Comprehensive Agreement No. 1

Twelfth Annual Report

FY25 (July 1, 2024 – June 30, 2025)



BIG CHINO SUB-BASIN
WATER MONITORING PROJECT
PRESCOTT - PRESCOTT VALLEY - SRP

Prepared by:







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Introduction

This twelfth annual report documents activities that occurred during the July 1, 2024, to June 30, 2025, timeframe for both the Monitoring and Modeling Committees (Committees) established by Comprehensive Agreement #1 (CA#1). This contractual agreement was scheduled to be an eight-year project with all Parties contributing a total of \$5.6 million dollars to monitor, model, and document the hydrology of the Big Chino Sub-basin and the headwaters of the Upper Verde River. Work on this project is now nearing completion, as the groundwater flow model is undergoing final refinement in anticipation of running the model for climate and development scenario evaluation.

Since late 2012, the Committees have worked to implement the Data Collection and Monitoring Plan (DCMP) for the purpose of developing an improved numerical groundwater flow model of the Big Chino Sub-basin as described in the exhibits attached to CA#1 (City Contract No. 2013-058). Monitoring continues for this project in an effort to better characterize the hydrology of the Big Chino Sub-basin and provide support for modeling efforts. Few monitoring contracts from the 2012-2020 timeframe remain active, but those that are active continue to yield additional high-quality data for the modeling project. Previous annual reports contain detailed information related to those earlier monitoring contracts and results. Only active monitoring contracts are presented in this annual report.

Groundwater modeling work commenced with Golder Associates Inc., now known as WSP USA, Inc. (WSP) on February 28,2017. The project is outlined in City Contract No. 2017-246 and its amendments. This portion of the project has been as intensive as the monitoring contracts. WSP finished the preliminary construction of the model on October 25, 2024, and the model was turned over to the Specialized Technical Consultants (STCs) for final refinement and model sensitivity analysis. The STCs were still working on the model as of the end of the FY25 period.

This Annual Report is comprised of the following sections:

- Background
- Summary of 2025 (FY25) Accomplishments
- Financial Summary
- Updates on monitoring and modeling activities required to fully execute CA#1 objectives.

Background

At a joint meeting on September 19, 2012, the Councils for the City of Prescott and the Town of Prescott Valley unanimously approved a comprehensive water monitoring and groundwater modeling agreement with Salt River Project and Salt River Valley Water Users' Association (SRP) regarding the Big Chino Water Ranch Project. The CA#1 agreement was authorized by SRP's Board on September 10, 2012.

CA#1 evolved over two years of discussions among Prescott, Prescott Valley, and SRP ("the Parties") to implement a plan consistent with the February 11, 2010, Agreement in Principle (AIP), City Contract No. 2010-128. The AIP resolved longstanding differences pertaining to water rights in the Big Chino Sub-basin, set forth a framework for future agreements, ended litigation between the Parties regarding plans to pump groundwater from the Big Chino Sub-basin as authorized by Arizona Revised Statutes - §45-555, and required the Communities to mitigate their impact from Big Chino Sub-basin water withdrawals on the flow in the Upper Verde River.

CA#1 established a program for enhanced water monitoring and modeling of groundwater flows in the Big Chino, confirmed rights to water arising from within the Prescott Active Management Area, and achieved a mutual agreement by all the Parties not to challenge those rights. CA#1 is a long-term commitment to construct, implement, and maintain the monitoring and modeling program, with the Parties sharing in the long-term cost.

The goals of the DCMP (Data Collection and Monitoring Plan), City Contract No. 2013-058, Exhibit 4 are to:

- Improve the understanding of the hydrologic relationship between groundwater and surface water in the Upper Verde River area.
- Act as an early warning system for the Upper Verde Springs.
- Collect data that may be used to distinguish groundwater pumping from the Big Chino Water Ranch from natural system variability and the impacts of groundwater pumping by others.
- Develop the ability to relate regional groundwater and surface water observations to future groundwater model calibration and verification.
- Determine if additional data are needed.
- Provide data for development of a numerical groundwater flow model.

The primary objective of the numerical groundwater flow model is to, "...develop a multilayered numerical groundwater flow model of the Big Chino Sub-basin and surrounding area that can inform resource managers about potential effects of groundwater pumping on the

potentiometric surface, evapotranspiration, stream baseflow, and spring discharge" (Source: City Contract No. 2013-058, Exhibit 3). Further, the specific objectives are as follows:

- Test the validity of alternative conceptual flow-system models using iterative recalibration of a specified region in the Northern Arizona Regional Groundwater Flow Model.
- Define and collect the hydrogeologic data needed to discern between ambiguous conceptual models tested during the first objective.
- Conduct a model-based analysis of stream and spring discharge depletion that may result from groundwater pumping at identified locations and specified amounts in the Big Chino Sub-basin and from changes in climate conditions.
- Determine the proportional impacts to groundwater levels and discharge to surface water sources caused by various sources of pumping in the Big Chino Sub-basin.
- Use the model to select three or more locations for monitoring wells that could be used in conjunction with the model, as alert or action indicators for alternative management of groundwater resources in the Big Chino Sub-basin.

Note these objectives were part of the original CA#1, Exhibit 3 where the USGS would be the lead investigator. The work was ultimately completed through a competitive process where WSP (then known as Golder) was selected.

Summary of FY25 Accomplishments

Meetings

Monthly meetings of the Monitoring and Modeling Committees continued. Those monthly meetings frequently included the Specialized Technical Consultants (STCs), (i.e., LRE Water and Matrix New World Engineering) to discuss the draft numerical groundwater flow model and updates and changes needed for model optimization. Additionally, the STCs met at least twice a month to discuss model refinement throughout that process. The dates of those meetings that included WSP and the STCs are specified below.

Meetings - WSP focused

The end of project meeting was held on November 7, 2024.

Meetings – STC-focused

• In early 2025, the STCs began working collaboratively on updating the model to prepare it for scenarios. See Memorandum dated February 12, 2025. The work tasks specified for the STCs project are shown in **Table 1**.

Table 1. Work tasks within the STC model refinement project

Item	Work Task							
1	Phase 1 – Change drain and drain return packages to stream package							
2	Phase 2 – Update model inputs							
3	Phase 3 – Calibration given changes to the model							
4	Monitoring program review and recommendations for adding or removing monitoring points							
5	Project communication and deliverables documenting the project							

Toward the end of the WSP modeling project the STCs were contracted to make several key changes to the model, including updating the model to include data collected since 2018, importing the model into the newest version of MODFLOW, assessing model sensitivity to observations and parameters, and recalibrating the model after inclusion of all changes. The STCs meet regularly to discuss their respective updates and confer on the work and achieve consensus on what needed to be done and how each task was to proceed. These modeler meetings were attended by the CA#1 technical representatives, but the meetings were run by and for the STCs as they moved through the project.

Meetings – Principal Focused

- On December 17, 2024, a meeting of the Principals identified in the CA#1 contract
 was held. Those Principals were City of Prescott Manager Dallin Kimble, Town of
 Prescott Valley Manager Gilbert Davidson, and SRP Acting Director of Water Rights
 and Contracts Lucas Shaw. Each Parties' Technical Representative and the Specialized
 Technical Consultants attended to address questions on the WSP model and discuss
 needed refinements and analyses needed to ensure that the model reflected realworld conditions.
- On February 20, 2025, a Principals meeting occurred. The Principals were again City
 of Prescott Manager Kimble, Town of Prescott Valley Manager Davidson, and SRP
 Director of Water Rights and Contracts Shaw. Each Parties' Technical Representative

attended in-person to address questions. Topics discussed included the project budget, the STCs proposal for model refinement, and broader scenarios to be modeled.

Executed Documents or Coordinated Activities

• City Contract No. 2017-246

Contract Allowance Authorization No. 4 – Hydrogeological Modeling Services for Big Chino Sub-basin Groundwater Flow Model dated January 31, 2023, was fully executed on May 4, 2023. Contract Allowance Authorization No. 5 was fully executed on July 2, 2024.

United States Geological Survey (USGS) JFA 24ZFJFA00411900

A fixed cost agreement with the USGS was executed for the continued monitoring of Williamson Valley Wash gauge (09502800) from October 1, 2023, through September 30, 2024.

- IGA December 19, 2024 with Arizona Department of Water Resources (ADWR)
 An IGA between the City (as fiduciary to the CA#1) and ADWR to continue the maintenance and monitoring of seven automated GWSI Index well sites.
- April Monitoring Field Trip

On April 23, 2025, the CA#1 technical representatives accompanied the SRP measurement services crew as they maintained flowtography sites in the Big Chino sub-basin.

Public Information

City of Prescott website:

https://www.prescott-az.gov/water-sewer/water-management/big-chino-water-ranch-project/

• Town of Prescott Valley website:

https://www.prescottvalley-az.gov/departments/utilities/water_resources/ pv_water_future.php

• SRP website:

https://www.watershedconnection.com/community+involvement/collaboration/big +chino+aquifer+monitoring+program that includes an overview of the CA#1 Monitoring and Modeling program and Flowtography, https://streamflow.watershedconnection.com/Content/pdf/SRPFlowtography.pdf

Reports Completed

• Big Chino Sub-basin Water Monitoring Project, July 1, 2024 – June 30, 2025 (Appendix I)

Financial Summary

In accordance with CA#1, the Parties funded the project with annual contributions to an account managed by the City of Prescott. All monies were paid into this project as of FY19.

The overall monitoring project account balance and FY25 expenditures as of June 30, 2025, were \$493,334.13 and \$105,299.09, respectively. Similarly, the overall modeling project account balance and FY25 expenditures as of June 30, 2025, were \$0.00 and \$72,545.27, respectively. Remaining CA#1 funds now reside in the monitoring portion of the budget. A detail of expenditures for FY25 only is shown in **Table 2**.

Table 2 – Contract Expenditures in FY25

Contractor Name, Number	Description	Amount
SRP, Contract No. 2022-154 (formerly 2014-001, 001A1, and 001A2)	New Stream Gages (Flowtography and weather equipment)	\$56,122.59
SRP, Contract No. 2022-154(formerly 2014-001)	Existing Stream Gage (Headwaters)	\$28,026.50
USGS, 24ZFJFA00411900	Surface Water Gauging (Williamson Valley Wash)	\$21,150.00
ADWR IGA Contract No. 2020-136	Installation of monitoring equipment and data collection	\$0
	Monitoring Total	\$ 105,299.09
Golder Associates (WSP), Contract No. 2017-246 with Amendment 1-8, and Contract Allowance Authorizations ¹	Modeling Contract	\$72,545.27
	Modeling Total	\$ 72,545.27
	Combined Total	\$177,844.36

Note: these expenditures are broken down by the original financial accounts structure that identified costs by the descriptions shown

^{1:} See section Executed Documents or Coordinated Activities for details.

As a result of overall project savings, funds are available for ongoing expenses in the near-term, subject to the Parties consensus for use. Future contributions may be necessary if additional work is planned and approved by the CA#1 Parties.

Monitoring Project – Equipment

Since the commencement of the project, the Parties and their STCs have worked with ADWR, USGS, Yavapai County Flood Control District, and others to develop a network of monitoring equipment in the Big Chino Sub-basin. This equipment, and the resulting data inventory, supports the development and testing of the groundwater flow model.

No new equipment was installed in FY25 except where needed to replace broken or missing equipment (as per Contract No. 2022-154) due to run-off events. Existing data collection types are listed below, and their basic details are shown in maps, figures, and tables in the appendices.

- Streamflow Monitoring See Appendix I for SRP's Big Chino Sub-basin Water Monitoring Project, July 1, 2024 – June 30, 2025, Annual Report for CA#1 Monitoring Committee. Additional references are made to this report's equipment in Figures 1-3 and Appendix II.
- Groundwater Level Monitoring See Figures 4-6 for figures showing locations of equipment and basic data and Appendix II for tabular information.
- Weather Monitoring See Figures 7-8 for locations and basic data, and Appendix II for tabular information.
- Crop Survey and Estimated Crop Water Use See Figures 9-1 to 9-5 for data plots.

Monitoring Project – Analytical Results and Data Collected

The results of data collection and data interpretation efforts are provided in separate reports and databases produced and managed by each responsible agency, as detailed below. One of the duties of the CA#1 Monitoring Committee is to coordinate and monitor these data collection and reporting efforts to produce results that are useful for the groundwater modeling and monitoring purposes outlined in CA#1. A brief explanation of active contracts or in-kind efforts are documented below.

Streamflow Monitoring – monitoring of streamflow in the Big Chino Sub-basin is conducted by SRP Aquifer Management and Data Analytics, and USGS under contract with the CA#1 project. The USGS also maintains other stream gauges in the area, but those efforts are outside of the CA#1 contract. Further, flow stage data is collected by Yavapai County Flood Control District (YCFCD) for their flood warning purposes, and several new locations were installed that were

deemed beneficial to both YCFCD and CA#1 needs. The Parties appreciated that YCFCD assumed the cost of these gauges.

Efforts by SRP

SRP Aquifer Management and Data Analytics collects streamflow data and other information at ten (10) locations in the Big Chino Sub-basin under the previously noted contract with the Parties. During July 2024-June 2025, flows were observed at some locations. The complete FY25 report is attached as **Appendix I**. The monitoring locations are shown in **Figure 1**, while the annual hydrographs are shown in **Figures 2** and **3**.

Efforts by USGS

The USGS operates several stream gauges in the Big Chino Sub-basin. The Williamson Valley Wash near Paulden, AZ gauge (station number 09502800, data plot shown in **Figure 10**) is funded through the CA#1 program (renewed annually), and the Verde River near Paulden, AZ gauge (station number 09503700, data plot shown in **Figure 10**) is funded through a separate program with SRP, the USFS, and the USGS (**Figure 1**). In 2017, USGS installed the Big Chino Wash at Paulden, AZ gauge (station number 09502830). Streamflow records for these sites are maintained by the USGS in their online database, https://waterdata.usgs.gov/az/nwis/current/?type=flow.

Site locations for the first two gauges are shown in **Figure 1**.

Efforts by YCFCD

YCFCD collects flow stage data at four (4) locations in the Big Chino Sub-basin: Ashfork Draw at I-40 (ID 3868), Partridge Creek at I-40 (ID 3873), Big Chino Wash at Highway 89 (ID 3828), and Walnut Creek at Walnut Creek Bridge (ID 410). The CA#1 Committee and SRP Aquifer Management and Data Analytics evaluated these sites for their usefulness in converting flood stage data into streamflow records. Of the listed sites only the Walnut Creek Bridge stage data has been used for calculating streamflow.

Groundwater Monitoring – Groundwater level monitoring efforts continued to be completed through traditional water level monitoring efforts (index lines and basin sweeps) by the Arizona Department of Water Resources (ADWR). ADWR annually collects water levels at select wells (Index lines) in the project area as part of their Basic Data program and basin-wide sweeps that are generally scheduled every five (5) years. The last "sweep" of the Big Chino Sub-basin occurred during February through May 2022. The Parties hold a contract with ADWR, IGA Contract No. 2024-3195IGA, for additional measurements at the new monitoring wells that were drilled as part of CA#1 (generally identified with "MW-4b to 4g").

<u>Climate and Weather Monitoring</u> – The CA#1 Parties reference other agencies that collect and make climate assessments. Those are listed in **Appendix II**, **Climate Monitoring**, **Publicly Accessible Repositories for Climate Data**. Efforts to track specific weather stations, both installed with CA#1 funds or in partnerships with other agencies, are listed in **Appendix II**, **Climate Monitoring**, **Existing Weather Stations in the Big Chino Sub-basin**. These weather stations are also shown in **Figures 7-8**. During FY25 the accumulated precipitation in the CA#1 study area ranged from approximately 4.9 inches to 13.6 inches.

<u>Crop Surveys and Estimated Crop Water Use</u> – The USGS and ADWR have had a longstanding contract to conduct crop surveys in what ADWR determines to be critical basins for observation. The Big Chino Sub-basin is not a location that is monitored every year. As such, the USGS, in contract with SRP, conducts crop surveys in the Big Chino Sub-basin. The results for 2024 are shown in **Table 3** and illustrated in **Figures 9-1 through 9-5**. Each year the CA#1 Parties collect the compiled data for inclusion in their annual report. The basic conclusions that can be drawn from 2024 data include:

- Approximately 29% of the irrigable lands that were surveyed were being irrigated in 2024 (1,216 cropped acres). See Table 3 below for a history of cropped acres and consumptive use since 2013.
- Approximately 2,732 acre-feet were calculated based on consumptive use to irrigate this year's cropping pattern.
- Approximately 2.2 acre-feet of water was used per crop acre.

Analysis of trends of measured cropped acres and consumptive water use since 2013 are shown in **Figure 11**. The overall trend has been downward over time.

Modeling Project

Groundwater flow modeling was identified in Exhibit 5 of the CA#1 contract to be an intensive 3-year, \$1.2 M effort to develop a defensible computerized groundwater flow model of the Big Chino Sub-basin. In early February of 2017, City Contract No. 2017-246 with WSP was executed.

Original cost estimates were generated based on 2007 costs which remained in place when the CA#1 contract was executed in 2012, and increased costs have been addressed in subsequent contract amendments. Other conditions addressed in the amendments include greater than expected volume of data sets, extended completion dates for monitoring contracts, increased review, increased coordination between WSP and the STCs, challenges related to attempting to develop and test three (3) draft conceptual models, and administrative changes needed as Golder was acquired by WSP.

Table 3 – 2024 Crop Survey (Acres Irrigated)

Crops	Upper Big Chino	Paulden	Walnut Creek	Williamson	Turkey Canyon	Total
ALFALFA	0	0	12	26	0	38
GRASS	0	54	46	538	0	638
GRAIN	0	0	0	0	272	272
PASTURE	0	0	22	161	0	183
SOD	0	60	0	0	0	60
VEGETABLE	0	25	0	0	0	25
Total Crop Acres	0	139	80	725	272	1216
No Crop Evident	1849	338	161	604	0	2952
Calculated Consumptive Use (acre-feet)	0	170	162	1680	720	2732

When the original contract is compared to the current contract amendment, the project timeline overall was extended by 4 years and required additional funding. The project with WSP ended on November 14, 2024. The model was subsequently turned over to the Parties' Specialized Technical Consultants for for final refinement and model sensitivity analysis.

Conclusions

Activities for the FY25 project year transitioned from WSP working to calibrate the Big Chino model to the STCs refining the model to assessing model uncertainty and addressing excessive model run times.

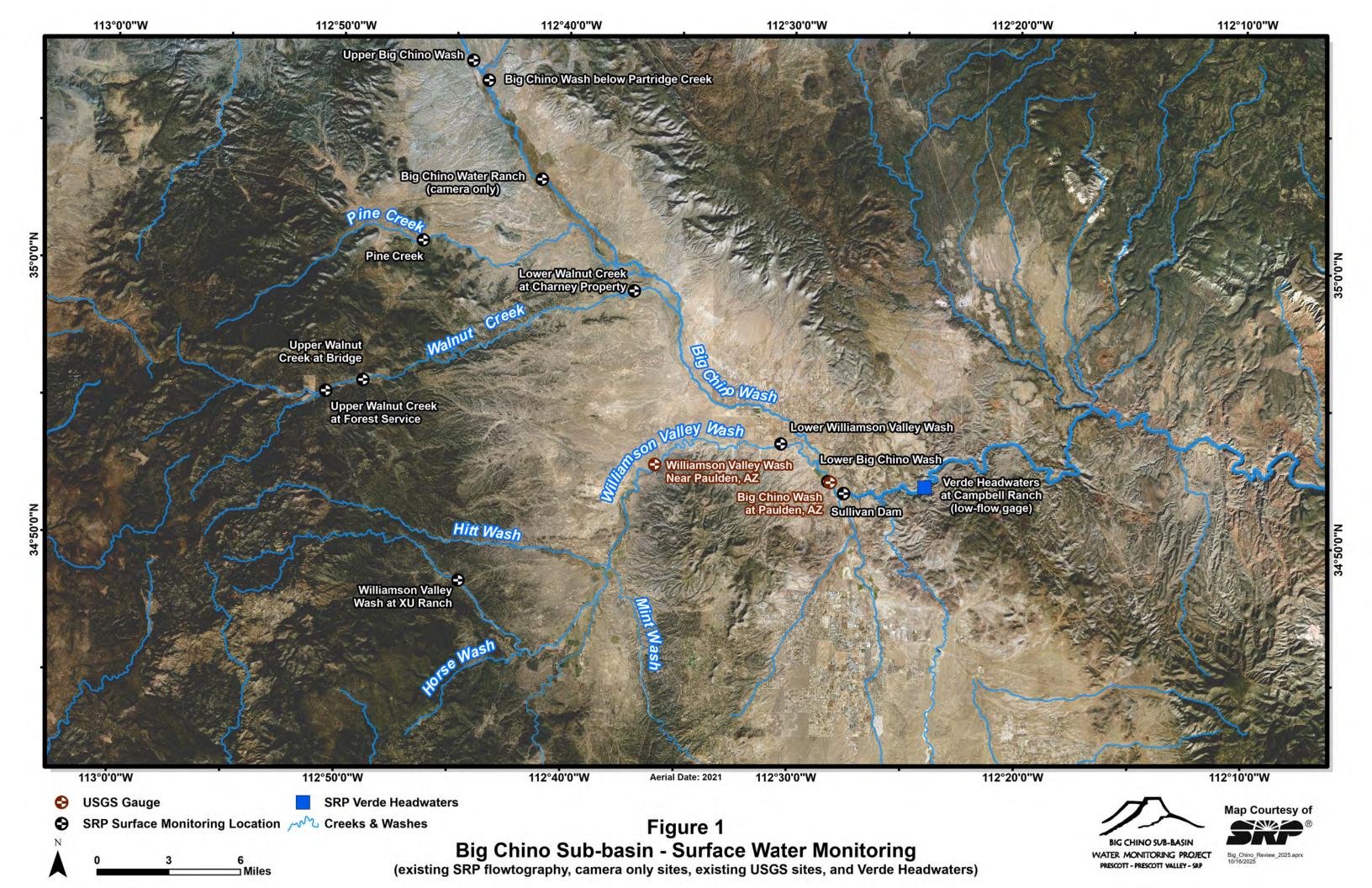
Project monitoring activities will continue through the coming fiscal year. The CA1 parties remain in contract with ADWR, SRP, and USGS.

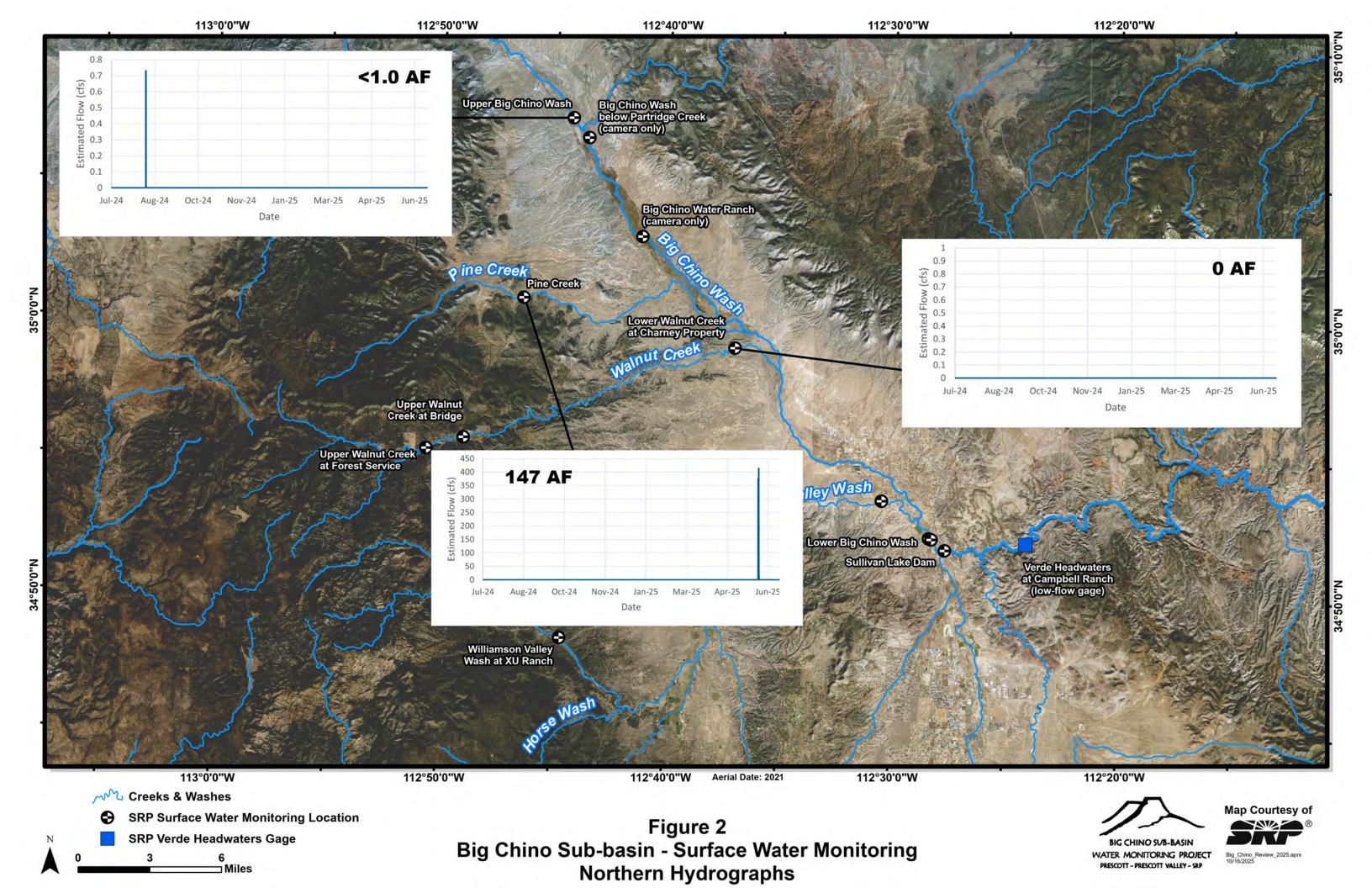
The project's funding at the close of FY25 is \$493,334.13. Communication among the Parties, with their STCs, and with the relevant contracted agencies (e.g., ADWR, USGS, etc.) will continue as work continues in FY26.

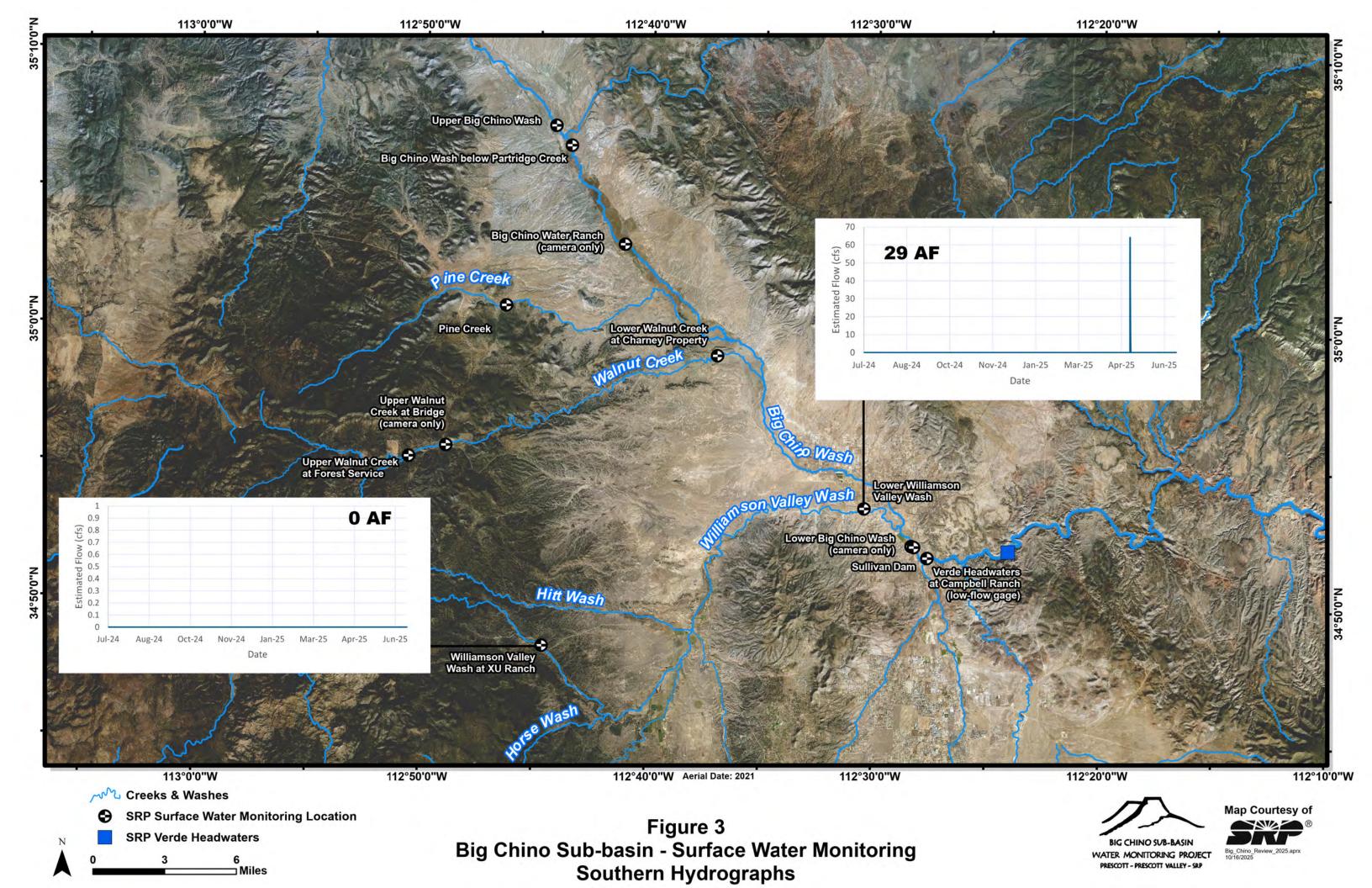
Future work includes both the monitoring and modeling components of CA#1. The existing monitoring contracts will continue but will need assessment as those contracts expire or data collection is no longer needed at those sites. As model refinement is completed, the Parties and

STCs will begin planning for scenario development. The Parties technical representatives continue regular presentation to the CA#1 Principals.

Figures







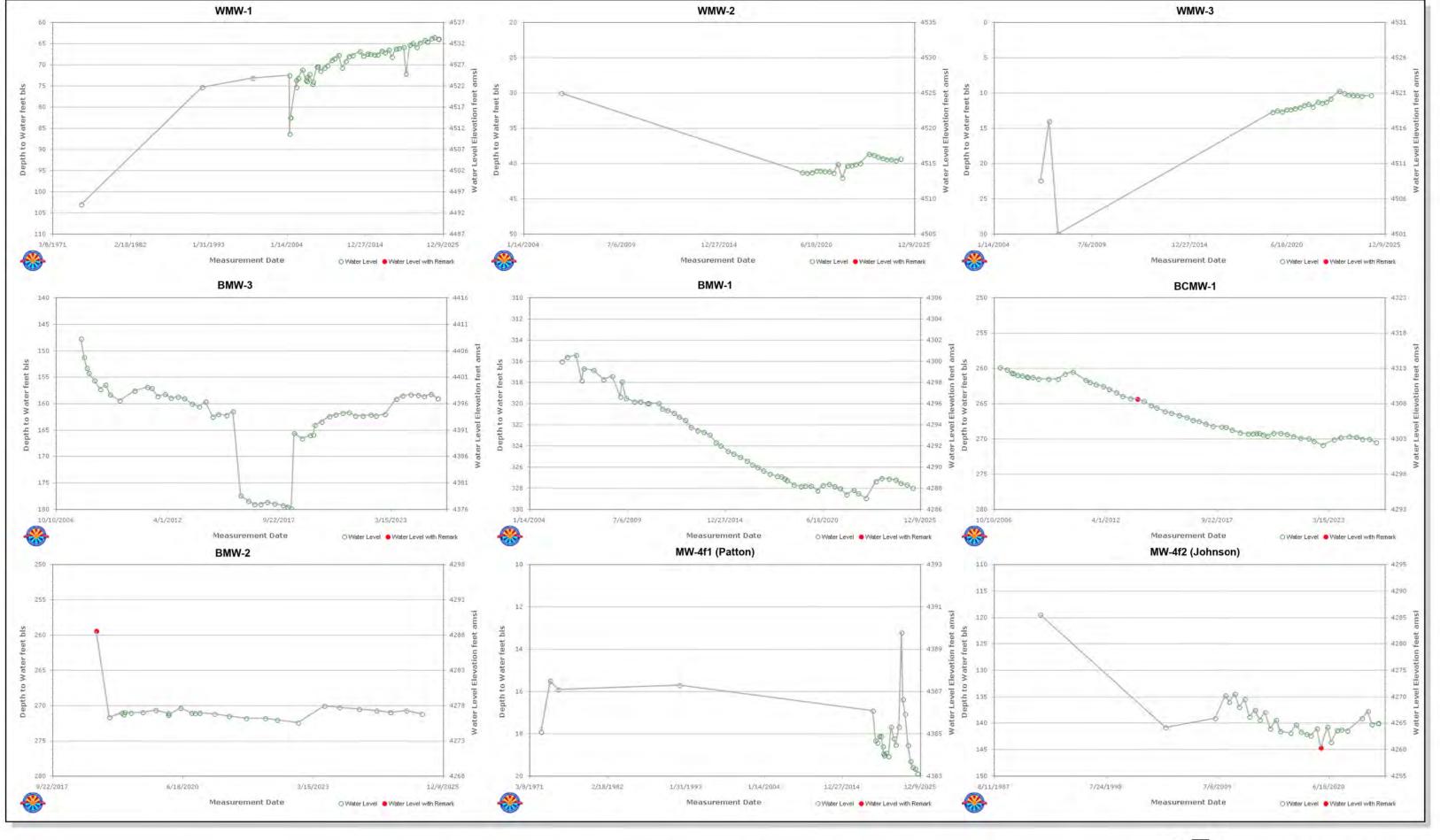


Figure 5
Big Chino Sub-basin Well Hydrographs





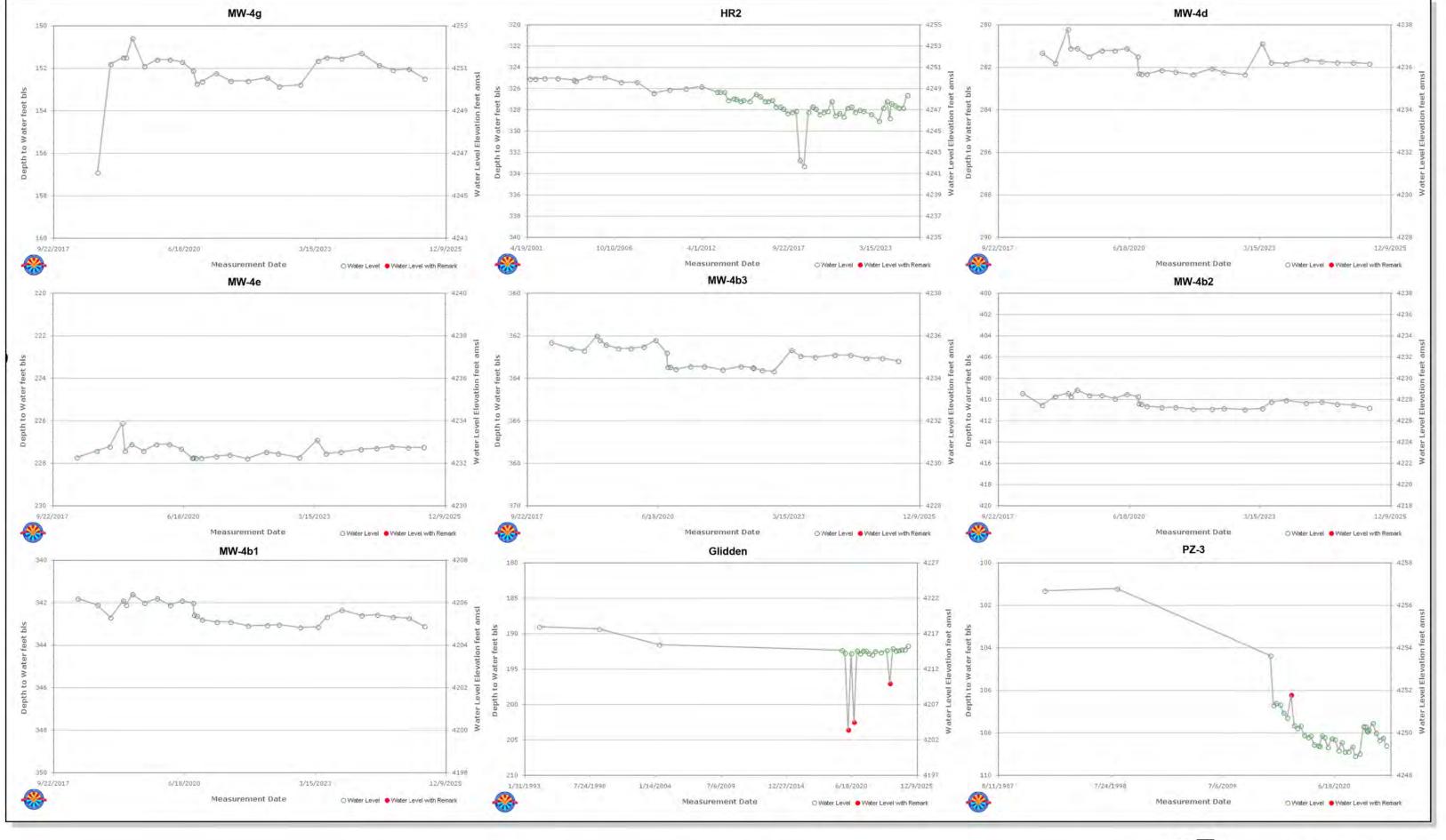
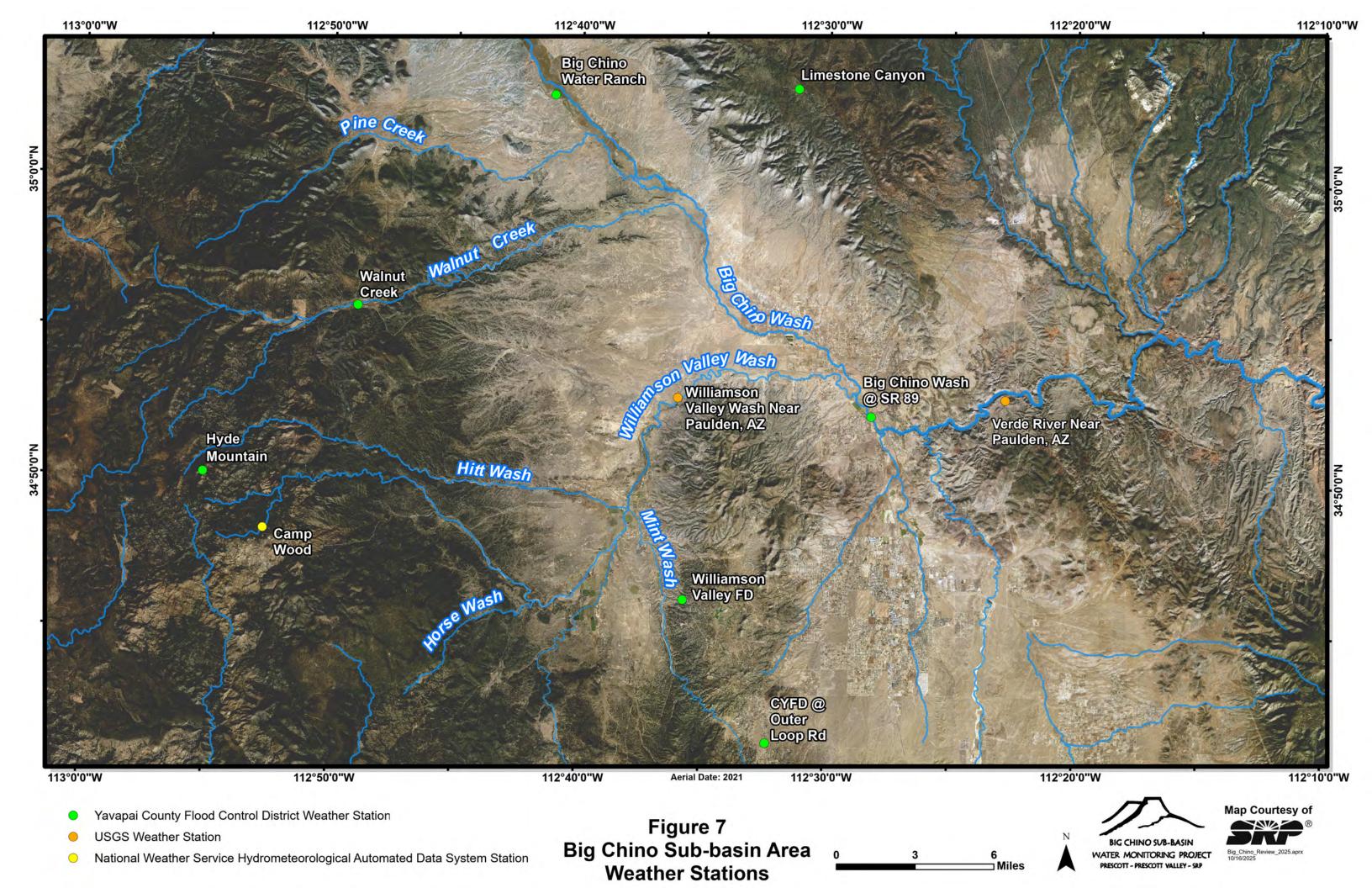


Figure 6
Big Chino Sub-basin Well Hydrographs







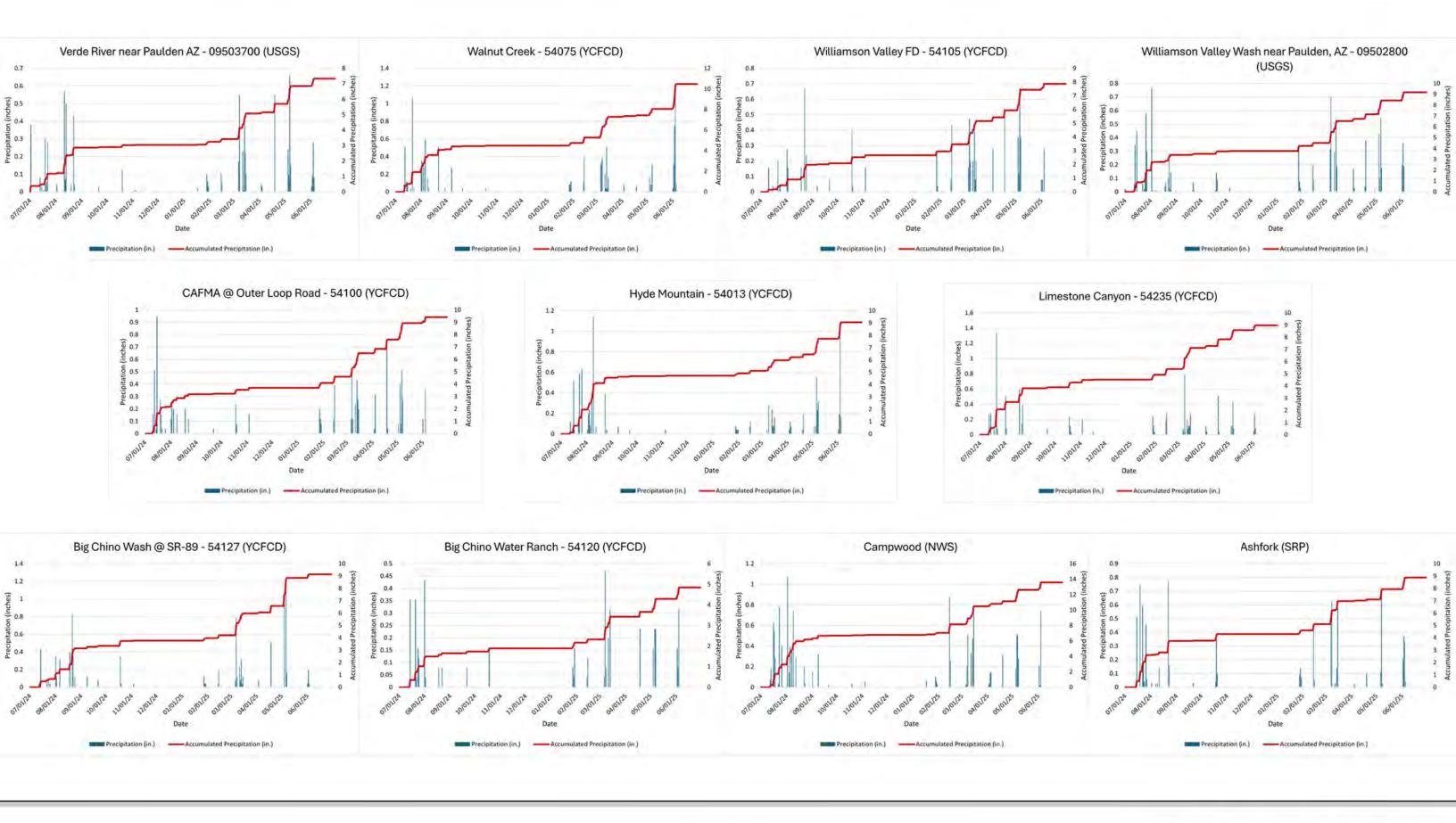
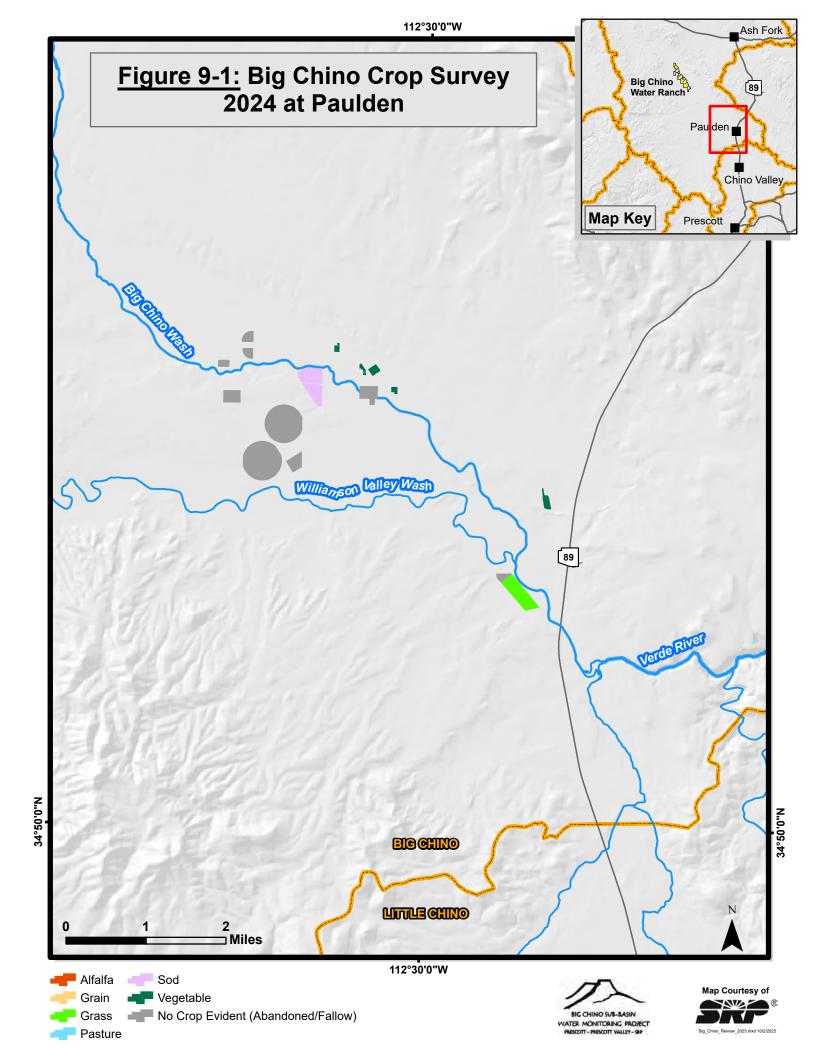
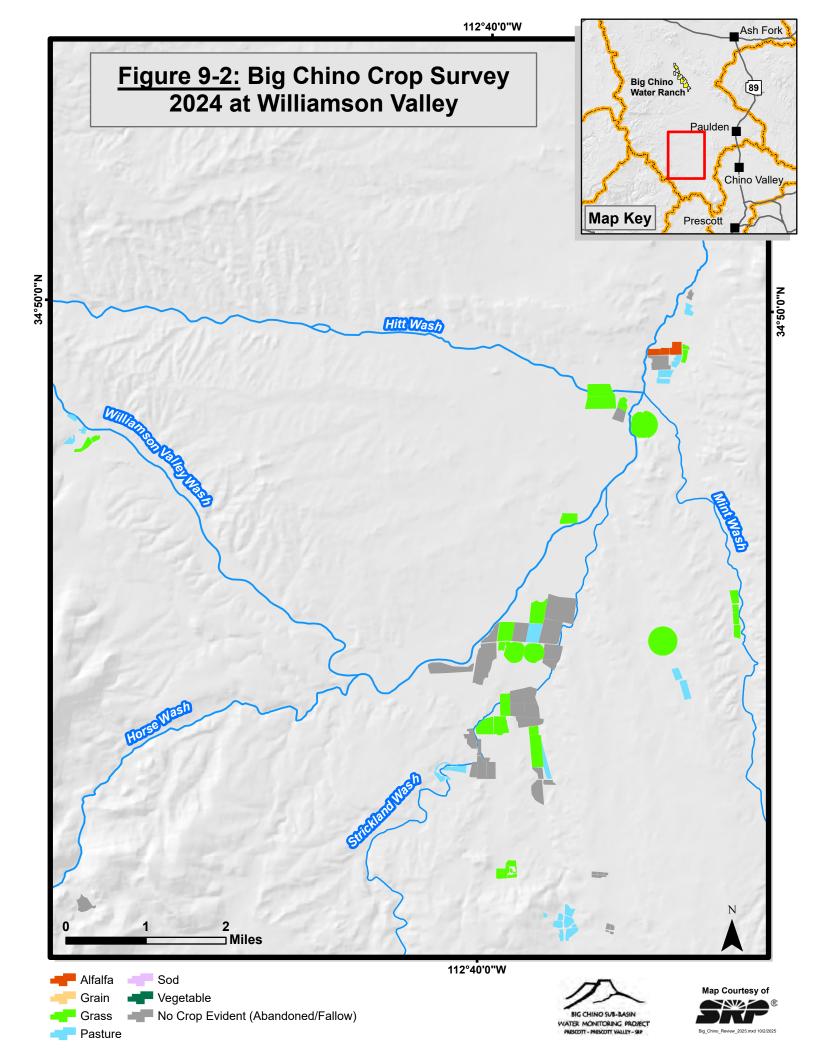
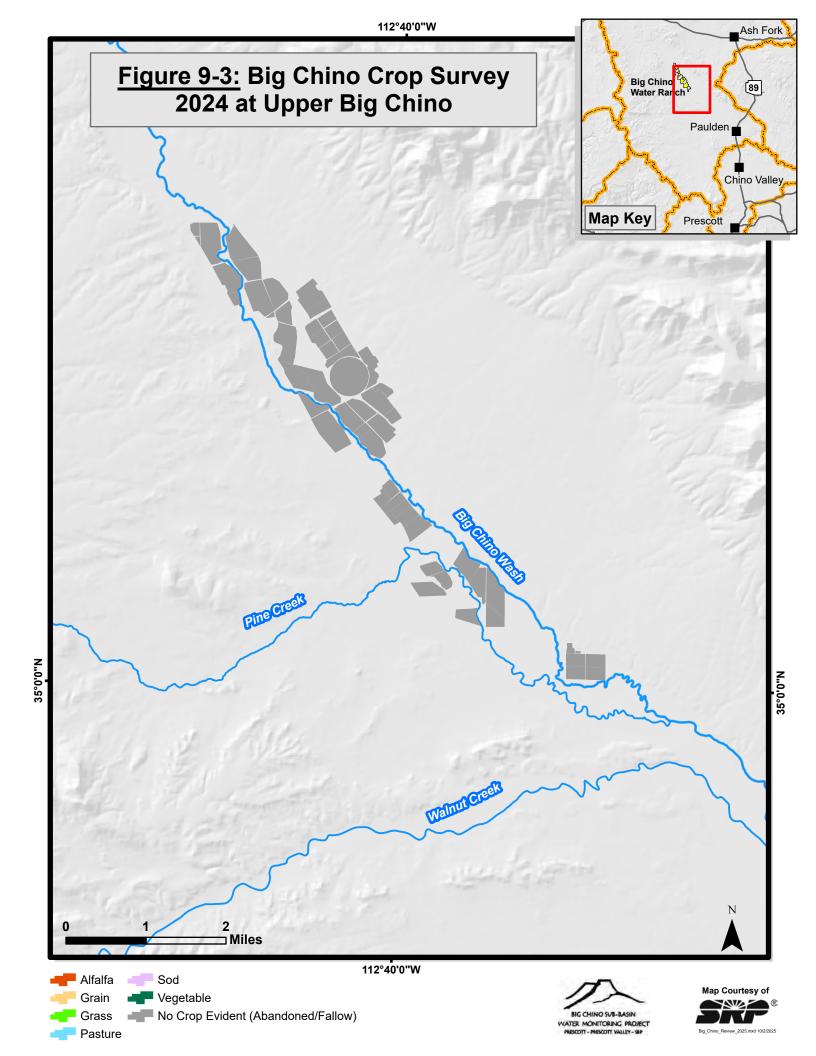


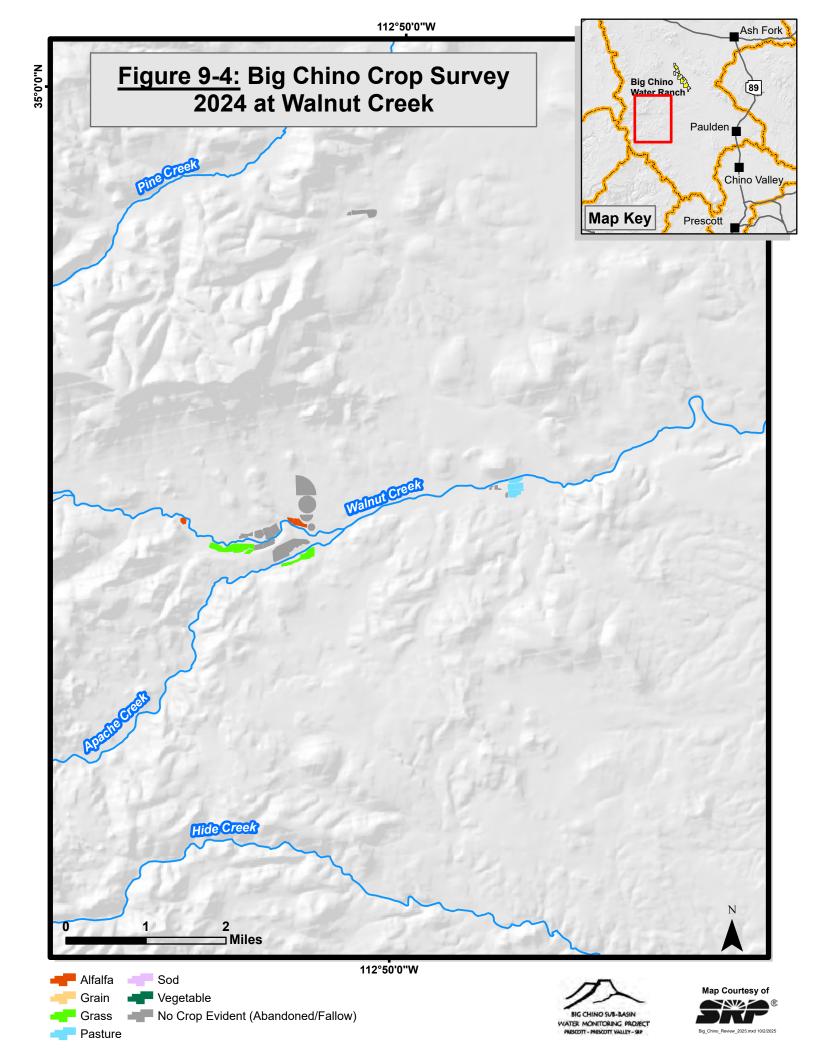
Figure 8
Big Chino Sub-basin Area
Weather Station Data (2024)

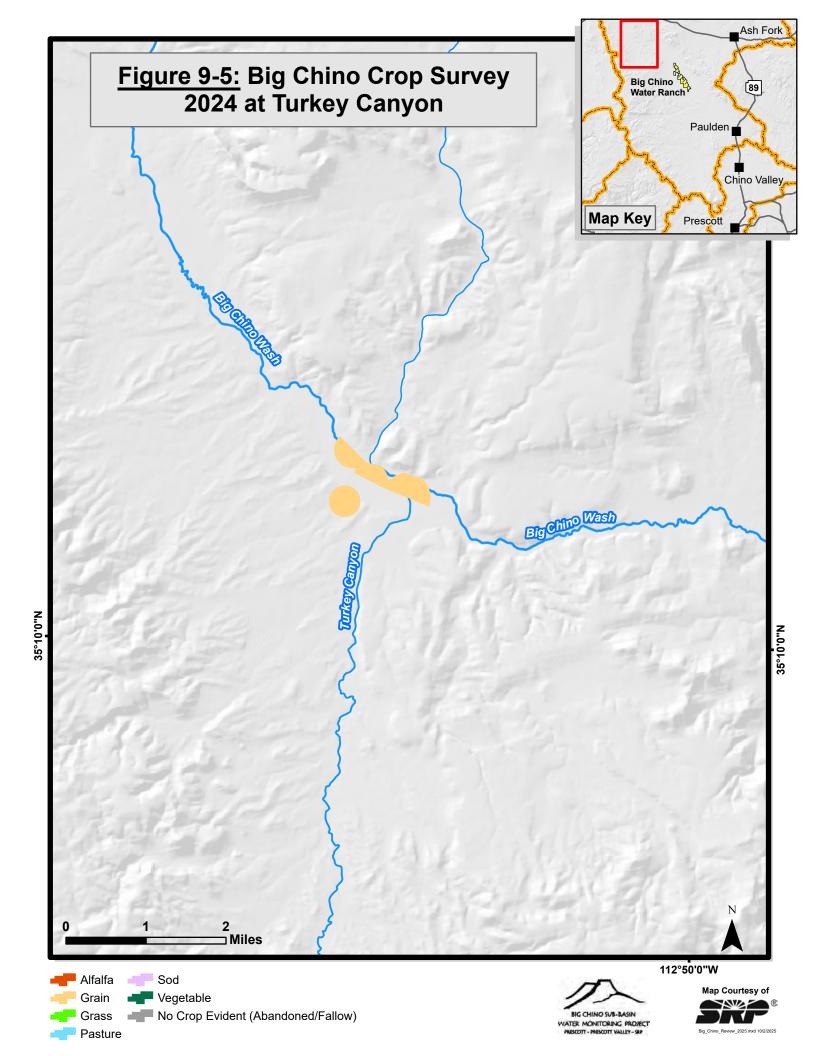












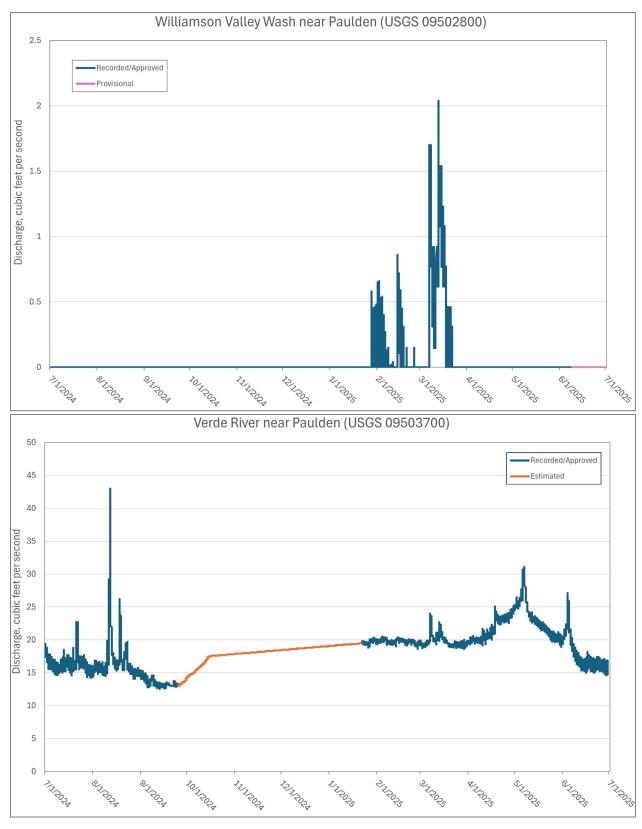


Figure 10. USGS gauge data for the Williamson Valley near Paulden and Verde River near Paulden gauges for FY25.

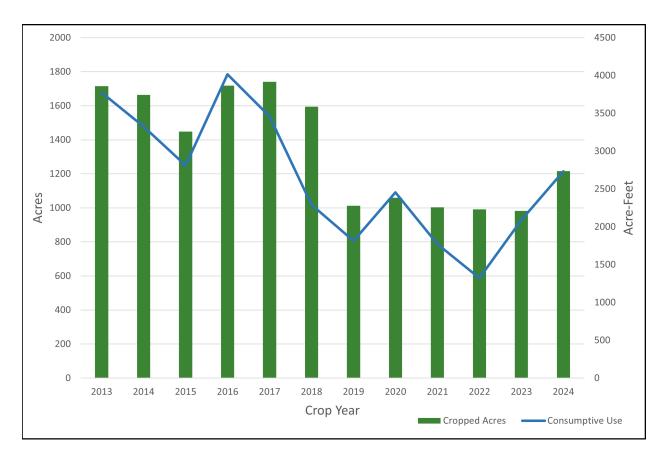


Figure 11. Trends of measured cropped acres and consumptive water use since 2013.

APPENDIX I

Big Chino Sub-basin
Water Monitoring Project

July 1, 2024 – June 30, 2025 Annual Report



BIG CHINO SUB-BASIN WATER MONITORING PROJECT

July 1, 2024, through June 30, 2025, Annual Report for CA1 Monitoring Committee

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Introduction

This report has been developed for the CA1 Monitoring Committee as part of the Big Chino Sub-Basin Water Monitoring project (city Contract No. 2022-154, A1 and A2) in collaboration with the City of Prescott, Town of Prescott Valley, and Salt River Project (SRP).

For this report, the 2025 monitoring period refers to July 1, 2024, through June 30, 2025. A summary of flow events observed during the period is contained within this report.

Seasonal Flow Summary

Surface water flow was observed in the sub-basin during the 2025 monitoring period; however, it was not observed at all monitoring sites. The following are details observed:

- Four (4) flow events were observed in the sub-basin:
 - o One (1) at Upper Big Chino Wash
 - o Two (2) at Pine Creek
 - One (1) at Lower Williamson Valley Wash
- Of the flow events observed, the flow event at Upper Big Chino Wash on August 9th, 2024, had the lowest total estimated flow volume at less than 1 Acre Foot.
- Of the flow events observed, the flow event at Pine Creek on June 3rd, 2025, had the largest total estimated flow volume at 75 Acre Feet.

Flow event details including the event start date, an estimate of the magnitude of flow, and the locations where surface water flow was observed are shown in *Table 1* and *Figure 1*.

Table 1. Big Chino Sub-Basin July 1, 2024, through June 30, 2025, Flow Event Summaries Including the Estimated Total Acre-Feet (AF)

Start Date ¹	Upper Big Chino Wash (UBCW)	Big Chino Wash below Partridge Creek (BCWPC) ²	Pine Creek (PC)	Upper Walnut Creek at Bridge (UWCB) ²	Lower Walnut Creek at Charney Property (LWCCP)	Williamson Valley Wash at XU Ranch (WVWXU)	Lower Williamson Valley Wash (LWVW)	Lower Big Chino Wash (LBCW) ²	Sullivan Dam (SD) ³
8/9/2024	< 1 AF	Yes		No				No	No
5/6/2025		No		No			29 AF	Yes	Yes
6/3/2025		No	75 AF	Yes				No	No
6/4/2025		No	72 AF	Yes				No	No
Total AF	< 1 AF		147 AF		0 AF	0 AF	29 AF		

¹ Flow events may start just prior to the date indicated of continue into the following day.

² This is a camera only site. A 'Yes' or 'No' will indicate whether flow was present on that date.

³ The Sullivan Dam weir crest is not rated for discharge measurement estimates. If 'Yes' is noted, spill was observed over the crest of the dam. See Location page for stage details.

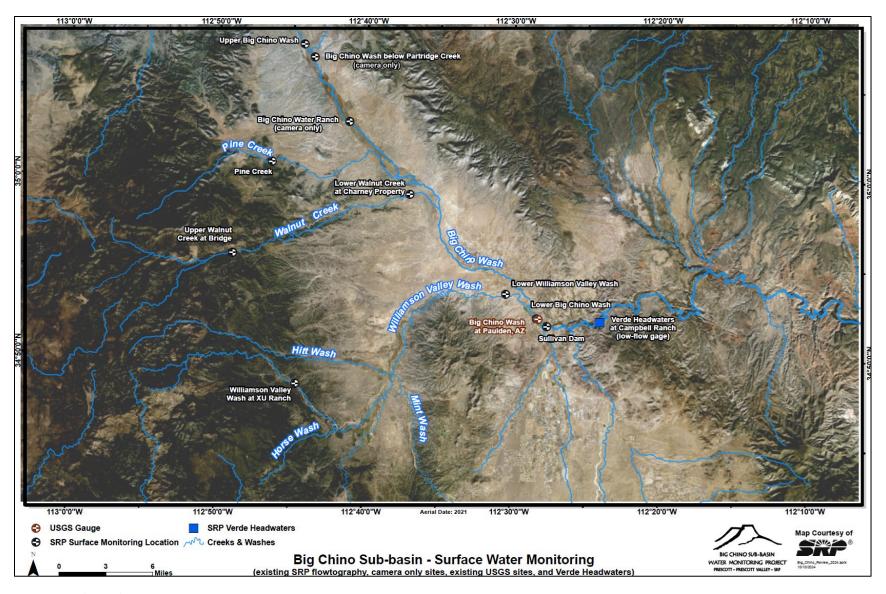


Figure 1. Big Chino Sub-Basin Map

Location Summaries

Upper Big Chino Wash (UBCW)

One (1) event with measurable flow was observed at UBCW. Flow event data including duration and estimated flow volume are outlined in *Table 2* and illustrated in *Figures 2-3*. Image data from the site can be seen in *Figures 4-6*.

Table 2. UBCW July 1, 2024, through June 30, 2025, Flow Event Data

Start Date	Start Time ⁴	Duration (hours) ⁵	Peak Stage (feet)	Peak Discharge (cfs)	Total Volume (Acre Feet)
8/9/2024	16:45	3.25	0.3'	< 1	< 1 AF
Total		3.25			< 1 AF

The UBCW site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.

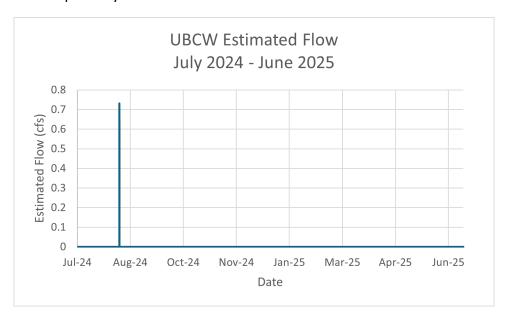


Figure 2. UBCW July 1, 2024, through June 30, 2025, Annual Flow Events

⁴ Start times are approximate and actual start times are within ±15 minutes of the noted time. Events may also continue into the following day(s).

⁵ Flow event duration is based on discharge calculated using the existing rating.

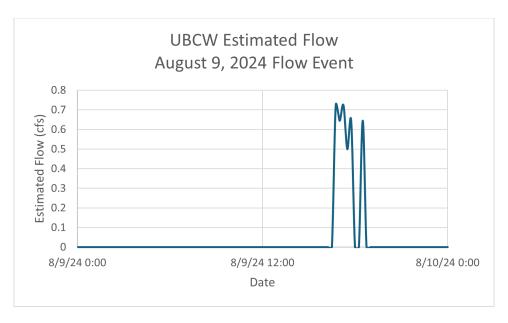


Figure 3. UBCW August 2024 Flow Event



Figure 4. UBCW at the start of the 2025 monitoring period



Figure 5. UBCW at the end of the 2025 monitoring period



Figure 6. UBCW at the peak of the 8/9/2024 flow event

Big Chino Wash Below Partridge Creek (BCWPC)

One (1) flow event was observed at the site during the 2025 monitoring period. This is a camera only site and there are no estimates of flow observed. Flow event data including duration are outlined in *Table 3*. Image data from the site can be seen in *Figures 7-9*.

Table 3. BCWPC July 1, 2024, through June 30, 2025, Flow Event Data

Start Date	Start Time ⁶	Duration (hours) ⁷	Peak Stage (feet)	Peak Discharge (cfs)	Total Volume (Acre Feet)
8/9/2024	16:45	0.25			
Total		0.25			

The BCWPC site was visited five (5) times during the 2025 monitoring period. In addition to quarterly site operations and maintenance, the following adjustments were made at the site:

A new antenna cable installed to fix camera connection issue.



Figure 7. BCWPC at the start of the 2025 monitoring period

⁶ Start times are approximate and actual start times are within ±15 minutes of the noted time. Events may also continue into the following day(s).

⁷ Flow event duration is based on discharge calculated using the existing rating.



Figure 8. BCWPC at the end of the 2025 monitoring period



Figure 9. BCWPC pooling observed during the 8/9/2024 flow event.

Big Chino Water Ranch (BCWR)

The BCWR site is a camera only site. The camera captures a broader view above the Big Chino Wash as well as the landscape of the surrounding area. In the past, some high flow events have caused the water to flow out of the Big Chino Wash and into the meadows captured in this site image data. For the 2025 monitoring period, there were no days where flow was visible in or exceeding the Big Chino Wash from the BCWR site. Image data from the site can be seen in *Figures 10-12*.

The BCWR site was visited four (4) times during the 2025 monitoring period. All site visits were for routine maintenance and data collection.



Figure 10. BCWR at the start of the 2025 monitoring period



Figure 11. BCWR at the end of the 2025 monitoring period



Figure 12. BCWR after snowfall and accumulation in March 2025

Pine Creek (PC)

Two (2) events with measurable flow were observed at PC. Flow event data including duration and estimated flow volume are outlined in Table 4 and illustrated in Figures 13-14. Image data from the site can be seen in *Figures 15-17*.

Table 4, PC July 1, 2024, through June 30, 2025, Flow Event Data

Start Date	Start Time ⁸	Duration (hours) ⁹	Peak Stage (feet)	Peak Discharge (cfs) ¹⁰	Total Volume (Acre Feet)
6/3/2025	16:45	19.25	2.8'	371*	75 AF
6/4/2025	12:45	20.5	3.5'	414*	72 AF
Total		39.75			147 AF

The PC site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.

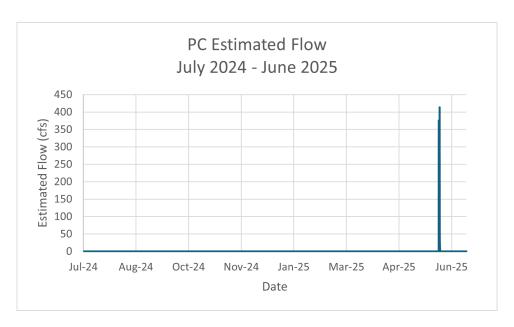


Figure 13. PC July 1, 2024, through June 30, 2025, Annual Flow Events

⁸ Start times are approximate and actual start times are within ±15 minutes of the noted time. Events may also continue into the following day(s).

⁹ Flow event duration is based on discharge calculated using the existing rating.

¹⁰ An asterisk near a peak discharge value indicated that the flow exceeded the rating for the channel during this flow event.

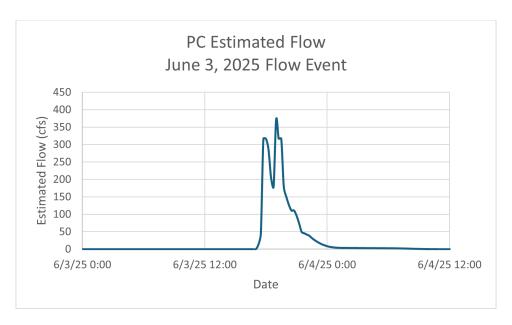


Figure 14. June 2025 Flow Event



Figure 15. PC at the start of the 2025 monitoring period



Figure 16. PC at the end of the 2025 monitoring period



Figure 17. PC at the peak of the 6/3/2025 flow event

Upper Walnut Creek at Bridge (UWCB)

The UWCB site is a camera only site. Image data from the site can be seen in Figures 18-20.

The UWCB site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.



Figure 18. UWCB at the start of the 2025 monitoring period



Figure 19. UWCB at the end of the 2025 monitoring period



Figure 20. UWCB during the 6/3/2025 flow event

Lower Walnut Creek at Charney Property (LWCCP)

Zero (0) events with measurable flow were observed at LWCCP. Flow event data are outlined in *Table 5* and illustrated in *Figure 21*. Image data from the site can be seen in *Figures 22-23*.

Table 5. LWCCP July 1, 2024, through June 30, 2025, Flow Event Data

Start Date	Start Time ¹¹	Duration (hours) ¹²	Peak Stage (feet)	Peak Discharge (cfs)	Total Volume (Acre Feet)
-	n/a	n/a	n/a	n/a	n/a
Total		-			-

The LWCCP site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.



Figure 21. LWCCP July 1, 2024, through June 30, 2025, Annual Flow Events

¹¹ Start times are approximate and actual start times are within ±15 minutes of the noted time. Events may also continue into the following day(s).

¹² Flow event duration is based on discharge calculated using the existing rating.



Figure 22. LWCCP at the start of the 2025 monitoring period



Figure 23. LWCCP at the end of the 2025 monitoring period

Williamson Valley Wash at XU Ranch (WVWXU)

Zero (0) events with measurable flow were observed at WVWXU. Flow event data are outlined in *Table 6* and illustrated in *Figure 24*. Image data from the site can be seen in *Figures 25-26*.

Table 6. WVWXU Jul	v 1, 2	2024, thro	ugh June	30, 2025	, Flow	Event	Data
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Start Date	Start Time ¹³	Duration (hours) ¹⁴	Peak Stage (feet)	Peak Discharge (cfs)	Total Volume (Acre Feet)
-	n/a	n/a	n/a	n/a	n/a
Total		-			-

The WVWXU site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.



Figure 24. WVWXU LWCCP July 1, 2024, through June 30, 2025, Annual Flow Events

 $^{^{13}}$ Start times are approximate and actual start times are within ± 15 minutes of the noted time. Events may also continue into the following day(s).

¹⁴ Flow event duration is based on discharge calculated using the existing rating.



Figure 25. WVWXU at the start of the 2025 monitoring period



Figure 26. WVWXU at the end of the 2025 monitoring period

Lower Williamson Valley Wash (LWVW)

One (1) event with measurable flow was observed at LWVW. Flow event data including duration and estimated flow volume are outlined in *Table 7* and illustrated in *Figures 27-28*. Image data from the site can be seen in *Figures 29-31*.

Table 7. LWVW July 1, 2024, through June 30, 2025, Flow Event Data

Start Date	Start Time ¹⁵	Duration (hours) ¹⁶	Peak Stage (feet)	Peak Discharge (cfs)	Total Volume (Acre Feet)
5/6/2025	22:15	22.00	1.3'	64	29 AF
Total		22.00			29 AF

The LWVW site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.

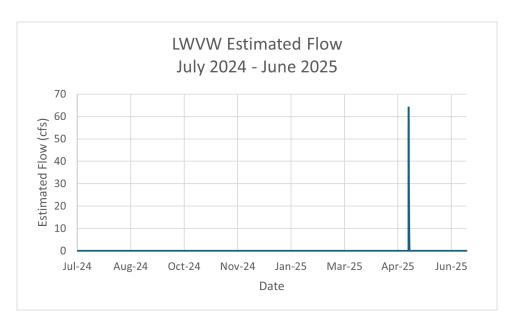


Figure 27. LWVW July 1, 2024, through June 30, 2025, Annual Flow Events

¹⁵ Start times are approximate and actual start times are within ±15 minutes of the noted time. Events may also continue into the following day(s).

¹⁶ Flow event duration is based on discharge calculated using the existing rating.

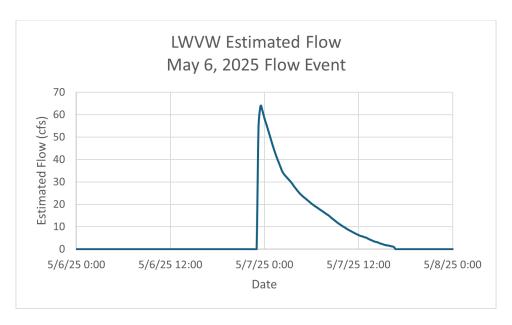


Figure 28. May 2025 Flow Event



Figure 29. LWVW at the start of the 2025 monitoring period



Figure 30. LWVW at the end of the 2025 monitoring period



Figure 31. LWVW at the peak of the 5/6/2025 flow event

Lower Big Chino Wash (LBCW)

The LBCW site is a camera only site. The USGS Big Chino Wash at Paulden, AZ (09502830) stream gage is about 0.15 river miles downstream of LBCW, on the downstream side of the road overpass. Flow data for the USGS site can be seen in *Figure 32*. Image data from the site can be seen in *Figures 33-35*.

The LBCW site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.

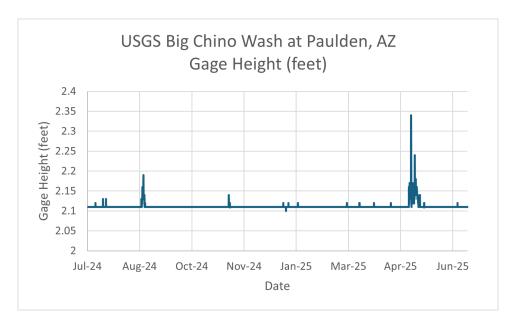


Figure 32. USGS Big Chino Wash at Paulden, AZ (09502830) July 1, 2024, through June 30, 2025, Annual Flow Events



Figure 33. LBCW at the start of the 2025 monitoring period



Figure 34. LBCW at the end of the 2025 monitoring period



Figure 35. LBCW during the flow event that started on 5/4/2025

Sullivan Dam (SD)

One (1) event with flow was observed at SD. Stage data including start time, duration, and peak stage are outlined in *Table 8* and illustrated in *Figures 36-37*. Image data from the site can be seen in *Figures 38-40*.

Table 8. SD July 1, 2024, through June 30, 2025, Flow Event Data

Start Date	Start Time ¹⁷	Duration (hours) ¹⁸	Peak Stage (feet)	
5/6/2025	18:15	7.25	0.03'	
Total		7.25		

The SD site was visited four (4) times during the 2025 monitoring period. All site visits were related to routine quarterly maintenance and data collection.

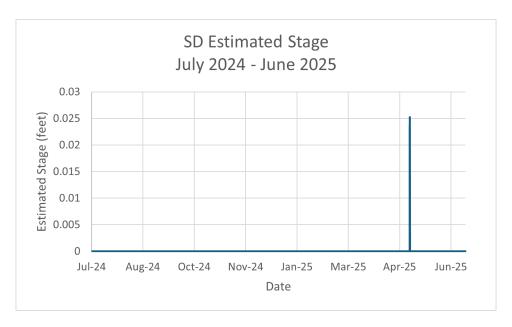


Figure 36. SD July 1, 2024, through June 30, 2025, Annual Flow Events

¹⁷ Start times are approximate and actual start times are within ±15 minutes of the noted time. Events may also continue into the following day(s).

¹⁸ Flow event duration is based on discharge calculated using the existing rating.

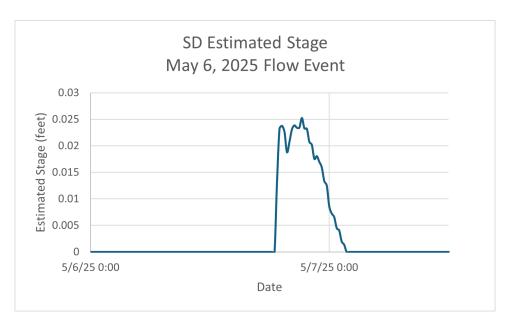


Figure 37. SD May 2025 Flow Event



Figure 38. SD at the start of the 2025 monitoring period



Figure 39. SD at the end of the 2025 monitoring period



Figure 40. SD at the start of the 5/6/2025 flow event

Verde Headwaters at Campbell Ranch (VHCR)

Continuous stage data was collected at the VHCR site for the duration of the 2025 monitoring period. The channel both upstream and downstream of the weir remained affected by that large scale flow event in March 2023.

In October and November of 2024, SRP Water Measurement and Water Construction and Maintenance went to the VHCR site and performed manual and machine removal of vegetation and debris both upstream and downstream of the weir. The effect on Estimated Stage can be seen in *Figure 41* below. Images of restoration efforts can be seen below in *Figures 48-50*. The step changes in the stage levels as seen in *Figure 41* are because of those restoration efforts. In the following months, the stage levels at the site began to slowly creep up and in April 2025, another effort to manually remove debris downstream of the gage was performed.

The USGS Verde River near Paulden, AZ stream gage is approximately six (6) river miles downstream of VHCR. Flow event data including peak discharge are outlined in *Table 9* and illustrated in *Figures 41-44*. Image data from the site can be seen in *Figures 45-47*.

Table 9. VHCR July 1, 2024, through June 30, 2025, Flow Event Data. Peak Discharge

Start Date	VHCR (cfs)	USGS Verde River near
		Paulden, AZ (cfs)
7/21/2024	-	24.1
8/10/2024	-	22.6
8/12/2024	-	43.0
8/18/2024	-	30.0
5/7/2025	-	27.9
6/4/2025	-	21.2

The VHCR site was visited sixteen (16) times during the 2025 monitoring period. In addition to routine quarterly maintenance and data collection, the following adjustments were made at the site:

- Fifteen (15) current meter measurements were performed to verify flow at the site.
- Manual vegetation and debris removal from the channel upstream and downstream of the weir.

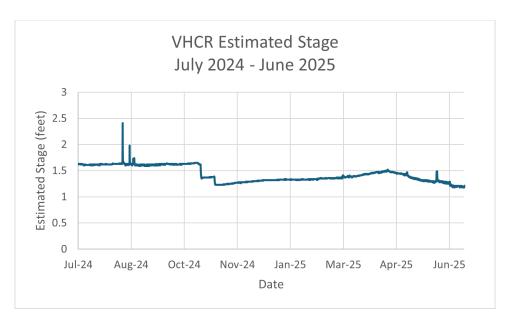


Figure 41. VHCR July 1, 2024, through June 30, 2025, Annual Events, Estimated Stage

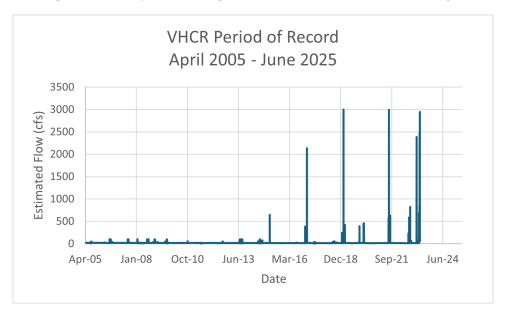


Figure 42. VHCR April 2005 through June 2025, Period of Record

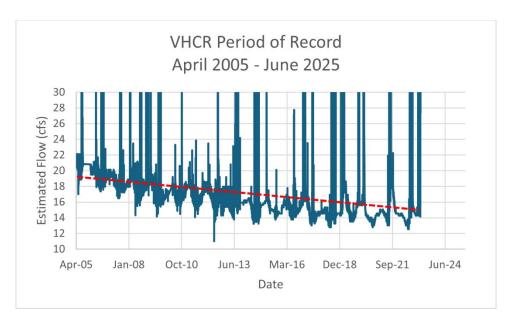


Figure 43. VHCR April 2025 through June 2025 Period of Record (zoomed in with trendline)

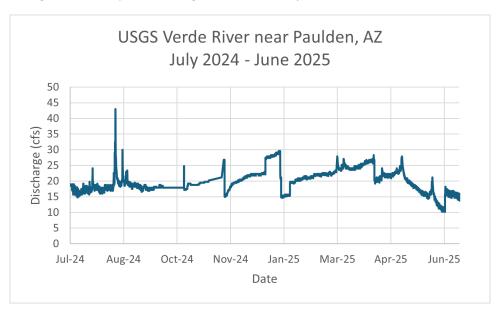


Figure 44. USGS Verde River near Paulden, AZ (09503700) July 1, 2024, through June 30, 2025, Annual Flow Events



Figure 45. VHCR at the start of the 2025 monitoring period



Figure 46. VHCR at the end of the 2025 monitoring period



Figure 47. VHCR during the monitoring period



Figure 48. Restoration efforts in October 2024 just downstream of the VHCR weir



Figure 49. Debris removed from the channel during October 2024 VHCR restoration efforts



Figure 50. VHCR just downstream of the weir during the November 2024 restoration efforts

Summary

A summary of the flow events observed in the sub-basin during the 2025 monitoring period are outlined below:

- Flow was observed at all but two (2) Flowtography® sites within the sub-basin. Those two sites being LWCCP and WVWXU.
- No flow has been observed at the LWCCP site for the last two monitoring periods (2025 and 2024).
- Four (4) flow events were observed during the monitoring period:
 - o One (1) of the flow events observed occurred during the 2024 monsoon season.
 - o Three (3) of the flow events occurred post-winter 2025 and pre-monsoon 2025.
- Water spilled over Sullivan Dam for approximately 7 hours.
- The total estimated flow volume observed in the sub-basin at all sites combined for the 2025 reporting period was approximately 176 AF.
- The 2025 monitoring period was the second driest monitoring period observed since the project began, behind only the 2021 monitoring period where 84 total Acre Feet were observed.

SRP Water Measurement continues to maintain the sites and process pressure transducer data and SRP Flowtography® image data collected at monitoring locations.

The data presented in this report are provisional and reflect the best available data when it was prepared.

APPENDIX II

Summaries of Data Collection Equipment

Established Monitoring Efforts

Groundwater Level Monitoring

Well Name	ADWR 55 number	Land Owner	Cadastral	Depth (ft bgs)	Perforated Interval (ft bgs)	Water Level (ft bgs)	Data Repository
MW-4b1	228266	USDA Forest Service	B(18-01) 28BCD	460	340-460	320	GWSI
MW-4b2	228265	USDA Forest Service	B(18-01) 19 ADC	520	420-520	400	GWSI
MW-4b3	228262	Arizona State Land Department	B(18-01) 31 CCD	480	380-480	360	GWSI
MW-4d	228472	Arizona State Land Department	B(17-02) 11ABA	450	280-340 (LCS); 330- 450 (PVC)	310	GWSI
MW-4e	228263	Arizona State Land Department	B(17-02) 12CBD	340	240-340	225	GWSI
MW-4g	921236	Southwest Land & Cattle LLC (dba K Larson)	B(18-03) 26ACC	1400	1000-1400	142	GWSI
BMW-2	921256	Kieckhefer, J.I.	B(18-04) 01ABD	2000	1600-2000	180	GWSI
Glidden	631886	USDA Forest Service	B(18-01) 27ABD	230	150-219	192.4	GWSI
HR-2	527679	Civitan Foundation	B(17-02) E02DCA	500	Not cased	328.3	GWSI
MW-4f.1 (Patton) ¹	803378	Southwest Land and Cattle Co.	B(18-03) 26BDD	92	25 to 60 and 80 to 90	15.5 to 18.3	GWSI
MW-4f.2 (Johnson) ¹	557247	Southwest Land and Cattle Co.	B(18-03) 26BDB1	320	37 to 320	119.4 to 141.8	GWSI

Well Name	ADWR 55 number	Land Owner	Cadastral	Depth (ft bgs)	Perforated Interval (ft bgs)	Water Level (ft bgs)	Data Repository
WMW-1(Pump 7) ²	624116	City of Prescott	B(20-04) 19CBA	600	unk	66.2 to 103	GWSI
WMW-2 (200' N of Pump 3) ²	210660	City of Prescott	B(20-04) 33CBD2	100-160 and 310-400	0-420	30	NWIS and GWSI
WMW-3 (1000' SE of Pump 12) ²	210659	City of Prescott	B(19-04) 10CCB2	670	614-654	14 to 29	NWIS and GWSI
BMW-3	905773	Kieckhefer	B(18-04) 01ACA2	1000' casing	499-999	155 (2008)	GWSI
BMW-1 (previously named BH-1) ²	200027	Kieckhefer	B(18-04) 11ACC	490	290-490	315.6 (2007)	GWSI
BCMW-1	211839	City of Prescott	B(18-04) 25AAA2	737	300-620	261.2 (2008)	GWSI
Paulden South (PZ3) ³	524078	City of Prescott	B(17-02S) 04DCB3	170	130-170	108 (2019)	GWSI

¹Southwest Groundwater Consultants, January 4, 2017

²Southwest Groundwater Consultant, December 23, 2004

³Not shown in Appendix III, Maps and Figures

Stream flow Monitoring

Stream flow Monitoring Sites Funded By/Established Under CA#1

Name	Completion Date	Comments
Verde Headwaters at Campbell Ranch	4/2005	https://streamflow.watershedconnection.com/?location=Campbell%20Ranc h&project=
Williamson Valley Wash Near Paulden, AZ	1965-1985 2002-Current	USGS Gage 09502800
Big Chino Wash below Partridge Creek	6/26/2014	SRP
Lower Big Chino Wash	5/21/2014	SRP
Lower Walnut Creek at Charney Property	6/10/2014	SRP
Lower Williamson Valley Wash	5/22/2014	SRP
Pine Creek	5/19/2014	SRP
Upper Big Chino Wash	1/16/2014	SRP
Upper Walnut Creek at Forest Service	10/1/2014	SRP - Displaced and removed
Williamson Valley Wash at XU Ranch	6/12/2014	SRP
Upper Walnut Creek at Bridge	6/26/2014	SRP - Camera only
Big Chino Water Ranch	8/26/2015	SRP -Camera only, basin conditions

Name	Completion Date	Comments
Sullivan Dam	5/25/2016	SRP -Stage gage/transducer installed 10/12/2017

Climate Monitoring

Publicly Accessible Repositories for Climate Data

Agency Name	Data Portal	
YCFCD	https://www.yavapaiaz.gov/Resident- Services/Flood-Control	
USGS Arizona	http://waterdata.usgs.gov/az/nwis/rt	
NWS-HADS	https://hads.ncep.noaa.gov/	
- Camp Wood – CPWA3	https://hads.ncep.noaa.gov//cgi- bin/hads/interactiveDisplays/displayMetaData.pl?ta ble=dcp&nesdis id=CE2280DC	
- Ashfork – ASFA3	https://hads.ncep.noaa.gov//cgi- bin/hads/interactiveDisplays/displayMetaData.pl?ta ble=dcp&nesdis id=F001D610	
Historic Climatic Data	http://www.wrcc.dri.edu/summary/climsmaz.html	

Existing Weather Stations in the Big Chino Sub-basin 1

Station Name	Responsible Agency	Data Collected
Granite Basin	YCFCD	Precipitation
Walnut Creek	YCFCD	Precipitation/Stage
Big Chino Wash @ SR 89	YCFCD	Precipitation/Stage
CYFD @ Outer Loop Rd	YCFCD	Precipitation
Hyde Mountain	YCFCD	Precipitation
Williamson Valley FD	YCFCD	Precipitation
Seligman Airport	YCFCD	Precipitation/Weather
Ash Fork Draw @ I-40	SRP	Precipitation/Stage
Partridge Creek @ I-40	YCFCD	Precipitation/Stage
Crookton	YCFCD	Precipitation
Big Chino Water Ranch	YCFCD	Precipitation/Weather
Williamson Valley Wash near Paulden, AZ	USGS	Precipitation/Stage/Flow
Verde River @ Perkinsville	USGS	Precipitation/Stage/Flow
Camp Wood Rain Near Bagdad CPWA3	National Weather Service	Precipitation
Ashfork 12 NW ASFA3	National Weather Service	Precipitation
Limestone Canyon	YCFCD	Precipitation
Verde River near Paulden, AZ	USGS	Precipitation/Stage/Flow
George Wood Canyon	SRP	Precipitation/Weather

 $^{^{\}rm 1}$ Not all the weather stations are included in Appendix III Figures.