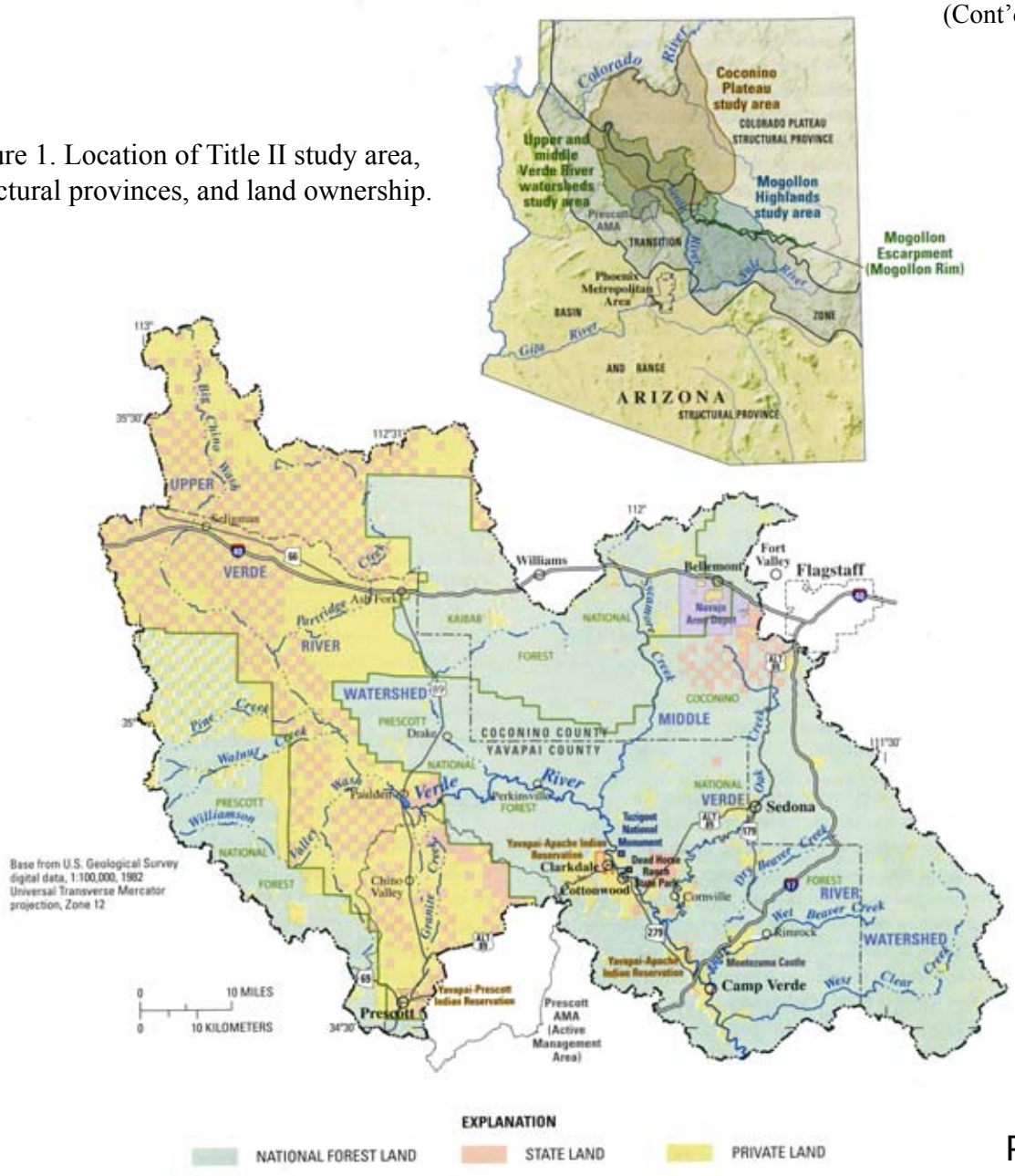

Figure 1. Location of Title II study area, structural provinces, and land ownership.

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about twenty member groups, were aggregated into five caucuses—Agricultural Caucus, Economic Development Caucus, National Environmental Groups Caucus, Grass-roots Environmental Groups Caucus, and Unincorporated/ Community Water Interests Caucus—each of which has a single vote. In addition, Partnership representatives met with Prescott-area town and city councils in an attempt to promote reconciliation. All efforts failed; the Prescott-area jurisdictions have so far continued to reject membership in the Partnership.

Nevertheless, during 2006, the Partnership formed its committees, developed its bylaws, and developed its initial scope of work with the USGS. Further, in spite of the Prescott-area objections, Senator McCain requested President Bush to include funding for the Partnership's work in the administration budget for fiscal years 2008 and 2009. In neither year did the administration honor the Senator's request.

An updated scope of work was developed with the USGS in 2009 (see Science Plan at http://www.verderiverbasinpartnership.org/) to build upon work that has been completed since 2006 by the USGS in cooperation with the Yavapai County Water Advisory Committee. The revised plan is more strongly directed to providing an enhanced groundwater model for the upper and middle Verde watersheds (Figure 1) that will serve as a useful predictive tool for the guidance of water-management decisions. It promises a major advance in understanding the potential as well as the limitations of the Verde River Basin water resources.

In October, 2009, the Partnership sent letters to the members of the Arizona federal congressional delegation requesting their support for the allocation of $5.4 million for the four years of investigation and reporting specified in Title II. $5.2 million is requested to fund the USGS work in support of the Partnership under Title II, and $200,000 is requested for the Partnership's reporting and administrative costs.

The proposed work will allow the USGS in conjunction with the Partnership to conduct the congressionally mandated hydrologic studies including:

- Complete a preliminary water-budget analysis of the Verde Valley.
- Analyze the potential long-term consequences of various water use scenarios on groundwater levels and Verde River Basin flows.
- Prepare a preliminary report that sets forth the USGS findings and the recommendations of the Partnership regarding the long-term available water supply.
- Create the water resource studies, hydrologic models, surface and groundwater monitoring networks, and other analytical tools helpful in the identification of long-term water supply management options within the Verde River Basin.
- Submit a final report to the Partnership and, via the Partnership, to the Secretary of Agriculture and the Governor of Arizona.

It's evident that the precise inter-relations between groundwater and surface water throughout the Verde River Basin are not well understood. Thus, critical relationships that clarify the strengths and weaknesses of our water resources and enable evaluation of the consequences of current and future water-management decisions are poorly known. The hydrology science plan (scope of work) developed by the USGS in cooperation with the Partnership offers a carefully designed plan to (1) fulfill the requirements of Title II and (2) to optimize the information and tools that water managers need for their decisions affecting long-term sustainability of the Verde River Basin's water resources. Because sound water-management decisions in the Verde River Basin are so critical to the long-term success of our communities, the Partnership has reinvigorated its effort, including initiation of a grass-roots citizen's campaign, in support of federal appropriation for the USGS and Partnership under Title II beginning in fiscal year 2011 (October 1, 2010).

Prepared by Ed Wolfe

Yavapai County Water Advisory Committee (WAC) Update (January '10)

The Yavapai County Water Advisory Committee (WAC) is continuing to collaborate and make progress on priority projects. The WAC has issued a summary report for 2009 and priorities for 2010. Included in the 2010 priorities is continuation of the he Central Yavapai Highlands Water Resource Management Study (CYHWRMS) with The Arizona department of Water Resources (ADWR) and U.S. Bureau of Reclamation. Additionally, NAU will continue with phase 3 of the surface water model for the Verde Valley system. The WAC is also anticipating completion of the USGS Northern Arizona Regional Groundwater Flow Model including some model runs with future pumping scenarios provided by the WAC.

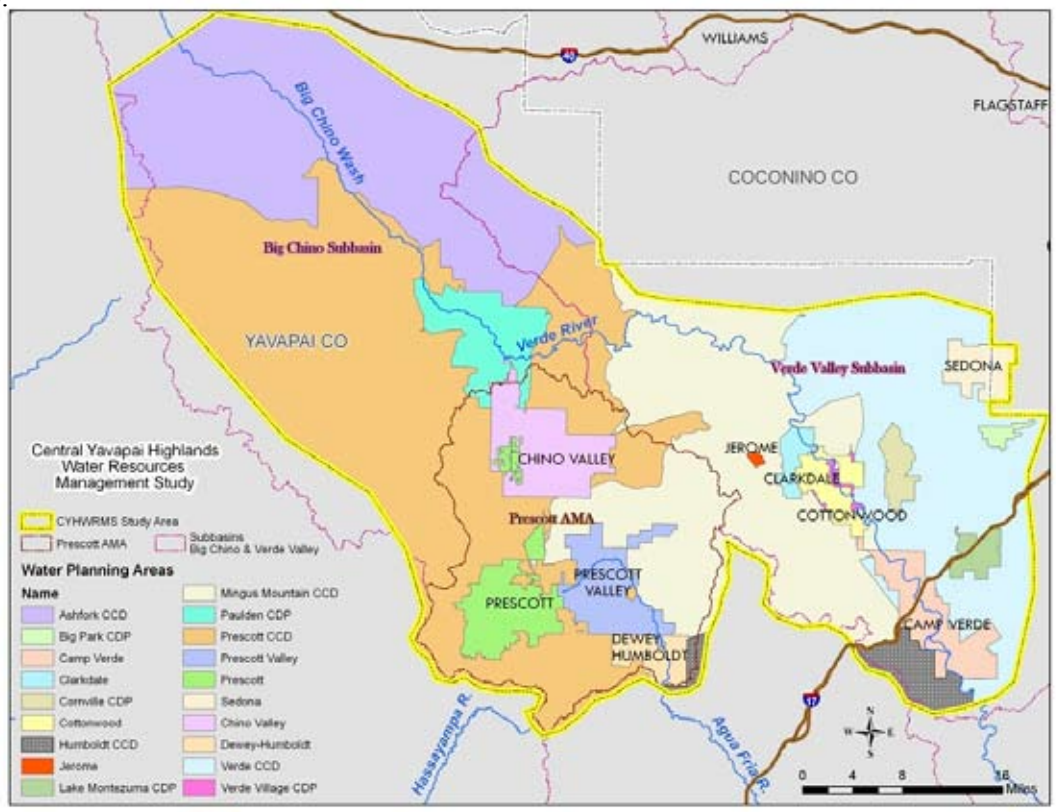
Except for some anticipated minor adjustments, the first phase of the CYHWRMS study has been completed and the Demand Analysis Table and supporting documentation are complete. The first phase indicates there is a problem of future unmet water demands in the study area (See Map). The Demand Analysis Table of Phase 1 was presented to the WAC in November 2009. The estimated future unmet demands in year 2050 for the study area range from about 45,000 acre feet per year to about 80,000 acre feet per year depending on the calculation method.

Phase 2 of the CYHWRMS is a water-supply assessment. The purpose of phase 2 is to locate and describe water resources that could be included in various water supply portfolios to meet different combination of 2050 water demands within the study area basins. This will be followed by development of alternatives to meet future demands (future study phases).

NAU graduate student Rob Ross is working on a Verde Valley surface water model. Currently, the third phase of the NAU project is ongoing, and a surface water model is being prepared for the river reach from the tunnel ditch to the Woods ditch return. The objectives are to: (1) collect data to support expansion of the pilot hydraulic model of the Verde River from Mile Zero to the Camp Verde gage, including the perennial tributaries and the major diversions and ditches; (2) simulate steady, low flow condition of the Middle and Upper Verde River without diversions, and; (3) simulate unsteady flow of the Middle and Upper Verde River with up to two major diversions constrained by new data collected in this study. The WAC is hopeful that the results of this work will be incorporated into the USGS regional groundwater model.

The Model Report for the USGS Northern Arizona Regional Groundwater Flow Model is in the review stages of the publication process. It is anticipated to be available to the public by late spring or summer 2010. The WAC has prepared a set of scenarios for the model that will investigate a range of groundwater pumping conditions in the Big Chino, Little Chino and Verde Valley areas. The results of these model runs should be available this year and will be reported to the WAC. Other future scenarios may be developed based on the results of the first model runs.

Please contact the WAC Coordinator, John Rasmussen, for more details on any of the WAC activities or if you would like to be added to the WAC email-recipient list (john.rasmussen@co.yavapai.az.us or 928-442-5199).



Verde River and Its Reservoirs—2009 and January 2010

The past year is a great illustration of what it is like to be located in a semi-arid desert environment. Some of the time you receive abundant precipitation and streamflow runoff, but most of the time it is relatively dry with little to no rainfall. The year started out well with near normal precipitation over the watershed through February and a subsequent Verde River flow at 168% of normal. However, much of that high streamflow can be attributed to an early season melt of the regional snowpack. Then typical of a desert climate it became dry. Recorded monthly watershed precipitation was below normal for the remaining months of the year, with May being the exception. Even the normally reliable summer precipitation was absent this year. The "monsoon" season turned out to be one of the driest in recorded history. With little rainfall as input into the system the recorded flow in the Verde River was below normal during every month after February. The March through December runoff was 35% of normal. Looking at the year in whole, the final flow total for the Verde River in 2009 was 221,500 acre-feet which is 56% of normal.

So how is the upcoming winter shaping up? Currently, the Verde watershed has seen well above normal precipitation during the month of January with the snowpack doing just as well. The historic precipitation event of January 18th through the 24th is primarily responsible for the current conditions. During this weeklong period, the Verde watershed received an astounding 6.31 inches of precipitation with Flagstaff measuring over 54 inches of new snow. Runoff into the Verde Reservoir system also saw significant increase due to the mid-month storms. On January 15th the combined Verde Reservoirs were only 33% full with about 192,000 acre-feet of available space. But, by February 1st the Verde system saw an increase of approximately 150,000 acre-feet with the combined reservoirs now standing at 84% full. In addition, the winter outlook for 2010 continues to be favorable. The major climate indicators are still in place for the Southwestern United States to receive additional precipitation this season. How much and where it will falls remains to be seen, but the National Weather Service and the major climate forecast centers are all suggesting there is still a good likelihood of above normal precipitation for the Verde region. ***Provided by Salt River Project***

Membership Form for the Verde Watershed Association

Government units	$ 100 per year
Business for profit	100 per year
Civic groups and non-profits	50 per year
Individuals	25 per year

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