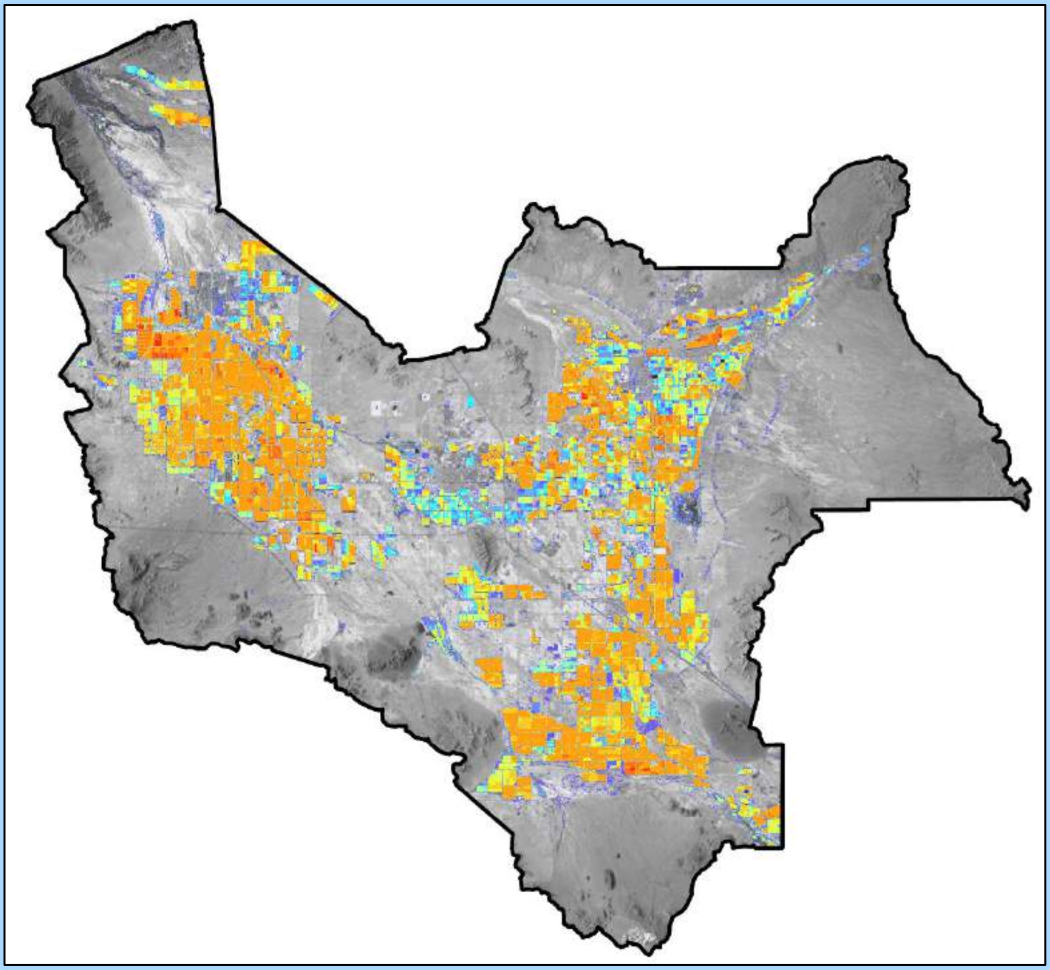
Eloy and Maricopa-Stanfield Basin Study

Supply and Demand Assessment



March 2022

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Acronyms and Abbreviations

Abbreviation	Description
ADWR	Arizona Department of Water Resources
AF	Acre-feet
AMA	Active Management Area
AOEO	Arizona Office of Economic Opportunity
ASR	Annual Storage and Recovery
Assessment	Eloy and Maricopa – Stanfield Supply and Demand Assessment
AWBA	Arizona Water Banking Authority
AWS	Assured Water Supply
AWSA	Arizona Water Settlement Act (2004)
CAGRD	Central Arizona Groundwater Replenishment District
CAP	Central Arizona Project
CAP:SAM	Central Arizona Project: Service Area Model
CAWCD	Central Arizona Water Conservation District
CAWS	Certificate of Assured Water Supply
CRSS	Colorado River Simulation System
DAWS	Designation of Assured Water Supply
EMS	Eloy and Maricopa-Stanfield
GIS	Geographic Information System
GMA	Groundwater Management Act
GPHUD	Gallons Per Housing Unit Per Day
GRIC	Gila River Indian Community
GSF	Groundwater Savings Facility
IGFR	Irrigation Grandfathered Rights
LBDCP	Lower Basin Drought Contingency Plan
LTSA	Long-Term Storage Account
LTSC	Long-Term Storage Credit
M&I	Municipal and Industrial
MAG	Maricopa Association of Governments
ML	Member Lands (CAGRD)
MSA	Member Service Areas (CAGRD)
NASS	National Agricultural Statistical Service
NIA	Non-Indian Agriculture
PMIP	Pima - Maricopa Irrigation Project
RCP	Representative Concentration Pathways
Reclamation	U.S. Bureau of Reclamation
SCIP	San Carlos Irrigation Project
Study	Eloy and Maricopa - Stanfield Basin Study
TAZ	Traffic Analysis Zone
USF	Underground Storage Facility

Table of Contents

List of Tables

List of Figures

Executive Summary

The Eloy and Maricopa – Stanfield Basin Study (Study) is a collaborative regional planning effort that began in November of 2018 as part of the Bureau of Reclamation's (Reclamation) WaterSMART program. The Study area is delineated as a subsection of the Pinal Active Management Area (AMA) corresponding to the populated regions. The goal of the study is to generate a range of plausible projections of future water supply and demand, evaluate how these projections may impact the regional aquifer system and identify mitigation strategies to address these imbalances.

The Central Arizona Water Conservation District (CAWCD), a non-federal cost-share partner of the Study, in conjunction with Study participants, conducted the Supply and Demand Assessment (Assessment) portion of this study. Using CAWCD's Central Arizona Project (CAP) Service Area Model, five unique projections from 2019 to 2060 were developed to simulate the impacts of changing climate, population growth, varying agricultural pumping capacity, and other factors on the supply and demand conditions within the Study area. The purpose of this report is to document the assumptions embedded in the model scenarios and to summarize the results of the Assessment.

Total demand for the Study area is projected to grow across all scenarios, ranging from a 15% to 32% increase compared to historic levels. The bulk of this increase is associated with growth in the municipal sector as well as the Gila River Indian Community's projected increase in on-reservation irrigation through the Pima-Maricopa Irrigation Project. Municipal sector growth is influenced largely by assumptions about rate and location. Agricultural demand, the largest use of water in the Study area, is projected to decrease across all scenarios due to urbanization and assumed increases in irrigation efficiency through time.

To meet growing demands, groundwater pumping is projected to increase across all scenarios. Groundwater pumping by the end of the projection period (2060) is estimated to range from 718,000 AF per year to over 975,000 AF per year. While overall agricultural demand is projected to decline, much of the groundwater pumping increase is associated with the agricultural sector. The Agricultural Settlement Pool, a CAP supply made exclusively available to agricultural districts will sunset after 2030. It is anticipated that irrigation districts will partially fill this gap by pumping additional groundwater. Moreover, CAP supplies that are typically available to the districts through GSF arrangements will be reduced due to projected shortages to the CAP system. Lastly, the pumping of stored credits for the purpose of firming by the Arizona Water Banking Authority and to meet interstate water banking obligations for the state of

Nevada, will also contribute to increases in groundwater pumping in the Study area.

This Assessment serves as the basis for evaluating a range of future supply and demand conditions and the ways in which water users might respond under these conditions. The combination of growing demands, reduced availability of renewable supplies and increases in groundwater pumping, result in a large net stress on the regional aquifer system. To evaluate this impact, the results of the Assessment were compiled and formatted to develop input files for the groundwater modeling portion of this Study. Montgomery & Associates used these files to subsequently update and run the Arizona Department of Water Resources Pinal AMA regional groundwater flow model.

1.0 Background and Scope

1.1 WaterSMART Program

Water resource managers in the Western U.S. face increased uncertainty surrounding future water availability due to climate change, population growth, aging infrastructure, and environmental demands. In response to the 2009 SECURE Water Act, the Bureau of Reclamation (Reclamation) established the WaterSMART[1] (Sustain and Manage America's Resources for Tomorrow) program as a framework for wisely managing the nation's water supplies and evaluating future scarcity. The program provides an opportunity for state agencies, tribes, and local entities to work collaboratively with the federal government on long-range regional scale planning studies. The principal goal of these studies is to generate a range of projections of future water supply and demand and to identify where adaptation and mitigation strategies may be needed to address potential imbalances and aquifer impacts.

The grant application for the Eloy and Maricopa-Stanfield (EMS) Basin Study (Study) was submitted in April 2017 by the Pinal Partnership. The Pinal Partnership is an Arizona based non-profit corporation that was established in 2006 and represents private companies, governmental entities, and Native American communities within Pinal County. The Study proposal was awarded for Federal Fiscal Year 2019 and work commenced in November 2018 upon the signing of the Memorandum of Agreement by all parties. The Study has an estimated budget of $1,360,000 with a 50/50 cost-share between Reclamation and non-Federal partners and is scheduled to conclude in May of 2022.

[1] https://www.usbr.gov/watersmart/

1.2 Eloy and Maricopa-Stanfield Study Area

The EMS Study area is approximately 1,977 mi^2 in size and consists of two large, deep, and productive groundwater subbasins: the Maricopa-Stanfield subbasin to the west and the Eloy subbasin to the east. The main surface water drainages for the region are the Santa Cruz and the Gila rivers. The area is part of the Pinal Active Management Area (AMA; Figure 1) as delineated by the Arizona Department of Water Resources' (ADWR) 1980 Groundwater Management Act and overlaps the model domain for ADWR's Pinal regional groundwater flow model.

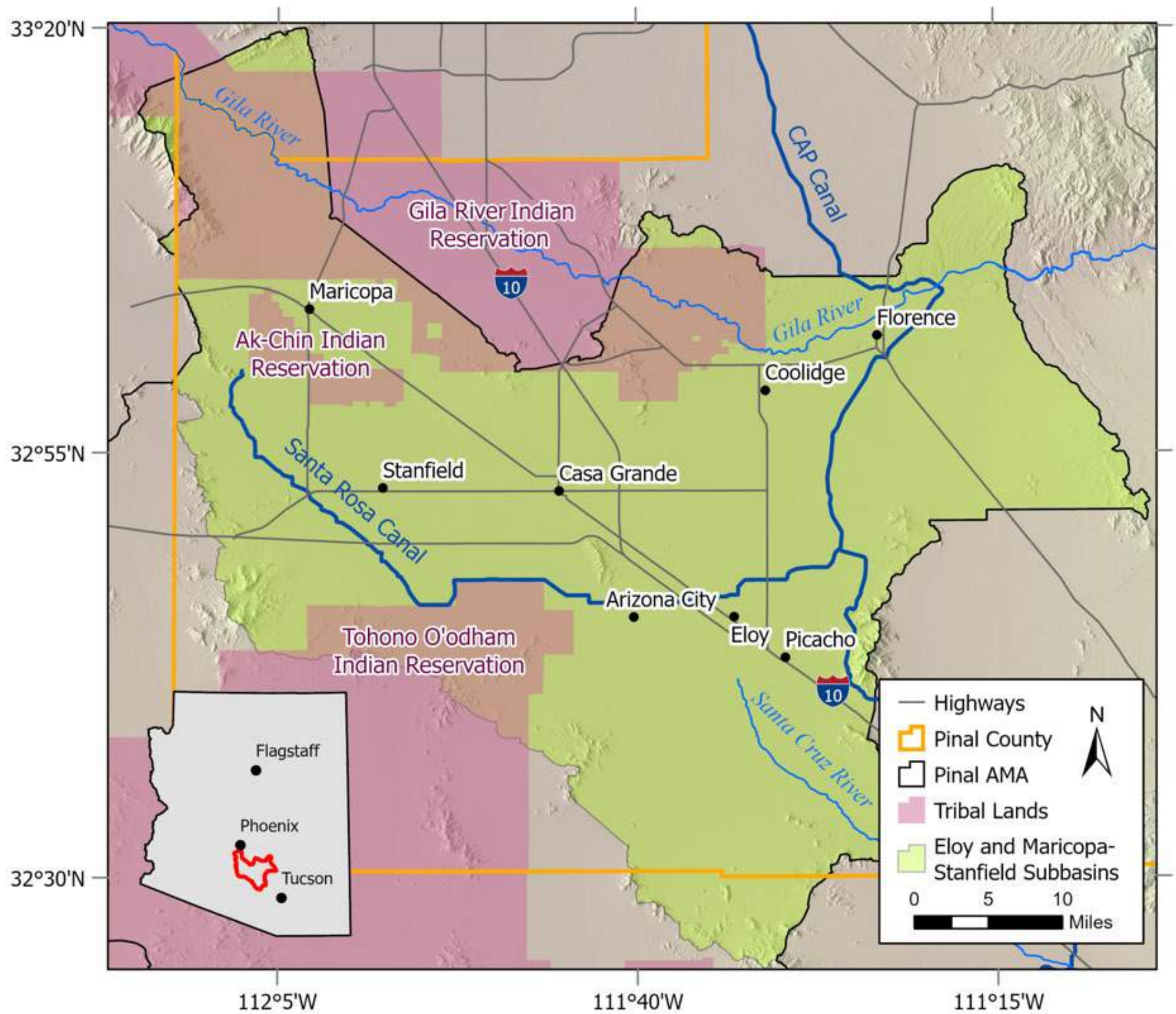


Figure 1 – Eloy and Maricopa-Stanfield Basin Study Area

The Study area encompasses approximately half of the Pinal AMA but includes much of the AMA's population. Therefore, trends in water use for the AMA are analogous to those of the Study area. Demand for water resources in the Pinal

AMA over the last 20 years (2000 – 2019) has remained relatively constant, averaging approximately 1.08 million acre-feet (AF; Figure 2). The majority (~95%) of this demand is associated with irrigation activity, either by the agricultural sector (i.e., Irrigation Grandfathered Rights) or tribal communities. Demand for the municipal and industrial sector has been on the order of about 52,000 AF.

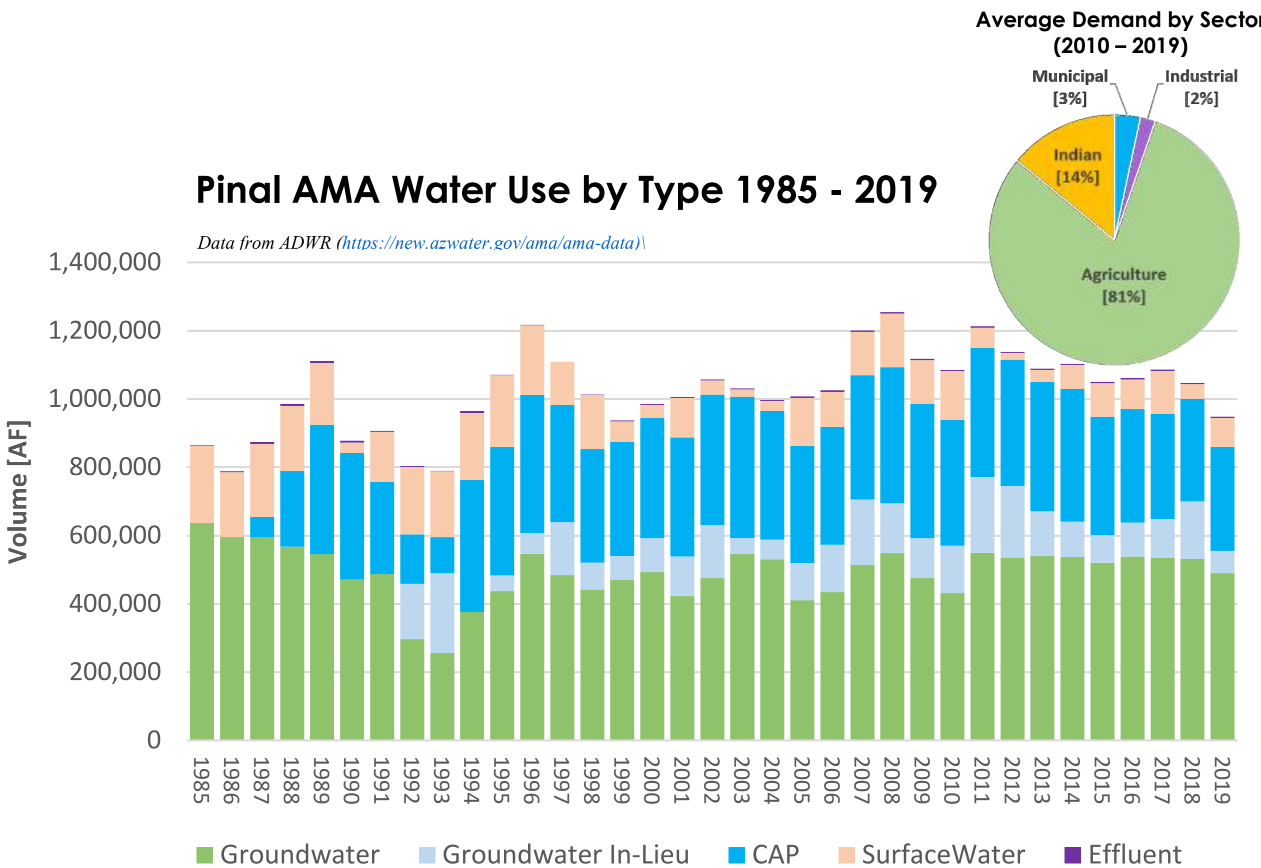


Figure 2 – Water use by type for the Pinal AMA, 1985 - 2019

Historically, there has been a nearly even split between the use of groundwater and renewable supplies to meet the demands of the Pinal AMA. Annual pumping of mined groundwater has varied by as much as 140,000 AF over the last 20 years but has typically averaged around 500,000 AF. Renewable supplies used in the AMA are comprised of surface flows from the Gila River, effluent supplies, and delivery of Colorado River supplies via the Central Arizona Project (CAP). Colorado River supplies (which include groundwater in-lieu supplies; Figure 2) have made up most of the renewable resources, averaging around 485,000 AF. Use of surface water flows and effluent supplies over the last 20 years have averaged 83,000 AF and 3,500 AF, respectively.

A substantial portion of the CAP supplies used in the AMA are part of the Agricultural Settlement Pool. This CAP priority pool was established in 2004 and made water available to irrigation districts that relinquished their long-term CAP entitlements under the terms of the Arizona Water Settlement Act (AWSA). The pool is set to decline in size in 2024 and ultimately sunset in 2030. With the loss of the Agricultural Settlement Pool and the compounding impact of drought on the availability of renewable supplies, irrigation districts are expected to mine additional groundwater to meet demand or fallow acres if supplies are insufficient to meet demands.

Current groundwater pumping is highly localized within the irrigation districts of the Study area (Figure 3) and has resulted in severe water level declines and associated land subsidence. An increase in future groundwater pumping to replace this lost supply will exacerbate these adverse outcomes, impacting valuable infrastructure and incurring additional costs for the districts. Moreover, declining water levels will reduce the ability of the municipal sector to prove physical availability of groundwater resources, a key component of Arizona's Assured Water Supply (AWS) Program (discussed later in this report).

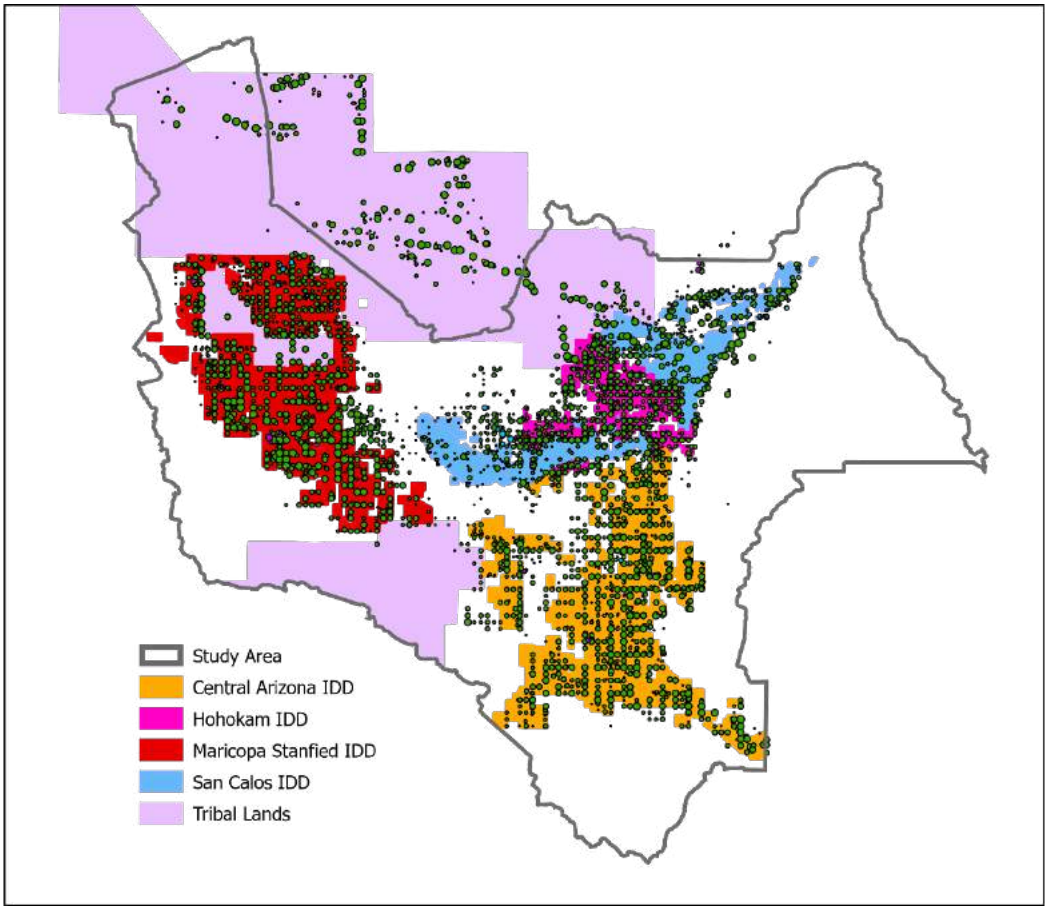


Figure 3 – Location of groundwater wells in the Study Area in relation to Irrigation Districts and Tribal Lands. Size of well indicates relative pumping volume based on 2015 data (ADWR – 2019 Pinal Model and 100-Year Assured Water Supply Projection)

These phenomena serve as the impetus for this Basin Study. The Study used state of the art tools and the best available data to evaluate the impacts of a range of future supply and demand conditions on the regional aquifer system and to address current and future imbalances that may occur.

1.3 Basin Study Process

All Reclamation WaterSMART Basin Studies must include four elements: (1) projections of future water supply and demand, considering specific impacts resulting from climate change; (2) an analysis of how existing water and power infrastructure and operations will perform in the face of changing water realities; (3) development of appropriate adaptation and mitigation strategies to meet current and future water demands and (4) a trade-off analysis (either qualitative or quantitative) of the adaptation and mitigation strategies identified. These four elements translate into seven key tasks (Figure 4) to be completed. Sub-teams comprised of Study participants (i.e., stakeholders and technical experts) were formed to ensure each task was completed in a manner that is technically sound and a Project Team was established to guide the overall efforts of the Study.

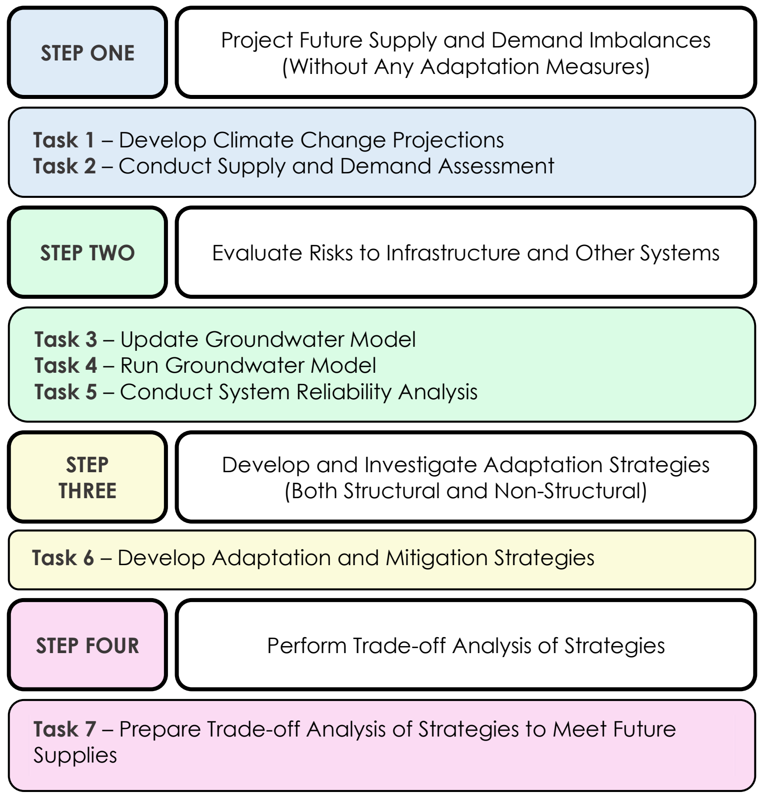


Figure 4 – General Framework for the Eloy and Maricopa-Stanfield Basin Study

The first element of the Basin Study process, i.e., projecting future water supply and demand imbalances, required two separate tasks. The first was to develop basin-scale climate change projections and evaluate the impacts of these projections on surface water resources in the Study area. The hydroclimate analysis was performed by Reclamation[2] and the results were used to determine annual stream recharge from the Gila and Santa Cruz Rivers for input into the groundwater flow model (Task 4, Figure 4).

The second task consisted of developing projections of supply and demand in the Study area under a range of plausible future conditions that vary with respect to climatic, socio-economic, and behavioral factors. This analysis is termed the Eloy and Maricopa-Stanfield Basin Study Supply and Demand

[2] Eloy-Maricopa Stanfield Basin Study: Development of Future Climate and Recharge Scenarios (pinalpartnership.com)

Assessment (Assessment). The purpose of this report is to document the assumptions associated with this analysis and to summarize the results of the Assessment.

2.0 Supply and Demand Assessment

Conducting a water resource Supply and Demand Assessment in the context of a Reclamation Basin Study, is a multi-part process. It begins with an evaluation of current conditions, followed by the development of supply and demand projections under a range of future conditions. For this Study, current water supply and demand data for the region was compiled from ADWR and Study participants. This provided a snapshot of current conditions in the Study area and served as a starting point for generating subsequent projections.

Changes in supply and demand through time are influenced by many climatic, socio-economic, and behavioral factors. Often the magnitude and trend of these factors is either unknown or highly variable. To address this uncertainty, projections of supply and demand should evaluate a large range in these key factors. A common best practice for analyzing this range is to employ a scenario planning approach. Scenarios are comprised of assumptions about the factors that influence supply and demand through time. They group together internally consistent combinations of factors that are associated with a plausible narrative for how the future may unfold. Utilizing a scenario planning approach allows for the generation of a range of plausible future conditions that can be further evaluated.

Projections of future water supply and demand for the Study area were developed by the Central Arizona Water Conservation District (CAWCD) in coordination with Study participants. CAWCD is a non-federal cost-share partner of the Study that operates and manages the CAP, a 336-mile-long aqueduct system designed to supply over 1.5 million AF of Colorado River Water annually to central and southern Arizona. Approximately 42 miles of the CAP canal, 15 turnouts and side-pumps, one siphon, and two pumping plants are located within the Study area (Figure 5). CAWCD has a broad range of roles and responsibilities within the region that include:

- Delivering over 420,000 AF of Colorado River water annually to municipal, industrial, tribal, and agricultural customers during a normal (i.e., non-shortage year)
- Levying two ad valorem taxes for the purposes of repayment, operations, and maintenance and enhancing the reliability of Municipal and Industrial (M&I) supplies during shortage through firming performed by the Arizona Water Banking Authority (AWBA)

- Serving as the recovery agent for approximately 1.5 million AF of water stored by the AWBA for the purposes of firming (i.e., to enhance supply reliability; Figure 6)
- Replenishing groundwater on behalf of the members of the Central Arizona Groundwater Replenishment District (CAGRD; Figure 6). The CAGRD serves to provide a mechanism for landowners and water providers to demonstrate an assured water supply per the 1995 AWS Rules

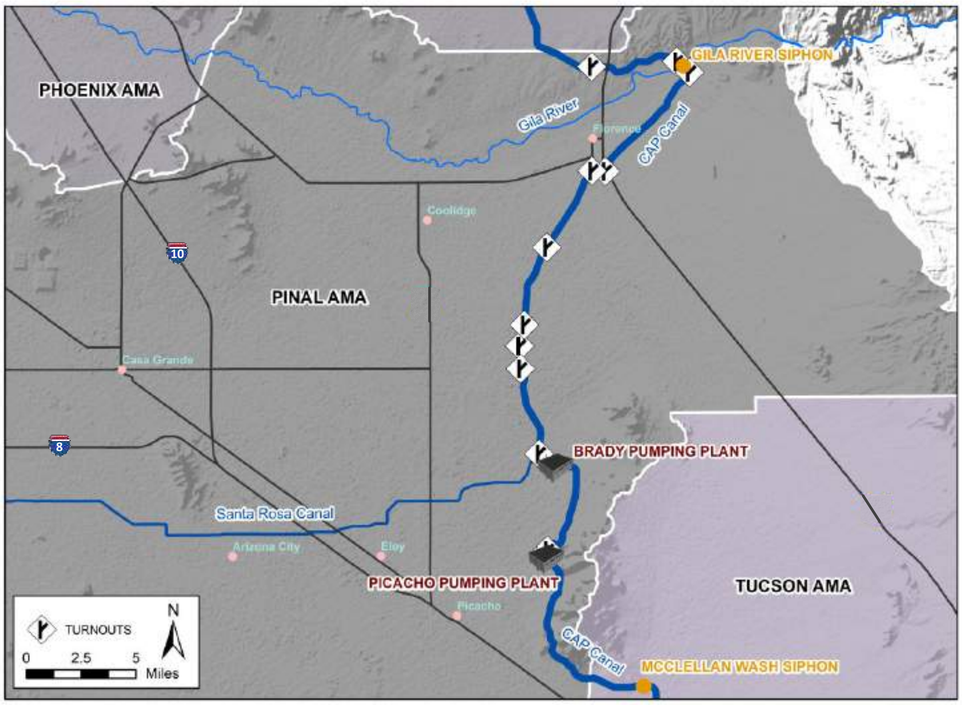


Figure 5 – CAP Infrastructure within the Study area (Study area boundary is the same as the Pinal AMA boundary in this figure)

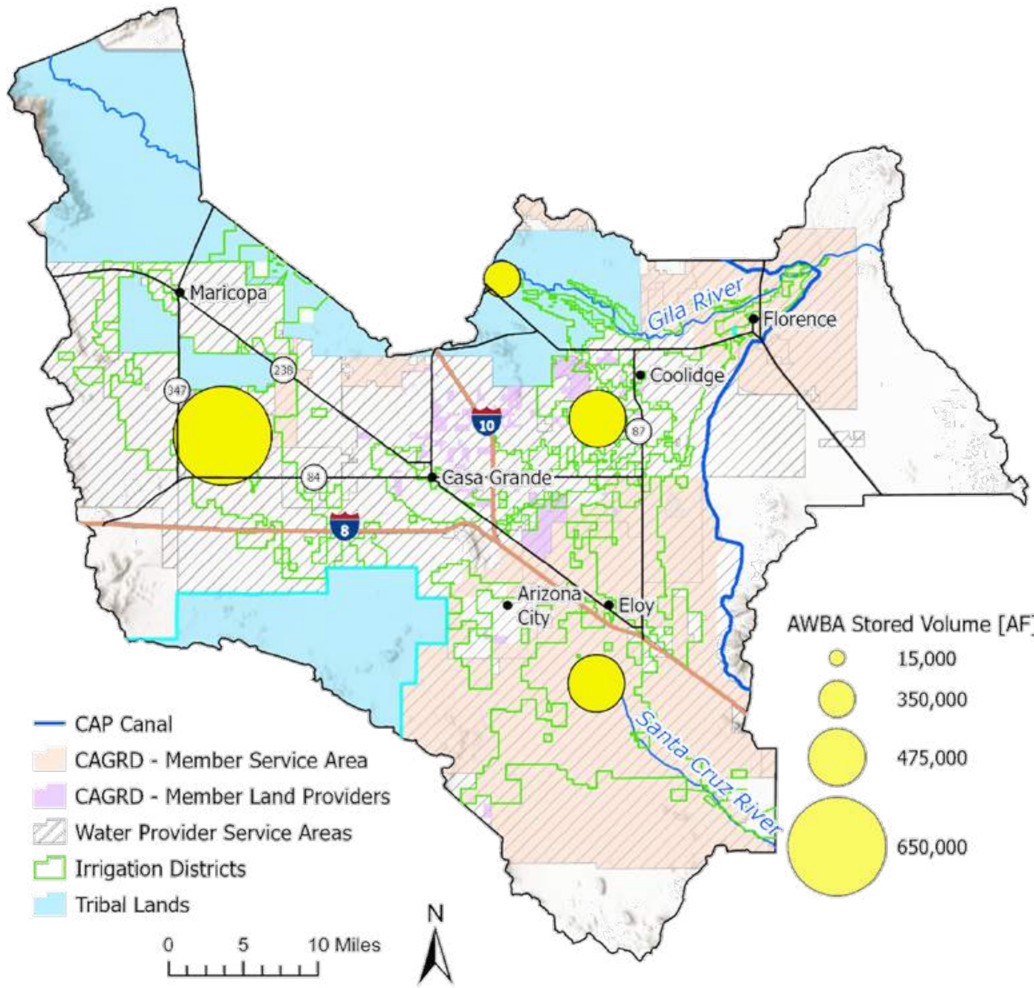


Figure 6 – CAP infrastructure, CAGRD membership and AWBA storage volumes in the Study area. For detailed information regarding storge volumes and facility locations visit the ADWR[3] and AWBA[4] websites

CAWCD's Resource Planning and Analysis department has developed unique modeling and technical capabilities that are well suited to evaluate future supply and demand conditions for the region. CAWCD has developed the CAP Service Area Model (CAP:SAM), a complex computer model built using GoldSim[5] software and designed to simulate over 135 water users (tribes, municipal providers, irrigation districts, institutional users) and 16 supply types within CAWCD's three-county service area (Maricopa, Pinal and Pima; Figure 7). CAP:SAM was specifically designed to generate "what-if" scenarios and includes the ability to evaluate a wide range of future conditions, including the

[3] https://new.azwater.gov/recharge/permitted-facilities
[4] https://waterbank.az.gov/ltsc-map
[5] https://www.goldsim.com/web/home/

rate and pattern of population growth, shortage impacts, effluent reuse, supply portfolio management decisions, trends in agricultural use, etc. CAP:SAM has significant capabilities to assist in planning and analysis for sub-regions like the EMS subbasins and has been used in the same capacity (i.e., to generate future supply and demand projections at the subbasin scale) for two other Reclamation sponsored Basin Studies in the state of Arizona: the West Salt River Valley Basin Study[6] and the Lower Santa Cruz River Basin Study[7].

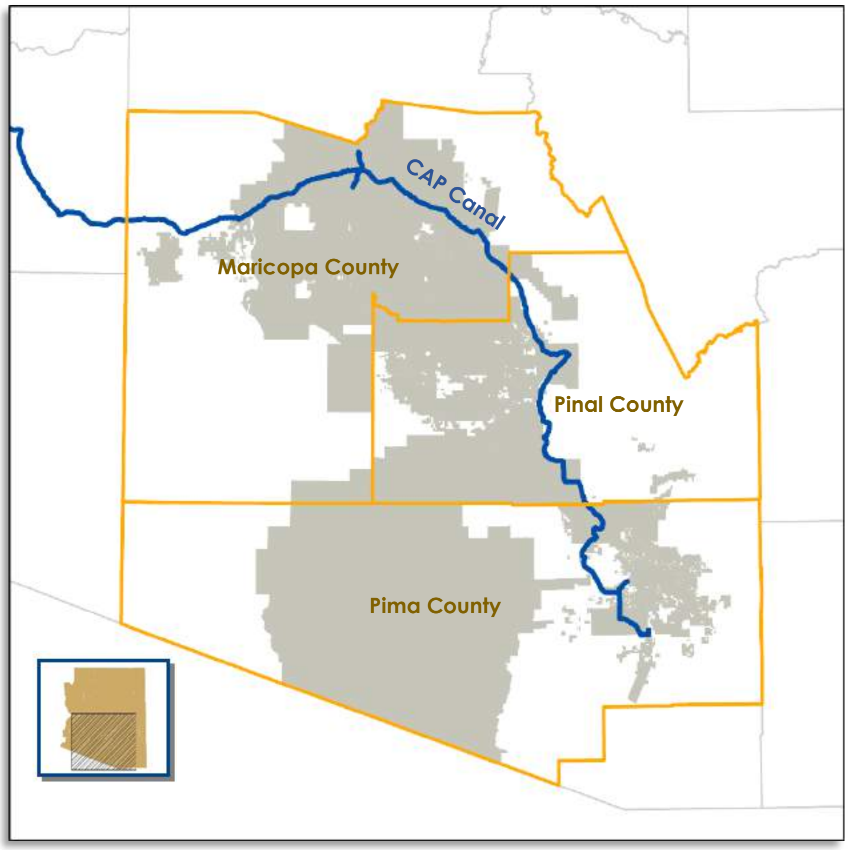


Figure 7 – CAWCD's three county service area. Shaded region represents Indian contracts, Municipal and Industrial subcontracts, Irrigation Districts, and non-subcontractors with relationship to the CAGRD.

For this Study, supply and demand projections were developed for CAWCD's entire three-county service area under six different "pre-mitigation" scenarios, using a planning period of 2019 – 2060. While the three-county model domain of CAP:SAM is greater than the Study area, there is regional interdependency of both water supply and water demand that has sub-regional effects. This report

[6] http://westcaps.org/basin-study/
[7] https://www.usbr.gov/lc/phoenix/programs/lscrbasin/LSCRBStudy.html

describes the development of these projections and the results of the Assessment as they pertain to the EMSBS. Results from this effort were provided as inputs for the groundwater flow modeling (Figure 4; Tasks 3 and 4) conducted by Montgomery & Associates[8] to evaluate the impacts to the aquifer system.

3.0 Water Management Framework

A key feature of CAP:SAM is its ability to model Arizona's water management framework. Water resource management in Arizona is an elaborate and substantial combination of laws, rules, and authorities. While a full review of this framework is beyond the scope of this report, an understanding of some of the major components is necessary to effectively interpret model results and place this Assessment in the broader state-wide water management context. The following sections provide a summary of some of the key water management concepts and describes some of the different water use requirements by sector. Of particular importance for the municipal sector are the AWS rules and the role of the CAGRD in helping satisfy them. The modeling performed in this Study assumes that the existing legal and regulatory framework stays in place through 2060, the end of this Study's planning period.

3.1 Active Management Areas

In response to extensive groundwater depletion, Arizona's 1980 Groundwater Management Act (GMA) was passed, and the principal components were codified into the Arizona Groundwater Code, Title 45, Chapter 2 of the Arizona Revised Statutes. In addition to creating the ADWR to administer the code's provisions, the GMA established AMAs geographic regions containing most of the State's population, in which groundwater overdraft historically was most severe. As a result, groundwater withdrawal, use and transportation are intensively regulated within these areas.

The GMA established management goals for each AMA related to the overall reduction in mined groundwater and mandated that all new development within an AMA secure access to a reliable, physically available water supply that is of sufficient quality for 100 years. In the Pinal AMA, the management goal is to preserve the agricultural economy for as long as feasible, while considering the need to preserve groundwater resources for future non-irrigation uses.

[8] Montgomery & Associates, Eloy and Maricopa-Stanfield Basin Study Predictive Groundwater Modeling Results, 2022

3.2 Assured Water Supply Rules and the CAGRD

ADWR adopted AWS rules in 1995 (and subsequently updated) that limited the volume of mined groundwater that new subdivisions can use to be consistent with the management goal of the AMAs. Groundwater can still be used to satisfy the requirement for a 100-year physically available water supply, but groundwater withdrawals that are made in excess of the AWS limits must be offset through the recharge of an equal volume of renewable supplies within the same AMA.

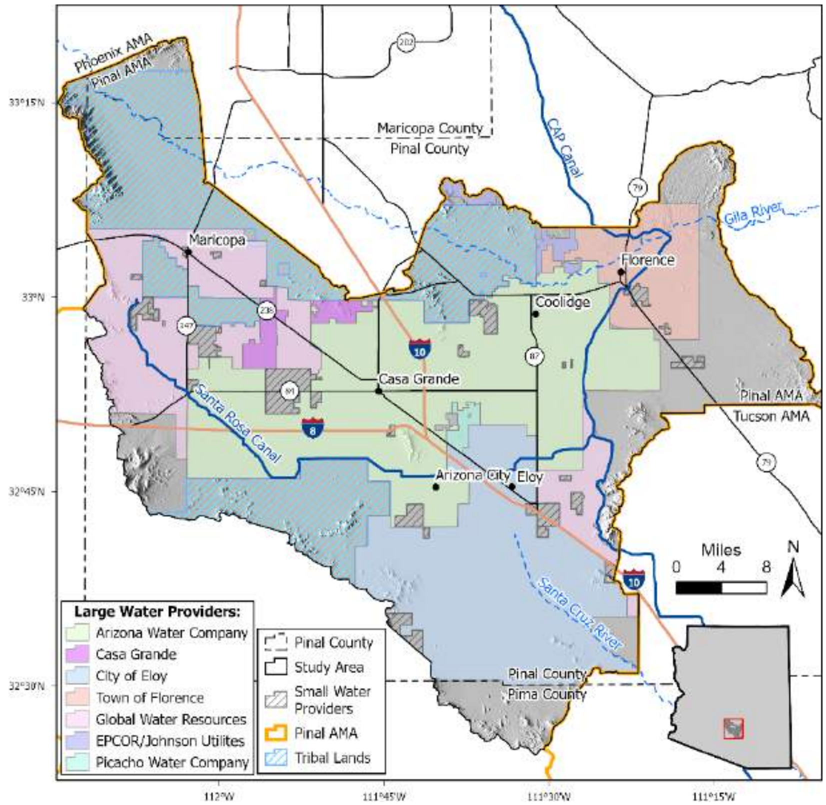
A developer can demonstrate an AWS in two ways. First, a municipal water provider can obtain a Designation of Assured Water Supply (DAWS) for its entire service area. The development that occurs within the provider's service area is automatically deemed to have an AWS because the provider has been designated as having sufficient physical and legal supplies to serve current, committed, and future demand. Second, a developer can apply for a Certificate of Assured Water Supply (CAWS) to prove an AWS for a single subdivision.

Voluntary membership in the CAGRD, either on an individual subdivision basis (Member Land; ML) or for an entire water provider (Member Service Area; MSA), is one of the primary ways in which an applicant can satisfy the renewable supply requirement of the AWS rules. Excess groundwater withdrawals made by a member are offset by recharge of renewable supplies performed by the CAGRD. This ensures that the proposed water use is consistent with the management goal of the AMA.

In CAP:SAM, each water provider is characterized as having one of the following options for their AWS status: (1) MSA, (2) ML, (3) DAWS on Own (i.e., not a member of the CAGRD), (4) Undesignated and (5) Other. The status of a provider can change through time. For example, an undesignated provider can become designated, or an undesignated provider can become a ML provider if it starts serving new subdivisions. The category of "Other" is applied to certain institutional providers (e.g., prisons, universities, etc.).

For the scenarios modeled in this Study, it was assumed that the AWS Rules remain in place through the projection period (2060), and that water providers maintain their current strategy for complying with the AWS rules. For water providers with a DAWS, which have both time and volume limits, this further assumes that those providers modify/renew their Designation as necessary throughout the projection period. For those providers that satisfy the provisions of the AWS rules through membership in the CAGRD, they are similarly assumed to maintain that status through the end of the simulation. By extension, the CAGRD itself is presumed to continue to exist and stay in compliance with the applicable statutory requirements. This includes submission of successive 10-year Plans of Operation, approved by ADWR, which require demonstration of sufficient renewable supplies to support current and projected membership, and annual requirements to stay current with replenishment obligations.

Seven large water providers in the Study area were modeled in CAP:SAM (Figure 8). Four of these providers are CAGRD MSAs, two are ML water providers and one has no relationship with the CAGRD. Relationship with the CAGRD has implications for how water providers meet their demands. Most of the smaller providers in the Study area have modest portfolios of renewable supplies or in many cases no renewable supplies at all. Provided that groundwater for these areas is physically available and access is not financially restricted, future growth in these regions will rely heavily on the CAGRD to stay in compliance with the AWS rules.



Water Provider	Ownership	Designated Water Provider?	CAGRD Relationship
City of Eloy	Public	Yes	Member Service Area
Town of Florence	Public	Yes	Member Service Area
City of Casa Grande	Public	Yes	Member Service Area
Arizona Water Company – Pinal Valley System	Private	No	Member Land Water Provider
Global Water Resources	Private	Yes	None (Designated on own)
EPCOR – San Tan (formerly Johnson Utilities)	Private	Yes	Member Service Area
Picacho Water Company	Private	No	Member Land Water Provider

Figure 8 – Large Study area water providers modeled in CAP:SAM and associated designation status and CAGRD relationship

In 2019, ADWR conducted a 100-year model simulation using an updated version of the department's regional groundwater flow model for the Pinal AMA. The purpose of this simulation was to determine the physical availability of groundwater as stipulated as part of the AWS rules, by evaluating current and committed demands through the year 2115. The results of this simulation led ADWR to conclude that there is insufficient groundwater within the Pinal AMA to support all existing uses and issued assured water supply determinations.[9] As follow on to this work, the Pinal AMA Water Supply Stakeholder Group was convened in October 2019, to examine potential solutions to the problems identified. Solutions proposed by the group have taken the form of refinements to ADWR's modeling assumptions as well as proposed legislative changes. Employing the suggested modifications, ADWR performed subsequent modeling

[9] https://new.azwater.gov/sites/default/files/10.11.19%20Pinal_Ad_Hoc_Committee_presentation_FINAL.pdf

work, ultimately leading to a resounding statement by Clint Chandler, ADWR's Deputy Director:

"ADWR will not approve new assured water supply applications seeking to utilize groundwater within the Pinal model domain. The solutions include non-groundwater importation and direct delivery. In other words, those desiring to develop within the Pinal model domain will need to bring their own non-groundwater supplies." – June 28, 2021[10]

The stakeholder group is currently performing independent modeling work and is collaborating closely with ADWR on further solutions.

While the decision to cease issuance of new determinations of assured water supply in the Pinal AMA is profound and likely to impact where new growth will occur, it is ***not*** the focus of the modeling work performed as part of this Study. Though there are shared technical tools between the efforts, the modeling assumptions made by ADWR are part of a regulatory process and represent a single projected future. That analysis serves a critical role but is sufficiently different than the EMS Basin Study. The modeling discussed in this report is for long-range planning purposes and therefore considers multiple futures and large variability in both the spatial and temporal components of demand. Potential regulatory implications of projected groundwater conditions are not evaluated as part of this work .

3.3 Agricultural Rights

Agriculture is the predominant use of water in the Study area and has historically accounted for nearly 95% of the total demand. Per the GMA, only land that has been issued a Certificate of Irrigation Grandfathered Right (IGFR) can legally be irrigated using groundwater within an AMA. Irrigation in this context is defined as the growing of crops for sale, human consumption, or livestock/poultry feed on two or more acres[11]. These IGFRs were issued by ADWR based on crop type and acres that were irrigated entirely or partially with groundwater in any year from 1975 to 1980. The GMA further prohibits the issuance of new IGFRs, effectively capping the irrigated acres within the AMAs. IGFRs are subject to conservation goals as outlined in ADWR's AMA management plans[12].

Most irrigation districts that provide water supplies to IGFRs have also been permitted by ADWR as Groundwater Savings Facilities (GSFs). A GSF is an arrangement in which a partner, i.e., a tribe, water provider, institution, etc.,

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[10] https://pinalcountyaz.new.swagit.com/videos/123585
[11] A.R.S. § 45-402.18
[12] https://new.azwater.gov/ama/management-plan/fourth-management-plan

provides a renewable water supply like CAP water to the district, reducing the amount of groundwater pumped by the district. The partner earns a long-term storage credit (LTSC) that is equivalent to the volume that would have been pumped, less a 5% cut to the aquifer. This water supply used by the irrigation district is termed “in-lieu” groundwater because the renewable supply is being used in-lieu of mined groundwater. CAP:SAM accounts for both parts of this transaction. ADWR typically issues the GSF permit volume based on the sum of the groundwater rights within an irrigation district, so as agricultural demand is adjusted in CAP:SAM due to efficiency changes, crop mix, or urbanization, the irrigation district’s GSF capacity is adjusted accordingly.

4.0 Pre-Mitigation Scenario Development

After receiving consensus from Study participants that CAP:SAM was a suitable tool for evaluating supply and demand in the Study area, a series of plausible pre-mitigation (i.e., without measures to reduce supply and demand imbalances) modeling scenarios were developed. This was an iterative and collaborative process between CAWCD and Study participants that began in the fall of 2018. A supply and demand sub-team was established and included representation from municipal, agricultural, tribal, industrial, and government stakeholders. The team met seven times in 2019 (Figure 9) to review CAP:SAM’s capabilities and develop the scenarios. The modeling scenarios were finalized and made official in September 2019. The following sections describe in detail the work and assumptions that led to the finalized modeling scenarios.

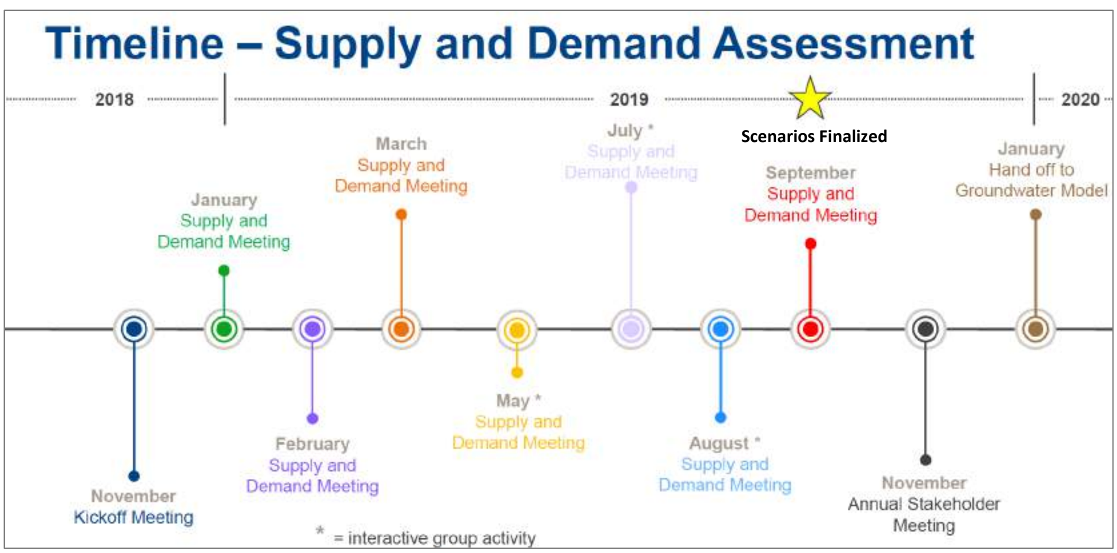


Figure 9 – Timeline for Supply and Demand Assessment pre-mitigation scenario development

4.1 Growth

Growth Rate

The Arizona Office of Economic Opportunity (AOEO) is the agency tasked with producing official county and statewide population projections. Much like the decennial census, these projections are developed using the cohort-component method, in which future population estimates are modeled based on demographic changes (i.e., births, deaths, migration, etc.). The AOEO projections consist of three series: low, medium, and high (Figure 10) and are typically updated every three years. The range between the high and the low series for CAP's three-county service area is approximately 2.1 million people by the year 2055.

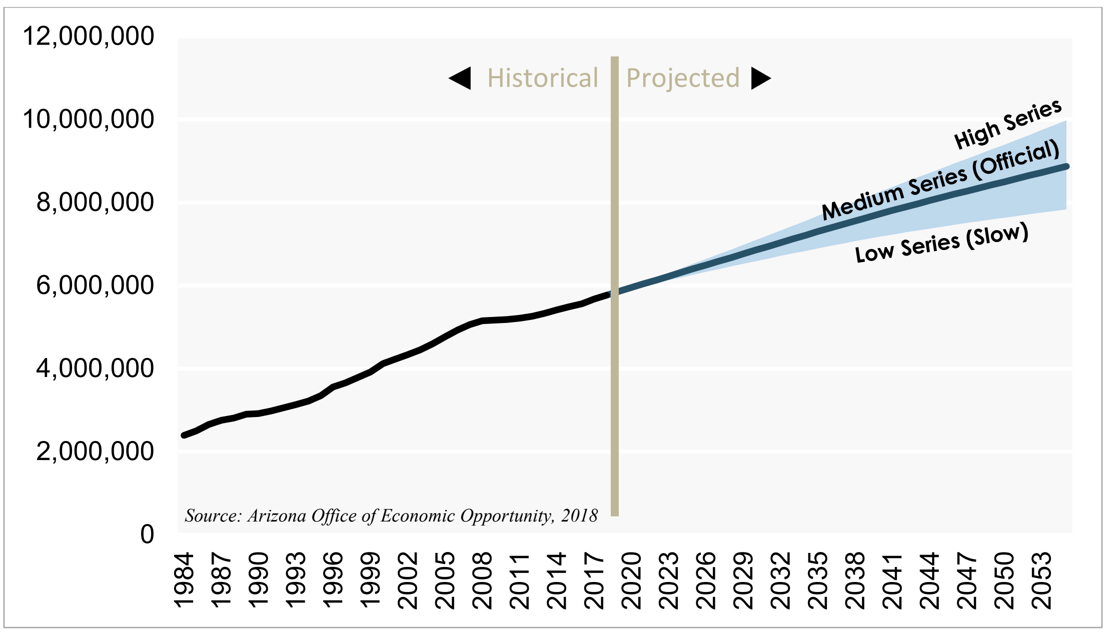


Figure 10 – Historic population and Arizona Office of Economic Opportunity's low, medium, and high series projections for CAP's three county service area

In CAP:SAM the fundamental unit for modeling population growth, and consequently growth in municipal demand, is the housing unit. Annual projections of new housing units are generated using a growth curve. To account for the lingering effects of the Great Recession (e.g., faster than normal housing growth rate post-crash) as well as to test a wide range of potential growth scenarios, CAP:SAM allows the user to define several parameters related to this curve:

- The initial rate of housing units
- The duration of the housing recovery (if applicable)
- The shape of the recovery curve
- The post-recovery "ordinary" rate of housing units (if applicable)
- The percentage growth rate following the housing recovery
- The percentage growth rate at the end of 50 years

A graphical example of how these parameters define the shape of this growth curve is shown below (Figure 11).

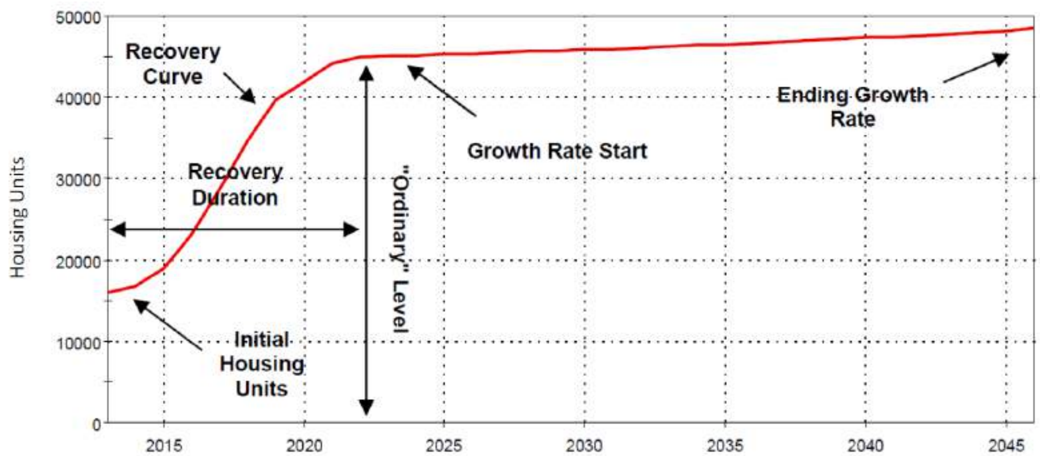


Figure 11 – Parameters of CAP:SAM's annual housing unit growth curve

For this Study, rate of population growth was divided into three categories: slow, official, and rapid, which correspond to AOEO's low, medium, and high population series, respectively. In each case a unique housing unit growth curve was developed by optimizing the parameters to match AOEO's control totals. In general, housing unit growth rate in CAP's service area has largely rebounded from the effects of the Great Recession (Figure 12). Therefore, each growth curve assumes a relatively short recovery duration prior to reaching post-recovery or "ordinary" levels of growth.

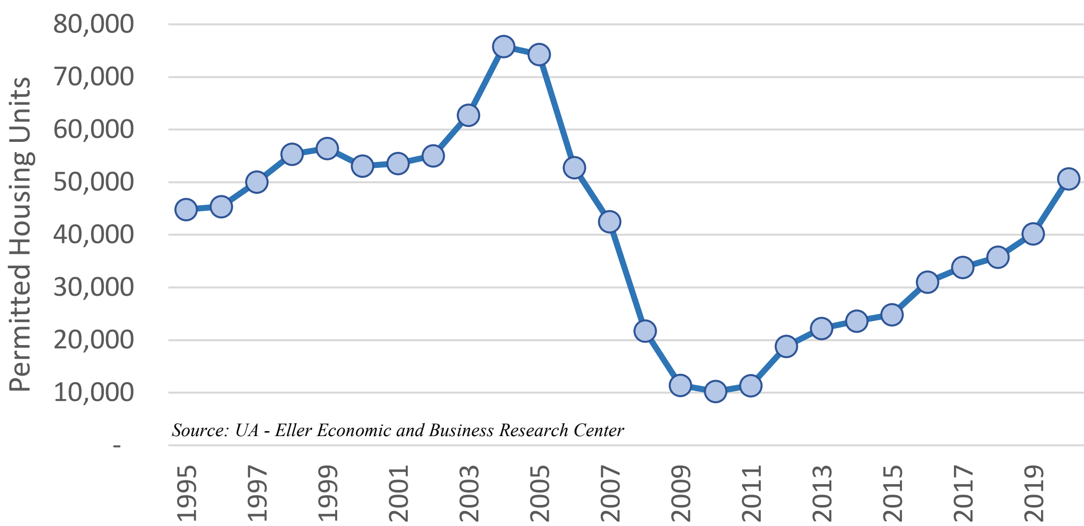


Figure 12 – Annual housing permits in CAP's three-county service area

Spatial Pattern

Once the magnitude of housing unit growth is determined, CAP:SAM distributes this growth based on geographic reference projections of housing units by water provider through time. CAP:SAM can utilize any reference projection, including the official forecasts developed by the Maricopa, Pima and Central Arizona Associations of Governments (MAG, PAG and CAG). The official forecast estimates housing unit counts at the decadal time-step for Traffic Analysis Zones (TAZ; Figure 13). These projections are based on growth modeling that incorporates many factors, including demographic data, construction data, planned developments, land uses, employment patterns and transportation infrastructure. Additional work using a Geographic Information System (GIS) was performed by CAWCD to characterize the projections by current and anticipated water provider service area.

To accommodate a variety of growth rates while maintaining the integrity of the spatial growth pattern, CAP:SAM matches the total projected housing units generated in the model with the corresponding point in the reference projection at each time-step. For example, a particular model run might project 2.8 million housing units for the three-county area in 2030, but the reference projection might have projected 2.9 million for 2030. CAP:SAM accounts for this by estimating the point within the reference projection at which 2.8 million units were distributed, and then applies that estimate to each water provider.

In addition to dynamically adjusting the rate at which growth occurs, CAP:SAM can incorporate alternative growth patterns. To implement this capability, CAP contracted with a consulting firm - Applied Economics - that had developed a socioeconomic model for Maricopa, Pinal, and Pima counties. As part of the contract work, Applied Economics developed eight different growth scenarios by varying key assumptions that affect the relative distribution of housing units. Some of the key factors included relative proximity to transportation infrastructure and existing development, how quickly planned but unbuilt development takes place, relative willingness to commute to employment centers, and land use capacity factors.

Three of the alternate growth patterns developed by Applied Economics were used in this Study: "Official", "Spillover" and "Dense Urbanization" (Figure 13). The Official projection mirrors the officially adopted growth pattern generated by the Associations of Governments. The Dense Urbanization projection places a greater number of housing units in the existing Phoenix and Tucson metropolitan areas, translating to less housing units simulated for the Study area compared to the official projection (Figure 13B). For the Spillover case, housing units are shifted from the metropolitan areas to the suburban and exurban areas. Under this projection a greater number of housing units are simulated to be built in the Study area compared to the official case (Figure 13C).

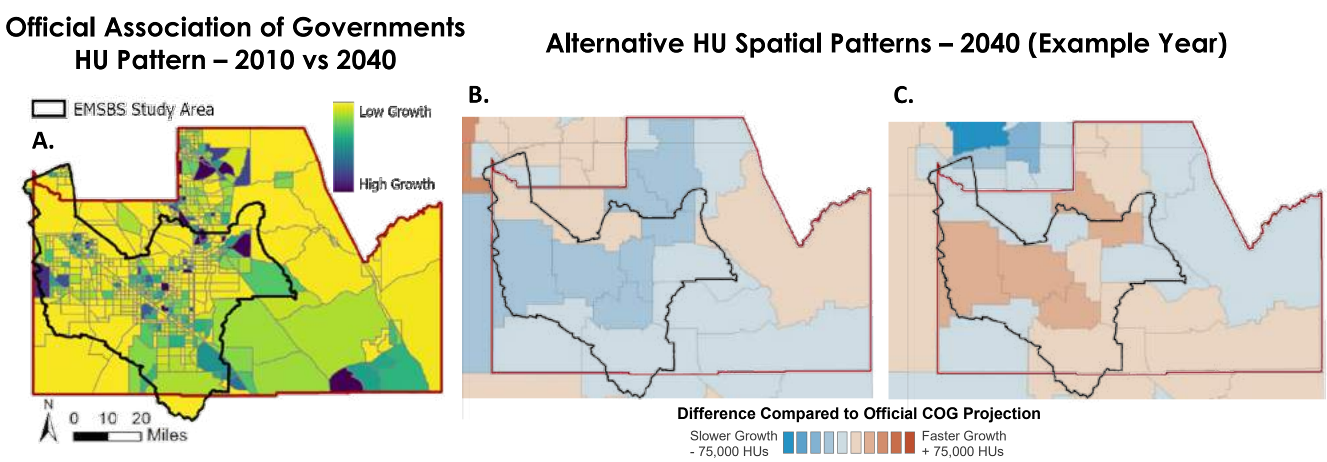


Figure 13 – (A) Official HU spatial pattern developed by the Associations of Governments. (B) Dense Urbanization and (C) Spillover alternative spatial patterns developed by Applied Economics. The Study area is outlined in black. Patterns are shown with reference to an example year (2040)

In addition to the patterns developed by Applied Economics and the Association of Governments, Study participants advocated for generating a new spatial pattern to reflect highly localized growth conditions. The Study area is home to some of the fastest growing cities in Arizona and is the site of several recent manufacturing developments. Moreover, state, and federal transportation officials have formally approved the construction of Interstate 11, a proposed new freeway that would pass directly through the Study area, linking the U.S.-Mexico border to Las Vegas[13]. To evaluate the impact of this future growth, CAWCD staff developed a Local spatial pattern. The pattern was constructed by taking the original Spillover pattern and re-allocating projected housing units from outside to inside the Study area (Figure 14). For example, in the year 2040 nearly 81,000 projected housing units were redistributed from outside to inside the Study area. This spatial pattern reflects the most aggressive growth pattern modeled in this Study.

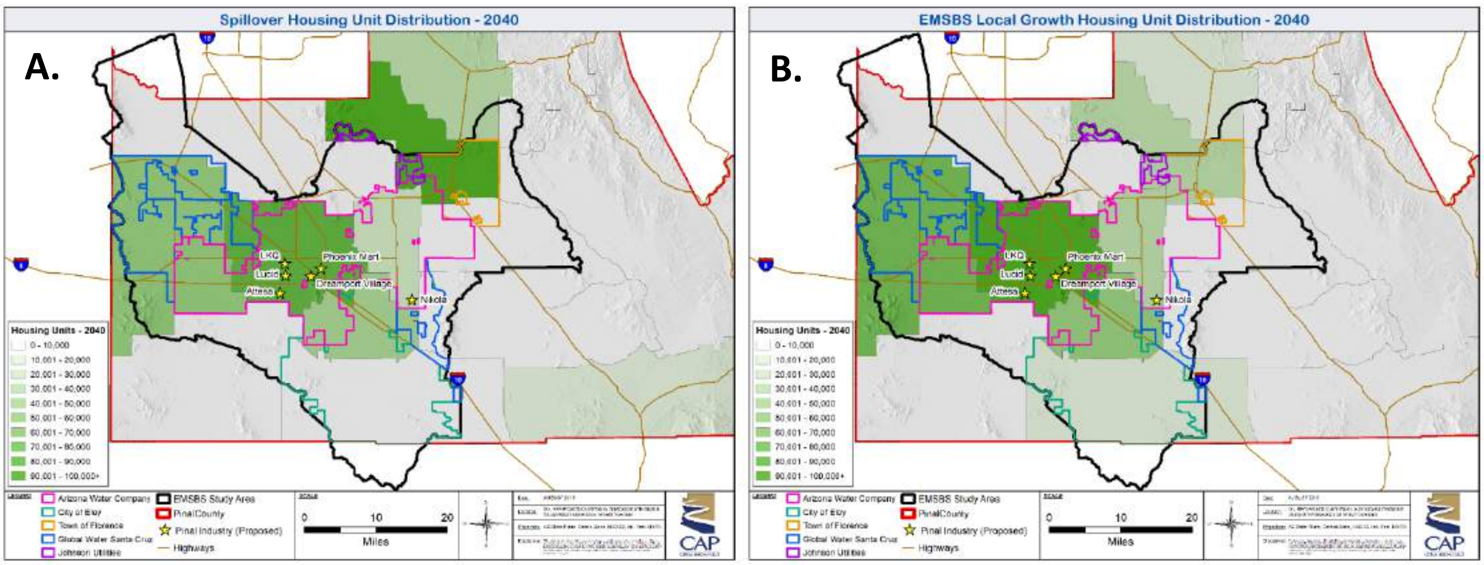


Figure 14 – (A) Distribution of housing units projected under the Spillover pattern and (B) distribution of housing units projected under the Local pattern developed by CAWCD staff, for the year 2040 (example year)

4.2 Climate

Climate scenarios are assumptions about how the key drivers that impact the Earth's climate will vary in the future. The Intergovernmental Panel on Climate Change's Fifth Assessment Report developed standardized scenarios known as Representative Concentration Pathways (RCPs)[14]. Each RCP represents a set of greenhouse gas concentration projections through the year 2100. RCPs vary in the degree of radiative forcing they project, based on several climate change factors. These scenarios are widely used by the scientific community to characterize potential future climate conditions. Two of the more commonly used scenarios include RCP 4.5 and RCP 8.5 (Figure 15).

[13] https://www.fox10phoenix.com/news/officials-approve-corridor-in-southern-central-arizona-for-part-of-proposed-new-i-11
[14] https://www.ipcc.ch/report/ar5/syr/

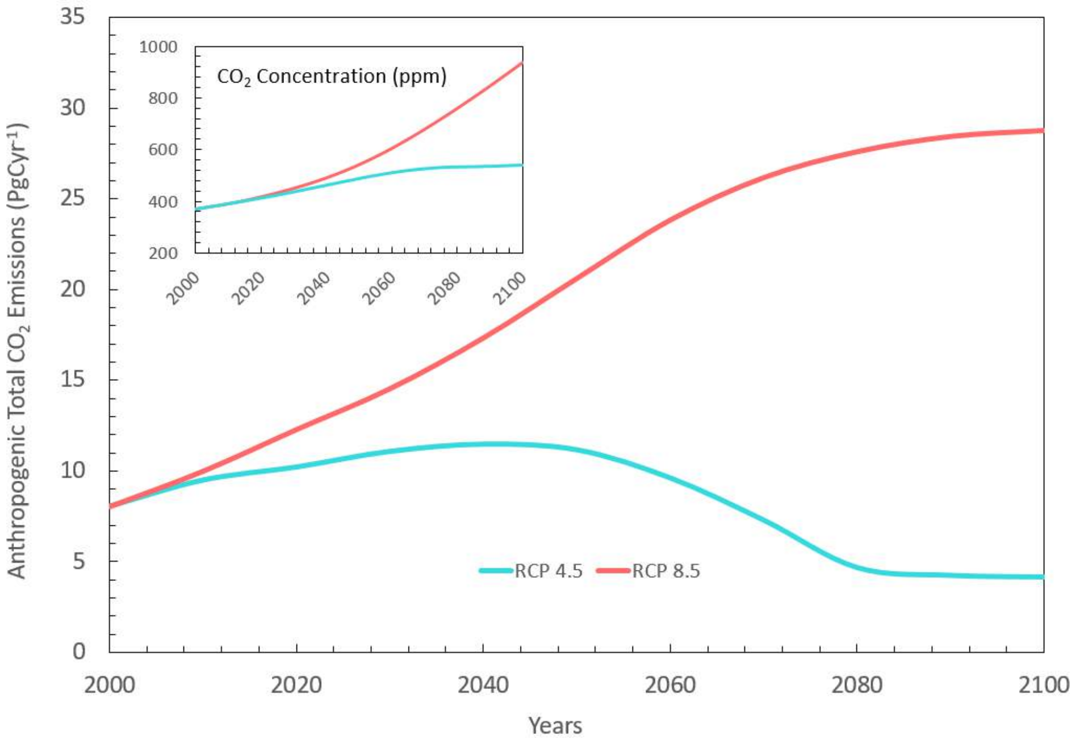


Figure 15 – CO2 emissions and concentration projections through 2100 for RCP 4.5 and 8.5, as provided in the Intergovernmental Panel on Climate Change's Fifth Assessment Report

The Study used climate scenarios termed "Hot and Dry" and "Hotter and Drier" that corresponded to the conditions projected by RCP 4.5 and 8.5, respectively. An additional climate scenario was included to represent current climate conditions. This projection does not represent a plausible future condition but was evaluated to maintain consistency with simulations performed by ADWR, which do not account for the effects of future climate change. The Current climate scenario assumes that the climate as it exists today perpetuates through the projection period and does not continue to warm.

A warming climate in CAP:SAM is broadly modeled as having the following impact:

- A slower rate of decline in per capita water use, i.e., under hotter climates, external water use increases and slows the historically observed decrease in per capita use
- A gradual increase in crop consumptive use
- More frequent, severe, and long-lasting reductions to the CAP supply and other surface water supplies

Of the above modeled impacts, the one that most significantly influences the CAP:SAM projections is the reduced availability of Colorado River water conveyed via the CAP and other renewable surface water supplies. In CAP:SAM these reductions are modeled using representative traces that describe the magnitude, duration, and frequency of reductions throughout the simulation period. CAP:SAM ultimately can evaluate a suite of hydrological inputs, including those from Reclamation's Colorado River Simulation System (CRSS)[15], to develop hundreds of realizations for a given model scenario. For this Study however, single shortage traces were chosen due to the cost of running projections through the groundwater flow model. Moreover, using individual shortage traces retains supply variability information, which allows for a more direct comparison across the different "what-if" scenarios. Three shortage traces for both surface water supplies and CAP supplies were developed and evaluated as part of this Study (Figure 16).

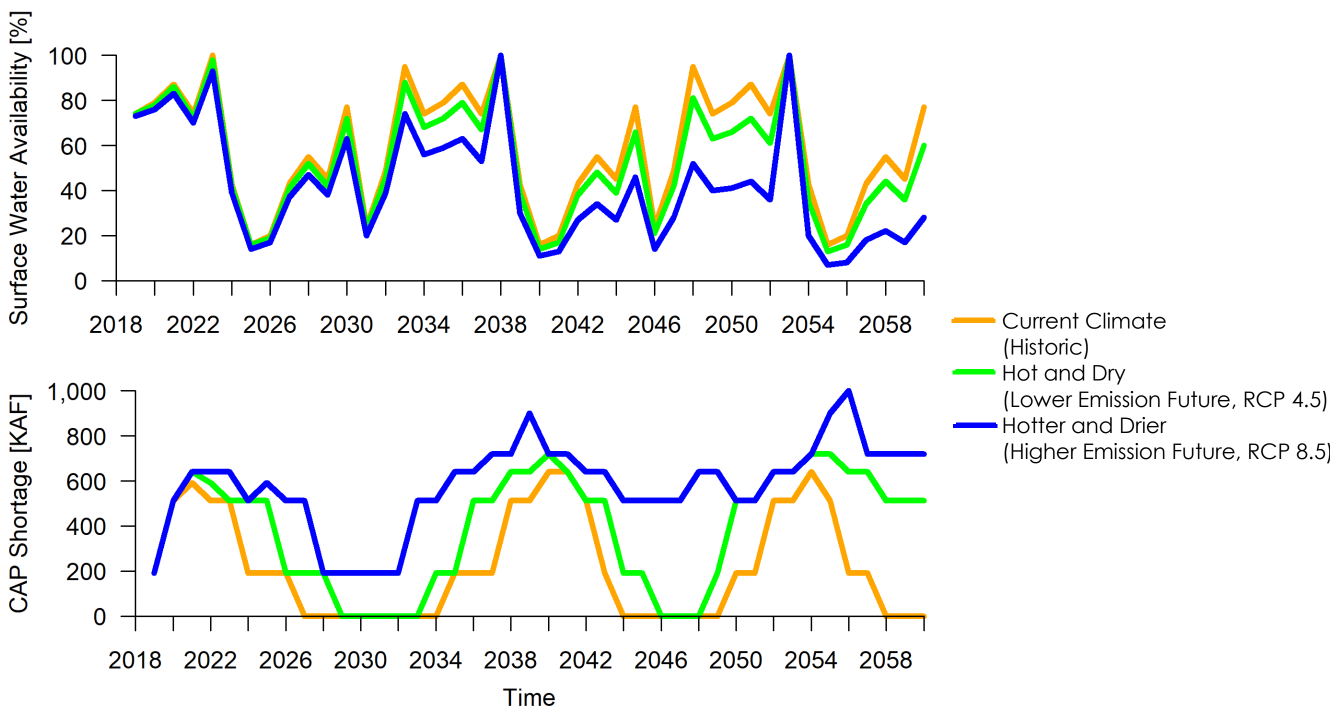


Figure 16 – Surface water availability and CAP shortage sequences for the three climate scenarios

The primary source of surface water in the Study area is the Gila River (Figure 1). Historical data for the distribution of natural and stored Gila River flows through the San Carlos Irrigation Project (SCIP), were obtained from the Bureau of Indian Affairs and used to develop projections of future surface water availability. In general, a 15-year period of historical flow data was used as the basis for the three different projections. Under the current climate scenario, this period was

[15] https://www.usbr.gov/lc/region/g4000/riverops/model-info-APR2018.html

replicated as-is through the end of the simulation period. For the Hot and Dry and Hotter and Drier scenarios, the replicated period was subject to varying levels of declining availability through time, while preserving more extreme events in the sequence.

Simulated reductions to the CAP system[16] are generally analogous to shortage tiers outlined in the 2019 Lower Basin Drought Contingency Plan[17] (LBDCP; Figure 17).

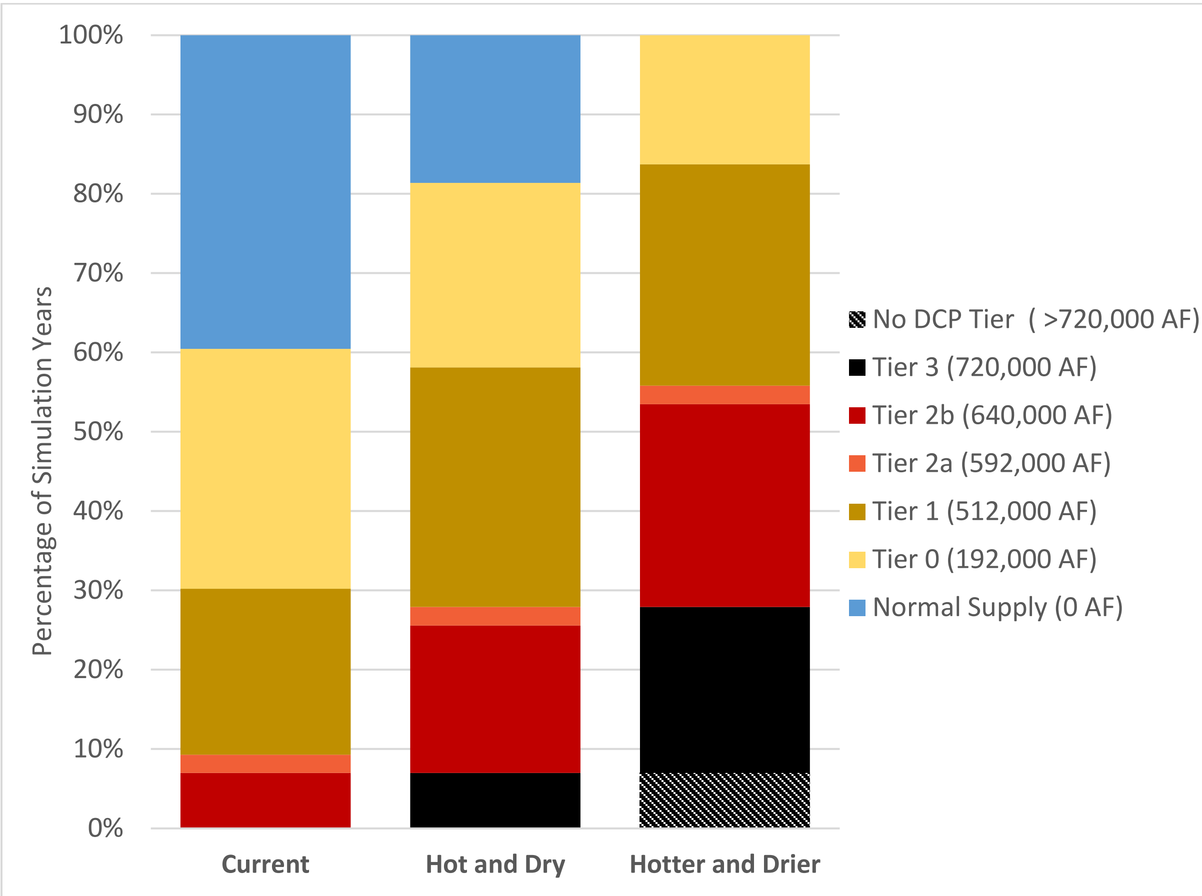


Figure 17 - Frequency and magnitude of reductions to the CAP supply aggregated by climate scenario. Reductions ≤ 720,000 AF are associated with Lower Basin Drought Contingency Plan tiers

[16] These traces represent speculative stress to the CAP system. They should not be used to infer future reservoir operations or construed as any indication of the magnitude and timing of supply reductions attributable to Arizona or the Central Arizona Project.

[17] The Lower Basin Drought Contingency Plan, signed on January 31, 2019 by Governor Ducey, established earlier and deeper reductions to Arizona's CAP supplies. These contributions to Lake Mead are in addition to the shortage reductions set forth by the 2007 Interim Guidelines.

CAP Supplies: Current Climate Scenario

The current climate trace depicts a pattern of CAP shortage volumes that are similar to the supply traces commonly used in the CRSS model, in which observed hydrology is used. A handful of normal supply years (i.e., no CAP shortage) are intermixed between decadal long periods of shortages that increase in duration and severity as projected uses in the Colorado River Basin increase. The maximum shortage projected in this trace is 720,000 AF, a Tier 3 LBDCP reduction.

CAP Supplies: Hot and Dry

As previously mentioned, the hot and dry climate scenario refers to a future climate condition that is warmer and drier than the current climate scenario. As such, overall, this trace projects more reductions to the CAP supply with a clear trend towards deeper, longer, and more frequent shortages. Under this shortage trace, there are no normal supply years projected. This trace was created to test reductions to the CAP supply that were severe enough to affect some of the highest priority water users and includes a reduction as large as 1,000,000 AF or approximately two-thirds of the normal CAP supply. This magnitude of shortage is greater than any reduction agreed to by CAWCD but is consistent with results from regionally downscaled global circulation models.

CAP Supplies: Hotter and Drier

The hotter and drier climate trace follows the same general pattern as the hot and dry climate but is overall more severe. Under this scenario, perpetual shortages to the CAP system are modeled (i.e., assumes no normal supply years). Projected shortages range from 520,000 AF (a Tier 1 LBDCP reduction) to a maximum reduction of 1,000,000 AF.

Lastly, results from Reclamation's hydroclimate analysis were used to inform projections of increased crop consumptive use through time (Appendix A).

4.3 Agricultural Sector Pumping Capacity

A unique aspect of this Basin Study (compared to others in the state) is the size of the agricultural sector. Over 80% of the supplies in the Pinal AMA are used by irrigation districts. The CAP Agricultural Settlement Pool will sunset in 2030 and supplies through GSF arrangements are expected to decline, as Arizona's Colorado River supplies become less available. In fact, districts are already impacted by the Tier 1 shortage declaration[18] on the Colorado River. Irrigation districts and individual farmers are currently increasing their pumping capacity and are expected to pump additional groundwater resources to make up for a portion of this lost supply. Because agricultural activity is so significant to the region, assumptions regarding the magnitude and timing of this additional groundwater pumping have profound impacts on the model results.

In this study we evaluated three different pumping scenarios. The scenarios were generated by analyzing historic pumping data for each irrigation district in the Study area from 2010 to 2015. Study participants requested to limit how far back the historical period went, to avoid anomalously high pumping years. It was determined that those years are not indicative of future pumping levels and should be removed from the analysis. The maximum annual pumping volume was determined for each district during over this six-year period. This volume was used to develop three unique pumping scenarios:

1. Current/Historic Scenario – Maximum pumping capacity equal to 2010 – 2015 maximum plus additional capacity funded through the LBDCP . Capacity phased in over five years
2. 125% of Historic – Maximum pumping capacity equal to 125% of 2010 – 2015 maximum. Capacity phased in over ten years
3. 150% of Historic – Maximum pumping capacity equal to 150% of 2010 – 2015 maximum. Capacity phased in over twenty years

A graphical representation of these pumping scenarios is show in Figure 18.

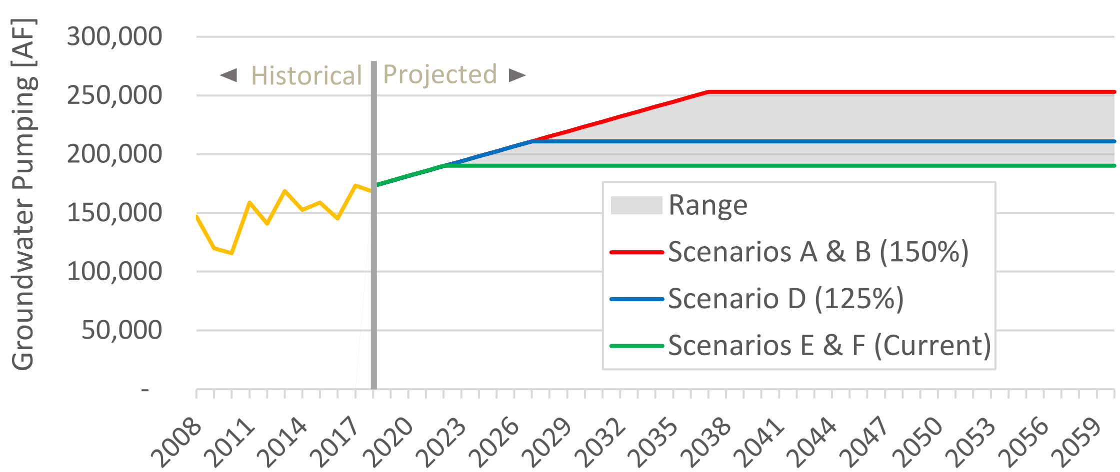


Figure 18 – Projected maximum groundwater pumping capacity under three modeling scenarios for a particular irrigation district in the Study area

[18] https://www.usbr.gov/newsroom/#/news-release/3950

4.4 Official Modeling Scenarios

Six pre-mitigation supply and demand scenarios were developed by generating unique combinations of the growth rate, growth pattern, future climate, and agricultural pumping capacity selections. Upon further evaluation, Scenario C was determined to not be substantively different than Scenario D and was therefore dropped from the analysis. The five official scenarios are outlined in Table 1). These scenarios were selected to capture, to the greatest extent possible, the range of potential supply and demand futures in the EMS Study area (Figure 19). Numerous Project Team meetings were used to flesh out the details of these scenarios and achieve group consensus.

Table 1 – Pre-mitigation EMSBS modeling scenarios

Scenario ID	Climate	Growth		Agricultural Pumping Capacity
		Rate	Spatial Pattern	
A	Hotter and Drier (Higher Emission Future)	High	Spillover	150% of Historic [1]
B	Hotter and Drier (Higher Emission Future)	Official	Local	150% of Historic
D	Hot and Dry (Lower Emission Future)	Official	Official	125% of Historic
E	Hotter and Drier (Higher Emission Future)	Slow	Dense Urbanization	Current [2]
F	Historic (Current Climate)	Sow	Dense Urbanization	Current

[1] Historic capacity is defined as the maximum pumping capacity used by the agricultural sector in the study area from 2010 to 2015

[2] Current capacity is defined as the historic capacity plus additional pumping capacity proposed as part of the LBDCP

Figure 19 – The five official EMSBS modeling scenarios plotted (on relative scales) as a function of total projected demand and projected supply (determined by climate scenario)

While climate, growth and groundwater pumping by the agricultural sector are the principal drivers of supply and demand, embedded in each of these scenarios are over 25 different parameter settings that affect factors like the relative rate of municipal conservation, agricultural irrigation efficiency, development of agricultural land, etc. For a full list of the modeling assumptions see Appendix A.

5.0 CAP Service Area Model

5.1 Model Overview

CAP:SAM is best thought of as a systems model and while it uses hydrological data as an input to determine supply availability, it does not explicitly model physical hydrological processes (e.g., precipitation, runoff, etc.). The principal utility of CAP:SAM rests in its ability to generate a large array of future supply and demand conditions by manually or probabilistically varying key model parameters that characterize the response of water users to different situations. The response of water users is also highly influenced by sets of laws, rules, rights, and practices that define the water management framework applicable to CAWCD's service area. Substantial effort has gone into representing this framework within the model.

5.2 Model Steps

CAP:SAM performs hundreds of complex, interrelated calculations at each model time step. However, the overall structure can be simplified into four basic steps: 1) project demands, 2) determine supplies, 3) request supplies and 4) fulfill demands (Figure 20).

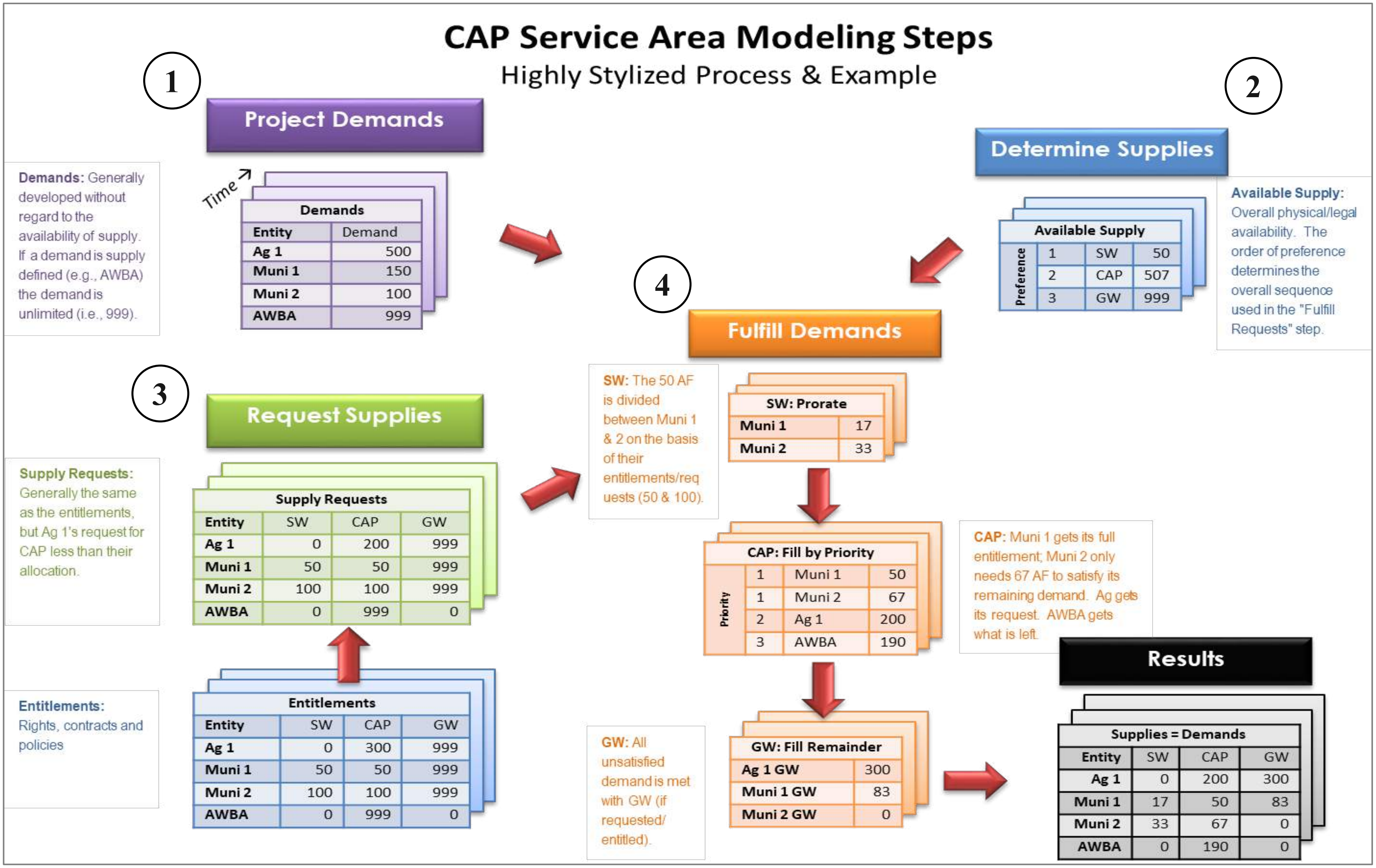


Figure 20 – Simplified version of CAP:SAM's modeling steps

Project Demands

Projecting demand is the first major calculation performed in the model. CAP:SAM generates projections of demand for over 80 public and private water utilities, 23 Agricultural Irrigation Districts and Grandfathered Irrigation Rights, 12 Tribes and Tribal Districts and over 20 other user categories, including the CAGRD, AWBA and industrial users such as mines and power plants. Together, these users account for most of the water demand within the three-county model domain. Projections of demand are generally developed without consideration of the available supply. The basis of these projections is discussed further in section 4.2.

Determine Supplies

The second step performed in the model is to determine the supplies available to a specific user. CAP:SAM tracks the total legal and physical supply availability for 16 supply types in each projection year. Supply categories include Effluent, Surface Water, including the Salt River Project, and CAP water. Long-term storage accounts (LTSAs) and Groundwater Allowances (i.e., volume of allowable groundwater pumping not subject to replenishment granted upon issuance of a CAWS or DAWS) are tracked and debits and credits to these accounts occur through time. To model the CAP supply from the Colorado River, CAP:SAM allows the user to input an annual diversion supply for Arizona, demands from on-River users, total system losses, and the net storage to CAP's storage reservoir, Lake Pleasant. CAP:SAM can also utilize externally generated Colorado River supply scenarios from CRSS. For supplies that have multiple users, like CAP water, this model step calculates the aggregate supply available, prior to allocation by priority and individual user.

Request Supplies

CAP:SAM contains extensive water supply data for each of the water-using entities that are simulated by the model. For municipal water providers, this includes legal entitlements to surface water and CAP water, initial balances of both LTSCs and groundwater allowances, remediated groundwater volumes, and for providers that do not have a DAWS, attributes related to any subdivisions that are currently enrolled as MLs of the CAGRD. Similarly, CAP:SAM contains supply portfolios for irrigation districts, Tribes, and others. Most of the supply data for the Study originated from publicly available sources, but Study participants also reviewed and provided revisions to the data.

The "request" step of the model determines how much of each supply in an entity's portfolio will be available to satisfy demand, if necessary. In many cases, the "request" is set at the full volume of the supply that is legally available to that entity, but there are individual circumstances in which entitlement volumes are individually adjusted either by percentage, or by setting a limit to represent specific preferences or operational limitations. For instance, there are a few water providers that have entitlements to CAP water that they are not putting it to use for legal or operational reasons. In those specific cases, the "request" for that supply is reduced.

For CAP supplies, requests are further differentiated between water destined for a water treatment plant versus annual storage and recovery (ASR). ASR involves storing water underground and subsequently pumping it out for delivery in the same year. CAP:SAM also contains individualized preferences for earning underground LTSCs with any CAP entitlement that is available to a provider after their annual demand has been satisfied. The request portion of the model also includes distribution to CAP water storage facilities, including deliveries to irrigation districts as in-lieu GSFs, or to direct recharge projects (Underground Storage Facilities; USFs). Finally, the request step simulates transfers, leases, exchanges, reallocations, and priority conversions. For this Study, only existing or currently proposed transactions were included.

Fulfill Demands

In the final and most computationally complex model step, information from each of the other three steps (project demand, determine supplies and request supplies) is brought together and reconciled. For each projection year, CAP:SAM takes the demands for each entity and steps through each supply type in a defined sequence, incrementally satisfying the demand of each entity based on their request and their volume of unsatisfied demand. That sequence reflects observed historic behavior, which is largely based on utilizing lower cost supplies first. The allocation method varies among the supplies (see Section 7 below), but the primary sequence for fulfilling demand is as follows:[19]

1. Effluent
2. Exempt groundwater (DAWS)
3. Surface water
4. CAP water (by internal priority system)
5. Recovered CAP long-term storage credits
6. Groundwater allowance
7. Replenished groundwater
8. Exempt groundwater (CAWS)
9. Unknown

[19] Note that to account for GSF arrangements, there is some iterative looping within CAP:SAM, so the fulfillment sequence is not as linear as described here.

As the model cycles through each of those supplies, credits, and debits to CAP LTSAs and groundwater allowances are calculated. Accruals to LTSAs are based on the storage preference parameters set in the "request" step, and accruals to the groundwater allowance are based on the incidental recharge factor specified in the Designation of Assured Water Supply for each water provider with a DAWS. The incidental recharge factor is calculated by ADWR and represents the ratio of water that recharges the aquifer after delivery and use.

5.3 Demand

Municipal Demand

CAP:SAM models large water providers as well as those that have a relationship to the CAGRD. A total of seven water providers in the Study area were modeled explicitly in CAP:SAM. These providers vary considerably in population served and the availability of supplies to meet demands. Of the seven providers modeled, three serve populations of less than 6,000 and do not have entitlements to CAP supplies. These smaller providers rely on pumped groundwater and the use of effluent supplies exclusively to meet demands. Two providers, the City of Eloy, and the Town of Florence, serve populations less than 12,000. Both Eloy and Florence have modest CAP entitlements totaling 2,171 AF and 2,048 AF, respectively. Currently, both providers are primarily storing their CAP entitlement and pumping groundwater to meet demands. These municipalities are expected to directly utilize their CAP supplies as demand grows and supply availability is impacted by climate change. The remaining two providers, Global Water Resources and Arizona Water Company, serve populations greater than 50,000 in the Study area. Global Water Resources does not have a CAP entitlement and Arizona Water Company holds an entitlement of 10,884 AF. Both providers rely heavily on groundwater supplies to meet demands.

Municipal water demand is a complex, multifactor phenomenon that is the result of literally millions of individual daily decisions. While this is a topic of extensive research, CAP:SAM takes a simplistic yet effective aggregate approach to projecting this demand. The approach involves multiplying annual projected housing units for each water provider by the bulk water use rate for that provider. In CAP:SAM the bulk water use rate is expressed as gallons per housing unit per day (GPHUD) and is initially determined using the existing demand volume for the most recent year reported to ADWR by each provider. Historically, per capita municipal water demand has declined steadily in the CAP service area since the mid 1980's (Figure 21). This trend in water use is modeled through a series of user defined parameters. To differentiate between the effects of observed long-term declines in water use and future growth-related trends, the model separately considers new and existing municipal demand.

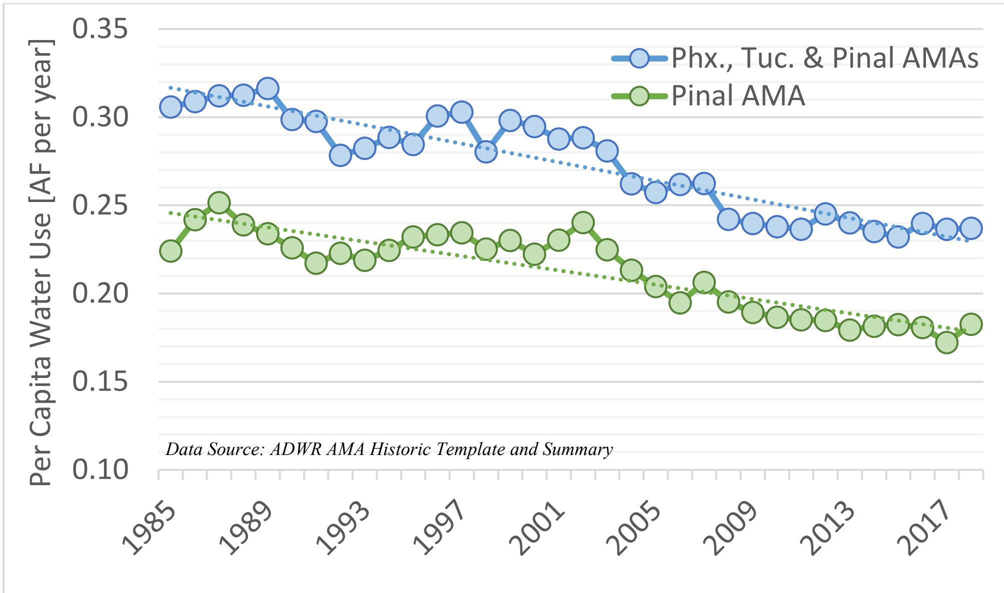


Figure 21 – Total per capita water use across the Phoenix, Tucson, and Pinal AMAs from 1985 – 2018 with linear trend line (dotted line). The Pinal AMA is identified for comparison.

Existing Municipal Demand

Existing demand represents baseline water use, as reported to ADWR in the most recent annual report, prior to the consideration of future growth. The demand and the count of housing units for that year are used to generate the initial GPHUD value. It is important to note that while most water provider's demand is associated with residential deliveries, the total demand used to compute the initial GPHUD includes non-residential deliveries (i.e., Industrial, Commercial, Turf, Government and Construction as characterized by ADWR).

The model allows a water provider's GPHUD to vary based on a set of parameters. These parameters include an annual rate of change (+ or -, in %), along with both a cumulative maximum change (in %), and a minimum "floor" (in GPHUD). The floor prevents the modified GPHUD value from dropping to unrealistically low values (if for example a negative rate of change has been specified). If an initial GPHUD is below the floor, its value is held constant at the initial value. CAP:SAM then generates a projection of existing demand by multiplying the modified GPHUD values, which vary through time, by the number of existing housing units at the start of the simulation period, which remains fixed.

<u>New Municipal Demand</u>

New demand is simulated in CAP:SAM based on housing units that are projected to be built in each water provider's planned service area. The projected housing units for each provider is determined largely based on the rate and spatial pattern of growth as discussed in Section 4.1. Similarly, to existing demand, CAP:SAM multiplies the projected housing units by a provider specific GPHUD. The GPHUD value used to compute new demand is different than that used to calculate existing demand. CAP:SAM uses as a default a new GPHUD that is 80% of the provider's existing GPHUD, although this can be modified based on preferences. Embedded in this assumption is that newly built housing units will be more water efficient than older, existing units. The same parameters that can be adjusted for existing GPHUD can also be modified for new GPHUD (i.e., annual rate of change, maximum change, and minimum floor). Parameter assumptions for new and existing municipal demand used in this Study can be found in Appendix A.

<u>Agricultural Demand</u>

The general CAP:SAM formula for calculating annual demand for an IGFR is as follows:

$$Irrigation\ Demand = \frac{(Total\ Acres\ Irrigated)\ x\ (Crop\ Mix)\ x\ (Consumptive\ Use)}{Irrigation\ Efficiency}$$

Each of the factors listed in the above equation can vary throughout the simulation.

The footprint of irrigated agriculture cannot expand (other than on tribal lands) but urbanization due to population growth can reduce total agricultural acres and result in a commensurate reduction in irrigation demand. To model this effect, a GIS analysis was performed using ADWR's GIS layer for irrigation districts and individual rights, crop type imagery from the National Agricultural Statistics Service (NASS)[20] and TAZs from the county Association of Governments. The analysis identified and quantified the acreage for each TAZ that wholly or partially intersected active agricultural land. As new housing units are projected for one of these TAZs, reduction in agriculture acreage is calculated based on the average density of surrounding urban uses. For TAZs that straddle active agricultural land and undeveloped desert land, CAP:SAM allows the user to set a preference so that more or less of the agricultural land is developed. The default is that the housing units are split proportionally.

[20] https://nassgeodata.gmu.edu/CropScape/

Initial crop mix for a district or right is determined by the NASS crop type imagery. CAP:SAM has the functionality to modify the composition of this crop mix through time to simulate a switch from higher water use crops (e.g., alfalfa and cotton) to lower water use ones.

Crop consumptive use and irrigation efficiency are key factors that affect total irrigation demand. Initial crop consumptive use is based on published crop specific values provided in ADWR's Third Management Plans[21] and subsequent updates to the plan. The initial Irrigation efficiency for each IGFR is computed as the ratio of the total water required to irrigate existing crops and the total agricultural demand reported by ADWR. Each of these parameters can vary through time based on user defined annual percentage rates. The annual rate of change for both parameters is typically set to non-zero, positive values to represent an increase in crop consumptive use due to climate change and an increase in the efficiency of irrigation through time.

When supplies available to an irrigation district are insufficient to meet demands, the modeling results in acres taken out of production, i.e., temporary fallowed. The bulk average consumptive use for the district and the deficit in supplies are used to compute the acreage to be fallowed for a given simulation year. To determine which acres should be fallowed and which should remain irrigated, CAWCD uses an irrigation intensity approach developed using satellite imagery processed via GIS and python script (Figure 22). NASS imagery from 2008 to 2018 was acquired and reclassified as either irrigation or non-irrigation. Irrigated cells were assigned a value of 1and double cropped cells were assigned values of 1.5 (i.e., double cropped cells were weighted higher in the analysis). The reclassified imagery was summarized across the 11-year period (2008 – 2018) to develop a historic irrigation intensity layer. If an area of land was irrigated each year from 2008 – 2018 it summed to a larger value and was characterized as "high" intensity. Conversely, if acreage was irrigated intermittently during that period, it summed to a smaller value and was characterized as "low" intensity. Acres classified as lower intensity by this approach, were taken out of production first if fallowing was simulated in the model. This procedure occurred iteratively until enough the irrigated footprint matched the volume of supplies that were available to irrigation district. Because this was done for each simulation year the irrigated footprint could change dynamically, i.e., grow or shrink, based on available supplies. Agricultural demand parameter assumptions can be found in Appendix A.

[21] https://new.azwater.gov/ama/management-plan/3

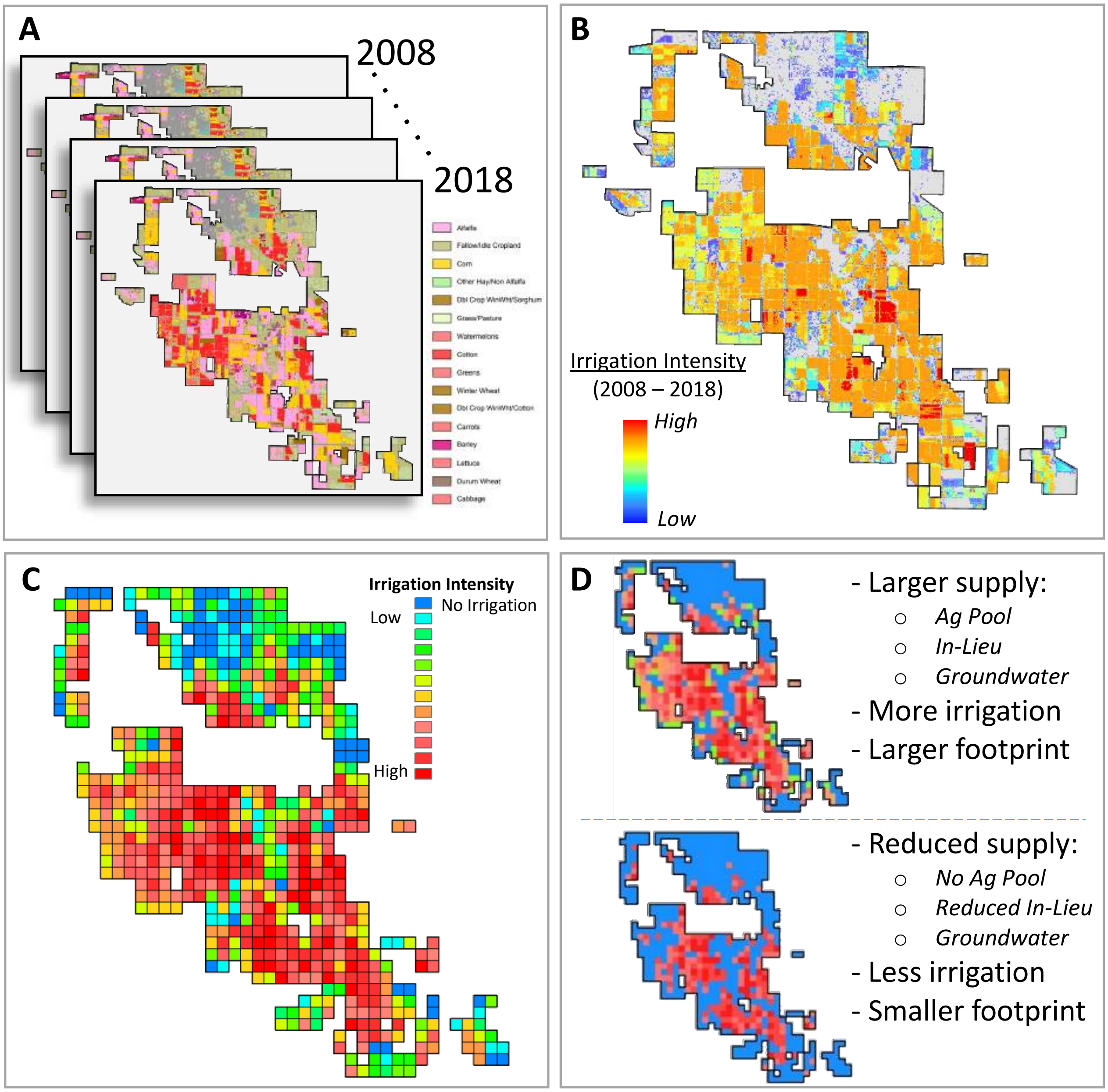


Figure 22 – (A) Raw National Agricultural Statistics Service (NASS) imagery data from 2008 – 2018. (B) Irrigation intensity layer constructed by reclassifying raw NASS imagery and summarizing across the 11-year historical period (2008 – 2011). (C) Irrigation intensity layer aggregated to the Pinal AMA Groundwater Flow Model (i.e., from 30-m resolution to ½ mile resolution). (D) Example of the dynamic irrigated footprint based on available supply

Tribal Demand

CAP:SAM runs include projections of tribal water use. Most of the tribal water use is modeled as irrigation demand using the same methodology outlined above.

CAP:SAM also makes assumptions regarding off-reservation storage at USFs and GSFs, as well as off-reservation leasing. Tribal supplies that are leased to other water providers are included in the individual water provider portfolios.

There are three tribal reservations within the Study area (Figure 1). Detailed projections were generated for two of the tribes: Gila River Indian Community (GRIC) and the Ak-Chin Indian Community. Demands for the Tohono O'odham Nation were included in the CAP:SAM modeling work but are outside of the Study area. The GRIC have plans to substantially increase their agricultural production from current levels (~33,000 acres) to ~77,000 acres, through the Pima-Maricopa Irrigation Project (PMIP). PMIP is a distribution system that allows the Community to fully utilize the supplies allocated to them through the AWSA. Construction began in 1998 and is expected to be fully complete in 2030. The desire of the Community to use their supplies to expand their irrigation capacity, has large implications for the potential for future leasing opportunities as well as the volumes of water the Community may store at GSF facilities within the Study area.

5.4 Supplies

Effluent

In the process of fulfilling annual demands, CAP:SAM makes projections of effluent use. This effluent use includes non-potable reclaimed water distribution (i.e., "purple pipe") and any recovered effluent that is indirectly satisfying potable demand (i.e., water that has been stored and is physically groundwater, but is legally accounted for as effluent). CAP:SAM relies on ADWR reported data for a base year, and then allows the use of the effluent supply to increase in proportion to the overall demand.

Importantly, CAP:SAM's effluent accounting does not reflect the total volume of effluent produced or potentially available to a water provider. This capability is currently under development, but for this Study, separate calculations of effluent production were made. In some cases, those calculations resulted in effluent volumes that were greater than what providers have identified plans for putting to use and were thus characterized as "unused." That term simply denotes that based on current utilization rates and plans, there is likely a volume of effluent that is available for new uses. Appropriately, effluent factors significantly in this Study as a resource that can be more fully utilized to address groundwater level declines and could have a large role in reducing reliance on CAGRD replenishment.

Exempt Groundwater (Designated Providers)

For a water provider with a DAWS, certain types and volumes of groundwater are exempt from the requirement for offsetting pumping with recharge of a renewable supply (i.e., satisfying the AWS rules). The most notable is pumping that is required as part of a remediation project for contaminated groundwater. CAP:SAM allows these volumes to be specified and used to satisfy annual demand early in the sequence of supply utilization, even if the provider has renewable supplies that exceed annual demand. Exempt groundwater is not a major supply type for the Study area.

Surface Water

The primary source of surface water in the Study area is the Gila River. The Gila flows west to east and is regulated by upstream reservoir releases and diversions at Ashurst-Hayden Dam. Diversions are delivered through the SCIP system. SCIP data were obtained from the Bureau of Indian affairs and used in conjunction with linear regression analyses to develop projections of the future availability of flows diverted from the Gila. These supplies were simulated in CAP:SAM and made available for use by GRIC and the San Carlos Irrigation and Drainage District.

While not relevant to the Study area, CAP:SAM also simulates the availability of Salt River Project (SRP) supplies. It is important to note that CAP:SAM does not attempt to fully simulate the SRP system. Notably, the SRP supply available to cities is not differentiated between water originating from reservoirs, versus water pumped from wells that is legally accounted for as surface water for AWS purposes. As an approximation of the volumes of SRP water available to each water provider in the “request” step of CAP:SAM, values from SRP’s 2008 AWS study were used. Data from each water provider’s ADWR Annual Report is then used as the base year for the CAP:SAM projection. That usage rate then varies based on the on-Project demand for the SRP system. To the extent that that demand is increasing, it can grow until it reaches the “request” volume.

CAP:SAM accounts for other surface water in a manner similar to SRP supplies, using ADWR annual reporting data, along with specific data provided by individual users.

CAP Water

CAP supplies are classified into six categories: Third Priority (P3), Indian, M&I, Non-Indian Agriculture (NIA), the Agricultural Pool and Other Excess[22]. These supplies

[22] https://knowyourwaternews.com/a-matter-of-priorities/

are allocated among tribal entities, municipal and industrial users, as well as institutions like the CAGRD and AWBA. Entitlements are based on contract volumes and all existing and pending leases and exchanges are modeled in CAP:SAM. The volumes of NIA-priority supply that have been recommended for reallocation by the Director of ADWR have also been included. In years when Other Excess supplies are available, they are utilized for banking and replenishment by the AWBA and CAGRD, respectively.

Long-Term Storage Credits

CAP:SAM contains the initial balance of LTSCs for each water provider, as tracked by ADWR. The storage preference settings (referenced in section 5.2) allow the supply of CAP LTSCs to increase, and the model makes a cut-to-the-aquifer calculation. Credits can also be recovered (pumped) and used to meet annual demands. For AWS purposes, that recovered water is legally identical to the supply used to create the credit (e.g., CAP water). The use of CAP LTSCs as a supply in CAP:SAM is affected by two primary factors: a preference factor set for each water provider during normal water supply conditions, and a calculation of reduction to a provider's supply based on shortage conditions. The preference factor for most water providers is 1% (i.e., treating the LTSC balance like a 100-year supply), though in cases where providers have indicated a specific management strategy for their credits, the factor has been adjusted. The shortage provisions are tied to reductions to a providers' CAP water supply that are not otherwise firmed by the AWBA (e.g., NIA-priority supplies). When their CAP supplies are reduced, the reduction is made up with recovery of the providers' credits, if available.

Groundwater Allowance (Designated Providers)

Groundwater allowances are granted to water providers with a DAWS. This represents a volume of mined groundwater that is permitted to be withdrawn without an obligation to replenish under the AWS rules. This allowance was initially established to help municipal providers transition from groundwater resources to renewable supplies. The way a groundwater allowance is calculated is unique to the AMA. For CAWS in the Pinal AMA filed prior to January 1, 2019, the groundwater allowance is computed as the demand for the proposed subdivision multiplied by 10. Applications for CAWS submitted after January 1, 2019, are not granted an allowance. For DAWS in the Pinal AMA, groundwater allowance is computed using the service areas population and a 125 gallons per capita per day demand estimate. DAWS submitted after October 1, 2007, are not granted allowances.

Designated providers in the Pinal AMA are allowed to pump additional groundwater equivalent to 4% of the previous year's total demand. This is based on the assumption that this volume is being returned to the aquifer through incidental recharge. Finally, providers can acquire extinguishment credits that are granted by ADWR when grandfathered groundwater rights are permanently retired.[23] The management of a groundwater allowance varies by water provider: some have opted to use the balance as it is accrued, some never use it, and some treat it like a long-term supply. CAP:SAM allows each of those approaches to be simulated by setting a usage preference percentage (i.e., 100%, 0%, 1% respectively).

Replenished Groundwater

For water providers that have a relationship with the CAGRD, this supply is the volume of groundwater that is reported to ADWR and the CAGRD as "excess groundwater." The physical supply is no different from any other groundwater pumped by the provider, but it generates an obligation on the part of the CAGRD to replenish the aquifer with an equal volume of renewable supply (through recharge or use of previously stored water).[24]

Because CAP:SAM was initially developed to support the CAGRD's 2015 Plan of Operation, the model has some particularly elaborate capabilities to estimate the volume of replenished groundwater, including tracking data on the 1,160 currently enrolled CAGRD ML subdivisions, along with Category 2 MLs (golf courses that do not participate in CAGRD's replenishment reserve program, and MSAs.[25]

Exempt Groundwater (Undesignated Providers)

For water providers that do not have a DAWS, there are several categories of groundwater use that do not require replenishment. These include the groundwater allowances granted to each CAWS issued to subdivisions served by the provider, any non-subdivision demand, pre-1995 subdivision demand, and lost and unaccounted for water. Because the volume of replenished groundwater is calculated in a previous model step, the primary calculation of this supply is based on the amount of demand that hasn't yet been satisfied.

[23] A more complex set of calculations are made for the Pinal AMA where groundwater allowances are affected by unique provisions related to pre-2007 extinguishment credits

[24] In keeping with CAGRD operations, a three-year lag in demand is introduced to simulate the time difference between when Excess Groundwater is reported and when the replenishment takes place.

[25] See http://www.cagrd.com/operations/plan-of-operation/current-plan and https://www.cagrd.com/news/1389-cagrd-mid-plan-review for or additional detail.

Unknown

Within CAP:SAM, the “unknown” supply is calculated primarily as a zero checksum to verify that a provider’s entire demand has been satisfied with supplies that are consistent with the AWS Rules. For purposes of this Study, any volumes of “unknown” were assumed to be satisfied with groundwater.

6.0 Modeling Results

6.1 Demand

Housing units in the Study area are projected to grow year-over-year under all five modeling scenarios (Table 2). The magnitude of this growth is determined by the combined impact of the rate as well as the spatial pattern (Section 4.1) defined for each scenario. Scenario A is the most aggressive municipal demand scenario. It uses both a rapid growth rate and a spillover spatial pattern, which results in over 372,000 housing units projected by the year 2060. This represents over a 450% increase from current levels (~67,000 housing units). Scenarios B and D both use a more moderate growth rate (i.e., the official growth projection provided by the AOEO) coupled with either a local or official growth pattern. The local growth pattern results in approximately 256,000 housing units projected in 2060 for Scenario B while the official growth pattern results in approximately 221,000 housing units. Scenarios E and F use the same assumptions for growth rate and pattern, i.e., slow growth with a dense urbanization pattern, which equates to approximately 135,000 housing at the end of the simulation period. Combined the modeled scenarios represent a range of roughly 237,000 housing units by 2060. The largest percent change in housing units through time occur in the smaller water providers on the periphery of the Study area, e.g., Eloy, EPCOR – San Tan and Picacho Water Company.

Table 2 – Total projected housing units in 2060 by water provider. Scenarios that are grouped together utilize the same spatial pattern and growth rate

	Total Projected Housing Units - 2060				Housing Unit Growth 2018 vs 2060			
Water Provider	**A**	**B**	**D**	**E&F**	**A**	**B**	**D**	**E&F**
City of Eloy	29,718	17,302	17,548	10,449	793%	420%	427%	214%
Town of Florence	14,640	11,003	9,787	6,343	251%	164%	134%	52%
City of Casa Grande	1,077	852	770	355	341%	249%	216%	45%
Arizona Water Company (Pinal Valley System)	204,016	134,156	108,039	67,539	454%	264%	194%	83%
Global Water Resources	73,384	59,686	58,374	34,550	292%	218%	211%	84%
EPCOR - San Tan	35,594	23,216	18,520	9,985	1185%	738%	569%	261%
Picacho Water Company	13,785	9,959	8,204	6,159	1299%	911%	733%	525%
Total	**372,214**	**256,174**	**221,242**	**135,380**	**455%**	**282%**	**230%**	**102%**

More Growth

Less Growth

As described in Section 5.3 of this report, annual municipal demand for each water provider is modeled in CAP:SAM as the product of housing units and GPHUD. Both housing units and the GPHUD values are differentiated on the basis of new vs. existing. Variations in housing unit projections in conjunction with different usage rates, have a marked impact on demand projections for the Study area (Figure 23).

	Total Projected Demand in AF - 2060			
Water Provider	**A**	**B**	**D**	**E&F**
City of Eloy	10,209	5,799	5,882	3,464
Town of Florence	5,100	3,741	3,350	2,132
City of Casa Grande	619	477	434	202
Arizona Water Company (Pinal Valley System)	71,224	45,751	37,122	22,873
Global Water Resources	21,603	17,055	16,696	9,747
EPCOR - San Tan	14,102	8,930	7,163	3,832
Picacho Water Company	8,085	5,760	4,826	3,667
Total	**130,943**	**87,514**	**75,473**	**45,917**

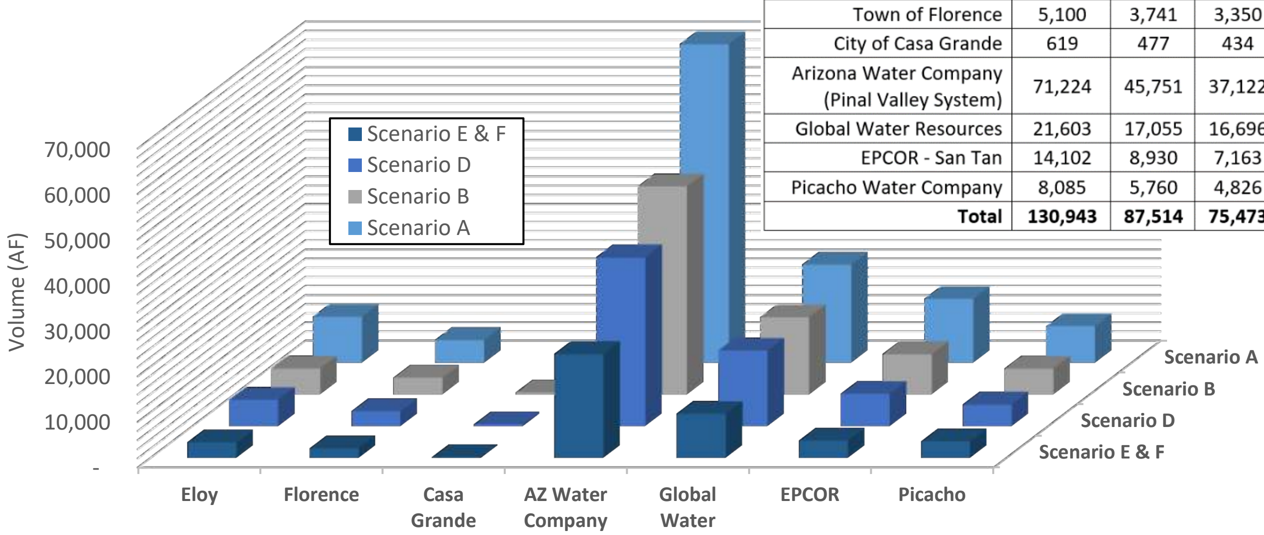


Figure 23 – Total projected water demand (AF) in 2060 by scenario by water provider

Not surprisingly, the impact of differing growth assumptions is most evident when comparing slow and compact growth (Scenarios E and F) to rapid spillover growth (Scenarios A). Based on additional assumptions regarding future trends in GPHUD (Appendix A), Scenario A and Scenarios E&F are the endmembers for the municipal demand projections. Total municipal demand in 2060 ranges from a maximum of about 131,000 AF in Scenario A to a minimum of about 46,000 AF in Scenarios E and F.

Agricultural Demand

Total agricultural demand, which excludes tribal agriculture, is projected to decrease from historic levels in all model scenarios (Figure 24). In 2060, demand ranges by approximately 30,000 AF across the scenarios. Declining agricultural demand is influenced by two key assumptions: 1) an increase in irrigation efficiency through time and 2) urbanization of existing agricultural land. Under hotter and drier climate, it is anticipated that evapotranspiration may increase and growing periods may be extended. To simulate this effect CAP:SAM models an increase in crop consumptive use through time which contributes to growth in demand. Assumptions for each of these parameters can be found in Appendix A.

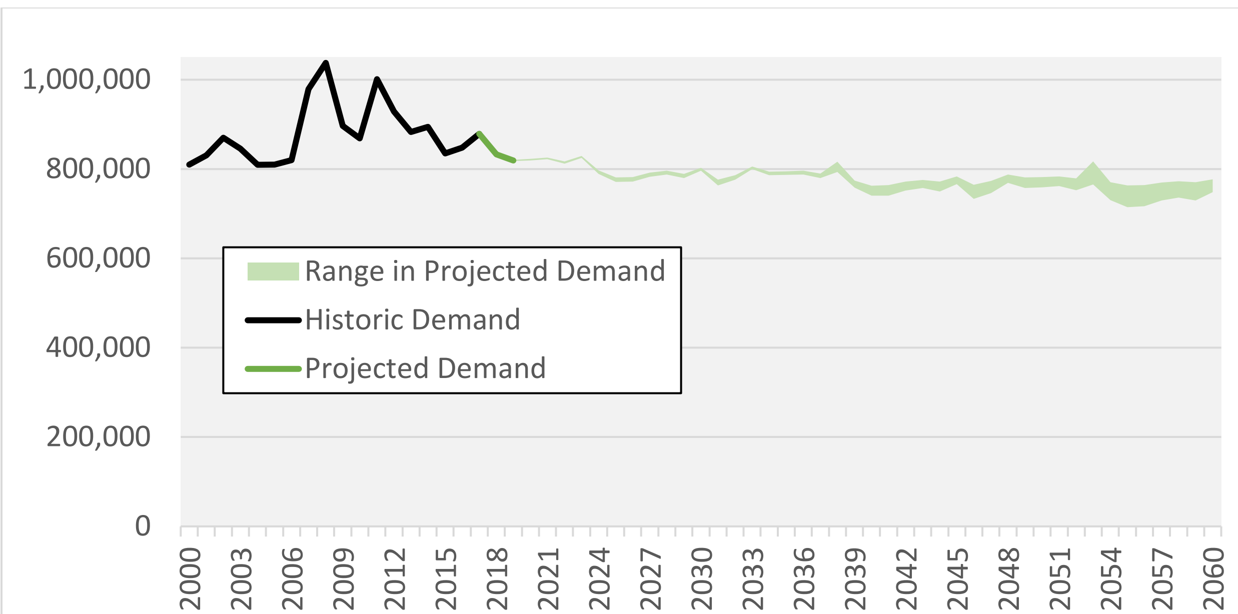


Figure 24 – Range in projected Agricultural demand across modeling scenarios compared to historic levels

As discussed in section 4.3, a key modeling assumption for this Study is that future increases in the capacity for irrigation districts to pump groundwater does not fully replace the loss of the CAP Agricultural Pool or water supplied to the districts through GSF arrangements. In all modeling scenarios there are projection years in which total demand exceeds the supplies available to meet those demands, even with an increased capacity to pump groundwater. The influence of supply availability and different pumping capacity scenarios can be seen in Figure 25. In the beginning of the projection period the fulfilled demand for all scenarios drops precipitously as simulated reductions to the CAP system eliminate the availability of Agricultural Pool and affect the ability of entities to store supplies at GSFs. As irrigation districts phase in new pumping capacity over time (an assumption of the model) the demand that is fulfilled increases and in some scenarios benefits from periodic Agricultural Pool water prior to 2030 if simulated CAP shortages are less severe. Post 2030, when the Agricultural Pool is eliminated, an equilibrium is effectively established in which districts are projected to have reached their full groundwater pumping capacity. In 2060 the range in fulfilled demand across the scenarios is approximately 185,000 AF.

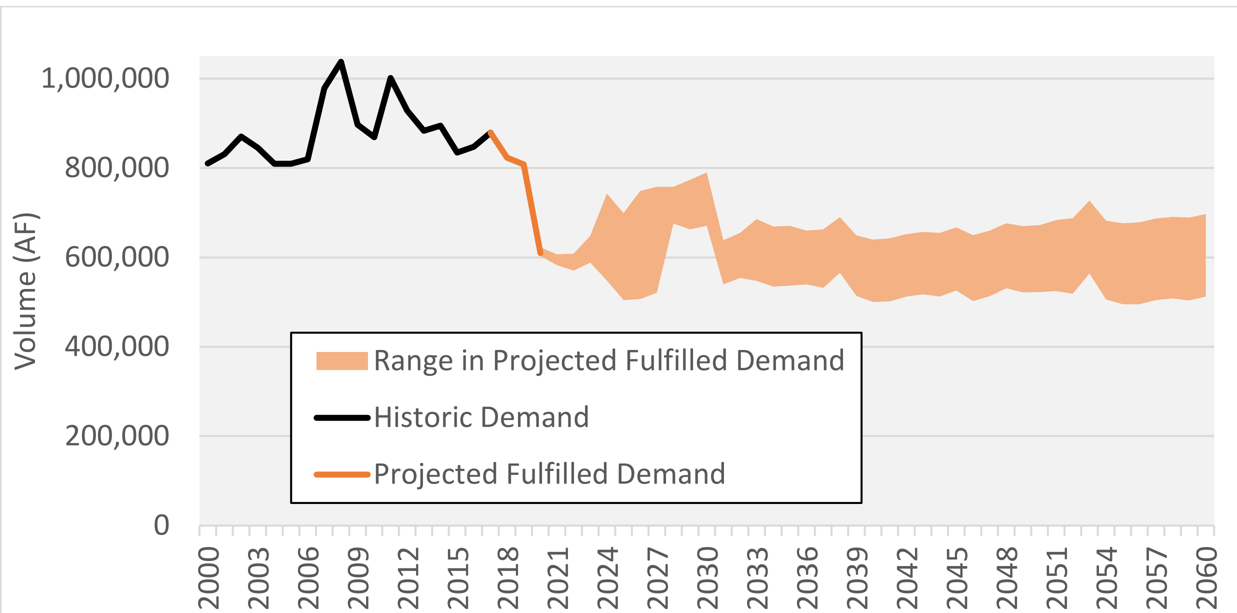


Figure 25 – Range in projected fulfilled Agricultural demand across modeling scenarios compared to historic levels

In a projection year in which available supplies are insufficient to meet demands, irrigation districts are projected to take acres out of production through fallowing activities. Average annual fallowing varies for each irrigation district (Figure 26). Across all scenarios the larger districts, Maricopa-Stanfield Irrigation and Drainage District (IDD) and Central Arizona IDD, are projected to fallow on average approximately 13,500 and 18,700 acres per year, respectively. Fallowing of 4,300 and 1,300 acres per year are projected for Hohokam IDD and San Carlos IDD, respectively.

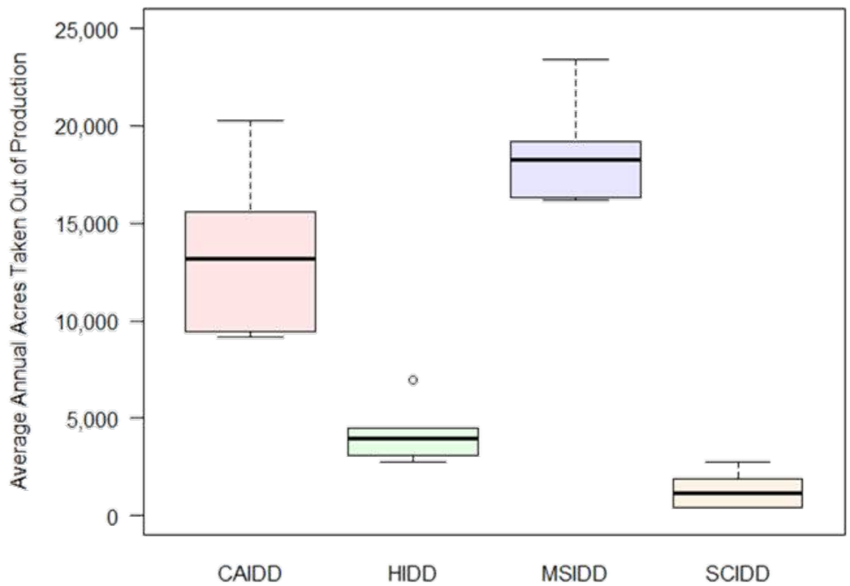


Figure 26 – Average fallowed acres by Irrigation and Drainage District across modeling scenarios

Tribal Demand

Tribal demand in the Study area is predominately for agriculture with a small portion of municipal and industrial use. Total projected tribal demand across all sectors ranges from 363,000 AF to 402,000 AF in 2060, representing a roughly 65% and 80% increase from current levels, respectively. A large portion of the projected tribal demand is associated with GRIC's increased agricultural activity through PMIP.

Industrial Demand

CAP:SAM has the capability to model industrial demands that can be either tied to, or independent of, municipal demand. For this modeling effort, demand associated with turf facilities, sand and gravel facilities and power plants was assumed to be tied to municipal growth. Therefore, in scenarios where municipal demand was projected to grow a commensurate growth in Industrial demand was projected. Demand associated with dairies and feedlots was not linked to the municipal sector and was held constant through the simulation period. Projections of groundwater pumping for the Florence Copper project[26] were used as the basis for the mining sector demand. Annual demand

[26] https://www.tasekomines.com/assets/docs/2017-01-16%20NI%2043-101%20Florence%20Technical%20Report.pdf

associated with this project is projected to grow to approximately 1,780 AF in 2023 and persist throughout the simulation period. A small volume of existing demand estimated by ADWR was also included for the mining sector.

Industrial demand constitutes a relatively small portion of the total demand within the Study area. Annual demand for the industrial sector is projected to increase from current levels of approximately 22,000 AF to anywhere from 28,000 AF to 32,000 AF by 2060. Much of this demand is associated with Turf facilities and dairy operations.

Other Demand

While CAP:SAM doesn't provide detailed projections for smaller water providers that are not associated with CAGRD, demand associated with these providers is still considered in the model. Current demand for small providers is approximately 4,600 AF and is projected to increase by anywhere from 38% (Scenarios E &F) to 127% (Scenario A).

Total Demand

Total demand for the Study area is projected to increase from current levels for all five modeling scenarios (Figure 27). Scenario A results in the largest increase in demand. This is due to a high projected growth rate, a spillover growth pattern that brings more housing units to the area and a hotter and drier climate that increases both agricultural and municipal use. In 2060, total demand under Scenario A is projected to be approximately 1.415 MAF, a 30% increase from current levels. Scenario F, which assumes a slow and dense growth profile, resulted in the smallest increase in demand. Demand for Scenario F in 2060 is projected to be 1.24 MAF, a 15% increase from current levels.

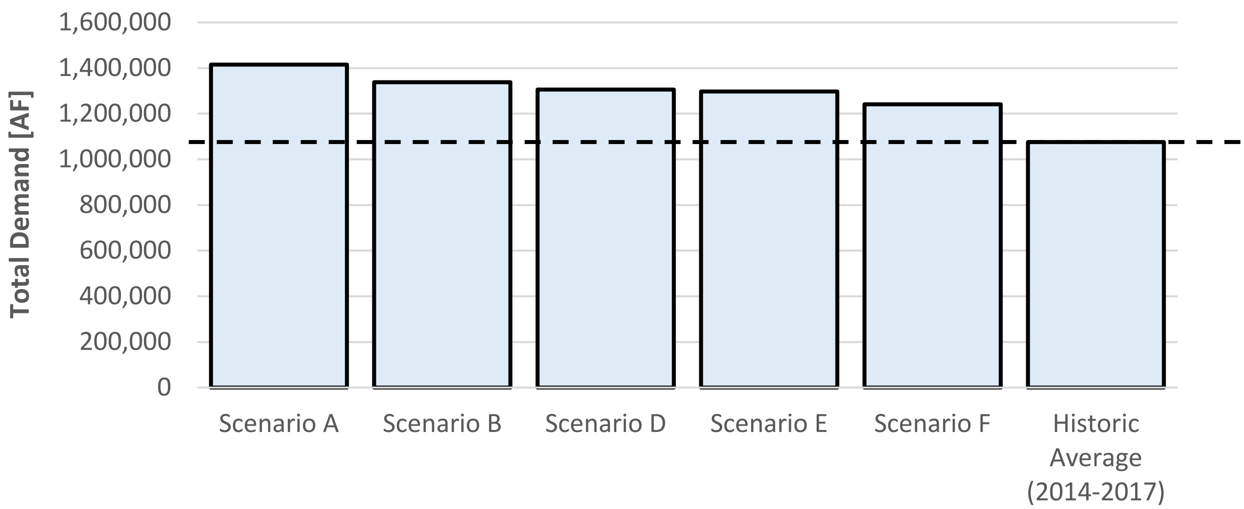


Figure 27 – Total projected demand in 2060 for each modeling scenario. Historical average was determined using ADWR data.

Detailed demand projections for individual water providers, irrigation districts and tribes can be found in Appendix B of this report.

6.2 Supply

Supplies that are projected to meet demands at the end of the simulation period are shown in Figure 28. The availability of these supplies is driven in large part by the interplay of three factors: climate, the rate and location of growth and the capacity for irrigation districts to pump groundwater (Section 4.0). As discussed in Section 4.2, the primary effect of modeling a warmer and drier climate in CAP:SAM is a reduction in the annual availability of both surface water and CAP supplies. Reduced availability of these supplies has a ripple effect that impacts the utilization of subsequent supplies. Under the scenarios in which supplies are reduced, a commensurate increase in mined groundwater is projected for tribes, water providers and irrigation districts to continue to meet demands. Groundwater pumping is further exacerbated for the municipal sector under aggressive growth conditions that generate additional demand.

Effluent use is projected to increase across all model scenarios in proportion to the increased municipal demand. Currently, use of effluent supplies represents about 0.5% of the supplies used to meet demands in the AMA. In 2060, effluent use is projected to represent approximately 2% of total supplies.

Total CAP utilization is projected to decrease across all model scenarios. This is the result of two factors. First, CAP's Agricultural Settlement Pool, a large resource for the agricultural sector, reduces in size in 2024 and sunsets fully in

2030. Second, increased magnitude, frequency, and duration of shortages compared to the CAP system are modeled under all scenarios. These shortages are most severe under the Hotter and Drier climate scenario and therefore CAP utilization is projected to be the lowest in Scenarios A, B and E. CAP utilization in 2060 ranges from ~133,000 AF to ~218,000 AF. Gila River surface water is subject to the same shortage trends as the CAP supply. Supplies are generally reduced under Scenarios A, B and E but remain available under the less aggressive climate assumptions (Scenario D and F). Surface water availability ranges from ~72,000 AF to ~128,000 AF across scenarios.

Under all modeling scenarios, mined groundwater is projected to increase from historic levels. Increased pumping capacity for the irrigation districts, GRIC's expansion of agricultural activity through the PMIP and water providers meeting growing demands, all contribute to this phenomenon. Mined groundwater in 2060 is projected to range from approximately 976,000 AF per year under Scenario A to 718,000 AF per year under Scenario F. In-lieu supplies are projected to decrease in each modeling scenario as the renewable supplies available for tribes and municipalities to send to GSFs decreases under future shortage conditions.

For irrigation districts, if the total portfolio of supplies available each year are insufficient to meet demands it results in some "demand that is not met." This volume then results in some acres taken out of production (i.e., fallowed). The total volume of demand not met is driven by assumptions (Appendix A) for pumping capacity, irrigation efficiency and changes in crop consumptive use. In 2060, this volume averages approximately 150,000 AF across all scenarios, with the exception of Scenario E where the volume is nearly 300,000 AF.

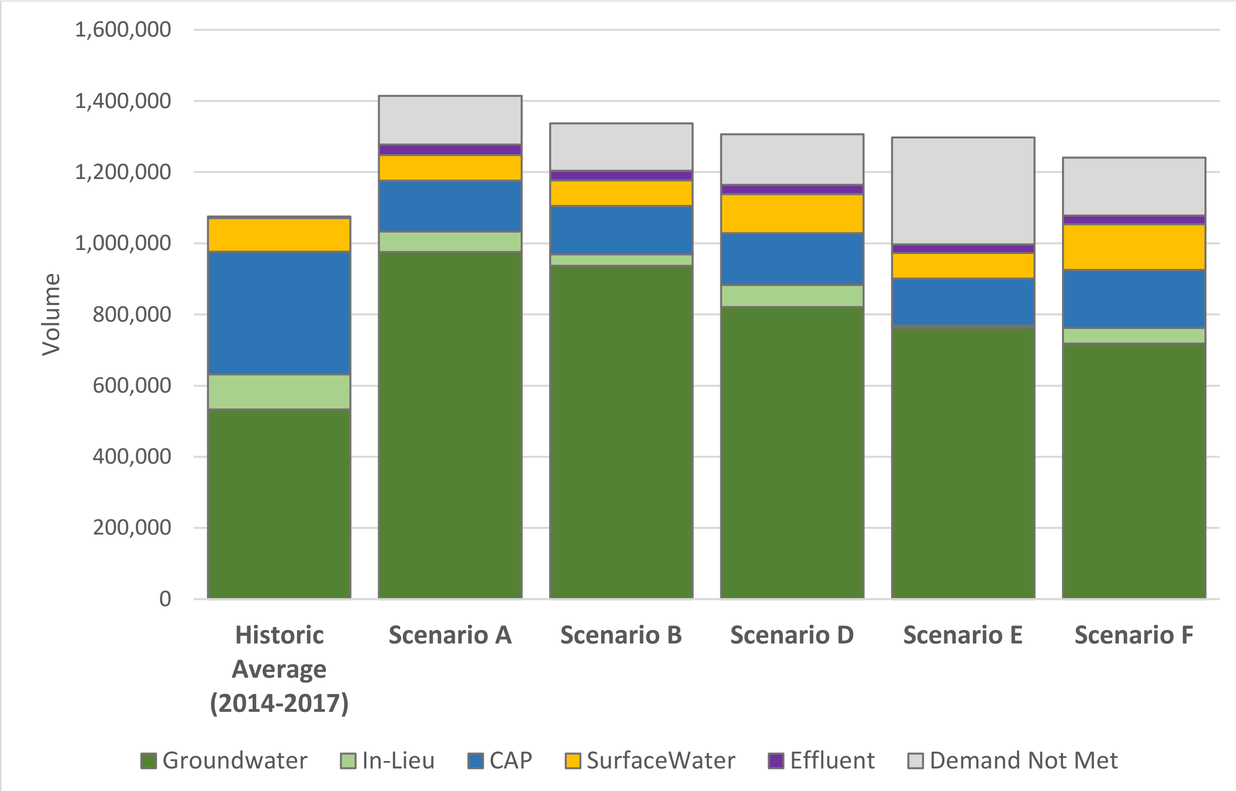


Figure 28 – Projected supply utilization to meet all municipal, agricultural, industrial, and tribal demands in 2060. Historical average was computed using ADWR data and is shown for comparison.

Detailed supply use projections for individual water providers, irrigation districts and tribes can be found in Appendix B of this report.

6.3 Effluent

Effluent generation is driven by assumptions regarding the rate and location of growth. The more growth that occurs within the Study area, the more effluent that is produced. While some of the effluent generated by Picacho Water Company and Global Water Resources is projected to be used to satisfy industrial demands, the bulk of the effluent is projected to be either stored at USFS or discharged. Under all scenarios, it is anticipated that Global Water Resources will finalize construction of their Groves USF and begin storing effluent in 2022. Effluent that is projected to be stored at all USFs in 2060 (both managed and constructed) ranges from ~28,000 AF under Scenario A to 12,000 AF under Scenarios E and F (Figure 29).

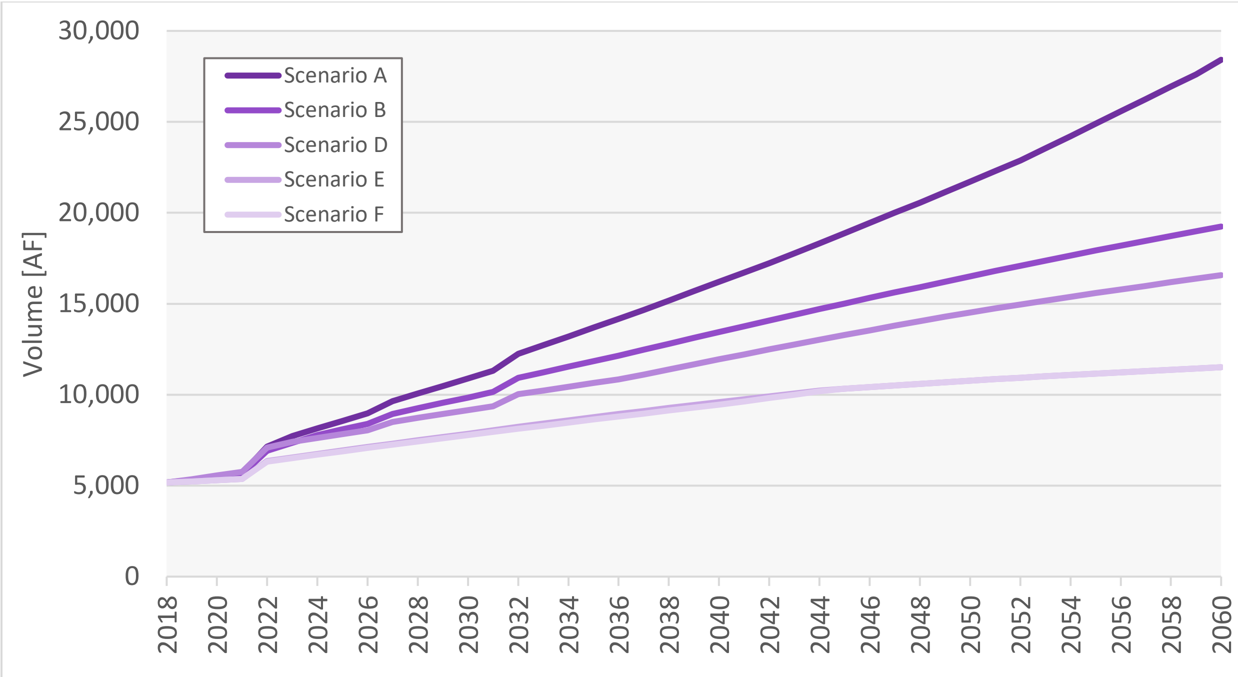


Figure 29 – Projected effluent storage at USFs for all scenarios

Currently, some portion of the effluent generated in the AMA is discharged directly into washes. Under all pre-mitigation scenarios this behavior is anticipated to continue. Effluent that is discharged is projected to range from ~25,000 AF to ~6,000 AF in 2060 (Figure 30).

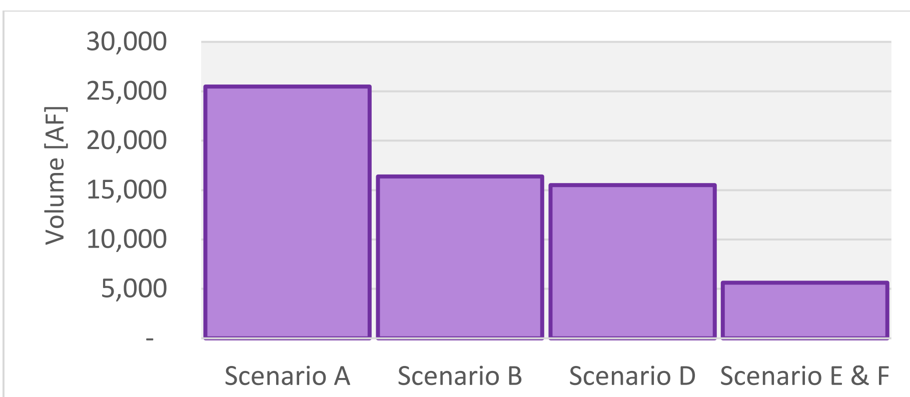


Figure 30 - Effluent that is projected to be discharged to washes in 2060

6.4 Pumping

Total groundwater pumping is projected to increase beyond current levels for all scenarios (Figure 31). The sharp rise in pumping early in the projection period is largely a product of irrigation districts establishing additional pumping capacity and GRIC expanding their agricultural production. In general, under each scenario, total groundwater pumping reaches a steady state (with some slight year to year variation) at some later point in the simulation. Since assumptions regarding GRIC's agricultural expansion are constant across simulations, the point in which groundwater pumping reaches a steady state is a function of when the irrigation districts reach full pumping capacity. Full capacity is reached in 2037 under Scenarios A and B, 2030 under Scenario D and 2022 under Scenario E and F. Groundwater pumping is projected to increase by 30% to 75% from historic levels.

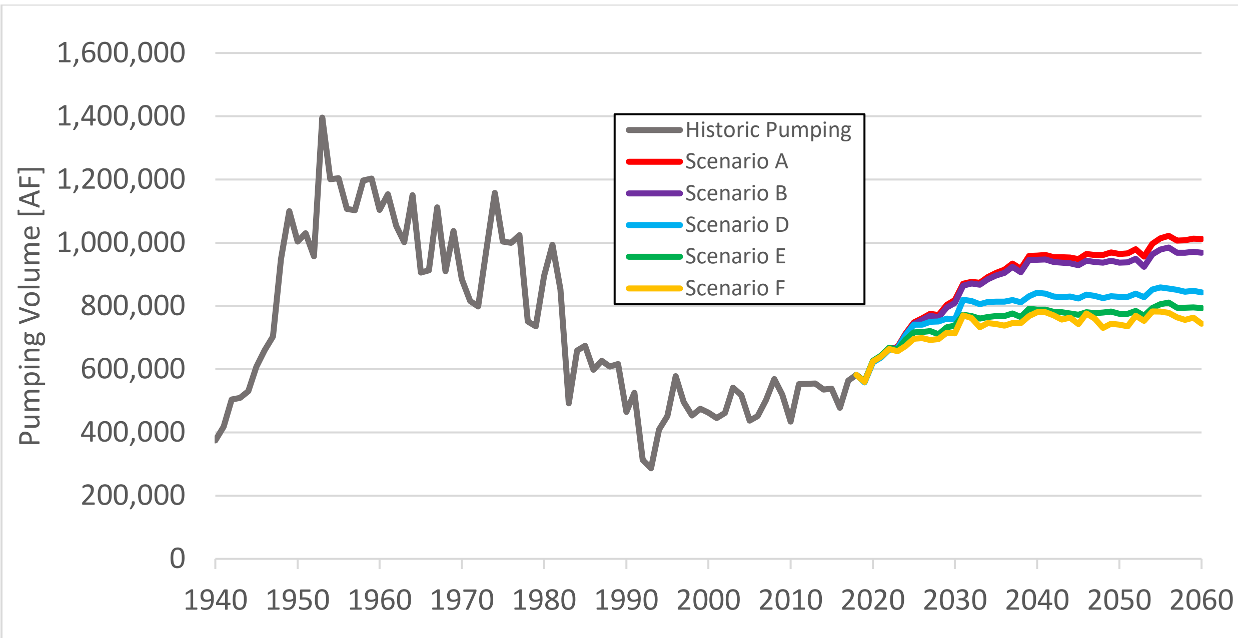


Figure 31 – Total pumping by scenario. Projections include agricultural pumping, municipal pumping (groundwater, annual storage and recovery, CAP LTSC recovery), tribal pumping and AWBA LTSC recovery.

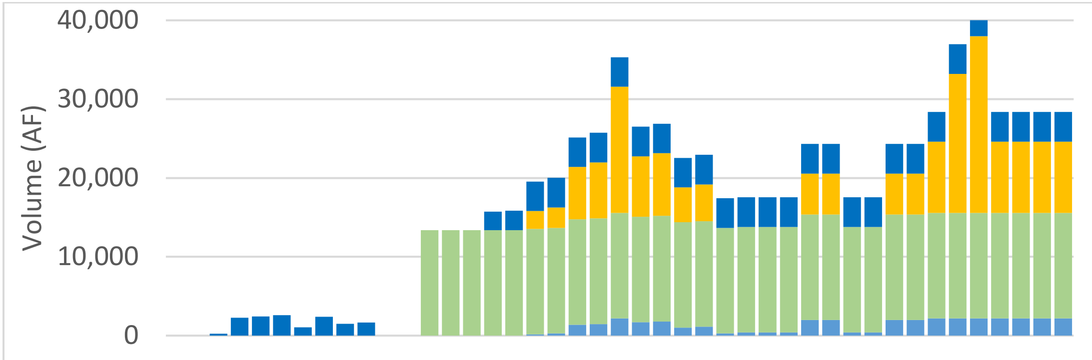
<u>Arizona Water Banking Authority Recovery</u>

Since its inception in 1996, the AWBA has stored over 4 million AF of CAP water underground. During times of declared shortage on the Colorado River, these credits will be recovered (pumped) for the purpose of increasing the reliability of supplies for CAP M&I subcontractors and Fourth Priority (P-4) On-River M&I users (known as firming). Credits will also be used to meet the State's Indian firming obligations, as well as to meet interstate water banking obligations with Nevada. A comprehensive analysis of the magnitude, timing, and frequency of credit recovery for the purpose of firming is beyond the scope of this report but is discussed in detail in the 2021 Joint Recovery Update[27] authored by the Recovery Planning Advisory Group[28].

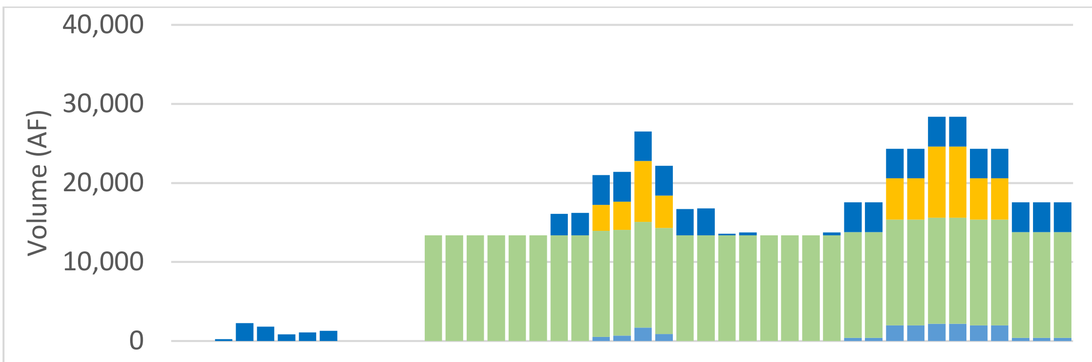
To date, approximately 1.5 million AF of AWBA credits have been accrued in the Pinal AMA. Recovery of these credits is projected to occur across all scenarios (Figure 32). Total recovery volumes over the full simulation period are expected to range from 470,000 AF to 733,000 AF. During years of severe impact to the CAP system, recovery peaks because of increased firming for M&I and tribal users. This phenomenon is most prevalent in Scenarios A, B and E, in which the Hotter and Drier climate is modeled. For each scenario, an interstate recovery volume of about 13,400 AF is projected to begin in 2030 and remains constant through the simulation.

[27] https://new.azwater.gov/sites/default/files/media/2021_Update_Joint_Recovery_Plan.pdf
[28] https://new.azwater.gov/rpag

Scenarios A, B and E



Scenario D



Scenario F

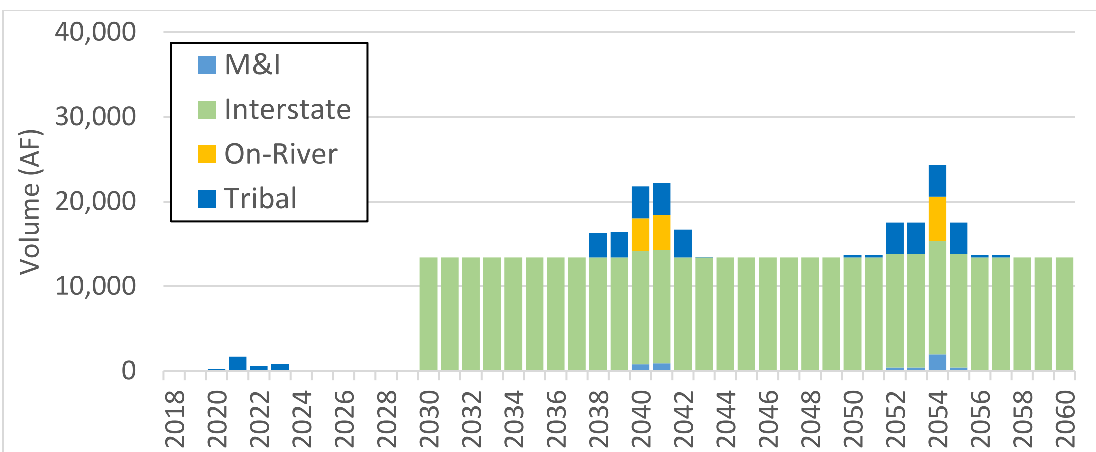


Figure 32 – Projected AWBA recovery volumes by scenario

Groundwater Subject to AWS

CAP:SAM makes projections of groundwater demand for several legal categories, but it does not simulate the physical properties of the regional groundwater aquifer. As such, it does not have the ability to constrain the supply of groundwater based on physical availability of pumping extraction costs. The ability to continue to satisfy the physical availability provision of the AWS rules is beyond the scope of CAP:SAM's capabilities but is a central benefit of connecting CAP:SAM results to the regional groundwater flow model.

While total groundwater pumping is not constrained in CAP:SAM, if the projected demand for a provider exceeds the availability of renewable supplies, exempt groundwater and LTSCs, the corresponding volume incurs a replenishment obligation under the AWS rules. This volume requires offsetting replenishment by either the CAGRD or the provider themselves and depends on the acquisition or development of renewable supplies within the AMA. The rate of groundwater use that is subject to replenishment varies considerably across scenarios (Figure 33). Total volume for the simulation period ranges from a maximum of 850,000 AF in Scenario A to a minimum of 158,000 AF in Scenario F.

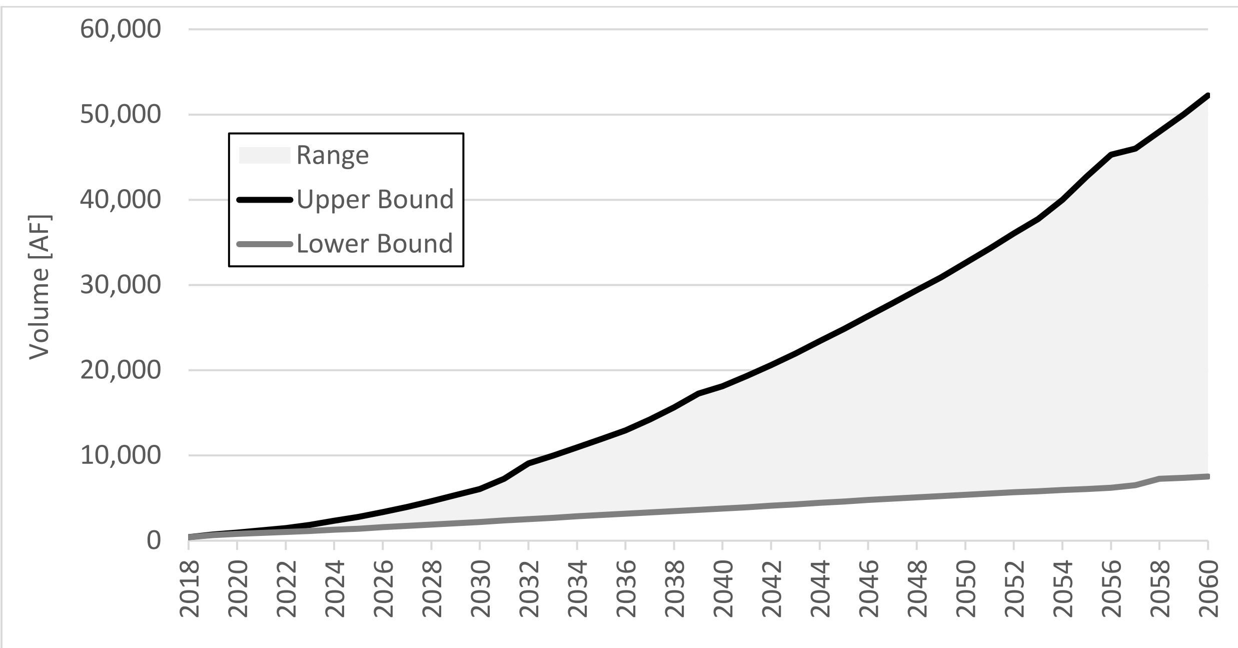


Figure 33 – Range in groundwater pumping subject to replenishment und the Assured Water Supply rules

6.5 Artificial Recharge of CAP Supplies

Recharge represents a net contribution to the aquifer that offsets groundwater pumping from a regional safe-yield perspective. A modest volume of CAP supplies is projected to be recharged at USF facilities during the simulation period. These volumes originate from Arizona Water Company storing at their

Pinal Valley USF and the GRIC storing at their Olberg Dam USF. Reductions in storage volumes over time across scenarios are driven by shortages to the CAP system as well as the implementation of Arizona Water Company's recovery exchange agreement[29] that is anticipated to be executed beginning in 2030 for this modeling exercise (Figure 34).

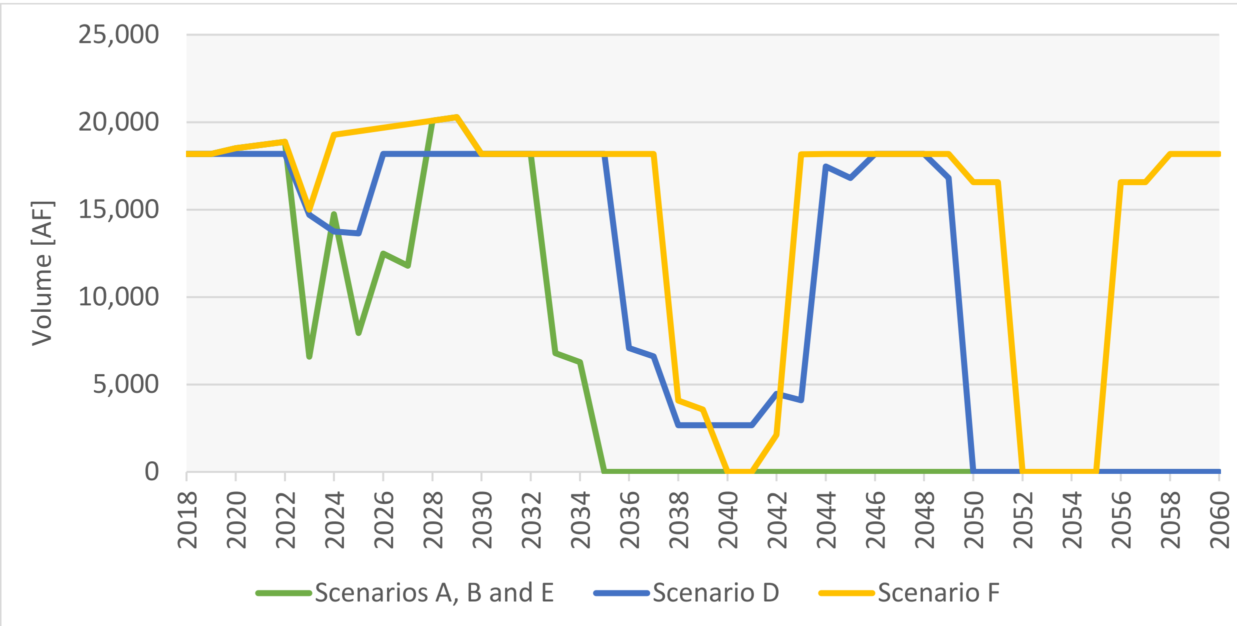


Figure 34 – Total annual recharge of CAP supplies.

7.0 Connection to Groundwater Flow Model

Upon completion of the Supply and Demand Assessment, CAP provided CAP:SAM modeling results, including those discussed in Section 6, to Montgomery & Associates for use as input files for the groundwater modeling. A detailed description of these files is listed in Appendix C.

[29] https://new.azwater.gov/sites/default/files/media/2021_Update_Joint_Recovery_Plan.pdf

8.0 Mitigation Strategies

8.1 Mitigation Strategy Development

Major findings of the groundwater modeling runs performed by Montgomery & Associates using the supply and demand modeling results for the pre-mitigation scenarios, include:

1. Groundwater level declines during the projection period across the entire Study area for all scenarios
2. Isolated regions of the Study area exhibit groundwater level declines of greater than 500 ft during the projection period
3. There is insufficient groundwater pumping capacity to meet all projected agricultural demands, resulting in acres being taken out of production
4. Groundwater level declines will make proving physical availability (a regulatory requirement for the municipal sector) challenging

The Bureau of Reclamation, in conjunction with EMSBS Stakeholders, convened a Mitigation and Adaptation Workshop[30] to develop strategies for ways in which the above issues could be partially addressed. The workshop was split over two days (May 17 and 18, 2021) and was held remotely. A small working group was established consisting of Project Team members and interested Study participants, to distill the information received during the Workshop into three broad mitigation strategies for further evaluation (Figure 35). Each strategy represents a combination of multiple mitigation actions. These strategies were first presented to the Project Team on July 13, 2021, and a subsequent presentation on strategy specific modeling assumptions was provided on August 10, 2021. Following these presentations, EMSBS Stakeholders provided feedback and suggested modifications be made both to the proposed strategies as wells as some of the modeling assumptions.

[30] https://secureservercdn.net/72.167.241.180/w15.377.myftpupload.com/wp-content/uploads/2021/12/Jake-Lenderking-EMS-Stakehoder-Consultation-Workshop-Documentation.pdf

Strategy	Name	Description
Strategy #1	Municipal Conservation and Reuse	Promote additional conservation across the municipal sector and optimize the use of water supplies currently in the AMA
Strategy #2	Changes to Agricultural Practices and Land Use	Promote a persistent and vibrant agricultural sector through land use changes and improved agricultural practices
Strategy #3	Supply and Infrastructure Investments	Invest in new infrastructure to effectively move current and future water supplies into and around the AMA

Figure 35 – List of mitigation strategies developed by the EMSBS planning team

8.2 Modeling Assumptions for Mitigation Scenarios

Pre-mitigation Scenario D was chosen as the baseline for the mitigation work. This scenario was modified to generate three new modeling scenarios associated with each mitigation strategy. The modeling assumptions that were made for each strategy are outlined in Table 3. The new mitigation scenarios were evaluated using CAP:SAM and the results were provided to Montgomery & Associates to generate three additional groundwater modeling runs. The results of both the CAP:SAM and groundwater modeling were compared to pre-mitigation Scenario D to evaluate the effectiveness of the mitigation strategies on addressing the issues identified in Section 8.1.

Table 3 – Key modeling assumptions for the three mitigation strategies

Strategy	Key Modeling Assumption	Quantification
#1	Reduced municipal demand for large providers	30% Reduction by 2060
#1	Reduction in municipal demand for small providers	15% Reduction by 2060
#1	Reduction in industrial demand	15% Reduction by 2060
#1	Use of effluent supplies to meet annual demand	Full use by 2035
#2	Reduction in irrigated acres	Variable (7,000 – 26,000 acres)
#2	Increased rate of development on ag land	Doubled from base assumption
#2	Increased rate of annual irrigation efficiency increase	Doubled from base assumption
#2	Conversion of high-water use to low water use crops	50% of current Alfalfa and Cotton acreage converted to low water use
#3	Import volume of water into Study area	75,000 AF annually by 2060
#3	Imported supply used to reduce groundwater pumping subject to AWS rules	~17,000 AF annually by 2060
#3	Remaining imported supplies distributed to Ag districts	~58,000 AF annually by 2060

8.3 Results of Mitigation Strategies

A complete summary comparing the supply and demand projections under the three mitigation strategies to pre-mitigation Scenario D, is provided in Appendix D of this report. In general, the impacts can be summarized as follows:

Strategy 1

Strategy 1 focuses on promoting additional conservation across the municipal and industrial sector and encourages the use of effluent resources to meet growing municipal demands. Under this strategy, total demand for both the municipal and industrial sectors is reduced compared to the base scenario (Scenario D). Under the base scenario, effluent supplies are projected to be stored at USFs across the Study area. Under Strategy 1, these supplies are re-directed to meet annual municipal demand through either direct or indirect potable reuse. The net effect of this scenario is that groundwater pumping associated with the municipal and industrial sectors decreases by over 1.1 MAF over the projection period, as compared to the base scenario. Effluent storage under this strategy is reduced by 0.68 MAF.

Strategy 2

Strategy 2 aims to establish a smaller more efficient agricultural sector through land use changes and improved irrigation practices. Numerous activities are contemplated under this strategy that effectively reduce the agricultural footprint in the Study area to something that can more sustainably be supported by the supply that is projected to be available. These activities include paying farmers to permanently or temporarily fallow lands and encouraging new development to occur on existing agriculture lands. In addition to reducing the footprint, this strategy contemplates potential conversions to less water intensive crops and (to the extent possible) increases in irrigation efficiency. Due to the size of the agriculture sector in the Study area, this strategy has the largest impact on the supply and demand projections. Total agricultural demand is projected to decline by over 6.7 MAF with an associated decline of over 6.5 MAF in groundwater pumping to meet those demands.

Strategy 3

Under Strategy 3, new supplies are projected to be brought into the Study area through new or existing infrastructure. The strategy is identical to the base pre-mitigation Scenario D except for that it augments the available supply by 75,000 AF annually by 2060. This supply is distributed to the municipal and agricultural sectors and reduces groundwater pumping by 0.33 MAF and 1.1 MAF over the projection period, respectively.

Appendix A - CAP:SAM Modeling Parameters

Key CAP:SAM Modeling Parameters by Scenario

Parameter	Scenarios				
	A	B	D	E	F
CAP and Surface Water Shortages	Hotter & Drier	Hotter & Drier	Hot & Dry	Hotter & Drier	Historic
Growth Rate (AOEO[1] Series)	High	Official	Official	Slow	Slow
Growth Pattern (Applied Economics)	Spillover	Local	Official	Dense Urban.	Dense Urban.
Agricultural Pumping Capacity [%]	150	150	125	Current	Current
Existing GPHUD[2], Rate of Change [%]	-0.3	-0.5	-0.5	-0.8	-1.0
Existing GPHUD, Max Rate of Change [%]	-12	-15	-15	-20	-20
Existing GPHUD, Min Value	220	200	200	150	150
New GPHUD, Rate of Change [%]	-0.0	-0.1	-0.1	-0.2	-0.3
New GPHUD, Max Rate of Change [%]	-5	-5	-5	-5	-5
New GPHUD, Min Value	200	200	200	200	200
Ag Efficiency , Rate of Change [%]	0.1	0.2	0.15	0.2	0.2
Ag Efficiency, Max [%]	80	80	80	80	80
Ag Climate Consumptive Use Rate of Change [%]	0.17	0.17	0.10	0.17	0.0

*Parameters that are applicable across all scenarios include:

- Use of the 2045 CAP buildup schedule
- Medium housing unit recovery rate
- No crop type replacement
- No reinvestment in underutilized agricultural lands
- Maximum 20% AWBA firming for municipal and industrial subcontractors

[1] AOEO = Arizona Office of Economic Opportunity

[2] GPHUD = Gallons per housing unit per day

Appendix B - CAP:SAM Supply and Demand Projections

CAP:SAM Supply and Demand Projections by Water Provider

CAP:SAM Supply and Demand Projections by Water Provider, Irrigation District and Tribe

Scenario A

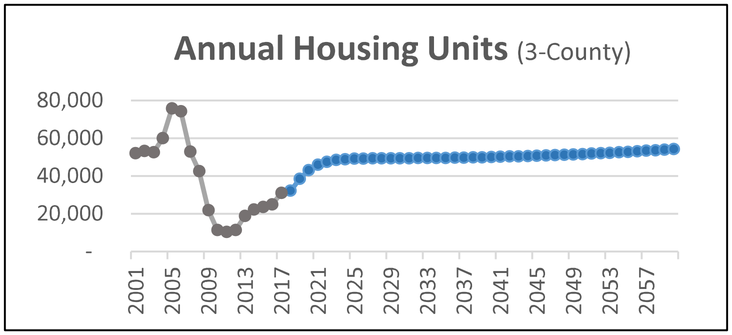
Climate: Hotter and Drier
Growth Rate: High
Growth Pattern: Spillover
Ag Pumping Capacity: 150% of Historic

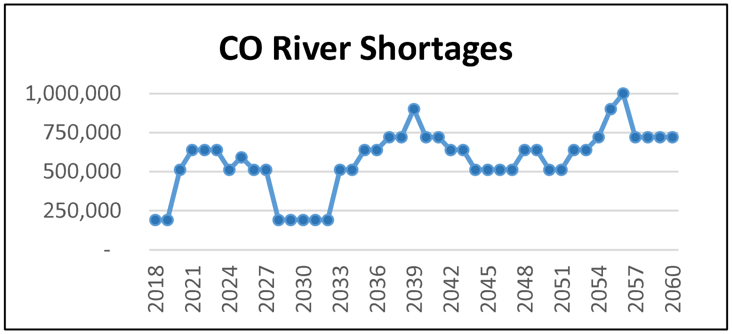
A. Highest Demand [EMSBS]

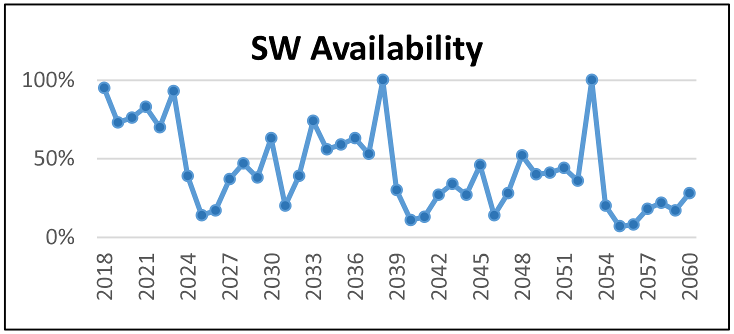
Run Date: 1/13/2021 **Filename:** CAPServiceArea_v3.51_ACv4.gsm

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015

Allow Shortages	Yes	
Select CRSS Array	3	*3=Synthetic*
Use Specific Trace	Yes	
Selected Trace	2	*1=Moderate; 2=Deep; 3=Slight*
AWBA Max M&I	20%	
Surface Water Scenario	6	*1=No Reduction; 2=Occational; 3=Frequent*
Use CAP Buildup	Yes	
CAP Buildup Scenario	2	*1=2035; 2=2045*
HU Growth Pattern	3	*3 = Spillover Growth*
HU Forecast	2	*1=Use Curve; 2=Eller Forecast*
HU Curve	2	
HU Growth Start Rate	0%	
HU Ordinary Level	49,300	
HU Rate @ 50 yrs	1%	
GPHUD Change Existing	-0.3%	*per year*
GPHUD Max Change Existing	-12%	
GPHUD Min Existing	220	
GPHUD Scenario New	1	
GPHUD Change New	0.0%	*per year*
Ag Climate Adjustment	0.2%	
Ag Efficiency Increase	0.1%	*per year*
Ag Efficiency Goal	80%	
Ag Replace Crop CU	2.66	
Ag Intensity Scenario	2	
Ag Develop on Crops	30%	*Perecent of max on active Ag*
Ag Acres Replace Percent	0%	
Ag Replace Crop Year	2025	





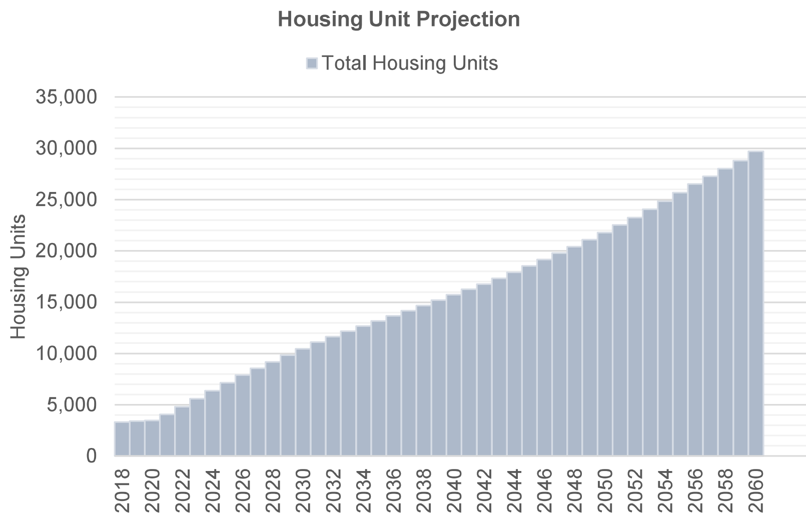


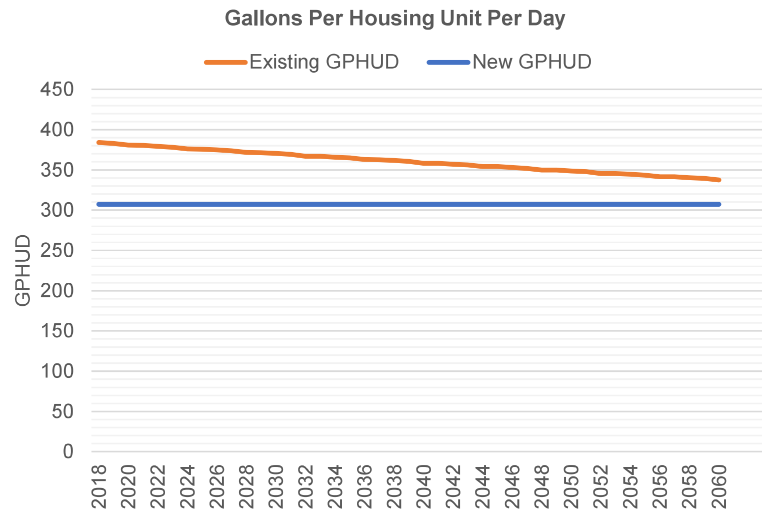
Central Arizona Project Service Area Model

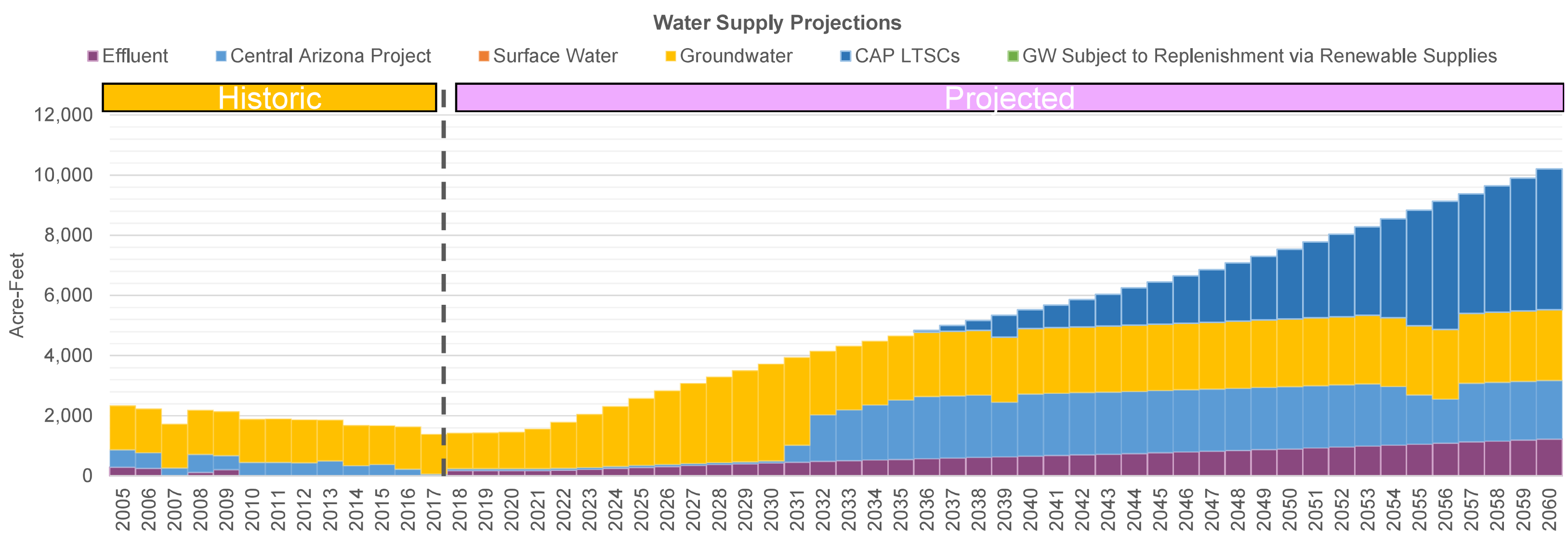
Eloy

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







CAP-LTSCs Available After 2060:	8,013 AF
Additional[1] effluent available to be put to complete use[2] in 2060:	8,181 AF
Additional effluent available to be put to complete use during the simulation period:	160,199 AF

[1] Effluent volume in excess of that being used to satisfy annual demand (i.e. purple pipe or recovery of effluent credits)

[2] Use of effluent for purposes other than being discharged (i.e. storage, DPR, irrigation, etc)

Eloy

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

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Demand Assumptions — Water Supply Projections (Acre-Feet)

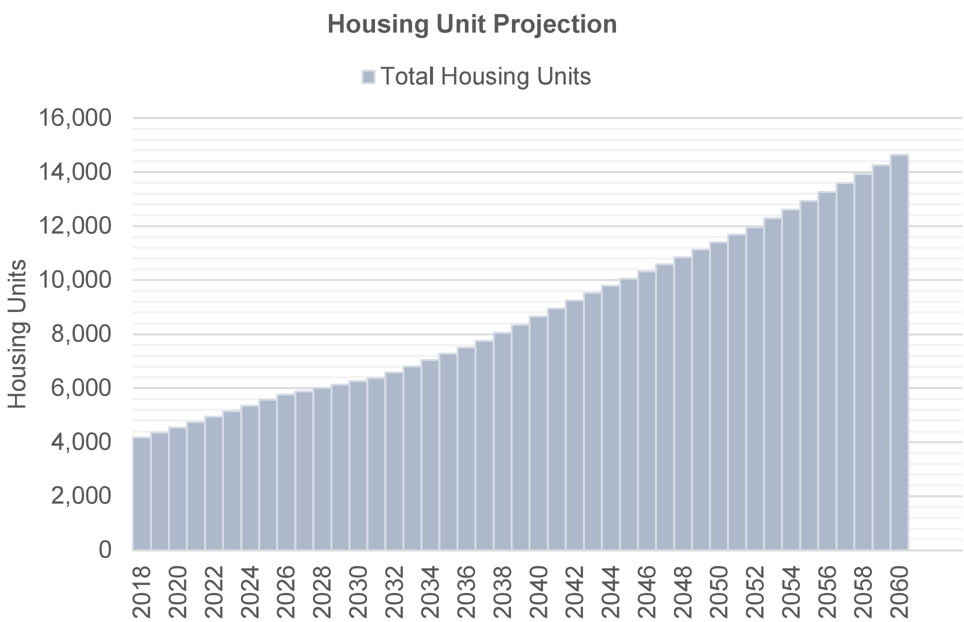
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	3,328	0	384	307	177	0	0	62	0	2,000	0	1,186	0	0
2019	3,399	0	383	307	177	0	0	62	0	2,000	0	1,198	0	0
2020	3,478	0	381	307	179	0	0	62	0	2,000	0	1,218	0	0
2021	4,060	0	381	307	181	0	0	62	0	2,000	0	1,325	0	0
2022	4,815	0	379	307	195	0	0	62	0	2,000	0	1,537	0	0
2023	5,584	0	378	307	223	0	0	62	0	2,000	0	1,767	0	0
2024	6,359	0	376	307	255	0	0	62	0	2,000	0	1,999	0	0
2025	7,140	0	376	307	288	0	0	62	0	2,000	0	2,227	0	0
2026	7,898	0	375	307	320	0	0	62	0	2,000	0	2,455	0	0
2027	8,540	0	374	307	353	0	0	62	0	2,000	0	2,659	0	0
2028	9,183	0	372	307	382	0	0	62	0	2,000	0	2,852	0	0
2029	9,826	0	371	307	410	0	0	62	0	2,000	0	3,036	0	0
2030	10,469	0	370	307	436	0	0	62	0	2,000	0	3,227	0	0
2031	11,112	0	369	307	463	0	0	559	0	1,504	0	2,921	0	0
2032	11,656	0	367	307	490	0	0	1,546	0	516	0	2,114	0	0
2033	12,160	0	367	307	516	0	0	1,681	0	382	0	2,122	0	0
2034	12,663	0	366	307	537	0	0	1,822	0	240	0	2,129	0	0
2035	13,168	0	365	307	558	0	0	1,964	0	99	0	2,136	0	0
2036	13,673	0	363	307	579	0	0	2,062	0	0	53	2,142	0	0
2037	14,180	0	363	307	601	0	0	2,062	0	0	184	2,149	0	0
2038	14,694	0	362	307	621	0	0	2,062	0	0	329	2,156	0	0
2039	15,209	0	360	307	642	0	0	1,813	0	0	724	2,163	0	0
2040	15,725	0	358	307	664	0	0	2,062	0	0	630	2,170	0	0
2041	16,242	0	358	307	687	0	0	2,062	0	0	762	2,177	0	0
2042	16,761	0	357	307	707	0	0	2,062	0	0	910	2,184	0	0
2043	17,323	0	356	307	728	0	0	2,062	0	0	1,064	2,191	0	0
2044	17,933	0	354	307	751	0	0	2,062	0	0	1,245	2,198	0	0
2045	18,546	0	354	307	777	0	0	2,062	0	0	1,403	2,206	0	0
2046	19,160	0	353	307	801	0	0	2,062	0	0	1,579	2,214	0	0
2047	19,777	0	352	307	827	0	0	2,062	0	0	1,752	2,222	0	0
2048	20,396	0	350	307	853	0	0	2,062	0	0	1,943	2,231	0	0
2049	21,095	0	350	307	881	0	0	2,062	0	0	2,113	2,240	0	0
2050	21,807	0	349	307	906	0	0	2,062	0	0	2,318	2,248	0	0
2051	22,523	0	348	307	936	0	0	2,062	0	0	2,520	2,257	0	0
2052	23,242	0	346	307	966	0	0	2,062	0	0	2,742	2,267	0	0
2053	24,045	0	346	307	999	0	0	2,062	0	0	2,938	2,278	0	0
2054	24,863	0	345	307	1,028	0	0	1,950	0	0	3,287	2,287	0	0
2055	25,685	0	344	307	1,063	0	0	1,634	0	0	3,835	2,298	0	0
2056	26,511	0	342	307	1,097	0	0	1,458	0	0	4,267	2,309	0	0
2057	27,274	0	341	307	1,135	0	0	1,950	0	0	3,974	2,321	0	0
2058	28,040	0	340	307	1,165	0	0	1,950	0	0	4,193	2,331	0	0
2059	28,811	0	339	307	1,198	0	0	1,950	0	0	4,410	2,342	0	0
2060	29,718	0	338	307	1,230	0	0	1,950	0	0	4,677	2,352	0	0

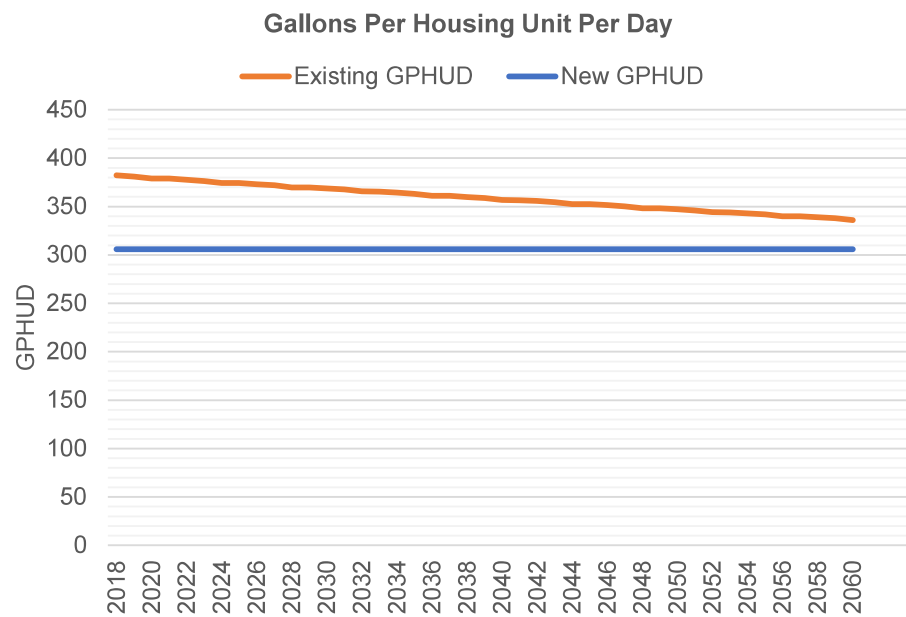
Central Arizona Project Service Area Model

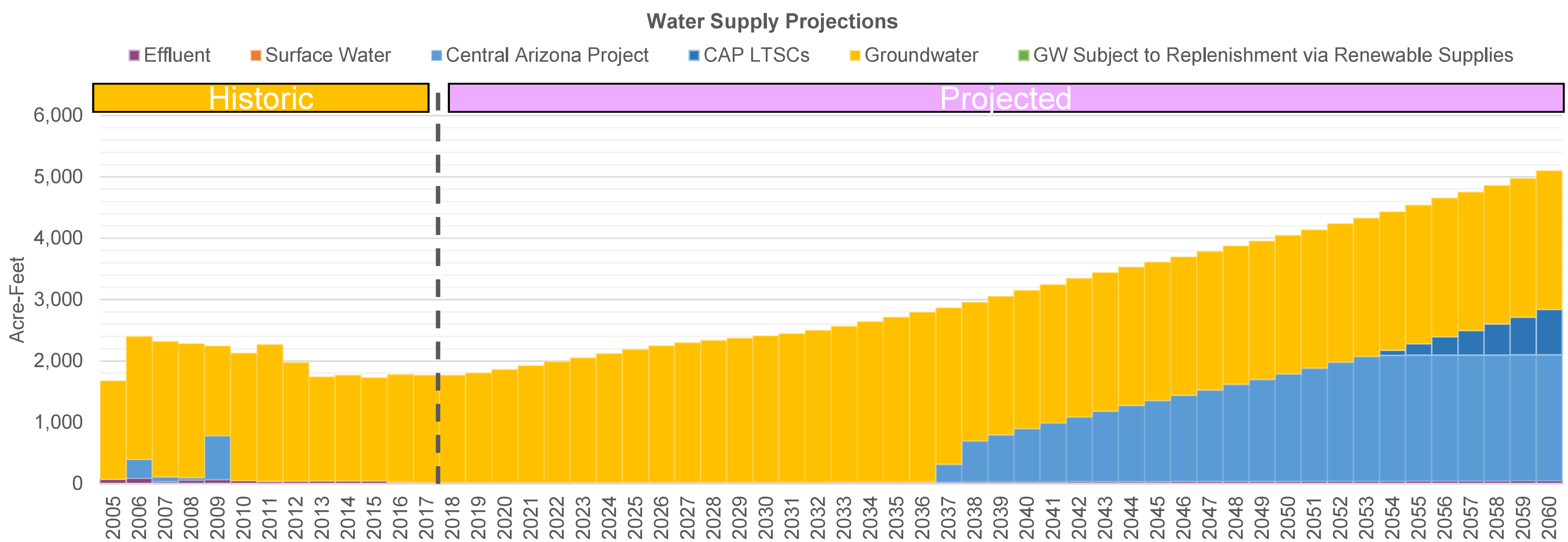
Florence

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

Florence

A. Highest Demand [EMSBS]

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Demand Assumptions / Water Supply Projections (Acre-Feet)

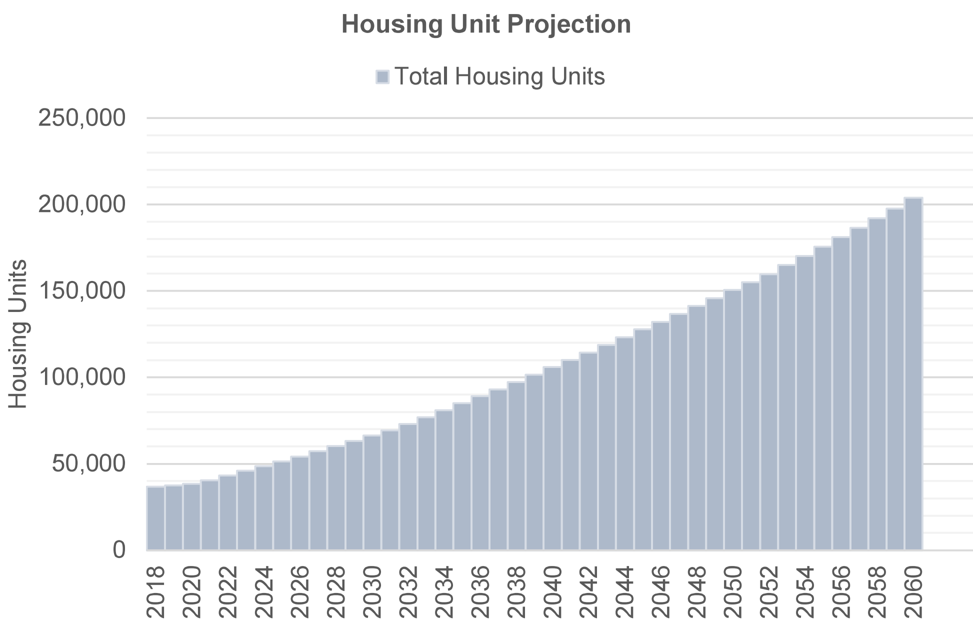
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	4,174	0	382	306	18	0	0	0	0	2,048	0	1,752	0	0
2019	4,348	0	381	306	18	0	0	0	0	2,048	0	1,787	0	0
2020	4,543	0	379	306	18	0	0	0	0	2,048	0	1,846	0	0
2021	4,742	0	379	306	19	0	0	0	0	2,048	0	1,907	0	0
2022	4,944	0	378	306	20	0	0	0	0	2,048	0	1,969	0	0
2023	5,151	0	376	306	20	0	0	0	0	2,048	0	2,034	0	0
2024	5,359	0	374	306	21	0	0	0	0	2,048	0	2,100	0	0
2025	5,568	0	374	306	22	0	0	0	0	2,048	0	2,164	0	0
2026	5,763	0	373	306	22	0	0	0	0	2,048	0	2,228	0	0
2027	5,886	0	372	306	23	0	0	0	0	2,048	0	2,276	0	0
2028	6,009	0	370	306	23	0	0	0	0	2,048	0	2,315	0	0
2029	6,133	0	370	306	24	0	0	0	0	2,048	0	2,350	0	0
2030	6,256	0	369	306	24	0	0	0	0	2,048	0	2,387	0	0
2031	6,379	0	367	306	25	0	0	0	0	2,048	0	2,423	0	0
2032	6,580	0	365	306	25	0	0	0	0	2,048	0	2,475	0	0
2033	6,813	0	365	306	25	0	0	0	0	2,048	0	2,542	0	0
2034	7,047	0	364	306	26	0	0	0	0	2,048	0	2,616	0	0
2035	7,280	0	363	306	27	0	0	0	0	2,048	0	2,690	0	0
2036	7,514	0	361	306	28	0	0	0	0	2,048	0	2,767	0	0
2037	7,757	0	361	306	28	0	0	289	0	1,759	0	2,551	0	0
2038	8,055	0	360	306	29	0	0	668	0	1,380	0	2,259	0	0
2039	8,353	0	359	306	30	0	0	764	0	1,029	0	2,259	0	0
2040	8,652	0	357	306	31	0	0	865	0	1,183	0	2,259	0	0
2041	8,952	0	357	306	32	0	0	957	0	1,091	0	2,259	0	0
2042	9,252	0	356	306	33	0	0	1,054	0	994	0	2,259	0	0
2043	9,534	0	354	306	34	0	0	1,148	0	900	0	2,259	0	0
2044	9,796	0	352	306	35	0	0	1,240	0	808	0	2,259	0	0
2045	10,059	0	352	306	36	0	0	1,319	0	729	0	2,259	0	0
2046	10,322	0	351	306	37	0	0	1,403	0	645	0	2,259	0	0
2047	10,587	0	350	306	38	0	0	1,488	0	560	0	2,259	0	0
2048	10,852	0	348	306	38	0	0	1,580	0	468	0	2,259	0	0
2049	11,129	0	348	306	39	0	0	1,661	0	387	0	2,259	0	0
2050	11,408	0	347	306	40	0	0	1,750	0	298	0	2,259	0	0
2051	11,688	0	346	306	41	0	0	1,840	0	208	0	2,259	0	0
2052	11,969	0	344	306	42	0	0	1,937	0	111	0	2,259	0	0
2053	12,287	0	344	306	43	0	0	2,027	0	21	0	2,259	0	0
2054	12,611	0	343	306	44	0	0	2,048	0	0	83	2,259	0	0
2055	12,937	0	342	306	45	0	0	2,048	0	0	189	2,259	0	0
2056	13,265	0	340	306	46	0	0	2,048	0	0	303	2,259	0	0
2057	13,594	0	340	306	47	0	0	2,048	0	0	402	2,259	0	0
2058	13,924	0	339	306	48	0	0	2,048	0	0	509	2,259	0	0
2059	14,257	0	338	306	49	0	0	2,048	0	0	617	2,259	0	0
2060	14,640	0	336	306	51	0	0	2,048	0	0	743	2,259	0	0

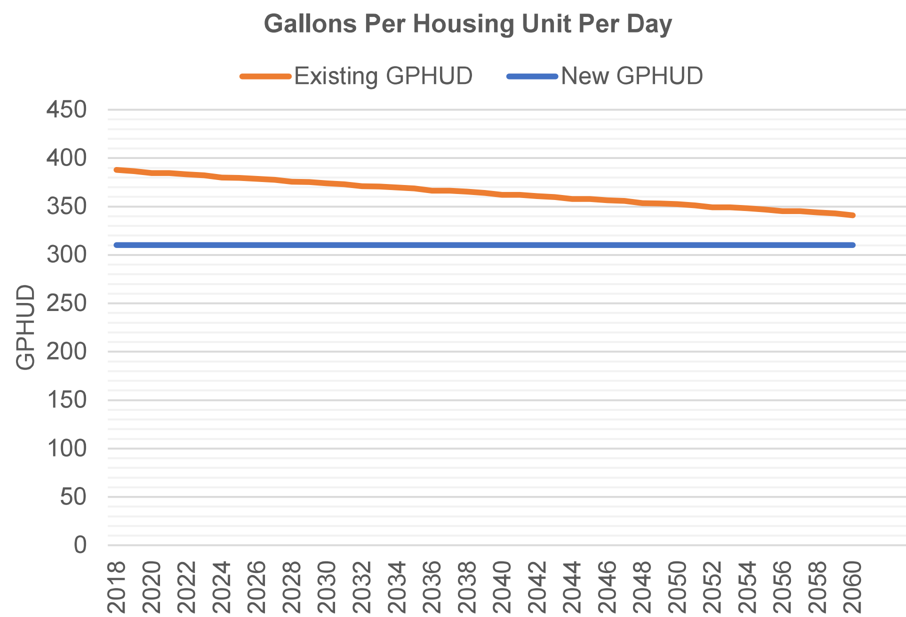
WCPinalValleySyst

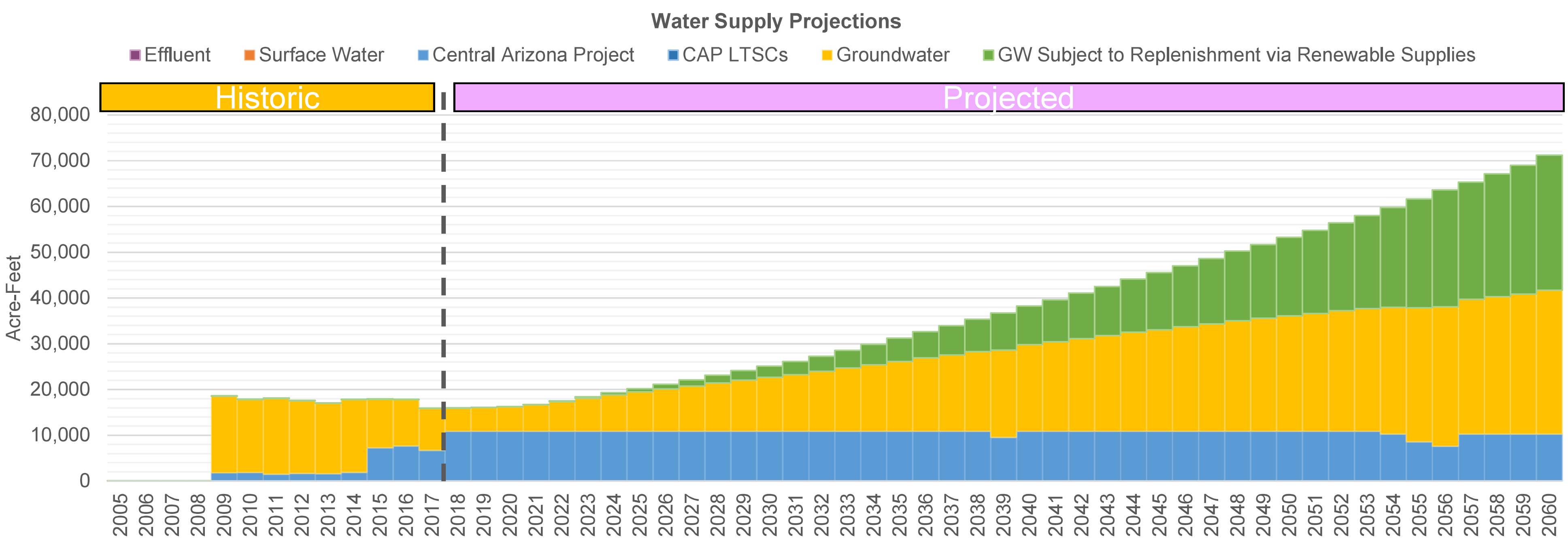
Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

AZWCPinalVall

A. Highest Demand [EMSBS]

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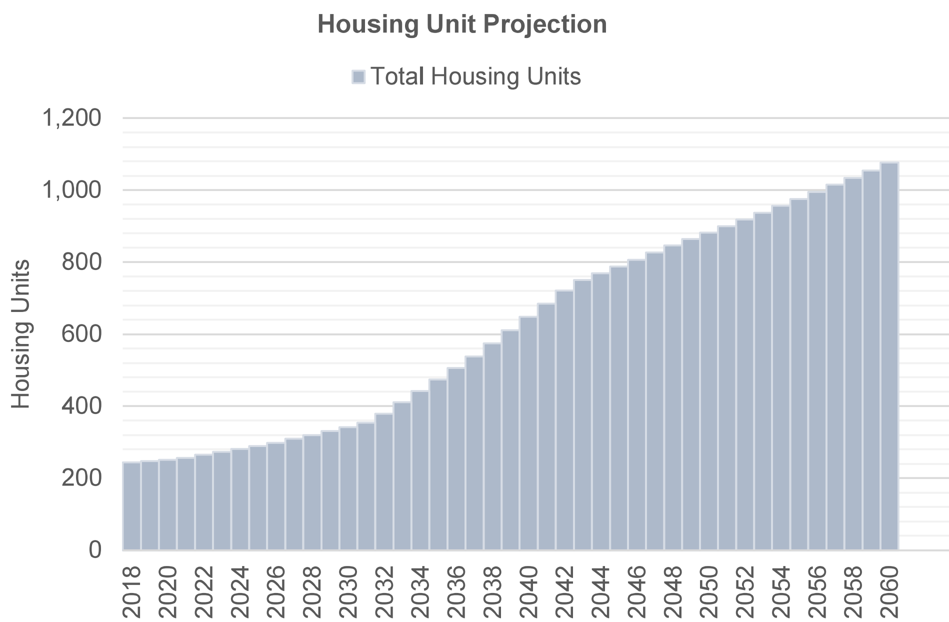
Date	Demand Assumptions: Housing Units Total	Housing Units SRP	GPHUD Existing	GPHUD New	Water Supply Projections (Acre-Feet): Effluent	Surface Water SRP	Surface Water Non-SRP	Central Arizona Project Direct	CAP ASR	CAP Storage	CAP Recovery	Groundwater Non-Repl.	Groundwater Replenished	Unknown
2018	36,809	0	388	310	0	0	0	2,800	8,084	0	0	5,025	9	0
2019	37,560	0	387	310	0	0	0	2,800	8,084	0	0	5,150	15	0
2020	38,400	0	384	310	0	0	0	2,800	8,084	0	0	5,357	38	0
2021	40,578	0	384	310	0	0	0	2,800	8,084	0	0	5,803	67	0
2022	43,225	0	383	310	0	0	0	2,800	8,084	0	0	6,486	176	0
2023	45,922	0	382	310	0	0	0	2,800	8,084	0	0	7,219	325	0
2024	48,642	0	380	310	0	0	0	2,800	8,084	0	0	7,925	522	0
2025	51,378	0	380	310	0	0	0	2,800	8,084	0	0	8,599	740	0
2026	54,166	0	379	310	0	0	0	2,800	8,084	0	0	9,241	1,011	0
2027	57,186	0	377	310	0	0	0	2,800	8,084	0	0	9,907	1,308	0
2028	60,209	0	375	310	0	0	0	2,800	8,084	0	0	10,572	1,668	0
2029	63,233	0	375	310	0	0	0	2,800	8,084	0	0	11,179	2,044	0
2030	66,257	0	374	310	0	0	0	2,800	8,084	0	0	11,781	2,447	0
2031	69,283	0	373	310	0	0	0	2,800	8,084	0	0	12,369	2,864	0
2032	72,999	0	371	310	0	0	0	2,800	8,084	0	0	13,086	3,306	0
2033	77,000	0	371	310	0	0	0	2,800	8,084	0	0	13,800	3,854	0
2034	81,006	0	370	310	0	0	0	2,800	8,084	0	0	14,541	4,458	0
2035	85,016	0	368	310	0	0	0	2,800	8,084	0	0	15,268	5,079	0
2036	89,032	0	366	310	0	0	0	2,800	8,084	0	0	16,027	5,718	0
2037	93,083	0	366	310	0	0	0	2,800	8,084	0	0	16,690	6,363	0
2038	97,323	0	365	310	0	0	0	2,800	8,084	0	0	17,419	7,030	0
2039	101,570	0	364	310	0	0	0	2,451	7,078	0	0	19,093	8,140	0
2040	105,827	0	362	310	0	0	0	2,800	8,084	0	0	18,919	8,457	0
2041	110,094	0	362	310	0	0	0	2,800	8,084	0	0	19,570	9,179	0
2042	114,372	0	361	310	0	0	0	2,800	8,084	0	0	20,249	9,940	0
2043	118,750	0	360	310	0	0	0	2,800	8,084	0	0	20,888	10,761	0
2044	123,240	0	358	310	0	0	0	2,800	8,084	0	0	21,609	11,617	0
2045	127,744	0	358	310	0	0	0	2,800	8,084	0	0	22,175	12,489	0
2046	132,262	0	357	310	0	0	0	2,800	8,084	0	0	22,812	13,375	0
2047	136,796	0	355	310	0	0	0	2,800	8,084	0	0	23,446	14,271	0
2048	141,346	0	353	310	0	0	0	2,800	8,084	0	0	24,165	15,184	0
2049	145,910	0	353	310	0	0	0	2,800	8,084	0	0	24,676	16,116	0
2050	150,493	0	352	310	0	0	0	2,800	8,084	0	0	25,188	17,149	0
2051	155,094	0	351	310	0	0	0	2,800	8,084	0	0	25,697	18,193	0
2052	159,715	0	349	310	0	0	0	2,800	8,084	0	0	26,308	19,256	0
2053	164,965	0	349	310	0	0	0	2,800	8,084	0	0	26,800	20,322	0
2054	170,331	0	348	310	0	0	0	2,643	7,630	0	0	27,728	21,807	0
2055	175,724	0	347	310	0	0	0	2,205	6,366	0	0	29,240	23,824	0
2056	181,144	0	345	310	0	0	0	1,961	5,663	0	0	30,439	25,542	0
2057	186,583	0	345	310	0	0	0	2,643	7,630	0	0	29,439	25,603	0
2058	192,050	0	344	310	0	0	0	2,643	7,630	0	0	30,007	26,887	0
2059	197,548	0	343	310	0	0	0	2,643	7,630	0	0	30,575	28,182	0
2060	204,016	0	341	310	0	0	0	2,643	7,630	0	0	31,440	29,511	0

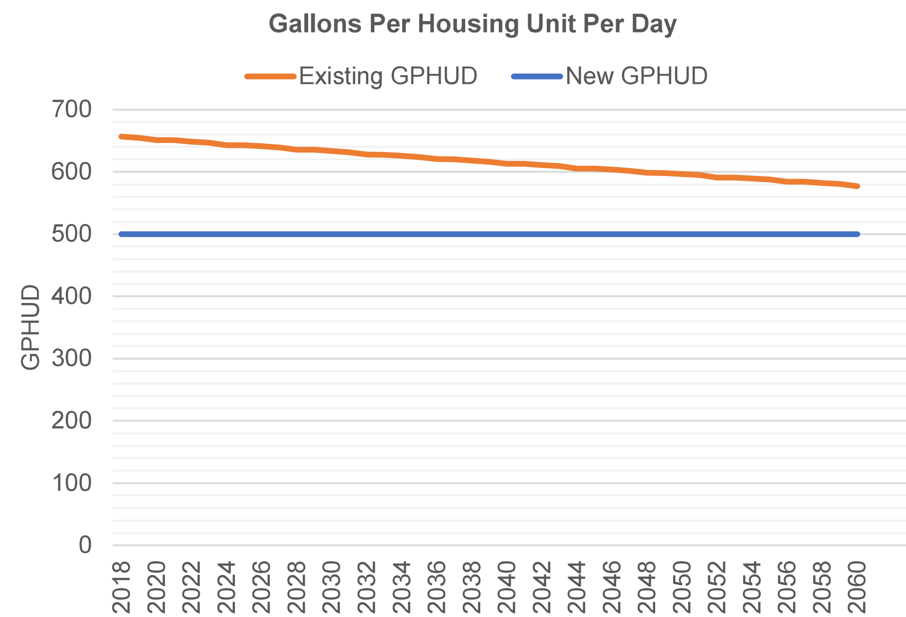
Central Arizona Project Service Area Model

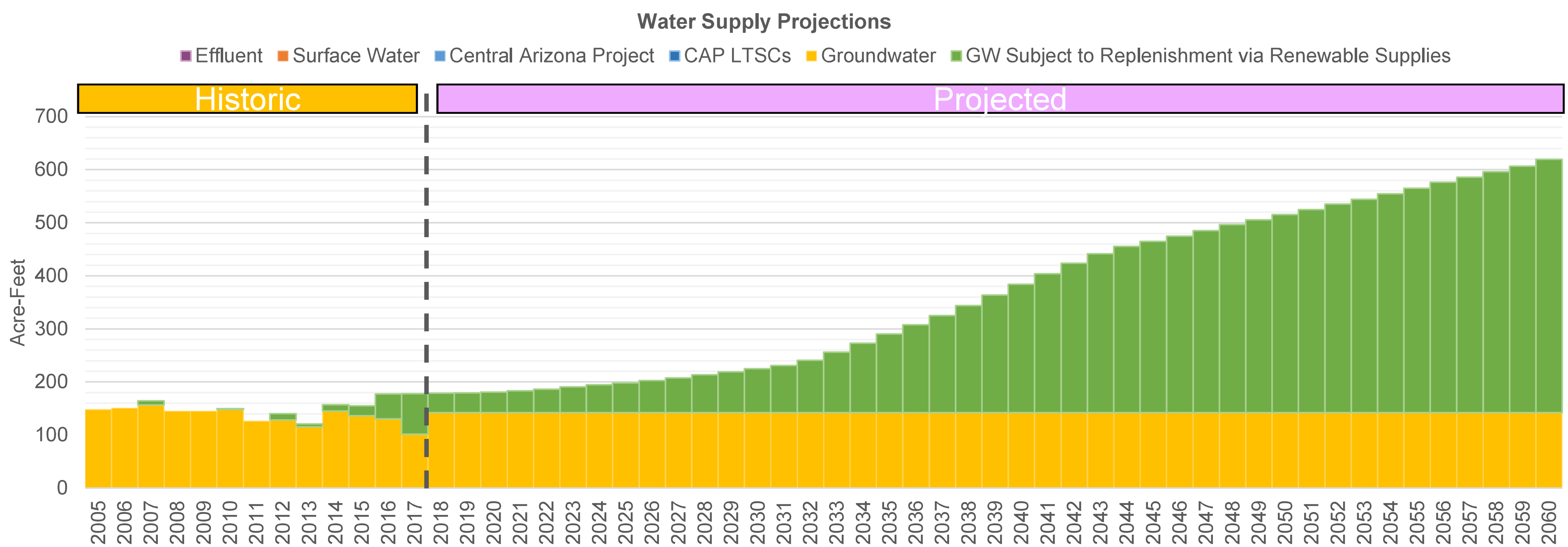
CasaGrande

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

CasaGrande

A. Highest Demand [EMSBS]

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Demand Assumptions / Water Supply Projections (Acre-Feet)

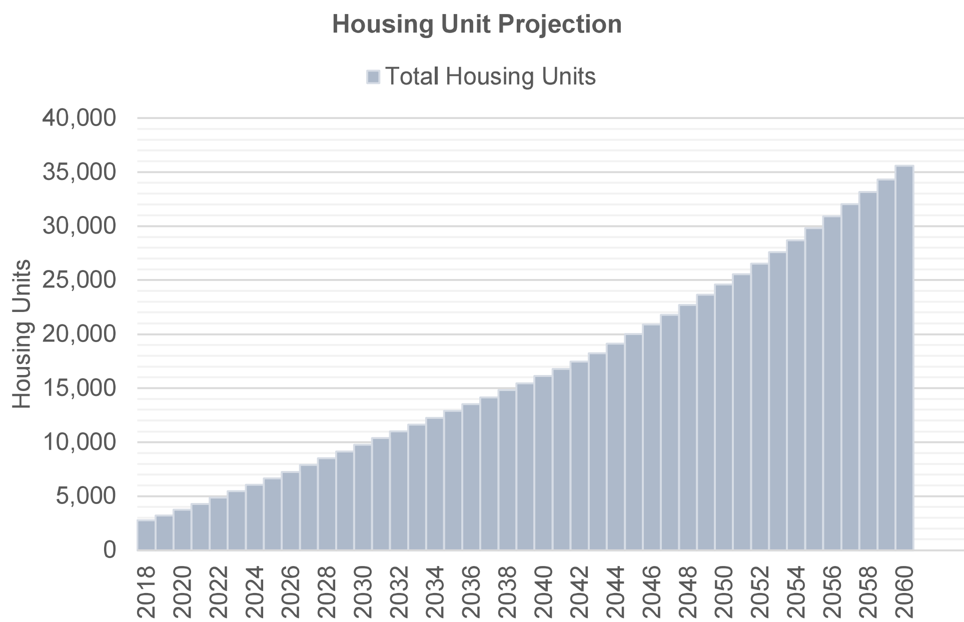
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	244	0	657	500	0	0	0	0	0	0	0	142	37	0
2019	247	0	655	500	0	0	0	0	0	0	0	142	37	0
2020	251	0	651	500	0	0	0	0	0	0	0	142	39	0
2021	257	0	651	500	0	0	0	0	0	0	0	142	41	0
2022	265	0	649	500	0	0	0	0	0	0	0	142	44	0
2023	273	0	647	500	0	0	0	0	0	0	0	142	48	0
2024	281	0	643	500	0	0	0	0	0	0	0	142	52	0
2025	289	0	643	500	0	0	0	0	0	0	0	142	56	0
2026	298	0	641	500	0	0	0	0	0	0	0	142	60	0
2027	309	0	639	500	0	0	0	0	0	0	0	142	65	0
2028	320	0	635	500	0	0	0	0	0	0	0	142	71	0
2029	331	0	635	500	0	0	0	0	0	0	0	142	77	0
2030	342	0	633	500	0	0	0	0	0	0	0	142	82	0
2031	354	0	631	500	0	0	0	0	0	0	0	142	88	0
2032	379	0	628	500	0	0	0	0	0	0	0	142	98	0
2033	411	0	628	500	0	0	0	0	0	0	0	142	114	0
2034	442	0	626	500	0	0	0	0	0	0	0	142	131	0
2035	474	0	624	500	0	0	0	0	0	0	0	142	148	0
2036	506	0	620	500	0	0	0	0	0	0	0	142	166	0
2037	538	0	620	500	0	0	0	0	0	0	0	142	183	0
2038	575	0	618	500	0	0	0	0	0	0	0	142	202	0
2039	611	0	616	500	0	0	0	0	0	0	0	142	221	0
2040	648	0	613	500	0	0	0	0	0	0	0	142	242	0
2041	685	0	613	500	0	0	0	0	0	0	0	142	262	0
2042	721	0	611	500	0	0	0	0	0	0	0	142	282	0
2043	750	0	609	500	0	0	0	0	0	0	0	142	299	0
2044	769	0	606	500	0	0	0	0	0	0	0	142	313	0
2045	788	0	605	500	0	0	0	0	0	0	0	142	322	0
2046	807	0	604	500	0	0	0	0	0	0	0	142	332	0
2047	827	0	602	500	0	0	0	0	0	0	0	142	343	0
2048	846	0	598	500	0	0	0	0	0	0	0	142	354	0
2049	864	0	598	500	0	0	0	0	0	0	0	142	363	0
2050	882	0	596	500	0	0	0	0	0	0	0	142	373	0
2051	900	0	595	500	0	0	0	0	0	0	0	142	382	0
2052	918	0	591	500	0	0	0	0	0	0	0	142	393	0
2053	937	0	591	500	0	0	0	0	0	0	0	142	402	0
2054	956	0	589	500	0	0	0	0	0	0	0	142	412	0
2055	976	0	588	500	0	0	0	0	0	0	0	142	422	0
2056	995	0	584	500	0	0	0	0	0	0	0	142	434	0
2057	1,015	0	584	500	0	0	0	0	0	0	0	142	443	0
2058	1,034	0	582	500	0	0	0	0	0	0	0	142	454	0
2059	1,054	0	581	500	0	0	0	0	0	0	0	142	464	0
2060	1,077	0	577	500	0	0	0	0	0	0	0	142	477	0

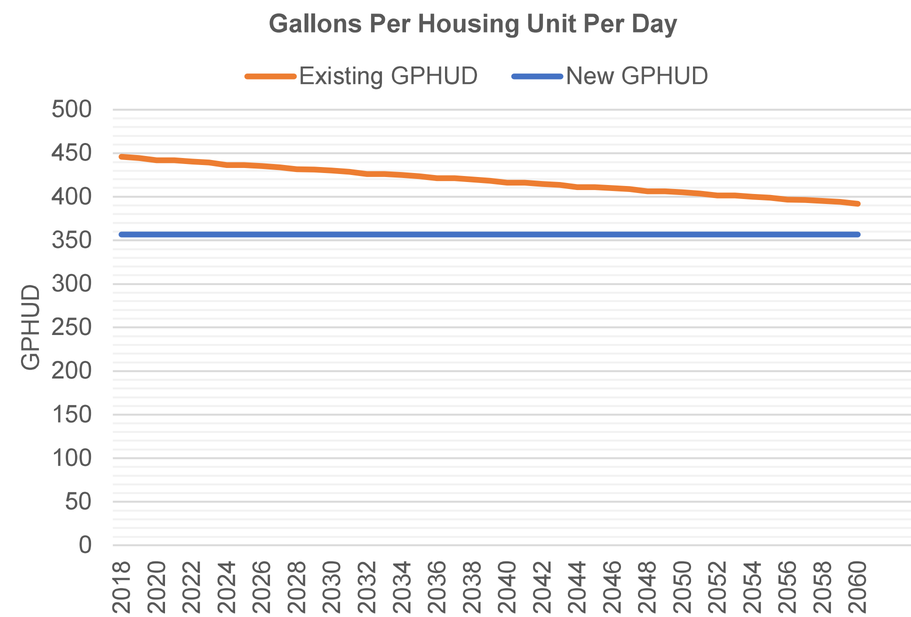
Central Arizona Project Service Area Model

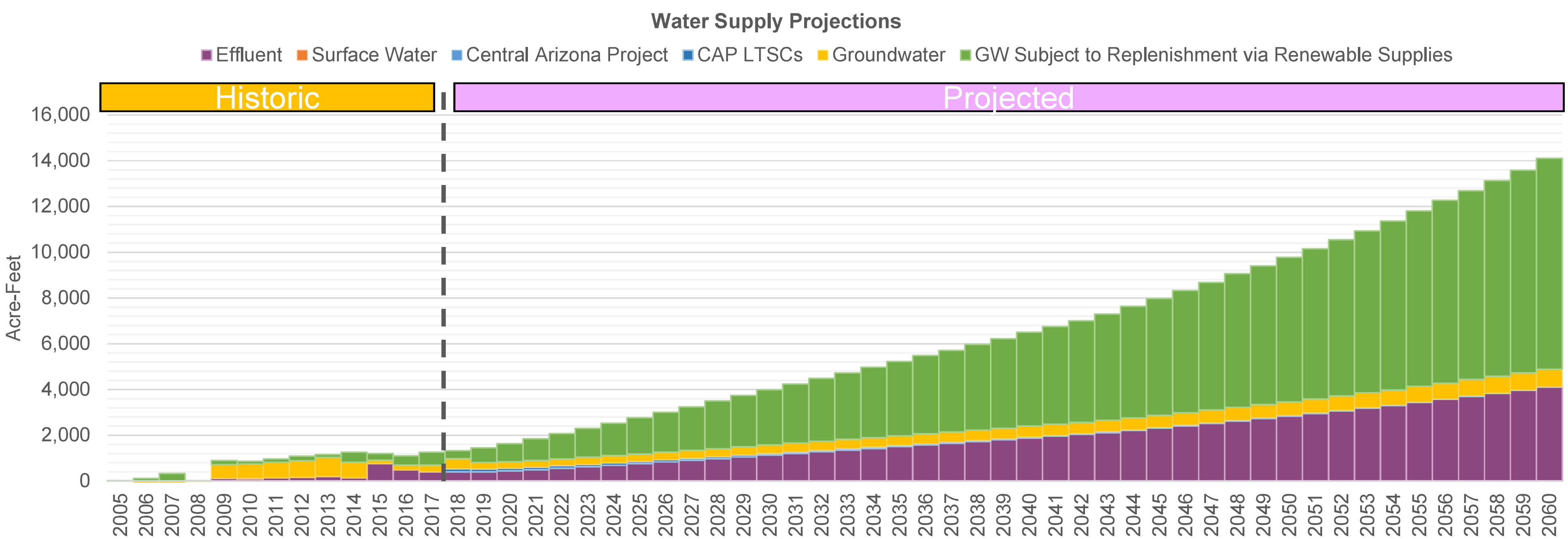
EPCOR-San Tan

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







EPCOR-San Ta

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

1/13/21 12:13 PM

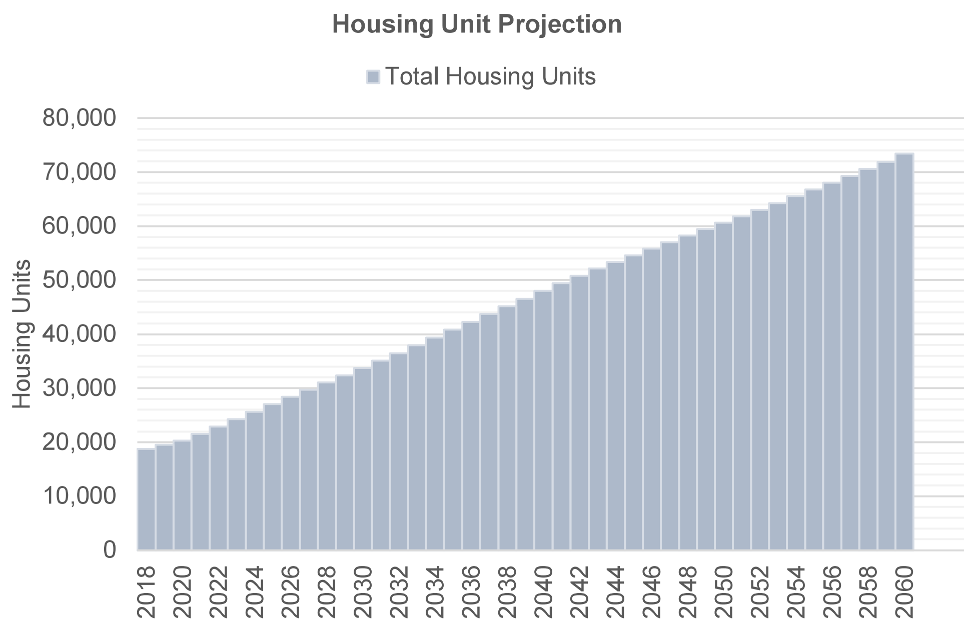
Date	**Demand Assumptions**				**Water Supply Projections** (Acre-Feet)									
	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	2,769	0	446	357	402	0	0	0	0	0	134	443	353	0
2019	3,221	0	445	357	402	0	0	0	0	0	127	278	645	0
2020	3,728	0	442	357	438	0	0	0	0	0	121	283	799	0
2021	4,283	0	442	357	495	0	0	0	0	0	115	291	948	0
2022	4,862	0	441	357	558	0	0	0	0	0	109	299	1,106	0
2023	5,452	0	439	357	625	0	0	0	0	0	103	308	1,265	0
2024	6,047	0	437	357	694	0	0	0	0	0	98	317	1,428	0
2025	6,646	0	437	357	766	0	0	0	0	0	93	326	1,583	0
2026	7,250	0	435	357	835	0	0	0	0	0	89	336	1,745	0
2027	7,878	0	434	357	907	0	0	0	0	0	84	345	1,911	0
2028	8,506	0	431	357	980	0	0	0	0	0	80	355	2,086	0
2029	9,134	0	431	357	1,056	0	0	0	0	0	76	365	2,244	0
2030	9,763	0	430	357	1,129	0	0	0	0	0	72	375	2,413	0
2031	10,392	0	429	357	1,204	0	0	0	0	0	69	385	2,580	0
2032	11,017	0	426	357	1,278	0	0	0	0	0	65	394	2,754	0
2033	11,641	0	426	357	1,355	0	0	0	0	0	62	405	2,907	0
2034	12,266	0	425	357	1,427	0	0	0	0	0	59	414	3,075	0
2035	12,892	0	424	357	1,501	0	0	0	0	0	56	424	3,240	0
2036	13,518	0	421	357	1,575	0	0	0	0	0	53	434	3,417	0
2037	14,150	0	421	357	1,653	0	0	0	0	0	50	444	3,567	0
2038	14,808	0	420	357	1,724	0	0	0	0	0	48	454	3,743	0
2039	15,467	0	419	357	1,801	0	0	0	0	0	46	464	3,918	0
2040	16,127	0	416	357	1,879	0	0	0	0	0	43	474	4,106	0
2041	16,789	0	416	357	1,962	0	0	0	0	0	41	485	4,260	0
2042	17,453	0	415	357	2,036	0	0	0	0	0	39	495	4,440	0
2043	18,225	0	414	357	2,115	0	0	0	0	0	37	505	4,635	0
2044	19,115	0	411	357	2,201	0	0	0	0	0	35	517	4,886	0
2045	20,009	0	411	357	2,305	0	0	0	0	0	33	531	5,105	0
2046	20,905	0	410	357	2,406	0	0	0	0	0	32	544	5,346	0
2047	21,805	0	409	357	2,513	0	0	0	0	0	30	558	5,582	0
2048	22,707	0	406	357	2,620	0	0	0	0	0	29	572	5,840	0
2049	23,647	0	406	357	2,734	0	0	0	0	0	27	587	6,055	0
2050	24,595	0	405	357	2,838	0	0	0	0	0	26	601	6,313	0
2051	25,547	0	404	357	2,950	0	0	0	0	0	25	616	6,563	0
2052	26,503	0	401	357	3,064	0	0	0	0	0	23	631	6,839	0
2053	27,584	0	401	357	3,185	0	0	0	0	0	22	647	7,080	0
2054	28,689	0	400	357	3,299	0	0	0	0	0	21	662	7,385	0
2055	29,799	0	399	357	3,430	0	0	0	0	0	20	680	7,677	0
2056	30,915	0	397	357	3,563	0	0	0	0	0	19	697	7,999	0
2057	32,034	0	397	357	3,705	0	0	0	0	0	18	716	8,252	0
2058	33,160	0	395	357	3,829	0	0	0	0	0	17	733	8,557	0
2059	34,292	0	394	357	3,964	0	0	0	0	0	16	750	8,853	0
2060	35,594	0	392	357	4,099	0	0	0	0	0	15	768	9,219	0

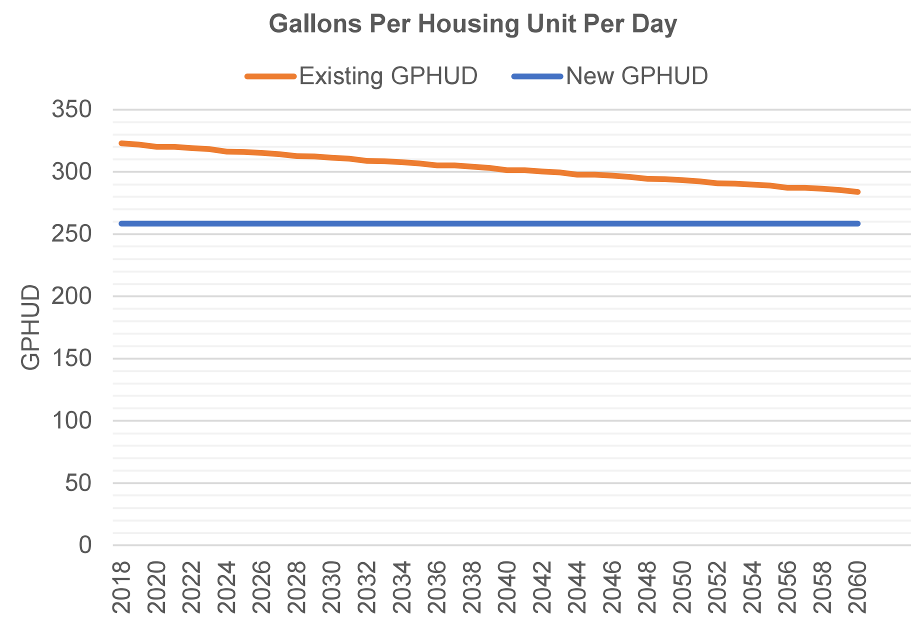
GlobalSantaCruzW

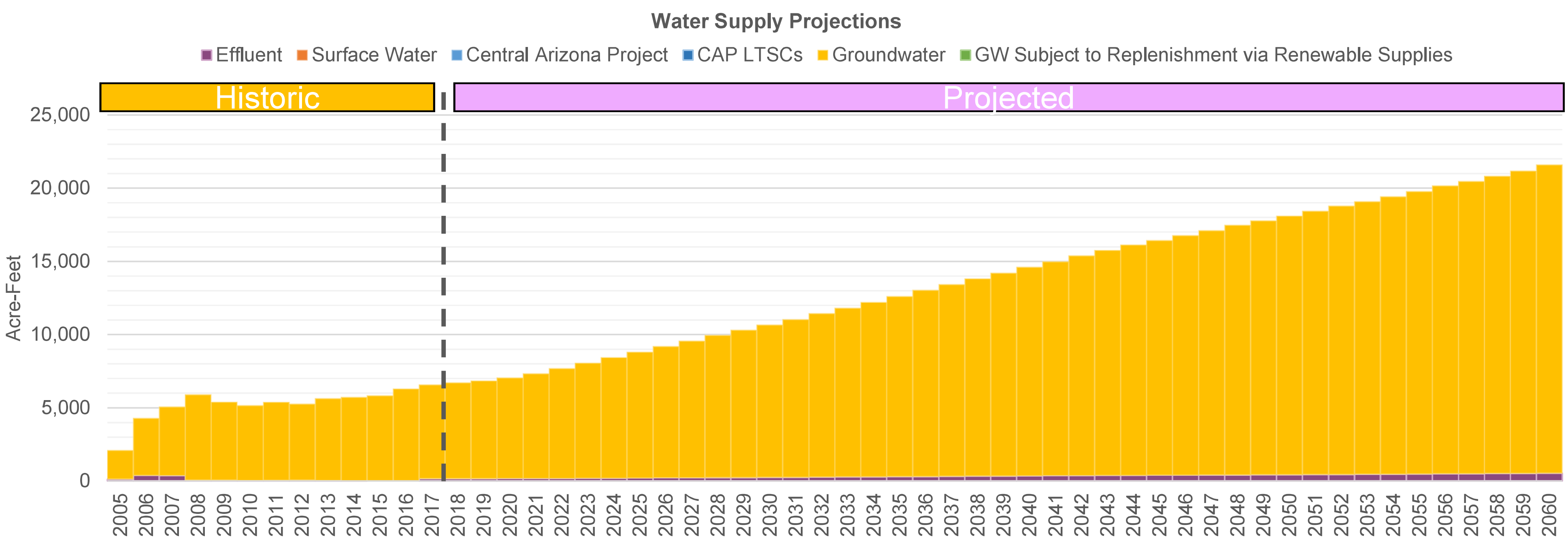
Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







GlobalSantaCru

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

1/13/21 12:13 PM

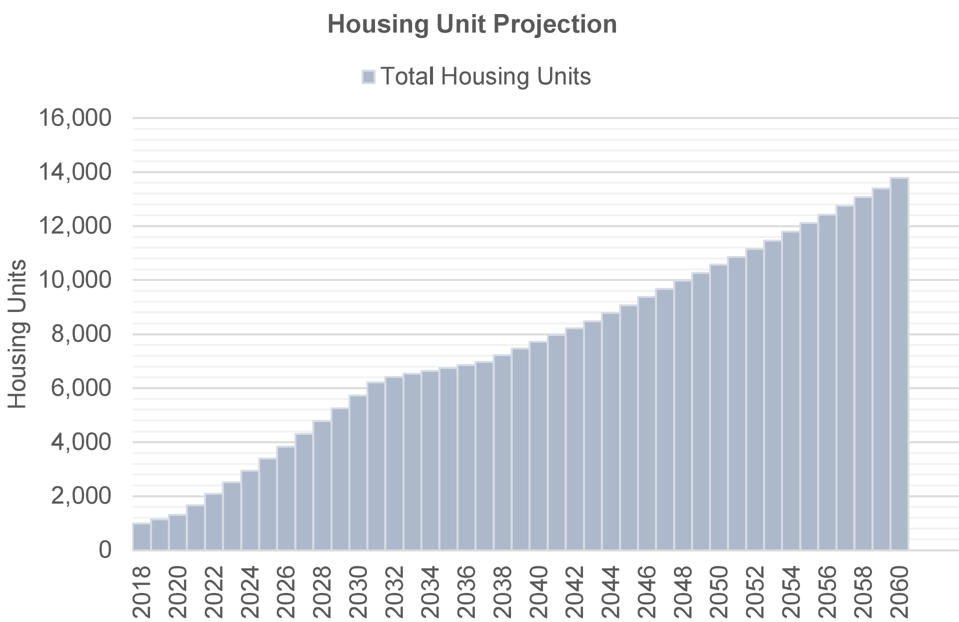
Date	Demand Assumptions: Housing Units Total	Housing Units SRP	GPHUD Existing	GPHUD New	Water Supply Projections (Acre-Feet): Effluent	Surface Water SRP	Surface Water Non-SRP	Central Arizona Project Direct	CAP ASR	CAP Storage	CAP Recovery	Groundwater Non-Repl.	Groundwater Replenished	Unknown
2018	18,744	0	323	258	167	0	0	0	0	0	0	6,553	0	0
2019	19,488	0	322	258	167	0	0	0	0	0	0	6,681	0	0
2020	20,322	0	320	258	170	0	0	0	0	0	0	6,887	0	0
2021	21,530	0	320	258	175	0	0	0	0	0	0	7,156	0	0
2022	22,878	0	319	258	182	0	0	0	0	0	0	7,499	0	0
2023	24,251	0	318	258	191	0	0	0	0	0	0	7,864	0	0
2024	25,636	0	316	258	200	0	0	0	0	0	0	8,240	0	0
2025	27,029	0	316	258	210	0	0	0	0	0	0	8,607	0	0
2026	28,414	0	315	258	219	0	0	0	0	0	0	8,980	0	0
2027	29,743	0	314	258	229	0	0	0	0	0	0	9,344	0	0
2028	31,073	0	313	258	238	0	0	0	0	0	0	9,709	0	0
2029	32,403	0	312	258	247	0	0	0	0	0	0	10,056	0	0
2030	33,734	0	311	258	256	0	0	0	0	0	0	10,413	0	0
2031	35,066	0	311	258	265	0	0	0	0	0	0	10,769	0	0
2032	36,484	0	309	258	274	0	0	0	0	0	0	11,153	0	0
2033	37,939	0	309	258	284	0	0	0	0	0	0	11,526	0	0
2034	39,396	0	308	258	293	0	0	0	0	0	0	11,919	0	0
2035	40,854	0	307	258	303	0	0	0	0	0	0	12,311	0	0
2036	42,315	0	305	258	313	0	0	0	0	0	0	12,723	0	0
2037	43,769	0	305	258	324	0	0	0	0	0	0	13,096	0	0
2038	45,174	0	304	258	334	0	0	0	0	0	0	13,482	0	0
2039	46,582	0	303	258	343	0	0	0	0	0	0	13,860	0	0
2040	47,993	0	301	258	353	0	0	0	0	0	0	14,262	0	0
2041	49,407	0	301	258	363	0	0	0	0	0	0	14,619	0	0
2042	50,825	0	300	258	372	0	0	0	0	0	0	15,001	0	0
2043	52,147	0	300	258	382	0	0	0	0	0	0	15,369	0	0
2044	53,362	0	298	258	391	0	0	0	0	0	0	15,736	0	0
2045	54,581	0	298	258	401	0	0	0	0	0	0	16,033	0	0
2046	55,805	0	297	258	408	0	0	0	0	0	0	16,360	0	0
2047	57,032	0	296	258	417	0	0	0	0	0	0	16,688	0	0
2048	58,263	0	294	258	425	0	0	0	0	0	0	17,048	0	0
2049	59,451	0	294	258	434	0	0	0	0	0	0	17,339	0	0
2050	60,635	0	293	258	442	0	0	0	0	0	0	17,657	0	0
2051	61,825	0	292	258	450	0	0	0	0	0	0	17,974	0	0
2052	63,019	0	291	258	458	0	0	0	0	0	0	18,327	0	0
2053	64,262	0	291	258	467	0	0	0	0	0	0	18,618	0	0
2054	65,516	0	290	258	474	0	0	0	0	0	0	18,954	0	0
2055	66,777	0	289	258	483	0	0	0	0	0	0	19,291	0	0
2056	68,043	0	287	258	491	0	0	0	0	0	0	19,670	0	0
2057	69,311	0	287	258	501	0	0	0	0	0	0	19,970	0	0
2058	70,586	0	286	258	509	0	0	0	0	0	0	20,312	0	0
2059	71,868	0	285	258	517	0	0	0	0	0	0	20,656	0	0
2060	73,384	0	284	258	526	0	0	0	0	0	0	21,077	0	0

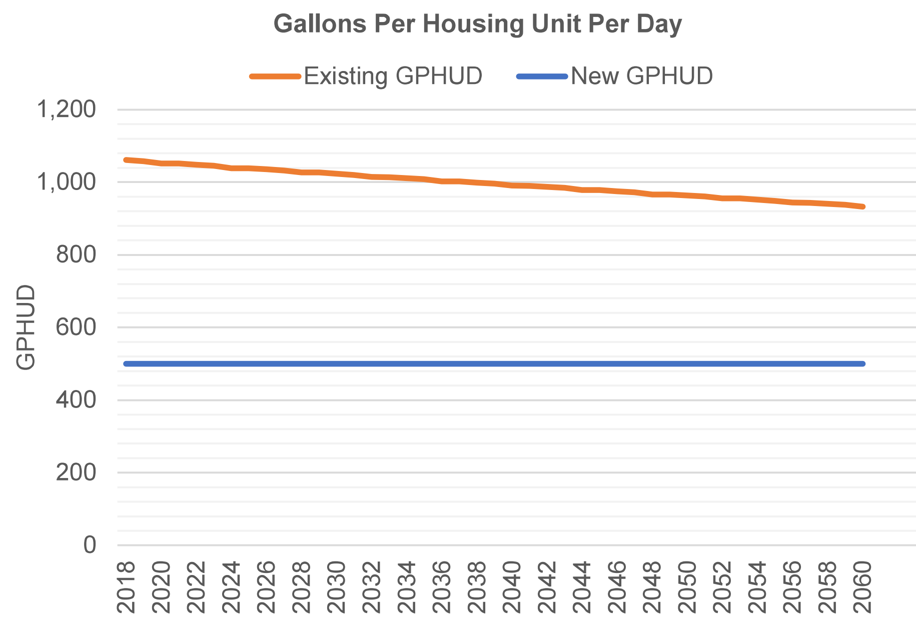
Central Arizona Project Service Area Model

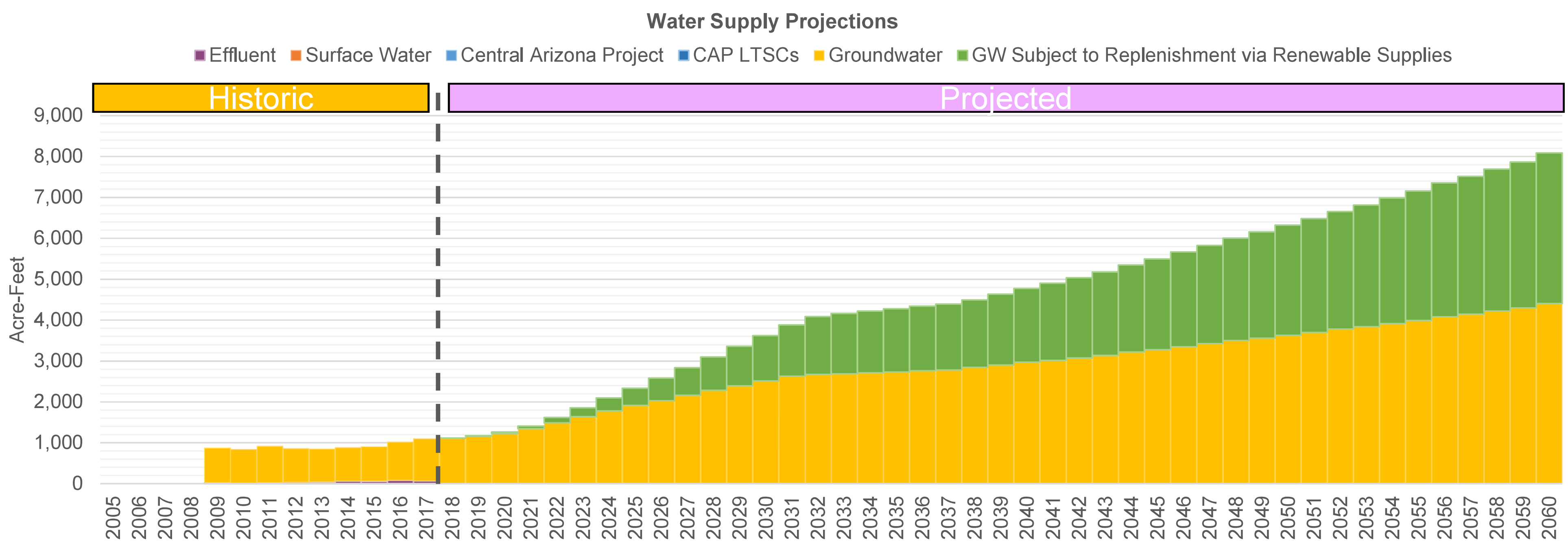
PicachoWC

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

PicachoWC

A. Highest Demand [EMSBS]

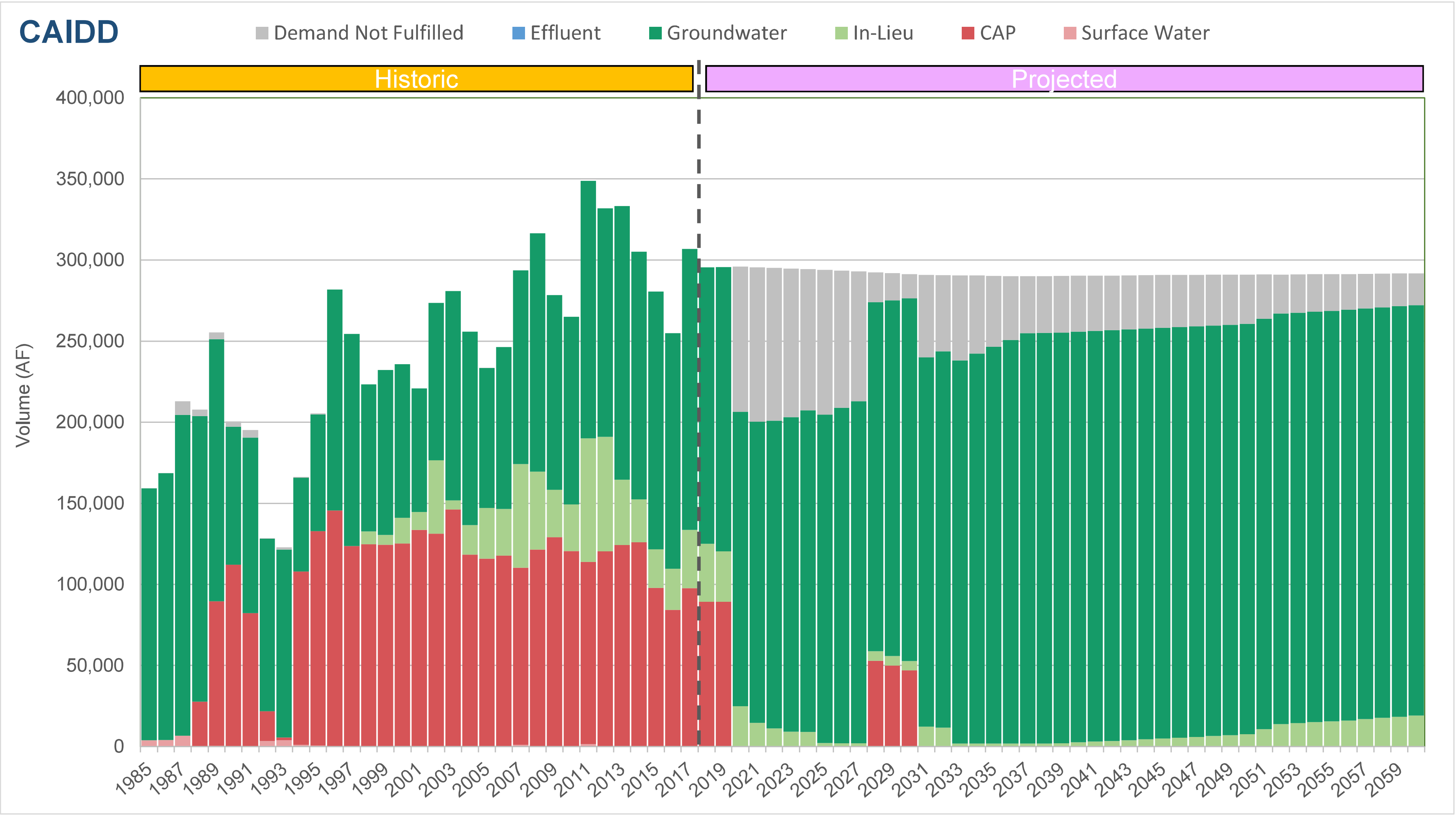
1/13/21 12:13 PM

Date	Demand Assumptions: Housing Units Total	Housing Units SRP	GPHUD Existing	GPHUD New	Water Supply Projections (Acre-Feet): Effluent	Surface Water SRP	Surface Water Non-SRP	Central Arizona Project Direct	CAP ASR	CAP Storage	CAP Recovery	Groundwater Non-Repl.	Groundwater Replenished	Unknown
2018	985	0	1,061	500	0	0	0	0	0	0	0	1,111	8	0
2019	1,138	0	1,058	500	0	0	0	0	0	0	0	1,160	14	0
2020	1,310	0	1,052	500	0	0	0	0	0	0	0	1,226	37	0
2021	1,666	0	1,052	500	0	0	0	0	0	0	0	1,345	62	0
2022	2,088	0	1,048	500	0	0	0	0	0	0	0	1,489	133	0
2023	2,518	0	1,045	500	0	0	0	0	0	0	0	1,640	217	0
2024	2,952	0	1,039	500	0	0	0	0	0	0	0	1,779	319	0
2025	3,388	0	1,039	500	0	0	0	0	0	0	0	1,912	423	0
2026	3,831	0	1,036	500	0	0	0	0	0	0	0	2,032	547	0
2027	4,307	0	1,033	500	0	0	0	0	0	0	0	2,160	673	0
2028	4,784	0	1,027	500	0	0	0	0	0	0	0	2,284	818	0
2029	5,260	0	1,027	500	0	0	0	0	0	0	0	2,396	964	0
2030	5,736	0	1,023	500	0	0	0	0	0	0	0	2,509	1,114	0
2031	6,213	0	1,020	500	0	0	0	0	0	0	0	2,623	1,264	0
2032	6,427	0	1,015	500	0	0	0	0	0	0	0	2,672	1,414	0
2033	6,533	0	1,014	500	0	0	0	0	0	0	0	2,683	1,481	0
2034	6,639	0	1,011	500	0	0	0	0	0	0	0	2,706	1,515	0
2035	6,745	0	1,008	500	0	0	0	0	0	0	0	2,728	1,548	0
2036	6,851	0	1,002	500	0	0	0	0	0	0	0	2,760	1,581	0
2037	6,977	0	1,002	500	0	0	0	0	0	0	0	2,780	1,615	0
2038	7,223	0	999	500	0	0	0	0	0	0	0	2,841	1,654	0
2039	7,469	0	996	500	0	0	0	0	0	0	0	2,898	1,732	0
2040	7,715	0	990	500	0	0	0	0	0	0	0	2,966	1,809	0
2041	7,962	0	990	500	0	0	0	0	0	0	0	3,013	1,887	0
2042	8,210	0	987	500	0	0	0	0	0	0	0	3,071	1,964	0
2043	8,482	0	984	500	0	0	0	0	0	0	0	3,136	2,042	0
2044	8,780	0	979	500	0	0	0	0	0	0	0	3,218	2,128	0
2045	9,079	0	978	500	0	0	0	0	0	0	0	3,277	2,222	0
2046	9,379	0	975	500	0	0	0	0	0	0	0	3,347	2,316	0
2047	9,679	0	972	500	0	0	0	0	0	0	0	3,418	2,410	0
2048	9,981	0	967	500	0	0	0	0	0	0	0	3,503	2,504	0
2049	10,275	0	967	500	0	0	0	0	0	0	0	3,558	2,600	0
2050	10,569	0	964	500	0	0	0	0	0	0	0	3,627	2,692	0
2051	10,863	0	961	500	0	0	0	0	0	0	0	3,696	2,785	0
2052	11,159	0	955	500	0	0	0	0	0	0	0	3,781	2,877	0
2053	11,473	0	955	500	0	0	0	0	0	0	0	3,840	2,970	0
2054	11,791	0	952	500	0	0	0	0	0	0	0	3,916	3,069	0
2055	12,110	0	949	500	0	0	0	0	0	0	0	3,991	3,169	0
2056	12,431	0	944	500	0	0	0	0	0	0	0	4,084	3,270	0
2057	12,753	0	944	500	0	0	0	0	0	0	0	4,143	3,371	0
2058	13,076	0	941	500	0	0	0	0	0	0	0	4,219	3,472	0
2059	13,402	0	938	500	0	0	0	0	0	0	0	4,296	3,574	0
2060	13,785	0	933	500	0	0	0	0	0	0	0	4,409	3,676	0

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



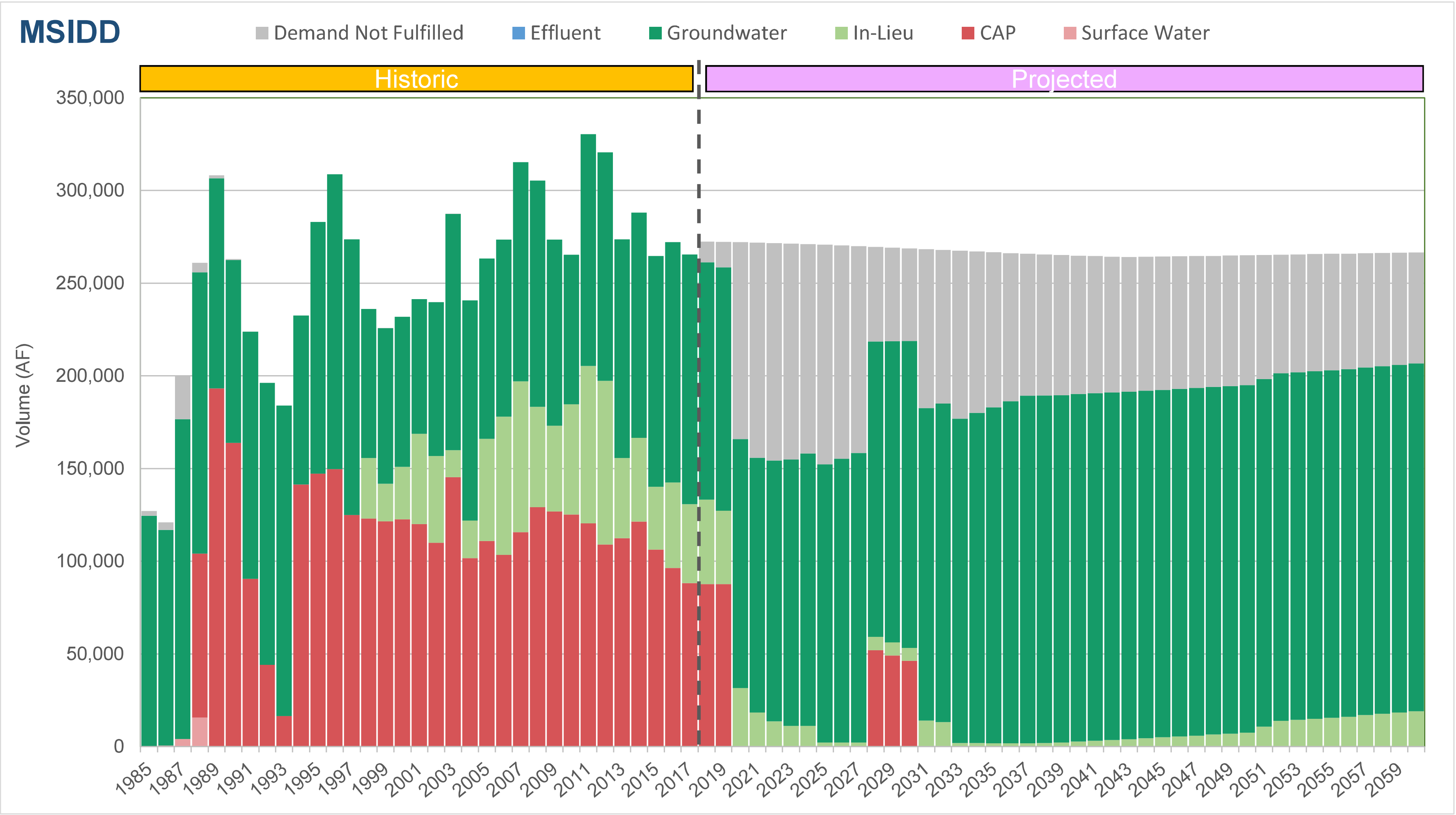
CAIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	89,222	35,860	170,437	0
2019	0	0	89,223	31,200	175,266	0
2020	0	0	0	24,917	181,406	89,525
2021	0	0	0	14,764	185,625	95,205
2022	0	0	0	11,173	189,843	94,174
2023	0	0	0	9,176	194,062	91,536
2024	0	0	0	9,121	198,281	86,944
2025	0	0	0	2,195	202,499	89,236
2026	0	0	0	2,128	206,718	84,639
2027	0	0	0	2,061	210,937	79,963
2028	0	0	52,928	5,907	215,156	18,432
2029	0	0	49,981	5,840	219,374	16,719
2030	0	0	47,008	5,773	223,593	15,013
2031	0	0	0	12,236	227,812	50,810
2032	0	0	0	11,621	232,031	46,946
2033	0	0	0	1,861	236,249	52,384
2034	0	0	0	1,861	240,468	48,039
2035	0	0	0	1,861	244,687	43,694
2036	0	0	0	1,861	248,906	39,326
2037	0	0	0	1,861	253,124	35,035
2038	0	0	0	1,903	253,124	35,082
2039	0	0	0	2,111	253,124	34,962
2040	0	0	0	2,730	253,124	34,403
2041	0	0	0	3,129	253,124	34,123
2042	0	0	0	3,557	253,124	33,783
2043	0	0	0	4,010	253,124	33,417
2044	0	0	0	4,503	253,124	32,978
2045	0	0	0	4,980	253,124	32,626
2046	0	0	0	5,478	253,124	32,216
2047	0	0	0	5,976	253,124	31,806
2048	0	0	0	6,496	253,124	31,333
2049	0	0	0	6,996	253,124	30,905
2050	0	0	0	7,559	253,124	30,361
2051	0	0	0	10,758	253,124	27,182
2052	0	0	0	13,875	253,124	24,036
2053	0	0	0	14,440	253,124	23,570
2054	0	0	0	15,037	253,124	23,029
2055	0	0	0	15,538	253,124	22,583
2056	0	0	0	16,147	253,124	21,977
2057	0	0	0	17,037	253,124	21,268
2058	0	0	0	17,713	253,124	20,719
2059	0	0	0	18,389	253,124	20,172
2060	0	0	0	19,123	253,124	19,494

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



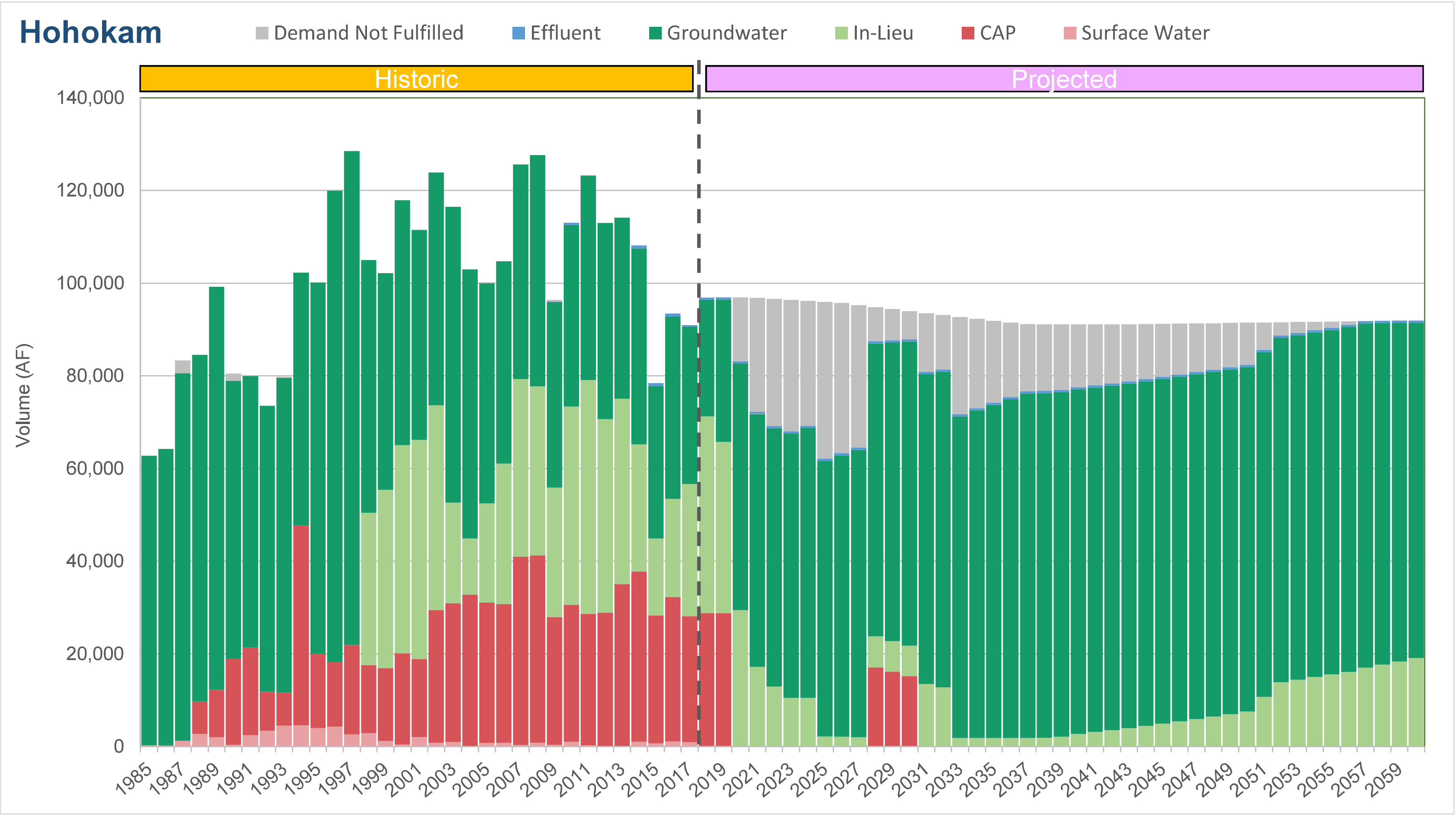
MSIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	87,706	45,467	128,120	11,046
2019	0	0	87,707	39,588	131,244	13,716
2020	0	0	0	31,555	134,369	106,213
2021	0	0	0	18,363	137,494	116,044
2022	0	0	0	13,735	140,619	117,263
2023	0	0	0	11,172	143,744	116,405
2024	0	0	0	11,206	146,869	112,941
2025	0	0	0	2,241	149,994	118,486
2026	0	0	0	2,202	153,119	115,078
2027	0	0	0	2,130	156,243	111,620
2028	0	0	52,028	7,162	159,368	51,013
2029	0	0	49,131	7,095	162,493	50,457
2030	0	0	46,208	7,028	165,618	49,911
2031	0	0	0	13,969	168,743	85,643
2032	0	0	0	13,234	171,868	82,815
2033	0	0	0	1,910	174,993	90,608
2034	0	0	0	1,907	178,118	87,062
2035	0	0	0	1,861	181,242	83,557
2036	0	0	0	1,861	184,367	79,981
2037	0	0	0	1,861	187,492	76,467
2038	0	0	0	1,903	187,492	76,116
2039	0	0	0	2,111	187,492	75,597
2040	0	0	0	2,730	187,492	74,641
2041	0	0	0	3,129	187,492	73,957
2042	0	0	0	3,557	187,492	73,214
2043	0	0	0	4,010	187,492	72,655
2044	0	0	0	4,503	187,492	72,258
2045	0	0	0	4,980	187,492	71,944
2046	0	0	0	5,478	187,492	71,576
2047	0	0	0	5,976	187,492	71,205
2048	0	0	0	6,496	187,492	70,776
2049	0	0	0	6,996	187,492	70,465
2050	0	0	0	7,559	187,492	70,057
2051	0	0	0	10,758	187,492	67,012
2052	0	0	0	13,875	187,492	64,007
2053	0	0	0	14,440	187,492	63,640
2054	0	0	0	15,037	187,492	63,194
2055	0	0	0	15,538	187,492	62,846
2056	0	0	0	16,147	187,492	62,343
2057	0	0	0	17,037	187,492	61,654
2058	0	0	0	17,713	187,492	61,130
2059	0	0	0	18,389	187,492	60,607
2060	0	0	0	19,123	187,492	59,968

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



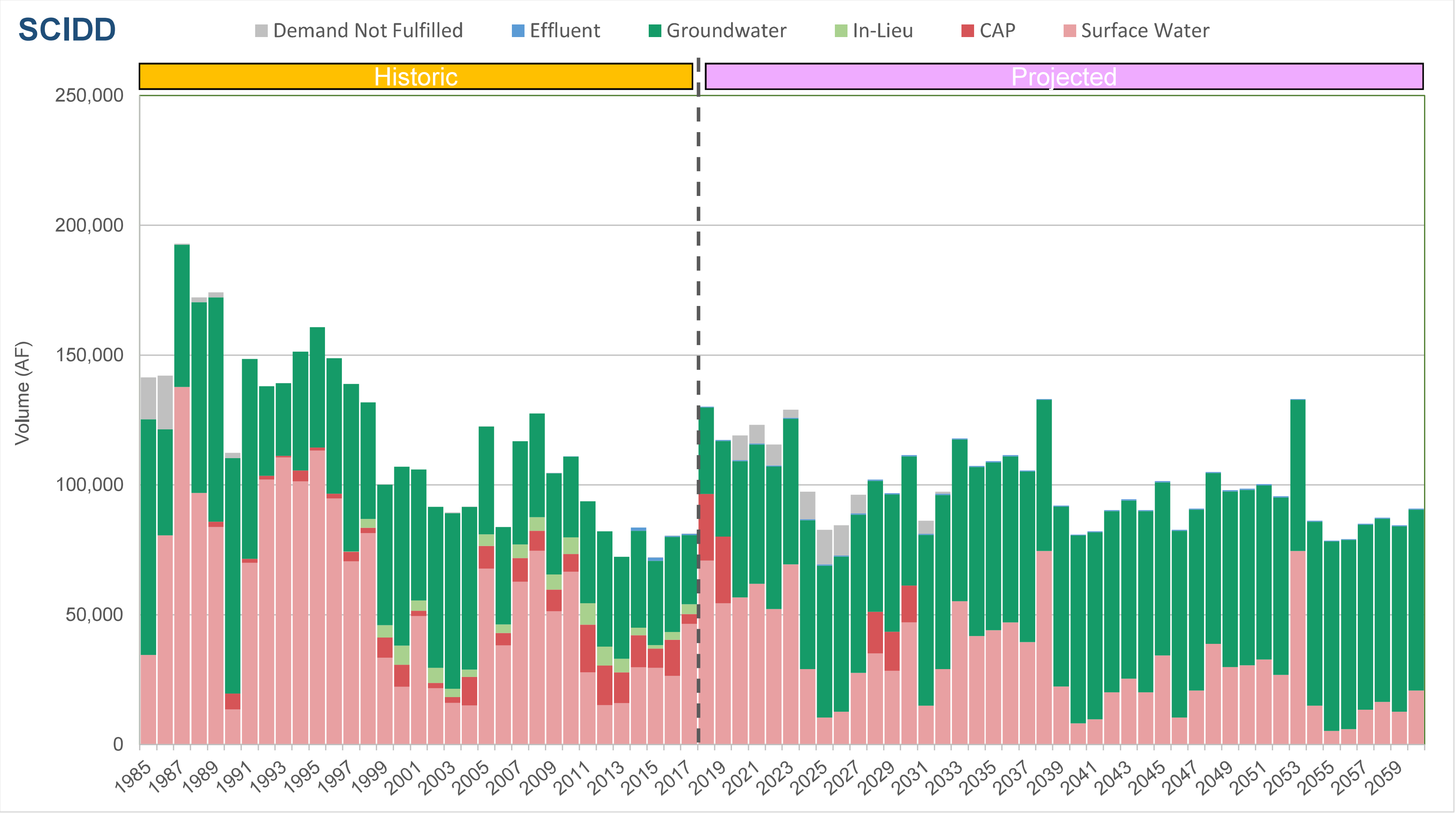
Hohokam

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	490	0	28,837	42,414	25,174	0
2019	490	0	28,837	36,913	30,705	0
2020	490	0	0	29,425	53,280	13,774
2021	490	0	0	17,242	54,519	24,573
2022	490	0	0	12,941	55,758	27,427
2023	490	0	0	10,554	56,997	28,360
2024	490	0	0	10,502	58,236	26,955
2025	490	0	0	2,195	59,475	33,808
2026	490	0	0	2,128	60,714	32,382
2027	490	0	0	2,061	61,954	30,772
2028	490	0	17,106	6,694	63,193	7,355
2029	490	0	16,154	6,628	64,432	6,702
2030	490	0	15,193	6,561	65,671	6,055
2031	490	0	0	13,502	66,910	12,628
2032	490	0	0	12,767	68,149	11,704
2033	490	0	0	1,861	69,388	20,973
2034	490	0	0	1,861	70,627	19,327
2035	490	0	0	1,861	71,866	17,683
2036	490	0	0	1,861	73,105	16,027
2037	490	0	0	1,861	74,344	14,442
2038	490	0	0	1,903	74,344	14,394
2039	490	0	0	2,111	74,344	14,183
2040	490	0	0	2,730	74,344	13,550
2041	490	0	0	3,129	74,344	13,157
2042	490	0	0	3,557	74,344	12,723
2043	490	0	0	4,010	74,344	12,291
2044	490	0	0	4,503	74,344	11,837
2045	490	0	0	4,980	74,344	11,422
2046	490	0	0	5,478	74,344	10,975
2047	490	0	0	5,976	74,344	10,527
2048	490	0	0	6,496	74,344	10,046
2049	490	0	0	6,996	74,344	9,608
2050	490	0	0	7,559	74,344	9,096
2051	490	0	0	10,758	74,344	5,948
2052	490	0	0	13,875	74,344	2,866
2053	490	0	0	14,440	74,344	2,363
2054	490	0	0	15,037	74,344	1,814
2055	490	0	0	15,538	74,344	1,361
2056	490	0	0	16,147	74,344	785
2057	490	0	0	17,037	74,303	0
2058	490	0	0	17,713	73,674	0
2059	490	0	0	18,389	73,045	0
2060	490	0	0	19,123	72,337	0

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



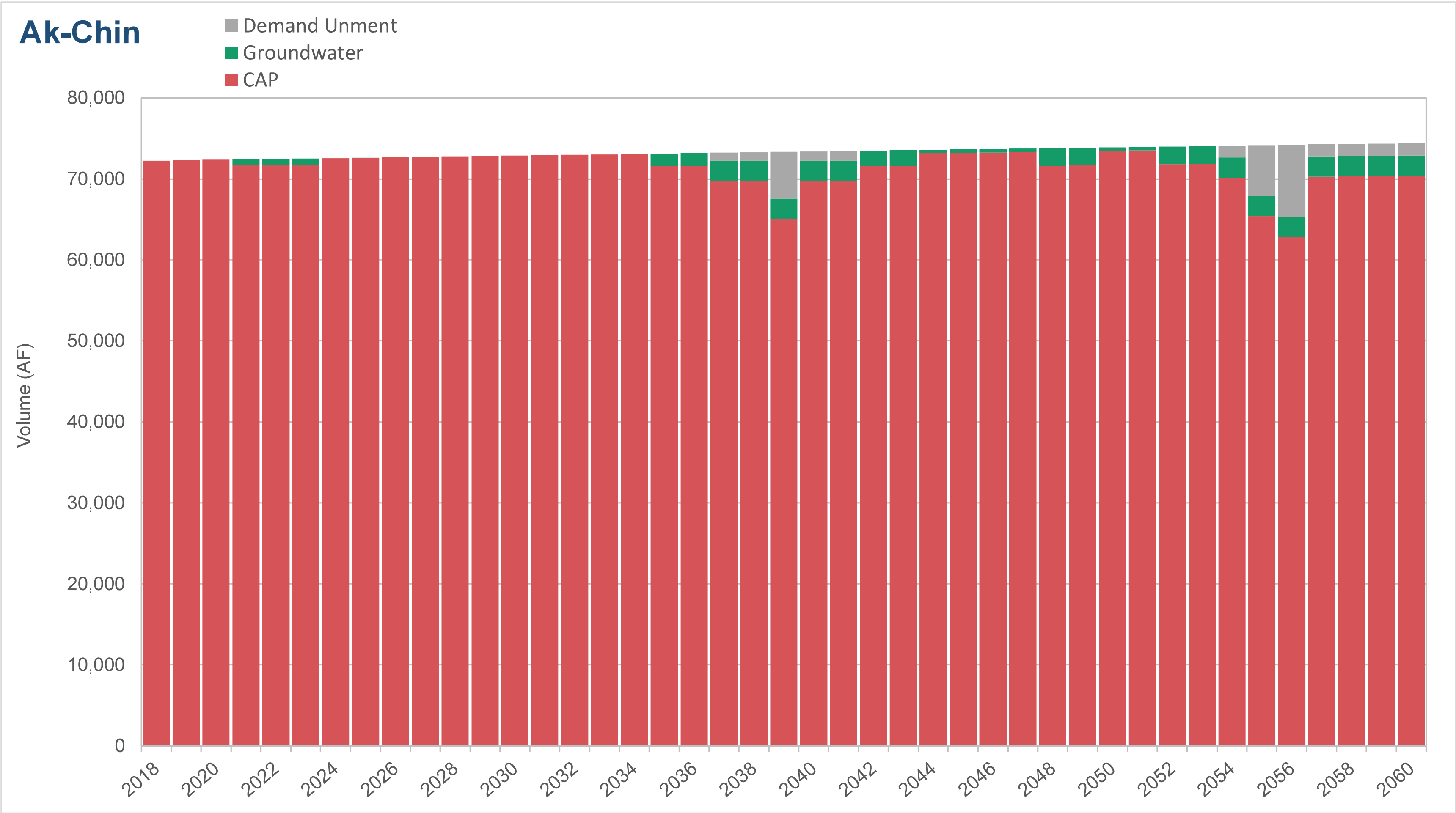
SCIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	410	70,870	25,657	0	33,272	0
2019	410	54,458	25,657	0	36,784	0
2020	410	56,696	0	0	52,442	9,520
2021	410	61,918	0	0	53,662	7,183
2022	410	52,220	0	0	54,882	8,038
2023	410	69,378	0	0	56,101	3,147
2024	410	29,094	0	0	57,321	10,548
2025	410	10,444	0	0	58,540	13,320
2026	410	12,682	0	0	59,760	11,621
2027	410	27,602	0	0	60,980	7,208
2028	410	35,062	16,024	0	50,567	0
2029	410	28,348	15,132	0	52,897	0
2030	410	46,998	14,231	0	49,806	0
2031	410	14,920	0	0	65,858	5,044
2032	410	29,094	0	0	67,078	791
2033	410	55,204	0	0	62,281	0
2034	410	41,776	0	0	65,155	0
2035	410	44,014	0	0	64,676	0
2036	410	46,998	0	0	64,037	0
2037	410	39,538	0	0	65,634	0
2038	410	74,600	0	0	58,131	0
2039	410	22,380	0	0	69,306	0
2040	410	8,206	0	0	72,339	0
2041	410	9,698	0	0	72,020	0
2042	410	20,142	0	0	69,785	0
2043	410	25,364	0	0	68,667	0
2044	410	20,142	0	0	69,785	0
2045	410	34,316	0	0	66,751	0
2046	410	10,444	0	0	71,860	0
2047	410	20,888	0	0	69,625	0
2048	410	38,792	0	0	65,794	0
2049	410	29,840	0	0	67,709	0
2050	410	30,586	0	0	67,550	0
2051	410	32,824	0	0	67,071	0
2052	410	26,856	0	0	68,348	0
2053	410	74,600	0	0	58,131	0
2054	410	14,920	0	0	70,902	0
2055	410	5,222	0	0	72,977	0
2056	410	5,968	0	0	72,818	0
2057	410	13,428	0	0	71,221	0
2058	410	16,412	0	0	70,583	0
2059	410	12,682	0	0	71,381	0
2060	410	20,888	0	0	69,625	0

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



Ak-Chin

Date	Effluent	Surface	CAP	Groundwater	Demand Not Fulfilled	Total
2018	0	0	72,265	0	0	72,265
2019	0	0	72,316	0	0	72,316
2020	0	0	72,365	0	0	72,365
2021	0	0	71,724	693	0	72,417
2022	0	0	71,707	761	0	72,468
2023	0	0	71,691	828	0	72,518
2024	0	0	72,567	0	0	72,567
2025	0	0	72,585	35	0	72,620
2026	0	0	72,671	0	0	72,671
2027	0	0	72,722	0	0	72,722
2028	0	0	72,769	0	0	72,769
2029	0	0	72,824	0	0	72,824
2030	0	0	72,875	0	0	72,875
2031	0	0	72,926	0	0	72,926
2032	0	0	72,972	0	0	72,972
2033	0	0	73,028	0	0	73,028
2034	0	0	73,079	0	0	73,079
2035	0	0	71,608	1,522	0	73,130
2036	0	0	71,602	1,573	0	73,175
2037	0	0	69,749	2,500	984	73,233
2038	0	0	69,747	2,500	1,038	73,284
2039	0	0	65,074	2,500	5,761	73,335
2040	0	0	69,736	2,500	1,143	73,379
2041	0	0	69,741	2,500	1,197	73,438
2042	0	0	71,611	1,879	0	73,490
2043	0	0	71,612	1,930	0	73,541
2044	0	0	73,200	384	0	73,584
2045	0	0	73,206	438	0	73,644
2046	0	0	73,257	439	0	73,696
2047	0	0	73,308	440	0	73,747
2048	0	0	71,621	2,168	0	73,789
2049	0	0	71,678	2,173	0	73,851
2050	0	0	73,460	442	0	73,903
2051	0	0	73,511	443	0	73,954
2052	0	0	71,810	2,185	0	73,994
2053	0	0	71,868	2,190	0	74,058
2054	0	0	70,132	2,500	1,477	74,110
2055	0	0	65,408	2,500	6,254	74,162
2056	0	0	62,781	2,500	8,919	74,200
2057	0	0	70,265	2,500	1,501	74,266
2058	0	0	70,309	2,500	1,508	74,318
2059	0	0	70,353	2,500	1,516	74,370
2060	0	0	70,385	2,500	1,522	74,407

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

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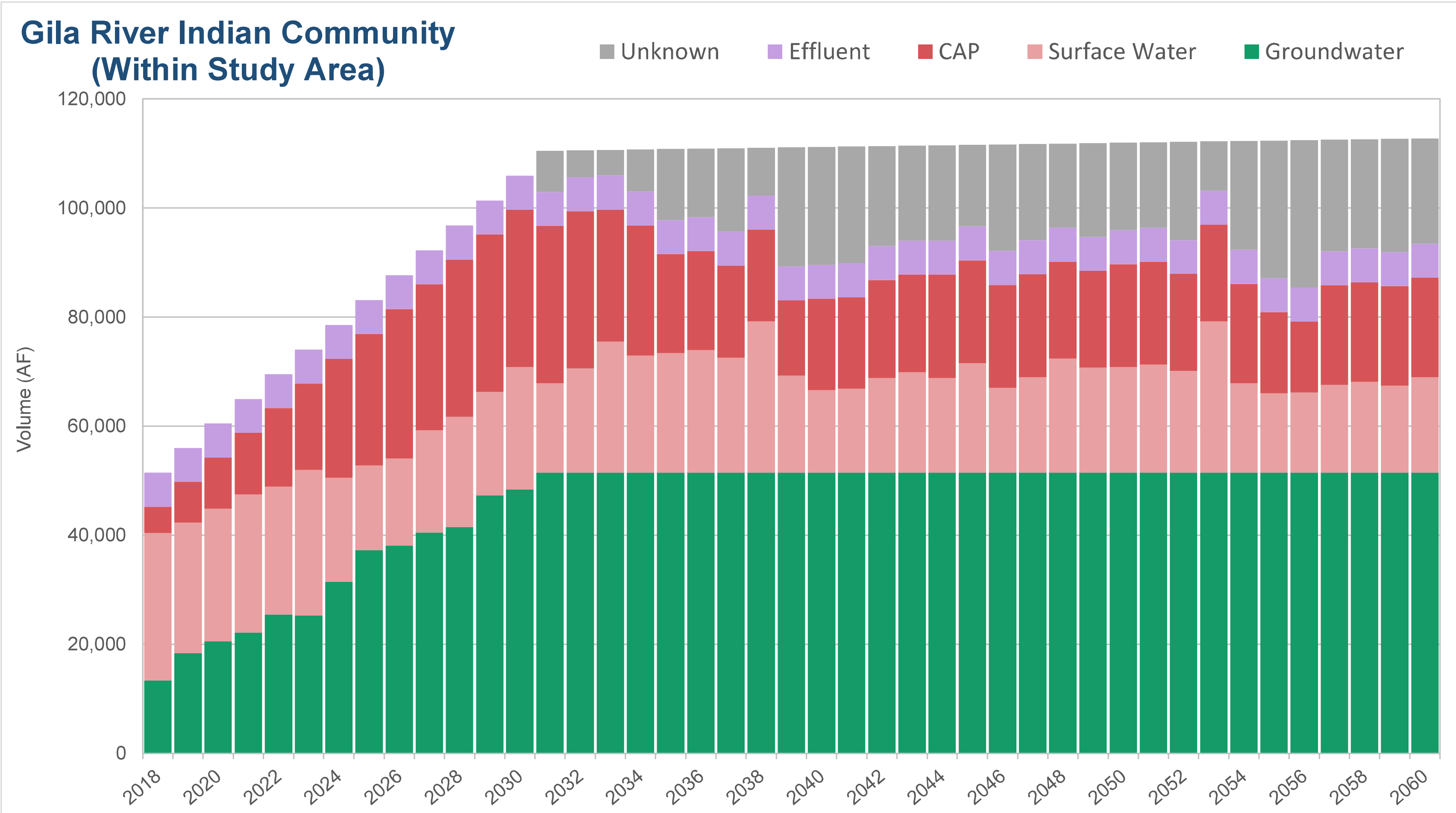


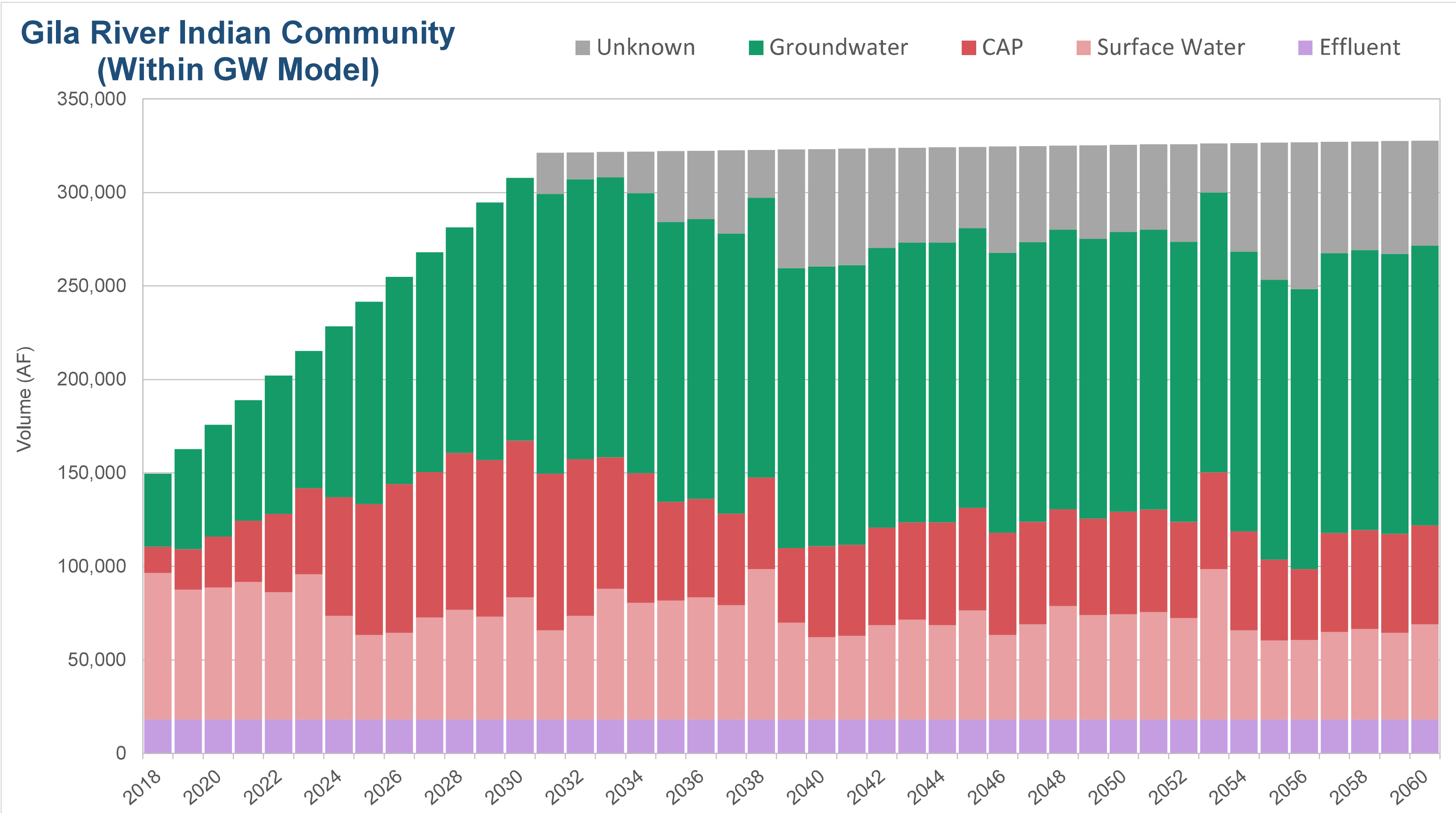
Gila River Indian Community
(Within Study Area)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	6,230	27,003	4,832	13,401	0	51,465
2019	6,230	23,889	7,472	18,376	0	55,967
2020	6,230	24,314	9,374	20,558	0	60,476
2021	6,230	25,305	11,284	22,173	0	64,992
2022	6,230	23,465	14,389	25,430	0	69,513
2023	6,230	26,720	15,839	25,253	0	74,041
2024	6,230	19,078	21,814	31,451	0	78,573
2025	6,230	15,540	24,104	37,242	0	83,116
2026	6,230	15,965	27,381	38,087	0	87,663
2027	6,230	18,795	26,710	40,481	0	92,216
2028	6,230	20,210	28,838	41,492	0	96,771
2029	6,230	18,937	28,838	47,336	0	101,341
2030	6,230	22,474	28,838	48,371	0	105,913
2031	6,230	16,389	28,838	51,471	7,563	110,492
2032	6,230	19,078	28,838	51,471	4,944	110,562
2033	6,230	24,031	24,234	51,471	4,681	110,647
2034	6,230	21,484	23,843	51,471	7,696	110,724
2035	6,230	21,908	18,145	51,471	13,047	110,802
2036	6,230	22,474	18,114	51,471	12,581	110,870
2037	6,230	21,059	16,868	51,471	15,329	110,957
2038	6,230	27,710	16,838	51,471	8,786	111,035
2039	6,230	17,804	13,770	51,471	21,837	111,112
2040	6,230	15,116	16,777	51,471	21,585	111,179
2041	6,230	15,399	16,748	51,471	21,421	111,268
2042	6,230	17,380	17,928	51,471	18,337	111,346
2043	6,230	18,370	17,898	51,471	17,455	111,424
2044	6,230	17,380	18,896	51,471	17,512	111,489
2045	6,230	20,069	18,862	51,471	14,949	111,580
2046	6,230	15,540	18,862	51,471	19,556	111,658
2047	6,230	17,521	18,862	51,471	17,653	111,737
2048	6,230	20,918	17,758	51,471	15,423	111,799
2049	6,230	19,220	17,758	51,471	17,215	111,893
2050	6,230	19,361	18,862	51,471	16,048	111,972
2051	6,230	19,786	18,862	51,471	15,702	112,050
2052	6,230	18,654	17,758	51,471	17,999	112,111
2053	6,230	27,710	17,758	51,471	9,038	112,207
2054	6,230	16,389	18,222	51,471	19,973	112,286
2055	6,230	14,550	14,882	51,471	25,231	112,364
2056	6,230	14,691	13,027	51,471	27,004	112,423
2057	6,230	16,106	18,222	51,471	20,492	112,522
2058	6,230	16,672	18,222	51,471	20,005	112,601
2059	6,230	15,965	18,222	51,471	20,791	112,679
2060	6,230	17,521	18,222	51,471	19,291	112,736

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



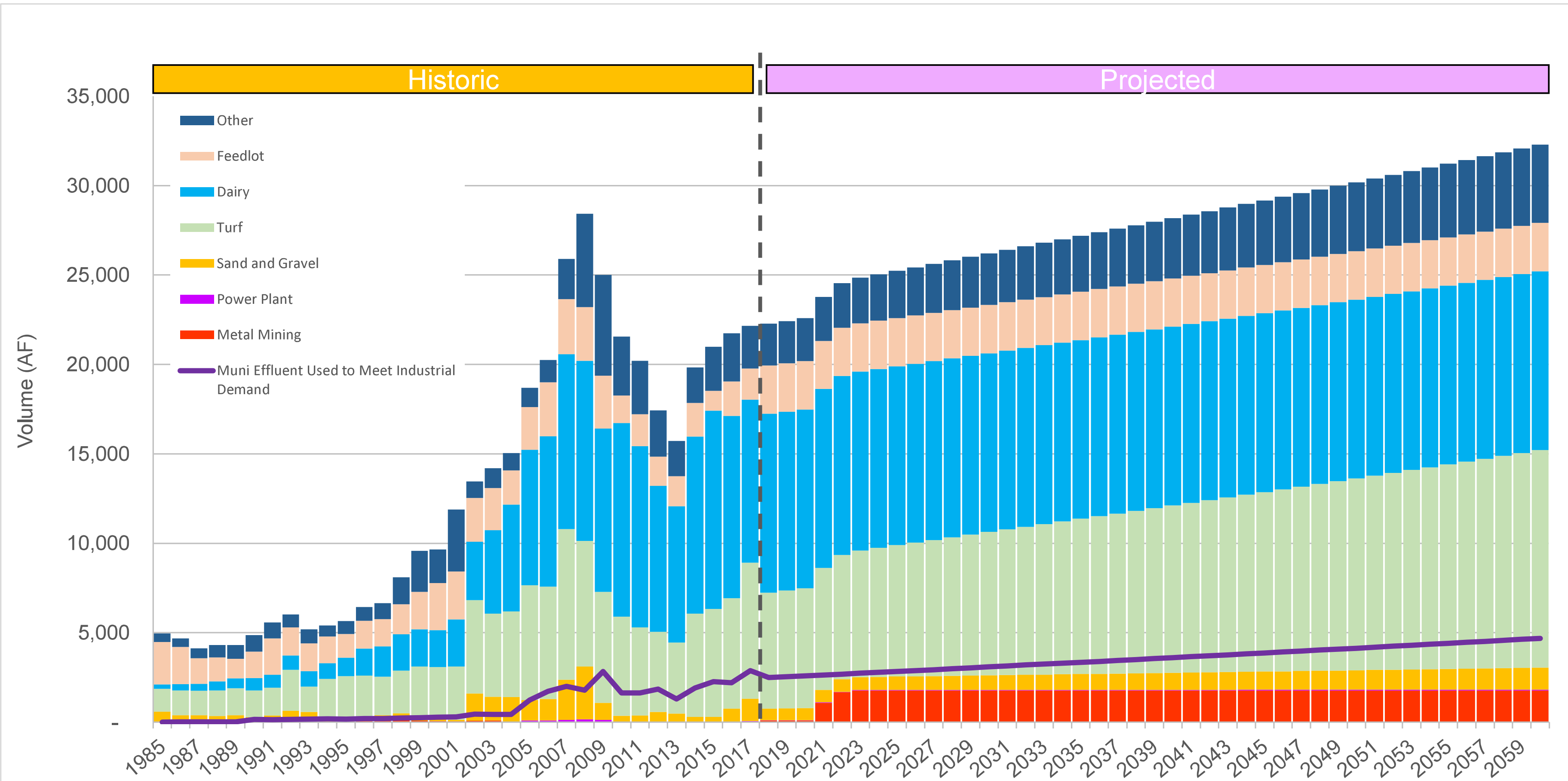
Gila River Indian Community
(Within GW Model)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	18,110	78,496	14,045	38,955	0	149,607
2019	18,110	69,446	21,722	53,417	0	162,696
2020	18,110	70,680	27,250	59,761	0	175,802
2021	18,110	73,560	32,803	64,457	0	188,930
2022	18,110	68,212	41,828	73,923	0	202,074
2023	18,110	77,674	46,043	73,409	0	215,236
2024	18,110	55,459	63,414	91,426	0	228,410
2025	18,110	45,175	70,069	108,262	0	241,616
2026	18,110	46,409	79,595	110,719	0	254,833
2027	18,110	54,637	77,645	117,677	0	268,069
2028	18,110	58,750	83,833	120,616	0	281,310
2029	18,110	55,048	83,833	137,606	0	294,597
2030	18,110	65,332	83,833	140,612	0	307,888
2031	18,110	47,643	83,833	149,625	21,985	321,197
2032	18,110	55,459	83,833	149,625	14,373	321,401
2033	18,110	69,858	70,446	149,625	13,609	321,648
2034	18,110	62,453	69,312	149,625	22,373	321,873
2035	18,110	63,687	52,748	149,625	37,927	322,098
2036	18,110	65,332	52,656	149,625	36,572	322,296
2037	18,110	61,219	49,035	149,625	44,561	322,550
2038	18,110	80,553	48,946	149,625	25,541	322,775
2039	18,110	51,757	40,028	149,625	63,481	323,001
2040	18,110	43,941	48,772	149,625	62,746	323,194
2041	18,110	44,764	48,686	149,625	62,270	323,455
2042	18,110	50,523	52,117	149,625	53,305	323,681
2043	18,110	53,403	52,029	149,625	50,740	323,907
2044	18,110	50,523	54,930	149,625	50,906	324,095
2045	18,110	58,339	54,831	149,625	43,457	324,362
2046	18,110	45,175	54,831	149,625	56,848	324,589
2047	18,110	50,934	54,831	149,625	51,315	324,816
2048	18,110	60,807	51,621	149,625	44,834	324,997
2049	18,110	55,871	51,621	149,625	50,045	325,272
2050	18,110	56,282	54,831	149,625	46,651	325,499
2051	18,110	57,516	54,831	149,625	45,645	325,727
2052	18,110	54,225	51,621	149,625	52,322	325,903
2053	18,110	80,553	51,621	149,625	26,275	326,184
2054	18,110	47,643	52,972	149,625	58,061	326,412
2055	18,110	42,295	43,262	149,625	73,347	326,640
2056	18,110	42,707	37,868	149,625	78,501	326,811
2057	18,110	46,821	52,972	149,625	59,571	327,099
2058	18,110	48,466	52,972	149,625	58,154	327,328
2059	18,110	46,409	52,972	149,625	60,440	327,556
2060	18,110	50,934	52,972	149,625	56,080	327,722

Central Arizona Project Service Area Model

A. Highest Demand [EMSBS]

High growth rate, spillover (suburban) growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



A. Highest Demand [EMSBS]

Industrial Demand

Date	Metal Mining	Power Plant	Sand and Gravel	Turf	Dairy	Feedlot	Other	Total Demand
2018	85	18	660	6,479	10,000	2,700	2,332	22,274
2019	85	19	670	6,583	10,000	2,700	2,369	22,426
2020	85	19	682	6,699	10,000	2,700	2,411	22,596
2021	1,088	19	695	6,823	10,000	2,700	2,456	23,781
2022	1,673	20	708	6,952	10,000	2,700	2,502	24,554
2023	1,778	20	721	7,083	10,000	2,700	2,549	24,851
2024	1,778	20	735	7,215	10,000	2,700	2,597	25,044
2025	1,778	21	748	7,348	10,000	2,700	2,644	25,239
2026	1,778	21	762	7,481	10,000	2,700	2,692	25,434
2027	1,778	21	775	7,614	10,000	2,700	2,740	25,629
2028	1,778	22	789	7,747	10,000	2,700	2,788	25,825
2029	1,778	22	803	7,881	10,000	2,700	2,836	26,020
2030	1,778	23	816	8,014	10,000	2,700	2,884	26,215
2031	1,778	23	830	8,148	10,000	2,700	2,932	26,411
2032	1,778	23	843	8,281	10,000	2,700	2,980	26,607
2033	1,778	24	857	8,415	10,000	2,700	3,029	26,802
2034	1,778	24	871	8,549	10,000	2,700	3,077	26,999
2035	1,778	24	884	8,683	10,000	2,700	3,125	27,195
2036	1,778	25	898	8,817	10,000	2,700	3,173	27,391
2037	1,778	25	912	8,952	10,000	2,700	3,222	27,588
2038	1,778	26	925	9,086	10,000	2,700	3,270	27,786
2039	1,778	26	939	9,221	10,000	2,700	3,319	27,983
2040	1,778	26	953	9,357	10,000	2,700	3,367	28,181
2041	1,778	27	967	9,492	10,000	2,700	3,416	28,380
2042	1,778	27	981	9,628	10,000	2,700	3,465	28,579
2043	1,778	27	994	9,764	10,000	2,700	3,514	28,779
2044	1,778	28	1,008	9,901	10,000	2,700	3,563	28,979
2045	1,778	28	1,022	10,038	10,000	2,700	3,613	29,179
2046	1,778	29	1,036	10,176	10,000	2,700	3,662	29,381
2047	1,778	29	1,050	10,314	10,000	2,700	3,712	29,583
2048	1,778	29	1,065	10,452	10,000	2,700	3,762	29,786
2049	1,778	30	1,079	10,591	10,000	2,700	3,812	29,989
2050	1,778	30	1,093	10,731	10,000	2,700	3,862	30,194
2051	1,778	31	1,107	10,871	10,000	2,700	3,912	30,399
2052	1,778	31	1,121	11,012	10,000	2,700	3,963	30,605
2053	1,778	31	1,136	11,153	10,000	2,700	4,014	30,812
2054	1,778	32	1,150	11,295	10,000	2,700	4,065	31,020
2055	1,778	32	1,165	11,438	10,000	2,700	4,116	31,229
2056	1,778	33	1,179	11,581	10,000	2,700	4,168	31,439
2057	1,778	33	1,194	11,725	10,000	2,700	4,220	31,651
2058	1,778	33	1,209	11,870	10,000	2,700	4,272	31,863
2059	1,778	34	1,224	12,016	10,000	2,700	4,325	32,076
2060	1,778	34	1,239	12,163	10,000	2,700	4,377	32,291

CAP:SAM Supply and Demand Projections by Water Provider, Irrigation District and Tribe

Scenario B

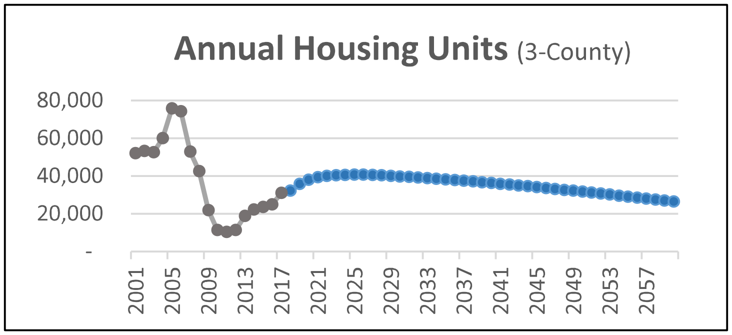
Climate: Hotter and Drier
Growth Rate: Official
Growth Pattern: Local
Ag Pumping Capacity: 150% of Historic

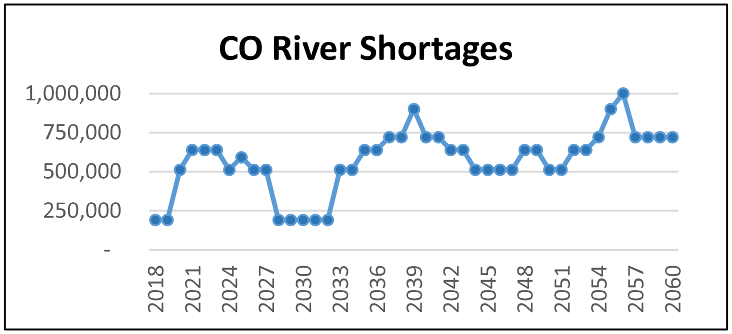
B. Having it All [EMSBS]

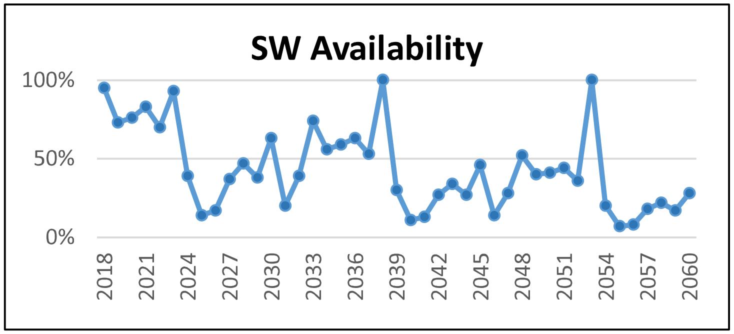
Run Date: 2/4/2021 **Filename:** CAPServiceArea_v3.51_ACv4.gsm

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015

Allow Shortages	Yes	
Select CRSS Array	3	*3=Synthetic*
Use Specific Trace	Yes	
Selected Trace	2	*1=Moderate; 2=Deep; 3=Slight*
AWBA Max M&I	20%	
Surface Water Scenario	6	*1=No Reduction; 2=Occational; 3=Frequent*
Use CAP Buildup	Yes	
CAP Buildup Scenario	2	*1=2035; 2=2045*
HU Growth Pattern	6	*3 = Spillover Growth*
HU Forecast	2	*1=Use Curve; 2=Eller Forecast*
HU Curve	2	
HU Growth Start Rate	-1%	
HU Ordinary Level	40,700	
HU Rate @ 50 yrs	-2%	
GPHUD Change Existing	-0.5%	*per year*
GPHUD Max Change Existing	-15%	
GPHUD Min Existing	200	
GPHUD Scenario New	1	
GPHUD Change New	-0.1%	*per year*
Ag Climate Adjustment	0.2%	
Ag Efficiency Increase	0.2%	*per year*
Ag Efficiency Goal	80%	
Ag Replace Crop CU	2.66	
Ag Intensity Scenario	2	
Ag Develop on Crops	30%	*Perecent of max on active Ag*
Ag Acres Replace Percent	0%	
Ag Replace Crop Year	2025	





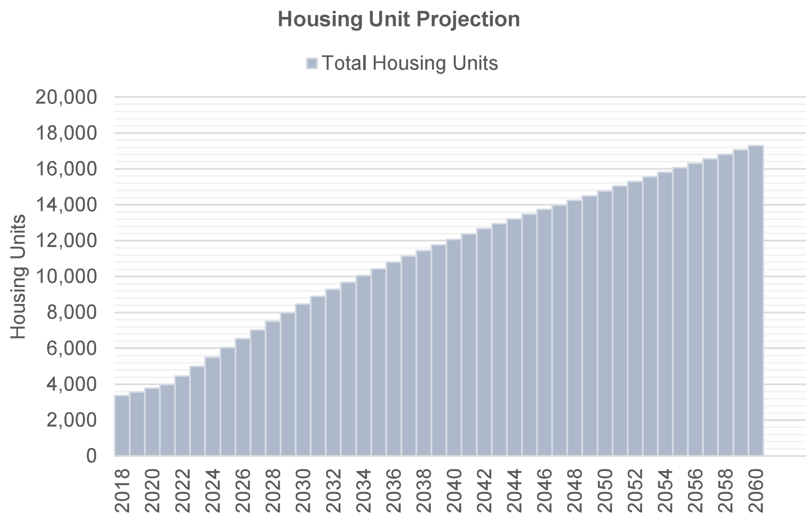


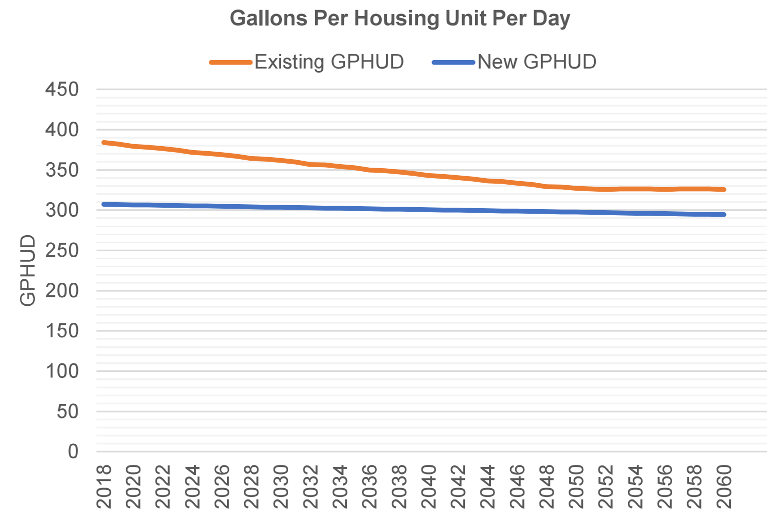
Central Arizona Project Service Area Model

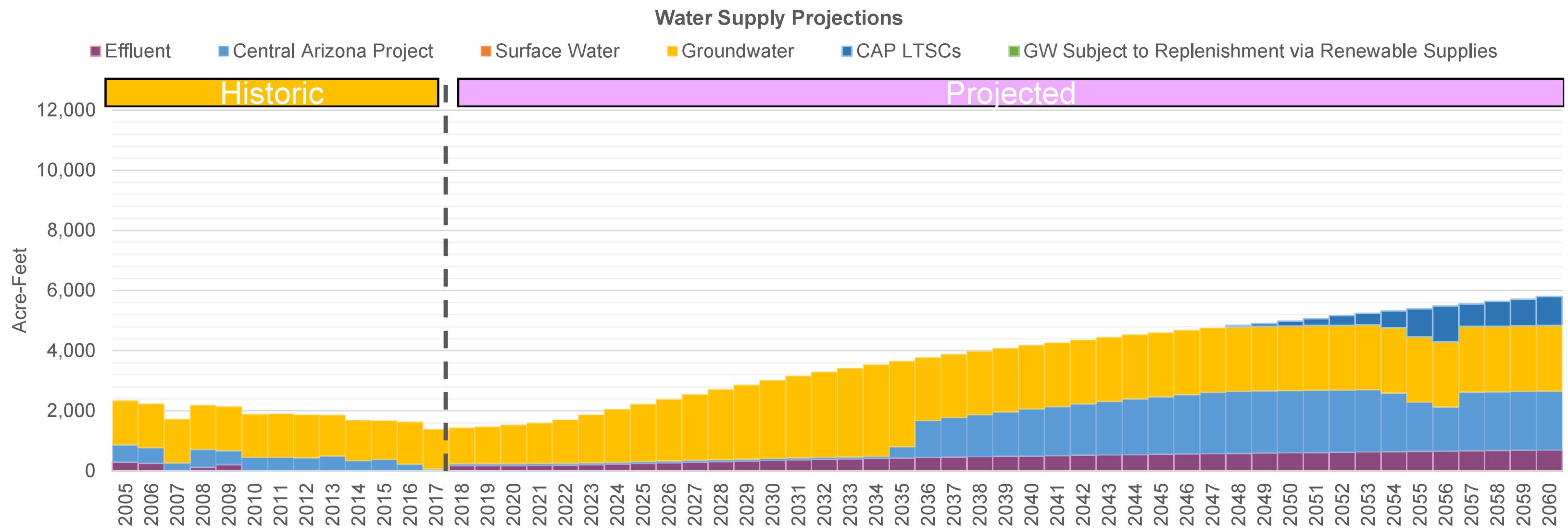
Eloy

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







CAP-LTSCs Available After 2060: 61,830 AF

Additional[1] effluent available to be put to complete use[2] in 2060: 4,995 AF

Additional effluent available to be put to complete use during the simulation period: 116,983 AF

[1] Effluent volume in excess of that being used to satisfy annual demand (i.e. purple pipe or recovery of effluent credits)

[2] Use of effluent for purposes other than being discharged (i.e. storage, DPR, irrigation, etc)

Central Arizona Project Service Area Model

Eloy

B. Having it All [EMSBS]

2/4/21 12:51 PM

Demand Assumptions / Water Supply Projections (Acre-Feet)

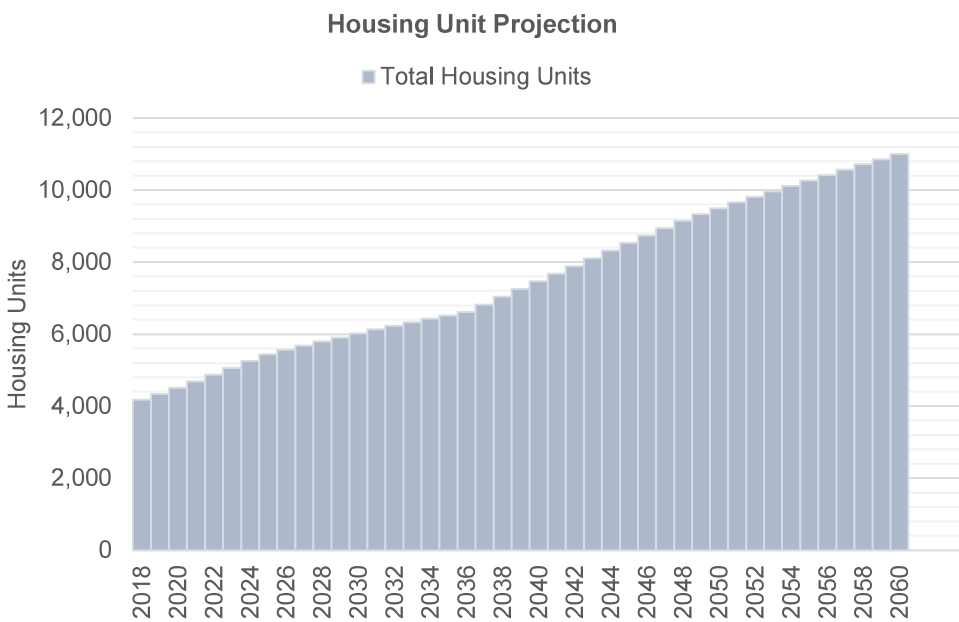
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	3,380	0	384	307	177	0	0	62	0	2,000	0	1,195	0	0
2019	3,573	0	382	307	177	0	0	62	0	2,000	0	1,234	0	0
2020	3,778	0	379	307	182	0	0	62	0	2,000	0	1,291	0	0
2021	3,991	0	378	306	189	0	0	62	0	2,000	0	1,348	0	0
2022	4,464	0	376	306	197	0	0	62	0	2,000	0	1,450	0	0
2023	4,991	0	374	306	211	0	0	62	0	2,000	0	1,600	0	0
2024	5,520	0	372	305	231	0	0	62	0	2,000	0	1,755	0	0
2025	6,051	0	371	305	253	0	0	62	0	2,000	0	1,905	0	0
2026	6,544	0	369	305	274	0	0	62	0	2,000	0	2,051	0	0
2027	7,031	0	367	304	295	0	0	62	0	2,000	0	2,189	0	0
2028	7,515	0	364	304	314	0	0	62	0	2,000	0	2,331	0	0
2029	7,995	0	363	304	334	0	0	62	0	2,000	0	2,463	0	0
2030	8,473	0	362	303	353	0	0	62	0	2,000	0	2,599	0	0
2031	8,902	0	360	303	372	0	0	62	0	2,000	0	2,726	0	0
2032	9,291	0	357	303	390	0	0	62	0	2,000	0	2,843	0	0
2033	9,676	0	356	303	407	0	0	62	0	2,000	0	2,944	0	0
2034	10,058	0	354	302	421	0	0	62	0	2,000	0	3,051	0	0
2035	10,437	0	353	302	436	0	0	369	0	1,694	0	2,849	0	0
2036	10,812	0	350	302	451	0	0	1,226	0	837	0	2,102	0	0
2037	11,139	0	349	301	467	0	0	1,308	0	755	0	2,107	0	0
2038	11,455	0	347	301	479	0	0	1,391	0	672	0	2,111	0	0
2039	11,767	0	346	301	492	0	0	1,471	0	335	0	2,115	0	0
2040	12,076	0	343	300	503	0	0	1,559	0	504	0	2,119	0	0
2041	12,381	0	342	300	516	0	0	1,628	0	435	0	2,123	0	0
2042	12,682	0	340	300	527	0	0	1,706	0	357	0	2,127	0	0
2043	12,955	0	339	300	538	0	0	1,778	0	285	0	2,130	0	0
2044	13,220	0	336	299	549	0	0	1,853	0	209	0	2,134	0	0
2045	13,480	0	335	299	560	0	0	1,908	0	155	0	2,137	0	0
2046	13,738	0	334	299	569	0	0	1,974	0	89	0	2,140	0	0
2047	13,991	0	332	298	578	0	0	2,037	0	26	0	2,143	0	0
2048	14,241	0	329	298	587	0	0	2,062	0	0	47	2,146	0	0
2049	14,500	0	329	298	598	0	0	2,062	0	0	98	2,150	0	0
2050	14,773	0	327	297	606	0	0	2,062	0	0	166	2,152	0	0
2051	15,042	0	326	297	616	0	0	2,062	0	0	237	2,155	0	0
2052	15,306	0	325	297	626	0	0	2,062	0	0	319	2,159	0	0
2053	15,566	0	326	297	638	0	0	2,062	0	0	375	2,163	0	0
2054	15,821	0	326	296	647	0	0	1,950	0	0	557	2,166	0	0
2055	16,072	0	326	296	657	0	0	1,634	0	0	939	2,169	0	0
2056	16,324	0	325	296	667	0	0	1,458	0	0	1,194	2,172	0	0
2057	16,575	0	326	295	678	0	0	1,950	0	0	754	2,176	0	0
2058	16,822	0	326	295	686	0	0	1,950	0	0	821	2,178	0	0
2059	17,064	0	326	295	696	0	0	1,950	0	0	885	2,181	0	0
2060	17,302	0	325	295	705	0	0	1,950	0	0	960	2,184	0	0

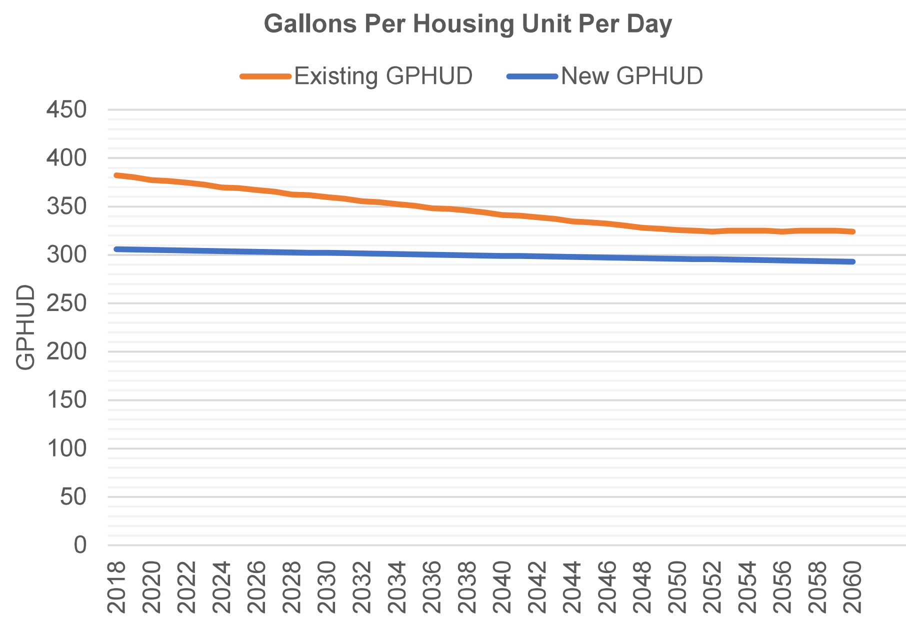
Central Arizona Project Service Area Model

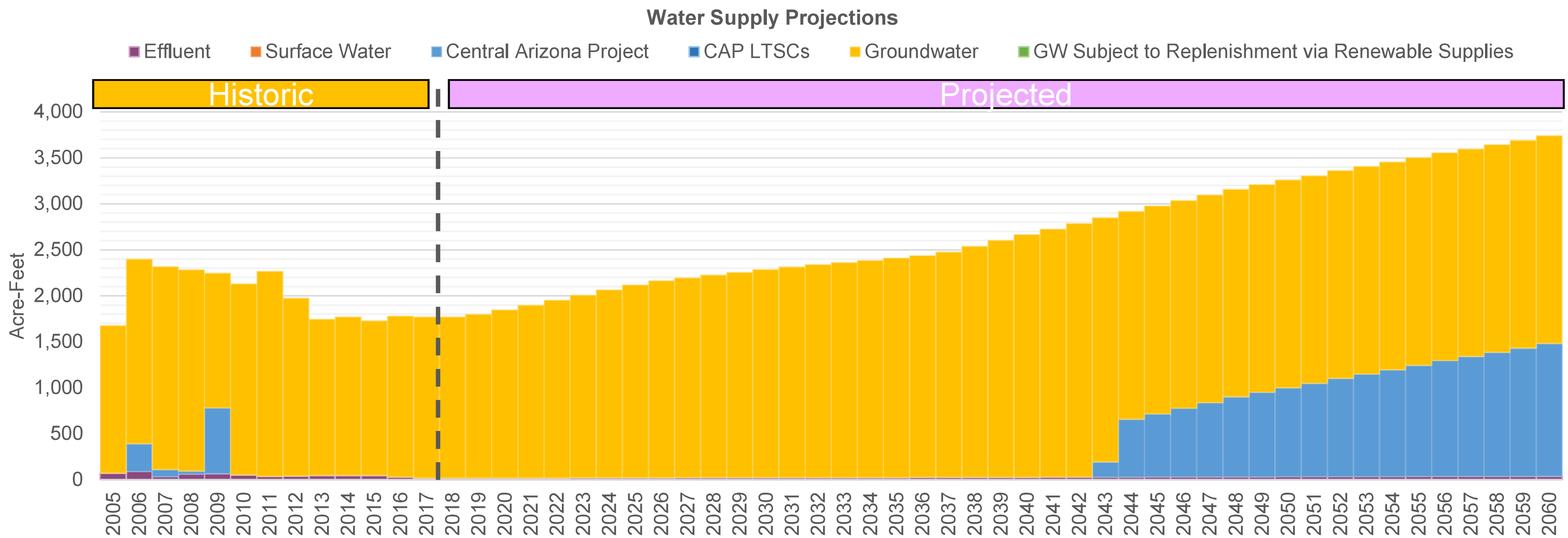
Florence

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

Florence

B. Having it All [EMSBS]

2/4/21 12:51 PM

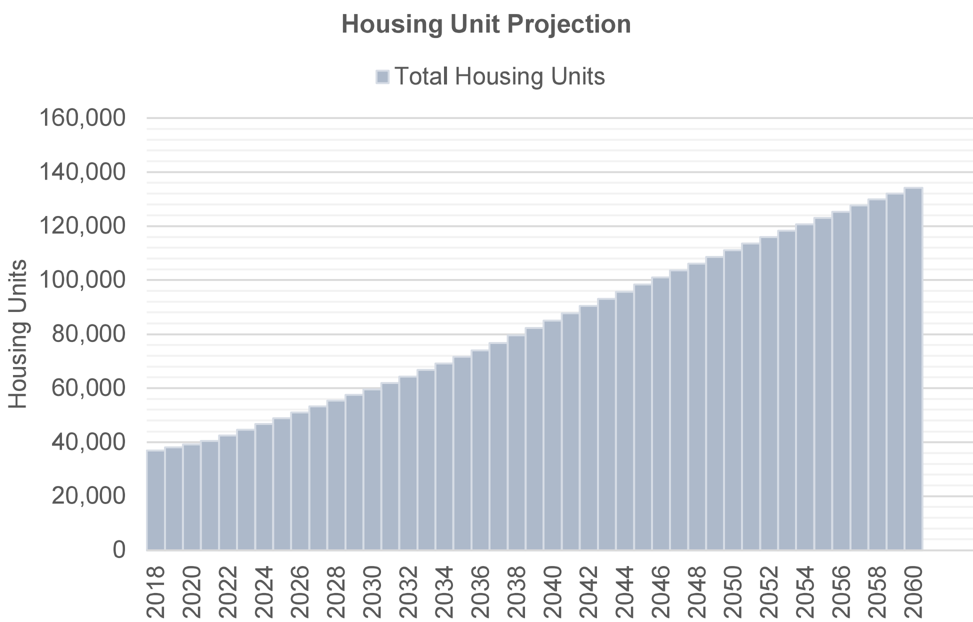
Date	Demand Assumptions: Housing Units		Demand Assumptions: GPHUD		Water Supply Projections (Acre-Feet)	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New	Effluent	SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	4,174	0	382	306	18	0	0	0	0	2,048	0	1,752	0	0
2019	4,336	0	380	305	18	0	0	0	0	2,048	0	1,782	0	0
2020	4,509	0	377	305	18	0	0	0	0	2,048	0	1,831	0	0
2021	4,687	0	376	305	19	0	0	0	0	2,048	0	1,881	0	0
2022	4,874	0	375	304	19	0	0	0	0	2,048	0	1,934	0	0
2023	5,062	0	373	304	20	0	0	0	0	2,048	0	1,988	0	0
2024	5,252	0	370	304	20	0	0	0	0	2,048	0	2,044	0	0
2025	5,443	0	369	304	21	0	0	0	0	2,048	0	2,098	0	0
2026	5,567	0	367	303	22	0	0	0	0	2,048	0	2,142	0	0
2027	5,682	0	365	303	22	0	0	0	0	2,048	0	2,173	0	0
2028	5,797	0	362	303	22	0	0	0	0	2,048	0	2,205	0	0
2029	5,911	0	362	302	23	0	0	0	0	2,048	0	2,233	0	0
2030	6,025	0	360	302	23	0	0	0	0	2,048	0	2,262	0	0
2031	6,131	0	358	302	23	0	0	0	0	2,048	0	2,290	0	0
2032	6,230	0	355	301	24	0	0	0	0	2,048	0	2,317	0	0
2033	6,328	0	354	301	24	0	0	0	0	2,048	0	2,339	0	0
2034	6,425	0	353	301	24	0	0	0	0	2,048	0	2,363	0	0
2035	6,522	0	351	301	24	0	0	0	0	2,048	0	2,387	0	0
2036	6,617	0	348	300	25	0	0	0	0	2,048	0	2,412	0	0
2037	6,820	0	347	300	25	0	0	0	0	2,048	0	2,451	0	0
2038	7,039	0	346	300	25	0	0	0	0	2,048	0	2,513	0	0
2039	7,255	0	344	299	26	0	0	0	0	1,793	0	2,576	0	0
2040	7,469	0	341	299	26	0	0	0	0	2,048	0	2,642	0	0
2041	7,681	0	341	299	27	0	0	0	0	2,048	0	2,700	0	0
2042	7,890	0	339	298	28	0	0	0	0	2,048	0	2,761	0	0
2043	8,106	0	337	298	28	0	0	164	0	1,884	0	2,658	0	0
2044	8,321	0	335	298	29	0	0	629	0	1,419	0	2,259	0	0
2045	8,533	0	334	298	30	0	0	687	0	1,361	0	2,259	0	0
2046	8,742	0	332	297	30	0	0	747	0	1,301	0	2,259	0	0
2047	8,949	0	330	297	31	0	0	806	0	1,242	0	2,259	0	0
2048	9,152	0	328	297	31	0	0	870	0	1,178	0	2,259	0	0
2049	9,337	0	327	296	32	0	0	919	0	1,129	0	2,259	0	0
2050	9,499	0	325	296	33	0	0	967	0	1,081	0	2,259	0	0
2051	9,659	0	325	296	33	0	0	1,015	0	1,033	0	2,259	0	0
2052	9,815	0	324	295	34	0	0	1,070	0	978	0	2,259	0	0
2053	9,970	0	325	295	34	0	0	1,114	0	934	0	2,259	0	0
2054	10,121	0	325	295	35	0	0	1,162	0	771	0	2,259	0	0
2055	10,270	0	325	295	35	0	0	1,209	0	403	0	2,259	0	0
2056	10,420	0	324	294	36	0	0	1,262	0	173	0	2,259	0	0
2057	10,570	0	325	294	36	0	0	1,303	0	630	0	2,259	0	0
2058	10,717	0	325	294	37	0	0	1,349	0	584	0	2,259	0	0
2059	10,861	0	325	293	37	0	0	1,394	0	539	0	2,259	0	0
2060	11,003	0	324	293	38	0	0	1,445	0	488	0	2,259	0	0

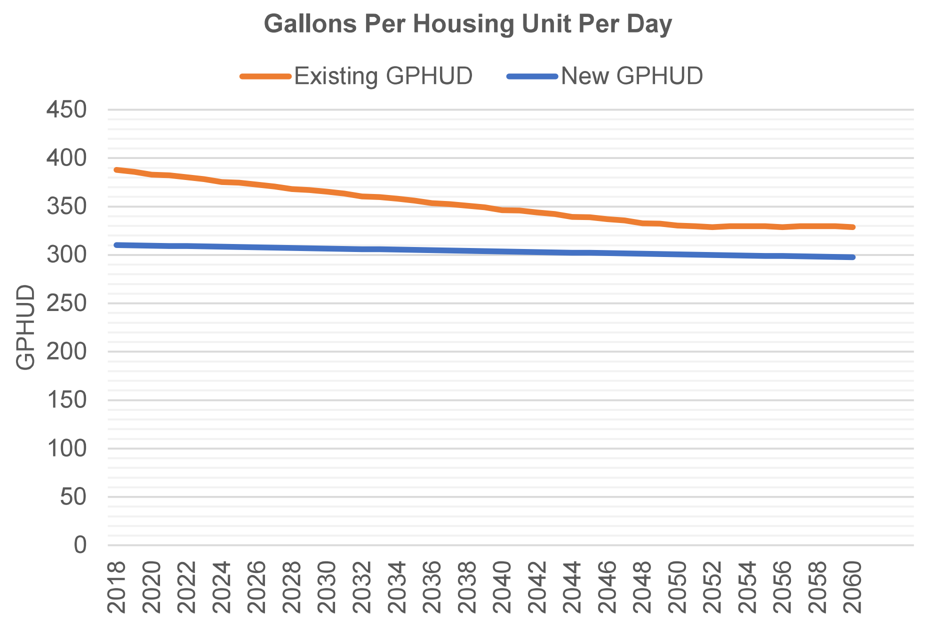
WCPinalValleySyst

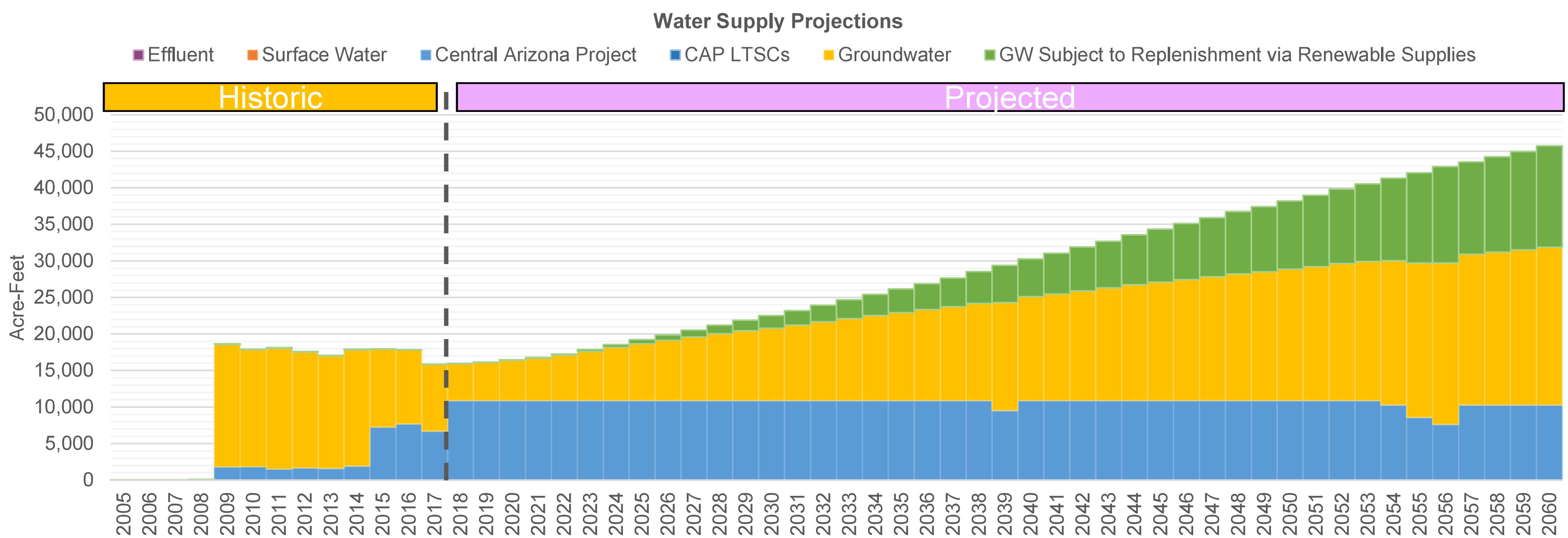
Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

AZWCPinalVall

B. Having it All [EMSBS]

2/4/21 12:51 PM

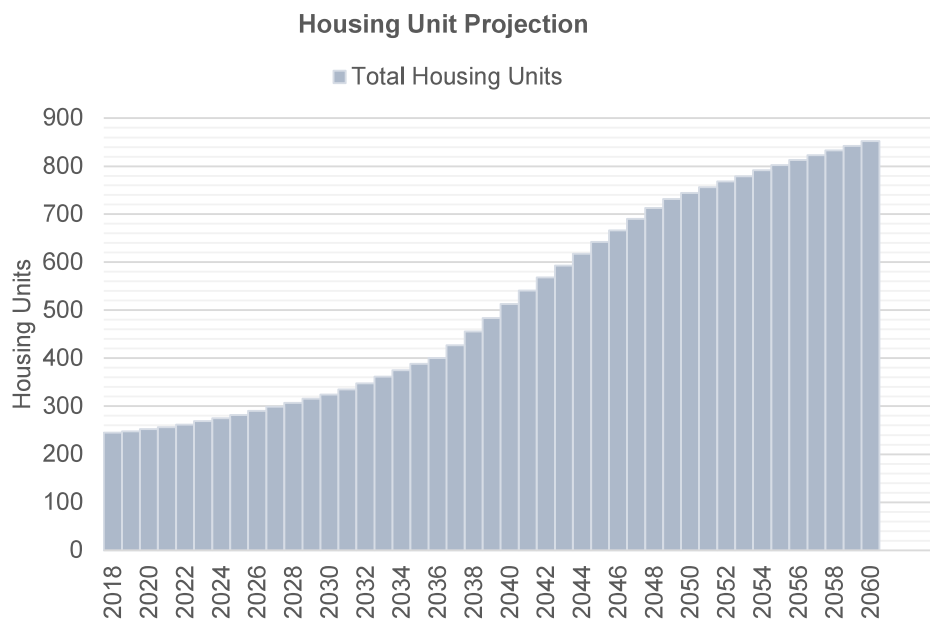
Date	Demand Assumptions: Housing Units		Demand Assumptions: GPHUD		Water Supply Projections (Acre-Feet): Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	36,971	0	388	310	0	0	0	2,800	8,084	0	0	5,053	9	0
2019	38,072	0	386	310	0	0	0	2,800	8,084	0	0	5,231	18	0
2020	39,244	0	383	310	0	0	0	2,800	8,084	0	0	5,513	53	0
2021	40,456	0	382	309	0	0	0	2,800	8,084	0	0	5,805	93	0
2022	42,443	0	380	309	0	0	0	2,800	8,084	0	0	6,219	154	0
2023	44,589	0	378	309	0	0	0	2,800	8,084	0	0	6,748	259	0
2024	46,747	0	375	308	0	0	0	2,800	8,084	0	0	7,274	406	0
2025	48,909	0	374	308	0	0	0	2,800	8,084	0	0	7,772	565	0
2026	51,074	0	373	308	0	0	0	2,800	8,084	0	0	8,241	761	0
2027	53,226	0	371	307	0	0	0	2,800	8,084	0	0	8,696	969	0
2028	55,365	0	368	307	0	0	0	2,800	8,084	0	0	9,137	1,201	0
2029	57,492	0	367	307	0	0	0	2,800	8,084	0	0	9,533	1,440	0
2030	59,603	0	365	307	0	0	0	2,800	8,084	0	0	9,925	1,694	0
2031	61,905	0	363	306	0	0	0	2,800	8,084	0	0	10,337	1,956	0
2032	64,361	0	361	306	0	0	0	2,800	8,084	0	0	10,797	2,253	0
2033	66,798	0	360	306	0	0	0	2,800	8,084	0	0	11,206	2,574	0
2034	69,214	0	358	305	0	0	0	2,800	8,084	0	0	11,624	2,902	0
2035	71,608	0	356	305	0	0	0	2,800	8,084	0	0	12,029	3,235	0
2036	73,980	0	353	305	0	0	0	2,800	8,084	0	0	12,452	3,574	0
2037	76,728	0	353	304	0	0	0	2,800	8,084	0	0	12,863	3,918	0
2038	79,518	0	351	304	0	0	0	2,800	8,084	0	0	13,319	4,320	0
2039	82,278	0	349	304	0	0	0	2,451	7,078	0	0	14,770	5,082	0
2040	85,007	0	346	303	0	0	0	2,800	8,084	0	0	14,232	5,155	0
2041	87,705	0	346	303	0	0	0	2,800	8,084	0	0	14,609	5,569	0
2042	90,370	0	344	303	0	0	0	2,800	8,084	0	0	15,014	5,986	0
2043	93,066	0	342	303	0	0	0	2,800	8,084	0	0	15,417	6,403	0
2044	95,740	0	339	302	0	0	0	2,800	8,084	0	0	15,861	6,834	0
2045	98,378	0	339	302	0	0	0	2,800	8,084	0	0	16,195	7,255	0
2046	100,980	0	337	302	0	0	0	2,800	8,084	0	0	16,568	7,678	0
2047	103,545	0	335	301	0	0	0	2,800	8,084	0	0	16,930	8,098	0
2048	106,072	0	333	301	0	0	0	2,800	8,084	0	0	17,338	8,520	0
2049	108,588	0	332	301	0	0	0	2,800	8,084	0	0	17,626	8,928	0
2050	111,100	0	330	300	0	0	0	2,800	8,084	0	0	17,967	9,342	0
2051	113,573	0	330	300	0	0	0	2,800	8,084	0	0	18,333	9,759	0
2052	116,005	0	329	300	0	0	0	2,800	8,084	0	0	18,759	10,204	0
2053	118,397	0	330	300	0	0	0	2,800	8,084	0	0	19,025	10,649	0
2054	120,746	0	330	299	0	0	0	2,643	7,630	0	0	19,735	11,318	0
2055	123,054	0	330	299	0	0	0	2,205	6,366	0	0	21,117	12,390	0
2056	125,344	0	329	299	0	0	0	1,961	5,663	0	0	22,079	13,195	0
2057	127,612	0	330	298	0	0	0	2,643	7,630	0	0	20,645	12,633	0
2058	129,836	0	330	298	0	0	0	2,643	7,630	0	0	20,934	13,064	0
2059	132,018	0	330	298	0	0	0	2,643	7,630	0	0	21,214	13,487	0
2060	134,156	0	329	297	0	0	0	2,643	7,630	0	0	21,567	13,911	0

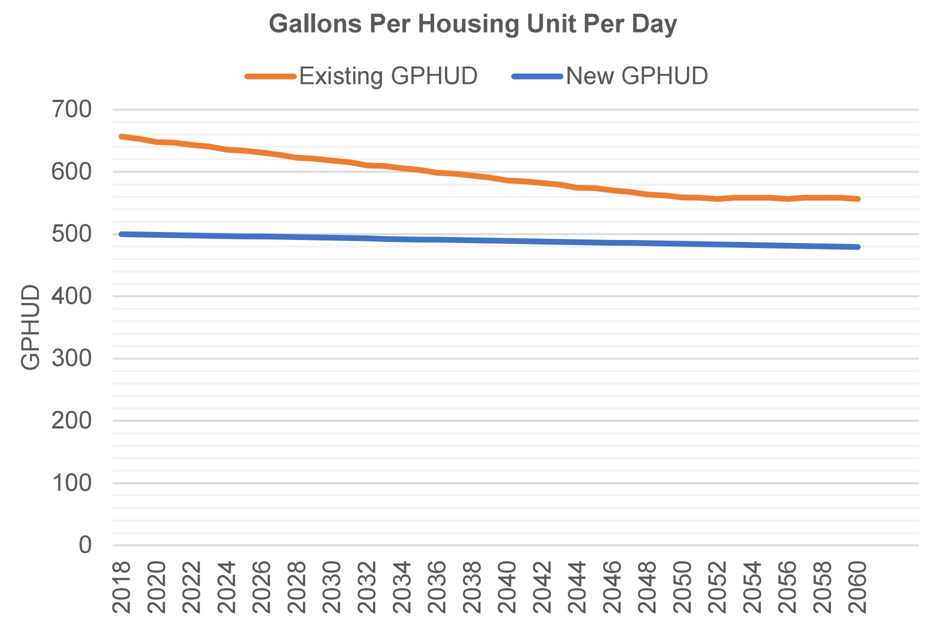
Central Arizona Project Service Area Model

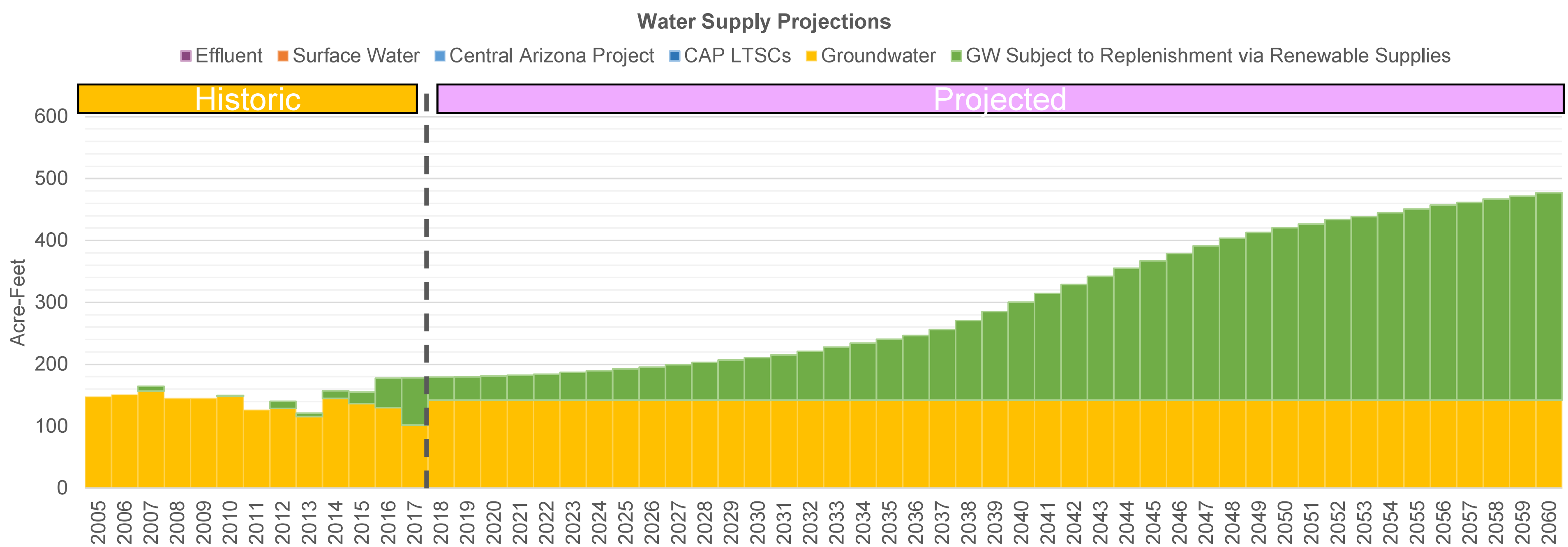
CasaGrande

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

CasaGrande

B. Having it All [EMSBS]

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Demand Assumptions / Water Supply Projections (Acre-Feet)

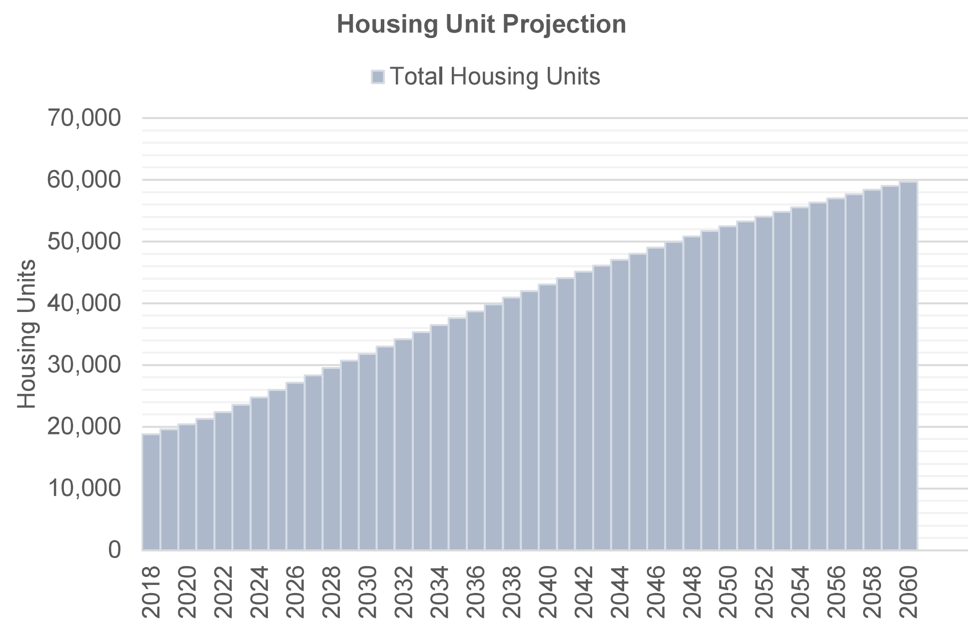
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	245	0	657	500	0	0	0	0	0	0	0	142	37	0
2019	248	0	653	500	0	0	0	0	0	0	0	142	37	0
2020	252	0	648	499	0	0	0	0	0	0	0	142	39	0
2021	256	0	647	499	0	0	0	0	0	0	0	142	40	0
2022	262	0	644	498	0	0	0	0	0	0	0	142	42	0
2023	269	0	640	498	0	0	0	0	0	0	0	142	44	0
2024	275	0	635	497	0	0	0	0	0	0	0	142	47	0
2025	282	0	634	497	0	0	0	0	0	0	0	142	50	0
2026	290	0	631	496	0	0	0	0	0	0	0	142	53	0
2027	299	0	628	496	0	0	0	0	0	0	0	142	57	0
2028	307	0	623	495	0	0	0	0	0	0	0	142	61	0
2029	316	0	621	495	0	0	0	0	0	0	0	142	65	0
2030	324	0	618	494	0	0	0	0	0	0	0	142	69	0
2031	335	0	615	494	0	0	0	0	0	0	0	142	73	0
2032	348	0	610	493	0	0	0	0	0	0	0	142	79	0
2033	362	0	609	493	0	0	0	0	0	0	0	142	85	0
2034	375	0	606	492	0	0	0	0	0	0	0	142	92	0
2035	388	0	603	492	0	0	0	0	0	0	0	142	98	0
2036	400	0	598	491	0	0	0	0	0	0	0	142	104	0
2037	427	0	597	491	0	0	0	0	0	0	0	142	114	0
2038	456	0	594	490	0	0	0	0	0	0	0	142	128	0
2039	484	0	591	490	0	0	0	0	0	0	0	142	143	0
2040	513	0	586	489	0	0	0	0	0	0	0	142	158	0
2041	541	0	585	489	0	0	0	0	0	0	0	142	172	0
2042	568	0	582	488	0	0	0	0	0	0	0	142	186	0
2043	593	0	579	488	0	0	0	0	0	0	0	142	200	0
2044	618	0	575	487	0	0	0	0	0	0	0	142	213	0
2045	642	0	574	487	0	0	0	0	0	0	0	142	225	0
2046	666	0	571	486	0	0	0	0	0	0	0	142	237	0
2047	690	0	568	486	0	0	0	0	0	0	0	142	249	0
2048	713	0	563	485	0	0	0	0	0	0	0	142	261	0
2049	731	0	562	485	0	0	0	0	0	0	0	142	271	0
2050	744	0	559	484	0	0	0	0	0	0	0	142	278	0
2051	756	0	558	484	0	0	0	0	0	0	0	142	284	0
2052	768	0	557	483	0	0	0	0	0	0	0	142	291	0
2053	779	0	558	483	0	0	0	0	0	0	0	142	296	0
2054	791	0	558	482	0	0	0	0	0	0	0	142	302	0
2055	802	0	558	482	0	0	0	0	0	0	0	142	308	0
2056	813	0	557	481	0	0	0	0	0	0	0	142	315	0
2057	823	0	558	481	0	0	0	0	0	0	0	142	319	0
2058	833	0	558	480	0	0	0	0	0	0	0	142	324	0
2059	842	0	558	480	0	0	0	0	0	0	0	142	329	0
2060	852	0	557	479	0	0	0	0	0	0	0	142	335	0

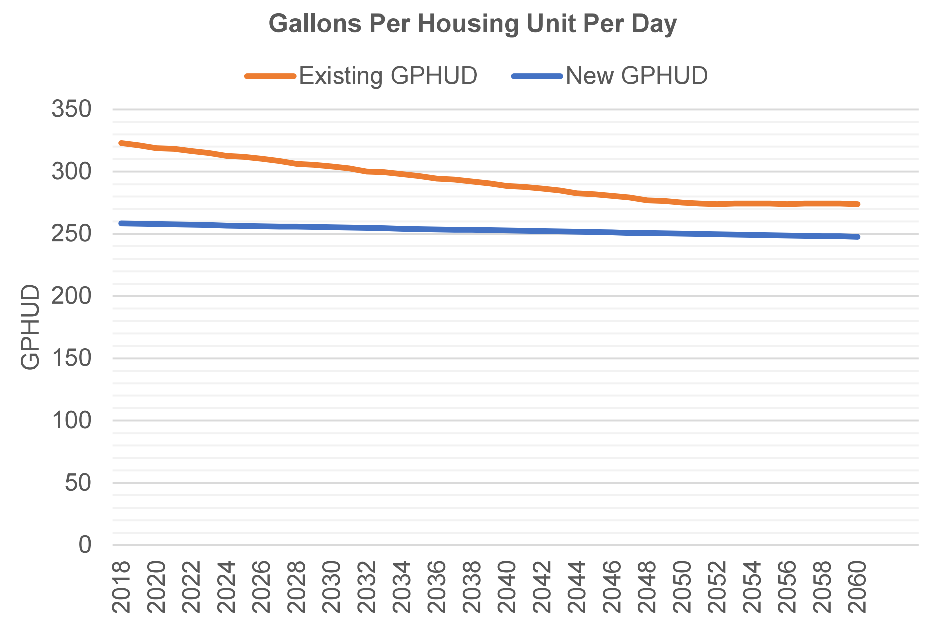
Central Arizona Project Service Area Model

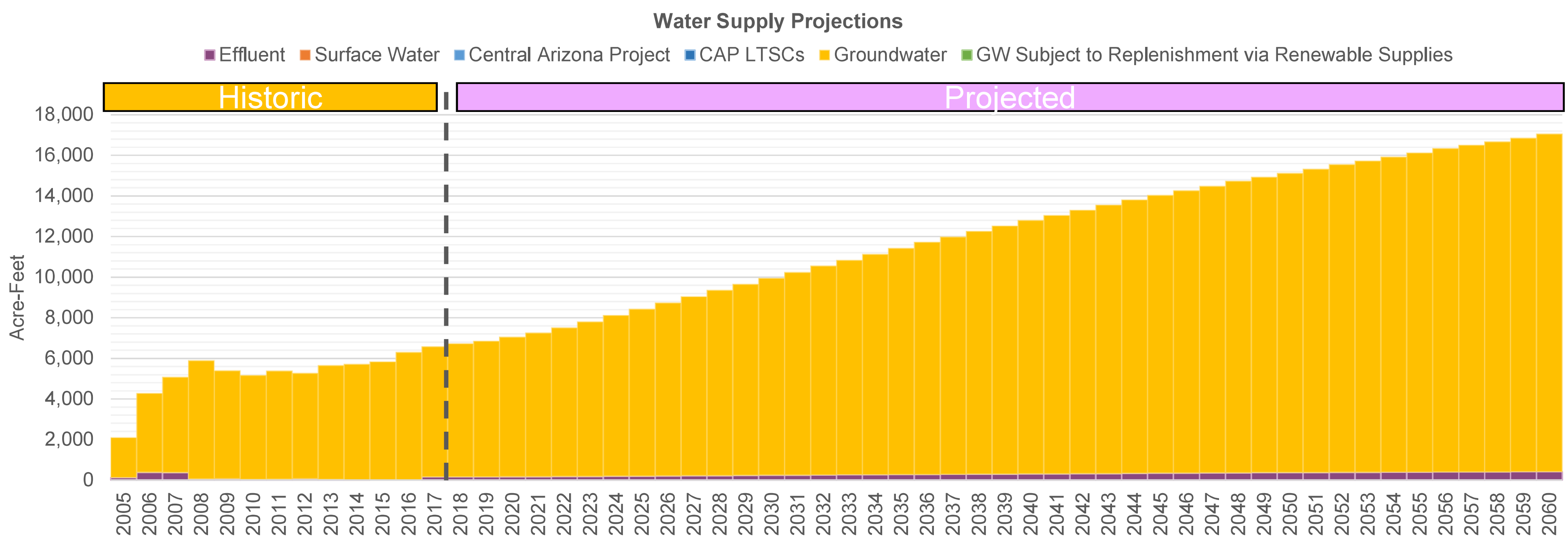
GlobalSantaCruzW(

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







GlobalSantaCru

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

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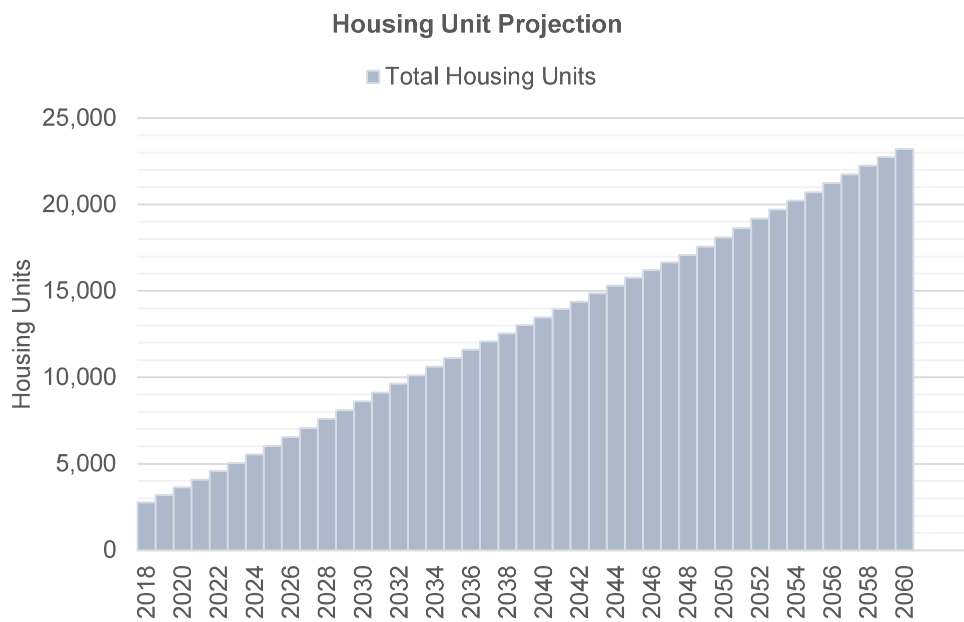
Date	Demand Assumptions: Housing Units Total	Housing Units SRP	GPHUD Existing	GPHUD New	Water Supply Projections (Acre-Feet): Effluent	Surface Water SRP	Surface Water Non-SRP	Central Arizona Project Direct	CAP ASR	CAP Storage	CAP Recovery	Groundwater Non-Repl.	Groundwater Replenished	Unknown
2018	18,779	0	323	258	167	0	0	0	0	0	0	6,558	0	0
2019	19,558	0	321	258	167	0	0	0	0	0	0	6,682	0	0
2020	20,387	0	319	258	170	0	0	0	0	0	0	6,879	0	0
2021	21,245	0	318	258	175	0	0	0	0	0	0	7,083	0	0
2022	22,371	0	317	257	180	0	0	0	0	0	0	7,330	0	0
2023	23,555	0	315	257	186	0	0	0	0	0	0	7,623	0	0
2024	24,745	0	312	257	194	0	0	0	0	0	0	7,927	0	0
2025	25,937	0	312	257	202	0	0	0	0	0	0	8,223	0	0
2026	27,130	0	310	256	209	0	0	0	0	0	0	8,524	0	0
2027	28,317	0	309	256	217	0	0	0	0	0	0	8,823	0	0
2028	29,497	0	306	256	224	0	0	0	0	0	0	9,128	0	0
2029	30,669	0	306	256	232	0	0	0	0	0	0	9,414	0	0
2030	31,833	0	304	255	240	0	0	0	0	0	0	9,705	0	0
2031	32,999	0	303	255	247	0	0	0	0	0	0	9,996	0	0
2032	34,165	0	300	255	254	0	0	0	0	0	0	10,298	0	0
2033	35,322	0	300	254	262	0	0	0	0	0	0	10,574	0	0
2034	36,469	0	298	254	269	0	0	0	0	0	0	10,859	0	0
2035	37,605	0	297	254	276	0	0	0	0	0	0	11,141	0	0
2036	38,731	0	294	254	284	0	0	0	0	0	0	11,434	0	0
2037	39,827	0	294	253	291	0	0	0	0	0	0	11,691	0	0
2038	40,908	0	292	253	298	0	0	0	0	0	0	11,957	0	0
2039	41,977	0	291	253	304	0	0	0	0	0	0	12,219	0	0
2040	43,035	0	288	253	311	0	0	0	0	0	0	12,495	0	0
2041	44,080	0	288	252	318	0	0	0	0	0	0	12,730	0	0
2042	45,113	0	286	252	324	0	0	0	0	0	0	12,980	0	0
2043	46,105	0	285	252	330	0	0	0	0	0	0	13,223	0	0
2044	47,078	0	283	252	337	0	0	0	0	0	0	13,478	0	0
2045	48,039	0	282	251	343	0	0	0	0	0	0	13,685	0	0
2046	48,986	0	281	251	348	0	0	0	0	0	0	13,911	0	0
2047	49,920	0	279	251	354	0	0	0	0	0	0	14,132	0	0
2048	50,840	0	277	251	360	0	0	0	0	0	0	14,374	0	0
2049	51,706	0	276	250	366	0	0	0	0	0	0	14,556	0	0
2050	52,501	0	275	250	371	0	0	0	0	0	0	14,746	0	0
2051	53,284	0	274	250	375	0	0	0	0	0	0	14,941	0	0
2052	54,054	0	274	250	380	0	0	0	0	0	0	15,171	0	0
2053	54,811	0	274	249	386	0	0	0	0	0	0	15,341	0	0
2054	55,555	0	274	249	391	0	0	0	0	0	0	15,536	0	0
2055	56,285	0	274	249	396	0	0	0	0	0	0	15,726	0	0
2056	56,997	0	274	249	400	0	0	0	0	0	0	15,941	0	0
2057	57,689	0	274	248	406	0	0	0	0	0	0	16,091	0	0
2058	58,368	0	274	248	410	0	0	0	0	0	0	16,267	0	0
2059	59,033	0	274	248	414	0	0	0	0	0	0	16,438	0	0
2060	59,686	0	274	248	418	0	0	0	0	0	0	16,637	0	0

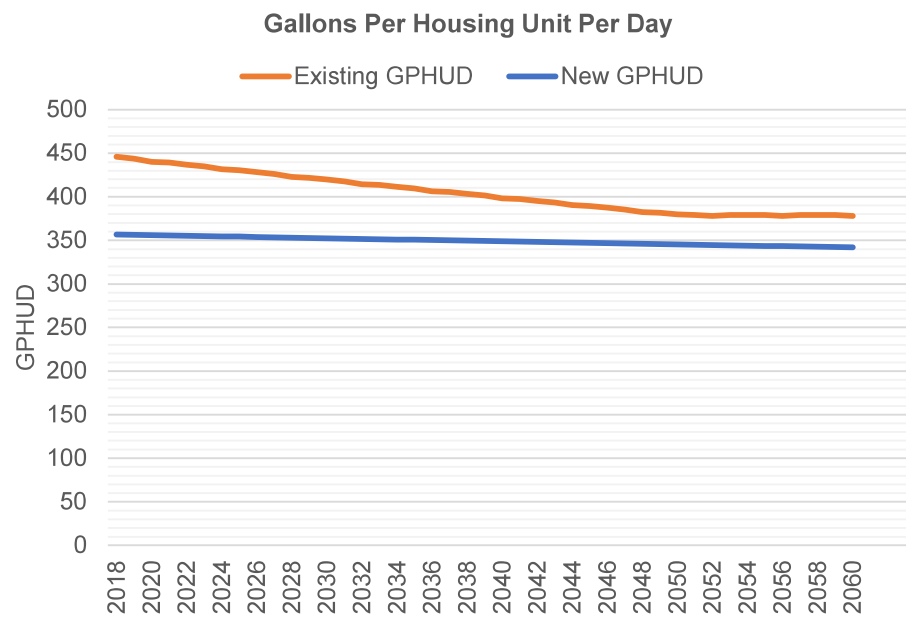
Central Arizona Project Service Area Model

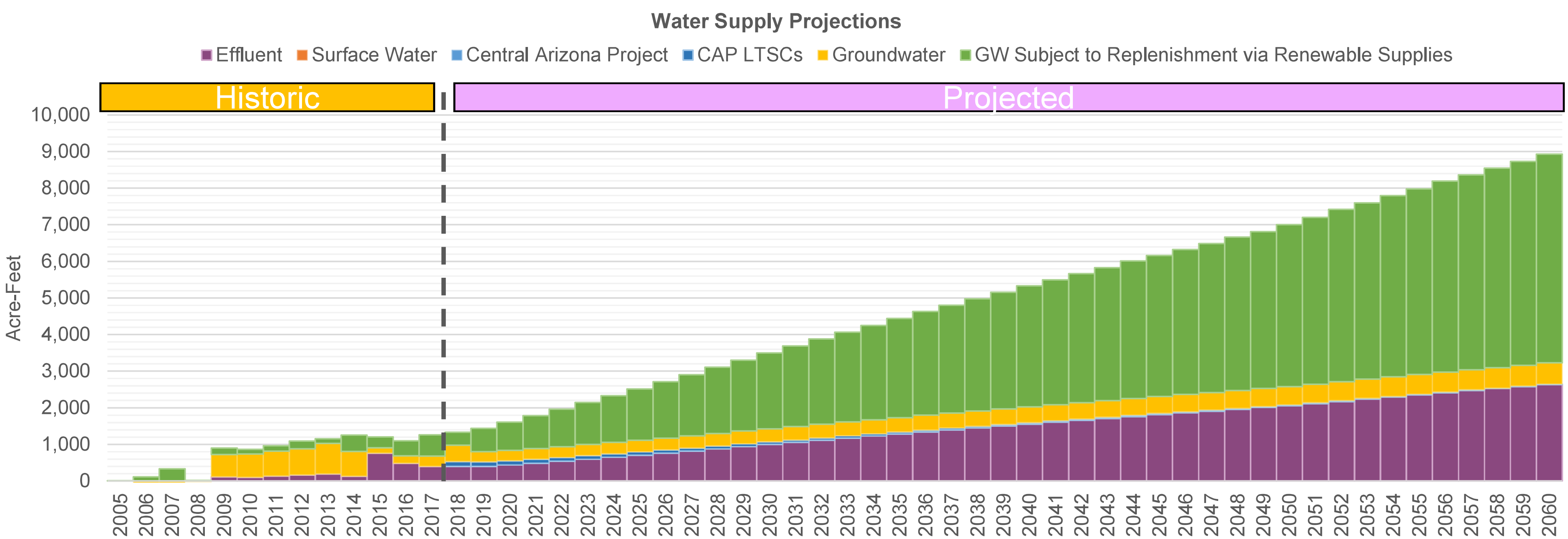
EPCOR-San Tan

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







EPCOR-San Ta

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

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Demand Assumptions | **Water Supply Projections** (Acre-Feet)

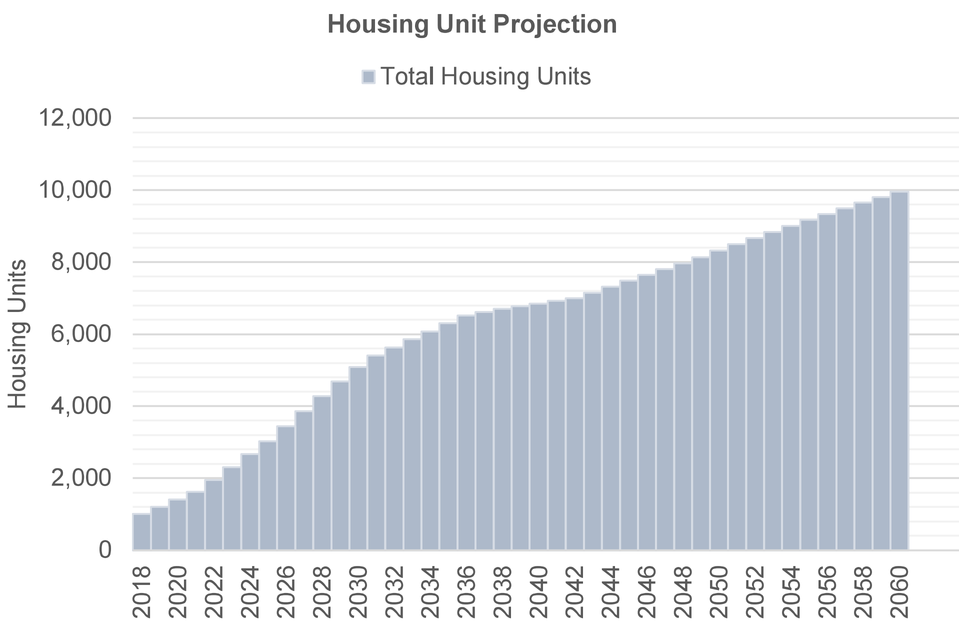
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	2,768	0	446	357	402	0	0	0	0	0	134	443	353	0
2019	3,187	0	444	356	402	0	0	0	0	0	127	278	635	0
2020	3,634	0	440	356	435	0	0	0	0	0	121	283	771	0
2021	4,095	0	439	356	486	0	0	0	0	0	115	289	893	0
2022	4,573	0	437	355	538	0	0	0	0	0	109	296	1,020	0
2023	5,055	0	435	355	592	0	0	0	0	0	103	304	1,148	0
2024	5,540	0	431	355	648	0	0	0	0	0	98	311	1,277	0
2025	6,027	0	430	354	704	0	0	0	0	0	93	318	1,401	0
2026	6,547	0	428	354	760	0	0	0	0	0	89	326	1,535	0
2027	7,069	0	426	353	817	0	0	0	0	0	84	333	1,673	0
2028	7,588	0	423	353	877	0	0	0	0	0	80	341	1,812	0
2029	8,103	0	422	353	939	0	0	0	0	0	76	349	1,937	0
2030	8,615	0	420	352	996	0	0	0	0	0	72	357	2,071	0
2031	9,123	0	418	352	1,055	0	0	0	0	0	69	365	2,200	0
2032	9,626	0	414	352	1,113	0	0	0	0	0	65	373	2,336	0
2033	10,125	0	414	351	1,173	0	0	0	0	0	62	380	2,453	0
2034	10,620	0	411	351	1,228	0	0	0	0	0	59	388	2,580	0
2035	11,111	0	409	351	1,284	0	0	0	0	0	56	395	2,704	0
2036	11,597	0	406	350	1,340	0	0	0	0	0	53	403	2,836	0
2037	12,075	0	405	350	1,398	0	0	0	0	0	50	410	2,943	0
2038	12,548	0	403	350	1,449	0	0	0	0	0	48	417	3,064	0
2039	13,015	0	401	349	1,502	0	0	0	0	0	46	424	3,180	0
2040	13,478	0	398	349	1,555	0	0	0	0	0	43	431	3,306	0
2041	13,935	0	397	349	1,610	0	0	0	0	0	41	438	3,404	0
2042	14,386	0	395	348	1,658	0	0	0	0	0	39	445	3,519	0
2043	14,848	0	393	348	1,708	0	0	0	0	0	37	451	3,632	0
2044	15,307	0	390	348	1,759	0	0	0	0	0	35	458	3,758	0
2045	15,760	0	389	347	1,814	0	0	0	0	0	33	465	3,851	0
2046	16,206	0	387	347	1,860	0	0	0	0	0	32	472	3,964	0
2047	16,647	0	386	346	1,910	0	0	0	0	0	30	478	4,071	0
2048	17,081	0	383	346	1,958	0	0	0	0	0	29	485	4,191	0
2049	17,562	0	382	346	2,011	0	0	0	0	0	27	492	4,284	0
2050	18,111	0	380	345	2,056	0	0	0	0	0	26	498	4,422	0
2051	18,651	0	379	345	2,113	0	0	0	0	0	25	505	4,561	0
2052	19,183	0	378	345	2,174	0	0	0	0	0	23	513	4,711	0
2053	19,705	0	379	344	2,240	0	0	0	0	0	22	522	4,818	0
2054	20,219	0	379	344	2,294	0	0	0	0	0	21	529	4,951	0
2055	20,723	0	379	344	2,352	0	0	0	0	0	20	537	5,075	0
2056	21,231	0	378	343	2,410	0	0	0	0	0	19	544	5,218	0
2057	21,742	0	379	343	2,472	0	0	0	0	0	18	553	5,318	0
2058	22,243	0	379	343	2,523	0	0	0	0	0	17	559	5,448	0
2059	22,734	0	379	342	2,580	0	0	0	0	0	16	567	5,568	0
2060	23,216	0	378	342	2,635	0	0	0	0	0	15	574	5,706	0

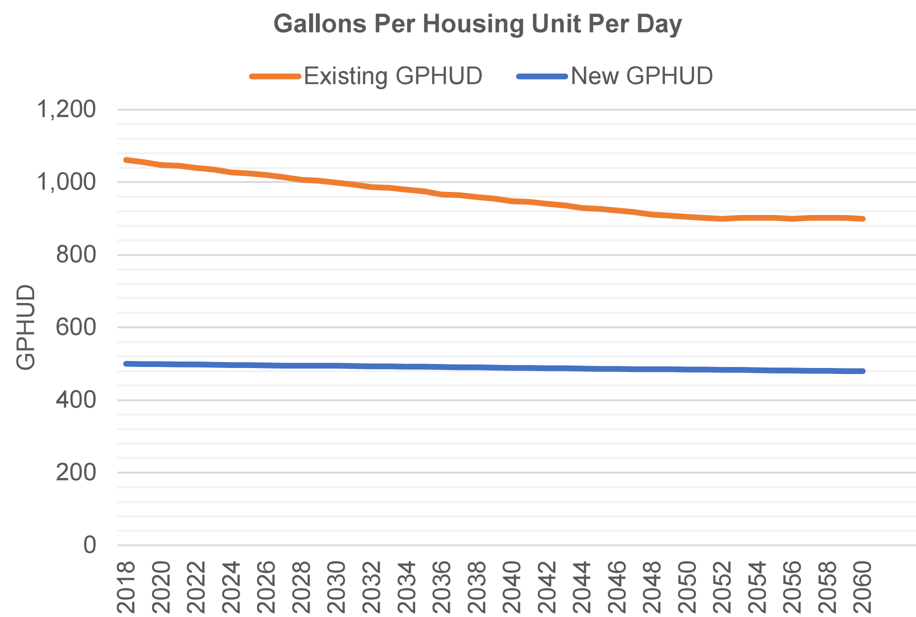
Central Arizona Project Service Area Model

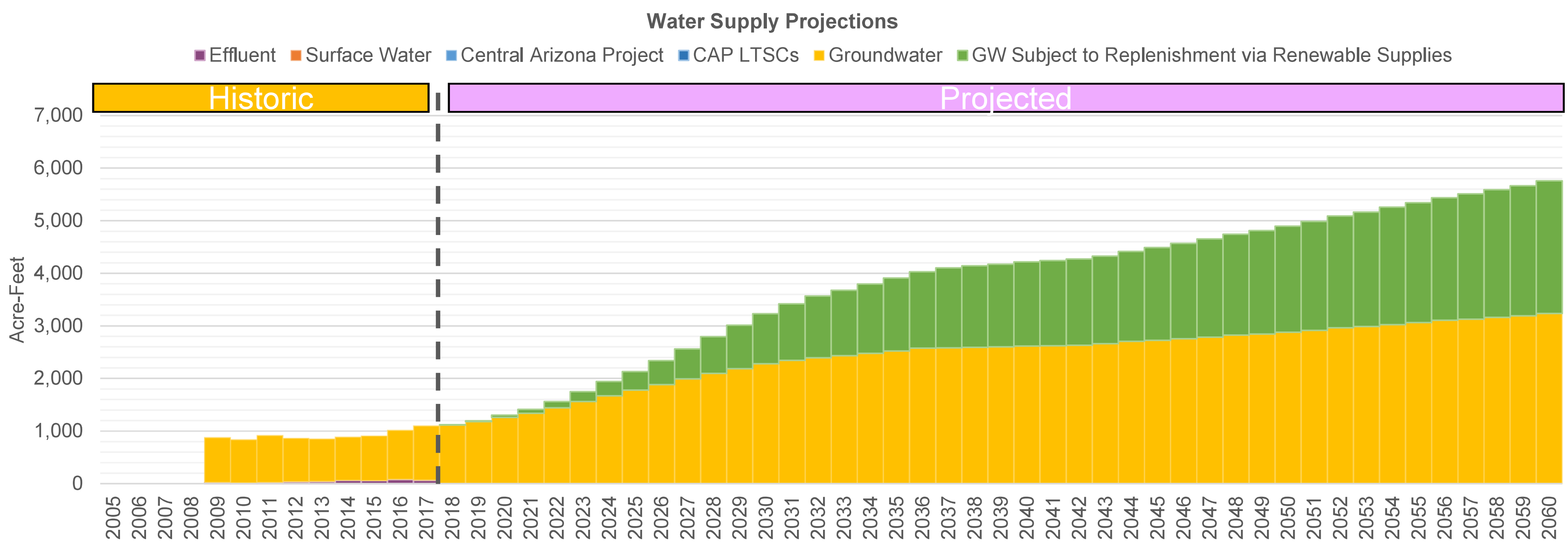
PicachoWC

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







PicachoWC

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

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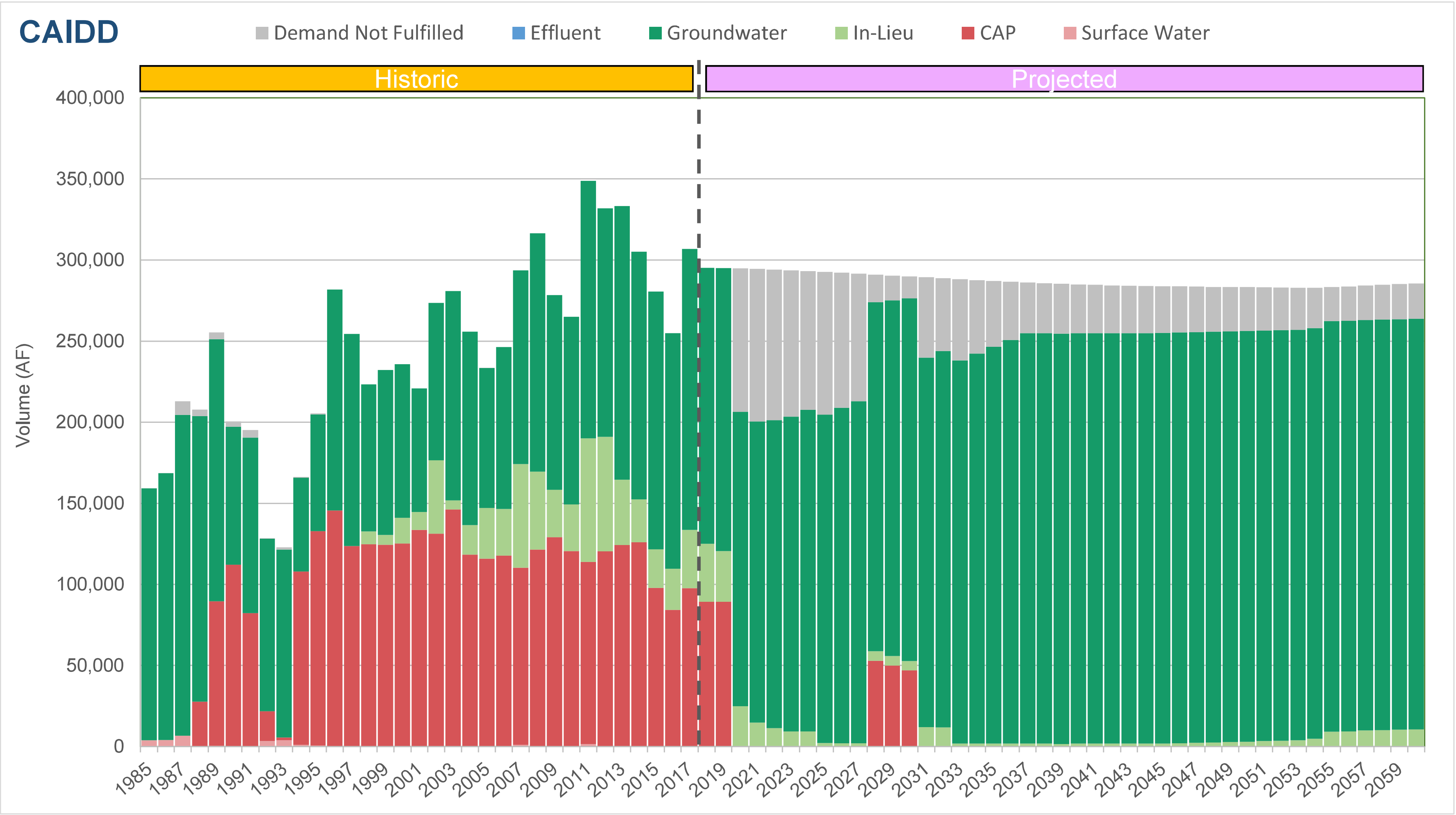
Demand Assumptions / Water Supply Projections (Acre-Feet)

Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	1,006	0	1,061	500	0	0	0	0	0	0	0	1,117	8	0
2019	1,202	0	1,056	500	0	0	0	0	0	0	0	1,179	16	0
2020	1,410	0	1,048	499	0	0	0	0	0	0	0	1,259	45	0
2021	1,625	0	1,045	499	0	0	0	0	0	0	0	1,340	75	0
2022	1,957	0	1,040	498	0	0	0	0	0	0	0	1,444	118	0
2023	2,313	0	1,035	498	0	0	0	0	0	0	0	1,564	184	0
2024	2,670	0	1,027	497	0	0	0	0	0	0	0	1,674	269	0
2025	3,029	0	1,024	497	0	0	0	0	0	0	0	1,780	354	0
2026	3,442	0	1,019	496	0	0	0	0	0	0	0	1,887	455	0
2027	3,859	0	1,014	496	0	0	0	0	0	0	0	1,995	571	0
2028	4,274	0	1,006	495	0	0	0	0	0	0	0	2,097	697	0
2029	4,686	0	1,004	495	0	0	0	0	0	0	0	2,188	823	0
2030	5,095	0	999	494	0	0	0	0	0	0	0	2,280	951	0
2031	5,405	0	994	494	0	0	0	0	0	0	0	2,344	1,078	0
2032	5,632	0	986	493	0	0	0	0	0	0	0	2,396	1,175	0
2033	5,857	0	984	493	0	0	0	0	0	0	0	2,435	1,245	0
2034	6,081	0	979	492	0	0	0	0	0	0	0	2,482	1,315	0
2035	6,302	0	974	492	0	0	0	0	0	0	0	2,527	1,384	0
2036	6,521	0	967	491	0	0	0	0	0	0	0	2,580	1,453	0
2037	6,620	0	965	491	0	0	0	0	0	0	0	2,583	1,520	0
2038	6,697	0	960	490	0	0	0	0	0	0	0	2,593	1,551	0
2039	6,773	0	955	490	0	0	0	0	0	0	0	2,603	1,575	0
2040	6,848	0	948	489	0	0	0	0	0	0	0	2,621	1,598	0
2041	6,923	0	945	489	0	0	0	0	0	0	0	2,622	1,621	0
2042	6,997	0	941	488	0	0	0	0	0	0	0	2,632	1,644	0
2043	7,150	0	936	488	0	0	0	0	0	0	0	2,663	1,667	0
2044	7,318	0	929	487	0	0	0	0	0	0	0	2,705	1,714	0
2045	7,484	0	927	487	0	0	0	0	0	0	0	2,726	1,766	0
2046	7,647	0	922	486	0	0	0	0	0	0	0	2,757	1,816	0
2047	7,809	0	917	486	0	0	0	0	0	0	0	2,787	1,866	0
2048	7,967	0	910	485	0	0	0	0	0	0	0	2,826	1,916	0
2049	8,135	0	908	485	0	0	0	0	0	0	0	2,848	1,964	0
2050	8,316	0	904	484	0	0	0	0	0	0	0	2,882	2,015	0
2051	8,493	0	902	484	0	0	0	0	0	0	0	2,918	2,071	0
2052	8,668	0	899	483	0	0	0	0	0	0	0	2,967	2,125	0
2053	8,839	0	902	483	0	0	0	0	0	0	0	2,992	2,178	0
2054	9,008	0	902	482	0	0	0	0	0	0	0	3,027	2,230	0
2055	9,174	0	902	482	0	0	0	0	0	0	0	3,062	2,281	0
2056	9,337	0	899	481	0	0	0	0	0	0	0	3,108	2,332	0
2057	9,497	0	902	481	0	0	0	0	0	0	0	3,129	2,381	0
2058	9,654	0	902	480	0	0	0	0	0	0	0	3,161	2,429	0
2059	9,808	0	902	480	0	0	0	0	0	0	0	3,193	2,477	0
2060	9,959	0	899	479	0	0	0	0	0	0	0	3,237	2,523	0

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



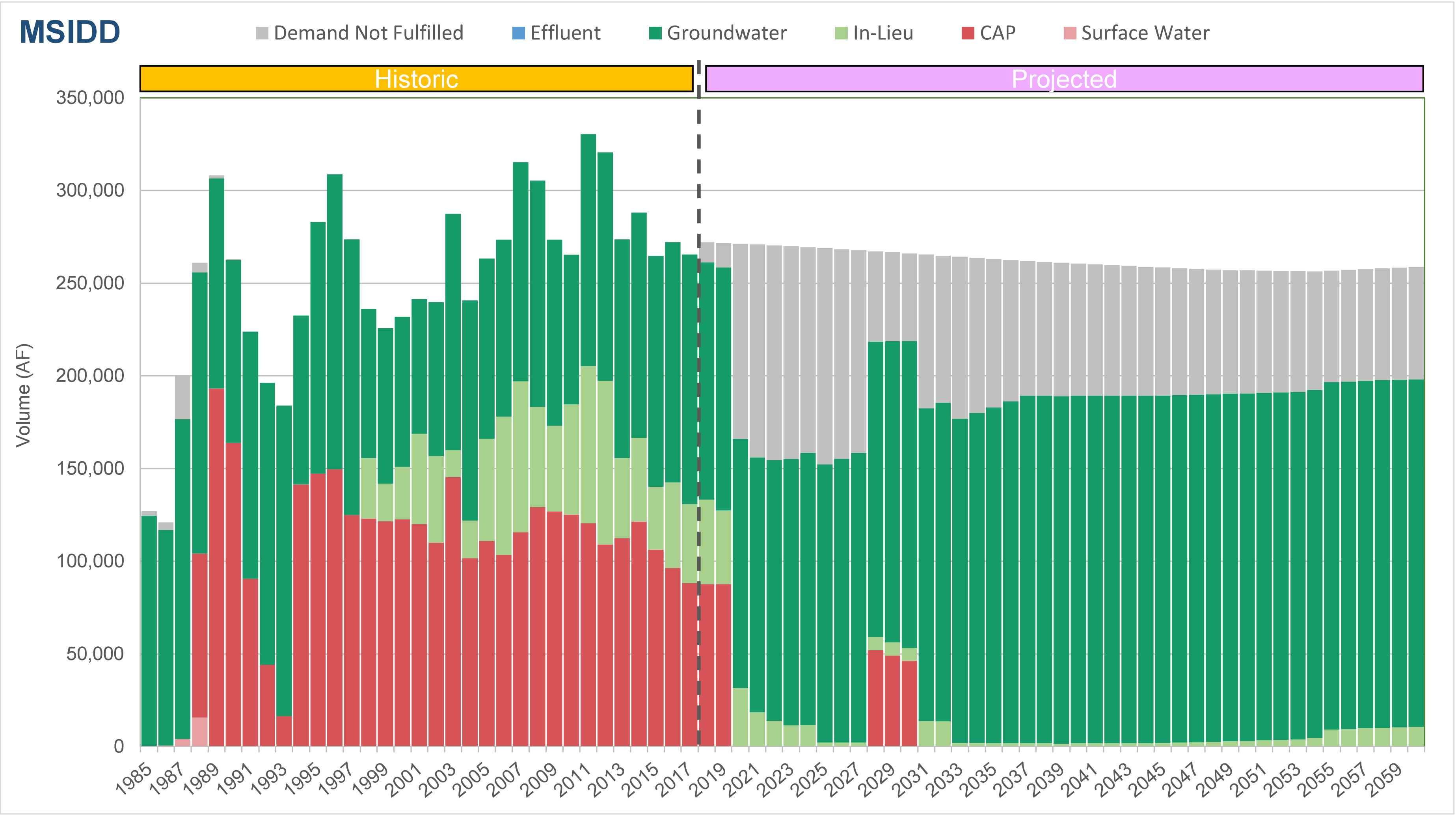
CAIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	89,222	35,873	170,107	0
2019	0	0	89,223	31,232	174,568	0
2020	0	0	0	24,974	181,406	88,451
2021	0	0	0	14,851	185,625	94,170
2022	0	0	0	11,298	189,843	93,063
2023	0	0	0	9,345	194,062	90,304
2024	0	0	0	9,344	198,281	85,584
2025	0	0	0	2,195	202,499	88,030
2026	0	0	0	2,128	206,718	83,310
2027	0	0	0	2,061	210,937	78,584
2028	0	0	52,928	5,907	215,156	17,009
2029	0	0	49,981	5,840	219,374	15,253
2030	0	0	47,008	5,773	223,593	13,509
2031	0	0	0	12,030	227,812	49,481
2032	0	0	0	11,851	232,031	44,865
2033	0	0	0	1,861	236,249	50,103
2034	0	0	0	1,861	240,468	45,335
2035	0	0	0	1,861	244,687	40,572
2036	0	0	0	1,861	248,906	35,788
2037	0	0	0	1,861	253,124	31,184
2038	0	0	0	1,861	253,124	30,799
2039	0	0	0	1,526	253,124	30,753
2040	0	0	0	1,861	253,124	30,009
2041	0	0	0	1,861	253,124	29,665
2042	0	0	0	1,861	253,124	29,293
2043	0	0	0	1,861	253,124	29,128
2044	0	0	0	1,861	253,124	28,970
2045	0	0	0	1,903	253,124	28,843
2046	0	0	0	2,145	253,124	28,481
2047	0	0	0	2,382	253,124	28,123
2048	0	0	0	2,629	253,124	27,716
2049	0	0	0	2,849	253,124	27,421
2050	0	0	0	3,090	253,124	27,069
2051	0	0	0	3,336	253,124	26,713
2052	0	0	0	3,600	253,124	26,292
2053	0	0	0	3,837	253,124	25,992
2054	0	0	0	4,854	253,124	24,865
2055	0	0	0	9,218	253,124	20,958
2056	0	0	0	9,364	253,124	21,221
2057	0	0	0	9,909	253,124	21,184
2058	0	0	0	10,151	253,124	21,400
2059	0	0	0	10,386	253,124	21,624
2060	0	0	0	10,633	253,124	21,784

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



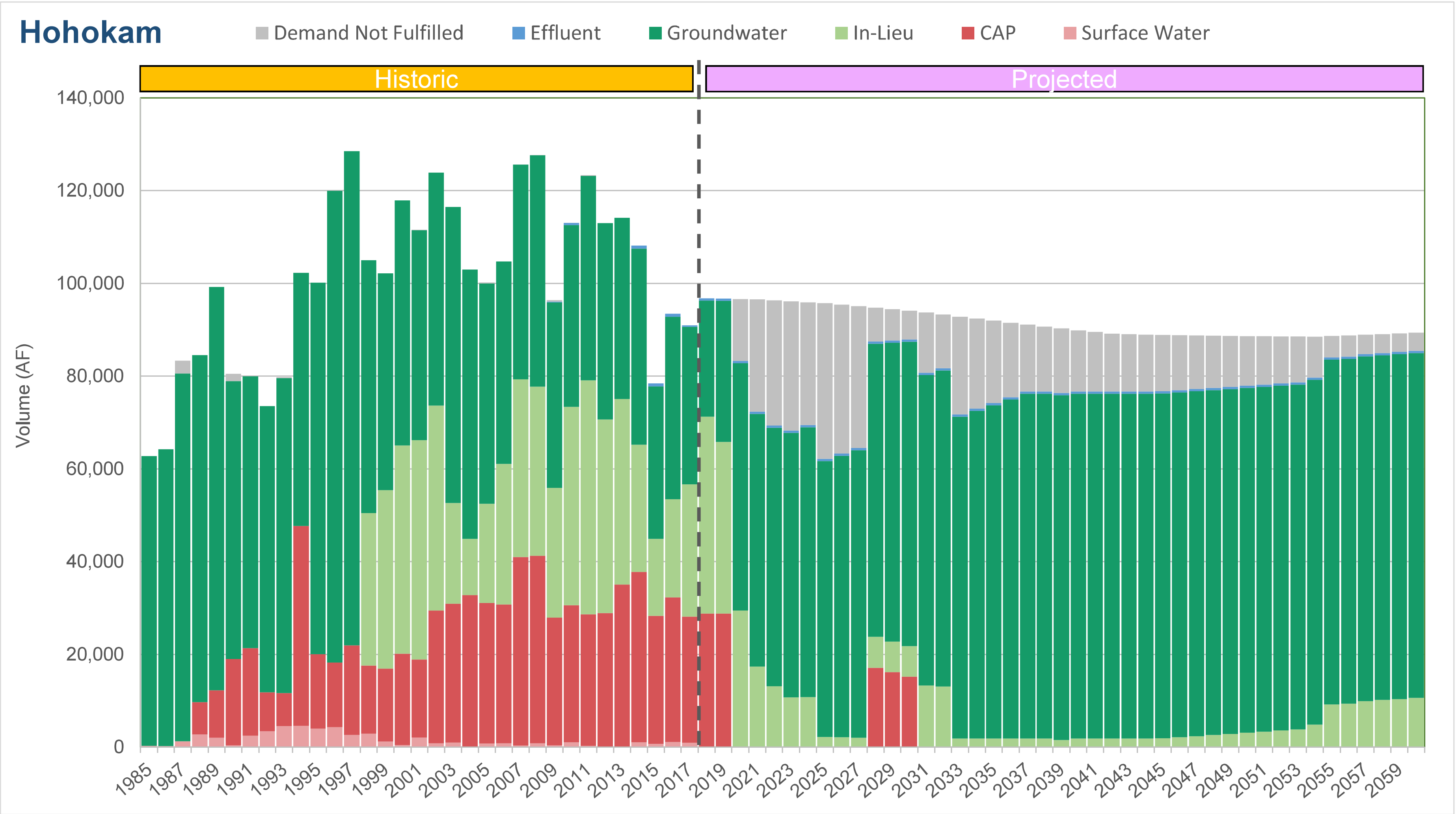
MSIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	87,706	45,484	128,120	10,744
2019	0	0	87,707	39,630	131,244	13,107
2020	0	0	0	31,628	134,369	105,304
2021	0	0	0	18,476	137,494	114,943
2022	0	0	0	13,897	140,619	115,923
2023	0	0	0	11,391	143,744	114,815
2024	0	0	0	11,496	146,869	111,088
2025	0	0	0	2,243	149,994	116,732
2026	0	0	0	2,204	153,119	113,067
2027	0	0	0	2,132	156,243	109,431
2028	0	0	52,028	7,164	159,368	48,650
2029	0	0	49,131	7,098	162,493	47,924
2030	0	0	46,209	7,031	165,618	47,213
2031	0	0	0	13,779	168,743	82,955
2032	0	0	0	13,551	171,868	79,436
2033	0	0	0	1,914	174,993	87,364
2034	0	0	0	1,911	178,118	83,643
2035	0	0	0	1,861	181,242	79,978
2036	0	0	0	1,861	184,367	76,241
2037	0	0	0	1,861	187,492	72,651
2038	0	0	0	1,861	187,492	72,181
2039	0	0	0	1,526	187,492	72,050
2040	0	0	0	1,861	187,492	71,230
2041	0	0	0	1,861	187,492	70,802
2042	0	0	0	1,861	187,492	70,350
2043	0	0	0	1,861	187,492	69,929
2044	0	0	0	1,861	187,492	69,485
2045	0	0	0	1,903	187,492	69,067
2046	0	0	0	2,145	187,492	68,422
2047	0	0	0	2,382	187,492	67,788
2048	0	0	0	2,629	187,492	67,112
2049	0	0	0	2,849	187,492	66,648
2050	0	0	0	3,090	187,492	66,283
2051	0	0	0	3,336	187,492	65,914
2052	0	0	0	3,600	187,492	65,486
2053	0	0	0	3,837	187,492	65,168
2054	0	0	0	4,854	187,492	64,029
2055	0	0	0	9,218	187,492	60,057
2056	0	0	0	9,364	187,492	60,273
2057	0	0	0	9,909	187,492	60,192
2058	0	0	0	10,151	187,492	60,372
2059	0	0	0	10,386	187,492	60,557
2060	0	0	0	10,633	187,492	60,684

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



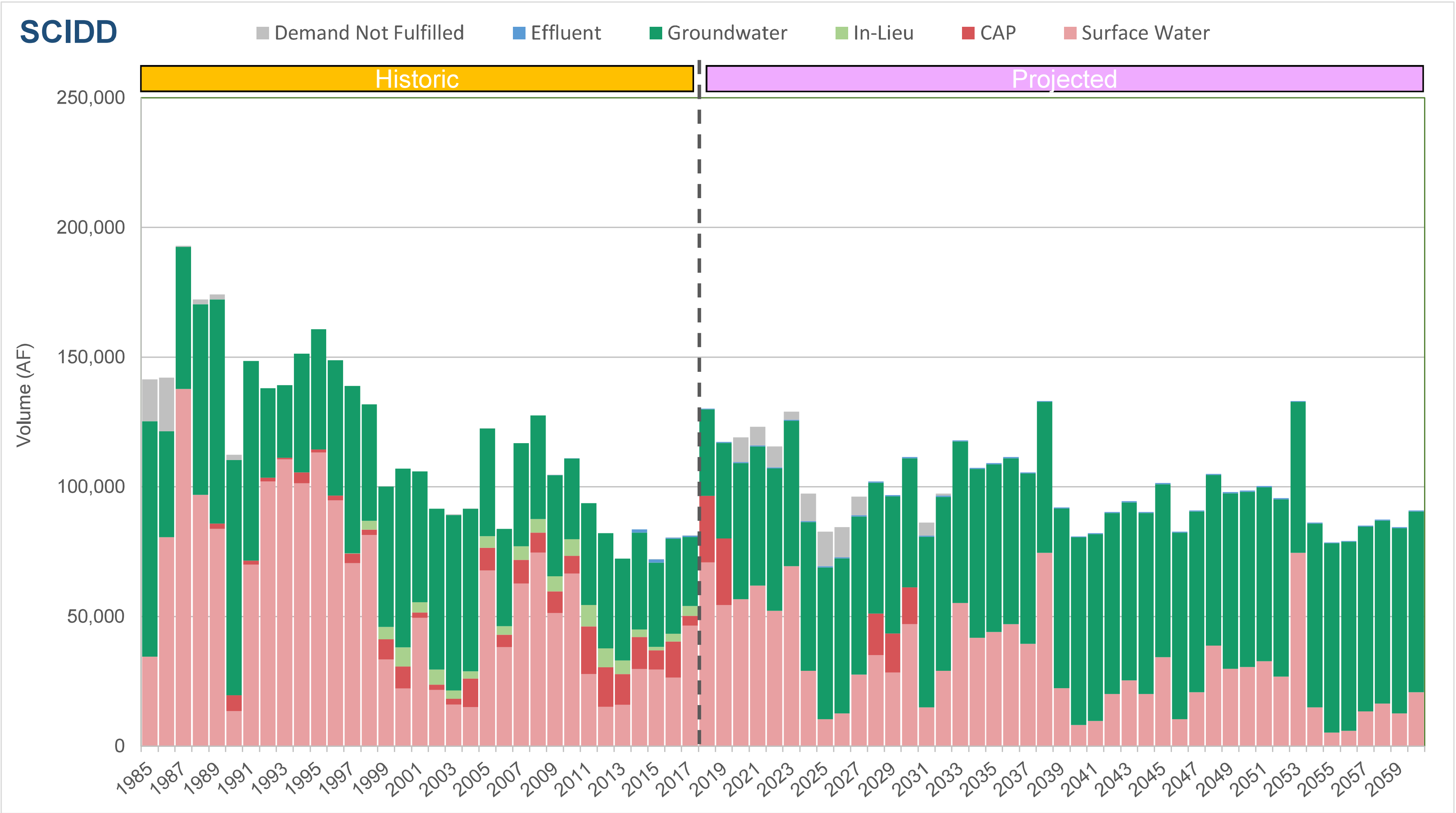
Hohokam

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	490	0	28,837	42,430	25,050	0
2019	490	0	28,837	36,951	30,439	0
2020	490	0	0	29,493	53,280	13,358
2021	490	0	0	17,346	54,519	24,170
2022	490	0	0	13,090	55,758	26,997
2023	490	0	0	10,758	56,997	27,881
2024	490	0	0	10,770	58,236	26,418
2025	490	0	0	2,195	59,475	33,548
2026	490	0	0	2,128	60,714	32,066
2027	490	0	0	2,061	61,954	30,574
2028	490	0	17,106	6,694	63,193	7,274
2029	490	0	16,154	6,628	64,432	6,744
2030	490	0	15,193	6,561	65,671	6,218
2031	490	0	0	13,309	66,910	13,035
2032	490	0	0	13,081	68,149	11,568
2033	490	0	0	1,861	69,388	21,105
2034	490	0	0	1,861	70,627	19,423
2035	490	0	0	1,861	71,866	17,745
2036	490	0	0	1,861	73,105	16,063
2037	490	0	0	1,861	74,344	14,420
2038	490	0	0	1,861	74,344	14,016
2039	490	0	0	1,526	74,344	13,950
2040	490	0	0	1,861	74,344	13,211
2041	490	0	0	1,861	74,344	12,829
2042	490	0	0	1,861	74,344	12,442
2043	490	0	0	1,861	74,344	12,324
2044	490	0	0	1,861	74,344	12,252
2045	490	0	0	1,903	74,344	12,161
2046	490	0	0	2,145	74,344	11,860
2047	490	0	0	2,382	74,344	11,562
2048	490	0	0	2,629	74,344	11,245
2049	490	0	0	2,849	74,344	10,988
2050	490	0	0	3,090	74,344	10,713
2051	490	0	0	3,336	74,344	10,435
2052	490	0	0	3,600	74,344	10,124
2053	490	0	0	3,837	74,344	9,867
2054	490	0	0	4,854	74,344	8,818
2055	490	0	0	9,218	74,344	4,598
2056	490	0	0	9,364	74,344	4,581
2057	490	0	0	9,909	74,344	4,196
2058	490	0	0	10,151	74,344	4,098
2059	490	0	0	10,386	74,344	4,009
2060	490	0	0	10,633	74,344	3,890

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



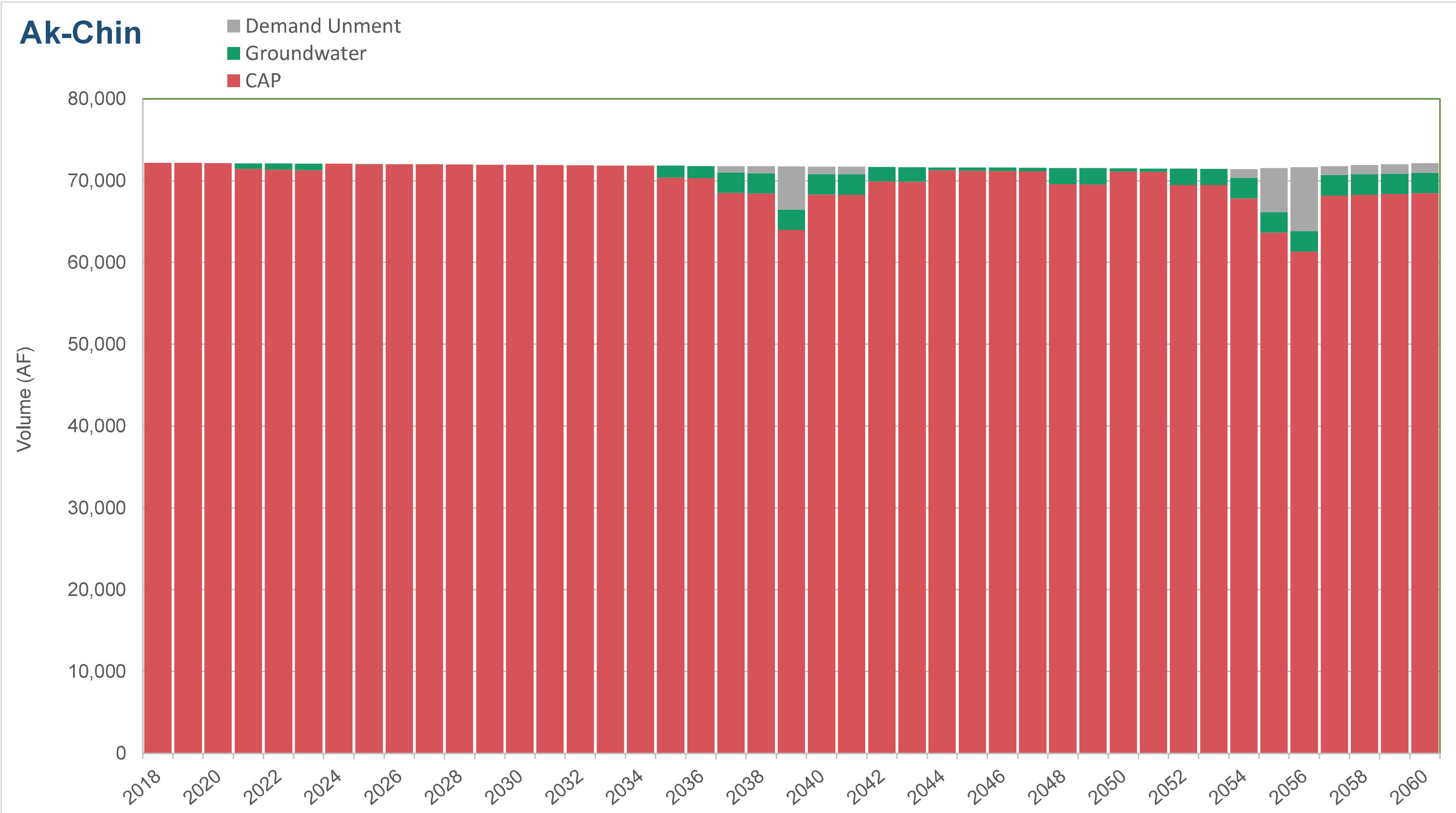
SCIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	410	70,870	25,657	0	33,272	0
2019	410	54,458	25,657	0	36,784	0
2020	410	56,696	0	0	52,442	9,520
2021	410	61,918	0	0	53,662	7,183
2022	410	52,220	0	0	54,882	8,038
2023	410	69,378	0	0	56,101	3,147
2024	410	29,094	0	0	57,321	10,548
2025	410	10,444	0	0	58,540	13,320
2026	410	12,682	0	0	59,760	11,621
2027	410	27,602	0	0	60,980	7,208
2028	410	35,062	16,024	0	50,567	0
2029	410	28,348	15,132	0	52,897	0
2030	410	46,998	14,231	0	49,806	0
2031	410	14,920	0	0	65,858	5,044
2032	410	29,094	0	0	67,078	791
2033	410	55,204	0	0	62,281	0
2034	410	41,776	0	0	65,155	0
2035	410	44,014	0	0	64,676	0
2036	410	46,998	0	0	64,037	0
2037	410	39,538	0	0	65,634	0
2038	410	74,600	0	0	58,131	0
2039	410	22,380	0	0	69,306	0
2040	410	8,206	0	0	72,339	0
2041	410	9,698	0	0	72,020	0
2042	410	20,142	0	0	69,785	0
2043	410	25,364	0	0	68,667	0
2044	410	20,142	0	0	69,785	0
2045	410	34,316	0	0	66,751	0
2046	410	10,444	0	0	71,860	0
2047	410	20,888	0	0	69,625	0
2048	410	38,792	0	0	65,794	0
2049	410	29,840	0	0	67,709	0
2050	410	30,586	0	0	67,550	0
2051	410	32,824	0	0	67,071	0
2052	410	26,856	0	0	68,348	0
2053	410	74,600	0	0	58,131	0
2054	410	14,920	0	0	70,902	0
2055	410	5,222	0	0	72,977	0
2056	410	5,968	0	0	72,818	0
2057	410	13,428	0	0	71,221	0
2058	410	16,412	0	0	70,583	0
2059	410	12,682	0	0	71,381	0
2060	410	20,888	0	0	69,625	0

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



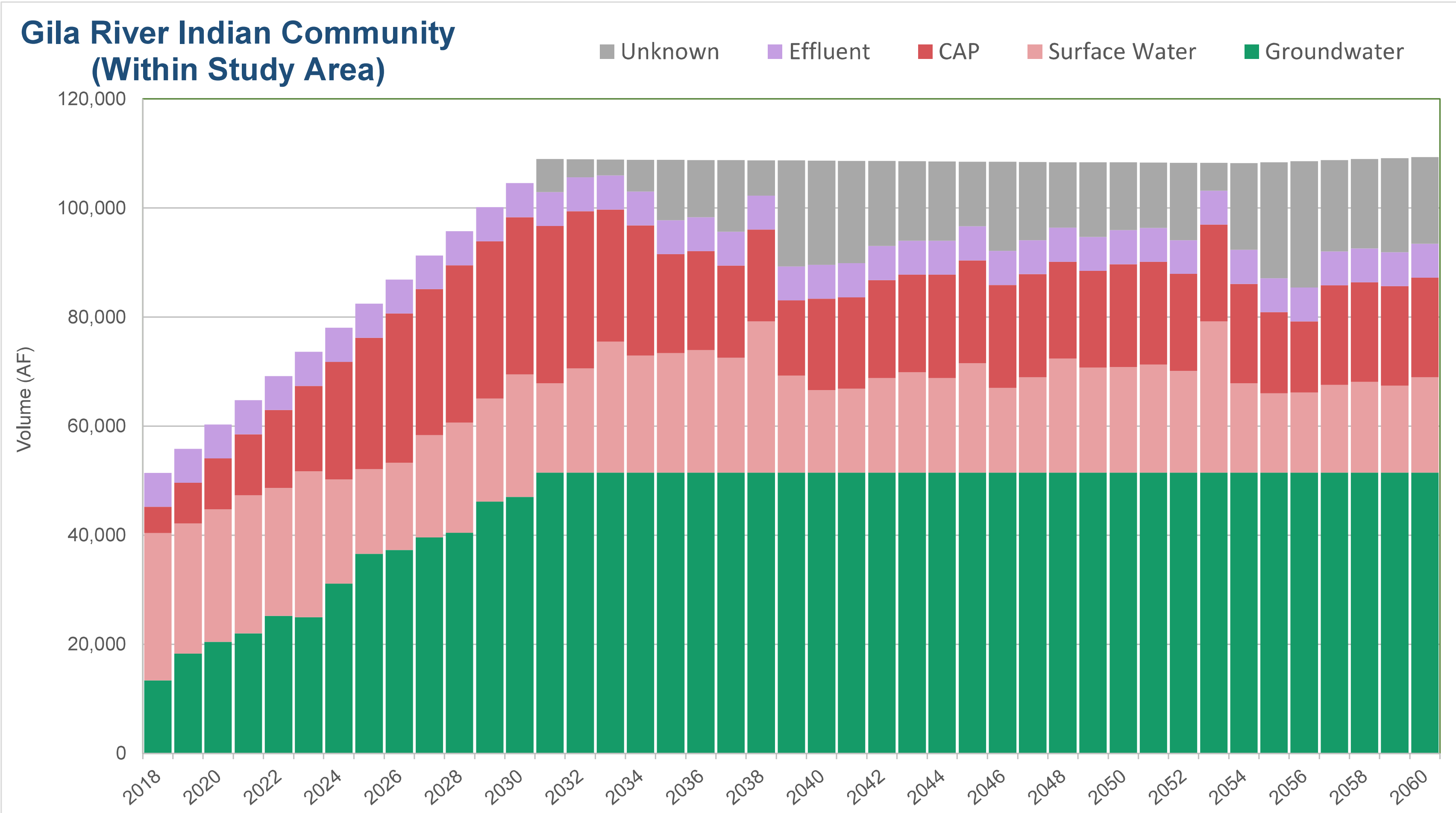
Ak-Chin

Date	Effluent	Surface	CAP	Groundwater	Demand Not Fulfilled	Total
2018	0	0	72,193	0	0	72,193
2019	0	0	72,171	0	0	72,171
2020	0	0	72,149	0	0	72,149
2021	0	0	71,443	685	0	72,128
2022	0	0	71,357	750	0	72,107
2023	0	0	71,272	814	0	72,085
2024	0	0	72,062	0	0	72,062
2025	0	0	72,008	34	0	72,042
2026	0	0	72,021	0	0	72,021
2027	0	0	71,999	0	0	71,999
2028	0	0	71,974	0	0	71,974
2029	0	0	71,956	0	0	71,956
2030	0	0	71,935	0	0	71,935
2031	0	0	71,913	0	0	71,913
2032	0	0	71,887	0	0	71,887
2033	0	0	71,871	0	0	71,871
2034	0	0	71,849	0	0	71,849
2035	0	0	70,383	1,445	0	71,828
2036	0	0	70,311	1,489	0	71,800
2037	0	0	68,497	2,500	788	71,785
2038	0	0	68,434	2,500	829	71,763
2039	0	0	63,990	2,500	5,252	71,742
2040	0	0	68,305	2,500	909	71,713
2041	0	0	68,250	2,500	949	71,699
2042	0	0	69,930	1,748	0	71,678
2043	0	0	69,867	1,790	0	71,656
2044	0	0	71,271	355	0	71,626
2045	0	0	71,210	404	0	71,614
2046	0	0	71,189	404	0	71,592
2047	0	0	71,168	403	0	71,571
2048	0	0	69,557	1,982	0	71,540
2049	0	0	69,547	1,981	0	71,528
2050	0	0	71,105	402	0	71,507
2051	0	0	71,084	402	0	71,486
2052	0	0	69,478	1,975	0	71,453
2053	0	0	69,469	1,974	0	71,443
2054	0	0	67,846	2,500	1,076	71,422
2055	0	0	63,649	2,500	5,394	71,543
2056	0	0	61,323	2,500	7,830	71,652
2057	0	0	68,157	2,500	1,130	71,787
2058	0	0	68,261	2,500	1,148	71,909
2059	0	0	68,365	2,500	1,167	72,031
2060	0	0	68,457	2,500	1,183	72,140

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



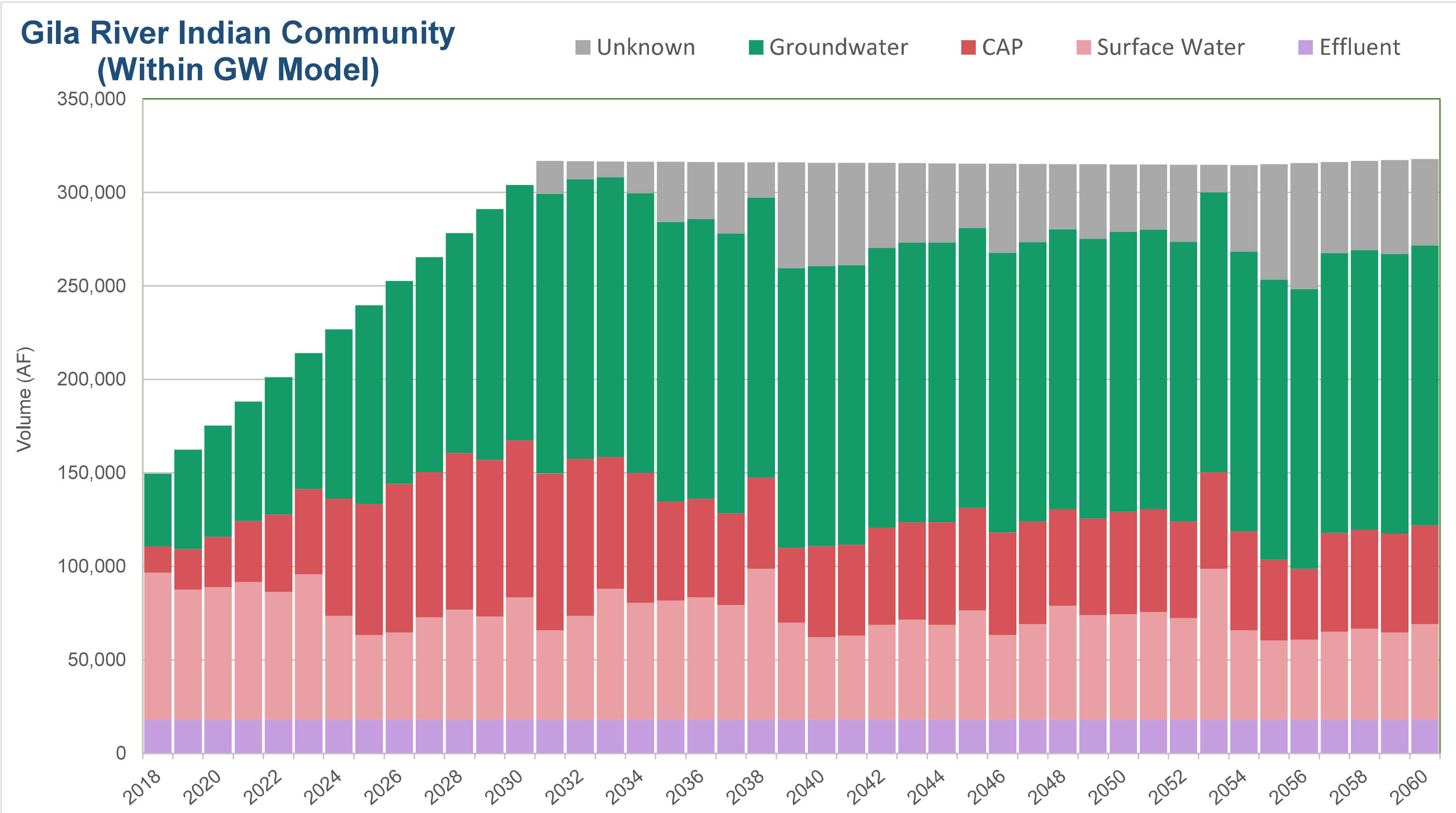
Gila River Indian Community
(Within Study Area)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	6,230	27,003	4,818	13,363	0	51,413
2019	6,230	23,889	7,440	18,296	0	55,856
2020	6,230	24,314	9,317	20,433	0	60,295
2021	6,230	25,305	11,197	22,001	0	64,733
2022	6,230	23,465	14,264	25,208	0	69,167
2023	6,230	26,720	15,668	24,981	0	73,599
2024	6,230	19,078	21,590	31,127	0	78,026
2025	6,230	15,540	24,104	36,581	0	82,455
2026	6,230	15,965	27,381	37,303	0	86,878
2027	6,230	18,795	26,710	39,565	0	91,300
2028	6,230	20,210	28,838	40,435	0	95,714
2029	6,230	18,937	28,838	46,129	0	100,134
2030	6,230	22,474	28,838	47,005	0	104,547
2031	6,230	16,389	28,838	51,471	6,029	108,958
2032	6,230	19,078	28,838	51,471	3,301	108,918
2033	6,230	24,031	24,234	51,471	2,928	108,893
2034	6,230	21,484	23,843	51,471	5,833	108,861
2035	6,230	21,908	18,145	51,471	11,073	108,828
2036	6,230	22,474	18,114	51,471	10,497	108,786
2037	6,230	21,059	16,868	51,471	13,135	108,763
2038	6,230	27,710	16,838	51,471	6,482	108,731
2039	6,230	17,804	13,770	51,471	19,423	108,698
2040	6,230	15,116	16,777	51,471	19,060	108,655
2041	6,230	15,399	16,748	51,471	18,786	108,634
2042	6,230	17,380	17,928	51,471	15,592	108,601
2043	6,230	18,370	17,898	51,471	14,599	108,569
2044	6,230	17,380	18,896	51,471	14,546	108,523
2045	6,230	20,069	18,862	51,471	11,873	108,504
2046	6,230	15,540	18,862	51,471	16,369	108,472
2047	6,230	17,521	18,862	51,471	14,355	108,439
2048	6,230	20,918	17,758	51,471	12,015	108,392
2049	6,230	19,220	17,758	51,471	13,697	108,375
2050	6,230	19,361	18,862	51,471	12,419	108,342
2051	6,230	19,786	18,862	51,471	11,962	108,310
2052	6,230	18,654	17,758	51,471	14,148	108,260
2053	6,230	27,710	17,758	51,471	5,077	108,245
2054	6,230	16,389	18,222	51,471	15,900	108,213
2055	6,230	14,550	14,882	51,471	21,264	108,397
2056	6,230	14,691	13,027	51,471	23,144	108,562
2057	6,230	16,106	18,222	51,471	16,737	108,766
2058	6,230	16,672	18,222	51,471	16,356	108,951
2059	6,230	15,965	18,222	51,471	17,248	109,137
2060	6,230	17,521	18,222	51,471	15,856	109,301

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



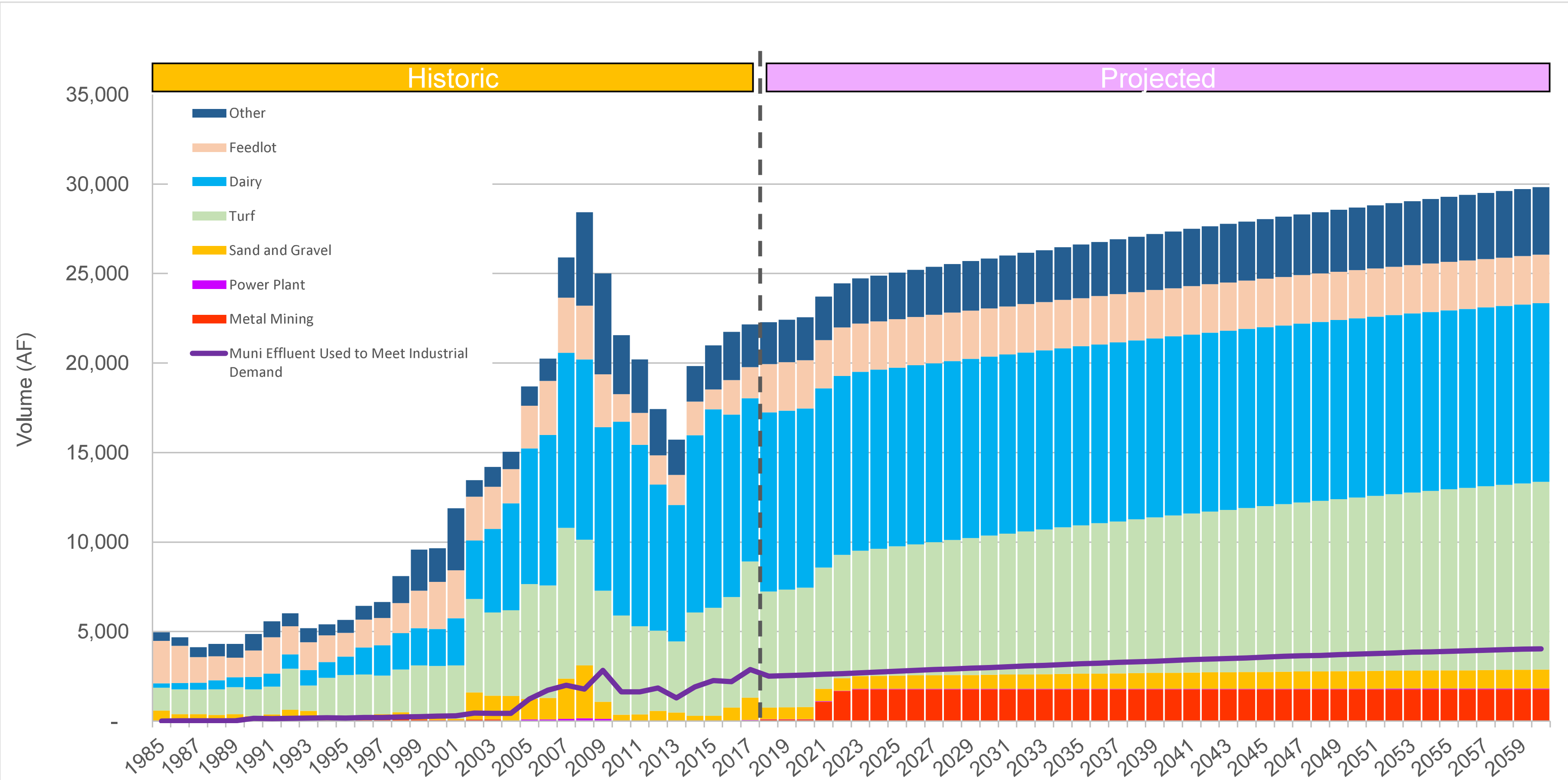
Gila River Indian Community
(Within GW Model)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	18,110	78,496	14,006	38,846	0	149,458
2019	18,110	69,446	21,628	53,187	0	162,371
2020	18,110	70,680	27,086	59,400	0	175,276
2021	18,110	73,560	32,549	63,957	0	188,177
2022	18,110	68,212	41,465	73,280	0	201,067
2023	18,110	77,674	45,548	72,619	0	213,950
2024	18,110	55,459	62,763	90,487	0	226,819
2025	18,110	45,175	70,069	106,340	0	239,694
2026	18,110	46,409	79,595	108,439	0	252,554
2027	18,110	54,637	77,645	115,014	0	265,406
2028	18,110	58,750	83,833	117,544	0	278,237
2029	18,110	55,048	83,833	134,097	0	291,088
2030	18,110	65,332	83,833	136,641	0	303,917
2031	18,110	47,643	83,833	149,625	17,527	316,738
2032	18,110	55,459	83,833	149,625	9,595	316,623
2033	18,110	69,858	70,446	149,625	8,511	316,550
2034	18,110	62,453	69,312	149,625	16,956	316,455
2035	18,110	63,687	52,748	149,625	32,190	316,360
2036	18,110	65,332	52,656	149,625	30,516	316,239
2037	18,110	61,219	49,035	149,625	38,184	316,172
2038	18,110	80,553	48,946	149,625	18,843	316,078
2039	18,110	51,757	40,028	149,625	56,463	315,983
2040	18,110	43,941	48,772	149,625	55,408	315,856
2041	18,110	44,764	48,686	149,625	54,611	315,795
2042	18,110	50,523	52,117	149,625	45,326	315,701
2043	18,110	53,403	52,029	149,625	42,439	315,606
2044	18,110	50,523	54,930	149,625	42,286	315,474
2045	18,110	58,339	54,831	149,625	34,514	315,419
2046	18,110	45,175	54,831	149,625	47,584	315,324
2047	18,110	50,934	54,831	149,625	41,730	315,230
2048	18,110	60,807	51,621	149,625	34,928	315,092
2049	18,110	55,871	51,621	149,625	39,816	315,043
2050	18,110	56,282	54,831	149,625	36,100	314,948
2051	18,110	57,516	54,831	149,625	34,772	314,854
2052	18,110	54,225	51,621	149,625	41,129	314,710
2053	18,110	80,553	51,621	149,625	14,758	314,667
2054	18,110	47,643	52,972	149,625	46,222	314,573
2055	18,110	42,295	43,262	149,625	61,815	315,108
2056	18,110	42,707	37,868	149,625	67,278	315,588
2057	18,110	46,821	52,972	149,625	48,654	316,181
2058	18,110	48,466	52,972	149,625	47,546	316,719
2059	18,110	46,409	52,972	149,625	50,141	317,257
2060	18,110	50,934	52,972	149,625	46,093	317,735

Central Arizona Project Service Area Model

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015



B. Having it All [EMSBS]

Industrial Demand

Date	Metal Mining	Power Plant	Sand and Gravel	Turf	Dairy	Feedlot	Other	Total Demand
2018	85	18	660	6,479	10,000	2,700	2,332	22,274
2019	85	19	670	6,575	10,000	2,700	2,367	22,415
2020	85	19	680	6,678	10,000	2,700	2,404	22,566
2021	1,088	19	691	6,785	10,000	2,700	2,442	23,724
2022	1,673	19	702	6,893	10,000	2,700	2,481	24,468
2023	1,778	20	713	7,002	10,000	2,700	2,520	24,733
2024	1,778	20	724	7,111	10,000	2,700	2,559	24,893
2025	1,778	20	735	7,221	10,000	2,700	2,599	25,054
2026	1,778	21	747	7,331	10,000	2,700	2,639	25,215
2027	1,778	21	758	7,441	10,000	2,700	2,678	25,376
2028	1,778	21	769	7,550	10,000	2,700	2,717	25,535
2029	1,778	22	780	7,658	10,000	2,700	2,756	25,694
2030	1,778	22	791	7,765	10,000	2,700	2,795	25,851
2031	1,778	22	802	7,872	10,000	2,700	2,833	26,007
2032	1,778	22	813	7,978	10,000	2,700	2,871	26,162
2033	1,778	23	823	8,083	10,000	2,700	2,909	26,316
2034	1,778	23	834	8,187	10,000	2,700	2,947	26,468
2035	1,778	23	844	8,290	10,000	2,700	2,984	26,620
2036	1,778	24	855	8,392	10,000	2,700	3,020	26,769
2037	1,778	24	865	8,494	10,000	2,700	3,057	26,917
2038	1,778	24	875	8,594	10,000	2,700	3,093	27,064
2039	1,778	24	885	8,693	10,000	2,700	3,129	27,209
2040	1,778	25	895	8,791	10,000	2,700	3,164	27,353
2041	1,778	25	905	8,888	10,000	2,700	3,199	27,495
2042	1,778	25	915	8,983	10,000	2,700	3,233	27,635
2043	1,778	26	925	9,078	10,000	2,700	3,267	27,773
2044	1,778	26	934	9,171	10,000	2,700	3,301	27,910
2045	1,778	26	943	9,263	10,000	2,700	3,334	28,045
2046	1,778	26	953	9,354	10,000	2,700	3,367	28,178
2047	1,778	27	962	9,443	10,000	2,700	3,399	28,309
2048	1,778	27	971	9,532	10,000	2,700	3,430	28,438
2049	1,778	27	980	9,618	10,000	2,700	3,462	28,565
2050	1,778	27	988	9,704	10,000	2,700	3,492	28,690
2051	1,778	28	997	9,788	10,000	2,700	3,523	28,813
2052	1,778	28	1,005	9,871	10,000	2,700	3,553	28,934
2053	1,778	28	1,014	9,952	10,000	2,700	3,582	29,054
2054	1,778	28	1,022	10,032	10,000	2,700	3,611	29,171
2055	1,778	28	1,030	10,111	10,000	2,700	3,639	29,286
2056	1,778	29	1,038	10,188	10,000	2,700	3,667	29,399
2057	1,778	29	1,045	10,263	10,000	2,700	3,694	29,509
2058	1,778	29	1,053	10,338	10,000	2,700	3,721	29,618
2059	1,778	29	1,060	10,410	10,000	2,700	3,747	29,725
2060	1,778	30	1,068	10,482	10,000	2,700	3,772	29,829

CAP:SAM Supply and Demand Projections by Water Provider, Irrigation District and Tribe

Scenario D

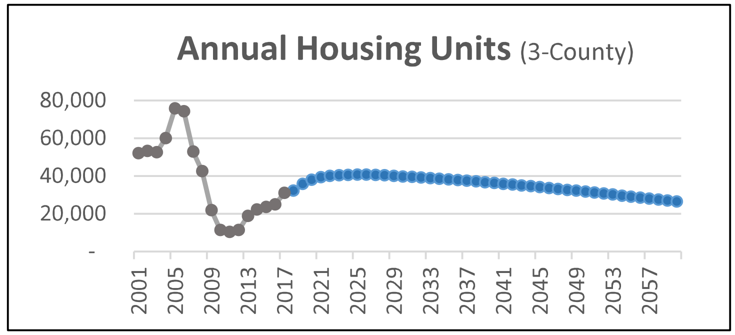
Climate: Hot and Dry
Growth Rate: Official
Growth Pattern: Official
Ag Pumping Capacity: 125% of Historic

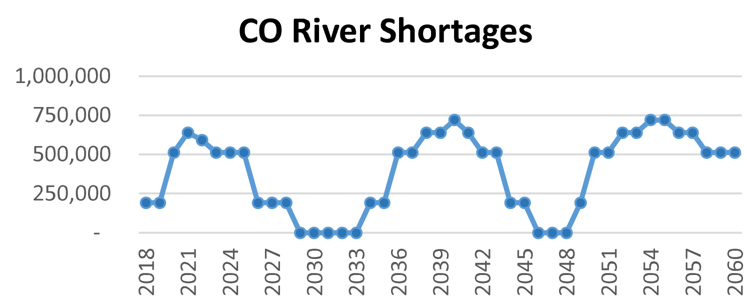
D. Medium, Reduced Ag [EMSBS]

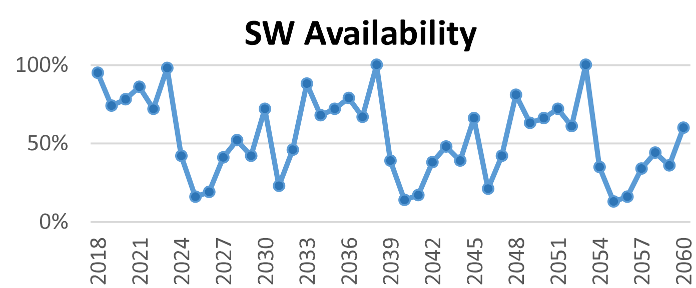
Run Date: 10/14/2020 **Filename:** CAPServiceArea_v3.51_ACv4.gsm

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.

Allow Shortages	Yes	
Select CRSS Array	3	*3=Synthetic*
Use Specific Trace	Yes	
Selected Trace	1	*1=Moderate; 2=Deep; 3=Slight*
AWBA Max M&I	20%	
Surface Water Scenario	5	*1=No Reduction; 2=Occational; 3=Frequent*
Use CAP Buildup	Yes	
CAP Buildup Scenario	2	*1=2035; 2=2045*
HU Growth Pattern	1	*3 = Spillover Growth*
HU Forecast	2	*1=Use Curve; 2=Eller Forecast*
HU Curve	2	
HU Growth Start Rate	-1%	
HU Ordinary Level	40,700	
HU Rate @ 50 yrs	-2%	
GPHUD Change Existing	-0.5%	*per year*
GPHUD Max Change Existing	-15%	
GPHUD Min Existing	200	
GPHUD Scenario New	1	
GPHUD Change New	-0.1%	*per year*
Ag Climate Adjustment	0.1%	
Ag Efficiency Increase	0.2%	*per year*
Ag Efficiency Goal	80%	
Ag Replace Crop CU	2.66	
Ag Intensity Scenario	2	
Ag Develop on Crops	50%	*Perecent of max on active Ag*
Ag Acres Replace Percent	0%	
Ag Replace Crop Year	2025	





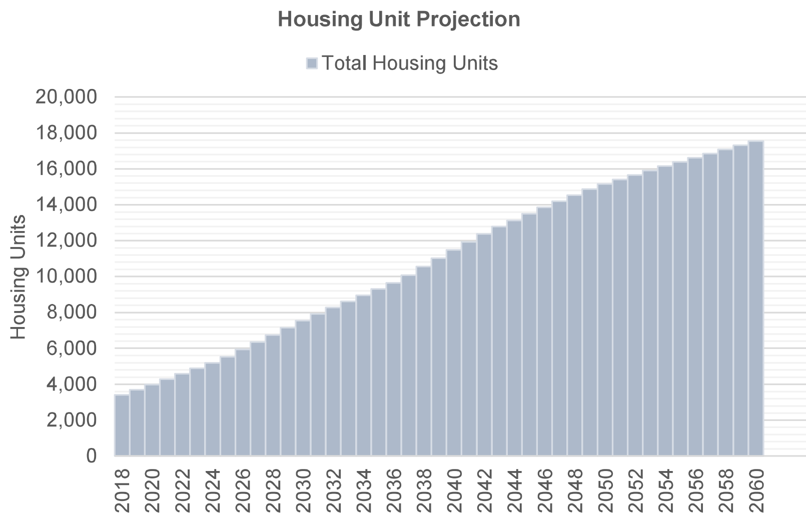


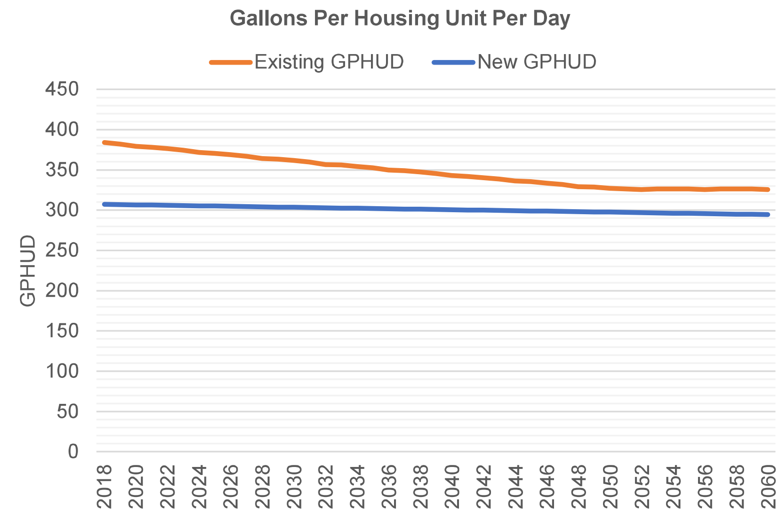
Central Arizona Project Service Area Model

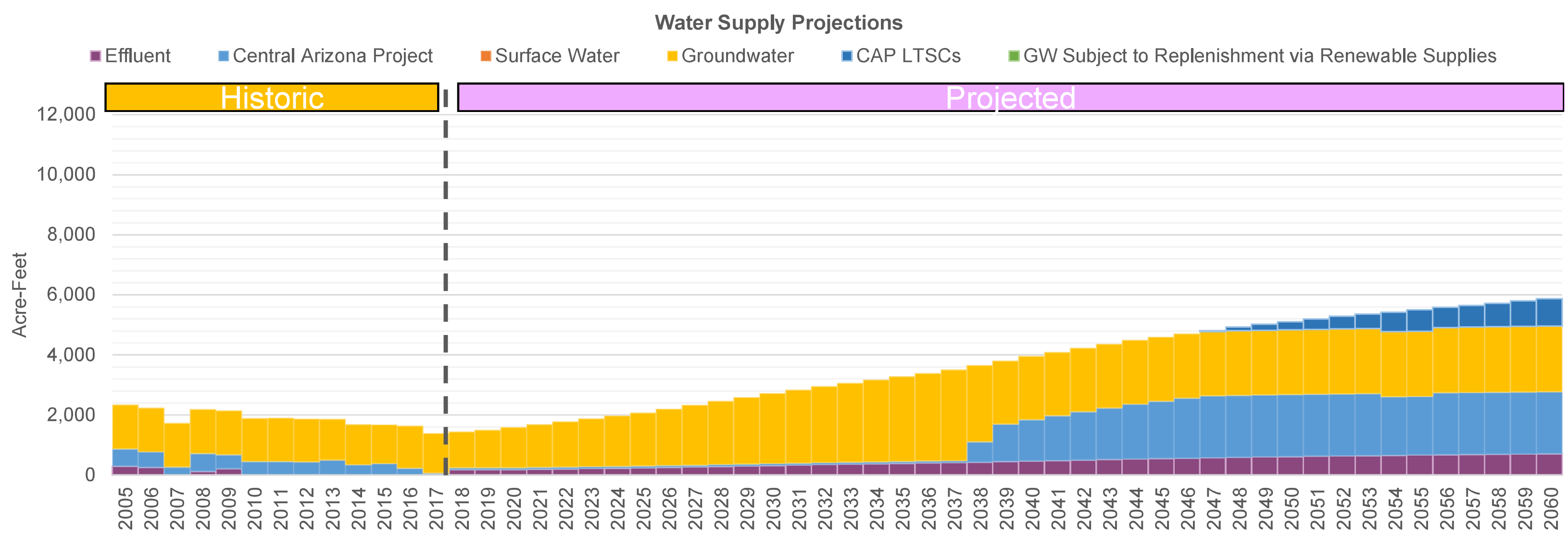
Eloy

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.







CAP-LTSCs Available After 2060:	66,103 AF
Additional[1] effluent available to be put to complete use[2] in 2060:	4,448 AF
Additional effluent available to be put to complete use during the simulation period:	106,116 AF

[1] Effluent volume in excess of that being used to satisfy annual demand (i.e. purple pipe or recovery of effluent credits)

[2] Use of effluent for purposes other than being discharged (i.e. storage, DPR, irrigation, etc)

Eloy

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

10/14/20 8:19 AM

Demand Assumptions | **Water Supply Projections** (Acre-Feet)

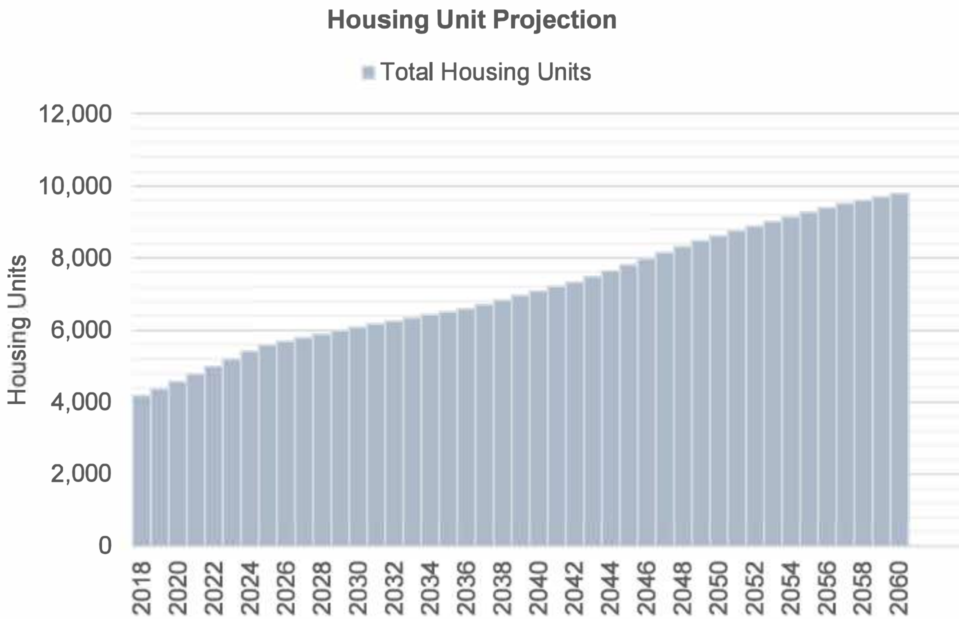
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	3,412	0	384	307	177	0	0	62	0	2,000	0	1,200	0	0
2019	3,686	0	382	307	177	0	0	62	0	2,000	0	1,259	0	0
2020	3,979	0	379	307	184	0	0	62	0	2,000	0	1,343	0	0
2021	4,281	0	378	306	195	0	0	62	0	2,000	0	1,426	0	0
2022	4,582	0	376	306	207	0	0	62	0	2,000	0	1,510	0	0
2023	4,884	0	374	306	219	0	0	62	0	2,000	0	1,594	0	0
2024	5,187	0	372	305	231	0	0	62	0	2,000	0	1,680	0	0
2025	5,526	0	371	305	243	0	0	62	0	2,000	0	1,768	0	0
2026	5,936	0	369	305	255	0	0	62	0	2,000	0	1,876	0	0
2027	6,345	0	367	304	270	0	0	62	0	2,000	0	1,994	0	0
2028	6,751	0	364	304	286	0	0	62	0	2,000	0	2,111	0	0
2029	7,154	0	363	304	303	0	0	62	0	2,000	0	2,222	0	0
2030	7,555	0	362	303	318	0	0	62	0	2,000	0	2,335	0	0
2031	7,923	0	360	303	334	0	0	62	0	2,000	0	2,441	0	0
2032	8,274	0	357	303	349	0	0	62	0	2,000	0	2,545	0	0
2033	8,622	0	356	303	364	0	0	62	0	2,000	0	2,636	0	0
2034	8,966	0	354	302	377	0	0	62	0	2,000	0	2,732	0	0
2035	9,308	0	353	302	390	0	0	62	0	2,000	0	2,826	0	0
2036	9,647	0	350	302	403	0	0	62	0	2,000	0	2,925	0	0
2037	10,089	0	349	301	417	0	0	62	0	2,000	0	3,029	0	0
2038	10,556	0	347	301	431	0	0	679	0	1,383	0	2,542	0	0
2039	11,018	0	346	301	449	0	0	1,249	0	814	0	2,102	0	0
2040	11,475	0	343	300	467	0	0	1,378	0	684	0	2,108	0	0
2041	11,926	0	342	300	486	0	0	1,489	0	573	0	2,114	0	0
2042	12,372	0	340	300	503	0	0	1,608	0	454	0	2,120	0	0
2043	12,776	0	339	300	520	0	0	1,719	0	344	0	2,125	0	0
2044	13,138	0	336	299	537	0	0	1,825	0	238	0	2,131	0	0
2045	13,495	0	335	299	553	0	0	1,906	0	157	0	2,136	0	0
2046	13,847	0	334	299	565	0	0	1,998	0	64	0	2,140	0	0
2047	14,194	0	332	298	578	0	0	2,062	0	0	26	2,144	0	0
2048	14,536	0	329	298	592	0	0	2,062	0	0	123	2,148	0	0
2049	14,873	0	329	298	606	0	0	2,062	0	0	198	2,153	0	0
2050	15,155	0	327	297	617	0	0	2,062	0	0	276	2,157	0	0
2051	15,410	0	326	297	629	0	0	2,062	0	0	343	2,160	0	0
2052	15,661	0	325	297	639	0	0	2,062	0	0	421	2,164	0	0
2053	15,908	0	326	297	650	0	0	2,062	0	0	474	2,167	0	0
2054	16,150	0	326	296	659	0	0	1,950	0	0	652	2,170	0	0
2055	16,389	0	326	296	668	0	0	1,950	0	0	715	2,173	0	0
2056	16,622	0	325	296	677	0	0	2,062	0	0	677	2,176	0	0
2057	16,852	0	326	295	688	0	0	2,062	0	0	723	2,180	0	0
2058	17,088	0	326	295	695	0	0	2,062	0	0	786	2,182	0	0
2059	17,320	0	326	295	704	0	0	2,062	0	0	847	2,185	0	0
2060	17,548	0	325	295	713	0	0	2,062	0	0	919	2,188	0	0

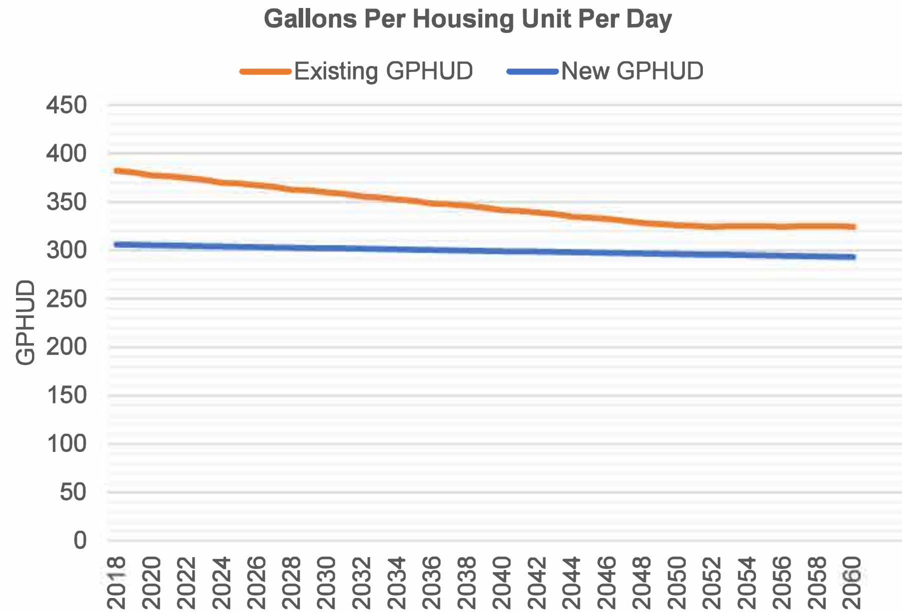
Central Arizona Project Service Area Model

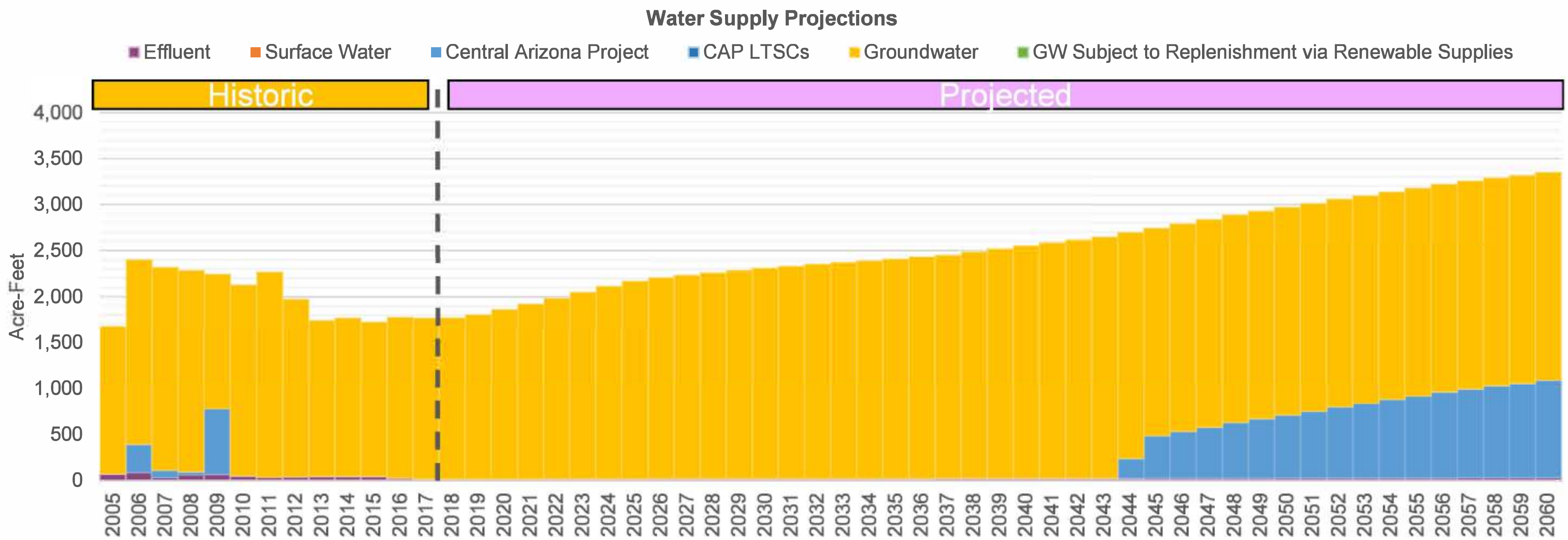
Florence

B. Having it All [EMSBS]

Medium growth rate, local growth pattern, hotter and drier climate, Ag pumping capacity equals 1.5x the max gw use from 2010 to 2015







Central Arizona Project Service Area Model

Florence

B. Having it All [EMSBS]

2/4/21 12:51 PM

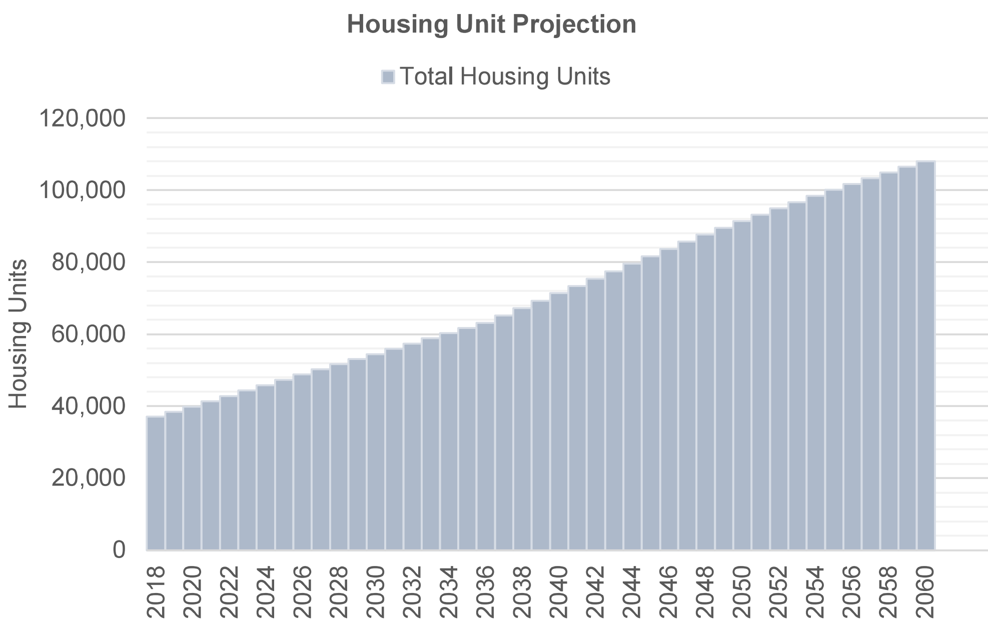
Date	Demand Assumptions: Housing Units		Demand Assumptions: GPHUD		Water Supply Projections (Acre-Feet): Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	4,184	0	382	306	18	0	0	0	0	2,048	0	1,754	0	0
2019	4,372	0	380	305	18	0	0	0	0	2,048	0	1,790	0	0
2020	4,572	0	377	305	18	0	0	0	0	2,048	0	1,848	0	0
2021	4,778	0	376	305	19	0	0	0	0	2,048	0	1,907	0	0
2022	4,988	0	375	304	20	0	0	0	0	2,048	0	1,968	0	0
2023	5,199	0	373	304	20	0	0	0	0	2,048	0	2,031	0	0
2024	5,411	0	370	304	21	0	0	0	0	2,048	0	2,094	0	0
2025	5,587	0	369	304	21	0	0	0	0	2,048	0	2,150	0	0
2026	5,688	0	367	303	22	0	0	0	0	2,048	0	2,187	0	0
2027	5,788	0	365	303	22	0	0	0	0	2,048	0	2,212	0	0
2028	5,887	0	362	303	23	0	0	0	0	2,048	0	2,238	0	0
2029	5,986	0	362	302	23	0	0	0	0	2,048	0	2,260	0	0
2030	6,084	0	360	302	23	0	0	0	0	2,048	0	2,285	0	0
2031	6,173	0	358	302	23	0	0	0	0	2,048	0	2,307	0	0
2032	6,257	0	355	301	24	0	0	0	0	2,048	0	2,329	0	0
2033	6,340	0	354	301	24	0	0	0	0	2,048	0	2,346	0	0
2034	6,423	0	353	301	24	0	0	0	0	2,048	0	2,365	0	0
2035	6,505	0	351	301	24	0	0	0	0	2,048	0	2,384	0	0
2036	6,586	0	348	300	24	0	0	0	0	2,048	0	2,405	0	0
2037	6,704	0	347	300	25	0	0	0	0	2,048	0	2,426	0	0
2038	6,832	0	346	300	25	0	0	0	0	2,048	0	2,458	0	0
2039	6,959	0	344	299	25	0	0	0	0	1,793	0	2,492	0	0
2040	7,084	0	341	299	26	0	0	0	0	2,048	0	2,528	0	0
2041	7,207	0	341	299	26	0	0	0	0	2,048	0	2,557	0	0
2042	7,330	0	339	298	26	0	0	0	0	2,048	0	2,590	0	0
2043	7,477	0	337	298	27	0	0	0	0	2,048	0	2,625	0	0
2044	7,650	0	335	298	27	0	0	214	0	1,834	0	2,459	0	0
2045	7,820	0	334	298	27	0	0	459	0	1,589	0	2,259	0	0
2046	7,989	0	332	297	28	0	0	505	0	1,543	0	2,259	0	0
2047	8,154	0	330	297	28	0	0	552	0	1,496	0	2,259	0	0
2048	8,318	0	328	297	29	0	0	600	0	1,448	0	2,259	0	0
2049	8,479	0	327	296	29	0	0	642	0	1,406	0	2,259	0	0
2050	8,621	0	325	296	30	0	0	682	0	1,366	0	2,259	0	0
2051	8,756	0	325	296	30	0	0	723	0	1,325	0	2,259	0	0
2052	8,887	0	324	295	31	0	0	769	0	1,279	0	2,259	0	0
2053	9,017	0	325	295	31	0	0	806	0	1,242	0	2,259	0	0
2054	9,144	0	325	295	31	0	0	847	0	1,086	0	2,259	0	0
2055	9,270	0	325	295	32	0	0	886	0	726	0	2,259	0	0
2056	9,392	0	324	294	32	0	0	930	0	505	0	2,259	0	0
2057	9,513	0	325	294	33	0	0	963	0	970	0	2,259	0	0
2058	9,607	0	325	294	33	0	0	996	0	937	0	2,259	0	0
2059	9,698	0	325	293	33	0	0	1,025	0	908	0	2,259	0	0
2060	9,787	0	324	293	34	0	0	1,057	0	876	0	2,259	0	0

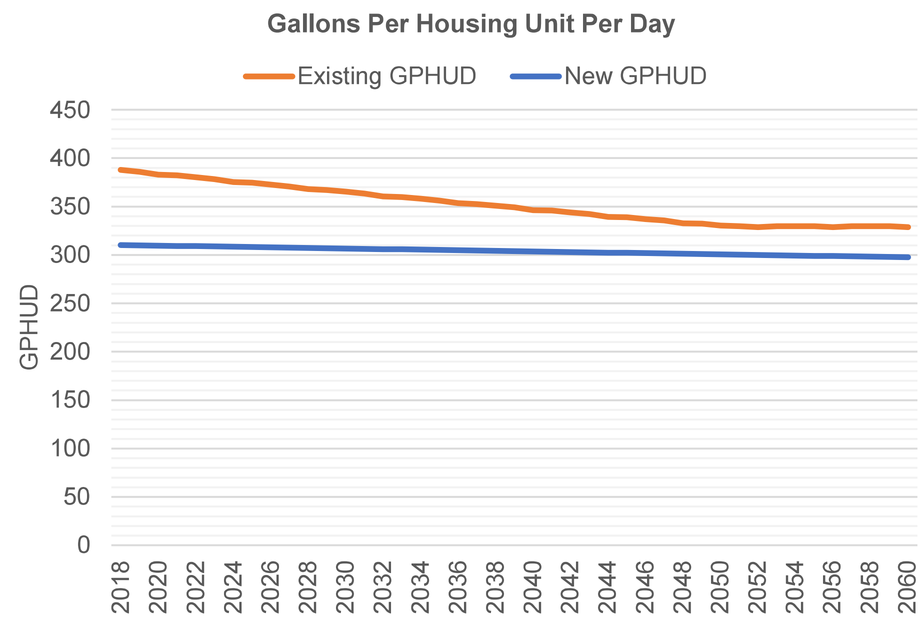
Central Arizona Project Service Area Model

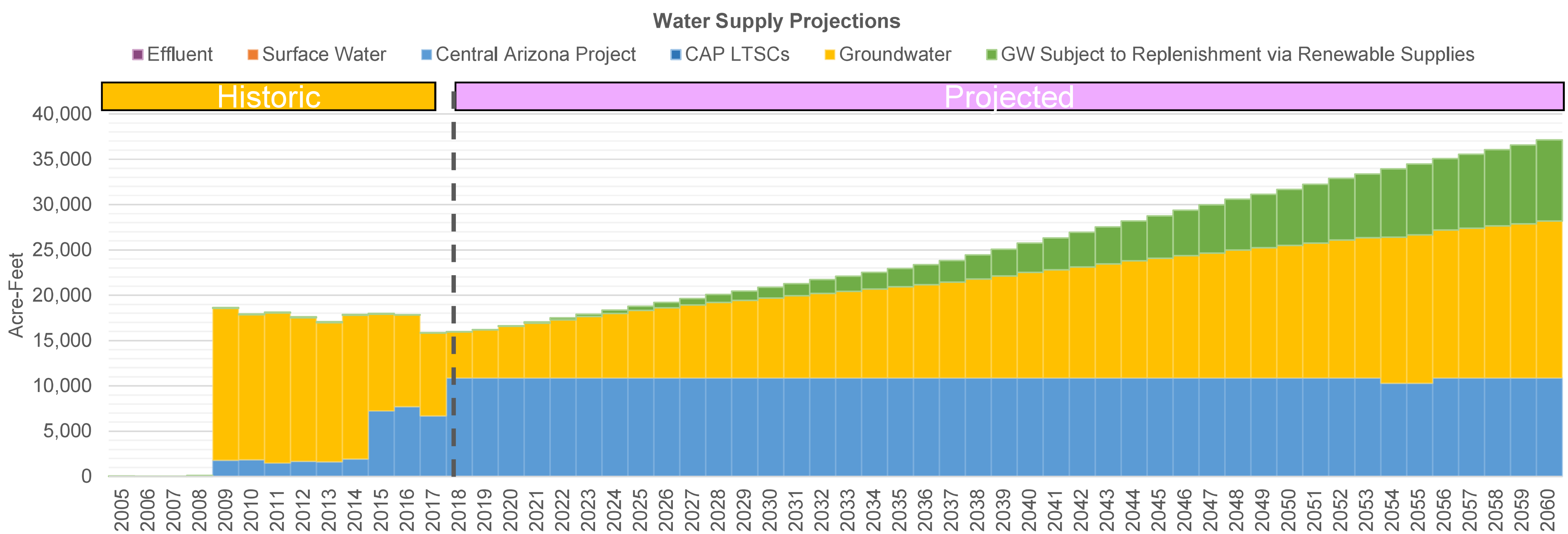
AZWC Pinal Valley System

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.







Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

10/14/20 8:19 AM

Demand Assumptions / Water Supply Projections (Acre-Feet)

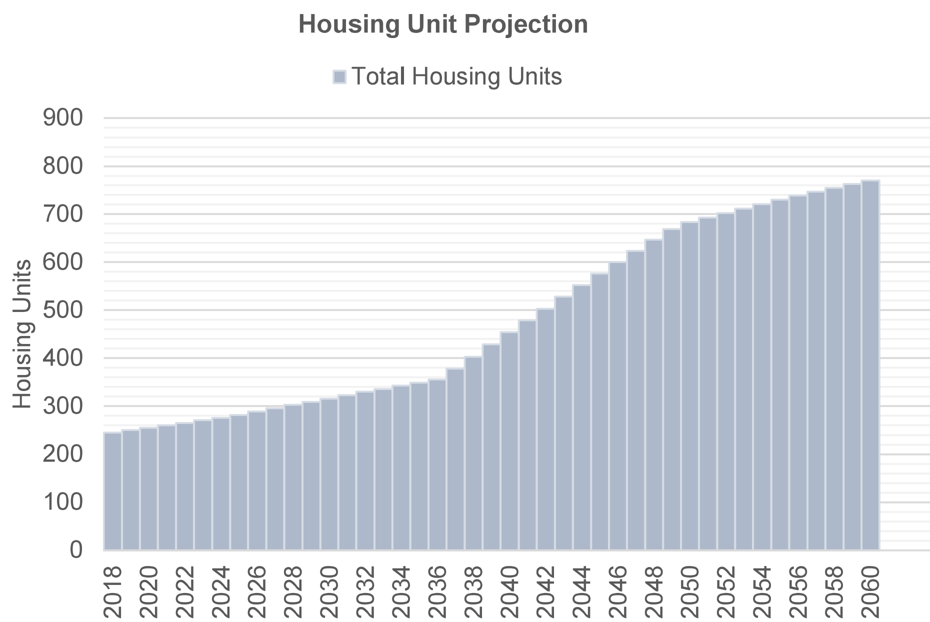
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	37,073	0	388	310	0	0	0	2,800	8,084	0	0	5,070	9	0
2019	38,428	0	386	310	0	0	0	2,800	8,084	0	0	5,308	21	0
2020	39,870	0	383	310	0	0	0	2,800	8,084	0	0	5,672	65	0
2021	41,362	0	382	309	0	0	0	2,800	8,084	0	0	6,048	116	0
2022	42,854	0	380	309	0	0	0	2,800	8,084	0	0	6,409	191	0
2023	44,349	0	378	309	0	0	0	2,800	8,084	0	0	6,766	271	0
2024	45,852	0	375	308	0	0	0	2,800	8,084	0	0	7,111	372	0
2025	47,338	0	374	308	0	0	0	2,800	8,084	0	0	7,433	478	0
2026	48,787	0	373	308	0	0	0	2,800	8,084	0	0	7,731	606	0
2027	50,229	0	371	307	0	0	0	2,800	8,084	0	0	8,019	736	0
2028	51,661	0	368	307	0	0	0	2,800	8,084	0	0	8,303	879	0
2029	53,085	0	367	307	0	0	0	2,800	8,084	0	0	8,553	1,026	0
2030	54,499	0	365	307	0	0	0	2,800	8,084	0	0	8,805	1,181	0
2031	55,952	0	363	306	0	0	0	2,800	8,084	0	0	9,058	1,339	0
2032	57,418	0	361	306	0	0	0	2,800	8,084	0	0	9,328	1,507	0
2033	58,871	0	360	306	0	0	0	2,800	8,084	0	0	9,556	1,678	0
2034	60,313	0	358	305	0	0	0	2,800	8,084	0	0	9,796	1,853	0
2035	61,741	0	356	305	0	0	0	2,800	8,084	0	0	10,028	2,030	0
2036	63,156	0	353	305	0	0	0	2,800	8,084	0	0	10,276	2,210	0
2037	65,123	0	353	304	0	0	0	2,800	8,084	0	0	10,561	2,396	0
2038	67,225	0	351	304	0	0	0	2,800	8,084	0	0	10,913	2,656	0
2039	69,303	0	349	304	0	0	0	2,800	8,084	0	0	11,260	2,938	0
2040	71,359	0	346	303	0	0	0	2,800	8,084	0	0	11,626	3,224	0
2041	73,391	0	346	303	0	0	0	2,800	8,084	0	0	11,922	3,508	0
2042	75,398	0	344	303	0	0	0	2,800	8,084	0	0	12,238	3,794	0
2043	77,449	0	342	303	0	0	0	2,800	8,084	0	0	12,554	4,083	0
2044	79,542	0	339	302	0	0	0	2,800	8,084	0	0	12,909	4,385	0
2045	81,607	0	339	302	0	0	0	2,800	8,084	0	0	13,185	4,689	0
2046	83,644	0	337	302	0	0	0	2,800	8,084	0	0	13,487	4,996	0
2047	85,652	0	335	301	0	0	0	2,800	8,084	0	0	13,780	5,301	0
2048	87,630	0	333	301	0	0	0	2,800	8,084	0	0	14,105	5,610	0
2049	89,579	0	332	301	0	0	0	2,800	8,084	0	0	14,338	5,907	0
2050	91,415	0	330	300	0	0	0	2,800	8,084	0	0	14,591	6,205	0
2051	93,198	0	330	300	0	0	0	2,800	8,084	0	0	14,866	6,492	0
2052	94,953	0	329	300	0	0	0	2,800	8,084	0	0	15,206	6,781	0
2053	96,678	0	330	300	0	0	0	2,800	8,084	0	0	15,442	7,056	0
2054	98,373	0	330	299	0	0	0	2,643	7,630	0	0	16,135	7,528	0
2055	100,039	0	330	299	0	0	0	2,643	7,630	0	0	16,401	7,804	0
2056	101,674	0	329	299	0	0	0	2,800	8,084	0	0	16,302	7,882	0
2057	103,278	0	330	298	0	0	0	2,800	8,084	0	0	16,502	8,143	0
2058	104,896	0	330	298	0	0	0	2,800	8,084	0	0	16,756	8,405	0
2059	106,483	0	330	298	0	0	0	2,800	8,084	0	0	17,004	8,669	0
2060	108,039	0	329	297	0	0	0	2,800	8,084	0	0	17,302	8,936	0

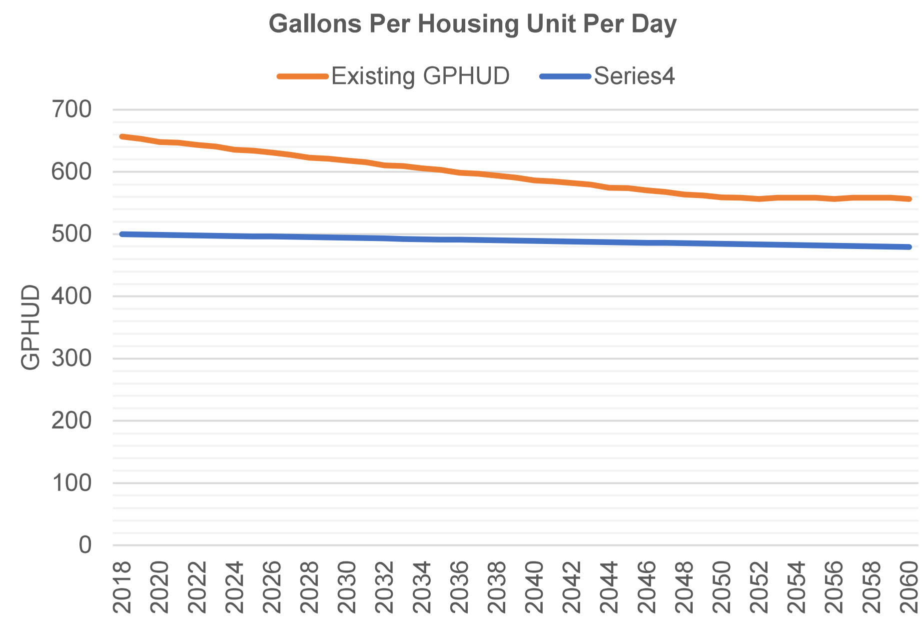
Central Arizona Project Service Area Model

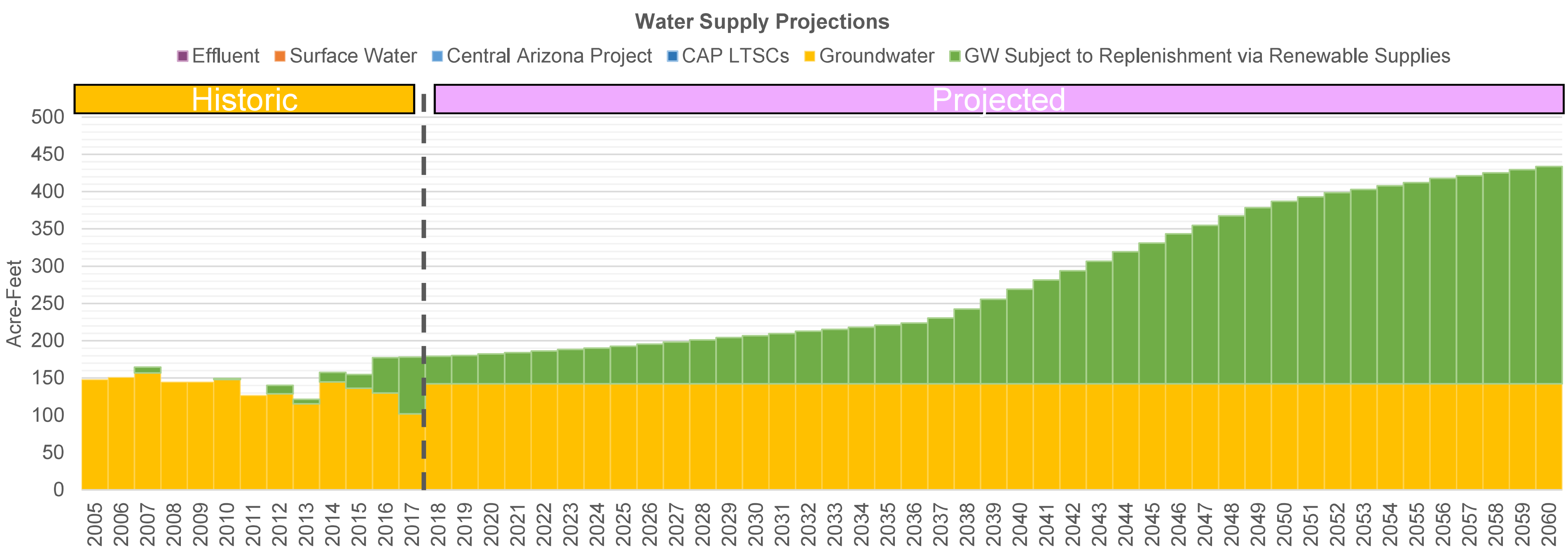
CasaGrande

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.







Central Arizona Project Service Area Model

CasaGrande

D. Medium, Reduced Ag [EMSBS]

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Demand Assumptions / Water Supply Projections (Acre-Feet)

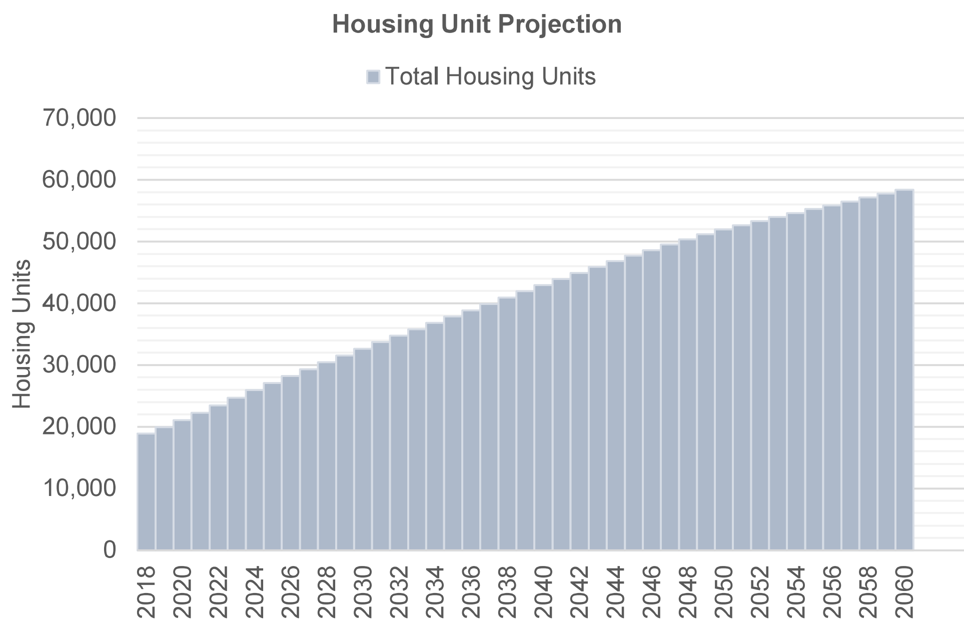
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	245	0	657	500	0	0	0	0	0	0	0	142	37	0
2019	250	0	653	500	0	0	0	0	0	0	0	142	38	0
2020	255	0	648	499	0	0	0	0	0	0	0	142	40	0
2021	260	0	647	499	0	0	0	0	0	0	0	142	42	0
2022	265	0	644	498	0	0	0	0	0	0	0	142	44	0
2023	271	0	640	498	0	0	0	0	0	0	0	142	46	0
2024	276	0	635	497	0	0	0	0	0	0	0	142	48	0
2025	282	0	634	497	0	0	0	0	0	0	0	142	50	0
2026	289	0	631	496	0	0	0	0	0	0	0	142	53	0
2027	296	0	628	496	0	0	0	0	0	0	0	142	56	0
2028	303	0	623	495	0	0	0	0	0	0	0	142	59	0
2029	309	0	621	495	0	0	0	0	0	0	0	142	62	0
2030	316	0	618	494	0	0	0	0	0	0	0	142	64	0
2031	323	0	615	494	0	0	0	0	0	0	0	142	67	0
2032	330	0	610	493	0	0	0	0	0	0	0	142	70	0
2033	336	0	609	493	0	0	0	0	0	0	0	142	73	0
2034	343	0	606	492	0	0	0	0	0	0	0	142	76	0
2035	349	0	603	492	0	0	0	0	0	0	0	142	78	0
2036	356	0	598	491	0	0	0	0	0	0	0	142	81	0
2037	378	0	597	491	0	0	0	0	0	0	0	142	88	0
2038	403	0	594	490	0	0	0	0	0	0	0	142	100	0
2039	429	0	591	490	0	0	0	0	0	0	0	142	113	0
2040	454	0	586	489	0	0	0	0	0	0	0	142	127	0
2041	479	0	585	489	0	0	0	0	0	0	0	142	139	0
2042	503	0	582	488	0	0	0	0	0	0	0	142	152	0
2043	528	0	579	488	0	0	0	0	0	0	0	142	164	0
2044	552	0	575	487	0	0	0	0	0	0	0	142	177	0
2045	576	0	574	487	0	0	0	0	0	0	0	142	189	0
2046	600	0	571	486	0	0	0	0	0	0	0	142	201	0
2047	623	0	568	486	0	0	0	0	0	0	0	142	213	0
2048	647	0	563	485	0	0	0	0	0	0	0	142	225	0
2049	669	0	562	485	0	0	0	0	0	0	0	142	236	0
2050	683	0	559	484	0	0	0	0	0	0	0	142	245	0
2051	693	0	558	484	0	0	0	0	0	0	0	142	251	0
2052	702	0	557	483	0	0	0	0	0	0	0	142	256	0
2053	712	0	558	483	0	0	0	0	0	0	0	142	260	0
2054	721	0	558	482	0	0	0	0	0	0	0	142	265	0
2055	730	0	558	482	0	0	0	0	0	0	0	142	270	0
2056	739	0	557	481	0	0	0	0	0	0	0	142	275	0
2057	747	0	558	481	0	0	0	0	0	0	0	142	279	0
2058	755	0	558	480	0	0	0	0	0	0	0	142	283	0
2059	763	0	558	480	0	0	0	0	0	0	0	142	287	0
2060	770	0	557	479	0	0	0	0	0	0	0	142	291	0

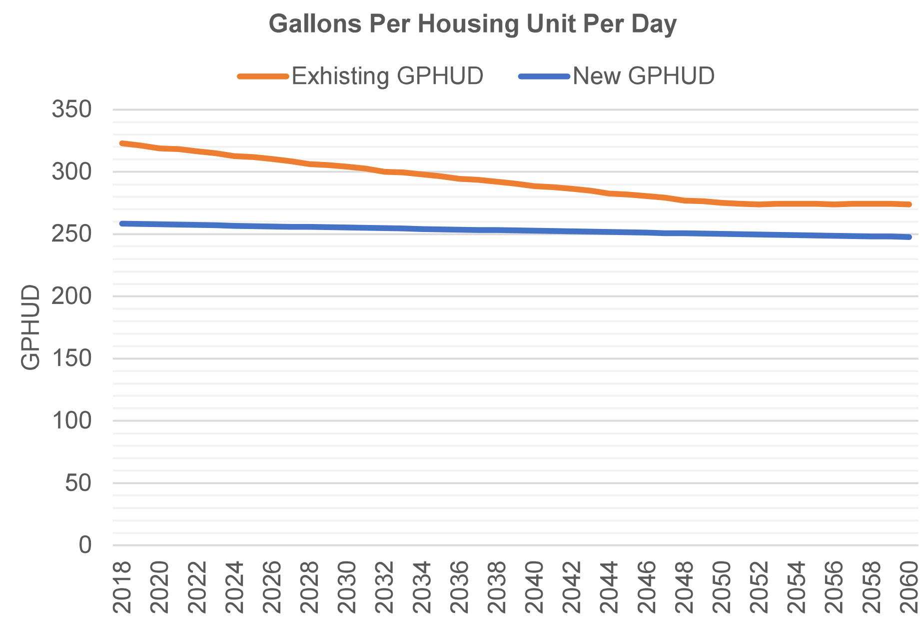
GlobalSantaCruzW(

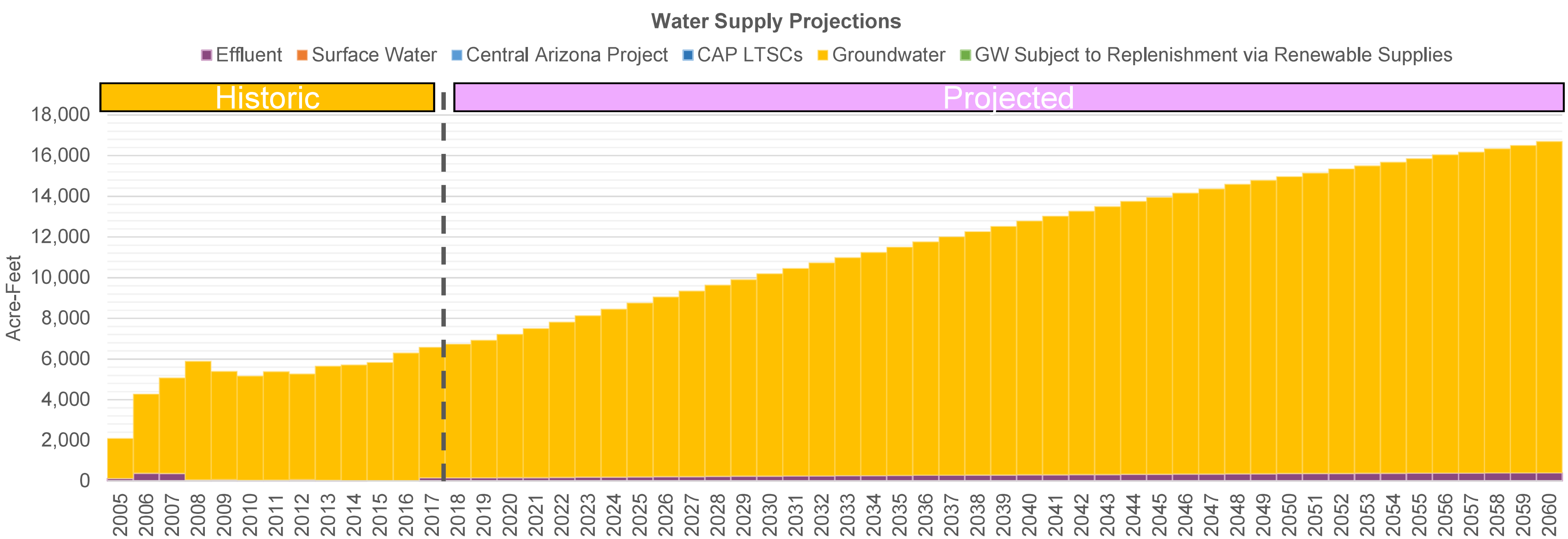
Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.







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Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

10/14/20 8:19 AM

Demand Assumptions / Water Supply Projections (Acre-Feet)

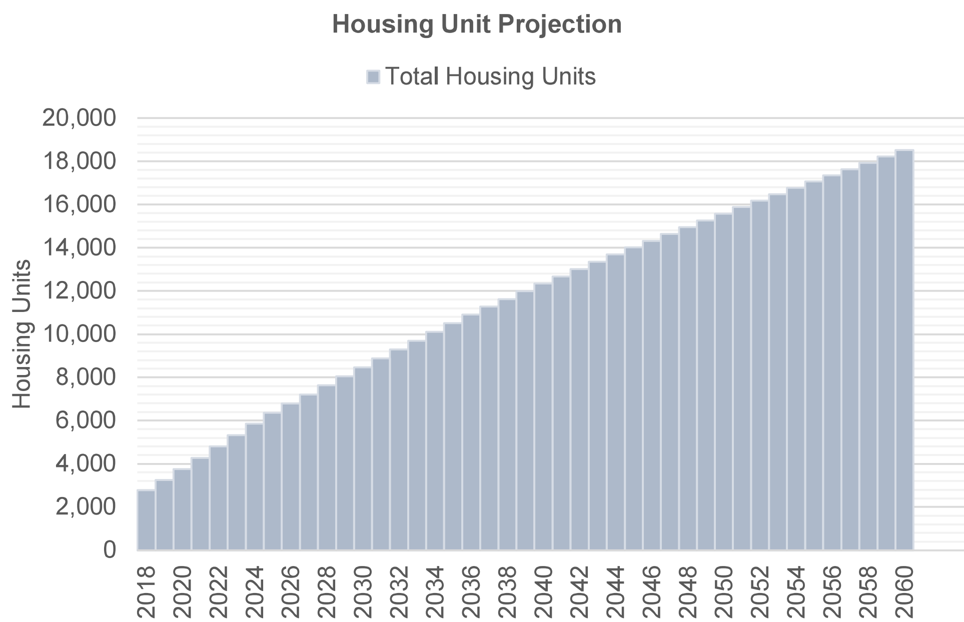
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	18,892	0	323	258	167	0	0	0	0	0	0	6,574	0	0
2019	19,954	0	321	258	167	0	0	0	0	0	0	6,756	0	0
2020	21,083	0	319	258	171	0	0	0	0	0	0	7,036	0	0
2021	22,252	0	318	258	179	0	0	0	0	0	0	7,325	0	0
2022	23,457	0	317	257	186	0	0	0	0	0	0	7,626	0	0
2023	24,678	0	315	257	194	0	0	0	0	0	0	7,933	0	0
2024	25,905	0	312	257	201	0	0	0	0	0	0	8,249	0	0
2025	27,099	0	312	257	209	0	0	0	0	0	0	8,549	0	0
2026	28,221	0	310	256	217	0	0	0	0	0	0	8,839	0	0
2027	29,337	0	309	256	224	0	0	0	0	0	0	9,118	0	0
2028	30,447	0	306	256	231	0	0	0	0	0	0	9,404	0	0
2029	31,550	0	306	256	239	0	0	0	0	0	0	9,669	0	0
2030	32,645	0	304	255	245	0	0	0	0	0	0	9,942	0	0
2031	33,712	0	303	255	252	0	0	0	0	0	0	10,208	0	0
2032	34,762	0	300	255	259	0	0	0	0	0	0	10,480	0	0
2033	35,803	0	300	254	266	0	0	0	0	0	0	10,723	0	0
2034	36,835	0	298	254	272	0	0	0	0	0	0	10,977	0	0
2035	37,858	0	297	254	279	0	0	0	0	0	0	11,227	0	0
2036	38,871	0	294	254	285	0	0	0	0	0	0	11,489	0	0
2037	39,904	0	294	253	292	0	0	0	0	0	0	11,721	0	0
2038	40,935	0	292	253	298	0	0	0	0	0	0	11,972	0	0
2039	41,955	0	291	253	304	0	0	0	0	0	0	12,219	0	0
2040	42,964	0	288	253	310	0	0	0	0	0	0	12,483	0	0
2041	43,961	0	288	252	317	0	0	0	0	0	0	12,704	0	0
2042	44,946	0	286	252	323	0	0	0	0	0	0	12,941	0	0
2043	45,896	0	285	252	329	0	0	0	0	0	0	13,172	0	0
2044	46,813	0	283	252	334	0	0	0	0	0	0	13,414	0	0
2045	47,717	0	282	251	341	0	0	0	0	0	0	13,605	0	0
2046	48,609	0	281	251	345	0	0	0	0	0	0	13,816	0	0
2047	49,488	0	279	251	351	0	0	0	0	0	0	14,022	0	0
2048	50,354	0	277	251	356	0	0	0	0	0	0	14,248	0	0
2049	51,207	0	276	250	362	0	0	0	0	0	0	14,422	0	0
2050	51,949	0	275	250	366	0	0	0	0	0	0	14,603	0	0
2051	52,636	0	274	250	371	0	0	0	0	0	0	14,777	0	0
2052	53,311	0	274	250	375	0	0	0	0	0	0	14,981	0	0
2053	53,974	0	274	249	380	0	0	0	0	0	0	15,126	0	0
2054	54,627	0	274	249	384	0	0	0	0	0	0	15,296	0	0
2055	55,267	0	274	249	388	0	0	0	0	0	0	15,462	0	0
2056	55,896	0	274	249	393	0	0	0	0	0	0	15,653	0	0
2057	56,514	0	274	248	397	0	0	0	0	0	0	15,783	0	0
2058	57,145	0	274	248	401	0	0	0	0	0	0	15,943	0	0
2059	57,766	0	274	248	405	0	0	0	0	0	0	16,102	0	0
2060	58,374	0	274	248	409	0	0	0	0	0	0	16,287	0	0

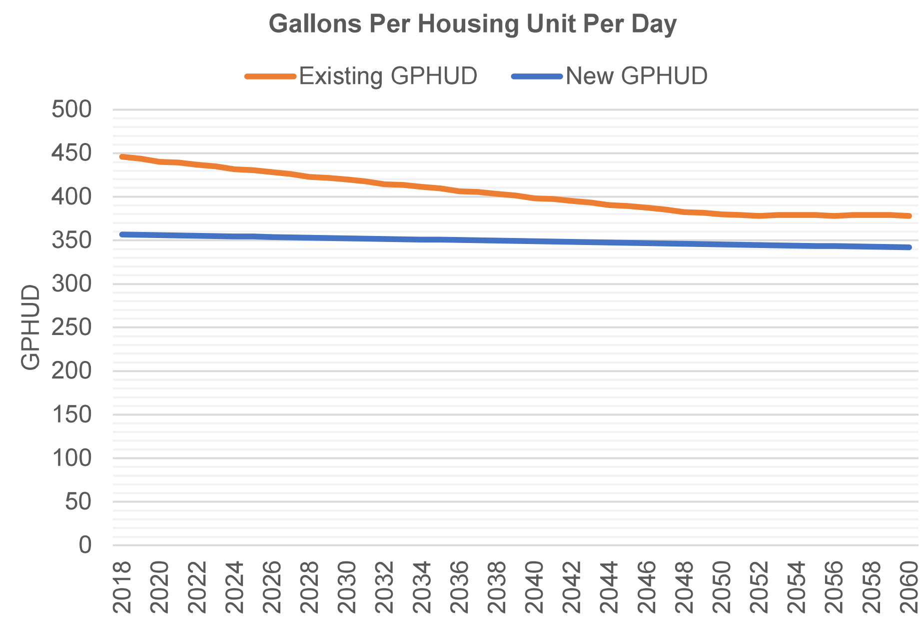
Central Arizona Project Service Area Model

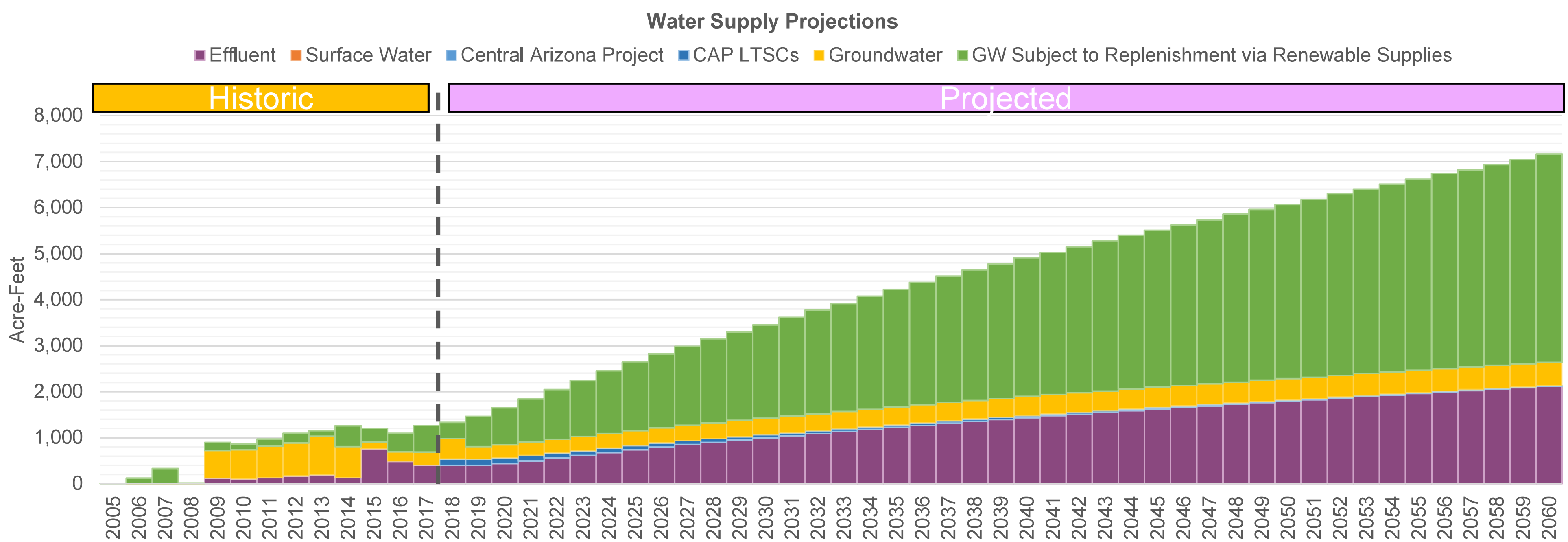
EPCOR-San Tan

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.







Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

EPCOR-San Ta

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Demand Assumptions / Water Supply Projections (Acre-Feet)

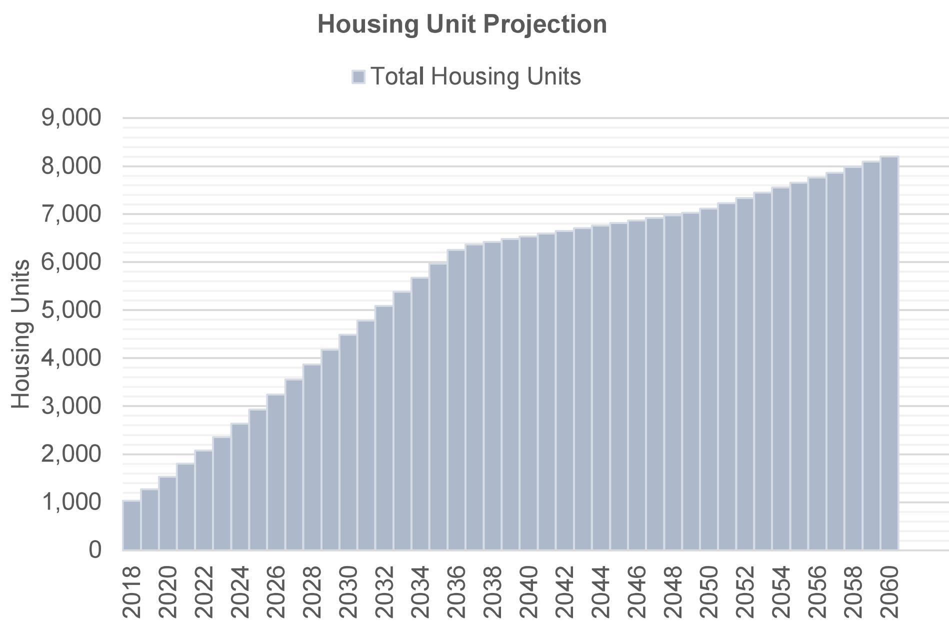
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	2,789	0	446	357	402	0	0	0	0	0	134	443	357	0
2019	3,259	0	444	356	402	0	0	0	0	0	127	278	654	0
2020	3,759	0	440	356	440	0	0	0	0	0	121	283	805	0
2021	4,277	0	439	356	496	0	0	0	0	0	115	291	942	0
2022	4,802	0	437	355	555	0	0	0	0	0	109	299	1,082	0
2023	5,331	0	435	355	615	0	0	0	0	0	103	307	1,222	0
2024	5,862	0	431	355	676	0	0	0	0	0	98	315	1,364	0
2025	6,360	0	430	354	738	0	0	0	0	0	93	323	1,492	0
2026	6,785	0	428	354	796	0	0	0	0	0	89	331	1,606	0
2027	7,209	0	426	353	849	0	0	0	0	0	84	338	1,711	0
2028	7,630	0	423	353	897	0	0	0	0	0	80	344	1,825	0
2029	8,048	0	422	353	947	0	0	0	0	0	76	351	1,926	0
2030	8,463	0	420	352	992	0	0	0	0	0	72	357	2,034	0
2031	8,878	0	418	352	1,039	0	0	0	0	0	69	363	2,140	0
2032	9,291	0	414	352	1,086	0	0	0	0	0	65	369	2,252	0
2033	9,701	0	414	351	1,135	0	0	0	0	0	62	376	2,346	0
2034	10,107	0	411	351	1,179	0	0	0	0	0	59	382	2,451	0
2035	10,509	0	409	351	1,224	0	0	0	0	0	56	388	2,552	0
2036	10,908	0	406	350	1,270	0	0	0	0	0	53	394	2,660	0
2037	11,275	0	405	350	1,317	0	0	0	0	0	50	400	2,742	0
2038	11,632	0	403	350	1,357	0	0	0	0	0	48	405	2,832	0
2039	11,985	0	401	349	1,396	0	0	0	0	0	46	411	2,919	0
2040	12,334	0	398	349	1,435	0	0	0	0	0	43	416	3,015	0
2041	12,679	0	397	349	1,477	0	0	0	0	0	41	421	3,086	0
2042	13,019	0	395	348	1,512	0	0	0	0	0	39	426	3,172	0
2043	13,354	0	393	348	1,549	0	0	0	0	0	37	431	3,254	0
2044	13,683	0	390	348	1,586	0	0	0	0	0	35	436	3,345	0
2045	14,007	0	389	347	1,625	0	0	0	0	0	33	441	3,408	0
2046	14,327	0	387	347	1,657	0	0	0	0	0	32	445	3,488	0
2047	14,643	0	386	346	1,691	0	0	0	0	0	30	450	3,564	0
2048	14,954	0	383	346	1,725	0	0	0	0	0	29	454	3,652	0
2049	15,260	0	382	346	1,763	0	0	0	0	0	27	459	3,706	0
2050	15,568	0	380	345	1,792	0	0	0	0	0	26	463	3,783	0
2051	15,878	0	379	345	1,824	0	0	0	0	0	25	468	3,860	0
2052	16,184	0	378	345	1,858	0	0	0	0	0	23	472	3,951	0
2053	16,484	0	379	344	1,897	0	0	0	0	0	22	477	4,006	0
2054	16,779	0	379	344	1,926	0	0	0	0	0	21	481	4,083	0
2055	17,068	0	379	344	1,959	0	0	0	0	0	20	485	4,154	0
2056	17,353	0	378	343	1,991	0	0	0	0	0	19	490	4,239	0
2057	17,632	0	379	343	2,027	0	0	0	0	0	18	495	4,286	0
2058	17,933	0	379	343	2,054	0	0	0	0	0	17	498	4,363	0
2059	18,229	0	379	342	2,085	0	0	0	0	0	16	502	4,437	0
2060	18,520	0	378	342	2,118	0	0	0	0	0	15	507	4,523	0

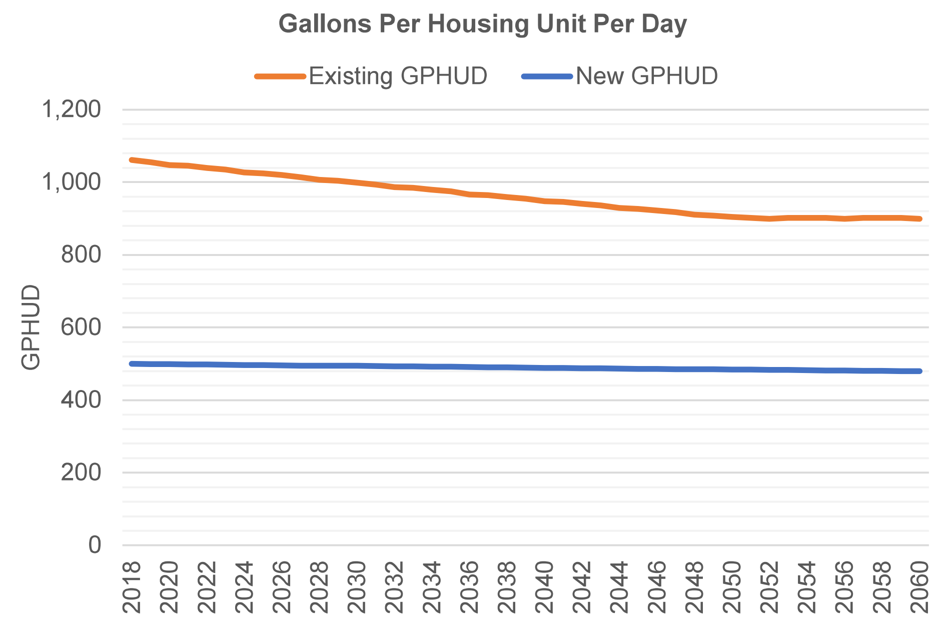
PicachoWC

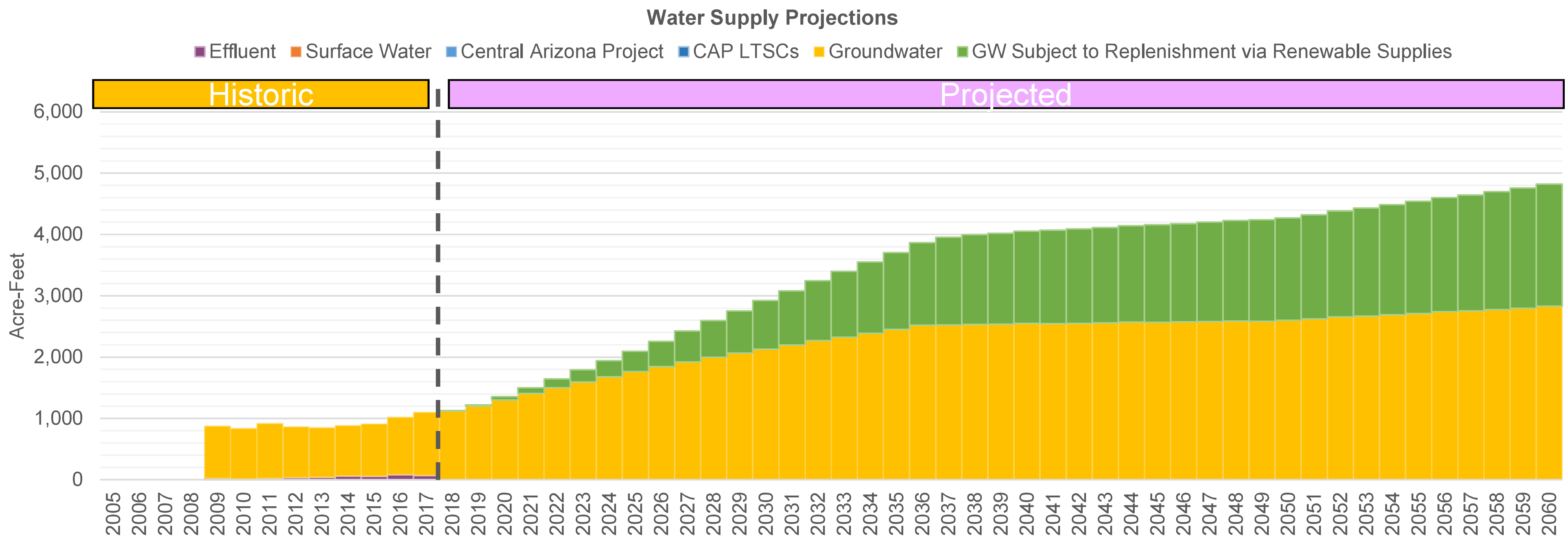
Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.







PicachoWC

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

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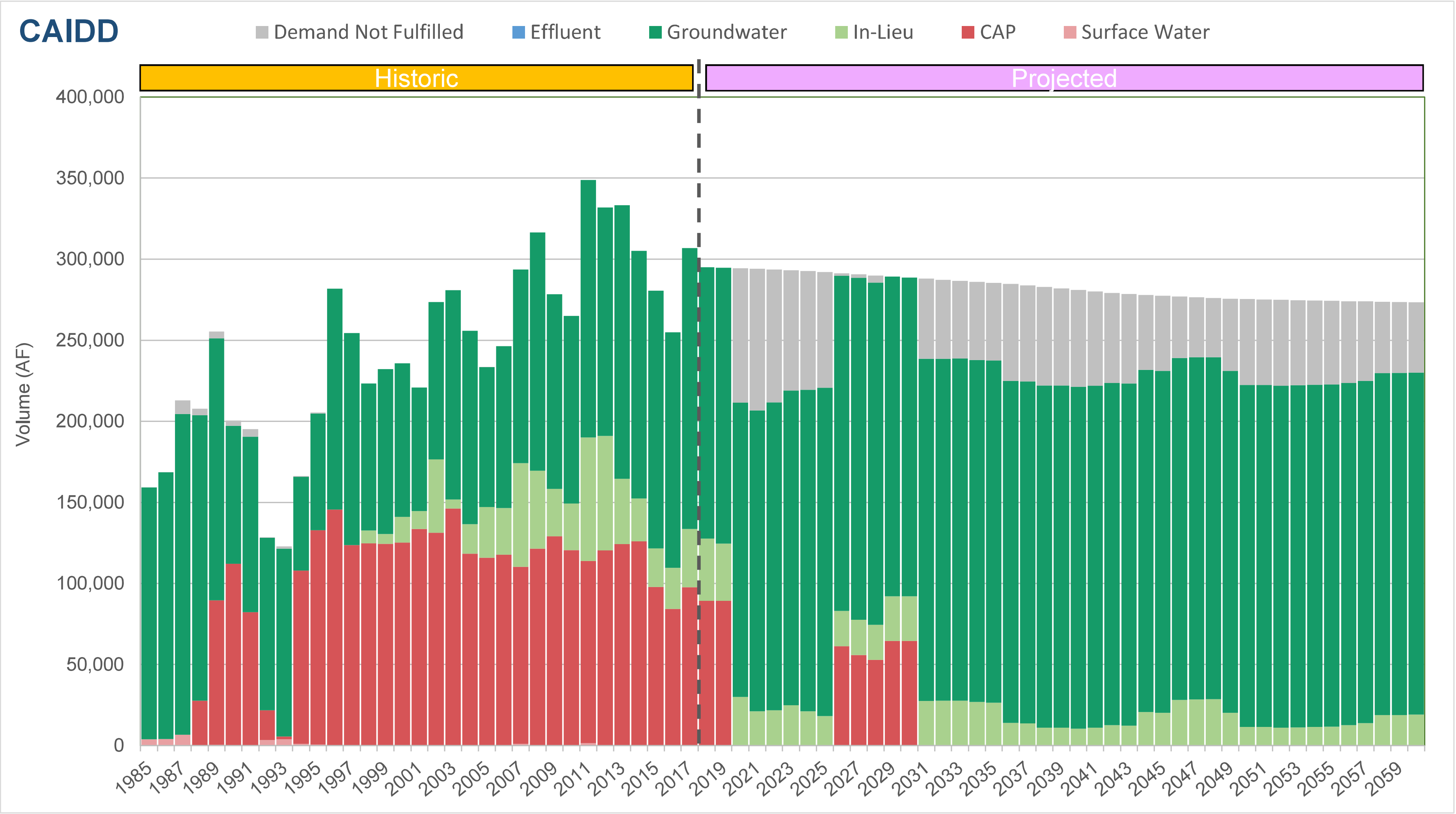
Demand Assumptions | **Water Supply Projections** (Acre-Feet)

Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	1,026	0	1,061	500	0	0	0	0	0	0	0	1,122	8	0
2019	1,272	0	1,056	500	0	0	0	0	0	0	0	1,203	19	0
2020	1,533	0	1,048	499	0	0	0	0	0	0	0	1,303	54	0
2021	1,802	0	1,045	499	0	0	0	0	0	0	0	1,407	93	0
2022	2,078	0	1,040	498	0	0	0	0	0	0	0	1,500	146	0
2023	2,357	0	1,035	498	0	0	0	0	0	0	0	1,594	201	0
2024	2,636	0	1,027	497	0	0	0	0	0	0	0	1,679	267	0
2025	2,927	0	1,024	497	0	0	0	0	0	0	0	1,762	334	0
2026	3,242	0	1,019	496	0	0	0	0	0	0	0	1,842	415	0
2027	3,555	0	1,014	496	0	0	0	0	0	0	0	1,921	504	0
2028	3,866	0	1,006	495	0	0	0	0	0	0	0	1,997	599	0
2029	4,176	0	1,004	495	0	0	0	0	0	0	0	2,064	693	0
2030	4,483	0	999	494	0	0	0	0	0	0	0	2,131	790	0
2031	4,785	0	994	494	0	0	0	0	0	0	0	2,197	885	0
2032	5,084	0	986	493	0	0	0	0	0	0	0	2,268	979	0
2033	5,381	0	984	493	0	0	0	0	0	0	0	2,326	1,072	0
2034	5,675	0	979	492	0	0	0	0	0	0	0	2,390	1,164	0
2035	5,966	0	974	492	0	0	0	0	0	0	0	2,452	1,255	0
2036	6,255	0	967	491	0	0	0	0	0	0	0	2,522	1,345	0
2037	6,363	0	965	491	0	0	0	0	0	0	0	2,525	1,434	0
2038	6,422	0	960	490	0	0	0	0	0	0	0	2,530	1,468	0
2039	6,480	0	955	490	0	0	0	0	0	0	0	2,536	1,486	0
2040	6,538	0	948	489	0	0	0	0	0	0	0	2,550	1,504	0
2041	6,595	0	945	489	0	0	0	0	0	0	0	2,547	1,522	0
2042	6,651	0	941	488	0	0	0	0	0	0	0	2,553	1,539	0
2043	6,707	0	936	488	0	0	0	0	0	0	0	2,558	1,556	0
2044	6,762	0	929	487	0	0	0	0	0	0	0	2,572	1,574	0
2045	6,816	0	927	487	0	0	0	0	0	0	0	2,568	1,590	0
2046	6,869	0	922	486	0	0	0	0	0	0	0	2,573	1,607	0
2047	6,921	0	917	486	0	0	0	0	0	0	0	2,577	1,623	0
2048	6,973	0	910	485	0	0	0	0	0	0	0	2,590	1,639	0
2049	7,024	0	908	485	0	0	0	0	0	0	0	2,585	1,655	0
2050	7,115	0	904	484	0	0	0	0	0	0	0	2,600	1,671	0
2051	7,228	0	902	484	0	0	0	0	0	0	0	2,622	1,698	0
2052	7,339	0	899	483	0	0	0	0	0	0	0	2,655	1,733	0
2053	7,448	0	902	483	0	0	0	0	0	0	0	2,667	1,767	0
2054	7,555	0	902	482	0	0	0	0	0	0	0	2,689	1,800	0
2055	7,660	0	902	482	0	0	0	0	0	0	0	2,710	1,832	0
2056	7,763	0	899	481	0	0	0	0	0	0	0	2,741	1,864	0
2057	7,864	0	902	481	0	0	0	0	0	0	0	2,751	1,896	0
2058	7,980	0	902	480	0	0	0	0	0	0	0	2,775	1,926	0
2059	8,093	0	902	480	0	0	0	0	0	0	0	2,798	1,961	0
2060	8,204	0	899	479	0	0	0	0	0	0	0	2,830	1,995	0

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



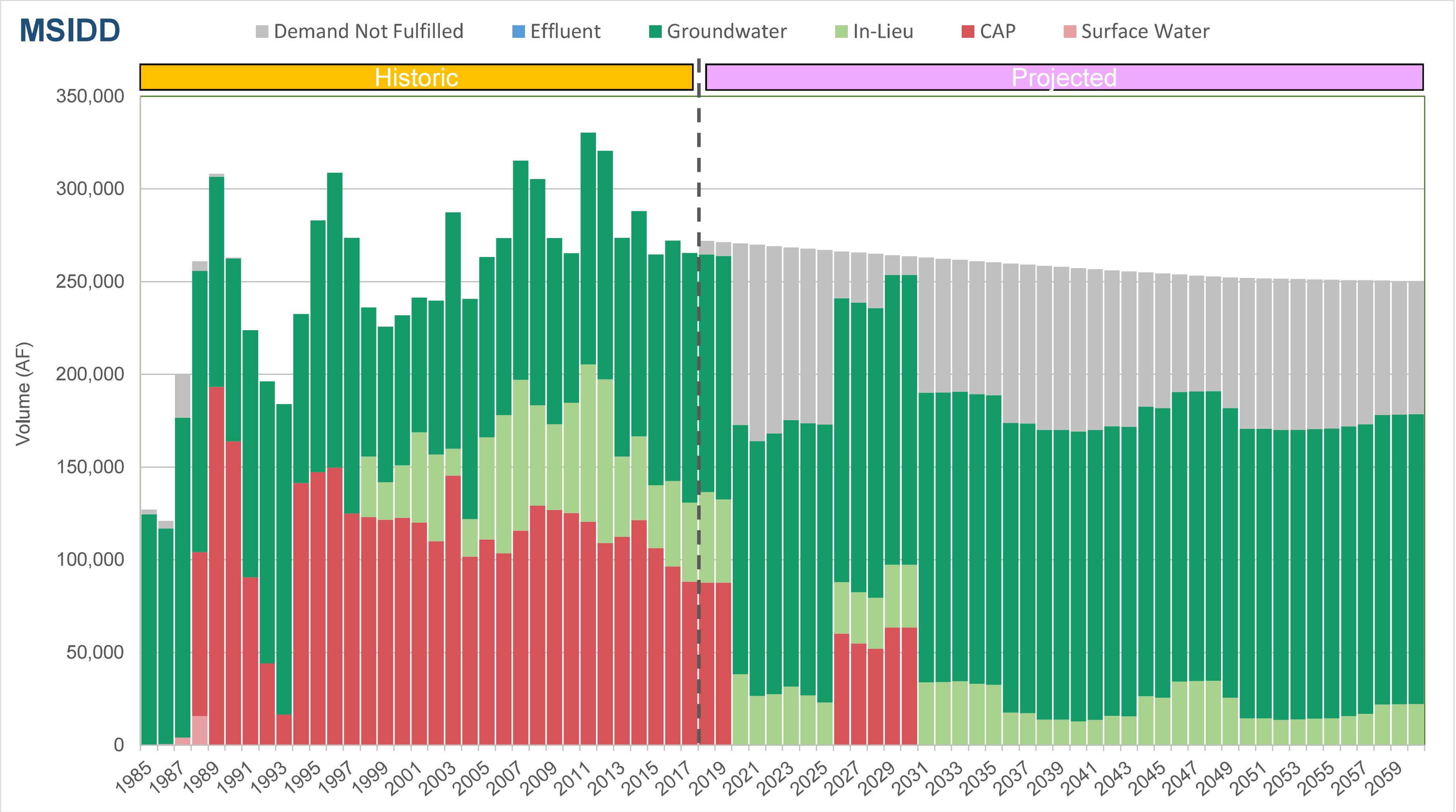
CAIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	89,223	38,492	167,376	0
2019	0	0	89,224	35,297	170,215	0
2020	0	0	0	30,142	181,406	82,815
2021	0	0	0	21,076	185,625	87,288
2022	0	0	0	21,801	189,843	81,897
2023	0	0	0	24,892	194,062	74,110
2024	0	0	0	21,247	198,281	73,054
2025	0	0	0	18,228	202,499	71,312
2026	0	0	61,242	21,799	206,718	1,591
2027	0	0	55,882	21,732	210,937	2,111
2028	0	0	52,930	21,666	210,937	4,440
2029	0	0	64,600	27,493	197,208	0
2030	0	0	64,600	27,468	196,558	0
2031	0	0	0	27,587	210,937	49,439
2032	0	0	0	27,702	210,937	48,658
2033	0	0	0	27,822	210,937	47,899
2034	0	0	0	26,940	210,937	48,136
2035	0	0	0	26,481	210,937	47,955
2036	0	0	0	13,972	210,937	59,814
2037	0	0	0	13,727	210,937	59,182
2038	0	0	0	11,102	210,937	60,853
2039	0	0	0	11,085	210,937	59,923
2040	0	0	0	10,409	210,937	59,646
2041	0	0	0	11,052	210,937	58,095
2042	0	0	0	12,628	210,937	55,604
2043	0	0	0	12,431	210,937	55,099
2044	0	0	0	20,814	210,937	46,206
2045	0	0	0	20,205	210,937	46,351
2046	0	0	0	28,204	210,937	37,874
2047	0	0	0	28,523	210,937	37,080
2048	0	0	0	28,638	210,937	36,472
2049	0	0	0	20,205	210,937	44,466
2050	0	0	0	11,543	210,937	52,836
2051	0	0	0	11,543	210,937	52,632
2052	0	0	0	11,079	210,937	52,868
2053	0	0	0	11,231	210,937	52,541
2054	0	0	0	11,565	210,937	52,008
2055	0	0	0	11,727	210,937	51,648
2056	0	0	0	12,665	210,937	50,483
2057	0	0	0	13,920	210,937	49,062
2058	0	0	0	18,796	210,937	44,016
2059	0	0	0	18,951	210,937	43,694
2060	0	0	0	19,117	210,937	43,333

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



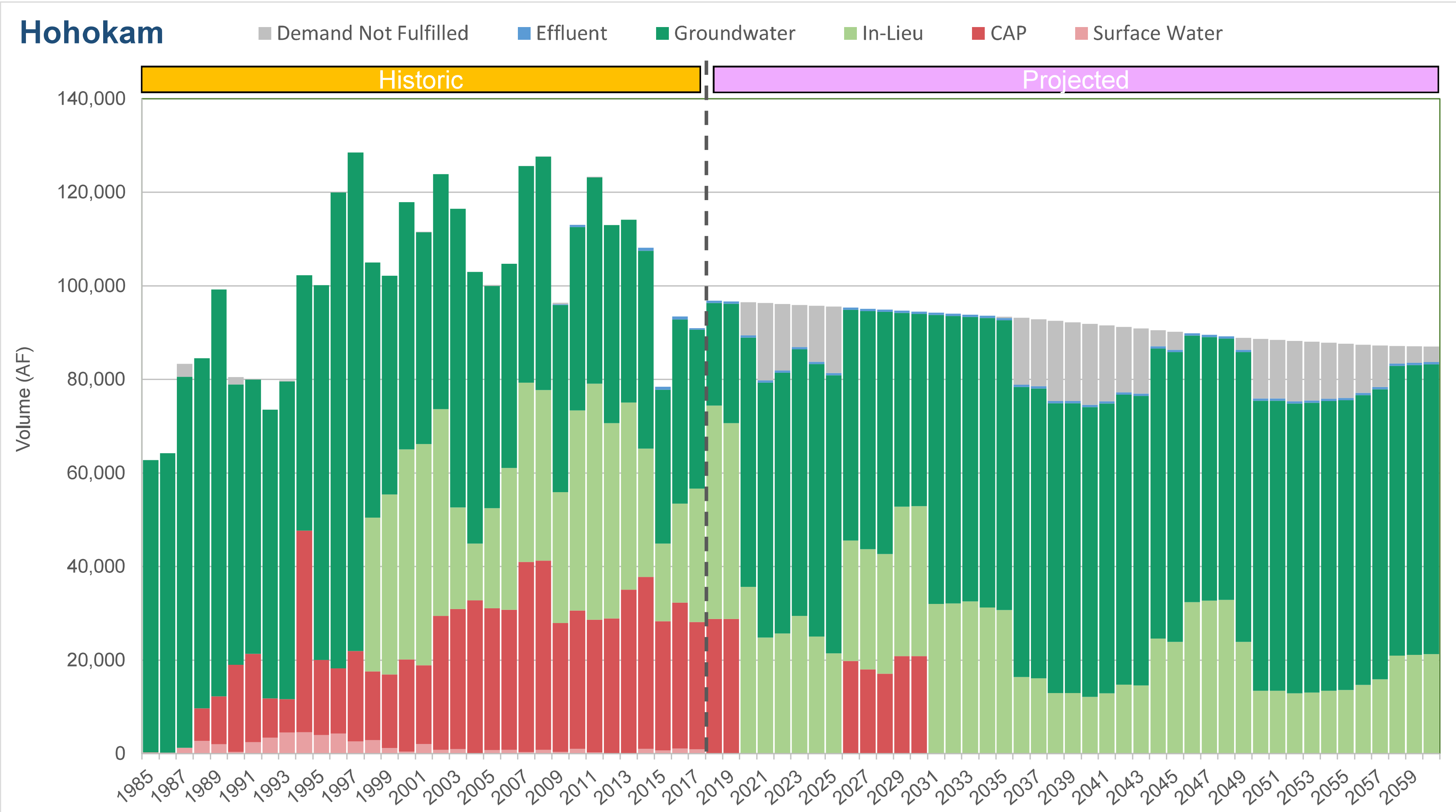
MSIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	87,707	48,866	128,120	7,359
2019	0	0	87,708	44,880	131,244	7,554
2020	0	0	0	38,285	134,369	98,031
2021	0	0	0	26,496	137,494	105,981
2022	0	0	0	27,505	140,619	101,120
2023	0	0	0	31,545	143,744	93,227
2024	0	0	0	26,850	146,869	94,060
2025	0	0	0	22,964	149,994	94,112
2026	0	0	60,200	27,632	153,119	25,435
2027	0	0	54,932	27,565	156,243	26,966
2028	0	0	52,030	27,499	156,243	29,252
2029	0	0	63,502	33,817	156,243	10,798
2030	0	0	63,502	33,904	156,243	10,045
2031	0	0	0	33,911	156,243	72,877
2032	0	0	0	34,026	156,243	72,096
2033	0	0	0	34,449	156,243	71,033
2034	0	0	0	33,121	156,243	71,713
2035	0	0	0	32,578	156,243	71,616
2036	0	0	0	17,547	156,243	85,997
2037	0	0	0	17,227	156,243	85,711
2038	0	0	0	13,796	156,243	88,527
2039	0	0	0	13,775	156,243	87,940
2040	0	0	0	12,901	156,243	88,197
2041	0	0	0	13,731	156,243	86,787
2042	0	0	0	15,793	156,243	84,136
2043	0	0	0	15,536	156,243	83,810
2044	0	0	0	26,454	156,243	72,304
2045	0	0	0	25,664	156,243	72,548
2046	0	0	0	34,268	156,243	63,384
2047	0	0	0	34,597	156,243	62,504
2048	0	0	0	34,751	156,243	61,784
2049	0	0	0	25,664	156,243	70,352
2050	0	0	0	14,366	156,243	81,351
2051	0	0	0	14,366	156,243	81,176
2052	0	0	0	13,726	156,243	81,618
2053	0	0	0	13,879	156,243	81,316
2054	0	0	0	14,287	156,243	80,734
2055	0	0	0	14,449	156,243	80,402
2056	0	0	0	15,585	156,243	79,069
2057	0	0	0	16,840	156,243	77,672
2058	0	0	0	21,911	156,243	72,457
2059	0	0	0	22,066	156,243	72,160
2060	0	0	0	22,231	156,243	71,824

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



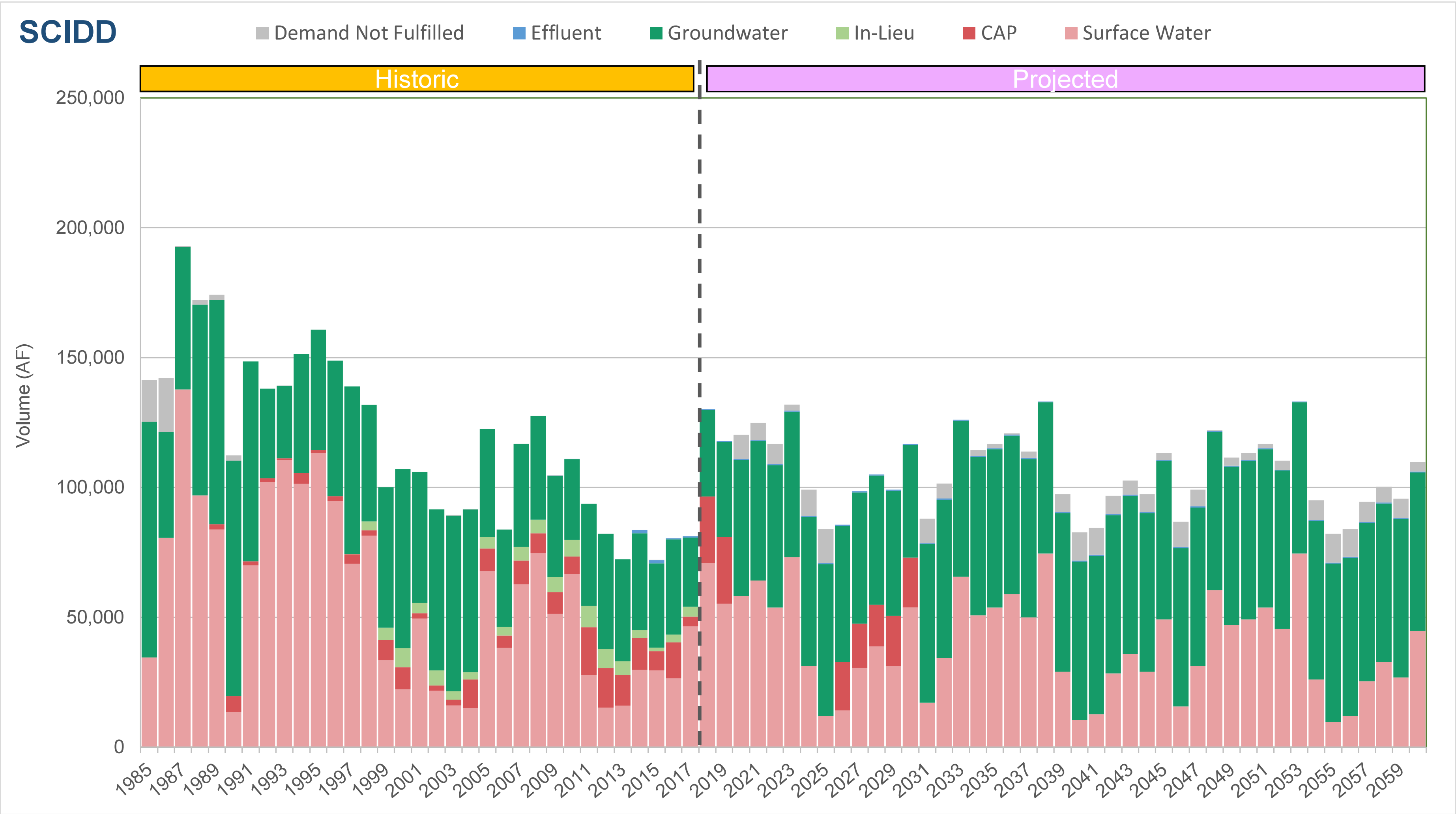
Hohokam

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	490	0	28,837	45,576	21,924	0
2019	490	0	28,837	41,834	25,503	0
2020	490	0	0	35,690	53,280	7,035
2021	490	0	0	24,811	54,519	16,501
2022	490	0	0	25,695	55,758	14,192
2023	490	0	0	29,422	56,997	9,035
2024	490	0	0	25,056	58,236	11,967
2025	490	0	0	21,443	59,475	14,145
2026	490	0	19,793	25,746	49,314	0
2027	490	0	18,061	25,680	50,905	0
2028	490	0	17,107	25,613	51,715	0
2029	490	0	20,879	31,931	41,422	0
2030	490	0	20,879	32,018	41,130	0
2031	490	0	0	32,025	61,783	0
2032	490	0	0	32,140	61,440	0
2033	490	0	0	32,563	60,798	0
2034	490	0	0	31,235	61,905	0
2035	490	0	0	30,692	61,954	275
2036	490	0	0	16,411	61,954	14,334
2037	490	0	0	16,116	61,954	14,323
2038	490	0	0	12,963	61,954	17,139
2039	490	0	0	12,942	61,954	16,828
2040	490	0	0	12,130	61,954	17,305
2041	490	0	0	12,902	61,954	16,214
2042	490	0	0	14,795	61,954	14,000
2043	490	0	0	14,559	61,954	13,905
2044	490	0	0	24,630	61,954	3,485
2045	490	0	0	23,899	61,954	3,885
2046	490	0	0	32,381	57,023	0
2047	490	0	0	32,709	56,366	0
2048	490	0	0	32,863	55,879	0
2049	490	0	0	23,899	61,954	2,577
2050	490	0	0	13,493	61,954	12,734
2051	490	0	0	13,493	61,954	12,520
2052	490	0	0	12,907	61,954	12,884
2053	490	0	0	13,060	61,954	12,531
2054	490	0	0	13,445	61,954	11,943
2055	490	0	0	13,607	61,954	11,577
2056	490	0	0	14,681	61,954	10,294
2057	490	0	0	15,936	61,954	8,853
2058	490	0	0	20,947	61,954	3,783
2059	490	0	0	21,102	61,954	3,571
2060	490	0	0	21,268	61,954	3,341

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



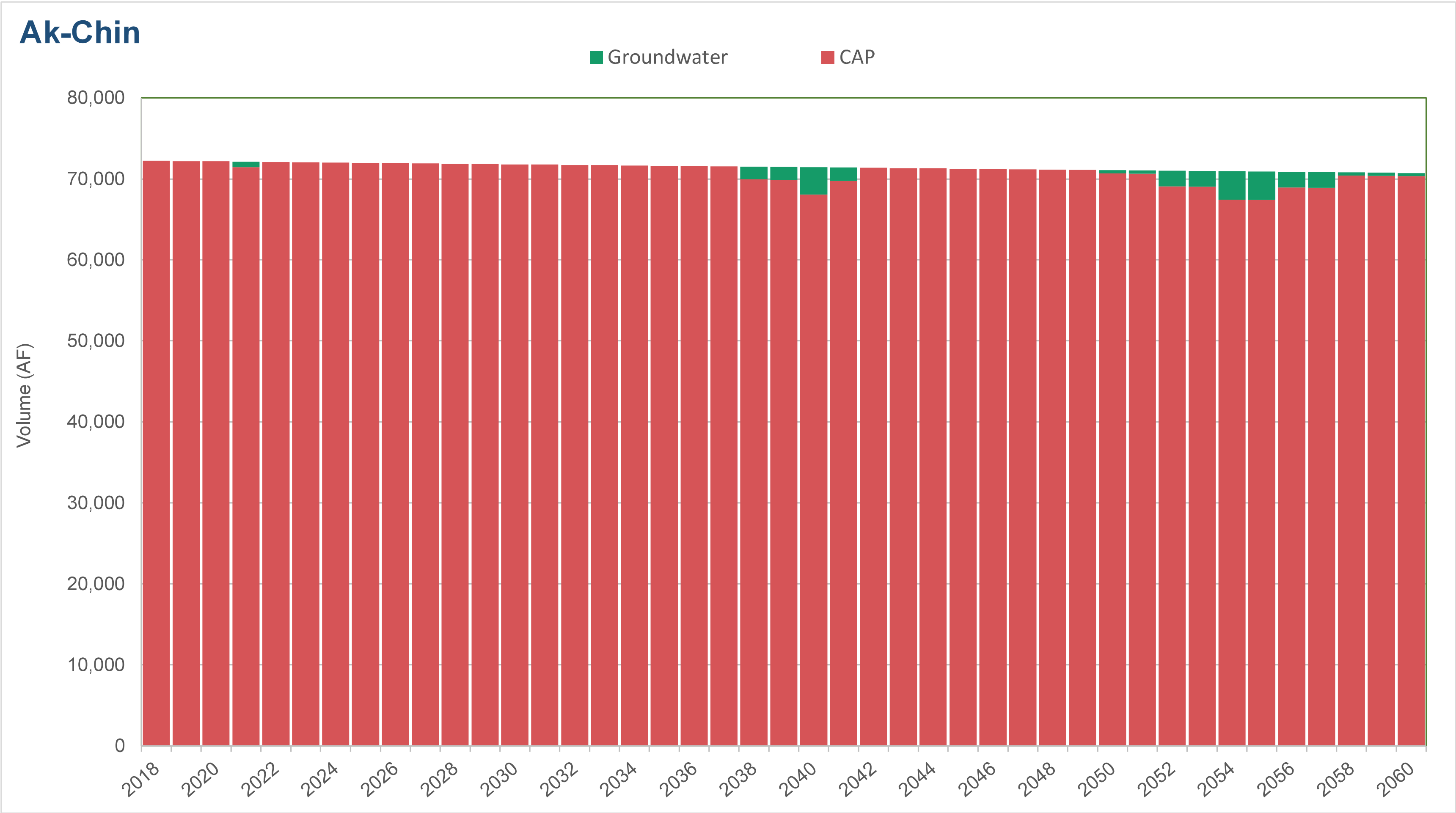
SCIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	410	70,870	25,657	0	33,272	0
2019	410	55,204	25,657	0	36,624	0
2020	410	58,188	0	0	52,442	9,201
2021	410	64,156	0	0	53,662	6,704
2022	410	53,712	0	0	54,882	7,719
2023	410	73,108	0	0	56,101	2,349
2024	410	31,332	0	0	57,321	10,069
2025	410	11,936	0	0	58,540	13,001
2026	410	14,174	18,546	0	52,516	0
2027	410	30,586	16,919	0	50,631	0
2028	410	38,792	16,024	0	49,769	0
2029	410	31,332	19,243	0	48,147	0
2030	410	53,712	19,243	0	43,358	0
2031	410	17,158	0	0	60,980	9,443
2032	410	34,316	0	0	60,980	5,771
2033	410	65,648	0	0	60,046	0
2034	410	50,728	0	0	60,980	2,259
2035	410	53,712	0	0	60,980	1,621
2036	410	58,934	0	0	60,980	503
2037	410	49,982	0	0	60,980	2,419
2038	410	74,600	0	0	58,131	0
2039	410	29,094	0	0	60,980	6,889
2040	410	10,444	0	0	60,980	10,880
2041	410	12,682	0	0	60,980	10,401
2042	410	28,348	0	0	60,980	7,049
2043	410	35,808	0	0	60,980	5,452
2044	410	29,094	0	0	60,980	6,889
2045	410	49,236	0	0	60,980	2,578
2046	410	15,666	0	0	60,980	9,762
2047	410	31,332	0	0	60,980	6,410
2048	410	60,426	0	0	60,980	184
2049	410	46,998	0	0	60,980	3,057
2050	410	49,236	0	0	60,980	2,578
2051	410	53,712	0	0	60,980	1,621
2052	410	45,506	0	0	60,980	3,377
2053	410	74,600	0	0	58,131	0
2054	410	26,110	0	0	60,980	7,527
2055	410	9,698	0	0	60,980	11,040
2056	410	11,936	0	0	60,980	10,561
2057	410	25,364	0	0	60,980	7,687
2058	410	32,824	0	0	60,980	6,091
2059	410	26,856	0	0	60,980	7,368
2060	410	44,760	0	0	60,980	3,536

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



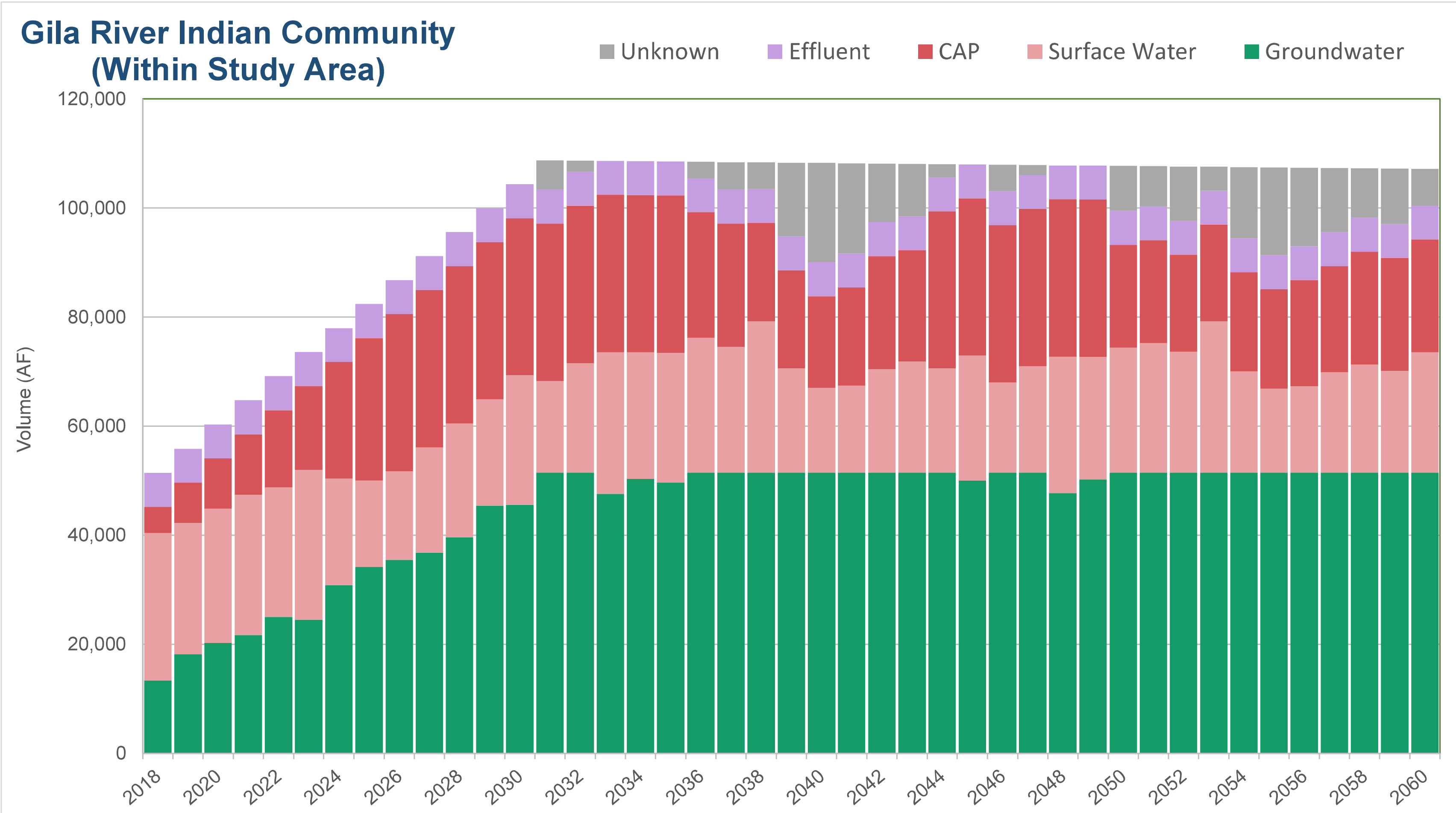
Ak-Chin

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	0	0	72,229	0	0	72,229
2019	0	0	72,193	0	0	72,193
2020	0	0	72,156	0	0	72,156
2021	0	0	71,436	685	0	72,121
2022	0	0	72,085	0	0	72,085
2023	0	0	72,049	0	0	72,049
2024	0	0	72,012	0	0	72,012
2025	0	0	71,977	0	0	71,977
2026	0	0	71,941	0	0	71,941
2027	0	0	71,905	0	0	71,905
2028	0	0	71,868	0	0	71,868
2029	0	0	71,834	0	0	71,834
2030	0	0	71,798	0	0	71,798
2031	0	0	71,762	0	0	71,762
2032	0	0	71,724	0	0	71,724
2033	0	0	71,691	0	0	71,691
2034	0	0	71,655	0	0	71,655
2035	0	0	71,619	0	0	71,619
2036	0	0	71,580	0	0	71,580
2037	0	0	71,548	0	0	71,548
2038	0	0	69,951	1,561	0	71,512
2039	0	0	69,874	1,603	0	71,476
2040	0	0	68,067	3,370	0	71,436
2041	0	0	69,720	1,685	0	71,405
2042	0	0	71,370	0	0	71,370
2043	0	0	71,334	0	0	71,334
2044	0	0	71,293	0	0	71,293
2045	0	0	71,263	0	0	71,263
2046	0	0	71,227	0	0	71,227
2047	0	0	71,192	0	0	71,192
2048	0	0	71,150	0	0	71,150
2049	0	0	71,121	0	0	71,121
2050	0	0	70,690	395	0	71,085
2051	0	0	70,655	395	0	71,050
2052	0	0	69,070	1,938	0	71,008
2053	0	0	69,043	1,936	0	70,979
2054	0	0	67,440	3,504	0	70,944
2055	0	0	67,409	3,499	0	70,908
2056	0	0	68,939	1,927	0	70,866
2057	0	0	68,913	1,924	0	70,838
2058	0	0	70,412	390	0	70,802
2059	0	0	70,377	390	0	70,767
2060	0	0	70,335	389	0	70,724

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



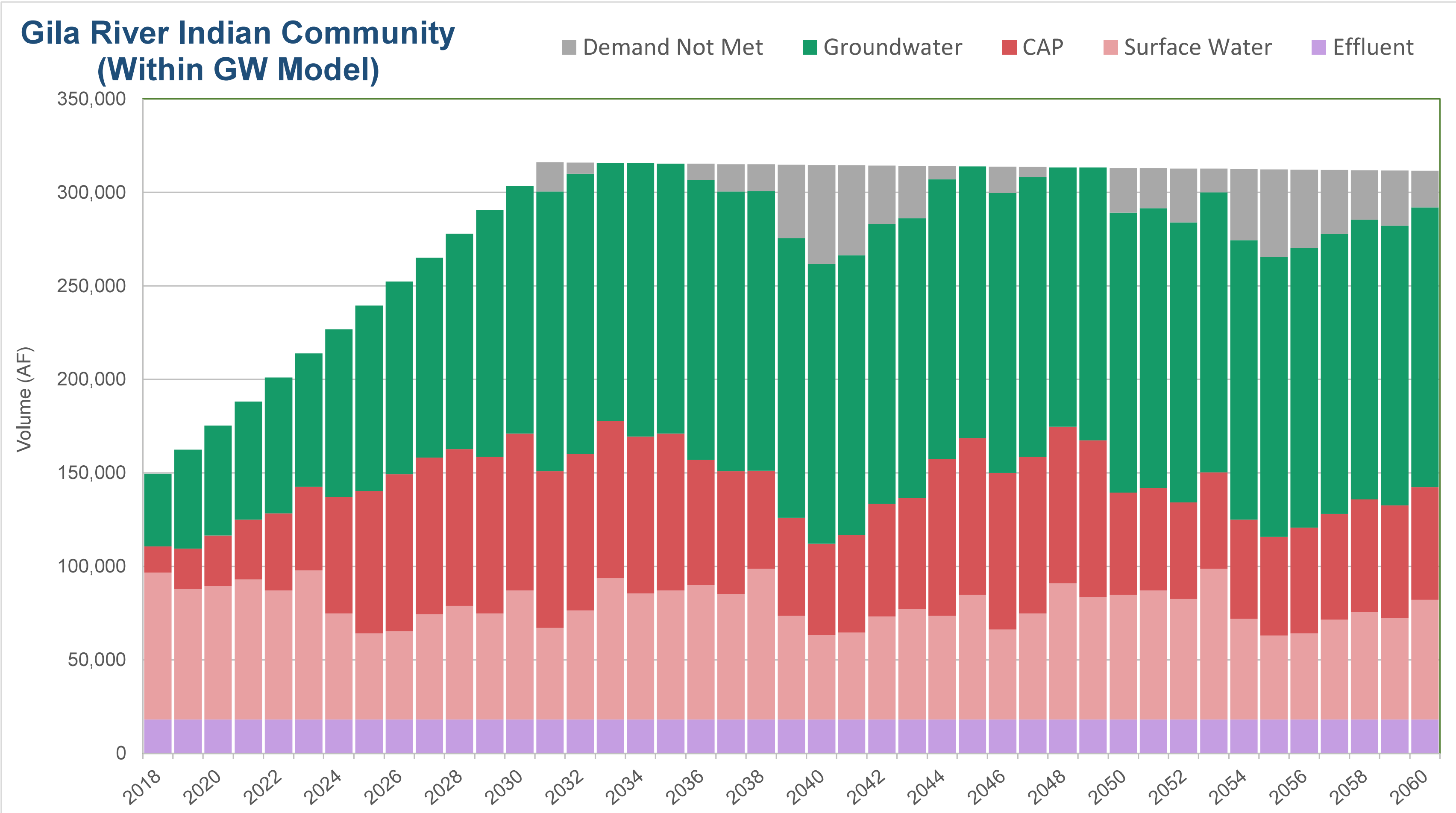
Gila River Indian Community
(Within Study Area)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	6,230	27,003	4,825	13,382	0	51,439
2019	6,230	24,031	7,404	18,208	0	55,873
2020	6,230	24,597	9,231	20,243	0	60,301
2021	6,230	25,729	11,051	21,716	0	64,726
2022	6,230	23,748	14,154	25,014	0	69,146
2023	6,230	27,427	15,381	24,523	0	73,562
2024	6,230	19,503	21,394	30,845	0	77,972
2025	6,230	15,823	26,160	34,167	0	82,380
2026	6,230	16,248	28,838	35,466	0	86,783
2027	6,230	19,361	28,838	36,751	0	91,181
2028	6,230	20,918	28,838	39,585	0	95,572
2029	6,230	19,503	28,838	45,393	0	99,964
2030	6,230	23,748	28,838	45,532	0	104,348
2031	6,230	16,814	28,838	51,471	5,375	108,729
2032	6,230	20,069	28,838	51,471	2,062	108,670
2033	6,230	26,012	28,838	47,540	0	108,620
2034	6,230	23,182	28,838	50,316	0	108,566
2035	6,230	23,748	28,838	49,696	0	108,512
2036	6,230	24,739	23,022	51,471	2,991	108,453
2037	6,230	23,040	22,603	51,471	5,060	108,404
2038	6,230	27,710	18,051	51,471	4,888	108,350
2039	6,230	19,078	18,020	51,471	13,497	108,296
2040	6,230	15,540	16,777	51,471	18,217	108,235
2041	6,230	15,965	17,959	51,471	16,564	108,188
2042	6,230	18,937	20,730	51,471	10,767	108,134
2043	6,230	20,352	20,394	51,471	9,633	108,080
2044	6,230	19,078	28,838	51,471	2,401	108,018
2045	6,230	22,899	28,838	50,005	0	107,972
2046	6,230	16,531	28,838	51,471	4,848	107,918
2047	6,230	19,503	28,838	51,471	1,823	107,865
2048	6,230	25,022	28,838	47,712	0	107,802
2049	6,230	22,474	28,838	50,214	0	107,757
2050	6,230	22,899	18,862	51,471	8,242	107,703
2051	6,230	23,748	18,862	51,471	7,339	107,650
2052	6,230	22,191	17,758	51,471	9,936	107,586
2053	6,230	27,710	17,758	51,471	4,374	107,542
2054	6,230	18,512	18,222	51,471	13,053	107,489
2055	6,230	15,399	18,222	51,471	16,113	107,435
2056	6,230	15,823	19,474	51,471	14,372	107,370
2057	6,230	18,370	19,474	51,471	11,783	107,328
2058	6,230	19,786	20,701	51,471	9,087	107,275
2059	6,230	18,654	20,701	51,471	10,166	107,221
2060	6,230	22,050	20,701	51,471	6,703	107,155

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



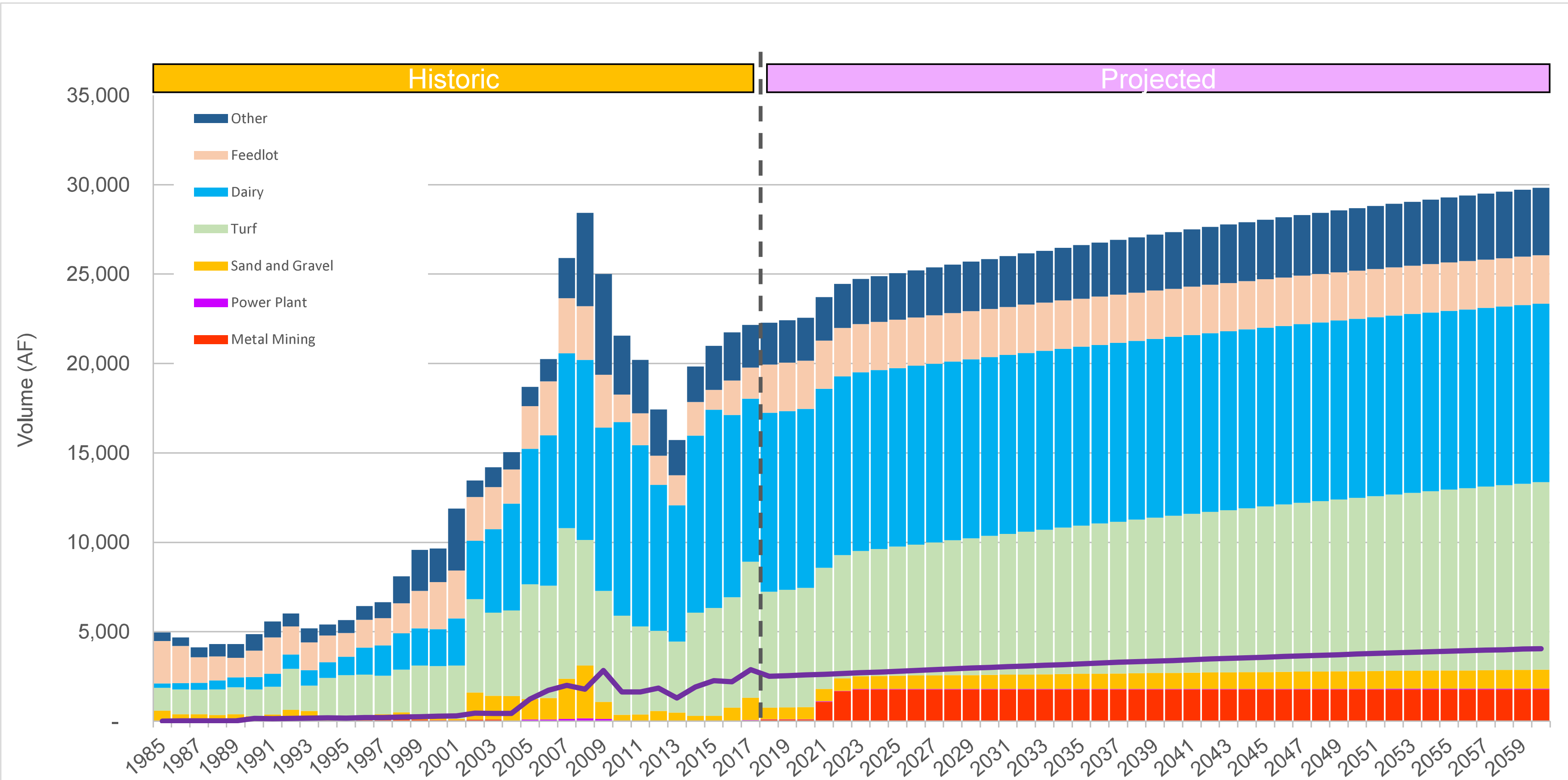
Gila River Indian Community
(Within GW Model)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	18,110	78,496	14,025	38,900	0	149,532
2019	18,110	69,858	21,523	52,929	0	162,420
2020	18,110	71,503	26,834	58,847	0	175,294
2021	18,110	74,794	32,126	63,127	0	188,157
2022	18,110	69,035	41,145	72,716	0	201,006
2023	18,110	79,730	44,713	71,288	0	213,843
2024	18,110	56,694	62,193	89,666	0	226,662
2025	18,110	45,998	76,046	99,323	0	239,477
2026	18,110	47,232	83,833	103,100	0	252,275
2027	18,110	56,282	83,833	106,835	0	265,060
2028	18,110	60,807	83,833	115,074	0	277,824
2029	18,110	56,694	83,833	131,955	0	290,592
2030	18,110	69,035	83,833	132,360	0	303,338
2031	18,110	48,877	83,833	149,625	15,626	316,072
2032	18,110	58,339	83,833	149,625	5,995	315,902
2033	18,110	75,617	83,833	138,197	0	315,757
2034	18,110	67,389	83,833	146,267	0	315,600
2035	18,110	69,035	83,833	144,464	0	315,442
2036	18,110	71,914	66,924	149,625	8,696	315,269
2037	18,110	66,978	65,706	149,625	14,709	315,128
2038	18,110	80,553	52,474	149,625	14,208	314,971
2039	18,110	55,459	52,384	149,625	39,235	314,813
2040	18,110	45,175	48,772	149,625	52,955	314,637
2041	18,110	46,409	52,205	149,625	48,150	314,500
2042	18,110	55,048	60,262	149,625	31,298	314,343
2043	18,110	59,162	59,286	149,625	28,003	314,186
2044	18,110	55,459	83,833	149,625	6,979	314,007
2045	18,110	66,567	83,833	145,364	0	313,873
2046	18,110	48,055	83,833	149,625	14,094	313,717
2047	18,110	56,694	83,833	149,625	5,298	313,560
2048	18,110	72,737	83,833	138,697	0	313,378
2049	18,110	65,332	83,833	145,972	0	313,248
2050	18,110	66,567	54,831	149,625	23,959	313,091
2051	18,110	69,035	54,831	149,625	21,334	312,935
2052	18,110	64,510	51,621	149,625	28,884	312,750
2053	18,110	80,553	51,621	149,625	12,714	312,624
2054	18,110	53,814	52,972	149,625	37,946	312,467
2055	18,110	44,764	52,972	149,625	46,840	312,311
2056	18,110	45,998	56,610	149,625	41,780	312,123
2057	18,110	53,403	56,610	149,625	34,252	312,001
2058	18,110	57,516	60,177	149,625	26,416	311,845
2059	18,110	54,225	60,177	149,625	29,551	311,689
2060	18,110	64,098	60,177	149,625	19,487	311,498

Central Arizona Project Service Area Model

D. Medium, Reduced Ag [EMSBS]

Medium growth rate, official growth pattern, hot and dry climate, Ag pumping capacity equals 1.25x the max gw use from 2010 to 2015. Pairwise comparison to Scenario C.



D. Medium, Reduced Ag [EMSBS]

Industrial Demand

Date	Metal Mining	Power Plant	Sand and Gravel	Turf	Dairy	Feedlot	Other	Total Demand
2018	85	18	660	6,479	10,000	2,700	2,332	22,274
2019	85	19	670	6,575	10,000	2,700	2,367	22,415
2020	85	19	680	6,678	10,000	2,700	2,404	22,566
2021	1,088	19	691	6,785	10,000	2,700	2,442	23,724
2022	1,673	19	702	6,893	10,000	2,700	2,481	24,468
2023	1,778	20	713	7,002	10,000	2,700	2,520	24,733
2024	1,778	20	724	7,111	10,000	2,700	2,559	24,893
2025	1,778	20	735	7,221	10,000	2,700	2,599	25,054
2026	1,778	21	747	7,331	10,000	2,700	2,639	25,215
2027	1,778	21	758	7,441	10,000	2,700	2,678	25,376
2028	1,778	21	769	7,550	10,000	2,700	2,717	25,535
2029	1,778	22	780	7,658	10,000	2,700	2,756	25,694
2030	1,778	22	791	7,765	10,000	2,700	2,795	25,851
2031	1,778	22	802	7,872	10,000	2,700	2,833	26,007
2032	1,778	22	813	7,978	10,000	2,700	2,871	26,162
2033	1,778	23	823	8,083	10,000	2,700	2,909	26,316
2034	1,778	23	834	8,187	10,000	2,700	2,947	26,468
2035	1,778	23	844	8,290	10,000	2,700	2,984	26,620
2036	1,778	24	855	8,392	10,000	2,700	3,020	26,769
2037	1,778	24	865	8,494	10,000	2,700	3,057	26,917
2038	1,778	24	875	8,594	10,000	2,700	3,093	27,064
2039	1,778	24	885	8,693	10,000	2,700	3,129	27,209
2040	1,778	25	895	8,791	10,000	2,700	3,164	27,353
2041	1,778	25	905	8,888	10,000	2,700	3,199	27,495
2042	1,778	25	915	8,983	10,000	2,700	3,233	27,635
2043	1,778	26	925	9,078	10,000	2,700	3,267	27,773
2044	1,778	26	934	9,171	10,000	2,700	3,301	27,910
2045	1,778	26	943	9,263	10,000	2,700	3,334	28,045
2046	1,778	26	953	9,354	10,000	2,700	3,367	28,178
2047	1,778	27	962	9,443	10,000	2,700	3,399	28,309
2048	1,778	27	971	9,532	10,000	2,700	3,430	28,438
2049	1,778	27	980	9,618	10,000	2,700	3,462	28,565
2050	1,778	27	988	9,704	10,000	2,700	3,492	28,690
2051	1,778	28	997	9,788	10,000	2,700	3,523	28,813
2052	1,778	28	1,005	9,871	10,000	2,700	3,553	28,934
2053	1,778	28	1,014	9,952	10,000	2,700	3,582	29,054
2054	1,778	28	1,022	10,032	10,000	2,700	3,611	29,171
2055	1,778	28	1,030	10,111	10,000	2,700	3,639	29,286
2056	1,778	29	1,038	10,188	10,000	2,700	3,667	29,399
2057	1,778	29	1,045	10,263	10,000	2,700	3,694	29,509
2058	1,778	29	1,053	10,338	10,000	2,700	3,721	29,618
2059	1,778	29	1,060	10,410	10,000	2,700	3,747	29,725
2060	1,778	30	1,068	10,482	10,000	2,700	3,772	29,829

CAP:SAM Supply and Demand Projections by Water Provider, Irrigation District and Tribe

Scenario E

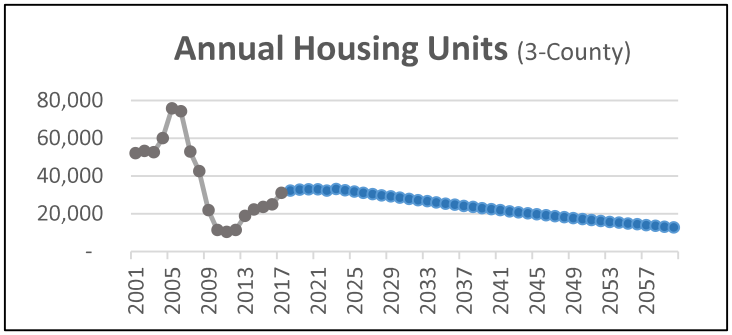
Climate: Hotter and Drier
Growth Rate: Slow
Growth Pattern: Dense Urbanization
Ag Pumping Capacity: Current

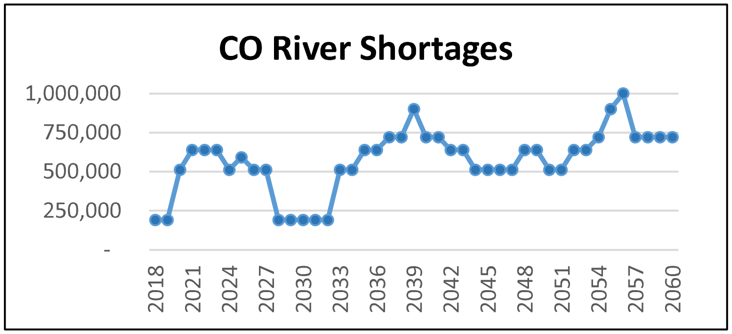
E. Lowest Demand, Hot [EMSBS]

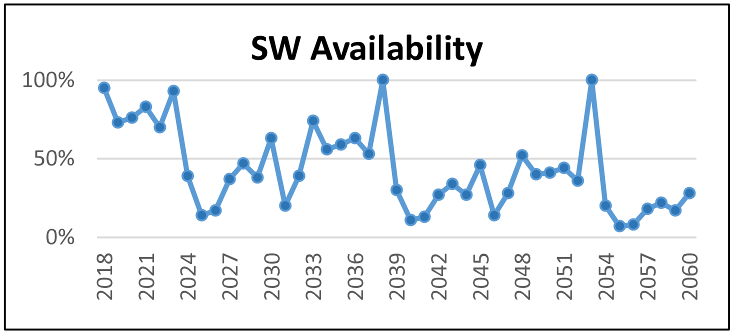
Run Date: 2/9/2021 **Filename:** CAPServiceArea_v3.51_ACv4.gsm

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise

Allow Shortages	Yes	
Select CRSS Array	3	*3=Synthetic*
Use Specific Trace	Yes	
Selected Trace	2	*1=Moderate; 2=Deep; 3=Slight*
AWBA Max M&I	20%	
Surface Water Scenario	6	*1=No Reduction; 2=Occational; 3=Frequent*
Use CAP Buildup	Yes	
CAP Buildup Scenario	2	*1=2035; 2=2045*
HU Growth Pattern	5	*3 = Spillover Growth*
HU Forecast	2	*1=Use Curve; 2=Eller Forecast*
HU Curve	2	
HU Growth Start Rate	-2%	
HU Ordinary Level	33,000	
HU Rate @ 50 yrs	-3%	
GPHUD Change Existing	-0.8%	*per year*
GPHUD Max Change Existing	-20%	
GPHUD Min Existing	150	
GPHUD Scenario New	1	
GPHUD Change New	-0.2%	*per year*
Ag Climate Adjustment	0.2%	
Ag Efficiency Increase	0.2%	*per year*
Ag Efficiency Goal	80%	
Ag Replace Crop CU	2.66	
Ag Intensity Scenario	2	
Ag Develop on Crops	70%	*Perecent of max on active Ag*
Ag Acres Replace Percent	0%	
Ag Replace Crop Year	2025	





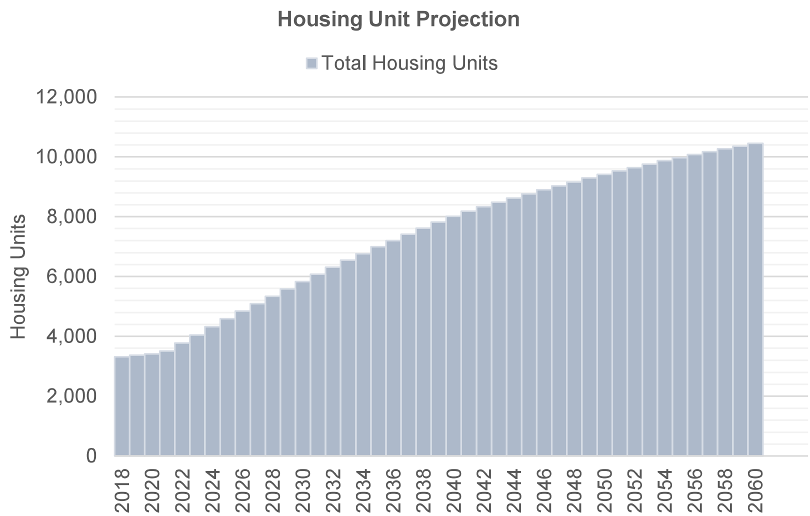


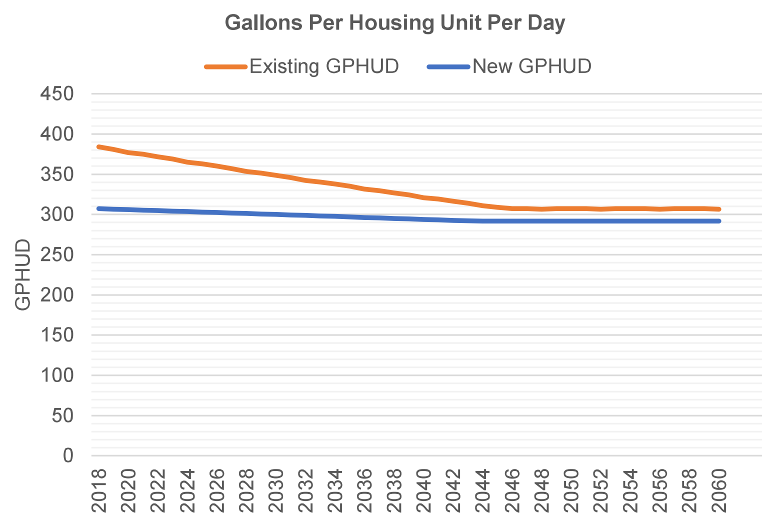
Central Arizona Project Service Area Model

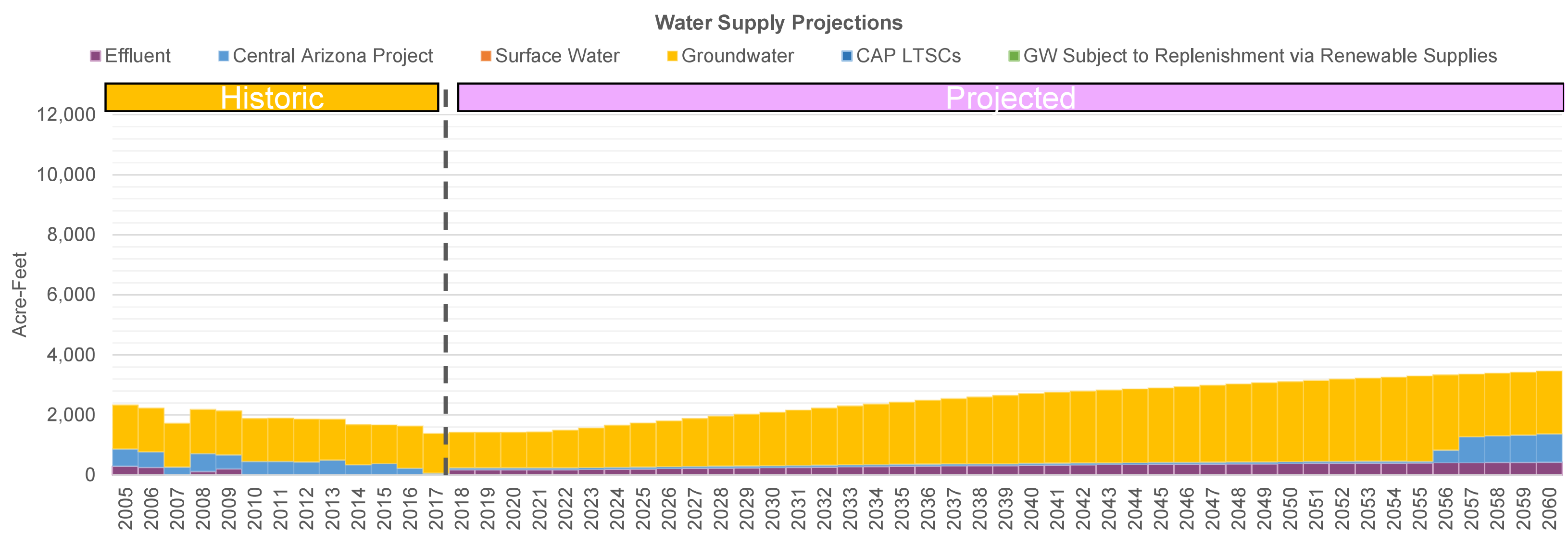
Eloy

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.







CAP-LTSCs Available After 2060:	105,345 AF
Additional[1] effluent available to be put to complete use[2] in 2060:	2,681 AF
Additional effluent available to be put to complete use during the simulation period:	74,297 AF

[1] Effluent volume in excess of that being used to satisfy annual demand (i.e. purple pipe or recovery of effluent credits)

[2] Use of effluent for purposes other than being discharged (i.e. storage, DPR, irrigation, etc)

Central Arizona Project Service Area Model

Eloy

E. Lowest Demand, Hot [EMSBS]

2/9/21 6:39 PM

Demand Assumptions

Water Supply Projections (Acre-Feet)

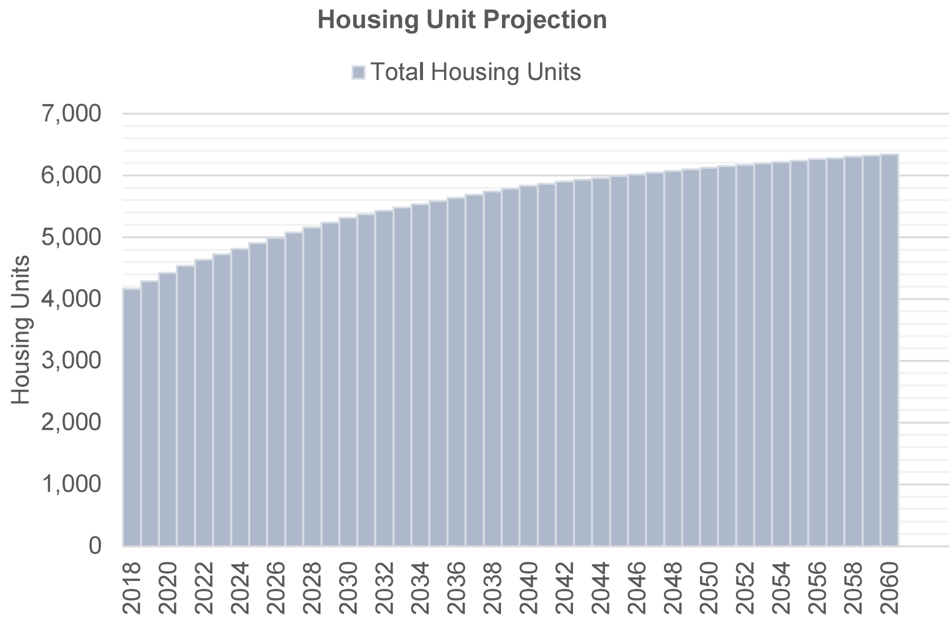
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	3,323	0	384	307	177	0	0	62	0	2,000	0	1,185	0	0
2019	3,371	0	381	307	177	0	0	62	0	2,000	0	1,185	0	0
2020	3,419	0	377	306	177	0	0	62	0	2,000	0	1,190	0	0
2021	3,511	0	375	305	178	0	0	62	0	2,000	0	1,202	0	0
2022	3,780	0	372	305	179	0	0	62	0	2,000	0	1,251	0	0
2023	4,055	0	369	304	186	0	0	62	0	2,000	0	1,326	0	0
2024	4,324	0	365	303	196	0	0	62	0	2,000	0	1,398	0	0
2025	4,588	0	363	303	206	0	0	62	0	2,000	0	1,466	0	0
2026	4,847	0	360	302	216	0	0	62	0	2,000	0	1,533	0	0
2027	5,100	0	357	302	225	0	0	62	0	2,000	0	1,599	0	0
2028	5,347	0	353	301	234	0	0	62	0	2,000	0	1,664	0	0
2029	5,590	0	351	300	244	0	0	62	0	2,000	0	1,723	0	0
2030	5,831	0	349	300	252	0	0	62	0	2,000	0	1,785	0	0
2031	6,074	0	346	299	261	0	0	62	0	2,000	0	1,845	0	0
2032	6,311	0	342	299	270	0	0	62	0	2,000	0	1,907	0	0
2033	6,543	0	340	298	278	0	0	62	0	2,000	0	1,962	0	0
2034	6,769	0	338	297	286	0	0	62	0	2,000	0	2,018	0	0
2035	6,990	0	335	297	294	0	0	62	0	2,000	0	2,073	0	0
2036	7,206	0	331	296	302	0	0	62	0	2,000	0	2,128	0	0
2037	7,416	0	330	296	310	0	0	62	0	2,000	0	2,175	0	0
2038	7,621	0	327	295	317	0	0	62	0	2,000	0	2,225	0	0
2039	7,822	0	324	295	324	0	0	54	0	1,751	0	2,280	0	0
2040	8,017	0	321	294	330	0	0	62	0	2,000	0	2,322	0	0
2041	8,187	0	319	293	337	0	0	62	0	2,000	0	2,359	0	0
2042	8,338	0	317	293	343	0	0	62	0	2,000	0	2,393	0	0
2043	8,486	0	314	292	348	0	0	62	0	2,000	0	2,424	0	0
2044	8,630	0	311	292	352	0	0	62	0	2,000	0	2,461	0	0
2045	8,770	0	309	292	357	0	0	62	0	2,000	0	2,489	0	0
2046	8,906	0	307	292	361	0	0	62	0	2,000	0	2,523	0	0
2047	9,038	0	307	292	366	0	0	62	0	2,000	0	2,561	0	0
2048	9,167	0	306	292	372	0	0	62	0	2,000	0	2,604	0	0
2049	9,293	0	307	292	378	0	0	62	0	2,000	0	2,634	0	0
2050	9,414	0	307	292	382	0	0	62	0	2,000	0	2,670	0	0
2051	9,533	0	307	292	387	0	0	62	0	2,000	0	2,704	0	0
2052	9,648	0	306	292	392	0	0	62	0	2,000	0	2,743	0	0
2053	9,759	0	307	292	397	0	0	62	0	2,000	0	2,769	0	0
2054	9,868	0	307	292	401	0	0	59	0	1,888	0	2,805	0	0
2055	9,973	0	307	292	406	0	0	49	0	1,575	0	2,845	0	0
2056	10,075	0	306	292	410	0	0	415	0	1,030	0	2,514	0	0
2057	10,173	0	307	292	415	0	0	861	0	1,085	0	2,090	0	0
2058	10,268	0	307	292	418	0	0	889	0	1,058	0	2,091	0	0
2059	10,360	0	307	292	422	0	0	914	0	1,033	0	2,092	0	0
2060	10,449	0	306	292	426	0	0	945	0	1,002	0	2,093	0	0

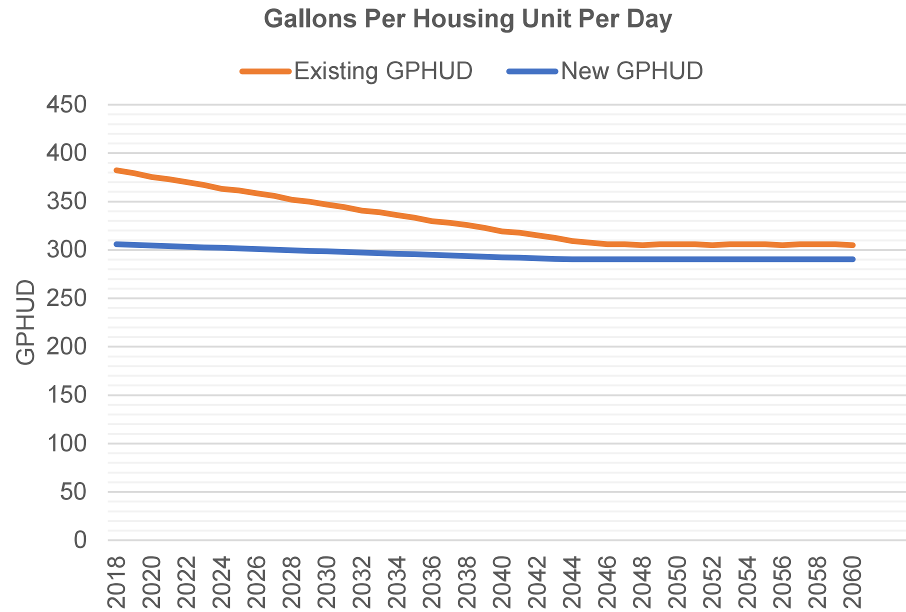
Central Arizona Project Service Area Model

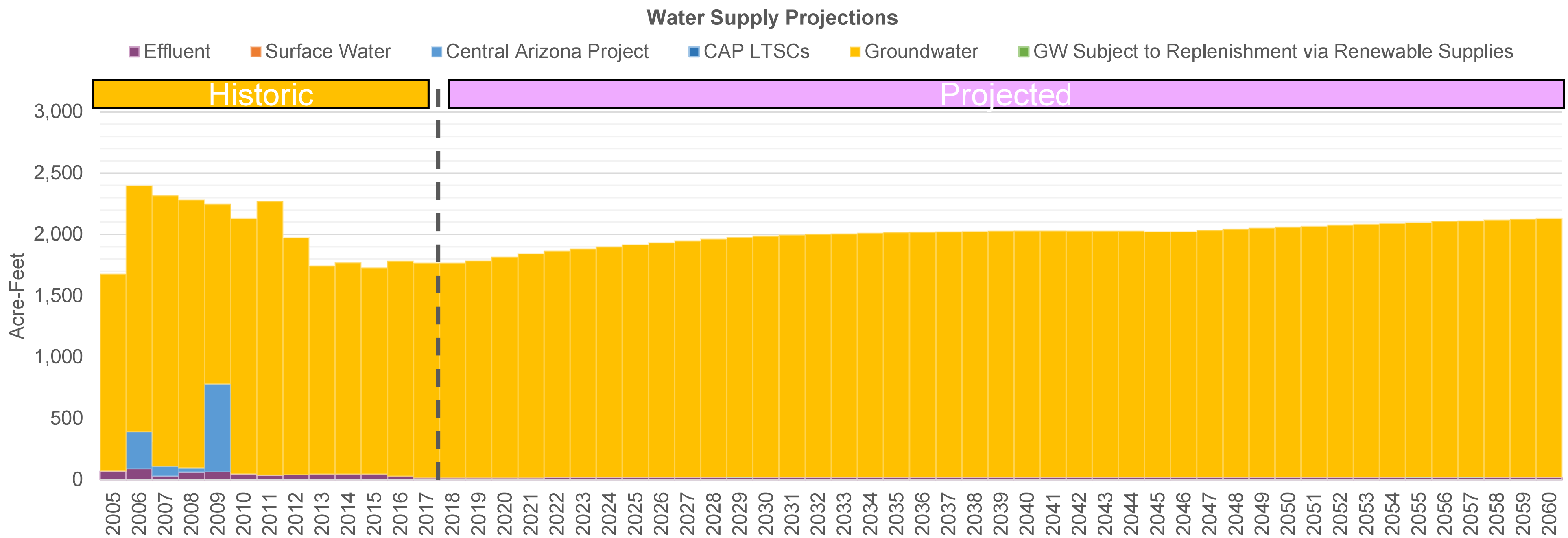
Florence

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.







Central Arizona Project Service Area Model

Florence

E. Lowest Demand, Hot [EMSBS]

2/9/21 6:39 PM

Demand Assumptions **Water Supply Projections** (Acre-Feet)

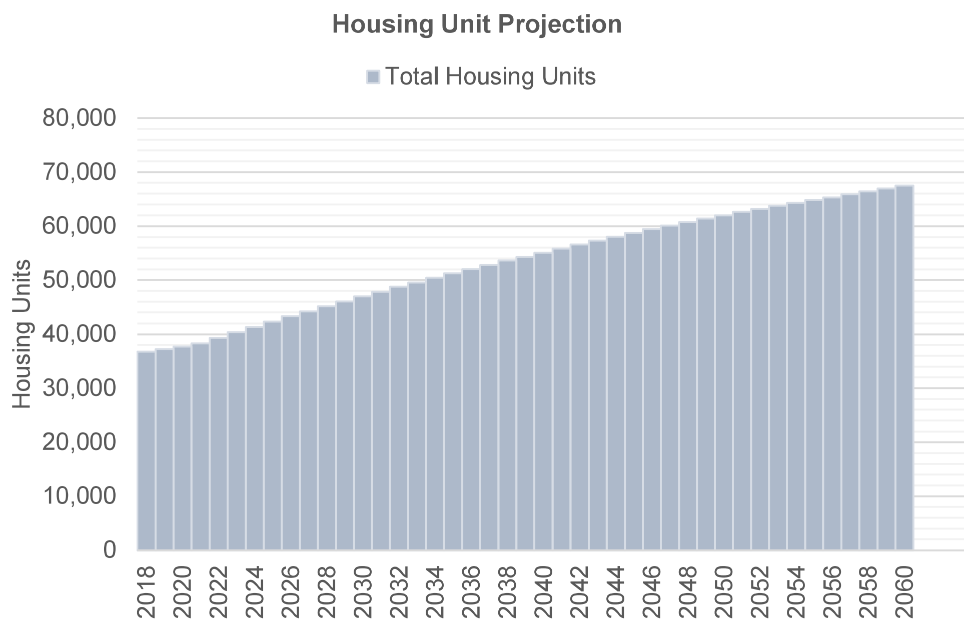
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	4,165	0	382	306	18	0	0	0	0	2,048	0	1,750	0	0
2019	4,292	0	379	305	18	0	0	0	0	2,048	0	1,767	0	0
2020	4,421	0	375	304	18	0	0	0	0	2,048	0	1,797	0	0
2021	4,542	0	373	304	18	0	0	0	0	2,048	0	1,826	0	0
2022	4,633	0	370	303	19	0	0	0	0	2,048	0	1,847	0	0
2023	4,725	0	367	303	19	0	0	0	0	2,048	0	1,864	0	0
2024	4,816	0	363	302	19	0	0	0	0	2,048	0	1,881	0	0
2025	4,905	0	361	301	19	0	0	0	0	2,048	0	1,897	0	0
2026	4,991	0	358	301	20	0	0	0	0	2,048	0	1,912	0	0
2027	5,077	0	355	300	20	0	0	0	0	2,048	0	1,927	0	0
2028	5,160	0	352	300	20	0	0	0	0	2,048	0	1,943	0	0
2029	5,241	0	350	299	20	0	0	0	0	2,048	0	1,956	0	0
2030	5,312	0	347	298	20	0	0	0	0	2,048	0	1,967	0	0
2031	5,370	0	344	298	20	0	0	0	0	2,048	0	1,975	0	0
2032	5,426	0	341	297	20	0	0	0	0	2,048	0	1,982	0	0
2033	5,481	0	339	297	20	0	0	0	0	2,048	0	1,986	0	0
2034	5,535	0	336	296	20	0	0	0	0	2,048	0	1,991	0	0
2035	5,587	0	333	295	20	0	0	0	0	2,048	0	1,995	0	0
2036	5,638	0	330	295	21	0	0	0	0	2,048	0	1,999	0	0
2037	5,688	0	328	294	21	0	0	0	0	2,048	0	2,001	0	0
2038	5,737	0	325	294	21	0	0	0	0	2,048	0	2,005	0	0
2039	5,784	0	323	293	21	0	0	0	0	1,793	0	2,007	0	0
2040	5,831	0	319	293	21	0	0	0	0	2,048	0	2,011	0	0
2041	5,868	0	318	292	21	0	0	0	0	2,048	0	2,011	0	0
2042	5,900	0	315	291	21	0	0	0	0	2,048	0	2,009	0	0
2043	5,931	0	313	291	21	0	0	0	0	2,048	0	2,006	0	0
2044	5,961	0	309	290	21	0	0	0	0	2,048	0	2,006	0	0
2045	5,990	0	308	290	21	0	0	0	0	2,048	0	2,002	0	0
2046	6,018	0	306	290	21	0	0	0	0	2,048	0	2,003	0	0
2047	6,046	0	306	290	21	0	0	0	0	2,048	0	2,012	0	0
2048	6,073	0	305	290	21	0	0	0	0	2,048	0	2,023	0	0
2049	6,099	0	306	290	21	0	0	0	0	2,048	0	2,029	0	0
2050	6,124	0	306	290	21	0	0	0	0	2,048	0	2,038	0	0
2051	6,149	0	306	290	21	0	0	0	0	2,048	0	2,046	0	0
2052	6,173	0	305	290	21	0	0	0	0	2,048	0	2,055	0	0
2053	6,196	0	306	290	21	0	0	0	0	2,048	0	2,061	0	0
2054	6,219	0	306	290	21	0	0	0	0	1,933	0	2,069	0	0
2055	6,240	0	306	290	21	0	0	0	0	1,613	0	2,076	0	0
2056	6,262	0	305	290	21	0	0	0	0	1,435	0	2,085	0	0
2057	6,283	0	306	290	21	0	0	0	0	1,933	0	2,090	0	0
2058	6,303	0	306	290	21	0	0	0	0	1,933	0	2,096	0	0
2059	6,323	0	306	290	22	0	0	0	0	1,933	0	2,102	0	0
2060	6,343	0	305	290	22	0	0	0	0	1,933	0	2,111	0	0

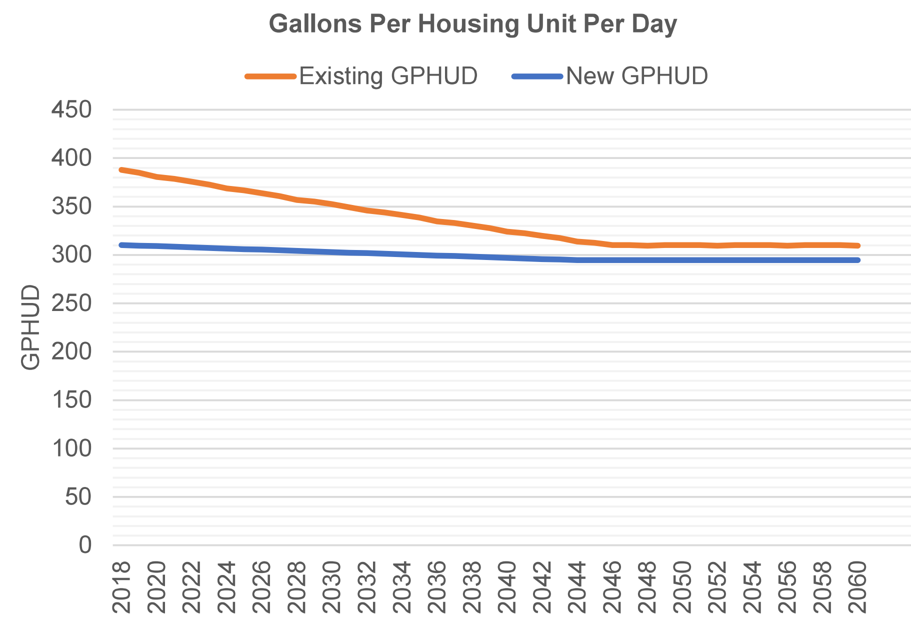
WCPinalValleySyst

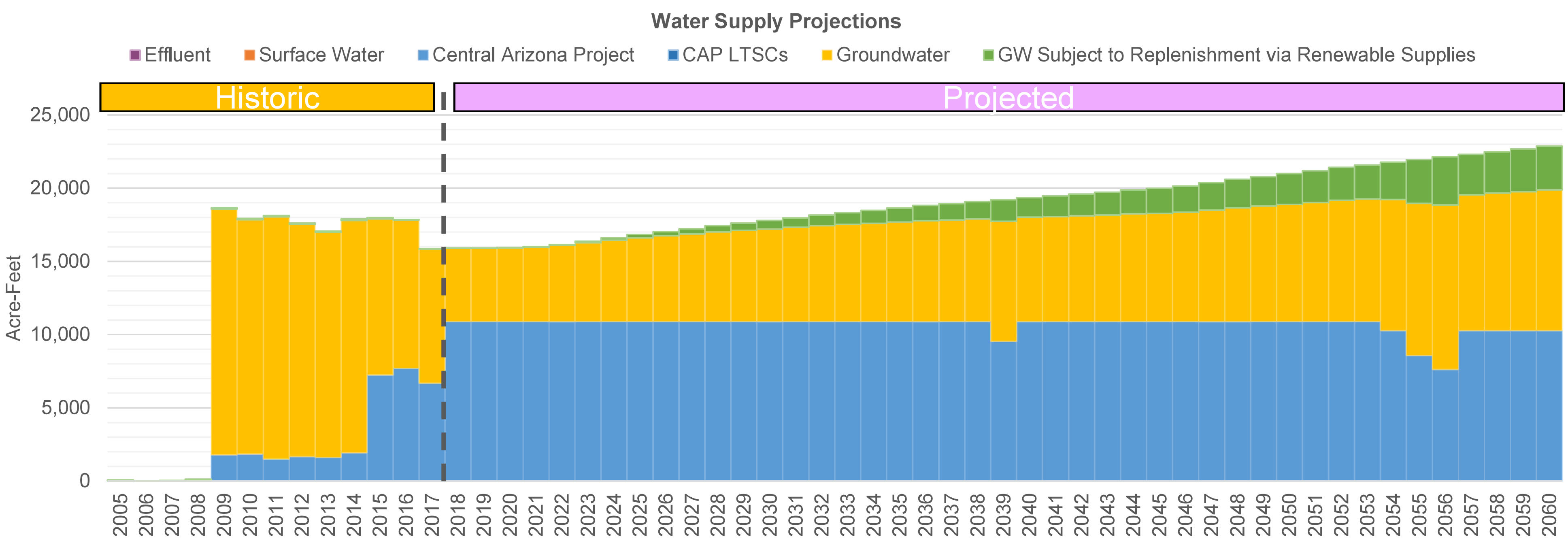
Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.







Central Arizona Project Service Area Model

AZWCPinalVall(

E. Lowest Demand, Hot [EMSBS]

2/9/21 6:39 PM

Demand Assumptions | **Water Supply Projections** (Acre-Feet)

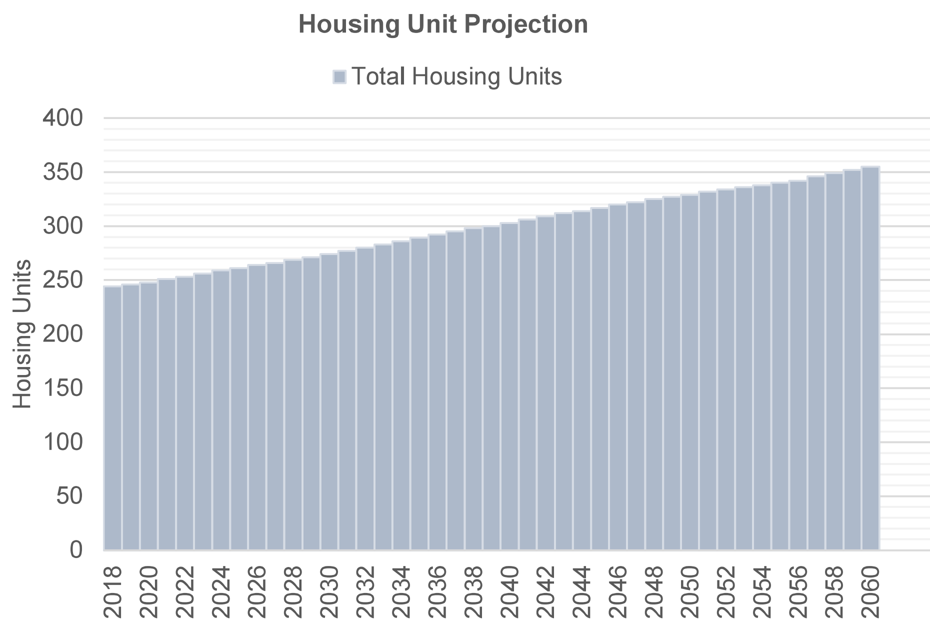
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	36,745	0	388	310	0	0	0	2,800	8,084	0	0	5,013	8	0
2019	37,236	0	385	310	0	0	0	2,800	8,084	0	0	5,004	13	0
2020	37,729	0	381	309	0	0	0	2,800	8,084	0	0	5,035	27	0
2021	38,325	0	379	308	0	0	0	2,800	8,084	0	0	5,082	42	0
2022	39,325	0	376	308	0	0	0	2,800	8,084	0	0	5,207	67	0
2023	40,350	0	373	307	0	0	0	2,800	8,084	0	0	5,387	110	0
2024	41,354	0	369	307	0	0	0	2,800	8,084	0	0	5,560	166	0
2025	42,337	0	367	306	0	0	0	2,800	8,084	0	0	5,717	222	0
2026	43,300	0	364	305	0	0	0	2,800	8,084	0	0	5,859	289	0
2027	44,242	0	361	305	0	0	0	2,800	8,084	0	0	5,993	356	0
2028	45,164	0	357	304	0	0	0	2,800	8,084	0	0	6,122	429	0
2029	46,066	0	355	303	0	0	0	2,800	8,084	0	0	6,229	503	0
2030	46,964	0	352	303	0	0	0	2,800	8,084	0	0	6,336	578	0
2031	47,862	0	349	302	0	0	0	2,800	8,084	0	0	6,441	655	0
2032	48,741	0	346	302	0	0	0	2,800	8,084	0	0	6,552	734	0
2033	49,599	0	344	301	0	0	0	2,800	8,084	0	0	6,634	812	0
2034	50,437	0	341	300	0	0	0	2,800	8,084	0	0	6,721	889	0
2035	51,255	0	338	300	0	0	0	2,800	8,084	0	0	6,802	966	0
2036	52,054	0	335	299	0	0	0	2,800	8,084	0	0	6,889	1,043	0
2037	52,833	0	333	299	0	0	0	2,800	8,084	0	0	6,945	1,117	0
2038	53,594	0	330	298	0	0	0	2,800	8,084	0	0	7,009	1,191	0
2039	54,336	0	328	297	0	0	0	2,451	7,078	0	0	8,216	1,469	0
2040	55,059	0	324	297	0	0	0	2,800	8,084	0	0	7,136	1,337	0
2041	55,811	0	322	296	0	0	0	2,800	8,084	0	0	7,176	1,406	0
2042	56,575	0	320	296	0	0	0	2,800	8,084	0	0	7,234	1,481	0
2043	57,319	0	317	295	0	0	0	2,800	8,084	0	0	7,289	1,557	0
2044	58,044	0	314	295	0	0	0	2,800	8,084	0	0	7,362	1,634	0
2045	58,750	0	312	295	0	0	0	2,800	8,084	0	0	7,403	1,707	0
2046	59,437	0	310	295	0	0	0	2,800	8,084	0	0	7,478	1,782	0
2047	60,105	0	310	295	0	0	0	2,800	8,084	0	0	7,619	1,865	0
2048	60,755	0	309	295	0	0	0	2,800	8,084	0	0	7,775	1,948	0
2049	61,387	0	310	295	0	0	0	2,800	8,084	0	0	7,887	2,026	0
2050	62,001	0	310	295	0	0	0	2,800	8,084	0	0	8,014	2,104	0
2051	62,598	0	310	295	0	0	0	2,800	8,084	0	0	8,137	2,181	0
2052	63,178	0	309	295	0	0	0	2,800	8,084	0	0	8,277	2,259	0
2053	63,741	0	310	295	0	0	0	2,800	8,084	0	0	8,371	2,331	0
2054	64,288	0	310	295	0	0	0	2,643	7,630	0	0	8,958	2,538	0
2055	64,819	0	310	295	0	0	0	2,205	6,366	0	0	10,385	2,991	0
2056	65,333	0	309	295	0	0	0	1,961	5,663	0	0	11,238	3,282	0
2057	65,907	0	310	295	0	0	0	2,643	7,630	0	0	9,274	2,751	0
2058	66,468	0	310	295	0	0	0	2,643	7,630	0	0	9,384	2,829	0
2059	67,012	0	310	295	0	0	0	2,643	7,630	0	0	9,490	2,905	0
2060	67,539	0	309	295	0	0	0	2,643	7,630	0	0	9,618	2,982	0

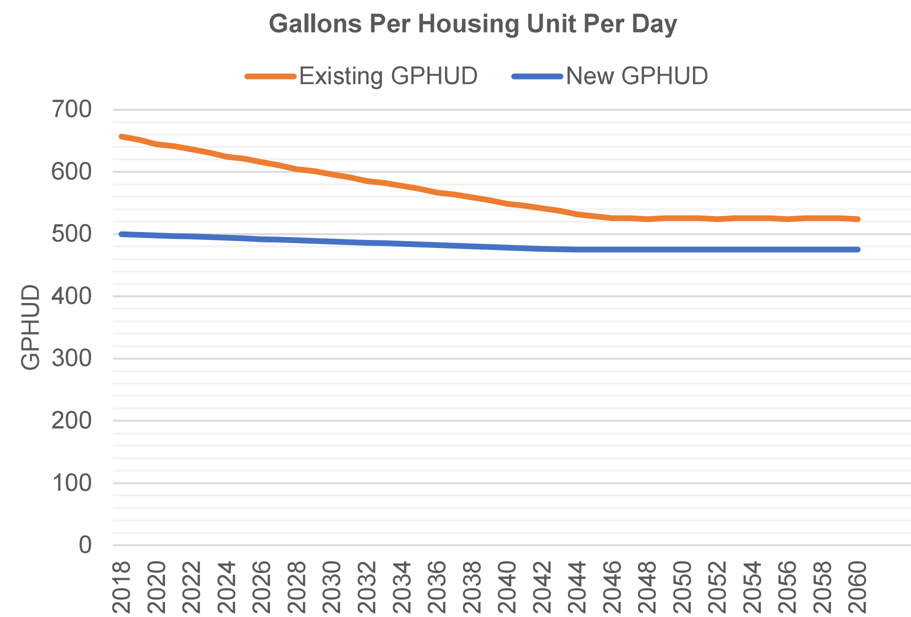
Central Arizona Project Service Area Model

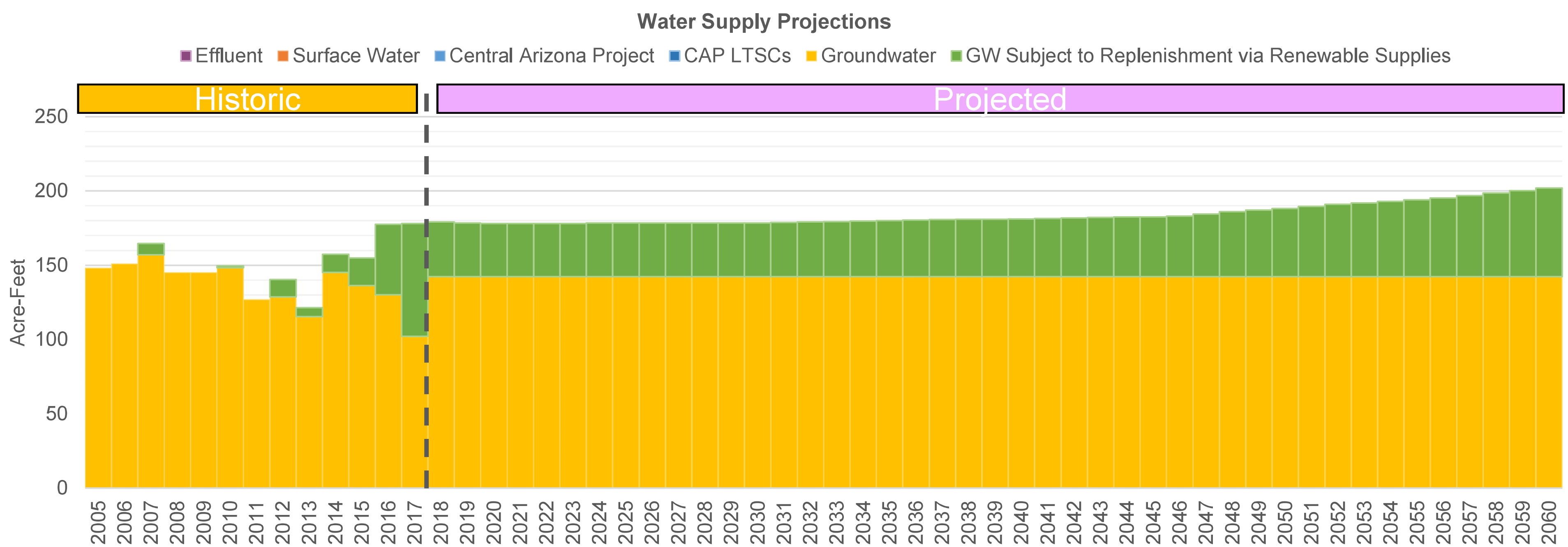
CasaGrande

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.







Central Arizona Project Service Area Model

CasaGrande

E. Lowest Demand, Hot [EMSBS]

2/9/21 6:39 PM

Demand Assumptions | **Water Supply Projections** (Acre-Feet)

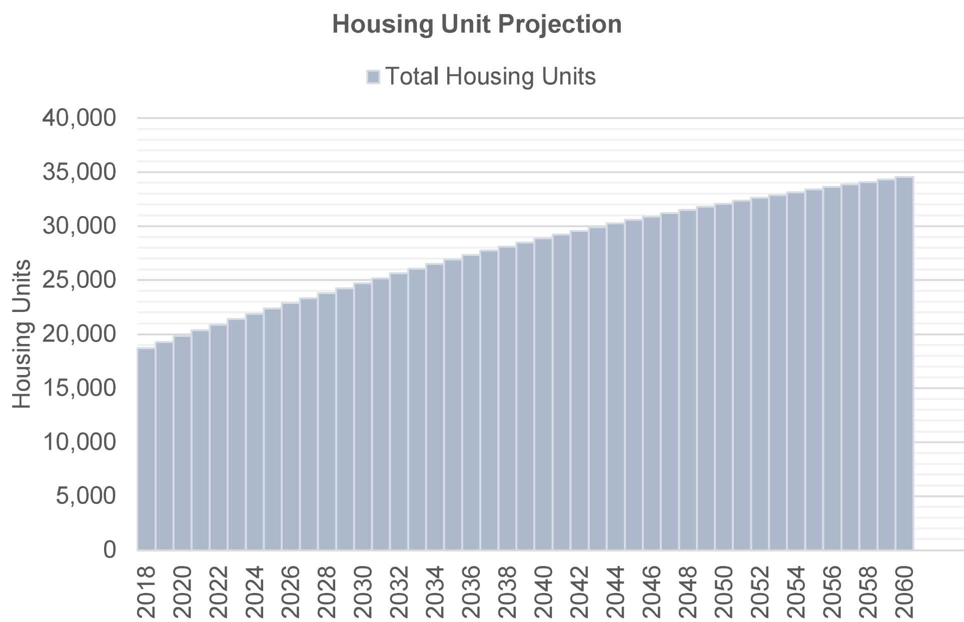
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	244	0	657	500	0	0	0	0	0	0	0	142	37	0
2019	246	0	651	499	0	0	0	0	0	0	0	142	36	0
2020	248	0	644	498	0	0	0	0	0	0	0	142	36	0
2021	251	0	641	497	0	0	0	0	0	0	0	142	36	0
2022	253	0	636	496	0	0	0	0	0	0	0	142	36	0
2023	256	0	631	495	0	0	0	0	0	0	0	142	36	0
2024	259	0	624	494	0	0	0	0	0	0	0	142	36	0
2025	261	0	621	493	0	0	0	0	0	0	0	142	36	0
2026	264	0	616	492	0	0	0	0	0	0	0	142	36	0
2027	266	0	611	491	0	0	0	0	0	0	0	142	36	0
2028	269	0	604	490	0	0	0	0	0	0	0	142	36	0
2029	271	0	601	489	0	0	0	0	0	0	0	142	36	0
2030	274	0	596	488	0	0	0	0	0	0	0	142	36	0
2031	277	0	592	487	0	0	0	0	0	0	0	142	36	0
2032	280	0	585	486	0	0	0	0	0	0	0	142	37	0
2033	283	0	582	485	0	0	0	0	0	0	0	142	37	0
2034	286	0	577	484	0	0	0	0	0	0	0	142	37	0
2035	289	0	573	483	0	0	0	0	0	0	0	142	38	0
2036	292	0	567	482	0	0	0	0	0	0	0	142	38	0
2037	295	0	564	481	0	0	0	0	0	0	0	142	38	0
2038	298	0	559	480	0	0	0	0	0	0	0	142	39	0
2039	300	0	555	479	0	0	0	0	0	0	0	142	39	0
2040	303	0	549	478	0	0	0	0	0	0	0	142	39	0
2041	306	0	546	477	0	0	0	0	0	0	0	142	39	0
2042	309	0	542	477	0	0	0	0	0	0	0	142	39	0
2043	312	0	537	476	0	0	0	0	0	0	0	142	40	0
2044	314	0	531	475	0	0	0	0	0	0	0	142	40	0
2045	317	0	529	475	0	0	0	0	0	0	0	142	40	0
2046	320	0	525	475	0	0	0	0	0	0	0	142	41	0
2047	322	0	525	475	0	0	0	0	0	0	0	142	42	0
2048	325	0	524	475	0	0	0	0	0	0	0	142	44	0
2049	327	0	525	475	0	0	0	0	0	0	0	142	45	0
2050	329	0	525	475	0	0	0	0	0	0	0	142	46	0
2051	332	0	525	475	0	0	0	0	0	0	0	142	47	0
2052	334	0	524	475	0	0	0	0	0	0	0	142	49	0
2053	336	0	525	475	0	0	0	0	0	0	0	142	50	0
2054	338	0	525	475	0	0	0	0	0	0	0	142	51	0
2055	340	0	525	475	0	0	0	0	0	0	0	142	52	0
2056	342	0	524	475	0	0	0	0	0	0	0	142	53	0
2057	346	0	525	475	0	0	0	0	0	0	0	142	54	0
2058	349	0	525	475	0	0	0	0	0	0	0	142	56	0
2059	352	0	525	475	0	0	0	0	0	0	0	142	58	0
2060	355	0	524	475	0	0	0	0	0	0	0	142	60	0

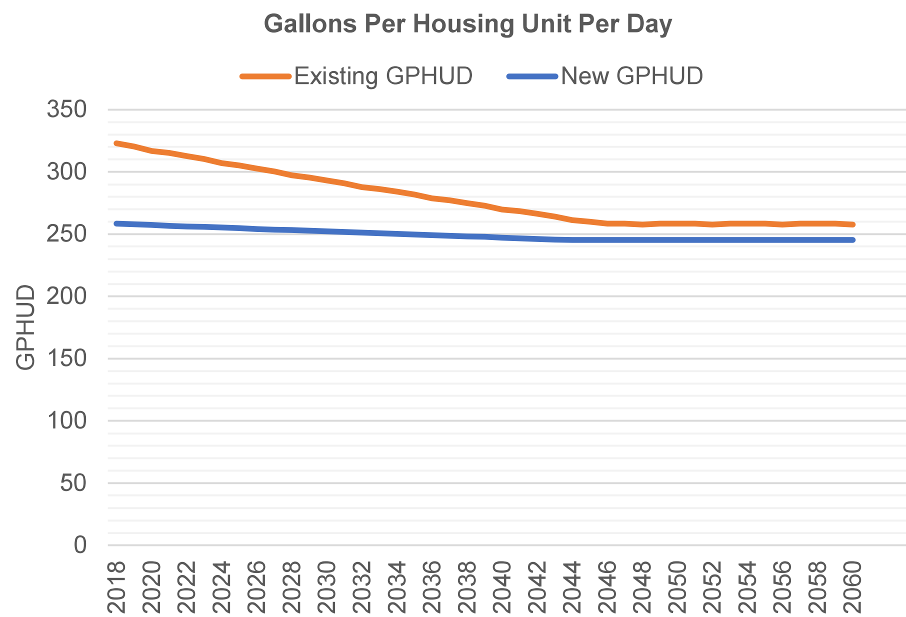
GlobalSantaCruzW

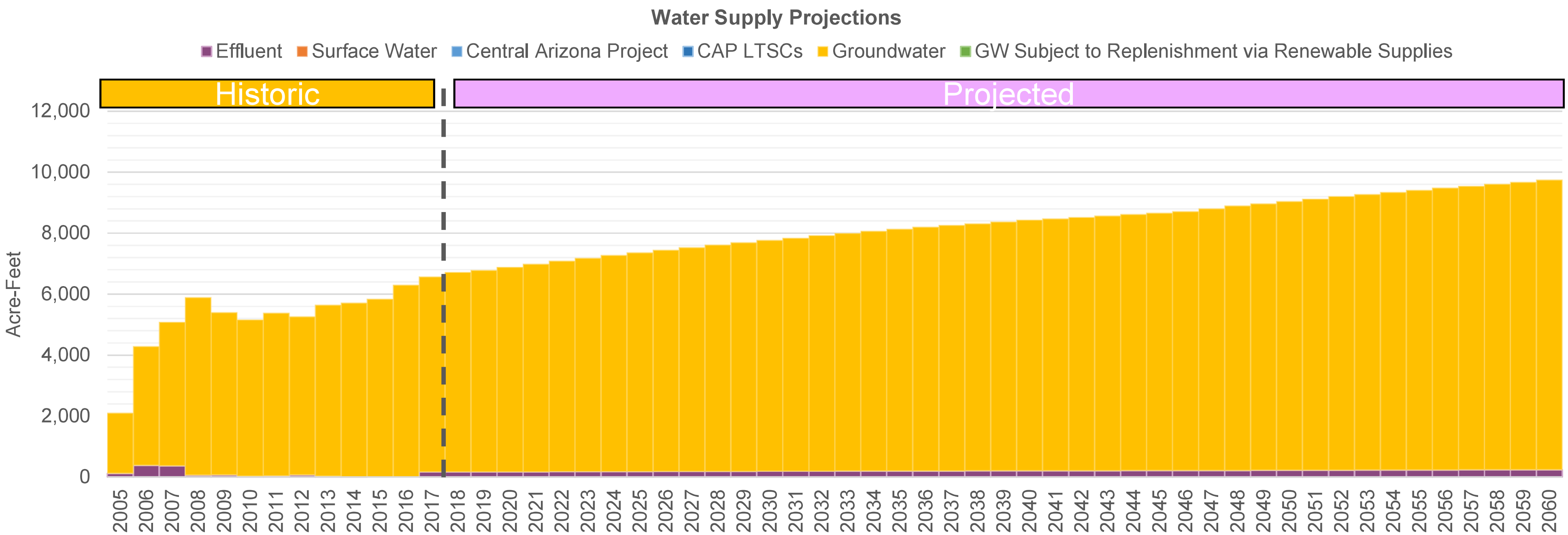
Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.







GlobalSantaCru

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

2/9/21 6:39 PM

Demand Assumptions | **Water Supply Projections** (Acre-Feet)

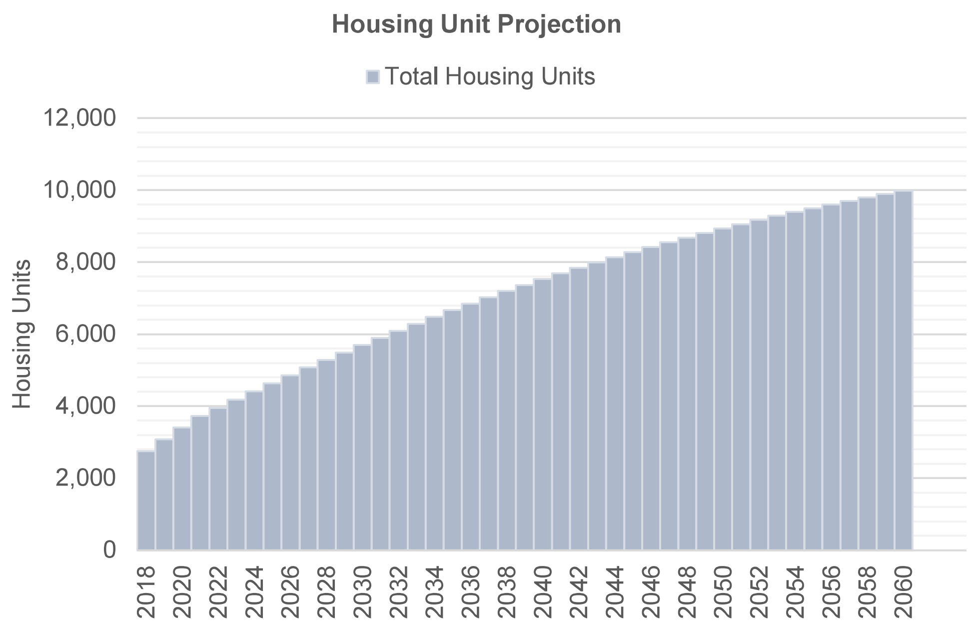
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	18,709	0	323	258	167	0	0	0	0	0	0	6,548	0	0
2019	19,262	0	320	258	167	0	0	0	0	0	0	6,609	0	0
2020	19,818	0	317	257	169	0	0	0	0	0	0	6,715	0	0
2021	20,367	0	315	257	171	0	0	0	0	0	0	6,817	0	0
2022	20,869	0	313	256	174	0	0	0	0	0	0	6,912	0	0
2023	21,383	0	310	256	176	0	0	0	0	0	0	7,003	0	0
2024	21,888	0	307	255	179	0	0	0	0	0	0	7,095	0	0
2025	22,382	0	305	255	181	0	0	0	0	0	0	7,180	0	0
2026	22,865	0	303	254	183	0	0	0	0	0	0	7,265	0	0
2027	23,338	0	300	254	185	0	0	0	0	0	0	7,346	0	0
2028	23,802	0	297	253	187	0	0	0	0	0	0	7,429	0	0
2029	24,255	0	296	253	189	0	0	0	0	0	0	7,500	0	0
2030	24,709	0	293	252	191	0	0	0	0	0	0	7,574	0	0
2031	25,169	0	291	252	193	0	0	0	0	0	0	7,649	0	0
2032	25,619	0	288	251	195	0	0	0	0	0	0	7,729	0	0
2033	26,058	0	286	251	197	0	0	0	0	0	0	7,795	0	0
2034	26,488	0	284	250	199	0	0	0	0	0	0	7,863	0	0
2035	26,907	0	282	250	201	0	0	0	0	0	0	7,929	0	0
2036	27,316	0	279	249	202	0	0	0	0	0	0	7,998	0	0
2037	27,715	0	277	249	204	0	0	0	0	0	0	8,051	0	0
2038	28,104	0	275	248	205	0	0	0	0	0	0	8,109	0	0
2039	28,484	0	273	248	207	0	0	0	0	0	0	8,163	0	0
2040	28,855	0	270	247	208	0	0	0	0	0	0	8,223	0	0
2041	29,216	0	268	247	210	0	0	0	0	0	0	8,264	0	0
2042	29,570	0	266	246	211	0	0	0	0	0	0	8,311	0	0
2043	29,914	0	264	246	212	0	0	0	0	0	0	8,356	0	0
2044	30,249	0	261	245	213	0	0	0	0	0	0	8,409	0	0
2045	30,575	0	260	245	214	0	0	0	0	0	0	8,447	0	0
2046	30,893	0	258	245	215	0	0	0	0	0	0	8,501	0	0
2047	31,202	0	258	245	217	0	0	0	0	0	0	8,585	0	0
2048	31,502	0	258	245	219	0	0	0	0	0	0	8,677	0	0
2049	31,794	0	258	245	221	0	0	0	0	0	0	8,746	0	0
2050	32,078	0	258	245	223	0	0	0	0	0	0	8,824	0	0
2051	32,354	0	258	245	225	0	0	0	0	0	0	8,898	0	0
2052	32,622	0	258	245	227	0	0	0	0	0	0	8,982	0	0
2053	32,882	0	258	245	229	0	0	0	0	0	0	9,042	0	0
2054	33,135	0	258	245	231	0	0	0	0	0	0	9,111	0	0
2055	33,380	0	258	245	232	0	0	0	0	0	0	9,178	0	0
2056	33,618	0	258	245	234	0	0	0	0	0	0	9,253	0	0
2057	33,862	0	258	245	236	0	0	0	0	0	0	9,306	0	0
2058	34,098	0	258	245	237	0	0	0	0	0	0	9,371	0	0
2059	34,328	0	258	245	239	0	0	0	0	0	0	9,433	0	0
2060	34,550	0	258	245	241	0	0	0	0	0	0	9,506	0	0

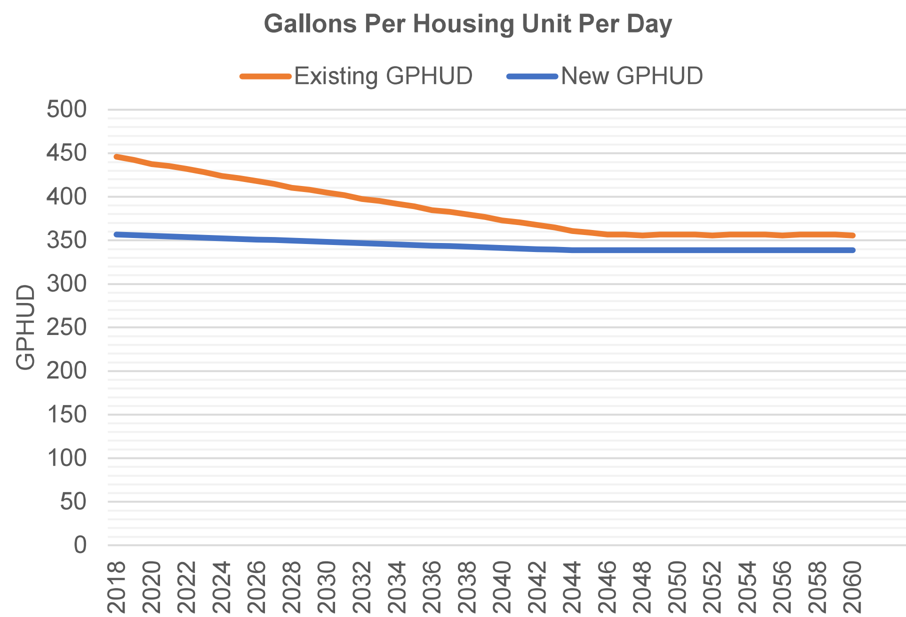
EPCOR-San Tan

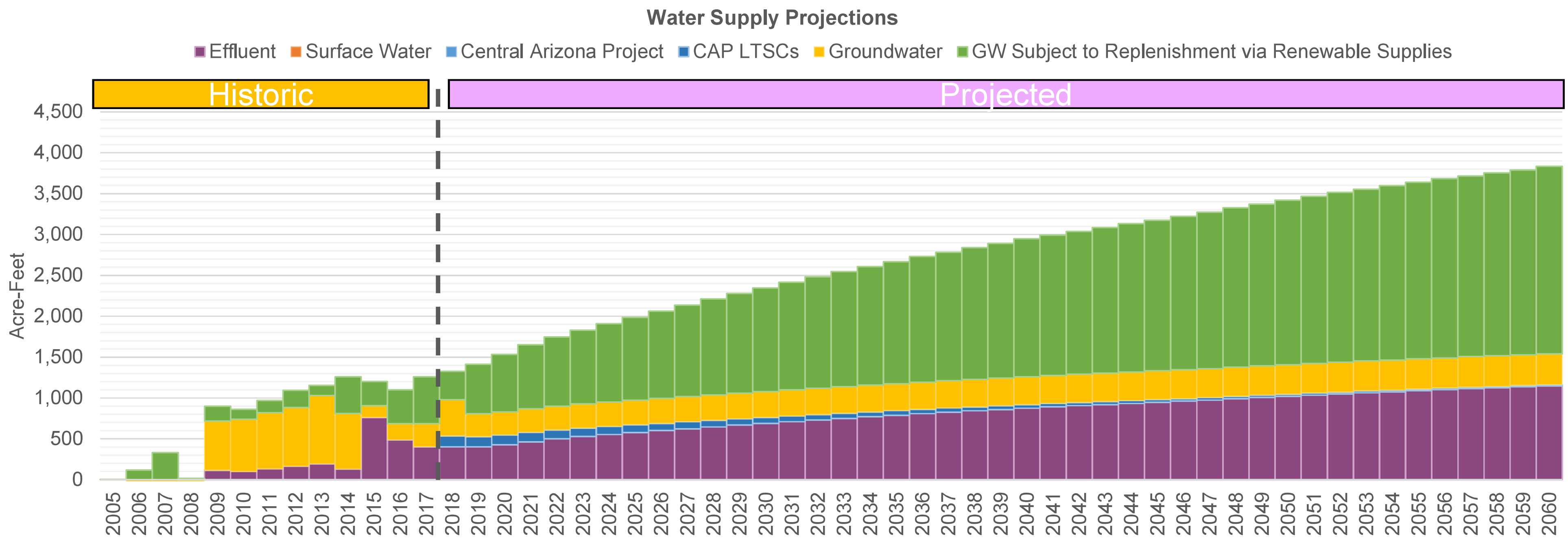
Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.







Central Arizona Project Service Area Model

EPCOR-San Ta

E. Lowest Demand, Hot [EMSBS]

2/9/21 6:39 PM

Demand Assumptions — **Water Supply Projections** (Acre-Feet)

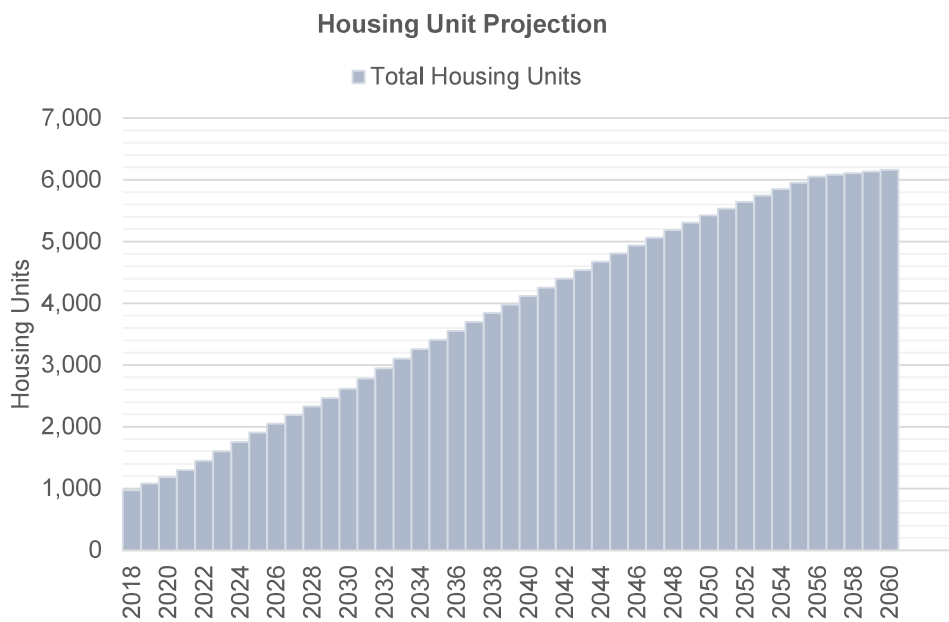
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	2,745	0	446	357	402	0	0	0	0	0	134	443	349	0
2019	3,076	0	442	356	402	0	0	0	0	0	127	278	605	0
2020	3,409	0	438	355	428	0	0	0	0	0	121	281	705	0
2021	3,723	0	435	355	465	0	0	0	0	0	115	286	786	0
2022	3,952	0	432	354	500	0	0	0	0	0	109	291	848	0
2023	4,185	0	428	353	529	0	0	0	0	0	103	295	901	0
2024	4,414	0	424	352	554	0	0	0	0	0	98	298	960	0
2025	4,639	0	421	352	578	0	0	0	0	0	93	301	1,014	0
2026	4,858	0	418	351	602	0	0	0	0	0	89	304	1,068	0
2027	5,073	0	415	350	625	0	0	0	0	0	84	307	1,120	0
2028	5,284	0	410	350	647	0	0	0	0	0	80	310	1,173	0
2029	5,490	0	408	349	669	0	0	0	0	0	76	313	1,219	0
2030	5,694	0	405	348	690	0	0	0	0	0	72	316	1,268	0
2031	5,898	0	402	348	710	0	0	0	0	0	69	319	1,316	0
2032	6,097	0	397	347	731	0	0	0	0	0	65	322	1,366	0
2033	6,292	0	395	346	752	0	0	0	0	0	62	324	1,406	0
2034	6,482	0	392	345	771	0	0	0	0	0	59	327	1,451	0
2035	6,668	0	389	345	790	0	0	0	0	0	56	329	1,493	0
2036	6,849	0	385	344	808	0	0	0	0	0	53	332	1,538	0
2037	7,026	0	383	343	827	0	0	0	0	0	50	334	1,571	0
2038	7,199	0	380	343	843	0	0	0	0	0	48	336	1,611	0
2039	7,367	0	377	342	859	0	0	0	0	0	46	339	1,648	0
2040	7,531	0	373	341	875	0	0	0	0	0	43	341	1,688	0
2041	7,690	0	371	341	892	0	0	0	0	0	41	343	1,715	0
2042	7,843	0	368	340	906	0	0	0	0	0	39	345	1,749	0
2043	7,993	0	365	339	920	0	0	0	0	0	37	347	1,780	0
2044	8,139	0	361	339	934	0	0	0	0	0	35	348	1,817	0
2045	8,281	0	359	339	949	0	0	0	0	0	33	350	1,842	0
2046	8,419	0	357	339	961	0	0	0	0	0	32	352	1,876	0
2047	8,553	0	357	339	975	0	0	0	0	0	30	354	1,914	0
2048	8,684	0	356	339	991	0	0	0	0	0	29	356	1,954	0
2049	8,811	0	357	339	1,008	0	0	0	0	0	27	358	1,979	0
2050	8,935	0	357	339	1,021	0	0	0	0	0	26	360	2,013	0
2051	9,055	0	357	339	1,036	0	0	0	0	0	25	362	2,044	0
2052	9,171	0	356	339	1,050	0	0	0	0	0	23	364	2,081	0
2053	9,285	0	357	339	1,065	0	0	0	0	0	22	366	2,102	0
2054	9,395	0	357	339	1,076	0	0	0	0	0	21	367	2,133	0
2055	9,501	0	357	339	1,089	0	0	0	0	0	20	369	2,160	0
2056	9,605	0	356	339	1,102	0	0	0	0	0	19	371	2,194	0
2057	9,704	0	357	339	1,116	0	0	0	0	0	18	372	2,210	0
2058	9,801	0	357	339	1,125	0	0	0	0	0	17	374	2,238	0
2059	9,895	0	357	339	1,137	0	0	0	0	0	16	375	2,262	0
2060	9,985	0	356	339	1,148	0	0	0	0	0	15	377	2,293	0

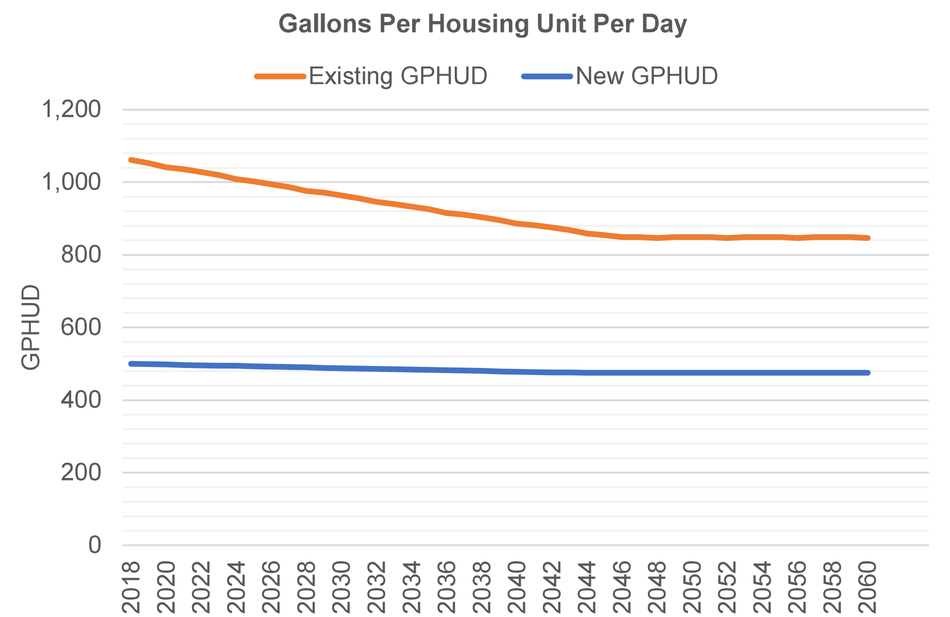
PicachoWC

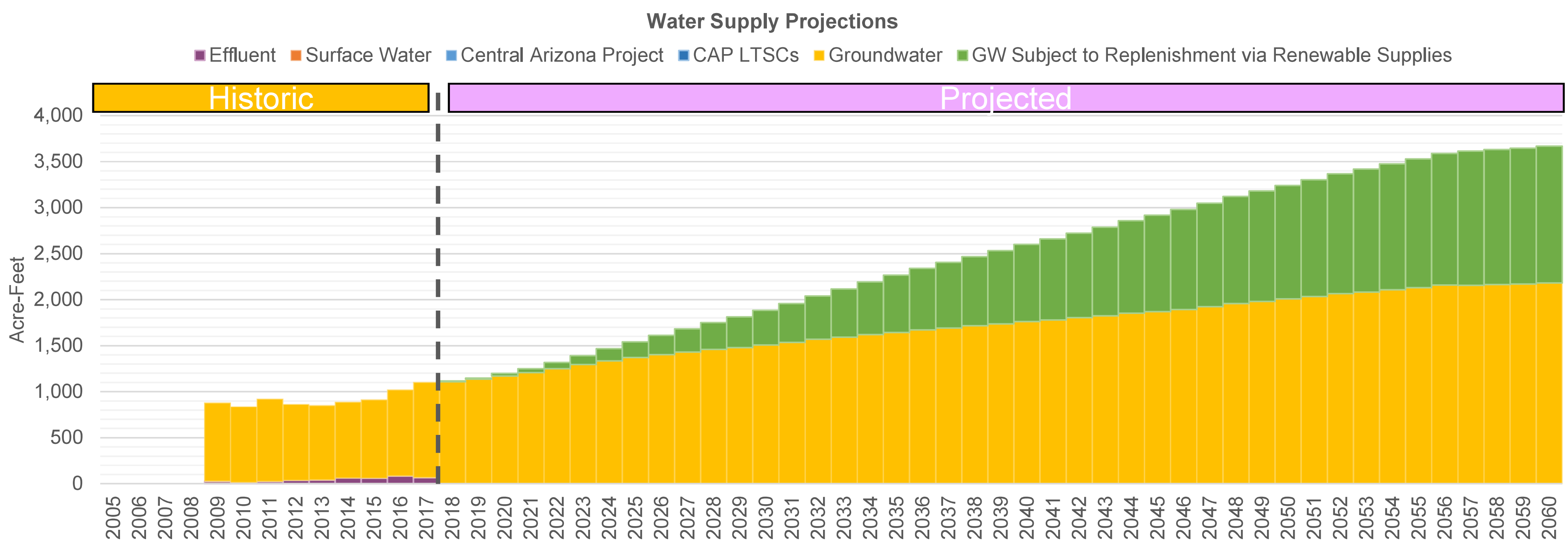
Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.







Central Arizona Project Service Area Model

PicachoWC

E. Lowest Demand, Hot [EMSBS]

2/9/21 6:39 PM

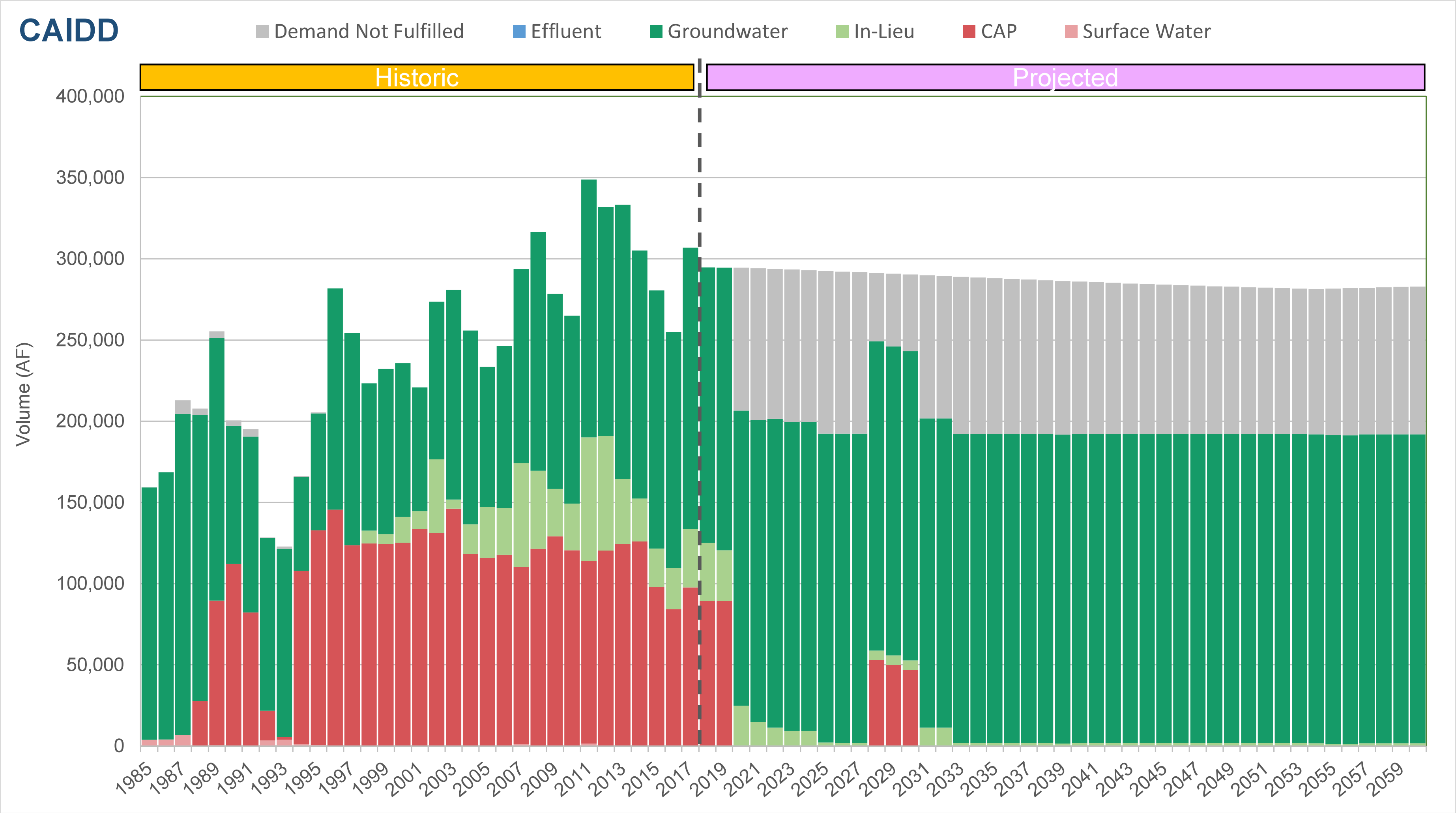
Demand Assumptions / Water Supply Projections (Acre-Feet)

Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	974	0	1,061	500	0	0	0	0	0	0	0	1,108	8	0
2019	1,078	0	1,053	499	0	0	0	0	0	0	0	1,136	13	0
2020	1,184	0	1,041	498	0	0	0	0	0	0	0	1,171	28	0
2021	1,298	0	1,036	497	0	0	0	0	0	0	0	1,207	44	0
2022	1,449	0	1,027	496	0	0	0	0	0	0	0	1,249	66	0
2023	1,604	0	1,019	495	0	0	0	0	0	0	0	1,295	96	0
2024	1,755	0	1,008	494	0	0	0	0	0	0	0	1,335	133	0
2025	1,904	0	1,003	493	0	0	0	0	0	0	0	1,372	169	0
2026	2,049	0	995	492	0	0	0	0	0	0	0	1,402	210	0
2027	2,191	0	987	491	0	0	0	0	0	0	0	1,431	251	0
2028	2,330	0	976	490	0	0	0	0	0	0	0	1,458	293	0
2029	2,466	0	971	489	0	0	0	0	0	0	0	1,480	335	0
2030	2,615	0	964	488	0	0	0	0	0	0	0	1,506	377	0
2031	2,781	0	956	487	0	0	0	0	0	0	0	1,537	423	0
2032	2,944	0	946	486	0	0	0	0	0	0	0	1,569	473	0
2033	3,103	0	941	485	0	0	0	0	0	0	0	1,593	523	0
2034	3,258	0	933	484	0	0	0	0	0	0	0	1,620	572	0
2035	3,409	0	926	483	0	0	0	0	0	0	0	1,645	619	0
2036	3,557	0	916	482	0	0	0	0	0	0	0	1,673	665	0
2037	3,701	0	911	481	0	0	0	0	0	0	0	1,693	710	0
2038	3,842	0	904	480	0	0	0	0	0	0	0	1,716	754	0
2039	3,980	0	896	479	0	0	0	0	0	0	0	1,737	796	0
2040	4,114	0	887	478	0	0	0	0	0	0	0	1,762	838	0
2041	4,254	0	882	477	0	0	0	0	0	0	0	1,780	878	0
2042	4,398	0	875	477	0	0	0	0	0	0	0	1,803	921	0
2043	4,539	0	868	476	0	0	0	0	0	0	0	1,825	964	0
2044	4,675	0	859	475	0	0	0	0	0	0	0	1,852	1,006	0
2045	4,808	0	854	475	0	0	0	0	0	0	0	1,870	1,047	0
2046	4,938	0	849	475	0	0	0	0	0	0	0	1,895	1,086	0
2047	5,064	0	849	475	0	0	0	0	0	0	0	1,924	1,125	0
2048	5,186	0	847	475	0	0	0	0	0	0	0	1,959	1,163	0
2049	5,306	0	849	475	0	0	0	0	0	0	0	1,980	1,199	0
2050	5,421	0	849	475	0	0	0	0	0	0	0	2,007	1,235	0
2051	5,534	0	849	475	0	0	0	0	0	0	0	2,033	1,270	0
2052	5,643	0	847	475	0	0	0	0	0	0	0	2,065	1,304	0
2053	5,749	0	849	475	0	0	0	0	0	0	0	2,083	1,336	0
2054	5,853	0	849	475	0	0	0	0	0	0	0	2,107	1,368	0
2055	5,953	0	849	475	0	0	0	0	0	0	0	2,130	1,399	0
2056	6,050	0	847	475	0	0	0	0	0	0	0	2,160	1,429	0
2057	6,081	0	849	475	0	0	0	0	0	0	0	2,158	1,458	0
2058	6,108	0	849	475	0	0	0	0	0	0	0	2,164	1,467	0
2059	6,134	0	849	475	0	0	0	0	0	0	0	2,170	1,475	0
2060	6,159	0	847	475	0	0	0	0	0	0	0	2,183	1,483	0

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



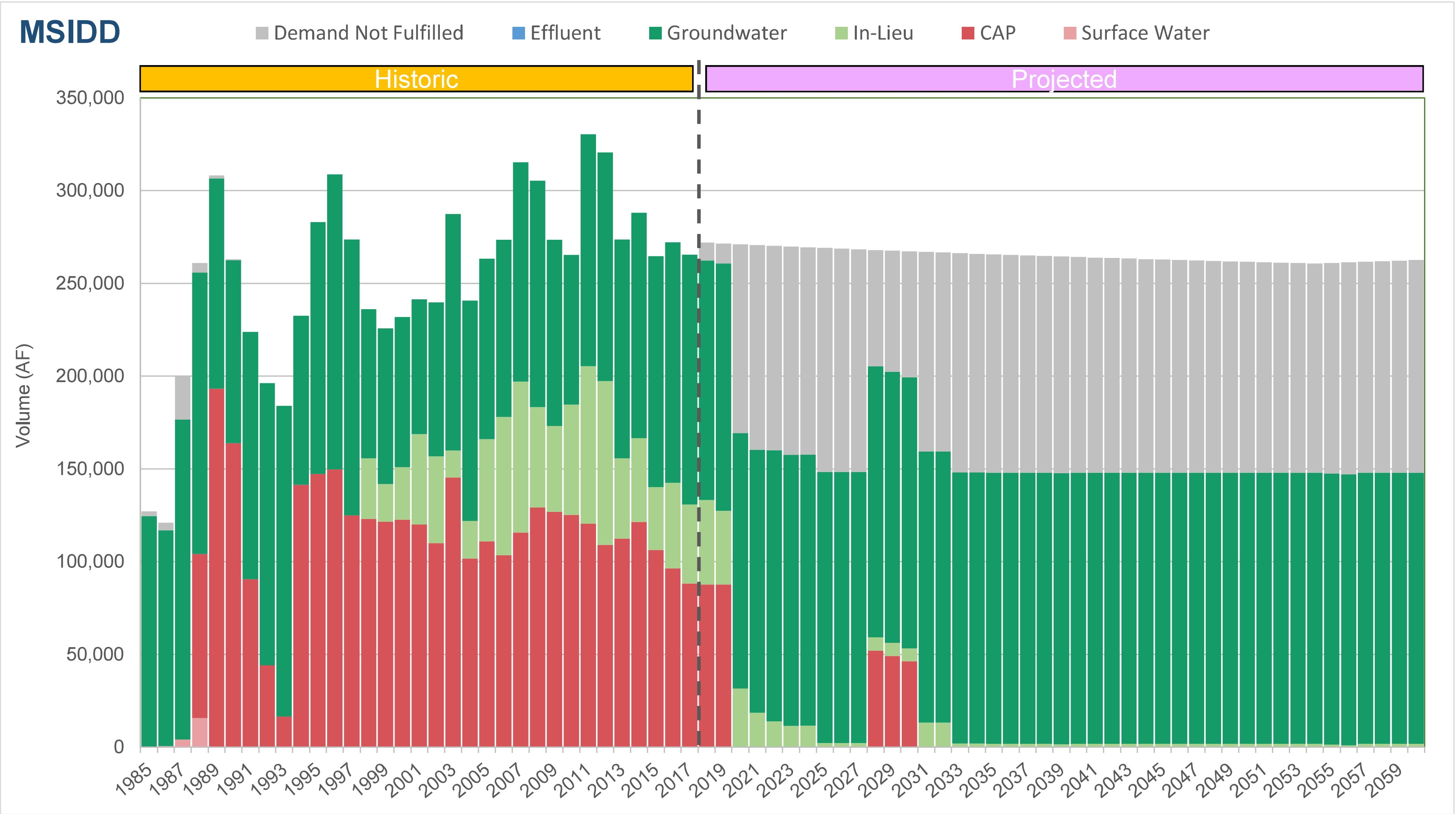
CAIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	89,224	35,873	169,692	0
2019	0	0	89,225	31,232	174,181	0
2020	0	0	0	24,974	181,644	87,869
2021	0	0	0	14,851	185,942	93,491
2022	0	0	0	11,298	190,240	92,308
2023	0	0	0	9,345	190,240	93,811
2024	0	0	0	9,344	190,240	93,366
2025	0	0	0	2,195	190,240	100,091
2026	0	0	0	2,128	190,240	99,734
2027	0	0	0	2,061	190,240	99,383
2028	0	0	52,931	5,907	190,240	42,182
2029	0	0	49,984	5,840	190,240	44,808
2030	0	0	47,011	5,773	190,240	47,409
2031	0	0	0	11,417	190,240	88,287
2032	0	0	0	11,471	190,240	87,736
2033	0	0	0	1,861	190,240	96,897
2034	0	0	0	1,861	190,240	96,439
2035	0	0	0	1,861	190,240	95,988
2036	0	0	0	1,861	190,240	95,522
2037	0	0	0	1,861	190,240	95,113
2038	0	0	0	1,861	190,240	94,689
2039	0	0	0	1,526	190,240	94,609
2040	0	0	0	1,861	190,240	93,837
2041	0	0	0	1,861	190,240	93,484
2042	0	0	0	1,861	190,240	93,115
2043	0	0	0	1,861	190,240	92,754
2044	0	0	0	1,861	190,240	92,369
2045	0	0	0	1,861	190,240	92,058
2046	0	0	0	1,861	190,240	91,719
2047	0	0	0	1,861	190,240	91,388
2048	0	0	0	1,861	190,240	91,024
2049	0	0	0	1,861	190,240	90,748
2050	0	0	0	1,861	190,240	90,436
2051	0	0	0	1,861	190,240	90,132
2052	0	0	0	1,861	190,240	89,790
2053	0	0	0	1,861	190,240	89,543
2054	0	0	0	1,710	190,240	89,410
2055	0	0	0	1,289	190,240	90,113
2056	0	0	0	1,054	190,240	90,587
2057	0	0	0	1,710	190,240	90,243
2058	0	0	0	1,710	190,240	90,509
2059	0	0	0	1,710	190,240	90,782
2060	0	0	0	1,710	190,240	91,006

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



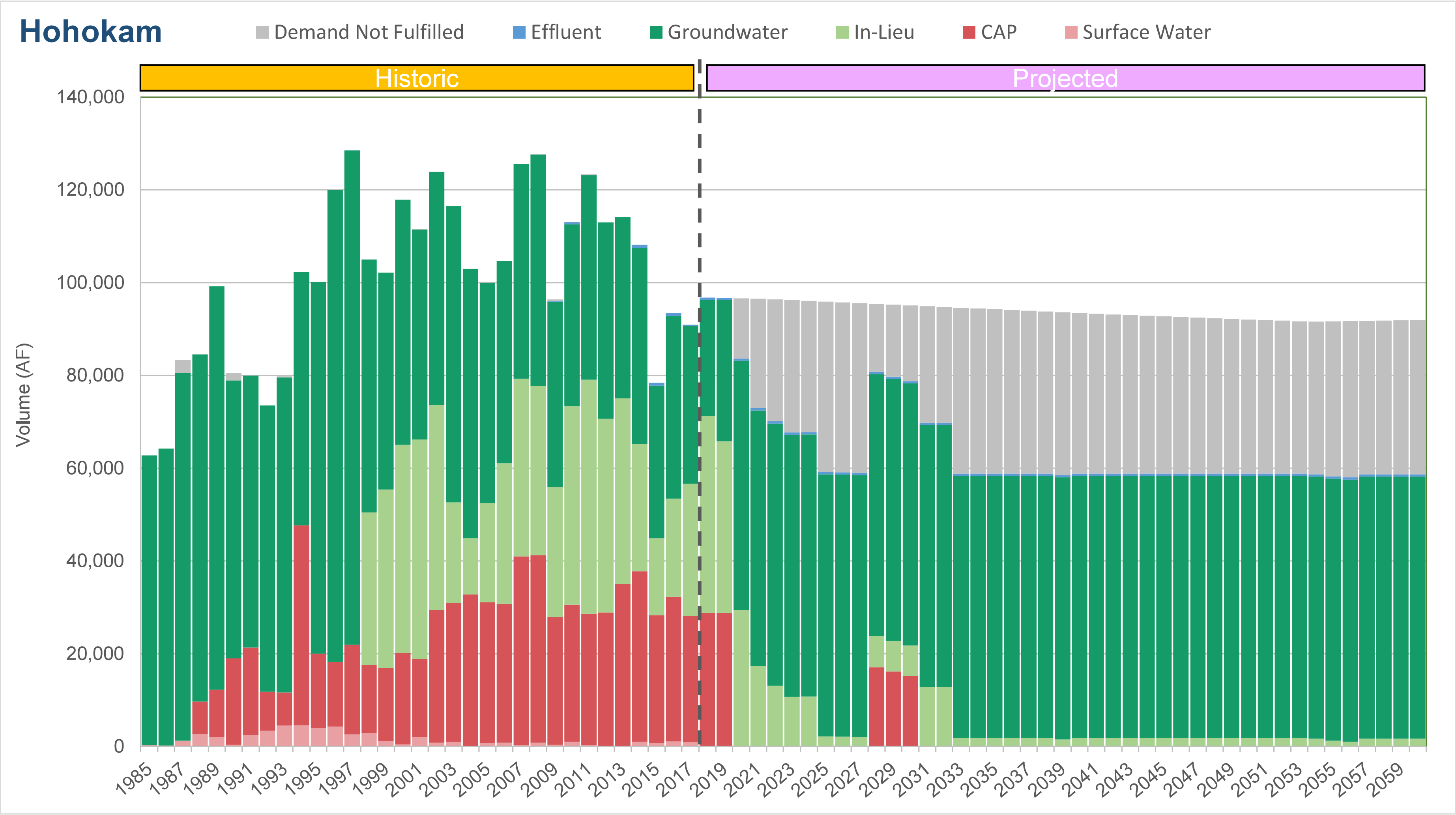
MSIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	87,708	45,484	129,223	9,518
2019	0	0	87,709	39,630	133,451	10,711
2020	0	0	0	31,628	137,679	101,757
2021	0	0	0	18,476	141,907	110,256
2022	0	0	0	13,897	146,135	110,222
2023	0	0	0	11,391	146,135	112,336
2024	0	0	0	11,496	146,135	111,840
2025	0	0	0	2,243	146,135	120,721
2026	0	0	0	2,204	146,135	120,389
2027	0	0	0	2,132	146,135	120,094
2028	0	0	52,031	7,164	146,135	62,658
2029	0	0	49,134	7,098	146,135	65,283
2030	0	0	46,212	7,031	146,135	67,927
2031	0	0	0	13,255	146,135	107,580
2032	0	0	0	13,309	146,135	107,180
2033	0	0	0	1,914	146,135	118,271
2034	0	0	0	1,911	146,135	117,958
2035	0	0	0	1,861	146,135	117,696
2036	0	0	0	1,861	146,135	117,370
2037	0	0	0	1,861	146,135	117,092
2038	0	0	0	1,861	146,135	116,797
2039	0	0	0	1,526	146,135	116,845
2040	0	0	0	1,861	146,135	116,199
2041	0	0	0	1,861	146,135	115,948
2042	0	0	0	1,861	146,135	115,674
2043	0	0	0	1,861	146,135	115,405
2044	0	0	0	1,861	146,135	115,108
2045	0	0	0	1,861	146,135	114,883
2046	0	0	0	1,861	146,135	114,629
2047	0	0	0	1,861	146,135	114,381
2048	0	0	0	1,861	146,135	114,100
2049	0	0	0	1,861	146,135	113,896
2050	0	0	0	1,861	146,135	113,663
2051	0	0	0	1,861	146,135	113,430
2052	0	0	0	1,861	146,135	113,165
2053	0	0	0	1,861	146,135	112,985
2054	0	0	0	1,710	146,135	112,918
2055	0	0	0	1,289	146,135	113,649
2056	0	0	0	1,054	146,135	114,150
2057	0	0	0	1,710	146,135	113,847
2058	0	0	0	1,710	146,135	114,157
2059	0	0	0	1,710	146,135	114,473
2060	0	0	0	1,710	146,135	114,740

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



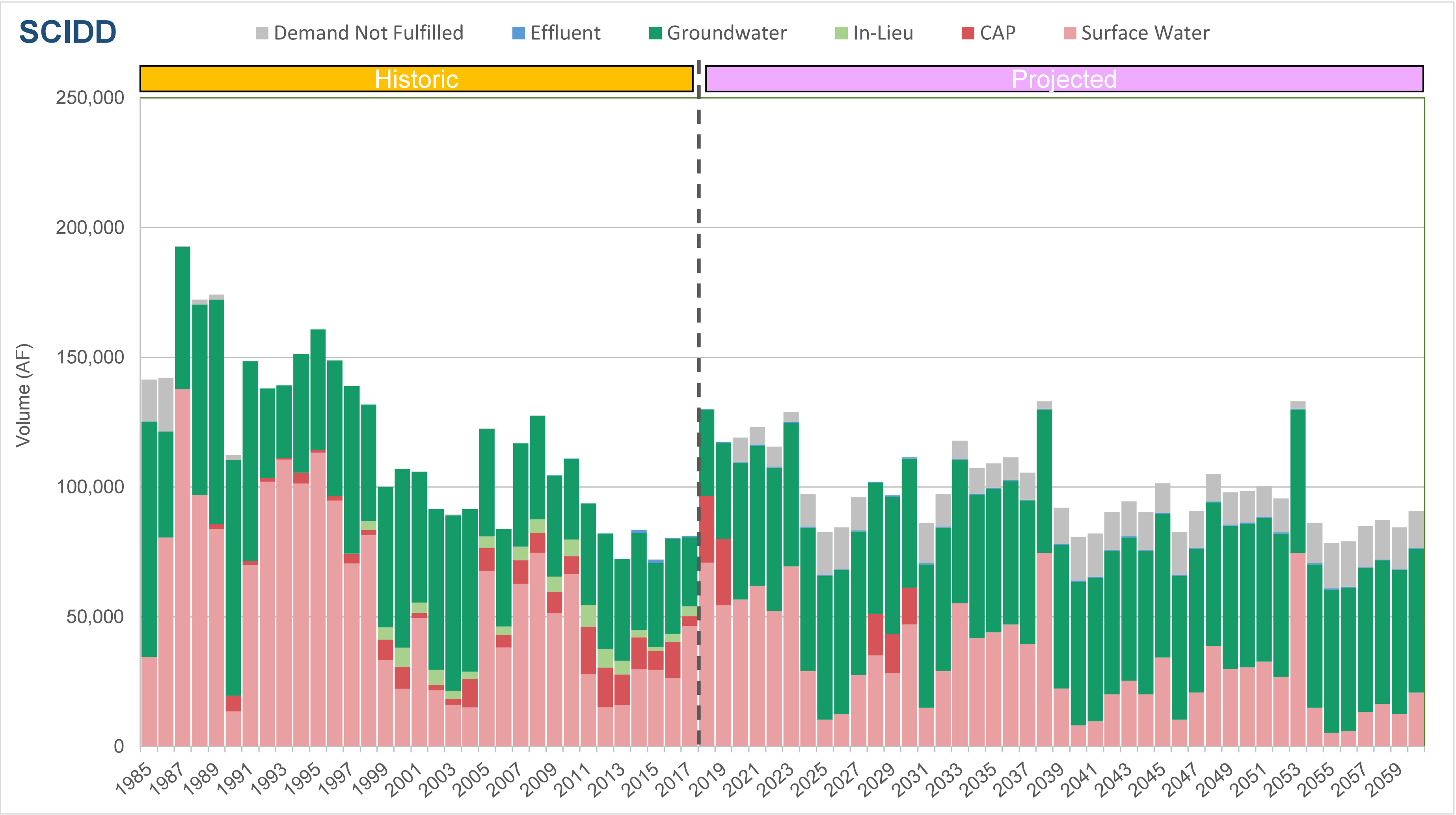
Hohokam

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	490	0	28,837	42,430	25,039	0
2019	490	0	28,838	36,951	30,440	0
2020	490	0	0	29,493	53,721	12,936
2021	490	0	0	17,346	55,107	23,604
2022	490	0	0	13,090	56,493	26,313
2023	490	0	0	10,758	56,493	28,479
2024	490	0	0	10,770	56,493	28,303
2025	490	0	0	2,195	56,493	36,722
2026	490	0	0	2,128	56,493	36,633
2027	490	0	0	2,061	56,493	36,546
2028	490	0	17,107	6,694	56,493	14,652
2029	490	0	16,155	6,628	56,493	15,528
2030	490	0	15,194	6,561	56,493	16,393
2031	490	0	0	12,785	56,493	25,183
2032	490	0	0	12,839	56,493	24,945
2033	490	0	0	1,861	56,493	35,756
2034	490	0	0	1,861	56,493	35,584
2035	490	0	0	1,861	56,493	35,418
2036	490	0	0	1,861	56,493	35,247
2037	490	0	0	1,861	56,493	35,094
2038	490	0	0	1,861	56,493	34,939
2039	490	0	0	1,526	56,493	35,119
2040	490	0	0	1,861	56,493	34,625
2041	490	0	0	1,861	56,493	34,482
2042	490	0	0	1,861	56,493	34,329
2043	490	0	0	1,861	56,493	34,179
2044	490	0	0	1,861	56,493	34,022
2045	490	0	0	1,861	56,493	33,892
2046	490	0	0	1,861	56,493	33,751
2047	490	0	0	1,861	56,493	33,614
2048	490	0	0	1,861	56,493	33,467
2049	490	0	0	1,861	56,493	33,351
2050	490	0	0	1,861	56,493	33,224
2051	490	0	0	1,861	56,493	33,099
2052	490	0	0	1,861	56,493	32,962
2053	490	0	0	1,861	56,493	32,858
2054	490	0	0	1,710	56,493	32,893
2055	490	0	0	1,289	56,493	33,383
2056	490	0	0	1,054	56,493	33,674
2057	490	0	0	1,710	56,493	33,083
2058	490	0	0	1,710	56,493	33,132
2059	490	0	0	1,710	56,493	33,183
2060	490	0	0	1,710	56,493	33,223

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



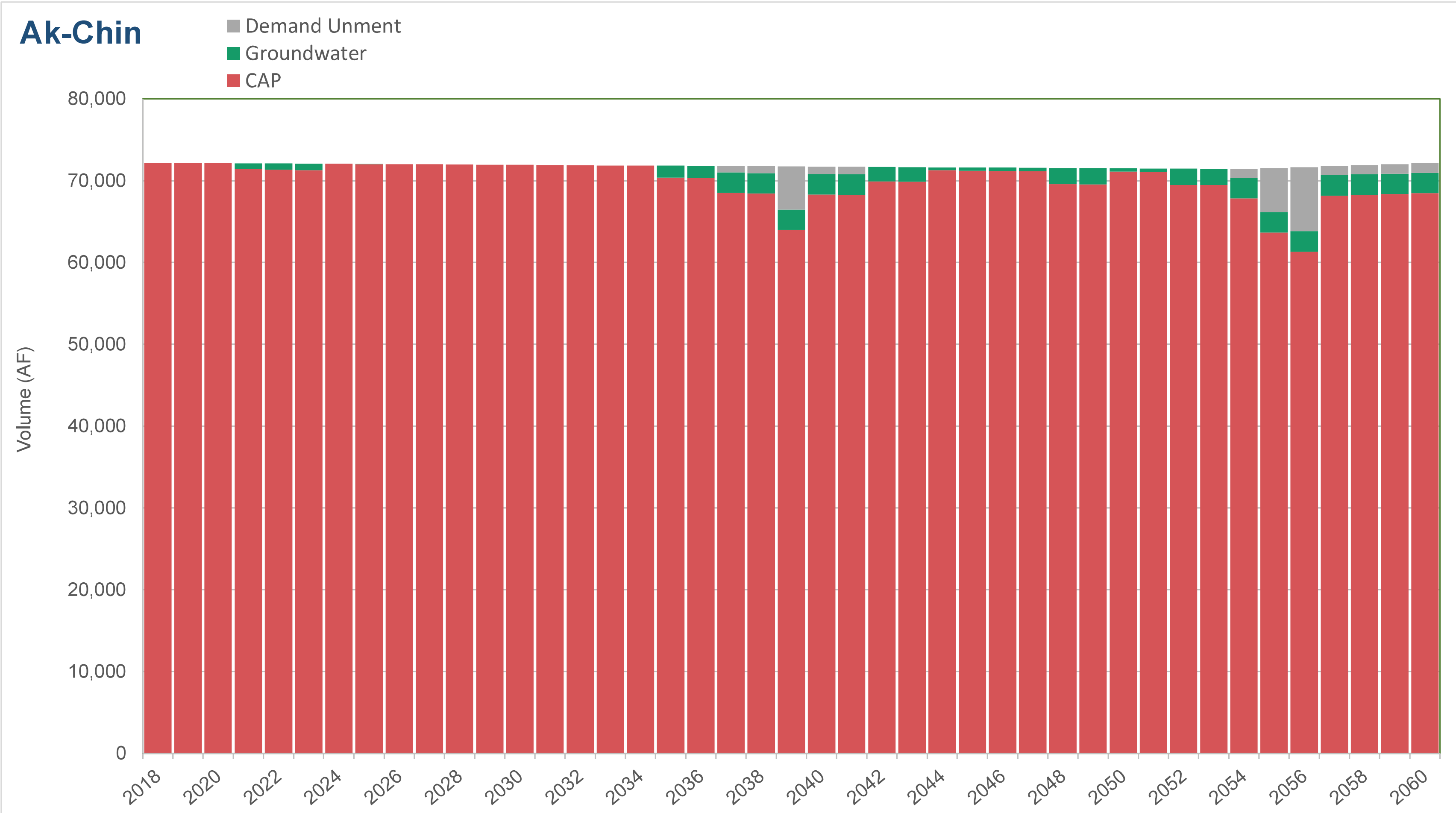
SCIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	410	70,870	25,657	0	33,272	0
2019	410	54,458	25,657	0	36,784	0
2020	410	56,696	0	0	52,690	9,272
2021	410	61,918	0	0	53,992	6,853
2022	410	52,220	0	0	55,294	7,626
2023	410	69,378	0	0	55,294	3,954
2024	410	29,094	0	0	55,294	12,575
2025	410	10,444	0	0	55,294	16,566
2026	410	12,682	0	0	55,294	16,087
2027	410	27,602	0	0	55,294	12,894
2028	410	35,062	16,024	0	50,567	0
2029	410	28,348	15,132	0	52,897	0
2030	410	46,998	14,231	0	49,806	0
2031	410	14,920	0	0	55,294	15,608
2032	410	29,094	0	0	55,294	12,575
2033	410	55,204	0	0	55,294	6,987
2034	410	41,776	0	0	55,294	9,861
2035	410	44,014	0	0	55,294	9,382
2036	410	46,998	0	0	55,294	8,743
2037	410	39,538	0	0	55,294	10,340
2038	410	74,600	0	0	55,294	2,837
2039	410	22,380	0	0	55,294	14,012
2040	410	8,206	0	0	55,294	17,045
2041	410	9,698	0	0	55,294	16,726
2042	410	20,142	0	0	55,294	14,491
2043	410	25,364	0	0	55,294	13,373
2044	410	20,142	0	0	55,294	14,491
2045	410	34,316	0	0	55,294	11,457
2046	410	10,444	0	0	55,294	16,566
2047	410	20,888	0	0	55,294	14,331
2048	410	38,792	0	0	55,294	10,500
2049	410	29,840	0	0	55,294	12,415
2050	410	30,586	0	0	55,294	12,256
2051	410	32,824	0	0	55,294	11,777
2052	410	26,856	0	0	55,294	13,054
2053	410	74,600	0	0	55,294	2,837
2054	410	14,920	0	0	55,294	15,608
2055	410	5,222	0	0	55,294	17,683
2056	410	5,968	0	0	55,294	17,524
2057	410	13,428	0	0	55,294	15,927
2058	410	16,412	0	0	55,294	15,289
2059	410	12,682	0	0	55,294	16,087
2060	410	20,888	0	0	55,294	14,331

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



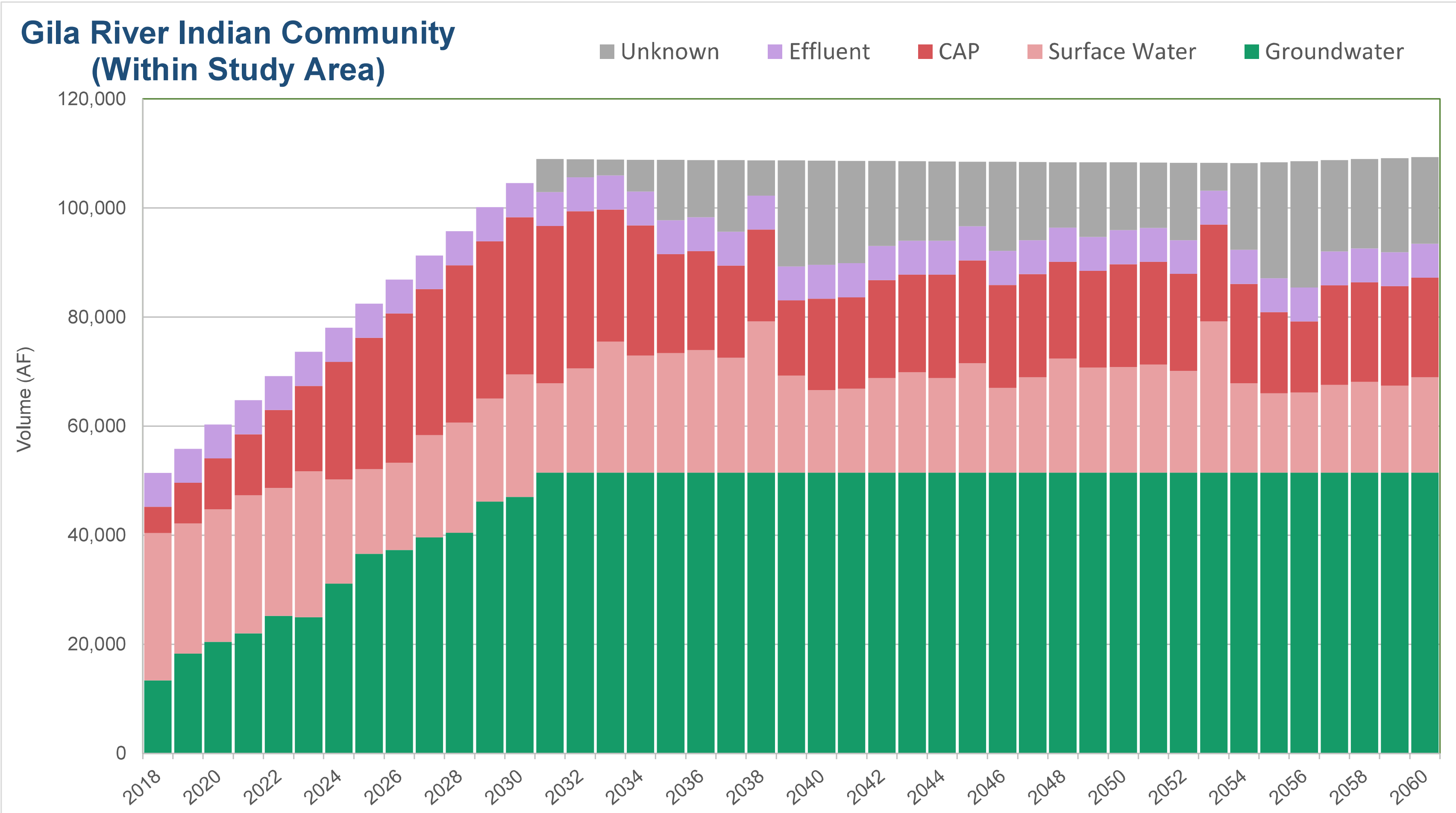
Ak-Chin

Date	Effluent	Surface	CAP	Groundwater	Demand Not Fulfilled	Total
2018	0	0	72,193	0	0	72,193
2019	0	0	72,171	0	0	72,171
2020	0	0	72,149	0	0	72,149
2021	0	0	71,443	685	0	72,128
2022	0	0	71,357	750	0	72,107
2023	0	0	71,272	814	0	72,085
2024	0	0	72,062	0	0	72,062
2025	0	0	72,008	34	0	72,042
2026	0	0	72,021	0	0	72,021
2027	0	0	71,999	0	0	71,999
2028	0	0	71,974	0	0	71,974
2029	0	0	71,956	0	0	71,956
2030	0	0	71,935	0	0	71,935
2031	0	0	71,913	0	0	71,913
2032	0	0	71,887	0	0	71,887
2033	0	0	71,871	0	0	71,871
2034	0	0	71,849	0	0	71,849
2035	0	0	70,383	1,445	0	71,828
2036	0	0	70,311	1,489	0	71,800
2037	0	0	68,497	2,500	788	71,785
2038	0	0	68,434	2,500	829	71,763
2039	0	0	63,990	2,500	5,252	71,742
2040	0	0	68,305	2,500	909	71,713
2041	0	0	68,250	2,500	949	71,699
2042	0	0	69,930	1,748	0	71,678
2043	0	0	69,867	1,790	0	71,656
2044	0	0	71,271	355	0	71,626
2045	0	0	71,210	404	0	71,614
2046	0	0	71,189	404	0	71,592
2047	0	0	71,168	403	0	71,571
2048	0	0	69,557	1,982	0	71,540
2049	0	0	69,547	1,981	0	71,528
2050	0	0	71,105	402	0	71,507
2051	0	0	71,084	402	0	71,486
2052	0	0	69,478	1,975	0	71,453
2053	0	0	69,469	1,974	0	71,443
2054	0	0	67,846	2,500	1,076	71,422
2055	0	0	63,649	2,500	5,394	71,543
2056	0	0	61,323	2,500	7,830	71,652
2057	0	0	68,157	2,500	1,130	71,787
2058	0	0	68,261	2,500	1,148	71,909
2059	0	0	68,365	2,500	1,167	72,031
2060	0	0	68,457	2,500	1,183	72,140

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



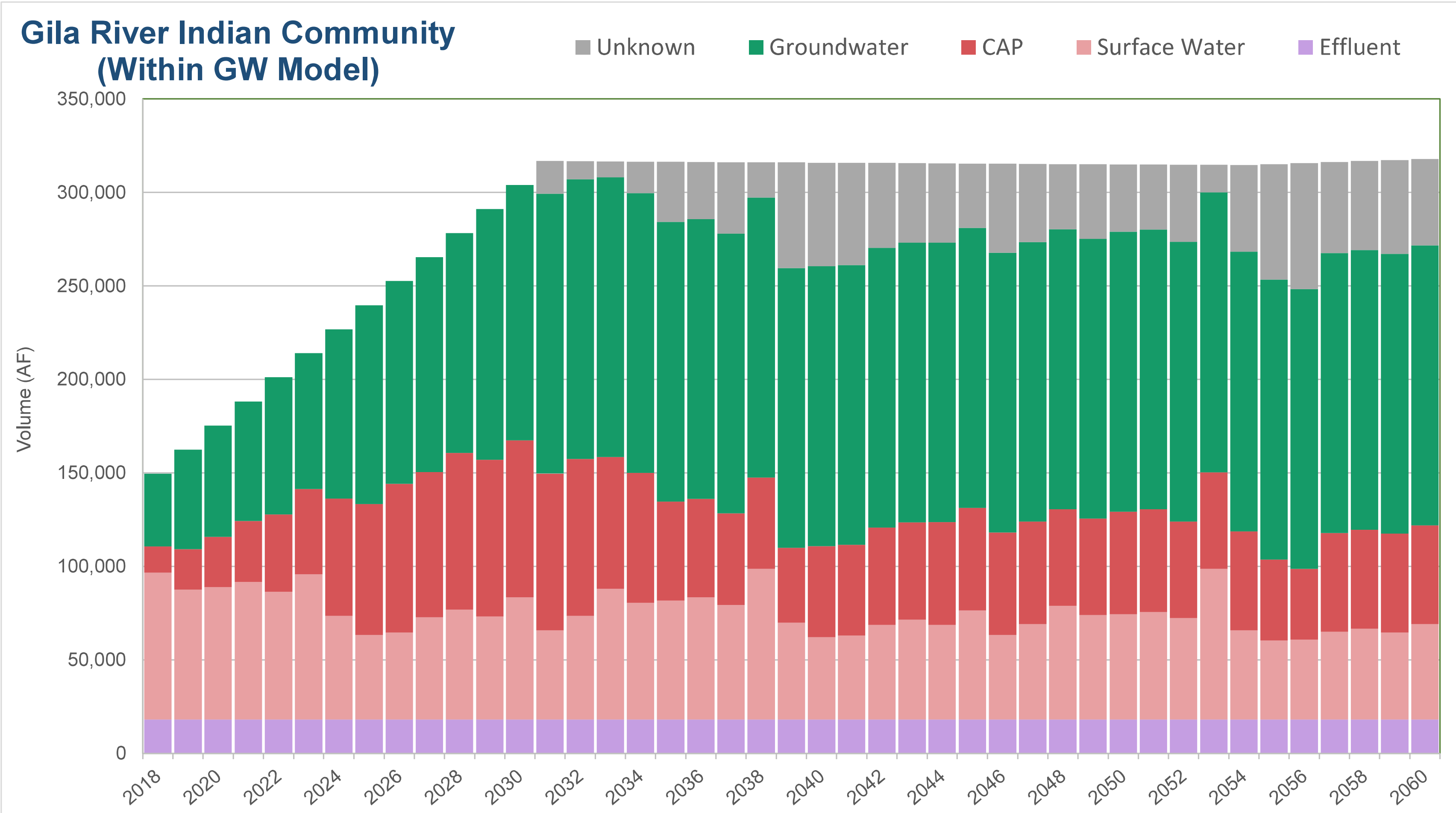
Gila River Indian Community
(Within Study Area)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	6,230	27,003	4,818	13,363	0	51,413
2019	6,230	23,889	7,440	18,296	0	55,856
2020	6,230	24,314	9,317	20,433	0	60,295
2021	6,230	25,305	11,197	22,001	0	64,733
2022	6,230	23,465	14,264	25,208	0	69,167
2023	6,230	26,720	15,668	24,981	0	73,599
2024	6,230	19,078	21,590	31,127	0	78,026
2025	6,230	15,540	24,104	36,581	0	82,455
2026	6,230	15,965	27,381	37,303	0	86,878
2027	6,230	18,795	26,710	39,565	0	91,300
2028	6,230	20,210	28,838	40,435	0	95,714
2029	6,230	18,937	28,838	46,129	0	100,134
2030	6,230	22,474	28,838	47,005	0	104,547
2031	6,230	16,389	28,838	51,471	6,029	108,958
2032	6,230	19,078	28,838	51,471	3,301	108,918
2033	6,230	24,031	24,234	51,471	2,928	108,893
2034	6,230	21,484	23,843	51,471	5,833	108,861
2035	6,230	21,908	18,145	51,471	11,073	108,828
2036	6,230	22,474	18,114	51,471	10,497	108,786
2037	6,230	21,059	16,868	51,471	13,135	108,763
2038	6,230	27,710	16,838	51,471	6,482	108,731
2039	6,230	17,804	13,770	51,471	19,423	108,698
2040	6,230	15,116	16,777	51,471	19,060	108,655
2041	6,230	15,399	16,748	51,471	18,786	108,634
2042	6,230	17,380	17,928	51,471	15,592	108,601
2043	6,230	18,370	17,898	51,471	14,599	108,569
2044	6,230	17,380	18,896	51,471	14,546	108,523
2045	6,230	20,069	18,862	51,471	11,873	108,504
2046	6,230	15,540	18,862	51,471	16,369	108,472
2047	6,230	17,521	18,862	51,471	14,355	108,439
2048	6,230	20,918	17,758	51,471	12,015	108,392
2049	6,230	19,220	17,758	51,471	13,697	108,375
2050	6,230	19,361	18,862	51,471	12,419	108,342
2051	6,230	19,786	18,862	51,471	11,962	108,310
2052	6,230	18,654	17,758	51,471	14,148	108,260
2053	6,230	27,710	17,758	51,471	5,077	108,245
2054	6,230	16,389	18,222	51,471	15,900	108,213
2055	6,230	14,550	14,882	51,471	21,264	108,397
2056	6,230	14,691	13,027	51,471	23,144	108,562
2057	6,230	16,106	18,222	51,471	16,737	108,766
2058	6,230	16,672	18,222	51,471	16,356	108,951
2059	6,230	15,965	18,222	51,471	17,248	109,137
2060	6,230	17,521	18,222	51,471	15,856	109,301

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



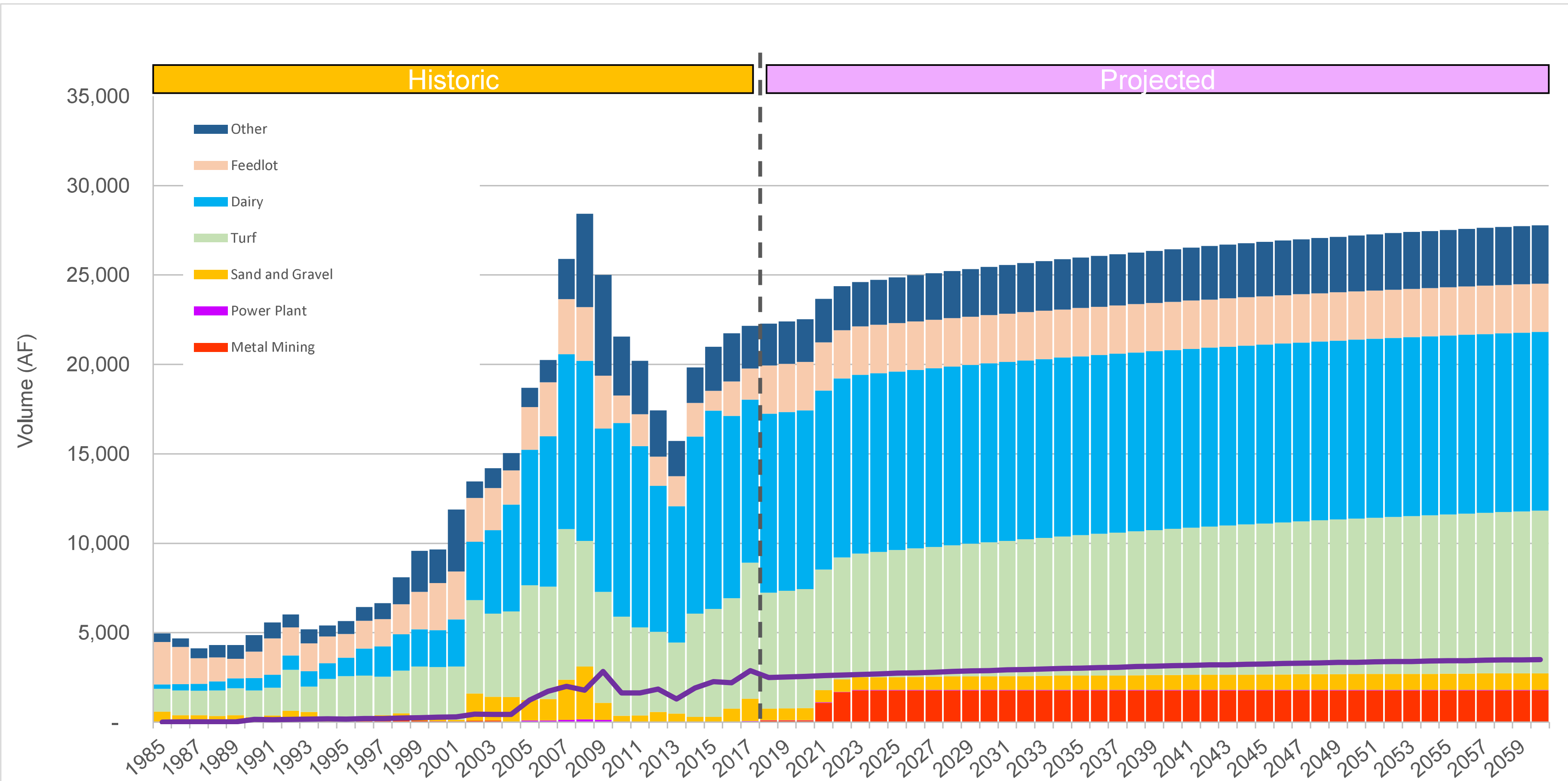
Gila River Indian Community
(Within GW Model)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	18,110	78,496	14,006	38,846	0	149,458
2019	18,110	69,446	21,628	53,187	0	162,371
2020	18,110	70,680	27,086	59,400	0	175,276
2021	18,110	73,560	32,549	63,957	0	188,177
2022	18,110	68,212	41,465	73,280	0	201,067
2023	18,110	77,674	45,548	72,619	0	213,950
2024	18,110	55,459	62,763	90,487	0	226,819
2025	18,110	45,175	70,069	106,340	0	239,694
2026	18,110	46,409	79,595	108,439	0	252,554
2027	18,110	54,637	77,645	115,014	0	265,406
2028	18,110	58,750	83,833	117,544	0	278,237
2029	18,110	55,048	83,833	134,097	0	291,088
2030	18,110	65,332	83,833	136,641	0	303,917
2031	18,110	47,643	83,833	149,625	17,527	316,738
2032	18,110	55,459	83,833	149,625	9,595	316,623
2033	18,110	69,858	70,446	149,625	8,511	316,550
2034	18,110	62,453	69,312	149,625	16,956	316,455
2035	18,110	63,687	52,748	149,625	32,190	316,360
2036	18,110	65,332	52,656	149,625	30,516	316,239
2037	18,110	61,219	49,035	149,625	38,184	316,172
2038	18,110	80,553	48,946	149,625	18,843	316,078
2039	18,110	51,757	40,028	149,625	56,463	315,983
2040	18,110	43,941	48,772	149,625	55,408	315,856
2041	18,110	44,764	48,686	149,625	54,611	315,795
2042	18,110	50,523	52,117	149,625	45,326	315,701
2043	18,110	53,403	52,029	149,625	42,439	315,606
2044	18,110	50,523	54,930	149,625	42,286	315,474
2045	18,110	58,339	54,831	149,625	34,514	315,419
2046	18,110	45,175	54,831	149,625	47,584	315,324
2047	18,110	50,934	54,831	149,625	41,730	315,230
2048	18,110	60,807	51,621	149,625	34,928	315,092
2049	18,110	55,871	51,621	149,625	39,816	315,043
2050	18,110	56,282	54,831	149,625	36,100	314,948
2051	18,110	57,516	54,831	149,625	34,772	314,854
2052	18,110	54,225	51,621	149,625	41,129	314,710
2053	18,110	80,553	51,621	149,625	14,758	314,667
2054	18,110	47,643	52,972	149,625	46,222	314,573
2055	18,110	42,295	43,262	149,625	61,815	315,108
2056	18,110	42,707	37,868	149,625	67,278	315,588
2057	18,110	46,821	52,972	149,625	48,654	316,181
2058	18,110	48,466	52,972	149,625	47,546	316,719
2059	18,110	46,409	52,972	149,625	50,141	317,257
2060	18,110	50,934	52,972	149,625	46,093	317,735

Central Arizona Project Service Area Model

E. Lowest Demand, Hot [EMSBS]

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario F.



E. Lowest Demand, Hot [EMSBS]

Industrial Demand

Date	Metal Mining	Power Plant	Sand and Gravel	Turf	Dairy	Feedlot	Other	Total Demand
2018	85	18	660	6,479	10,000	2,700	2,332	22,274
2019	85	18	669	6,567	10,000	2,700	2,364	22,403
2020	85	19	678	6,656	10,000	2,700	2,395	22,533
2021	1,088	19	687	6,745	10,000	2,700	2,427	23,666
2022	1,673	19	696	6,832	10,000	2,700	2,459	24,379
2023	1,778	19	705	6,921	10,000	2,700	2,491	24,615
2024	1,778	20	714	7,009	10,000	2,700	2,522	24,743
2025	1,778	20	723	7,094	10,000	2,700	2,553	24,868
2026	1,778	20	731	7,178	10,000	2,700	2,583	24,991
2027	1,778	20	739	7,260	10,000	2,700	2,613	25,111
2028	1,778	21	748	7,341	10,000	2,700	2,642	25,229
2029	1,778	21	756	7,419	10,000	2,700	2,670	25,344
2030	1,778	21	763	7,496	10,000	2,700	2,698	25,457
2031	1,778	21	771	7,571	10,000	2,700	2,725	25,567
2032	1,778	22	779	7,645	10,000	2,700	2,751	25,674
2033	1,778	22	786	7,716	10,000	2,700	2,777	25,779
2034	1,778	22	793	7,786	10,000	2,700	2,802	25,882
2035	1,778	22	800	7,855	10,000	2,700	2,827	25,982
2036	1,778	22	807	7,922	10,000	2,700	2,851	26,080
2037	1,778	22	813	7,987	10,000	2,700	2,875	26,175
2038	1,778	23	820	8,050	10,000	2,700	2,897	26,268
2039	1,778	23	826	8,113	10,000	2,700	2,920	26,359
2040	1,778	23	832	8,173	10,000	2,700	2,941	26,448
2041	1,778	23	838	8,232	10,000	2,700	2,963	26,534
2042	1,778	23	844	8,289	10,000	2,700	2,983	26,618
2043	1,778	24	850	8,345	10,000	2,700	3,003	26,700
2044	1,778	24	855	8,400	10,000	2,700	3,023	26,780
2045	1,778	24	861	8,453	10,000	2,700	3,042	26,858
2046	1,778	24	866	8,504	10,000	2,700	3,061	26,933
2047	1,778	24	871	8,555	10,000	2,700	3,079	27,007
2048	1,778	24	876	8,603	10,000	2,700	3,096	27,078
2049	1,778	24	881	8,651	10,000	2,700	3,113	27,148
2050	1,778	24	886	8,697	10,000	2,700	3,130	27,215
2051	1,778	25	890	8,742	10,000	2,700	3,146	27,281
2052	1,778	25	895	8,785	10,000	2,700	3,162	27,345
2053	1,778	25	899	8,828	10,000	2,700	3,177	27,407
2054	1,778	25	903	8,869	10,000	2,700	3,192	27,467
2055	1,778	25	907	8,909	10,000	2,700	3,206	27,525
2056	1,778	25	911	8,947	10,000	2,700	3,220	27,582
2057	1,778	25	915	8,985	10,000	2,700	3,234	27,637
2058	1,778	25	919	9,021	10,000	2,700	3,247	27,690
2059	1,778	26	922	9,057	10,000	2,700	3,259	27,742
2060	1,778	26	926	9,091	10,000	2,700	3,272	27,792

CAP:SAM Supply and Demand Projections by Water Provider, Irrigation District and Tribe

<u>Scenario F</u>

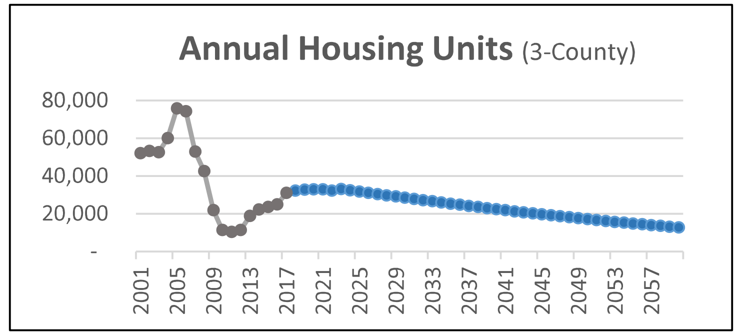
Climate: Historic
Growth Rate: Slow
Growth Pattern: Dense Urbanization
Ag Pumping Capacity: Current

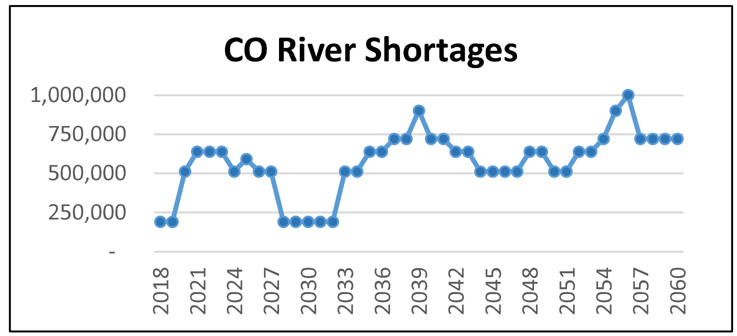
E. Lowest Demand, Hot [EMSBS]

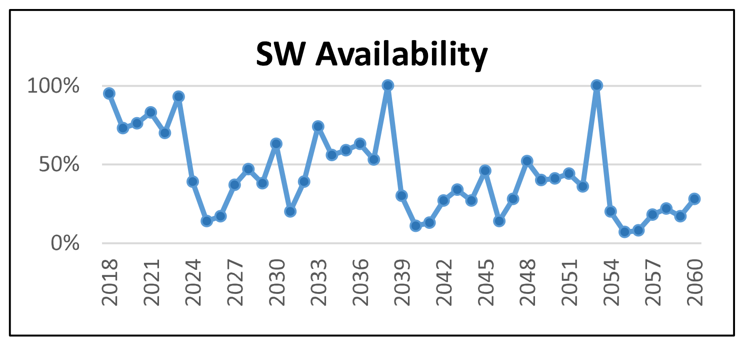
Run Date: 2/9/2021 **Filename:** CAPServiceArea_v3.51_ACv4.gsm

Slow growth rate, dense urbanization growth pattern, hotter and drier climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise

Allow Shortages	Yes	
Select CRSS Array	3	*3=Synthetic*
Use Specific Trace	Yes	
Selected Trace	2	*1=Moderate; 2=Deep; 3=Slight*
AWBA Max M&I	20%	
Surface Water Scenario	6	*1=No Reduction; 2=Occational; 3=Frequent*
Use CAP Buildup	Yes	
CAP Buildup Scenario	2	*1=2035; 2=2045*
HU Growth Pattern	5	*3 = Spillover Growth*
HU Forecast	2	*1=Use Curve; 2=Eller Forecast*
HU Curve	2	
HU Growth Start Rate	-2%	
HU Ordinary Level	33,000	
HU Rate @ 50 yrs	-3%	
GPHUD Change Existing	-0.8%	*per year*
GPHUD Max Change Existing	-20%	
GPHUD Min Existing	150	
GPHUD Scenario New	1	
GPHUD Change New	-0.2%	*per year*
Ag Climate Adjustment	0.2%	
Ag Efficiency Increase	0.2%	*per year*
Ag Efficiency Goal	80%	
Ag Replace Crop CU	2.66	
Ag Intensity Scenario	2	
Ag Develop on Crops	70%	*Perecent of max on active Ag*
Ag Acres Replace Percent	0%	
Ag Replace Crop Year	2025	





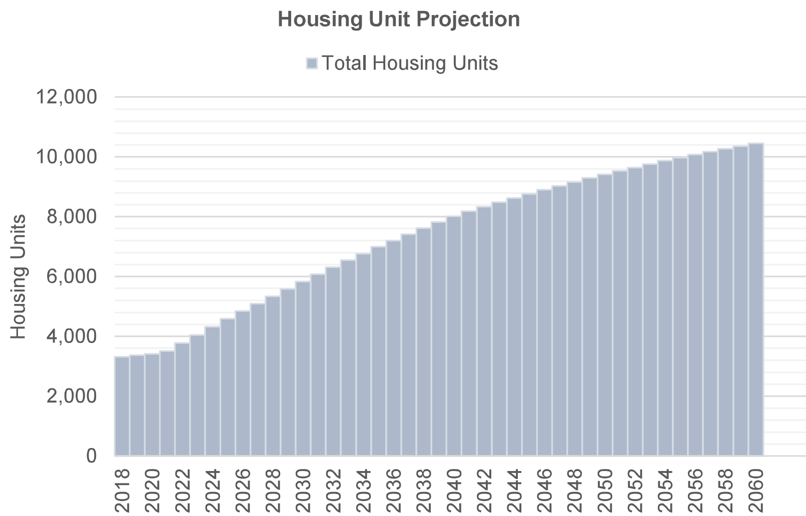


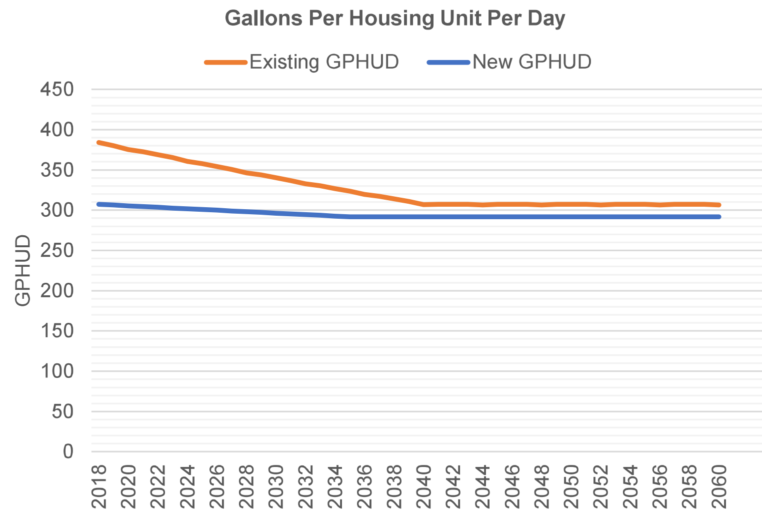
Central Arizona Project Service Area Model

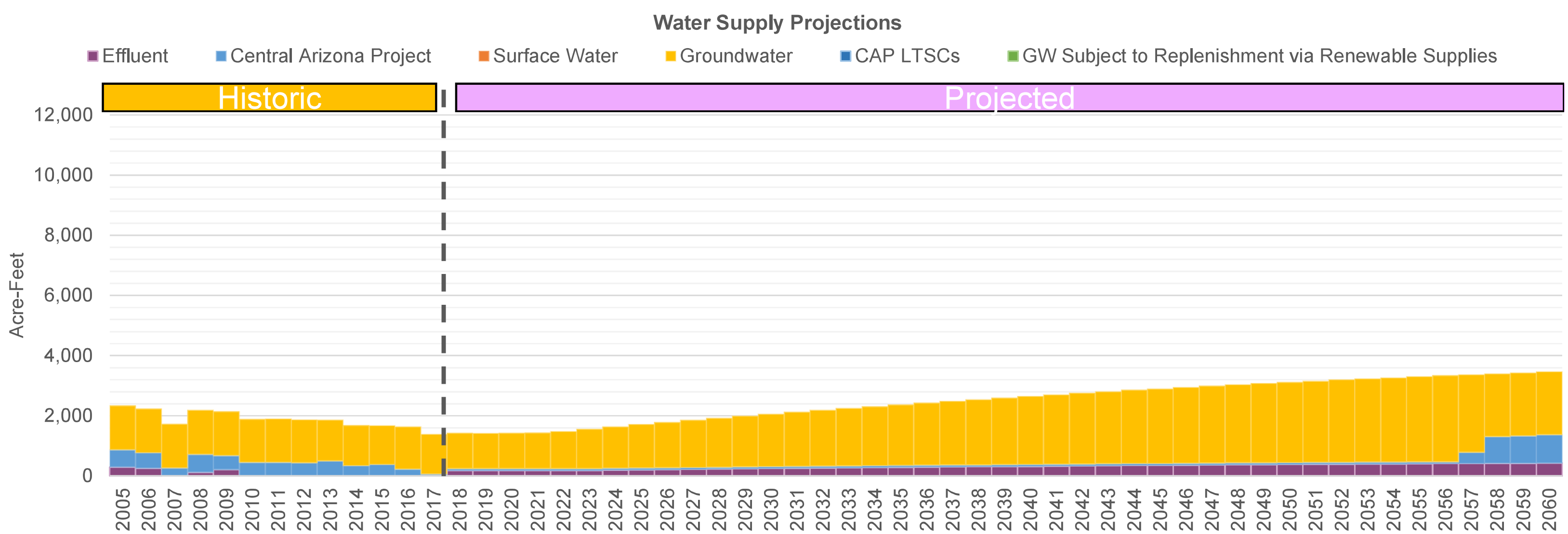
Eloy

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.







CAP-LTSCs Available After 2060: 107,807 AF

Additional[1] effluent available to be put to complete use[2] in 2060: 2,681 AF

Additional effluent available to be put to complete use during the simulation period: 73,585 AF

[1] Effluent volume in excess of that being used to satisfy annual demand (i.e. purple pipe or recovery of effluent credits)

[2] Use of effluent for purposes other than being discharged (i.e. storage, DPR, irrigation, etc)

Central Arizona Project Service Area Model

Eloy

F. Lowest Demand, Historic [EMSBS]

1/15/21 9:59 AM

Demand Assumptions **Water Supply Projections** (Acre-Feet)

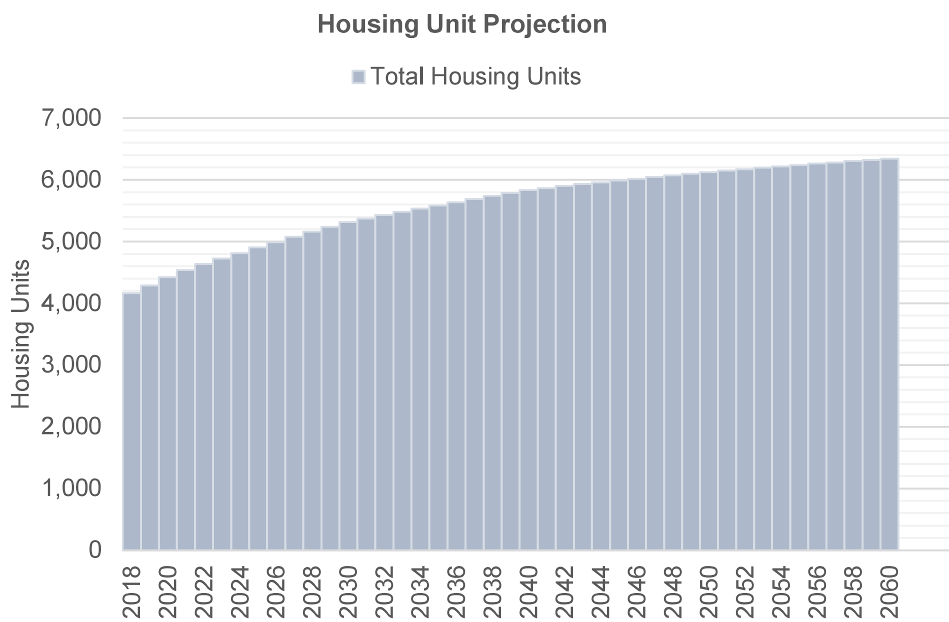
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	3,323	0	384	307	177	0	0	62	0	2,000	0	1,185	0	0
2019	3,371	0	380	306	177	0	0	62	0	2,000	0	1,182	0	0
2020	3,419	0	375	305	177	0	0	62	0	2,000	0	1,185	0	0
2021	3,511	0	373	304	177	0	0	62	0	2,000	0	1,195	0	0
2022	3,780	0	369	303	178	0	0	62	0	2,000	0	1,241	0	0
2023	4,055	0	365	303	184	0	0	62	0	2,000	0	1,313	0	0
2024	4,324	0	360	302	194	0	0	62	0	2,000	0	1,382	0	0
2025	4,588	0	358	301	204	0	0	62	0	2,000	0	1,447	0	0
2026	4,847	0	354	300	213	0	0	62	0	2,000	0	1,511	0	0
2027	5,100	0	351	299	222	0	0	62	0	2,000	0	1,573	0	0
2028	5,347	0	346	298	231	0	0	62	0	2,000	0	1,635	0	0
2029	5,590	0	344	297	240	0	0	62	0	2,000	0	1,691	0	0
2030	5,831	0	340	296	248	0	0	62	0	2,000	0	1,748	0	0
2031	6,074	0	337	295	256	0	0	62	0	2,000	0	1,805	0	0
2032	6,311	0	333	295	264	0	0	62	0	2,000	0	1,864	0	0
2033	6,543	0	330	294	272	0	0	62	0	2,000	0	1,915	0	0
2034	6,769	0	327	293	280	0	0	62	0	2,000	0	1,967	0	0
2035	6,990	0	324	292	287	0	0	62	0	2,000	0	2,018	0	0
2036	7,206	0	320	292	294	0	0	62	0	2,000	0	2,073	0	0
2037	7,416	0	317	292	302	0	0	62	0	2,000	0	2,120	0	0
2038	7,621	0	314	292	309	0	0	62	0	2,000	0	2,169	0	0
2039	7,822	0	311	292	316	0	0	62	0	2,000	0	2,217	0	0
2040	8,017	0	307	292	323	0	0	62	0	2,000	0	2,267	0	0
2041	8,187	0	307	292	330	0	0	62	0	2,000	0	2,313	0	0
2042	8,338	0	307	292	336	0	0	62	0	2,000	0	2,359	0	0
2043	8,486	0	307	292	343	0	0	62	0	2,000	0	2,402	0	0
2044	8,630	0	306	292	349	0	0	62	0	2,000	0	2,448	0	0
2045	8,770	0	307	292	355	0	0	62	0	2,000	0	2,483	0	0
2046	8,906	0	307	292	361	0	0	62	0	2,000	0	2,523	0	0
2047	9,038	0	307	292	366	0	0	62	0	2,000	0	2,561	0	0
2048	9,167	0	306	292	372	0	0	62	0	2,000	0	2,604	0	0
2049	9,293	0	307	292	378	0	0	62	0	2,000	0	2,634	0	0
2050	9,414	0	307	292	382	0	0	62	0	2,000	0	2,670	0	0
2051	9,533	0	307	292	387	0	0	62	0	2,000	0	2,704	0	0
2052	9,648	0	306	292	392	0	0	62	0	2,000	0	2,743	0	0
2053	9,759	0	307	292	397	0	0	62	0	2,000	0	2,769	0	0
2054	9,868	0	307	292	401	0	0	62	0	2,000	0	2,801	0	0
2055	9,973	0	307	292	406	0	0	62	0	2,000	0	2,832	0	0
2056	10,075	0	306	292	410	0	0	62	0	2,000	0	2,867	0	0
2057	10,173	0	307	292	415	0	0	375	0	1,688	0	2,576	0	0
2058	10,268	0	307	292	418	0	0	889	0	1,174	0	2,091	0	0
2059	10,360	0	307	292	422	0	0	914	0	1,148	0	2,092	0	0
2060	10,449	0	306	292	426	0	0	945	0	1,118	0	2,093	0	0

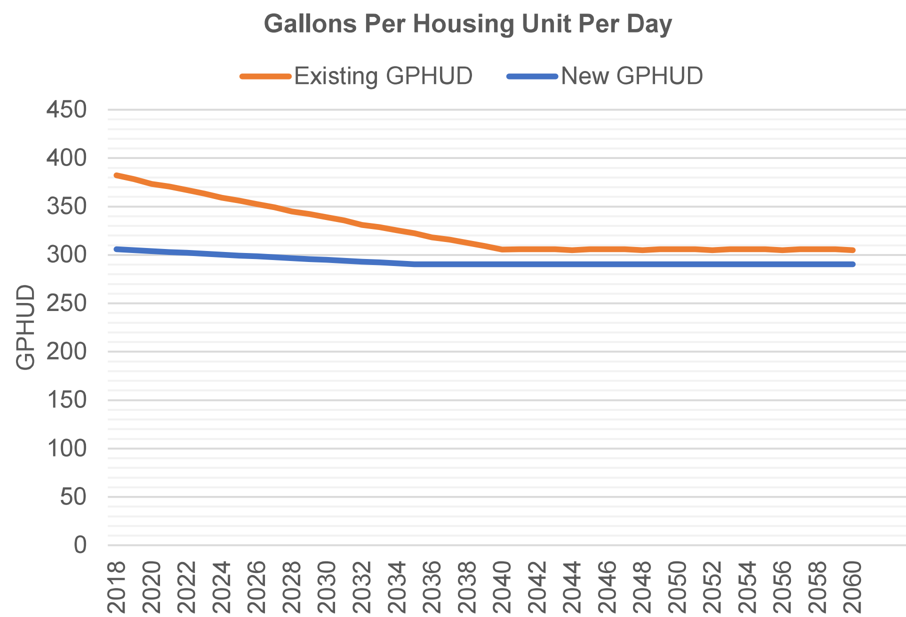
Central Arizona Project Service Area Model

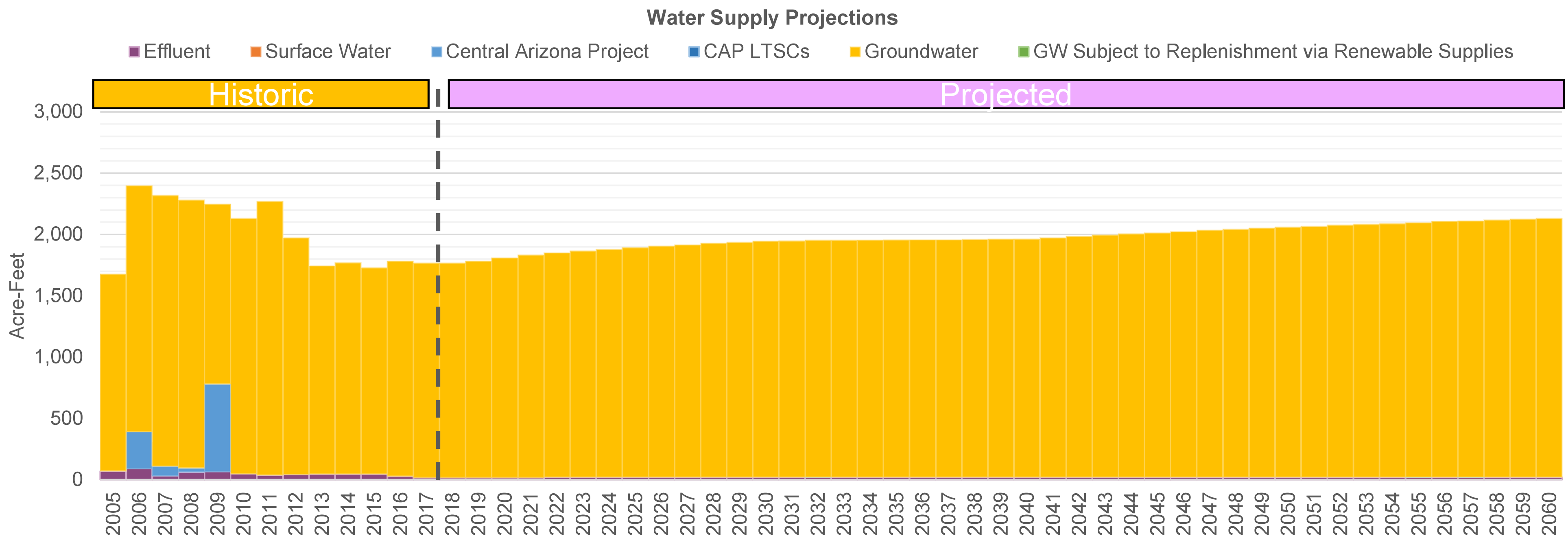
Florence

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.







Florence

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

1/15/21 9:59 AM

Demand Assumptions | **Water Supply Projections** (Acre-Feet)

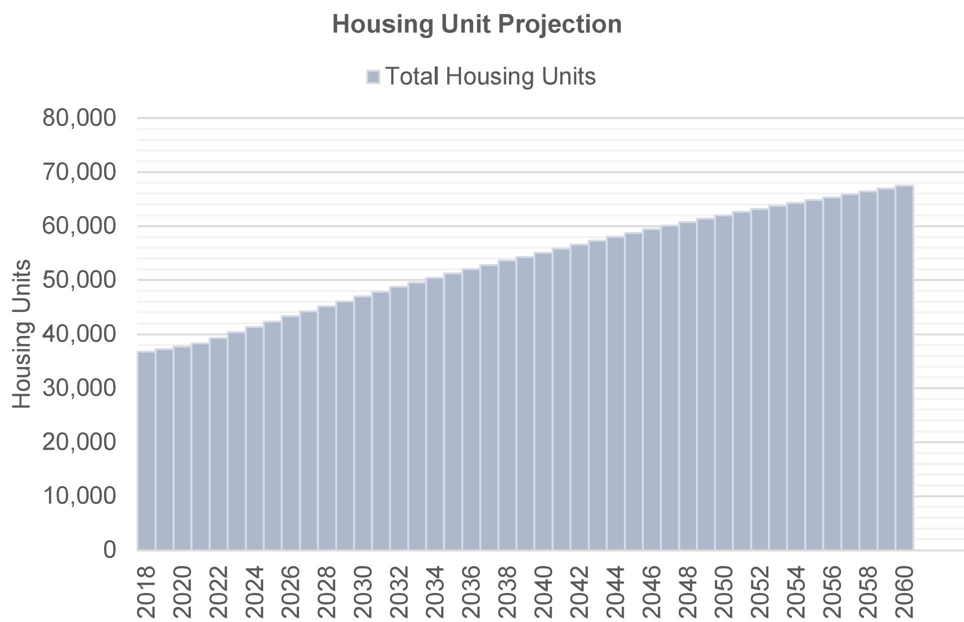
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	4,165	0	382	306	18	0	0	0	0	2,048	0	1,750	0	0
2019	4,292	0	378	305	18	0	0	0	0	2,048	0	1,764	0	0
2020	4,421	0	373	304	18	0	0	0	0	2,048	0	1,790	0	0
2021	4,542	0	371	303	18	0	0	0	0	2,048	0	1,815	0	0
2022	4,633	0	367	302	19	0	0	0	0	2,048	0	1,833	0	0
2023	4,725	0	363	301	19	0	0	0	0	2,048	0	1,846	0	0
2024	4,816	0	359	300	19	0	0	0	0	2,048	0	1,860	0	0
2025	4,905	0	356	299	19	0	0	0	0	2,048	0	1,872	0	0
2026	4,991	0	353	298	19	0	0	0	0	2,048	0	1,884	0	0
2027	5,077	0	349	298	19	0	0	0	0	2,048	0	1,896	0	0
2028	5,160	0	345	297	19	0	0	0	0	2,048	0	1,908	0	0
2029	5,241	0	342	296	20	0	0	0	0	2,048	0	1,917	0	0
2030	5,312	0	339	295	20	0	0	0	0	2,048	0	1,925	0	0
2031	5,370	0	335	294	20	0	0	0	0	2,048	0	1,929	0	0
2032	5,426	0	331	293	20	0	0	0	0	2,048	0	1,932	0	0
2033	5,481	0	329	292	20	0	0	0	0	2,048	0	1,933	0	0
2034	5,535	0	325	291	20	0	0	0	0	2,048	0	1,934	0	0
2035	5,587	0	322	290	20	0	0	0	0	2,048	0	1,935	0	0
2036	5,638	0	318	290	20	0	0	0	0	2,048	0	1,938	0	0
2037	5,688	0	316	290	20	0	0	0	0	2,048	0	1,939	0	0
2038	5,737	0	313	290	20	0	0	0	0	2,048	0	1,940	0	0
2039	5,784	0	309	290	20	0	0	0	0	2,048	0	1,941	0	0
2040	5,831	0	305	290	20	0	0	0	0	2,048	0	1,944	0	0
2041	5,868	0	306	290	20	0	0	0	0	2,048	0	1,953	0	0
2042	5,900	0	306	290	20	0	0	0	0	2,048	0	1,964	0	0
2043	5,931	0	306	290	20	0	0	0	0	2,048	0	1,975	0	0
2044	5,961	0	305	290	20	0	0	0	0	2,048	0	1,986	0	0
2045	5,990	0	306	290	20	0	0	0	0	2,048	0	1,994	0	0
2046	6,018	0	306	290	21	0	0	0	0	2,048	0	2,003	0	0
2047	6,046	0	306	290	21	0	0	0	0	2,048	0	2,012	0	0
2048	6,073	0	305	290	21	0	0	0	0	2,048	0	2,023	0	0
2049	6,099	0	306	290	21	0	0	0	0	2,048	0	2,029	0	0
2050	6,124	0	306	290	21	0	0	0	0	2,048	0	2,038	0	0
2051	6,149	0	306	290	21	0	0	0	0	2,048	0	2,046	0	0
2052	6,173	0	305	290	21	0	0	0	0	2,048	0	2,055	0	0
2053	6,196	0	306	290	21	0	0	0	0	2,048	0	2,061	0	0
2054	6,219	0	306	290	21	0	0	0	0	2,048	0	2,069	0	0
2055	6,240	0	306	290	21	0	0	0	0	2,048	0	2,076	0	0
2056	6,262	0	305	290	21	0	0	0	0	2,048	0	2,085	0	0
2057	6,283	0	306	290	21	0	0	0	0	2,048	0	2,090	0	0
2058	6,303	0	306	290	21	0	0	0	0	2,048	0	2,096	0	0
2059	6,323	0	306	290	22	0	0	0	0	2,048	0	2,102	0	0
2060	6,343	0	305	290	22	0	0	0	0	2,048	0	2,111	0	0

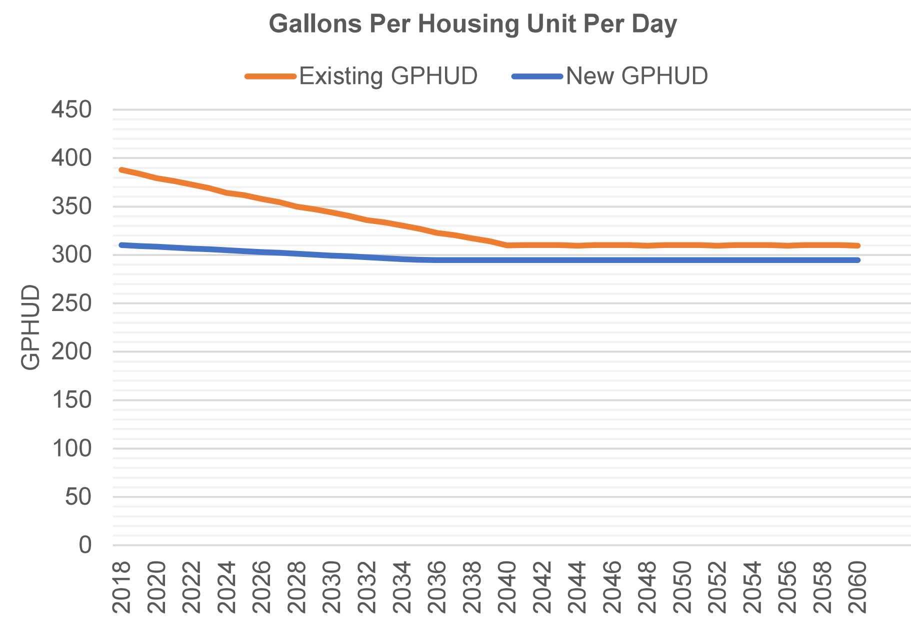
WCPinalValleySyst

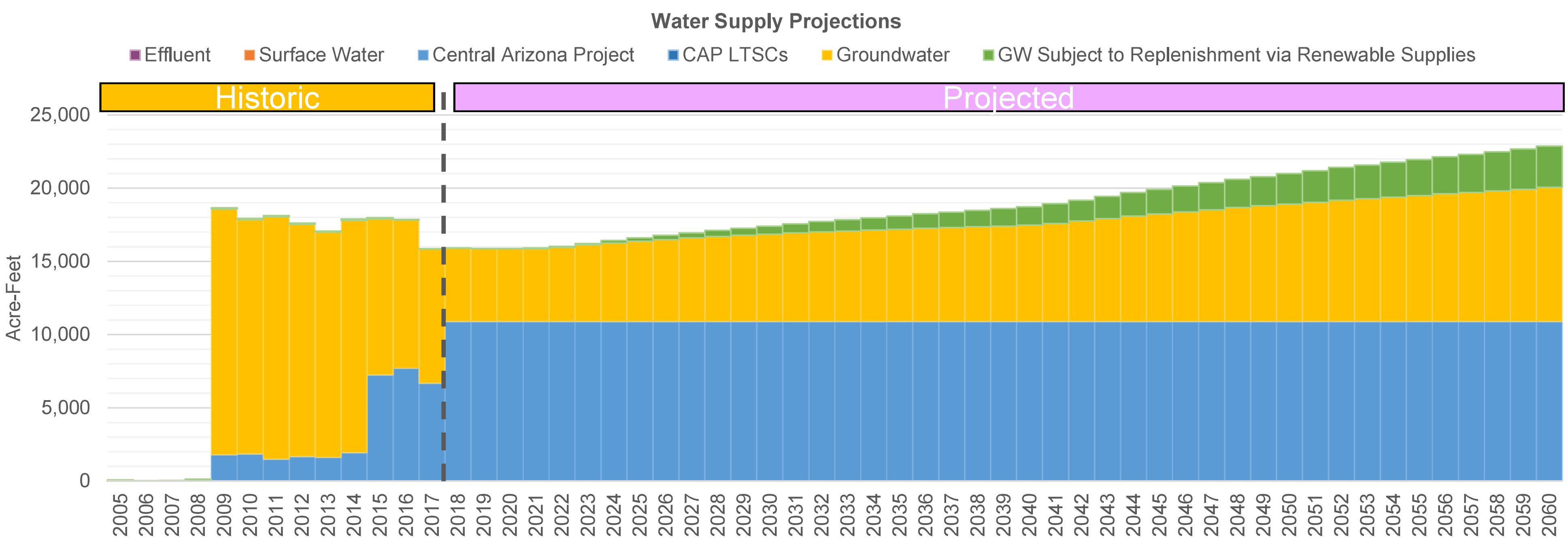
Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.







Central Arizona Project Service Area Model

AZWCPinalVall

F. Lowest Demand, Historic [EMSBS]

1/15/21 9:59 AM

Demand Assumptions / Water Supply Projections (Acre-Feet)

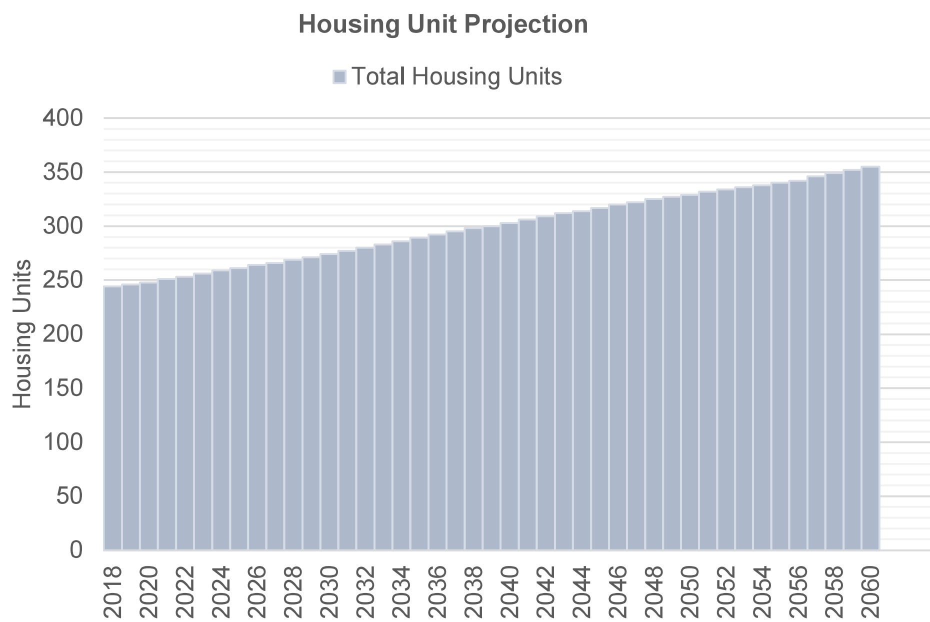
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	36,745	0	388	310	0	0	0	2,800	8,084	0	0	5,013	8	0
2019	37,236	0	384	309	0	0	0	2,800	8,084	0	0	4,972	13	0
2020	37,729	0	379	308	0	0	0	2,800	8,084	0	0	4,972	27	0
2021	38,325	0	376	307	0	0	0	2,800	8,084	0	0	4,987	42	0
2022	39,325	0	373	307	0	0	0	2,800	8,084	0	0	5,081	66	0
2023	40,350	0	369	306	0	0	0	2,800	8,084	0	0	5,231	108	0
2024	41,354	0	364	305	0	0	0	2,800	8,084	0	0	5,374	161	0
2025	42,337	0	361	304	0	0	0	2,800	8,084	0	0	5,500	216	0
2026	43,300	0	358	303	0	0	0	2,800	8,084	0	0	5,612	280	0
2027	44,242	0	354	302	0	0	0	2,800	8,084	0	0	5,717	344	0
2028	45,164	0	350	301	0	0	0	2,800	8,084	0	0	5,817	414	0
2029	46,066	0	347	300	0	0	0	2,800	8,084	0	0	5,895	483	0
2030	46,964	0	344	299	0	0	0	2,800	8,084	0	0	5,975	554	0
2031	47,862	0	340	298	0	0	0	2,800	8,084	0	0	6,052	626	0
2032	48,741	0	336	297	0	0	0	2,800	8,084	0	0	6,134	700	0
2033	49,599	0	334	297	0	0	0	2,800	8,084	0	0	6,190	773	0
2034	50,437	0	330	296	0	0	0	2,800	8,084	0	0	6,250	845	0
2035	51,255	0	327	295	0	0	0	2,800	8,084	0	0	6,303	916	0
2036	52,054	0	323	295	0	0	0	2,800	8,084	0	0	6,377	989	0
2037	52,833	0	320	295	0	0	0	2,800	8,084	0	0	6,421	1,059	0
2038	53,594	0	317	295	0	0	0	2,800	8,084	0	0	6,475	1,128	0
2039	54,336	0	314	295	0	0	0	2,800	8,084	0	0	6,524	1,197	0
2040	55,059	0	310	295	0	0	0	2,800	8,084	0	0	6,584	1,267	0
2041	55,811	0	310	295	0	0	0	2,800	8,084	0	0	6,710	1,343	0
2042	56,575	0	310	295	0	0	0	2,800	8,084	0	0	6,876	1,427	0
2043	57,319	0	310	295	0	0	0	2,800	8,084	0	0	7,038	1,513	0
2044	58,044	0	309	295	0	0	0	2,800	8,084	0	0	7,212	1,601	0
2045	58,750	0	310	295	0	0	0	2,800	8,084	0	0	7,347	1,683	0
2046	59,437	0	310	295	0	0	0	2,800	8,084	0	0	7,493	1,767	0
2047	60,105	0	310	295	0	0	0	2,800	8,084	0	0	7,635	1,849	0
2048	60,755	0	309	295	0	0	0	2,800	8,084	0	0	7,790	1,932	0
2049	61,387	0	310	295	0	0	0	2,800	8,084	0	0	7,903	2,010	0
2050	62,001	0	310	295	0	0	0	2,800	8,084	0	0	8,031	2,088	0
2051	62,598	0	310	295	0	0	0	2,800	8,084	0	0	8,154	2,165	0
2052	63,178	0	309	295	0	0	0	2,800	8,084	0	0	8,294	2,243	0
2053	63,741	0	310	295	0	0	0	2,800	8,084	0	0	8,388	2,314	0
2054	64,288	0	310	295	0	0	0	2,800	8,084	0	0	8,499	2,386	0
2055	64,819	0	310	295	0	0	0	2,800	8,084	0	0	8,606	2,457	0
2056	65,333	0	309	295	0	0	0	2,800	8,084	0	0	8,733	2,528	0
2057	65,907	0	310	295	0	0	0	2,800	8,084	0	0	8,820	2,594	0
2058	66,468	0	310	295	0	0	0	2,800	8,084	0	0	8,932	2,670	0
2059	67,012	0	310	295	0	0	0	2,800	8,084	0	0	9,040	2,744	0
2060	67,539	0	309	295	0	0	0	2,800	8,084	0	0	9,169	2,820	0

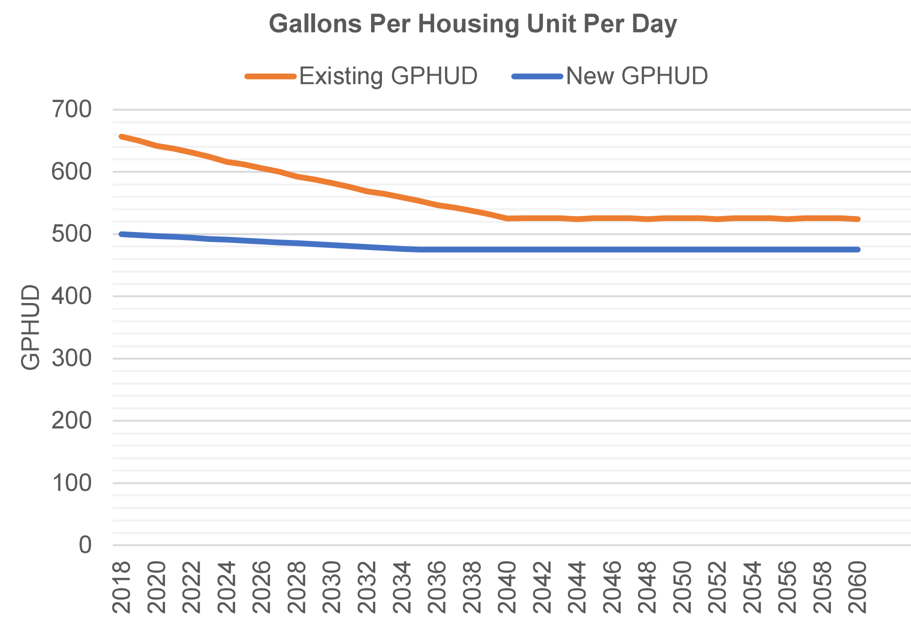
Central Arizona Project Service Area Model

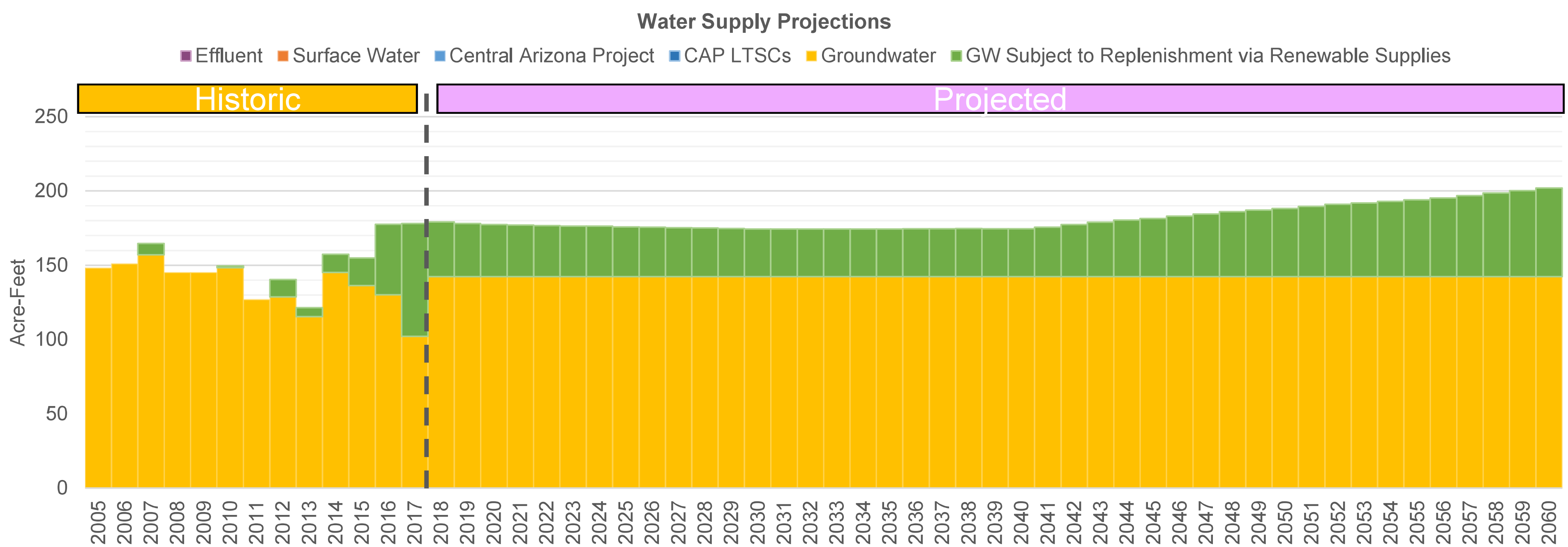
CasaGrande

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.







Central Arizona Project Service Area Model

CasaGrande

F. Lowest Demand, Historic [EMSBS]

1/15/21 9:59 AM

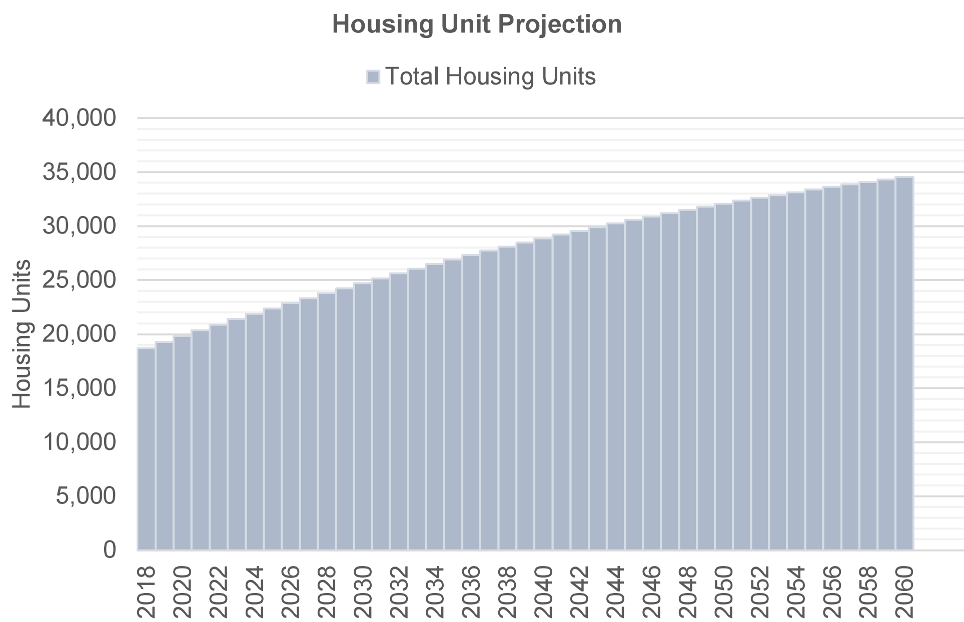
Date	Demand Assumptions: Housing Units Total	Housing Units SRP	GPHUD Existing	GPHUD New	Water Supply Projections (Acre-Feet): Effluent	Surface Water SRP	Surface Water Non-SRP	Central Arizona Project Direct	CAP ASR	CAP Storage	CAP Recovery	Groundwater Non-Repl.	Groundwater Replenished	Unknown
2018	244	0	657	500	0	0	0	0	0	0	0	142	37	0
2019	246	0	650	499	0	0	0	0	0	0	0	142	36	0
2020	248	0	642	497	0	0	0	0	0	0	0	142	35	0
2021	251	0	637	496	0	0	0	0	0	0	0	142	35	0
2022	253	0	631	494	0	0	0	0	0	0	0	142	34	0
2023	256	0	624	493	0	0	0	0	0	0	0	142	34	0
2024	259	0	617	491	0	0	0	0	0	0	0	142	34	0
2025	261	0	612	490	0	0	0	0	0	0	0	142	34	0
2026	264	0	606	488	0	0	0	0	0	0	0	142	33	0
2027	266	0	600	487	0	0	0	0	0	0	0	142	33	0
2028	269	0	592	485	0	0	0	0	0	0	0	142	33	0
2029	271	0	588	484	0	0	0	0	0	0	0	142	32	0
2030	274	0	582	482	0	0	0	0	0	0	0	142	32	0
2031	277	0	576	481	0	0	0	0	0	0	0	142	32	0
2032	280	0	569	479	0	0	0	0	0	0	0	142	32	0
2033	283	0	565	478	0	0	0	0	0	0	0	142	32	0
2034	286	0	559	477	0	0	0	0	0	0	0	142	32	0
2035	289	0	554	475	0	0	0	0	0	0	0	142	32	0
2036	292	0	546	475	0	0	0	0	0	0	0	142	32	0
2037	295	0	543	475	0	0	0	0	0	0	0	142	32	0
2038	298	0	537	475	0	0	0	0	0	0	0	142	32	0
2039	300	0	532	475	0	0	0	0	0	0	0	142	32	0
2040	303	0	525	475	0	0	0	0	0	0	0	142	32	0
2041	306	0	525	475	0	0	0	0	0	0	0	142	33	0
2042	309	0	525	475	0	0	0	0	0	0	0	142	35	0
2043	312	0	525	475	0	0	0	0	0	0	0	142	37	0
2044	314	0	524	475	0	0	0	0	0	0	0	142	38	0
2045	317	0	525	475	0	0	0	0	0	0	0	142	39	0
2046	320	0	525	475	0	0	0	0	0	0	0	142	41	0
2047	322	0	525	475	0	0	0	0	0	0	0	142	42	0
2048	325	0	524	475	0	0	0	0	0	0	0	142	44	0
2049	327	0	525	475	0	0	0	0	0	0	0	142	45	0
2050	329	0	525	475	0	0	0	0	0	0	0	142	46	0
2051	332	0	525	475	0	0	0	0	0	0	0	142	47	0
2052	334	0	524	475	0	0	0	0	0	0	0	142	49	0
2053	336	0	525	475	0	0	0	0	0	0	0	142	50	0
2054	338	0	525	475	0	0	0	0	0	0	0	142	51	0
2055	340	0	525	475	0	0	0	0	0	0	0	142	52	0
2056	342	0	524	475	0	0	0	0	0	0	0	142	53	0
2057	346	0	525	475	0	0	0	0	0	0	0	142	54	0
2058	349	0	525	475	0	0	0	0	0	0	0	142	56	0
2059	352	0	525	475	0	0	0	0	0	0	0	142	58	0
2060	355	0	524	475	0	0	0	0	0	0	0	142	60	0

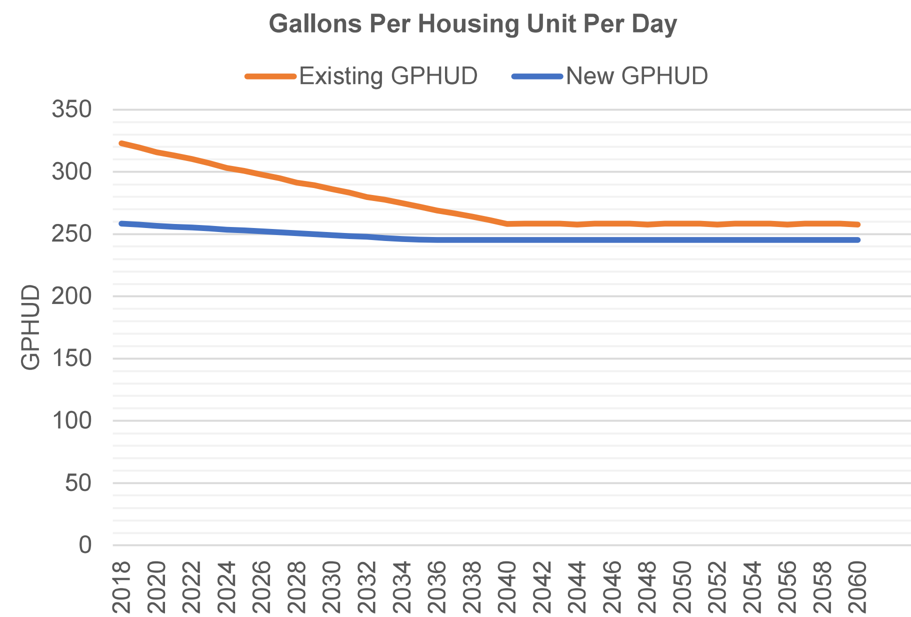
GlobalSantaCruzW(

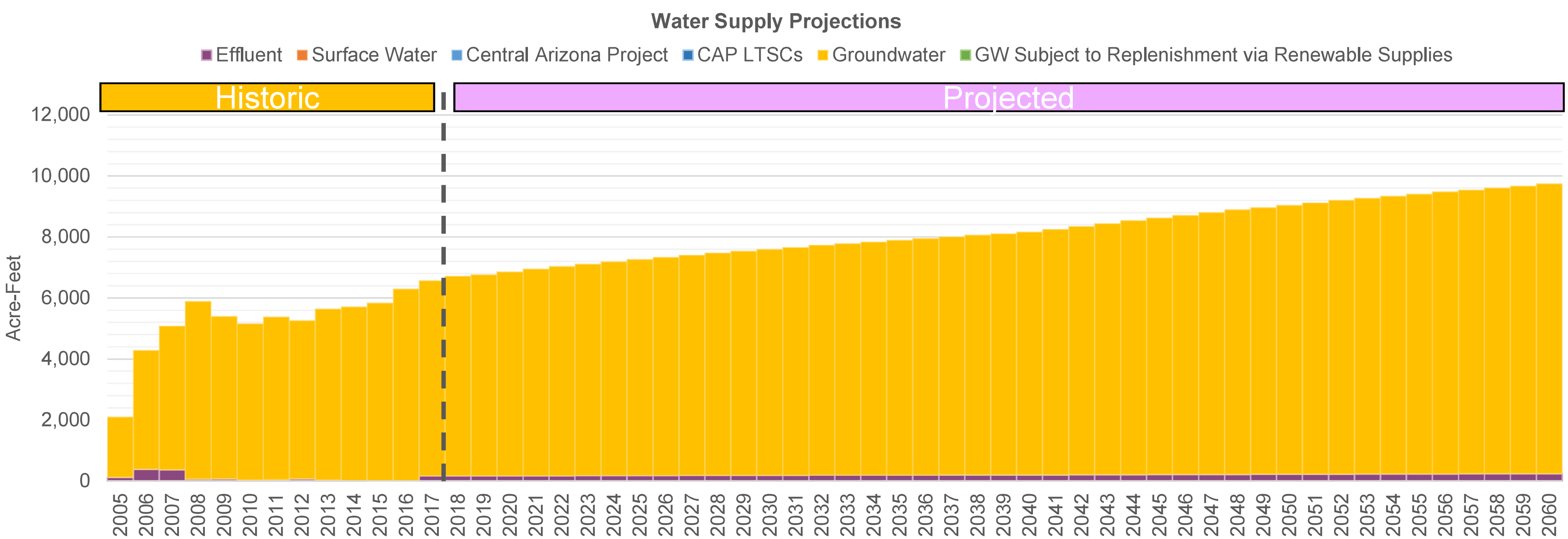
Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.







Central Arizona Project Service Area Model

GlobalSantaCru

F. Lowest Demand, Historic [EMSBS]

1/15/21 9:59 AM

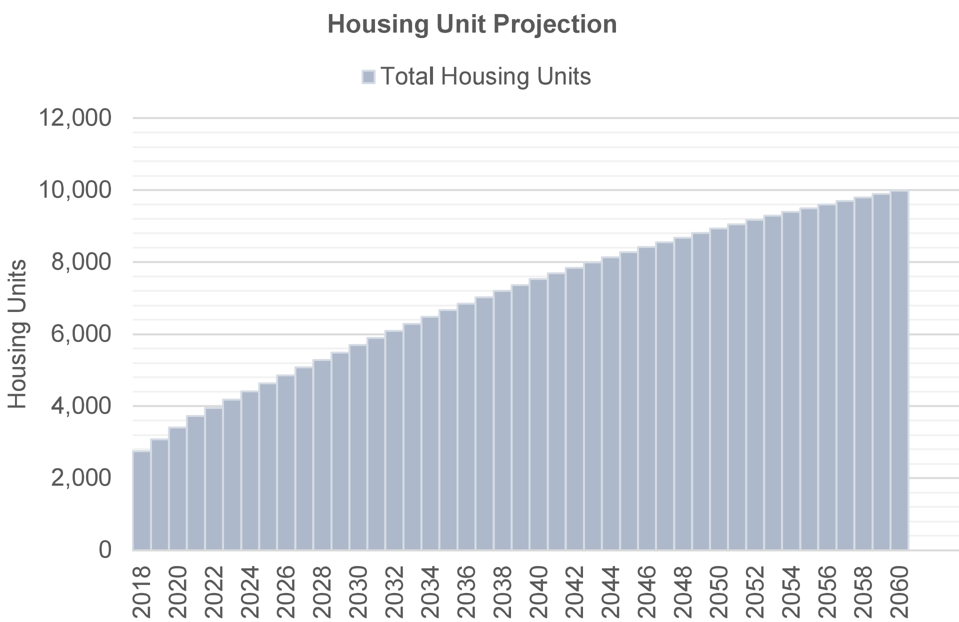
	Demand Assumptions				Water Supply Projections (Acre-Feet)									
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	18,709	0	323	258	167	0	0	0	0	0	0	6,548	0	0
2019	19,262	0	320	258	167	0	0	0	0	0	0	6,596	0	0
2020	19,818	0	316	257	168	0	0	0	0	0	0	6,688	0	0
2021	20,367	0	313	256	171	0	0	0	0	0	0	6,777	0	0
2022	20,869	0	310	255	173	0	0	0	0	0	0	6,859	0	0
2023	21,383	0	307	254	175	0	0	0	0	0	0	6,936	0	0
2024	21,888	0	303	254	177	0	0	0	0	0	0	7,015	0	0
2025	22,382	0	301	253	179	0	0	0	0	0	0	7,086	0	0
2026	22,865	0	298	252	181	0	0	0	0	0	0	7,157	0	0
2027	23,338	0	295	251	182	0	0	0	0	0	0	7,225	0	0
2028	23,802	0	291	251	184	0	0	0	0	0	0	7,294	0	0
2029	24,255	0	289	250	186	0	0	0	0	0	0	7,352	0	0
2030	24,709	0	286	249	187	0	0	0	0	0	0	7,413	0	0
2031	25,169	0	283	248	189	0	0	0	0	0	0	7,474	0	0
2032	25,619	0	280	248	191	0	0	0	0	0	0	7,540	0	0
2033	26,058	0	278	247	192	0	0	0	0	0	0	7,592	0	0
2034	26,488	0	275	246	194	0	0	0	0	0	0	7,647	0	0
2035	26,907	0	272	245	195	0	0	0	0	0	0	7,699	0	0
2036	27,316	0	269	245	196	0	0	0	0	0	0	7,761	0	0
2037	27,715	0	267	245	198	0	0	0	0	0	0	7,808	0	0
2038	28,104	0	264	245	199	0	0	0	0	0	0	7,860	0	0
2039	28,484	0	261	245	200	0	0	0	0	0	0	7,910	0	0
2040	28,855	0	258	245	202	0	0	0	0	0	0	7,965	0	0
2041	29,216	0	258	245	203	0	0	0	0	0	0	8,046	0	0
2042	29,570	0	258	245	205	0	0	0	0	0	0	8,142	0	0
2043	29,914	0	258	245	208	0	0	0	0	0	0	8,236	0	0
2044	30,249	0	258	245	210	0	0	0	0	0	0	8,335	0	0
2045	30,575	0	258	245	213	0	0	0	0	0	0	8,415	0	0
2046	30,893	0	258	245	215	0	0	0	0	0	0	8,502	0	0
2047	31,202	0	258	245	217	0	0	0	0	0	0	8,585	0	0
2048	31,502	0	258	245	219	0	0	0	0	0	0	8,677	0	0
2049	31,794	0	258	245	221	0	0	0	0	0	0	8,746	0	0
2050	32,078	0	258	245	223	0	0	0	0	0	0	8,824	0	0
2051	32,354	0	258	245	225	0	0	0	0	0	0	8,898	0	0
2052	32,622	0	258	245	227	0	0	0	0	0	0	8,982	0	0
2053	32,882	0	258	245	229	0	0	0	0	0	0	9,042	0	0
2054	33,135	0	258	245	231	0	0	0	0	0	0	9,111	0	0
2055	33,380	0	258	245	232	0	0	0	0	0	0	9,178	0	0
2056	33,618	0	258	245	234	0	0	0	0	0	0	9,253	0	0
2057	33,862	0	258	245	236	0	0	0	0	0	0	9,306	0	0
2058	34,098	0	258	245	237	0	0	0	0	0	0	9,371	0	0
2059	34,328	0	258	245	239	0	0	0	0	0	0	9,433	0	0
2060	34,550	0	258	245	241	0	0	0	0	0	0	9,506	0	0

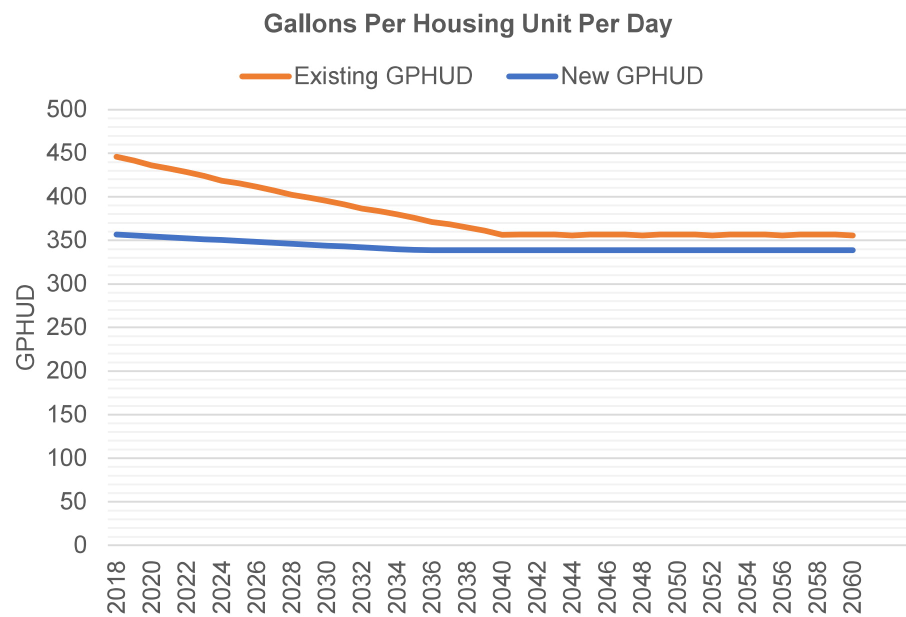
EPCOR-San Tan

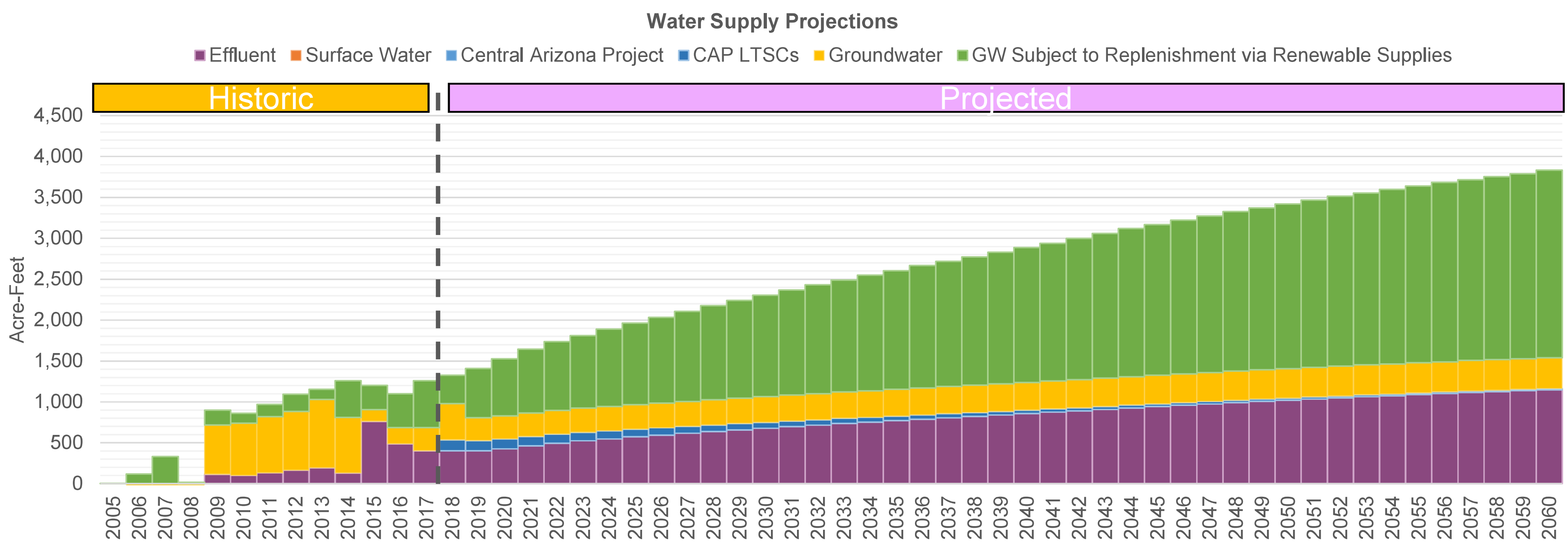
Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.







Central Arizona Project Service Area Model

EPCOR-San Tai

F. Lowest Demand, Historic [EMSBS]

1/15/21 9:59 AM

Demand Assumptions / Water Supply Projections (Acre-Feet)

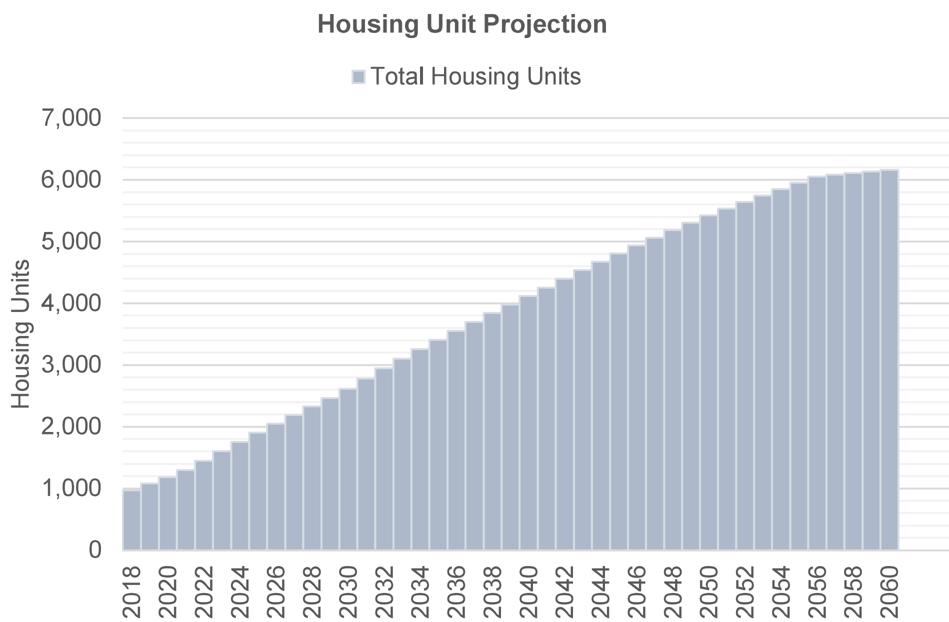
Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	2,745	0	446	357	402	0	0	0	0	0	134	443	349	0
2019	3,076	0	441	356	402	0	0	0	0	0	127	278	602	0
2020	3,409	0	436	355	427	0	0	0	0	0	121	281	700	0
2021	3,723	0	433	353	463	0	0	0	0	0	115	286	779	0
2022	3,952	0	428	352	497	0	0	0	0	0	109	291	839	0
2023	4,185	0	424	351	526	0	0	0	0	0	103	294	889	0
2024	4,414	0	419	350	549	0	0	0	0	0	98	298	946	0
2025	4,639	0	416	349	573	0	0	0	0	0	93	301	997	0
2026	4,858	0	411	348	595	0	0	0	0	0	89	304	1,049	0
2027	5,073	0	407	347	617	0	0	0	0	0	84	306	1,099	0
2028	5,284	0	402	346	638	0	0	0	0	0	80	309	1,150	0
2029	5,490	0	399	345	659	0	0	0	0	0	76	312	1,193	0
2030	5,694	0	395	344	678	0	0	0	0	0	72	315	1,239	0
2031	5,898	0	391	343	698	0	0	0	0	0	69	317	1,284	0
2032	6,097	0	386	342	717	0	0	0	0	0	65	320	1,331	0
2033	6,292	0	383	341	737	0	0	0	0	0	62	322	1,369	0
2034	6,482	0	380	340	754	0	0	0	0	0	59	325	1,410	0
2035	6,668	0	376	339	771	0	0	0	0	0	56	327	1,450	0
2036	6,849	0	371	339	788	0	0	0	0	0	53	329	1,496	0
2037	7,026	0	368	339	807	0	0	0	0	0	50	332	1,530	0
2038	7,199	0	365	339	823	0	0	0	0	0	48	334	1,570	0
2039	7,367	0	361	339	840	0	0	0	0	0	46	336	1,607	0
2040	7,531	0	356	339	857	0	0	0	0	0	43	338	1,648	0
2041	7,690	0	357	339	874	0	0	0	0	0	41	340	1,685	0
2042	7,843	0	357	339	890	0	0	0	0	0	39	343	1,728	0
2043	7,993	0	357	339	908	0	0	0	0	0	37	345	1,767	0
2044	8,139	0	356	339	926	0	0	0	0	0	35	347	1,811	0
2045	8,281	0	357	339	945	0	0	0	0	0	33	350	1,840	0
2046	8,419	0	357	339	959	0	0	0	0	0	32	352	1,879	0
2047	8,553	0	357	339	975	0	0	0	0	0	30	354	1,914	0
2048	8,684	0	356	339	991	0	0	0	0	0	29	356	1,954	0
2049	8,811	0	357	339	1,008	0	0	0	0	0	27	358	1,979	0
2050	8,935	0	357	339	1,021	0	0	0	0	0	26	360	2,013	0
2051	9,055	0	357	339	1,036	0	0	0	0	0	25	362	2,044	0
2052	9,171	0	356	339	1,050	0	0	0	0	0	23	364	2,081	0
2053	9,285	0	357	339	1,065	0	0	0	0	0	22	366	2,102	0
2054	9,395	0	357	339	1,076	0	0	0	0	0	21	367	2,133	0
2055	9,501	0	357	339	1,089	0	0	0	0	0	20	369	2,160	0
2056	9,605	0	356	339	1,102	0	0	0	0	0	19	371	2,194	0
2057	9,704	0	357	339	1,116	0	0	0	0	0	18	372	2,210	0
2058	9,801	0	357	339	1,125	0	0	0	0	0	17	374	2,238	0
2059	9,895	0	357	339	1,137	0	0	0	0	0	16	375	2,262	0
2060	9,985	0	356	339	1,148	0	0	0	0	0	15	377	2,293	0

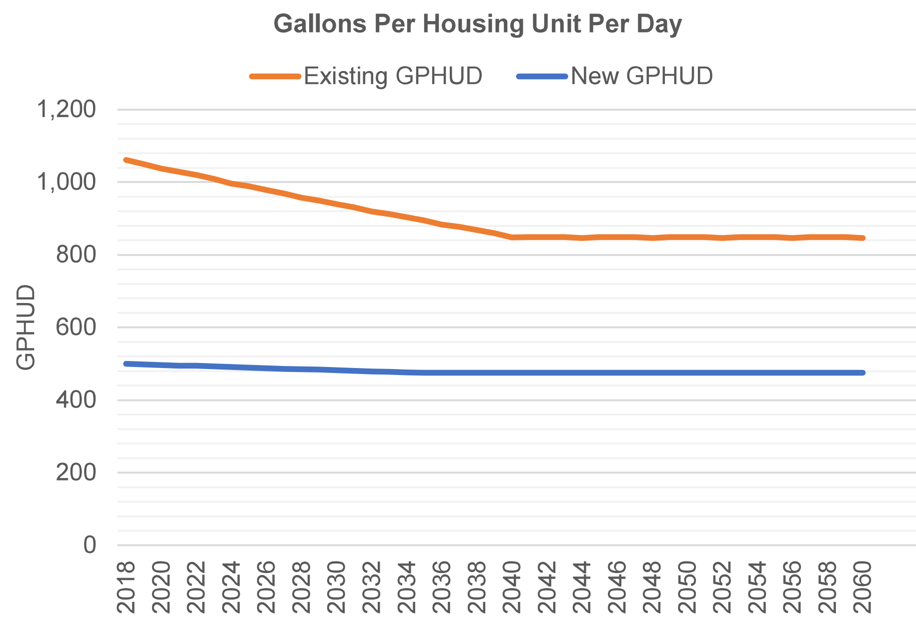
Central Arizona Project Service Area Model

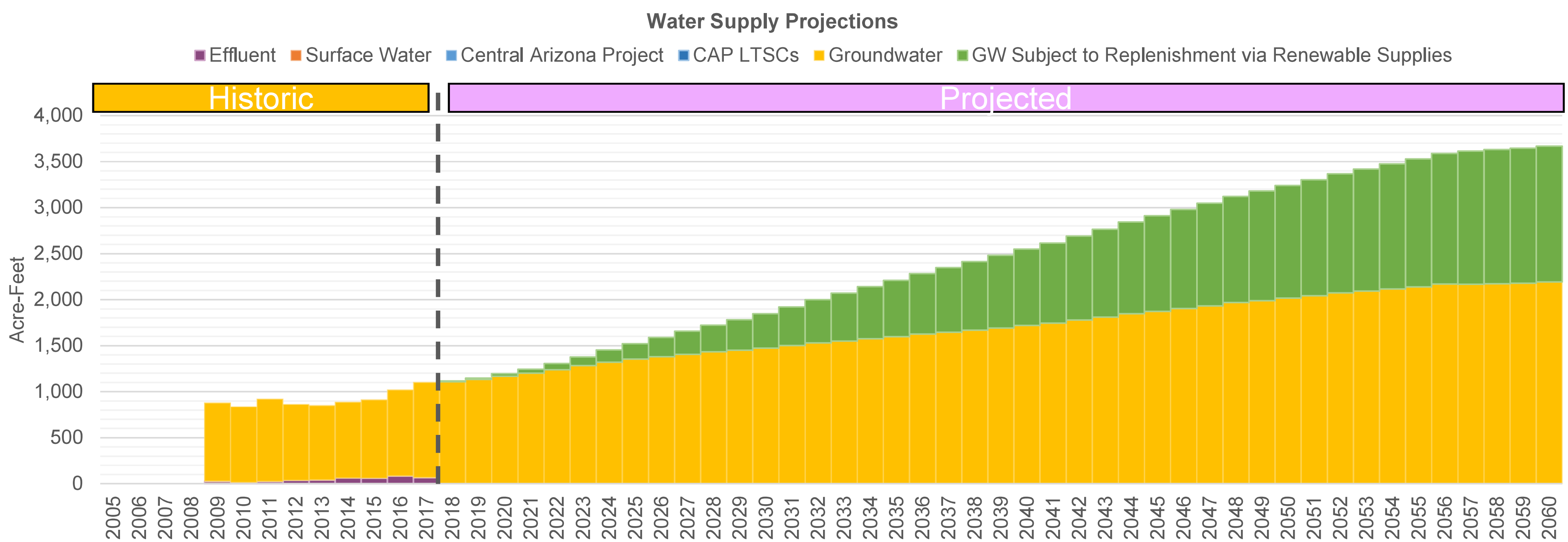
PicachoWC

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.







PicachoWC

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

1/15/21 9:59 AM

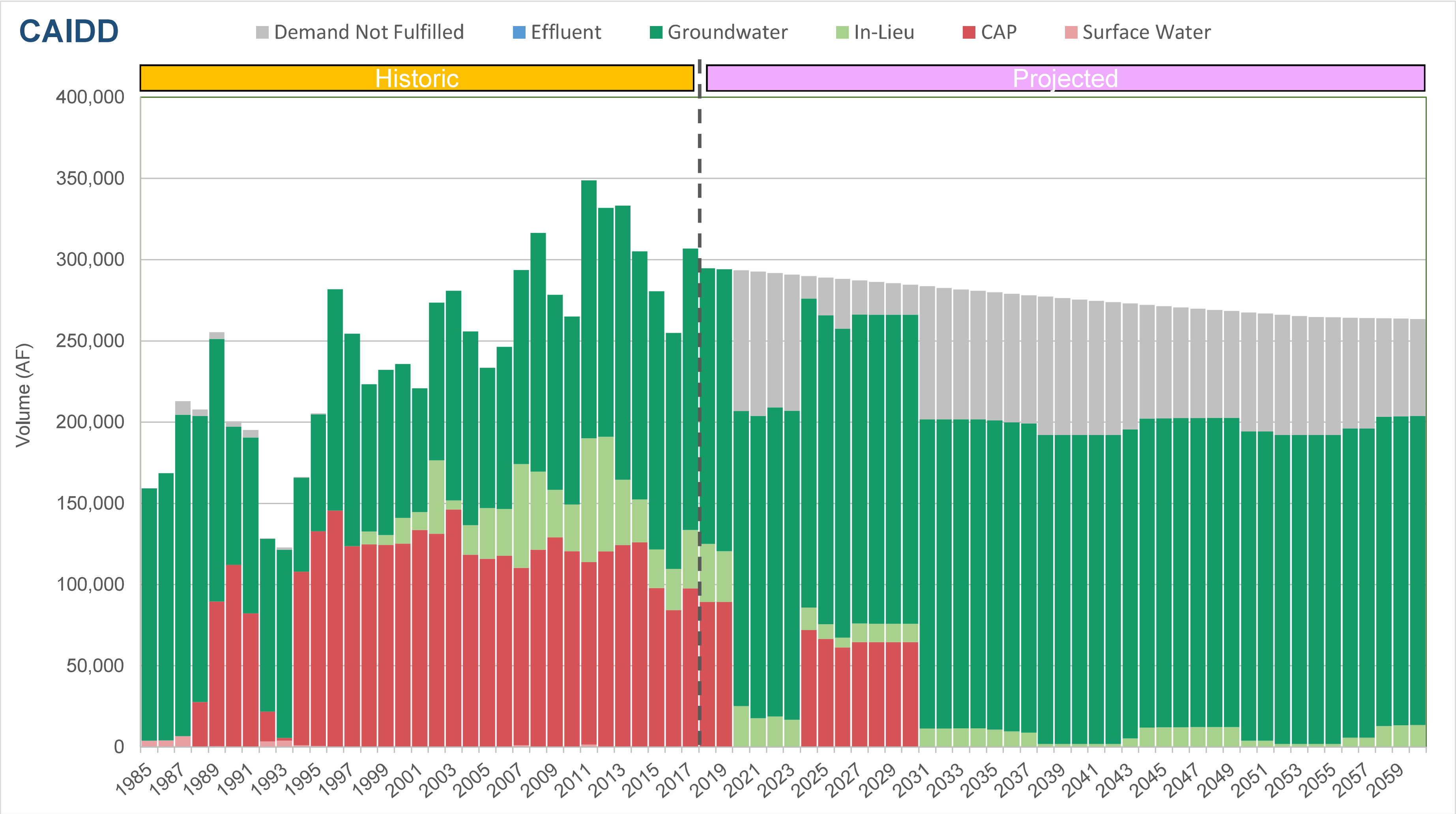
Demand Assumptions / Water Supply Projections (Acre-Feet)

Date	Housing Units		GPHUD		Effluent	Surface Water		Central Arizona Project				Groundwater		Unknown
	Total	SRP	Existing	New		SRP	Non-SRP	Direct	ASR	Storage	Recovery	Non-Repl.	Replenished	
2018	974	0	1,061	500	0	0	0	0	0	0	0	1,108	8	0
2019	1,078	0	1,050	499	0	0	0	0	0	0	0	1,134	13	0
2020	1,184	0	1,037	497	0	0	0	0	0	0	0	1,166	28	0
2021	1,298	0	1,030	496	0	0	0	0	0	0	0	1,200	44	0
2022	1,449	0	1,019	494	0	0	0	0	0	0	0	1,240	66	0
2023	1,604	0	1,009	493	0	0	0	0	0	0	0	1,283	96	0
2024	1,755	0	996	491	0	0	0	0	0	0	0	1,321	132	0
2025	1,904	0	989	490	0	0	0	0	0	0	0	1,355	168	0
2026	2,049	0	979	488	0	0	0	0	0	0	0	1,382	209	0
2027	2,191	0	969	487	0	0	0	0	0	0	0	1,408	249	0
2028	2,330	0	957	485	0	0	0	0	0	0	0	1,432	292	0
2029	2,466	0	950	484	0	0	0	0	0	0	0	1,451	333	0
2030	2,615	0	940	482	0	0	0	0	0	0	0	1,474	374	0
2031	2,781	0	931	481	0	0	0	0	0	0	0	1,502	420	0
2032	2,944	0	919	479	0	0	0	0	0	0	0	1,530	470	0
2033	3,103	0	913	478	0	0	0	0	0	0	0	1,551	519	0
2034	3,258	0	903	477	0	0	0	0	0	0	0	1,575	567	0
2035	3,409	0	894	475	0	0	0	0	0	0	0	1,597	613	0
2036	3,557	0	883	475	0	0	0	0	0	0	0	1,625	659	0
2037	3,701	0	877	475	0	0	0	0	0	0	0	1,645	703	0
2038	3,842	0	868	475	0	0	0	0	0	0	0	1,669	746	0
2039	3,980	0	859	475	0	0	0	0	0	0	0	1,692	788	0
2040	4,114	0	848	475	0	0	0	0	0	0	0	1,719	829	0
2041	4,254	0	849	475	0	0	0	0	0	0	0	1,745	869	0
2042	4,398	0	849	475	0	0	0	0	0	0	0	1,779	911	0
2043	4,539	0	849	475	0	0	0	0	0	0	0	1,812	954	0
2044	4,675	0	847	475	0	0	0	0	0	0	0	1,849	996	0
2045	4,808	0	849	475	0	0	0	0	0	0	0	1,874	1,037	0
2046	4,938	0	849	475	0	0	0	0	0	0	0	1,904	1,077	0
2047	5,064	0	849	475	0	0	0	0	0	0	0	1,934	1,116	0
2048	5,186	0	847	475	0	0	0	0	0	0	0	1,968	1,153	0
2049	5,306	0	849	475	0	0	0	0	0	0	0	1,990	1,190	0
2050	5,421	0	849	475	0	0	0	0	0	0	0	2,016	1,226	0
2051	5,534	0	849	475	0	0	0	0	0	0	0	2,043	1,260	0
2052	5,643	0	847	475	0	0	0	0	0	0	0	2,075	1,294	0
2053	5,749	0	849	475	0	0	0	0	0	0	0	2,092	1,327	0
2054	5,853	0	849	475	0	0	0	0	0	0	0	2,117	1,358	0
2055	5,953	0	849	475	0	0	0	0	0	0	0	2,140	1,390	0
2056	6,050	0	847	475	0	0	0	0	0	0	0	2,170	1,419	0
2057	6,081	0	849	475	0	0	0	0	0	0	0	2,167	1,449	0
2058	6,108	0	849	475	0	0	0	0	0	0	0	2,173	1,458	0
2059	6,134	0	849	475	0	0	0	0	0	0	0	2,179	1,466	0
2060	6,159	0	847	475	0	0	0	0	0	0	0	2,193	1,474	0

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



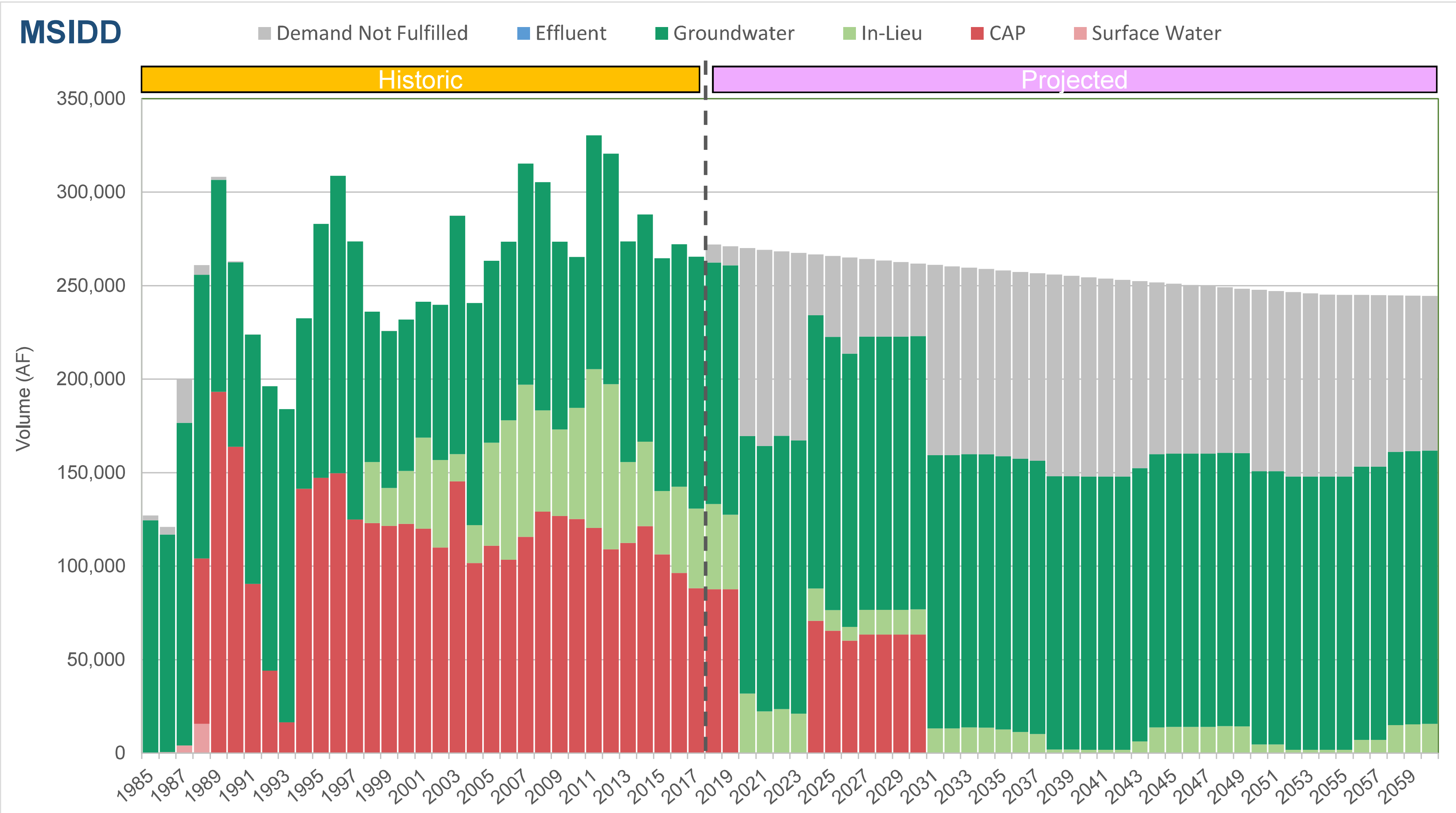
CAIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	89,224	35,873	169,692	0
2019	0	0	89,226	31,300	173,613	0
2020	0	0	0	25,170	181,644	86,677
2021	0	0	0	17,797	185,942	89,048
2022	0	0	0	18,753	190,240	82,862
2023	0	0	0	16,789	190,240	83,885
2024	0	0	72,035	13,772	190,240	13,940
2025	0	0	66,653	8,961	190,240	23,212
2026	0	0	61,243	6,040	190,240	30,634
2027	0	0	64,600	11,398	190,240	21,018
2028	0	0	64,600	11,378	190,240	20,148
2029	0	0	64,600	11,364	190,240	19,280
2030	0	0	64,600	11,348	190,240	18,381
2031	0	0	0	11,402	190,240	81,966
2032	0	0	0	11,453	190,240	80,967
2033	0	0	0	11,506	190,240	79,977
2034	0	0	0	11,560	190,240	78,999
2035	0	0	0	10,786	190,240	78,858
2036	0	0	0	9,721	190,240	79,020
2037	0	0	0	8,927	190,240	78,919
2038	0	0	0	1,861	190,240	85,103
2039	0	0	0	1,861	190,240	84,232
2040	0	0	0	1,861	190,240	83,371
2041	0	0	0	1,861	190,240	82,534
2042	0	0	0	1,861	190,240	81,715
2043	0	0	0	5,230	190,240	77,535
2044	0	0	0	12,056	190,240	69,909
2045	0	0	0	12,088	190,240	69,085
2046	0	0	0	12,197	190,240	68,192
2047	0	0	0	12,255	190,240	67,359
2048	0	0	0	12,306	190,240	66,542
2049	0	0	0	12,309	190,240	65,781
2050	0	0	0	3,983	190,240	73,357
2051	0	0	0	3,983	190,240	72,615
2052	0	0	0	1,861	190,240	74,004
2053	0	0	0	1,861	190,240	73,276
2054	0	0	0	1,861	190,240	72,558
2055	0	0	0	1,861	190,240	72,373
2056	0	0	0	5,845	190,240	68,213
2057	0	0	0	5,845	190,240	68,008
2058	0	0	0	13,002	190,240	60,651
2059	0	0	0	13,421	190,240	60,039
2060	0	0	0	13,527	190,240	59,746

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



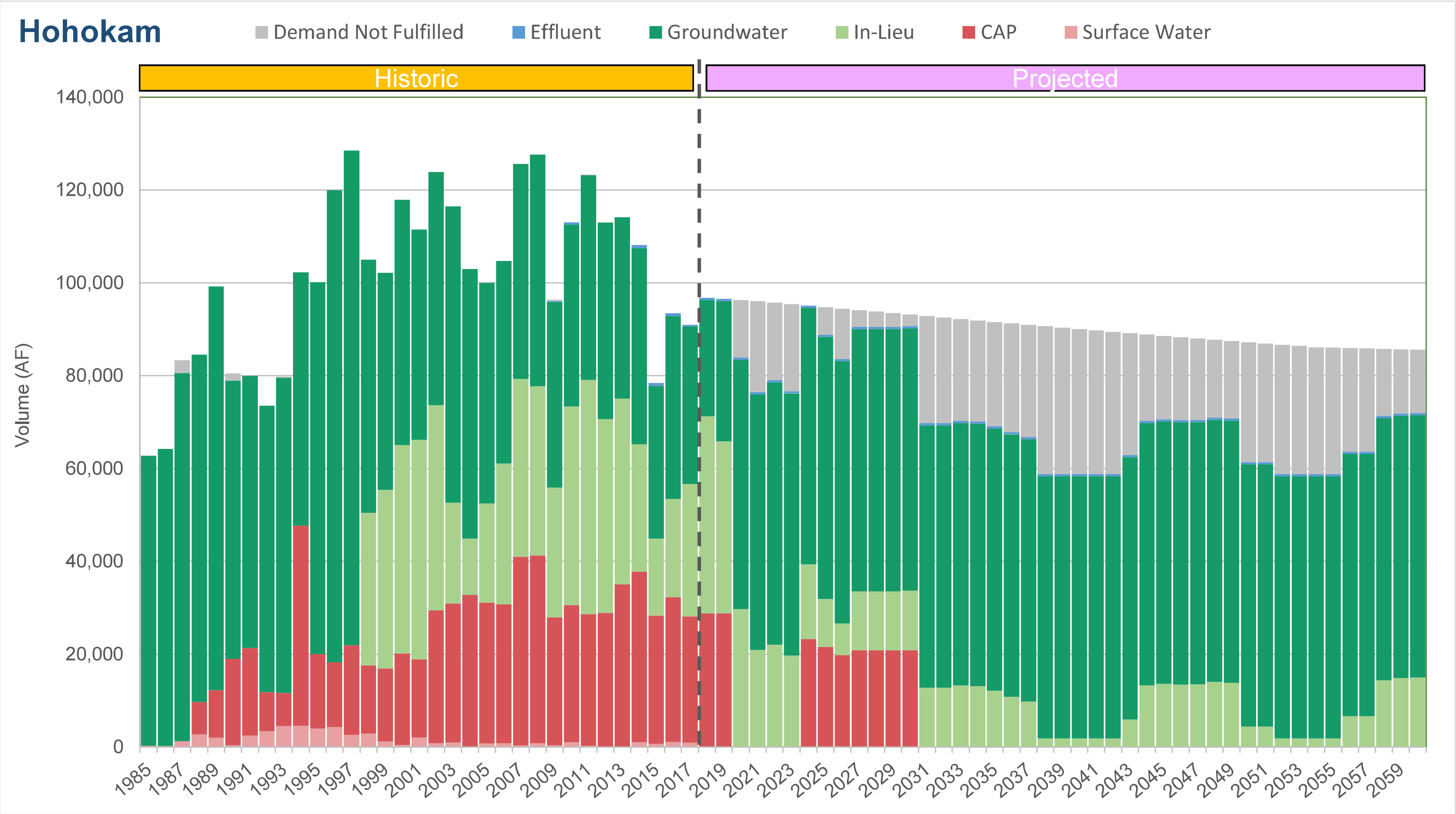
MSIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	0	0	87,708	45,484	129,223	9,518
2019	0	0	87,709	39,718	133,451	10,162
2020	0	0	0	31,882	137,679	100,586
2021	0	0	0	22,339	141,907	105,016
2022	0	0	0	23,624	146,135	98,664
2023	0	0	0	21,100	146,135	100,344
2024	0	0	70,811	17,246	146,135	32,553
2025	0	0	65,520	11,053	146,135	43,207
2026	0	0	60,201	7,300	146,135	51,462
2027	0	0	63,502	13,150	146,135	41,500
2028	0	0	63,502	13,130	146,135	40,718
2029	0	0	63,502	13,116	146,135	39,938
2030	0	0	63,502	13,331	146,135	38,940
2031	0	0	0	13,244	146,135	101,756
2032	0	0	0	13,296	146,135	100,941
2033	0	0	0	13,788	146,135	99,692
2034	0	0	0	13,628	146,135	99,105
2035	0	0	0	12,625	146,135	99,365
2036	0	0	0	11,308	146,135	99,949
2037	0	0	0	10,259	146,135	100,270
2038	0	0	0	1,905	146,135	107,903
2039	0	0	0	1,902	146,135	107,194
2040	0	0	0	1,861	146,135	106,529
2041	0	0	0	1,861	146,135	105,828
2042	0	0	0	1,895	146,135	105,101
2043	0	0	0	6,338	146,135	99,971
2044	0	0	0	13,807	146,135	91,819
2045	0	0	0	14,093	146,135	90,860
2046	0	0	0	13,956	146,135	90,328
2047	0	0	0	14,015	146,135	89,608
2048	0	0	0	14,509	146,135	88,458
2049	0	0	0	14,302	146,135	88,012
2050	0	0	0	4,722	146,135	96,951
2051	0	0	0	4,722	146,135	96,310
2052	0	0	0	1,861	146,135	98,540
2053	0	0	0	1,861	146,135	97,911
2054	0	0	0	1,861	146,135	97,289
2055	0	0	0	1,861	146,135	97,164
2056	0	0	0	7,127	146,135	91,775
2057	0	0	0	7,127	146,135	91,645
2058	0	0	0	14,984	146,135	83,662
2059	0	0	0	15,456	146,135	83,069
2060	0	0	0	15,584	146,135	82,822

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



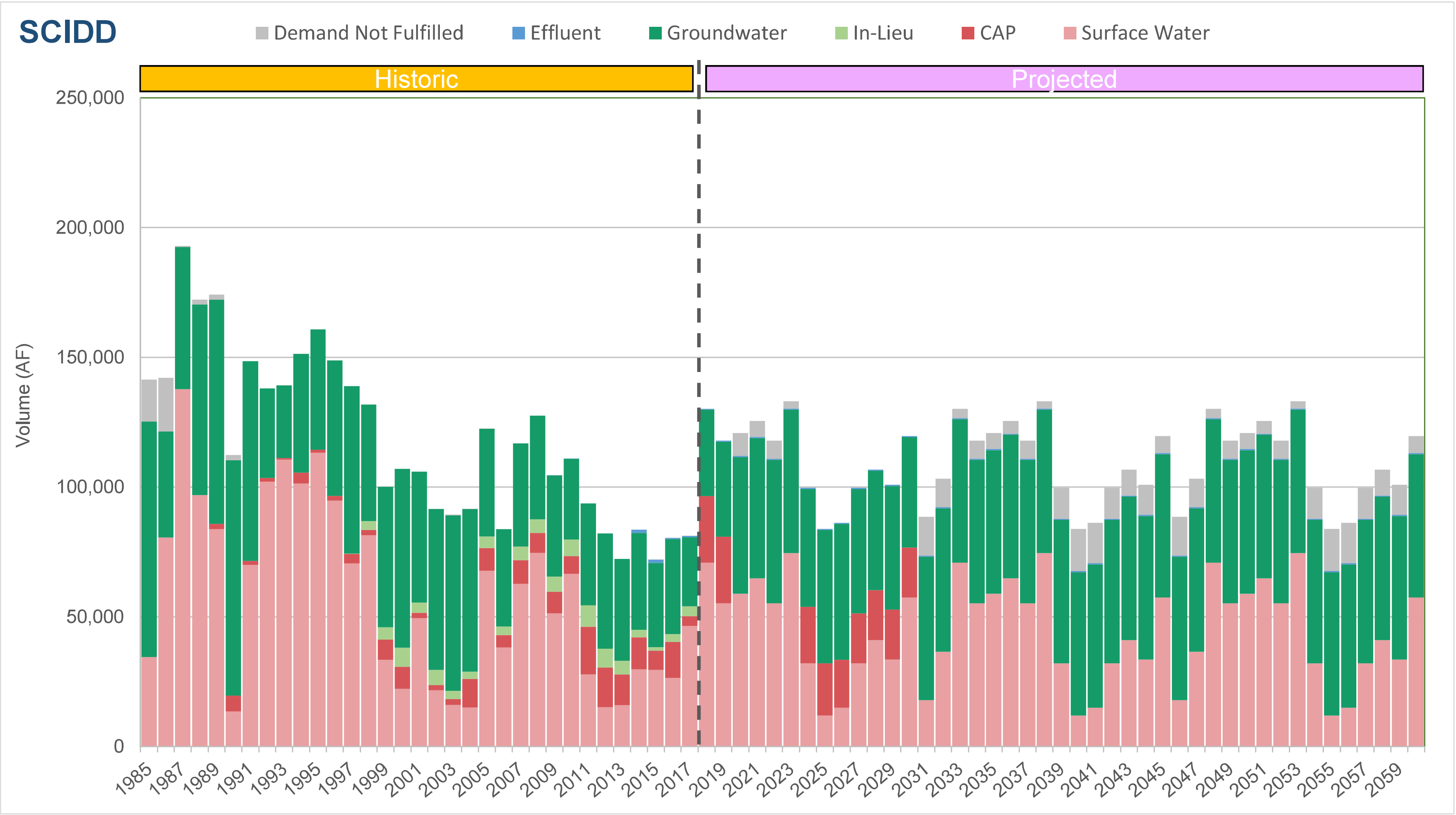
Hohokam

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	490	0	28,837	42,430	25,039	0
2019	490	0	28,838	37,033	30,194	0
2020	490	0	0	29,728	53,721	12,374
2021	490	0	0	20,884	55,107	19,575
2022	490	0	0	22,046	56,493	16,704
2023	490	0	0	19,700	56,493	18,722
2024	490	0	23,282	16,089	55,223	0
2025	490	0	21,542	10,324	56,493	5,917
2026	490	0	19,794	6,828	56,493	10,847
2027	490	0	20,879	12,677	56,493	3,600
2028	490	0	20,879	12,656	56,493	3,314
2029	490	0	20,879	12,643	56,493	3,024
2030	490	0	20,879	12,857	56,493	2,491
2031	490	0	0	12,770	56,493	23,123
2032	490	0	0	12,821	56,493	22,741
2033	490	0	0	13,313	56,493	21,923
2034	490	0	0	13,152	56,493	21,760
2035	490	0	0	12,149	56,493	22,446
2036	490	0	0	10,869	56,493	23,412
2037	490	0	0	9,822	56,493	24,148
2038	490	0	0	1,861	56,493	31,805
2039	490	0	0	1,861	56,493	31,501
2040	490	0	0	1,861	56,493	31,203
2041	490	0	0	1,861	56,493	30,904
2042	490	0	0	1,861	56,493	30,605
2043	490	0	0	5,908	56,493	26,263
2044	490	0	0	13,330	56,493	18,550
2045	490	0	0	13,618	56,493	17,976
2046	490	0	0	13,476	56,493	17,833
2047	490	0	0	13,534	56,493	17,495
2048	490	0	0	14,028	56,493	16,724
2049	490	0	0	13,826	56,493	16,655
2050	490	0	0	4,410	56,493	25,801
2051	490	0	0	4,410	56,493	25,535
2052	490	0	0	1,861	56,493	27,820
2053	490	0	0	1,861	56,493	27,562
2054	490	0	0	1,861	56,493	27,306
2055	490	0	0	1,861	56,493	27,224
2056	490	0	0	6,647	56,493	22,361
2057	490	0	0	6,647	56,493	22,260
2058	490	0	0	14,385	56,493	14,421
2059	490	0	0	14,857	56,493	13,852
2060	490	0	0	14,985	56,493	13,631

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



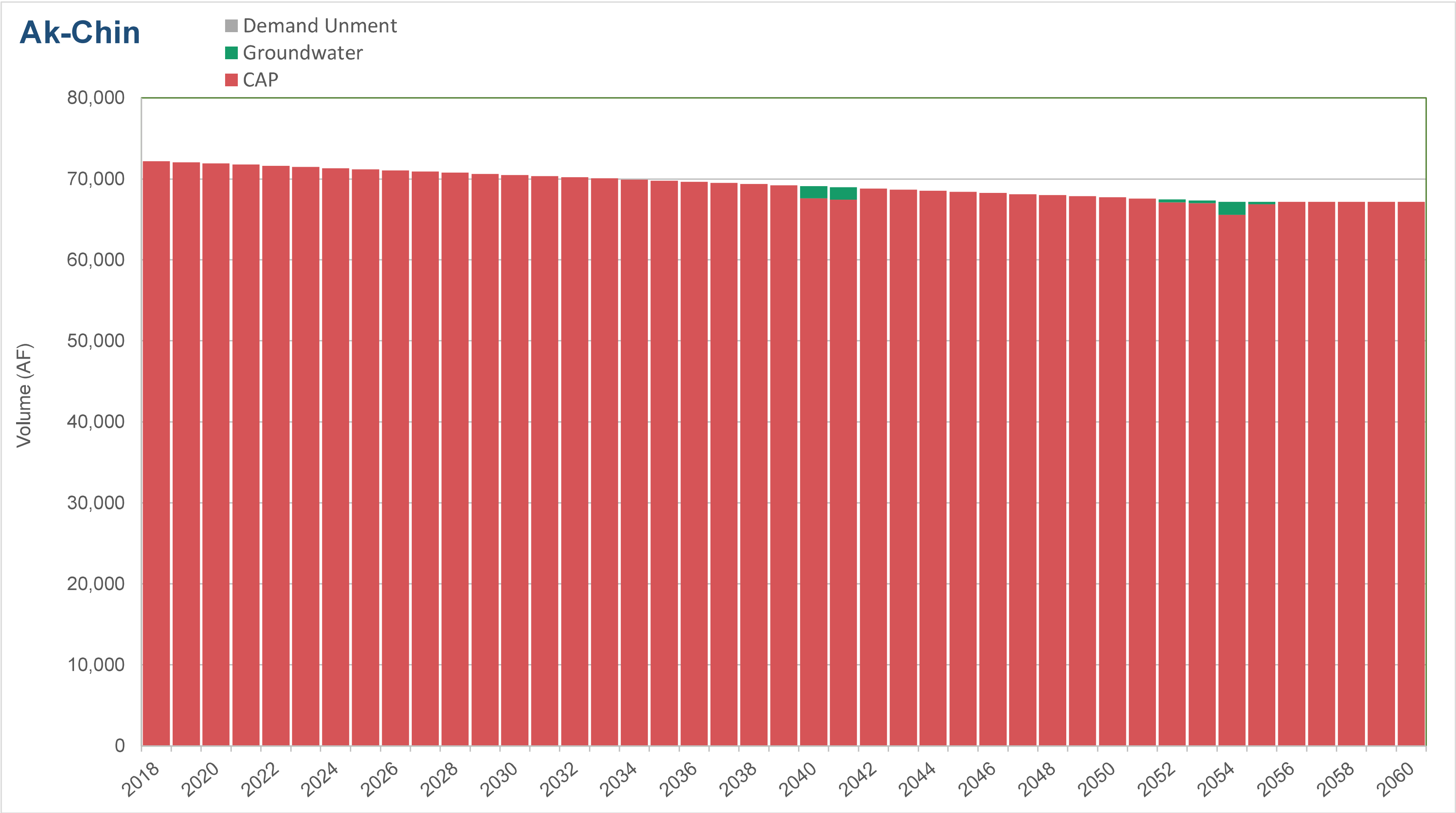
SCIDD

Date	Effluent	Surface Water	CAP	In-Lieu	Groundwater	Unknwon
2018	410	70,870	25,657	0	33,272	0
2019	410	55,204	25,657	0	36,624	0
2020	410	58,934	0	0	52,690	8,793
2021	410	64,902	0	0	53,992	6,214
2022	410	55,204	0	0	55,294	6,987
2023	410	74,600	0	0	55,294	2,837
2024	410	32,078	21,805	0	45,425	0
2025	410	11,936	20,175	0	51,366	0
2026	410	14,920	18,546	0	52,356	0
2027	410	32,078	19,243	0	47,987	0
2028	410	41,030	19,243	0	46,072	0
2029	410	33,570	19,243	0	47,668	0
2030	410	57,442	19,243	0	42,559	0
2031	410	17,904	0	0	55,294	14,970
2032	410	36,554	0	0	55,294	10,978
2033	410	70,870	0	0	55,294	3,635
2034	410	55,204	0	0	55,294	6,987
2035	410	58,934	0	0	55,294	6,189
2036	410	64,902	0	0	55,294	4,912
2037	410	55,204	0	0	55,294	6,987
2038	410	74,600	0	0	55,294	2,837
2039	410	32,078	0	0	55,294	11,936
2040	410	11,936	0	0	55,294	16,247
2041	410	14,920	0	0	55,294	15,608
2042	410	32,078	0	0	55,294	11,936
2043	410	41,030	0	0	55,294	10,021
2044	410	33,570	0	0	55,294	11,617
2045	410	57,442	0	0	55,294	6,508
2046	410	17,904	0	0	55,294	14,970
2047	410	36,554	0	0	55,294	10,978
2048	410	70,870	0	0	55,294	3,635
2049	410	55,204	0	0	55,294	6,987
2050	410	58,934	0	0	55,294	6,189
2051	410	64,902	0	0	55,294	4,912
2052	410	55,204	0	0	55,294	6,987
2053	410	74,600	0	0	55,294	2,837
2054	410	32,078	0	0	55,294	11,936
2055	410	11,936	0	0	55,294	16,247
2056	410	14,920	0	0	55,294	15,608
2057	410	32,078	0	0	55,294	11,936
2058	410	41,030	0	0	55,294	10,021
2059	410	33,570	0	0	55,294	11,617
2060	410	57,442	0	0	55,294	6,508

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



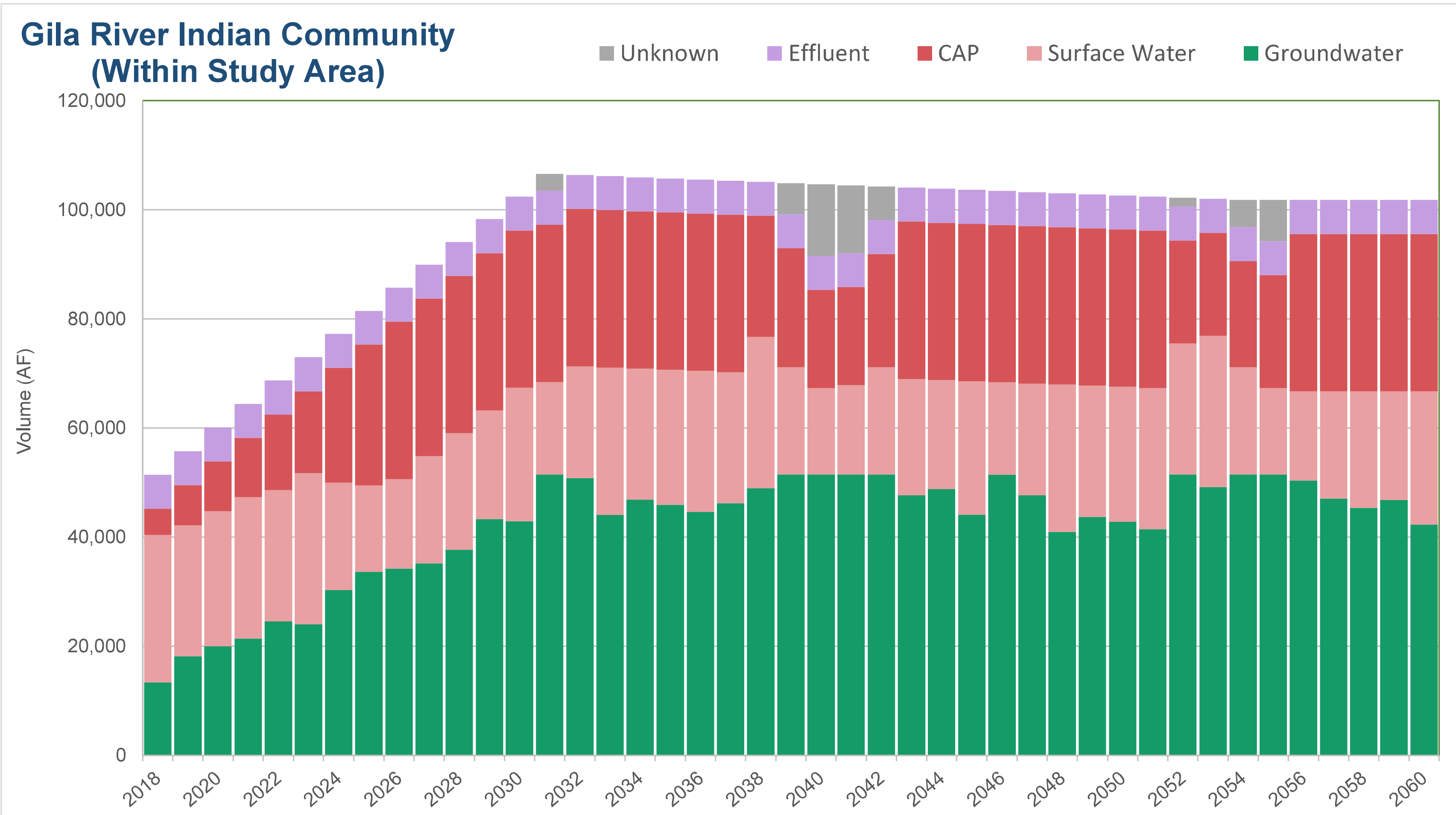
Ak-Chin

Date	Effluent	Surface	CAP	Groundwater	Demand Not Fulfilled	Total
2018	0	0	72,193	0	0	72,193
2019	0	0	72,049	0	0	72,049
2020	0	0	71,905	0	0	71,905
2021	0	0	71,761	0	0	71,761
2022	0	0	71,618	0	0	71,618
2023	0	0	71,475	0	0	71,475
2024	0	0	71,333	0	0	71,333
2025	0	0	71,190	0	0	71,190
2026	0	0	71,048	0	0	71,048
2027	0	0	70,906	0	0	70,906
2028	0	0	70,765	0	0	70,765
2029	0	0	70,624	0	0	70,624
2030	0	0	70,483	0	0	70,483
2031	0	0	70,342	0	0	70,342
2032	0	0	70,201	0	0	70,201
2033	0	0	70,061	0	0	70,061
2034	0	0	69,922	0	0	69,922
2035	0	0	69,782	0	0	69,782
2036	0	0	69,643	0	0	69,643
2037	0	0	69,504	0	0	69,504
2038	0	0	69,365	0	0	69,365
2039	0	0	69,226	0	0	69,226
2040	0	0	67,606	1,482	0	69,088
2041	0	0	67,438	1,512	0	68,950
2042	0	0	68,813	0	0	68,813
2043	0	0	68,675	0	0	68,675
2044	0	0	68,538	0	0	68,538
2045	0	0	68,402	0	0	68,402
2046	0	0	68,265	0	0	68,265
2047	0	0	68,129	0	0	68,129
2048	0	0	67,993	0	0	67,993
2049	0	0	67,857	0	0	67,857
2050	0	0	67,722	0	0	67,722
2051	0	0	67,586	0	0	67,586
2052	0	0	67,117	334	0	67,452
2053	0	0	66,985	332	0	67,317
2054	0	0	65,560	1,623	0	67,183
2055	0	0	66,853	330	0	67,183
2056	0	0	67,183	0	0	67,183
2057	0	0	67,183	0	0	67,183
2058	0	0	67,183	0	0	67,183
2059	0	0	67,183	0	0	67,183
2060	0	0	67,183	0	0	67,183

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



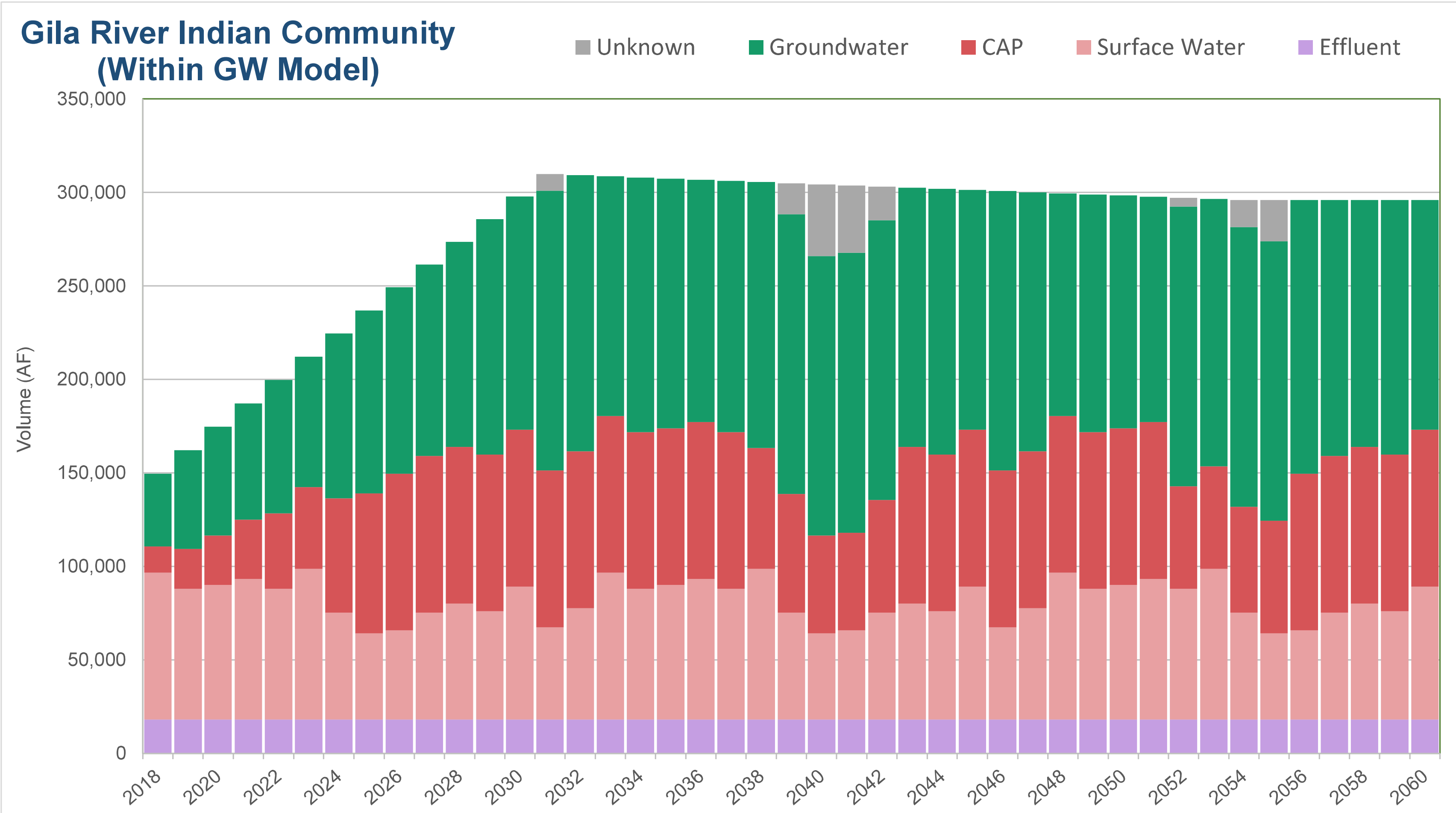
Gila River Indian Community
(Within Study Area)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	6,230	27,003	4,818	13,363	0	51,413
2019	6,230	24,031	7,372	18,128	0	55,761
2020	6,230	24,739	9,121	20,002	0	60,091
2021	6,230	25,871	10,895	21,408	0	64,403
2022	6,230	24,031	13,890	24,548	0	68,698
2023	6,230	27,710	15,047	23,989	0	72,976
2024	6,230	19,644	21,035	30,327	0	77,236
2025	6,230	15,823	25,769	33,657	0	81,479
2026	6,230	16,389	28,838	34,247	0	85,705
2027	6,230	19,644	28,838	35,201	0	89,914
2028	6,230	21,342	28,838	37,694	0	94,105
2029	6,230	19,927	28,838	43,284	0	98,279
2030	6,230	24,456	28,838	42,913	0	102,437
2031	6,230	16,955	28,838	51,471	3,082	106,577
2032	6,230	20,493	28,838	50,803	0	106,364
2033	6,230	27,003	28,838	44,081	0	106,152
2034	6,230	24,031	28,838	46,841	0	105,940
2035	6,230	24,739	28,838	45,922	0	105,728
2036	6,230	25,871	28,838	44,578	0	105,517
2037	6,230	24,031	28,838	46,207	0	105,307
2038	6,230	27,710	22,200	48,957	0	105,097
2039	6,230	19,644	21,812	51,471	5,730	104,887
2040	6,230	15,823	17,989	51,471	13,164	104,678
2041	6,230	16,389	17,959	51,471	12,420	104,469
2042	6,230	19,644	20,730	51,471	6,185	104,260
2043	6,230	21,342	28,838	47,641	0	104,052
2044	6,230	19,927	28,838	48,849	0	103,844
2045	6,230	24,456	28,838	44,113	0	103,637
2046	6,230	16,955	28,838	51,406	0	103,430
2047	6,230	20,493	28,838	47,662	0	103,224
2048	6,230	27,003	28,838	40,946	0	103,018
2049	6,230	24,031	28,838	43,713	0	102,812
2050	6,230	24,739	28,838	42,800	0	102,607
2051	6,230	25,871	28,838	41,463	0	102,402
2052	6,230	24,031	18,862	51,471	1,604	102,198
2053	6,230	27,710	18,862	49,192	0	101,994
2054	6,230	19,644	19,474	51,471	4,971	101,790
2055	6,230	15,823	20,701	51,471	7,565	101,790
2056	6,230	16,389	28,838	50,332	0	101,790
2057	6,230	19,644	28,838	47,078	0	101,790
2058	6,230	21,342	28,838	45,379	0	101,790
2059	6,230	19,927	28,838	46,795	0	101,790
2060	6,230	24,456	28,838	42,266	0	101,790

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



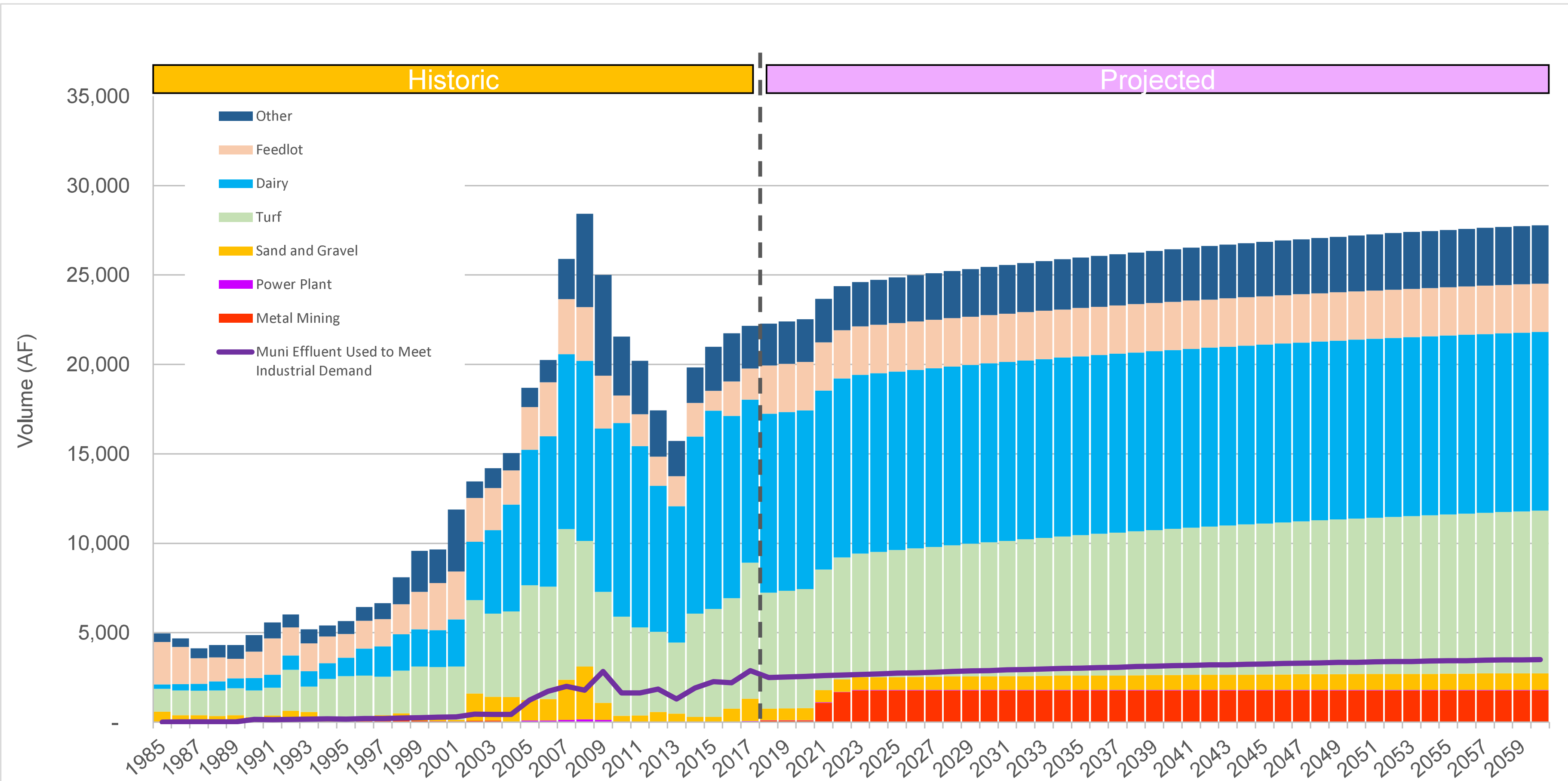
Gila River Indian Community
(Within GW Model)

Date	Effluent	Surface	CAP	Groundwater	Unknwon	Total
2018	18,110	78,496	14,006	38,846	0	149,458
2019	18,110	69,858	21,430	52,698	0	162,096
2020	18,110	71,914	26,513	58,145	0	174,683
2021	18,110	75,205	31,671	62,233	0	187,219
2022	18,110	69,858	40,378	71,359	0	199,705
2023	18,110	80,553	43,740	69,736	0	212,140
2024	18,110	57,105	61,149	88,160	0	224,524
2025	18,110	45,998	74,911	97,840	0	236,859
2026	18,110	47,643	83,833	99,556	0	249,143
2027	18,110	57,105	83,833	102,329	0	261,377
2028	18,110	62,041	83,833	109,577	0	273,561
2029	18,110	57,928	83,833	125,825	0	285,696
2030	18,110	71,092	83,833	124,746	0	297,781
2031	18,110	49,289	83,833	149,625	8,960	309,816
2032	18,110	59,573	83,833	147,682	0	309,198
2033	18,110	78,496	83,833	128,141	0	308,581
2034	18,110	69,858	83,833	136,164	0	307,965
2035	18,110	71,914	83,833	133,493	0	307,350
2036	18,110	75,205	83,833	129,588	0	306,737
2037	18,110	69,858	83,833	134,324	0	306,125
2038	18,110	80,553	64,534	142,316	0	305,513
2039	18,110	57,105	63,406	149,625	16,657	304,904
2040	18,110	45,998	52,294	149,625	38,268	304,295
2041	18,110	47,643	52,205	149,625	36,104	303,688
2042	18,110	57,105	60,262	149,625	17,980	303,082
2043	18,110	62,041	83,833	138,492	0	302,477
2044	18,110	57,928	83,833	142,002	0	301,873
2045	18,110	71,092	83,833	128,236	0	301,270
2046	18,110	49,289	83,833	149,437	0	300,669
2047	18,110	59,573	83,833	138,553	0	300,069
2048	18,110	78,496	83,833	119,030	0	299,470
2049	18,110	69,858	83,833	127,072	0	298,872
2050	18,110	71,914	83,833	124,418	0	298,276
2051	18,110	75,205	83,833	120,532	0	297,680
2052	18,110	69,858	54,831	149,625	4,663	297,086
2053	18,110	80,553	54,831	142,999	0	296,493
2054	18,110	57,105	56,610	149,625	14,451	295,901
2055	18,110	45,998	60,177	149,625	21,991	295,901
2056	18,110	47,643	83,833	146,315	0	295,901
2057	18,110	57,105	83,833	136,853	0	295,901
2058	18,110	62,041	83,833	131,917	0	295,901
2059	18,110	57,928	83,833	136,031	0	295,901
2060	18,110	71,092	83,833	122,867	0	295,901

Central Arizona Project Service Area Model

F. Lowest Demand, Historic [EMSBS]

Slow growth rate, dense urbanization growth pattern, historic climate, Ag pumping capacity equal to the max gw use from 2010 to 2015 plus additional DCP pumping capacity. Pairwise comparison to Scenario E.



F. Lowest Demand, Historic [EMSBS]

Industrial Demand

Date	Metal Mining	Power Plant	Sand and Gravel	Turf	Dairy	Feedlot	Other	Total Demand
2018	85	18	660	6,479	10,000	2,700	2,332	22,274
2019	85	18	669	6,567	10,000	2,700	2,364	22,403
2020	85	19	678	6,656	10,000	2,700	2,395	22,533
2021	1,088	19	687	6,745	10,000	2,700	2,427	23,666
2022	1,673	19	696	6,832	10,000	2,700	2,459	24,379
2023	1,778	19	705	6,921	10,000	2,700	2,491	24,615
2024	1,778	20	714	7,009	10,000	2,700	2,522	24,743
2025	1,778	20	723	7,094	10,000	2,700	2,553	24,868
2026	1,778	20	731	7,178	10,000	2,700	2,583	24,991
2027	1,778	20	739	7,260	10,000	2,700	2,613	25,111
2028	1,778	21	748	7,341	10,000	2,700	2,642	25,229
2029	1,778	21	756	7,419	10,000	2,700	2,670	25,344
2030	1,778	21	763	7,496	10,000	2,700	2,698	25,457
2031	1,778	21	771	7,571	10,000	2,700	2,725	25,567
2032	1,778	22	779	7,645	10,000	2,700	2,751	25,674
2033	1,778	22	786	7,716	10,000	2,700	2,777	25,779
2034	1,778	22	793	7,786	10,000	2,700	2,802	25,882
2035	1,778	22	800	7,855	10,000	2,700	2,827	25,982
2036	1,778	22	807	7,922	10,000	2,700	2,851	26,080
2037	1,778	22	813	7,987	10,000	2,700	2,875	26,175
2038	1,778	23	820	8,050	10,000	2,700	2,897	26,268
2039	1,778	23	826	8,113	10,000	2,700	2,920	26,359
2040	1,778	23	832	8,173	10,000	2,700	2,941	26,448
2041	1,778	23	838	8,232	10,000	2,700	2,963	26,534
2042	1,778	23	844	8,289	10,000	2,700	2,983	26,618
2043	1,778	24	850	8,345	10,000	2,700	3,003	26,700
2044	1,778	24	855	8,400	10,000	2,700	3,023	26,780
2045	1,778	24	861	8,453	10,000	2,700	3,042	26,858
2046	1,778	24	866	8,504	10,000	2,700	3,061	26,933
2047	1,778	24	871	8,555	10,000	2,700	3,079	27,007
2048	1,778	24	876	8,603	10,000	2,700	3,096	27,078
2049	1,778	24	881	8,651	10,000	2,700	3,113	27,148
2050	1,778	24	886	8,697	10,000	2,700	3,130	27,215
2051	1,778	25	890	8,742	10,000	2,700	3,146	27,281
2052	1,778	25	895	8,785	10,000	2,700	3,162	27,345
2053	1,778	25	899	8,828	10,000	2,700	3,177	27,407
2054	1,778	25	903	8,869	10,000	2,700	3,192	27,467
2055	1,778	25	907	8,909	10,000	2,700	3,206	27,525
2056	1,778	25	911	8,947	10,000	2,700	3,220	27,582
2057	1,778	25	915	8,985	10,000	2,700	3,234	27,637
2058	1,778	25	919	9,021	10,000	2,700	3,247	27,690
2059	1,778	26	922	9,057	10,000	2,700	3,259	27,742
2060	1,778	26	926	9,091	10,000	2,700	3,272	27,792

Appendix C - Groundwater Modeling File Transfer

CAP Memo Detailing CAP:SAM Files Provided to Montgomery and Associates for the Purpose of Groundwater Modeling

CENTRAL ARIZONA PROJECT

MEMO

Date: April 2, 2020

To: The Eloy and Maricopa-Stanfield Basin Study Supply and Demand Sub-Team and Montgomery and Associates

From: Central Arizona Project

Subject: Supply and Demand Files for Input into the Groundwater Flow Model

Background

Central Arizona Project (CAP) is a non-federal cost-share partner of the Eloy and Maricopa-Stanfield Basin Study and has developed future water supply and demand projections for the study area using the CAP Service Area Model (CAP:SAM). Outputs from CAP:SAM serve as inputs into the groundwater flow modeling being conducted by Montgomery and Associates.

List and Explanation of Files

The following list of files will be provided to Montgomery and Associates by CAP for the purpose of generating groundwater model runs. These files will be provided for each of the six modeling scenarios.

Agriculture

- Total demand, by supply type, by district, by year
- Footprint of active acres, by Irrigation district, by grid cell, by year.
    - Changes due to involuntary fallowing and urbanization
    - Used, with total demand, to spatially distribute incidental recharge.
- Total on-reservation demand by water type, by tribe, by year
    - Used to compute incidental recharge.
- Groundwater pumping and AWBA credit recovery by irrigation district, by well, by year
- Groundwater pumping for IGFRs (not part of an irrigation district) by well by year

Municipal

- Groundwater pumping and recovery by water provider by well by year
    - Includes providers in CAP:SAM and all other small providers not modeled individually in CAP:SAM

    - In the event that groundwater pumping exceeds the capacity of existing wells for an individual provider, coordination with the supply and demand sub-team will be necessary to locate new wells

Recharge

- USF recharge volumes by facility by year
    - Direct recharge input into the model
    - Include accrual of LTSCs (municipal) and Arizona Water Bank Authority storage
- Footprints of USFs (if needed)

Effluent

- Total effluent produced per year
    - This is effluent not used directly (i.e. purple pipe or recovery) to meet municipal demand.
    - Additional coordination with the supply and demand sub-team will be necessary to spatially distribute this volume

Industrial

- Total industrial demand by category by year
    - This is demand served by a groundwater right (i.e. not a municipal provider)
    - Additional coordination with the supply and demand sub-team will be necessary to spatially distribute this volume

Appendix D - Mitigation Results

Comparison of Key Supply and Demand Metrics - Mitigation Runs vs Pre-Mitigation Scenario D

Strategy #1 - Municipal Conservation and Reuse

	End of Projection Period (2060)			Projection Period (2019 – 2060)		
Metric	Base Scenario D	Mitigation & Adaptation Run	Difference (Mitigation – Base)	Base Scenario D	Mitigation & Adaptation Run	Difference (Mitigation – Base)
Total Municipal and Industrial Demand	113,400 af/yr	86,700 af/yr	-26,700 af/yr	3,650,000 af	3,100,000 af	-550,000 af
Total Municipal and Industrial GW Pumping	100,800 af/yr	49,600 af/yr	-51,200 af/yr	3,280,000 af	2,130,000 af	-1,150,000 af
GW Pumping Subject to AWS Rules	16,800 af/yr	3,200 af/yr	-13,600 af/yr	340,000 af	110,000 af	-230,000 af
ASR/DPR of Effluent Supplies	0 af/yr	26,200 af/yr	+26,200 af/yr	0 af	610,000 af	+610,000 af
Storage of Effluent Supplies	32,100 af/yr	0 af/yr	-32,100 af/yr	760,000 af	80,000 af	-680,000 af

**Values are compared to pre-mitigation Scenario D (base)*

Strategy #2 – Changes to Ag Practices and Land Use

	End of Projection Period (2060)			Projection Period (2019 – 2060)		
Metric	Base Scenario D	Mitigation & Adaptation Run	Difference (Mitigation – Base)	Base Scenario D	Mitigation & Adaptation Run	Difference (Mitigation – Base)
Total Agricultural Demand	964,700 af/yr	797,200 af/yr	-167,500 af/yr	41,640,000 af	34,930,000 af	-6,710,000 af
Total Agricultural GW Pumping	735,000 af/yr	563,400 af/yr	-171,600 af/yr	30,250,000 af	23,690,000 af	-6,560,000 af
Total Irrigated Acres	239,000 acres/yr	211,000 acres/yr	-28,000 acres/yr	10,200,000 acres	9,180,000 acres	-1,060,000 acres

**Values are compared to pre-mitigation Scenario D (base)*

Strategy #3 - Supply and Infrastructure Investments

	End of Projection Period (2060)			Projection Period (2019 – 2060)		
Metric	Base Scenario D	Mitigation & Adaptation Run	Difference (Mitigation – Base)	Base Scenario D	Mitigation & Adaptation Run	Difference (Mitigation – Base)
Total GW Pumping Subject to AWS Rules	16,800 af/yr	0 af/yr	-16,800 af/yr	340,000 af	8,600 af	-331,400 af
Total Agricultural GW Pumping (GSFs Only)	429,100 af/yr	370,900 af/yr	-58,200 af/yr	17,990,000 af	16,930,000 af	-1,060,000 af

Note: *Values are compared to pre-mitigation Scenario D (base)*