



SUPPLY & DEMAND

2025

DRIPPING SPRING WASH

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2025 SUPPLY AND DEMAND ASSESSMENT DRIPPING SPRING WASH BASIN

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1 INTRODUCTION

DRIPPING SPRING WASH BASIN



- Dam
- Population Center
- Highway
- River
- Groundwater Basin
- National Forest
- San Carlos Apache Reservation

Figure 1. Map of the Dripping Spring Wash Basin.

1.1 REPORT BACKGROUND AND PURPOSE

Preparing the Supply and Demand Reports (SDRs) is a duty of the Director of the Arizona Department of Water Resources (ADWR) required by statute, as stated in Arizona Revised Statutes (A.R.S.) § 45-105(B)(14).¹ Beginning in 2023, the Director must ensure that a water supply and demand assessment for at least six of Arizona's fifty-one groundwater basins are prepared and issued by December 1st of each year.

Although similar assessments have been completed periodically, 2023 was the first time ADWR was allocated dedicated funding and staff to conduct assessments of all of Arizona's groundwater basins on a recurring cycle. By the end of 2027, ADWR will complete assessments for all 51 groundwater basins throughout the state, and each basin will be reassessed at least every five Water Infrastructure Finance Authority on funding decisions in the future (see A.R.S. § 49-1304(A)(14)²). years. The SDRs may also be used as a planning tool for water resource management by ADWR, policymakers, community members, and other interested stakeholders.

The basins and subbasins assessed in 2025 include Aravaipa Canyon, Bill Williams (Alamo Reservoir, Burro Creek, Clara Peak, Santa Maria, and Skull Valley Subbasins), Bonita Creek, Coconino Plateau, Dripping Springs Wash, Duncan Valley, Hualapai Valley, Little Colorado River Plateau, Morenci, Sacramento Valley, Safford (San Carlos Valley, Gila Valley, and San Simon Valley Subbasins), Salt River (Black River, White River, Salt River Canyon, and Salt River Lakes Subbasins), and San Simon Wash.

¹ Arizona Revised Statutes § 45-105(B)(14). <https://www.azleg.gov/ars/45/00105.htm>

² Arizona Revised Statutes § 49-1304(A)(14). <https://www.azleg.gov/ars/49/01304.htm>



1.2 PROCEDURE AND SCOPE



Figure 2. Depiction of the Dripping Spring Wash basin water budget, including all available supplies and demands and how they contribute to changes in groundwater in storage.

The SDRs are structured as water budgets, focusing on total inflows and outflows at the basin scale. The SDRs estimate the volumes of water demands from all uses (categorized into sectors of Agricultural, Industrial, Municipal, and Other) and the volumes of water supplies (Surface Water, Groundwater, Effluent, Incidental Recharge, Transportation Water, and Moved Water) available to meet those demands. The reports also include projected demands and supplies under various influences of future scenarios.

The SDRs are not groundwater flow models with finer geographic results. The development of regional groundwater flow models for each basin is an extensive technical process and is not feasible within the time constraints of this project. Outside of Arizona’s regulated Active Management Areas (AMAs) and Irrigation Non-Expansion Areas (INAs), data is much more limited. In instances where data does exist, the data may be outdated or lack reliability. ADWR has endeavored to acquire local and specific data to generate the SDRs. However, when such information was not obtainable, staff utilized scientific literature estimates, averages, or assumptions to formulate water usage estimates.

The SDRs attempt to answer the following questions:

1. What is the estimated annual volume of water demand?
2. What is the estimated annual volume of available water supply?
3. Is there sufficient available water supply to balance water demand annually?

The water budget was calculated by subtracting the estimated annual demand from the estimated annual available supply. If demand exceeds supply in a year, the difference is subtracted from the



estimated aquifer storage. If supply exceeds demand, the difference is added to estimated aquifer storage. In this manner, the process is like balancing a checkbook, totaling the credits and debits made to the account through the year to understand how much estimated groundwater is available in storage.

The SDRs are designed to be understandable to the general public. The Methods Appendix includes specific technical information and additional details regarding data and methods: [[Methods Appendix](#)]. Additional SDRs and an interactive dashboard are available for further information: [[Dashboards](#)].

1.3 METHODOLOGY AND LIMITATIONS

This study reviewed and compiled data for two primary purposes:

1. Estimate supply and demand volumes in the basin.
2. Project changes in supply and demand from possible future scenarios.

ADWR developed and compiled baseline data for the period from 1990 to 2024. Staff then developed scenarios based on the most likely impacts on water demands and supplies over 51 years (from 2025 to 2075), and then projections were generated from the baseline data. The results from these scenarios and the combined baseline data were used to estimate whether supply could meet demand each year from 1990 to 2075. ADWR independently developed both the supply and demand estimates.

Due to the limited reported water data available outside Arizona's AMAs and INAs, the supplies and demands outlined in the SDRs are estimates only. When available, ADWR used high-quality data from credible sources. Due to the need to focus staff bandwidth on developing initial methods for analysis of all 51 groundwater basins by the December 1, 2027, statutory deadline, outreach was limited to major water users in the basin. When data could not be obtained, research into existing literature and the use of representative data were necessary to develop estimates.

Please see the Methods Appendix for an in-depth discussion of the methodologies and assumptions ADWR applied to create each estimate: [[Methods Appendix](#)].

2 RESULTS

2.1 BASIN SUMMARY

The Dripping Springs Wash Basin encompasses 378 square miles in the southeastern portion of the state. The basin is characterized by mid-elevation mountain ranges, and in the western portion of the basin lies the Dripping Springs Mountains. The basin is comprised of the federally recognized San Carlos Apache Indian Reservation (57.8%), the U.S. Bureau of Land Management (BLM) lands (22.0%), State Trust lands (11.5%), and National Forest lands (1.3%). The basin has an estimated population of 328 people, and 7.4% of the basin is privately owned. The principal aquifers in the basin are recent stream alluvium consisting mostly of sand and silt, and Gila Conglomerate sedimentary rock. The recent stream alluvium is the principal water-producing unit.



Groundwater storage was previously estimated to be between 150,000 to less than 1,000,000 acre-feet (AF) to a depth of 1,200 feet.³ The basin includes Dripping Springs Wash, a tributary of the Gila River, which runs northwest of the unincorporated community of Christmas, Arizona. The Gila River runs east to west, creating a boundary between Pinal and Gila Counties. The two perennial streams in the Dripping Springs Wash Basin are the Gila River and Mescal Creek. Deer Creek and Ash Creek run parallel to one another southeast of Christmas.

2.1.1 Surface Water

ADWR examined all water sources defined as surface water in each basin. Surface water includes all water flowing in streams, canyons, ravines, or other natural channels, or in definite underground channels, whether perennial or intermittent, floodwater, wastewater, or surplus water, and of lakes, ponds, and springs discharging to the surface (A.R.S. § 45-141).⁴ After examining these sources and deducting any existing surface water diversions (stockponds, reservoirs, and agricultural diversions) from the resulting volumes, ADWR generated a final estimate of the remaining water available for diversion or use. When possible, streamgauge data were used to estimate surface water volumes. Where active streamgages were absent, which often applies to areas with intermittent and ephemeral streamflow, the Drainage-Area Ratio (DAR) method (see the Methods Appendix) was used to estimate surface water volume.

2.1.2 Groundwater

This report refers to the “inflow to” and “outflow from” the aquifer each year as groundwater. This volume is distinct from the volume of groundwater considered to be available in storage. “Inflow to” represents the annual recharge or replenishment of groundwater through processes such as the percolation of precipitation or surface water into the subsurface, which is observed through processes such as streamflow infiltration, groundwater inflow, and mountain-front recharge. “Outflow from,” the movement of water leaving the system, is represented by such processes as baseflow and groundwater outflow. See the Methods Appendix for more information on how streamflow, baseflow, groundwater inflow/outflow, and mountain-front recharge estimates were obtained.

The total groundwater storage volume provided in this report reflects the volume of groundwater reasonably accessible at the average depth of the wells in the basin, rather than at the 1,200 feet groundwater storage depth used in previous ADWR reports. The water level falling below the basin’s average well depth suggests that wells will have begun to go dry. Using this approach to estimate groundwater storage effectively illustrates the impact of declining water levels on the current existing infrastructure of property owners, residents, and other water users in each basin. Please note that this report does not address potential subsidence or permanent loss of aquifer

³ ADWR (2009). Arizona Water Atlas, Volume 3, Section 3.6, pg. 246, Table 3.6-6. https://infoshare.azwater.gov/docushare/dsweb/Get/Document-10428/Volume_3_final.pdf

⁴ Arizona Revised Statutes § 45-141. <https://www.azleg.gov/ars/45/00141.htm>



storage that could occur if the estimated water volume in storage were to be removed from the basin. See the Methods Appendix for more information on how groundwater storage was estimated.

2.1.3 Effluent

Effluent is defined as “water that has been collected in a sanitary sewer for subsequent treatment in a facility that is regulated pursuant to Title 49, Chapter 2.”⁵ ADWR used effluent data provided by the Arizona Department of Environmental Quality (ADEQ) to estimate the amounts of effluent available for reuse. These effluent estimates are based on effluent volumes produced from wastewater treatment plants designated for reuse. These volumes do not include wastewater discharged from the treatment plants. Effluent volumes also do not include septic tanks or other wastewater collection systems. Recharge from septic tanks is included in the Incidental Recharge estimation.

2.1.4 Incidental Recharge

Incidental recharge is defined as water from human use that replenishes groundwater supplies. Incidental recharge is associated with agricultural, industrial, and municipal water demands. ADWR used data derived from demand analyses to estimate incidental recharge volumes.

2.1.5 Transportation Water

Certain basins have been identified in A.R.S. Title 45, Chapter 2, Article 8.1⁶ as basins from which groundwater may be withdrawn for transportation to an AMA. Where such transportation has been authorized, that groundwater is referred to as “Transportation Water” in this report.

2.1.6 Moved Water

Any water that crosses basin boundaries through artificial means and that does not fall under the Transportation Water definition is referred to as “Moved Water” in this report. Moved Water includes groundwater that is transported between basins that are not AMAs, pursuant to A.R.S. Title 45, Chapter 2, Article 8.⁷

2.2 SUPPLY RESULTS

This subsection contains ADWR’s estimates of annual supplies available to the Dripping Springs Wash Basin.

⁵ Arizona Revised Statutes § 45-101(4). <https://www.azleg.gov/ars/45/00101.htm>

⁶ Arizona Revised Statutes Title 45, Chapter 2, Article 8.1.
<https://www.azleg.gov/arsDetail/?title=45>

⁷ Arizona Revised Statutes Title 45, Chapter 2, Article 8.
<https://www.azleg.gov/arsDetail/?title=45>

2.2.1 Surface Water

In the Dripping Springs Wash Basin, ADWR identified the following surface water conveyances (USGS streamgages in parentheses):

- Ash Creek
- Copper Canyon
- Deer Creek
- Dripping Spring Wash
- Garden Creek
- Gila River (09469500)
- Little Ash Creek
- Little Rock Creek
- Mescal Creek
- Pioneer Creek
- Rock Creek
- Silver Creek
- Skunk Camp Wash
- Stone Cabin Wash
- Sycamore Creek

Flows on the Gila River are measured with streamgage (09469500). For streams without streamgage data, the DAR method was applied to estimate streamflow volumes. The streamflow volume estimates provided in the table below are composites of the streamgage and DAR estimation methods.

Table 1. Estimated Surface Water Volumes in the Dripping Springs Wash Basin for 1990-2024. (SDR 2025)

Basin	Streamflow Minimum	Streamflow Maximum	Average Streamflow (Streamgage Method)	Average Streamflow (DAR Method)	Total Average Streamflow	Median Streamflow
Dripping Spring Wash	46,346(1990)	1,715,796(1993)	249,824	2,528	252,352	220,001

All values are shown in AF. Parentheses indicate the year streamflow volume was recorded.

Operations at the Coolidge Dam significantly skewed streamflow data at streamgage (09469500) in the Dripping Springs Wash Basin, resulting in unnaturally high streamflow volumes. Therefore, this streamflow data is not a representation of a natural streamflow regime in the Dripping Springs Wash Basin. Acknowledging this deviation, surface water is estimated to contribute 220,001 AF to the supplies in the basin in a typical year. However, there are years with extremely high or low surface water inflows. Due to the extremely high flow years associated with floods, the average surface water supply in the basin is higher than the median of 222,001 AF per year.



Table 2. Estimated Surface Water Volumes Diverted for Use in the Dripping Springs Wash Basin for 1990-2024. (SDR 2025)

Year	Diverted Streamflow
1990	75
2007	75
2024	75
Average Annual Diverted Streamflow from 1990-2024	75

All values are shown in AF.

The estimated surface water volumes were diverted for storage in reservoirs in the Dripping Springs Wash Basin.

2.2.2 Groundwater

The following groundwater volumes were estimated in the Dripping Springs Wash Basin:

Table 3. Estimated Streamflow Infiltration Volumes in the Dripping Springs Wash Basin for 1990-2024. (SDR 2025)

Basin	Average Annual Streamflow Infiltration (Perennial)	Average Annual Streamflow Infiltration (Intermittent & Ephemeral)	Total Average Annual Streamflow Infiltration
Dripping Spring Wash	21,235	2,181	23,416

All values are shown in AF.

- Streamflow Infiltration: Infiltration for perennial streams was estimated using the fixed percentage listed in the Methods Appendix. Infiltration for intermittent and ephemeral streams, was estimated using infiltration rates from the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Soil Quality Indicators.⁸ The predominant soil type was sandy-skeletal.⁹ The standard storm duration utilized was 1.5 hours.¹⁰ Total streamflow infiltration peaked in 1993 at approximately 150,562 AF and was lowest in 1990 at 4,364 AF.

⁸ USDA NRCS. (2024). Soil Quality Indicators. United States Department of Agriculture Natural Resource Conservation Service. <https://www.nrcs.usda.gov/sites/default/files/2022-10/Infiltration.pdf>

⁹ Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture (NRCS, USDA). (2016). Web Soil Survey (STATSGO2). <http://websoilsurvey.nrcs.usda.gov/>

¹⁰ Food and Agriculture Organization of the United Nations (FAO). (2024). Annex 2 Infiltration Rate and Infiltration Test. <https://www.fao.org/4/s8684e/s8684e0a.htm>



Table 4. Estimated Groundwater Volumes in the Dripping Springs Wash Basin for 1990-2024. (SDR 2025)

Basin	Average Annual Baseflow	Average Annual Groundwater Inflow	Average Annual Groundwater Outflow	Average Annual Mountain-Front Recharge	Calculated Initial Groundwater Storage
Dripping Spring Wash	-192,054	0	-200	NA	209,295 ⁽²⁰²⁴⁾

All values are shown in AF. Negative numbers indicate demands or water flows leaving the basin. Parentheses indicate the representative year chosen to calculate initial storage.

- Baseflow: ADWR estimated baseflow using the USGS Hydrologic Toolbox in ArcGIS.¹¹ Streamgauge data were utilized when available. Any gaps in the data were filled using precipitation data from PRISM¹² and the USGS StreamStats website.¹³ Operations at the Coolidge Dam significantly skewed streamflow data at streamgauge (09469500) in the Dripping Springs Wash Basin, resulting in an abnormally high estimate of baseflow.
- Groundwater Inflow/Outflow: Inter-basin underflow volumes were based on USGS predevelopment maps and scientific literature estimates.¹⁴
- Mountain-Front Recharge: The mountain-front recharge estimates were calculated using precipitation data, model data, scientific literature estimates for groundwater inflows/outflows,¹⁵ and a water budget accounting for the inflows/outflows that affected the mountain-front recharge volume. Due to the high baseflow estimate skewing the mountain-front recharge water budget, mountain front recharge was not estimated for this basin.
- Groundwater Storage: Storage was calculated using either a model data plus water budget method, if model data were available for the basin, or a GIS-based geological data non-model method, if model data were unavailable for the basin (Section 2.5.4, Methods Appendix). Initial groundwater storage was calculated using wells located within alluvial aquifer boundaries in the basin. A representative year was selected containing the most

¹¹ Barlow, P.M. et al. (2022). U.S. Geological Survey Hydrologic Toolbox — A graphical and mapping interface for analysis of hydrologic data: U.S. Geological Survey Techniques and Methods, book 4, chap. D3, 23 p. <https://doi.org/10.3133/tm4D3>

¹² PRISM Climate Group. (2024). 30-Year Normals [dataset] <https://prism.oregonstate.edu/explorer/>

¹³ USGS. (n.d.-b). StreamStats [dataset]. <https://www.usgs.gov/streamstats>

¹⁴ USGS. (n.d.-b). StreamStats [dataset]. <https://www.usgs.gov/streamstats>

¹⁵ Tillman, F. et al. (2011). Water Availability and Use Pilot: Methods Development for a Regional Assessment of Groundwater Availability, Southwest Alluvial Basins, Arizona (Scientific Investigations Report 2011–5071). United States Geological Survey. https://media.kjzz.org/s3fs-public/field/docs/2011/09/21/sir2011-5071_text.pdf



water level measurements at those wells. If no representative year contained enough well measurements to calculate groundwater storage, which was the case with Dripping Springs Wash Basin, a composite of all water level measurements from any year was utilized. The estimated storage volume was calculated to the basin’s average well depth, 119 feet. Due to the high baseflow estimate skewing the mountain-front recharge budget, mountain front recharge was not used to estimate groundwater storage for this basin.

2.2.3 Effluent

None of the effluent produced in the Dripping Springs Wash Basin has been allocated for reuse, so no effluent is categorized as a water supply.

2.2.4 Incidental Recharge

Sources of incidental recharge are agricultural, municipal and industrial.:

Table 5. Estimated Incidental Recharge Volumes in the Dripping Springs Wash Basin for 1990-2024. (SDR 2025)

Sector	1990	2007	2024
Agricultural	0	0	0
Municipal	1	3	3
Industrial	0	0	0

All values are shown in AF.

- **Agricultural Incidental Recharge:** Agricultural incidental recharge is determined based on total irrigation withdrawals and irrigation efficiency within a basin. There is no estimated agricultural incidental recharge in the basin.
- **Municipal Incidental Recharge:** Municipal incidental recharge is a byproduct of lost and unaccounted for (L&U) water from water providers and seepage from septic tanks. The estimated volume of municipal incidental recharge increased 2 AF from 1990 to 2007, then remained relatively stable through 2024.
- **Industrial Incidental Recharge:** Industrial incidental recharge occurs from the irrigation of turf facilities and is influenced by irrigation systems' total withdrawals and efficiency. There is no estimated industrial incidental recharge in the basin.

2.2.5 Transportation Water

Certain basins have been identified in A.R.S. Title 45, Chapter 2, Article 8.1 as basins from which groundwater may be withdrawn for transportation to an AMA. Where such transportation has been authorized, that groundwater is referred to as “Transportation Water” in this report.

The Dripping Springs Wash Basin was not identified as a transportation water basin.



2.2.6 Moved Water

Any water that crosses basin boundaries through artificial means and that does not fall under the Transportation Water definition is referred to as “Moved Water” in this report. Moved Water includes groundwater that is transported between basins that are not AMAs, pursuant to A.R.S. Title 45, Chapter 2, Article 8.

The Dripping Springs Wash Basin was not identified as a basin with moved water.

2.3 DEMAND RESULTS

The Demand subsection contains ADWR’s estimates of annual demands in the Dripping Springs Wash Basin.

Table 6. Estimated Demand Volumes for the Dripping Springs Wash Basin by Sector for 1990-2024. (SDR 2025)

Sector	Subsector/Water Type	Year		
		1990	2007	2024
Agricultural	Agriculture	0	0	0
Municipal	Residential Provider	0	0	0
	Residential Non-Provider	-6	-21	-19
	Non-Residential	0	0	0
	L&U	0	0	0
Industrial	Dairies	0	0	0
	Feedlots	0	0	0
	Grazing	-43	-43	-43
	Mining	0	0	0
	Power	0	0	0
	Sand and Gravel	0	0	0
	Turf	0	0	0
	Other	0	0	0
Environmental	Riparian	-2,259	-2,259	-2,259

Negative numbers indicate demands or waterflows leaving the basin—all values in AF.

2.3.1 Agricultural

Agricultural demand is water applied to two or more acres of land to produce plants or parts of plants for sale for human consumption or use as feed for livestock, range livestock, or poultry.

There is no agricultural water use in the Dripping Springs Wash Basin.

2.3.2 Municipal

Municipal demand is defined as the non-agricultural and non-industrial uses of water supplied by a city, town, private water company, irrigation district, domestic water improvement district, water cooperative, or private domestic well.



The Dripping Springs Wash Basin has an estimated 328 residents, with no incorporated towns or major institutions. Approximately half of the basin lies within the boundaries of the San Carlos Indian Reservation.

- Residential Provider: Residential provider use is supplied by a municipal provider, or a Community Water System (CWS) as defined in A.R.S. § 45-341.¹⁶ There are no Community Water Systems or municipal providers in the Dripping Springs Wash Basin.
- Residential Non-Provider: Residential non-provider use is any residential water use that is not supplied by a municipal provider but rather by a non-public water system or domestic well. An estimated 328 residents in the basin rely on self-supplied water resources. Municipal non-provider water demand more than tripled between 1990 and 2007, increasing from 6 AF to 21 AF. Following this period of rapid growth, demand gradually declined to 19 AF by 2024.
- Non-Residential: Non-residential use is defined as municipal water not used for residential purposes but instead used for commercial, institutional, recreational, or transitory uses. Due to the absence of large institutions or incorporated towns, there is no non-residential water demand identified in the Dripping Springs Wash Basin.
- Lost and Unaccounted for Water: Lost and Unaccounted for (L&U) water is defined as the total quantity of water from any source that enters a water distribution system minus the total amount of authorized deliveries from the distribution system during the calendar year. L&U does not account for water loss from a non-public water system or domestic well. There are no residential providers in the basin, so there is no reported L&U water.

2.3.3 Industrial

Industrial demand is water used by an industrial facility, such as a golf course, dairy, feedlot, power plant, mine, or paper mill.

The current industrial water demands in the Dripping Springs Wash Basin come from grazing.

- Grazing: Grazing demand is defined as the water used to maintain stock ponds for the sole purpose of watering livestock. An estimated 2,555 animals graze in the Dripping Springs Wash Basin, the majority of which are cattle.

2.3.4 Environmental

Environmental demand is quantified within this report as evapotranspiration along streams, rivers, lakes, and drainage ways. The largest riparian areas in the Dripping Springs Wash Basin are along the Gila River. Additional riparian habitat exists in the eastern region of the basin, mostly along Ash Creek, Deer Creek, and Garden Creek. The riparian demand values in the SDRs represent a high-end estimate of the potential water needs of riparian plants within a basin. In the absence of

¹⁶ Arizona Revised Statutes § 45-341. <https://www.azleg.gov/ars/45/00341.htm>

site-specific data, these estimates assume an average value for riparian plants' water needs, which does not consider local environmental conditions. Please see the Methods Appendix for an in-depth explanation of the methodologies.

- Annual net water requirements for the riparian plants are estimated to be 2,259 AF.

3 COMBINING SUPPLY AND DEMAND

The water budget in the Dripping Springs Wash Basin shows a consistently negative trend over the baseline period. Demand values averaged 2,320 AF per year, with Environmental demand constituting the overwhelming majority. Supply values greatly fluctuated throughout the baseline period (as seen in the table below), contributing on average 409 AF per year, but ranging from 1 AF in 1990 to 1,893 AF in 1996. Groundwater storage has decreased over time due to demand consistently exceeding supply in the basin.

Table 7. Summary of Total Estimated Demand and Supply Values from 1990-2024 in the Dripping Springs Wash Basin. (SDR 2025)

	1990	2007	2024
Supply	1	61	3
Demand	-2,308	-2,323	-2,321
Balance	-2,307	-2,262	-2,318
Resulting Water Available in Storage	273,888	247,640	209,295

Negative numbers indicate demands or water flows leaving the basin—all values in AF.

4 RESULTS OF PROJECTION SCENARIOS

Staff developed scenarios based on the most likely impacts on water demands and supplies over 51 years (from 2025 to 2075). Projections were then generated from the baseline data.

The projection scenarios developed are:

1. Status Quo: baseline volumes were carried forward through the projection period.
2. Growth: volumes were assumed to increase within specific parameters throughout the projection period.
3. Conservation: volumes were assumed to be influenced by specific conservation practices through the projection period.
4. Technology: volumes were assumed to be influenced by technological advancements through the projection period.
5. Climate: volumes were adjusted for three different climate scenarios, using a 1-degree Fahrenheit temperature increase in the mean annual temperature for the projection period, following a lower emissions pathway for Arizona; a 5-degree Fahrenheit temperature increase, following a medium emissions pathway; and a 10-degree Fahrenheit temperature increase, following a high emissions pathway.



4.1 SUPPLY PROJECTION RESULTS

4.1.1 Surface Water

For the Status Quo scenario, the estimated projected volume of surface water will remain constant until 2075.

Table 8. Estimated Surface Water Status Quo Projection Volumes for the Dripping Springs Wash Basin for 2025-2075. (SDR 2025)

Basin	Volume
Dripping Springs Wash	175,167

All values are shown in AF.

Due to ongoing projection scenario improvements, no other projection scenarios were applied to surface water for this report.

4.1.2 Groundwater Storage

For the Status Quo scenario, the estimated projected balance between Supply and Demand will remain constant at -2,262 AF through 2075.

Table 9. Estimated Groundwater Storage Status Quo Projection Volumes for the Dripping Springs Wash Basin for 2025-2075. (SDR 2025)

Scenario	2025	2050	2075
Status Quo	207,033	150,480	93,927

All values are shown in AF.

Due to ongoing projection scenario improvements, no other projection scenarios were applied to groundwater storage for this report.

4.1.3 Effluent

In the Dripping Springs Wash Basin, no effluent produced has been allocated for reuse. Therefore, no effluent is used as a water supply, and no supply projections were applied to the data.



4.1.4 Incidental Recharge

Table 10. Estimated Municipal Incidental Recharge Projection Volumes for the Dripping Springs Wash Basin for 2025-2075. (SDR 2025)

Sector	Scenario	2025	2050	2075
Municipal	Status Quo	21	21	21
	Climate – Low	22	22	22
	Climate – Medium	22	22	22
	Climate - High	22	22	22
	Conservation	22	18	15
	Growth	22	22	22
	Technology	22	19	16

All values are shown in AF.

- Status Quo: The Status Quo scenario estimated projected volume will remain constant through 2075.
- Climate: The Climate scenario anticipates that rising temperatures and increased evaporation rates will elevate water usage demands. In the Dripping Springs Wash Basin, under all scenarios, no significant change in water demand is projected.
- Conservation: The Conservation scenario assumes implementation of requirements similar to those in the AMA 5th Management Plans. In this scenario, incidental recharge in the Dripping Springs Wash Basin is projected to decline 32% by 2075.
- Growth: Under the Growth scenario, population projections from the Arizona Commerce Authority Office of Economic Opportunity (ACA OEO)¹⁷ were used to estimate incidental recharge. No increase in incidental recharge is anticipated due to limited population growth.
- Technology: The Technology scenario assumes widespread adoption of water monitoring technologies, such as advanced metering infrastructure (AMI) or home-based devices, with active leak detection and customer response. Estimated savings of 14,000 gallons per household per year reflect reductions from leaks and improved water use efficiency. A 33% reduction in incidental recharge is anticipated by 2050 as a result of improved water use efficiency, with volumes then expected to stabilize through 2075.

¹⁷ Arizona Commerce Authority (ACA). (2022a). Population Estimates. Arizona Commerce Authority. <https://www.azcommerce.com/oEO/population/population-estimates/>



4.1.5 Agricultural Incidental Recharge

There is no estimated agricultural incidental recharge in the Dripping Springs Wash Basin. Therefore, no projection scenarios were estimated.

4.1.6 Industrial Incidental Recharge

There is no estimated industrial incidental recharge in the Dripping Springs Wash Basin. Therefore, no projection scenarios were estimated.

4.2 DEMAND PROJECTION RESULTS

4.2.1 Agricultural

In the Dripping Springs Wash Basin, there is no estimated agricultural demand. Therefore, no projection scenarios were estimated.

4.2.2 Municipal

Table 11. Estimated Projected Demand Volumes for the Municipal Sector for Dripping Springs Wash Basin for 2025-2075. (SDR 2025)

	Residential Provider			Residential Non-Provider		
	2025	2050	2075	2025	2050	2075
Status Quo	0	0	0	-18	-18	-18
Climate – Low	0	0	0	-19	-19	-19
Climate – Medium	0	0	0	-19	-19	-19
Climate - High	0	0	0	-19	-19	-19
Conservation	0	0	0	-19	-16	-13
Growth	0	0	0	-19	-19	-19
Technology	0	0	0	-19	-16	-14

Negative numbers indicate demands or water flows leaving the basin—all values in AF.



	Non-Residential			L&U		
	2025	2050	2075	2025	2050	2075
Status Quo	0	0	0	0	0	0
Climate – Low	0	0	0	0	0	0
Climate – Medium	0	0	0	0	0	0
Climate - High	0	0	0	0	0	0
Conservation	0	0	0	0	0	0
Growth	0	0	0	0	0	0
Technology	0	0	0	0	0	0

Negative numbers indicate demands or water flows leaving the basin—all values in AF.

- Status Quo: The Status Quo scenario estimated projected volume will remain constant through 2075.
- Climate: Under the Climate scenario, rising temperatures and increased evaporation rates are expected to increase water demands. The Dripping Springs Wash Basin is projected to remain unchanged across all scenario analyses for residential non-providers.
- Conservation: Under the Conservation scenario, additional water-saving measures and requirements similar to those in the initial AMAs’ 5th Management Plan are implemented. By 2075, a 32% reduction in residential non-provider total water use is expected as a result of conservation measures.
- Growth: Under the Growth scenario, population projections produced by the Arizona Commerce Authority Office of Economic Opportunity (ACA OEO)¹⁷ were used to estimate the growth in the basin. Residential non-provider demand in the basin is expected to remain unchanged through 2075.
- Technology: The Technology scenario assumes widespread adoption of water monitoring technologies, such as AMI or home-based devices, with active leak detection and customer response. Estimated savings of 14,000 gallons per household per year reflect reductions from leaks and improved water use efficiency. In the Dripping Springs Wash Basin, ADWR projects that by 2075, residential non-provider water demand will decrease by 26%.



4.2.3 Industrial

Table 12. Estimated Projected Demand Volumes for the Industrial Sector for Dripping Springs Wash Basin for 2025-2075. (SDR 2025)

	Grazing
Status Quo	-43

Status Quo projections were applied across all scenarios for the grazing subsector. Negative numbers indicate demands or water flows leaving the basin—all values in AF.

For the Status Quo scenario, the estimated projected volume of grazing demand will remain constant until 2075.

Due to ongoing projection scenario improvements, no other projection scenarios were applied to the grazing subsector for this report.

No other industrial subsectors were present in the basin. Therefore, no projection scenarios were estimated.

4.2.4 Environmental

Table 13. Estimated Projected Environmental Demand Volumes for Dripping Springs Wash Basin for 2025-2075. (SDR 2025)

	Environmental		
	2025	2050	2075
Status Quo	-2,259	-2,259	-2,259
Climate – Low	-2,259	-2,267	-2,276
Climate – Medium	-2,259	-2,302	-2,342
Climate - High	-2,259	-2,344	-2,415

Negative numbers indicate demands or waterflows leaving the basin—all values in AF.

- Status Quo: The Status Quo scenario estimated projected volume will remain constant through 2075.
- Climate: The Climate scenarios for riparian use consider the impact of increased temperatures, increased evapotranspiration, and habitat transition. Under the set parameters of these scenarios, riparian use is expected to increase in the Dripping Springs Wash Basin as the higher temperatures increase evapotranspiration from riparian plants. Riparian water use is estimated to increase by one percent in the low emissions scenario, four percent in the medium emissions scenario, and seven percent in the high emissions scenario.

5 CONCLUSION

The water budget in the Dripping Springs Wash Basin shows a consistently negative trend over the baseline period. Estimated groundwater storage decreased through the period by an average



of 1,911 AF per year. If groundwater levels were to drop below the basin's average well depth of 119 feet, approximately 91% of existing wells would become dry. The average recorded water level of wells in Dripping Springs Wash Basin is 32 feet.

Supply values varied greatly, ranging from 1 AF in 1990 to 1,893 AF in 1996. Streamflow values fluctuated significantly, from the minimum value of 46,346 AF in 1990, to the maximum of 1,715,796 AF in 1993. Streamflow infiltration did not contribute significantly to basin supply due to the amount of evapotranspiration occurring in riparian areas.

The demand sectors identified in the basin were residential non-provider, grazing, and Environmental, with Environmental constituting a majority of the demand volume. Demand values were consistent throughout, with residential non-provider showing some fluctuations due to changes in population.

The Dripping Springs Wash Basin remains in a negative water balance.

5.1 ATTACHMENTS

- [Acronyms and Definitions](#)
- [References \(Sources\) – general](#)

