

Gila River

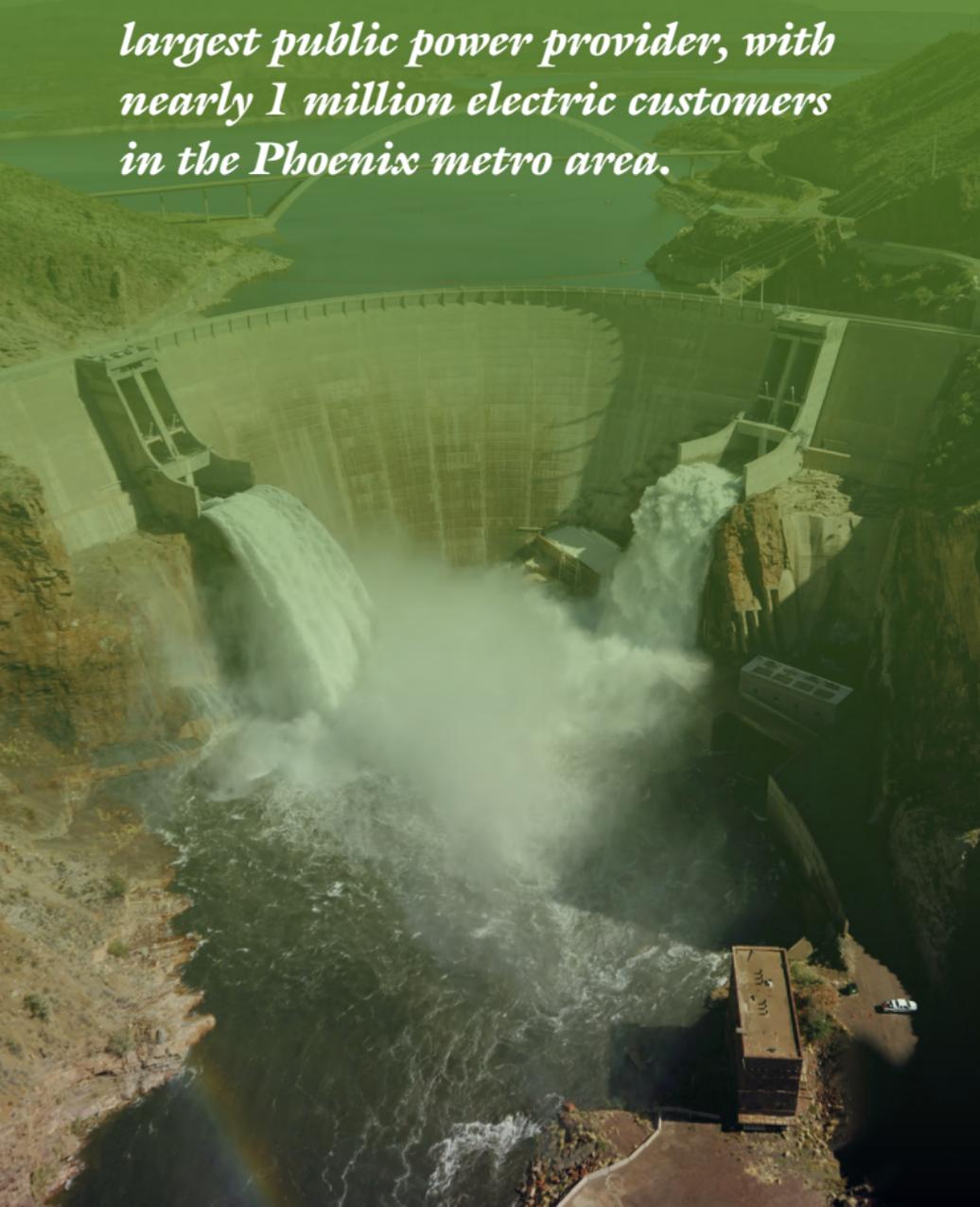




The Gila River Indian Community is located on 372,000 acres between Phoenix and Casa Grande. Established in 1859, it is one of the oldest American Indian communities in Arizona.



Created in 1903, SRP is one of the first U.S. Reclamation Act projects. It delivers nearly 1 million acre-feet of water annually to the Phoenix area. SRP is also the nation's third-largest public power provider, with nearly 1 million electric customers in the Phoenix metro area.



SALT RIVER PROJECT AND GILA RIVER INDIAN COMMUNITY

As an inhabitant of the region for centuries, the Gila River Indian Community (Community) has a rich history of managing water supplies for its members and the Community as a whole. The Community's water rights are some of the most extensive in the state and include water from the Gila River, water received from Salt River Project (SRP) resources (Salt River, Verde River, and East Clear Creek), groundwater, reclaimed water, and Colorado River water delivered through the Central Arizona Project (CAP) canal. The single largest component of the Community's water rights is the water derived from the CAP — more than 300,000 acre-feet per year. Currently, the primary use of water by the Community is for agriculture. The Community's vast land resources are prime areas for agricultural production, and the Community has plans to further develop its agricultural enterprise in the future. However, more water delivery infrastructure is needed, and construction of these facilities is still many years away. Until the infrastructure needed to deliver the water to the entire reservation is completed, the Community is expanding its water management expertise through innovative banking of its unused CAP water for future use. The CAP water is stored underground in central Arizona's vast aquifers and earns what is termed "long-term storage credits" under Arizona's Underground Water Storage, Savings, and Replenishment Program.

SRP was established in 1903 to coordinate the management of water supplies for shareholders of the Salt River Valley Water Users' Association. Initially, SRP's focus was on the operation and management of Theodore Roosevelt Dam, the cornerstone of SRP's water supply infrastructure, and the water delivery system comprising the network of canals, laterals, and delivery gates in the Salt River Valley. Over the past 100 years, SRP's expertise has grown into the conjunctive management of the 13,000-square-mile Salt River and Verde River watershed that produces SRP's surface water supplies; seven dams and reservoirs; more than 250 groundwater wells; three water-banking projects; and a vast electric generation, transmission, and distribution system spanning multiple states to serve a 2,900-square-mile electric and water service area in central Arizona.

Gila River Water Storage LLC

Water is a critical resource. Nowhere is this more true than in central Arizona, where water supplies delivered through SRP, CAP, and the San Carlos Project sustain the region's economic development — from agriculture and industry to cities and towns. Although the rights to these water supplies have long been fully established and the water is being used for a variety of purposes, it is clear that additional dependable, renewable water supplies are needed to continue to grow and further diversify the region's economy. Securing these additional supplies in a competitive land and business development environment has been a great challenge. It has been an area of concern for investors, who see the region's economic potential but often ask about the water needed to sustain it. In response to the mounting challenges to secure



dependable, renewable water supplies, two of the region's long-standing water management entities, the Gila River Indian Community (Community) and SRP, created the **Gila River Water Storage LLC (GRWS)**. GRWS was formed to bring 5 million acre-feet of additional dependable, renewable water supplies to central Arizona. These supplies are created from the Community's vast CAP water resources and are targeted for landowners, industrial interests, and municipal development interests that are in need of additional dependable, renewable water supplies in central Arizona.



What Is Gila River Water Storage LLC?

GRWS is a limited liability company of the Community and SRP. It was formed in 2010, and it is managed by representatives of both entities. The Community's role in the company is to work in collaboration with SRP to plan where portions of the Community's CAP water will be banked each year. The Community acquires and maintains water storage permits from the Arizona Department





of Water Resources (ADWR) to bank water at various recharge facilities in central Arizona. Additionally, the Community coordinates the delivery of its CAP water supplies with the Central Arizona Water Conservation District and with operators of recharge facilities. The Community also keeps track of water storage on a monthly basis and reports the amount of water banked each year to ADWR. SRP's role is to work alongside the Community in water-banking planning, to identify and work with various types of current and prospective water users who are in need of renewable water supplies to meet state renewable water supply requirements, and to meet regularly throughout the year to ensure coordination, collaboration, and communication in the banking and marketing of long-term storage credits earned by the Community.

What Water Supplies Are Available?

The Community has committed to making 30,000 acre-feet of its CAP water available under 100-year leases. This leased water retains its “Indian priority,” which means it has a low risk of being affected by shortages on the Colorado River. **In addition to the leased water, the Community has committed to storing at least 2 million acre-feet of CAP water underground to create long-term storage credits by 2029.** Over a 100-year period, these credits will yield a renewable water supply of 20,000 acre-feet per year. Between these two supplies, a total of 5 million acre-feet of renewable supplies are available.

CAP water stored for and managed by GRWS has been carefully planned with new municipal and industrial growth in mind. Credits have been earned in a variety of locations in the Phoenix and Pinal Active Management Areas (AMAs). The intent behind this plan is for credits to be available when and where needed. Having access to stored water in growth areas ensures prudent water management. State law allows stored water to be recovered from outside the area it was stored; in some cases, depending on water level conditions, it may be prudent to do so. However, having water stored in areas where growth will occur provides confidence that the necessary water supply will be available to meet future demands.

Long-term storage credits have also been stored in

areas with access to existing infrastructure for recovery and conveyance. For example, water stored within an irrigation district can be recovered by existing wells and delivered through the district's existing laterals. Maps of the locations where GRWS credits have been stored, along with current credit balances, are available.

How Is Water Banked for the Future?

Arizona has an innovative program called the Underground Water Storage, Savings, and Replenishment Program. Managed by ADWR, this program allows surface water and reclaimed water not needed today to be banked or stored underground for future use. Water is stored underground through two methods. The first is direct recharge, in which water is delivered to specially constructed basins that facilitate the infiltration of water into the ground. The water percolates and eventually reaches the existing groundwater aquifer, storing the water underground for future use. The Community is permitted to recharge CAP water at the Granite Reef Underground Storage Project, the New River-Agua Fria River Underground Storage Project, and the Superstition Mountains Recharge Project, all of which are located in the Phoenix AMA. The Community is also conducting tests to locate suitable direct recharge facilities on the reservation.

The second recharge method is called indirect recharge and is performed at irrigation districts that are permitted by ADWR as groundwater savings facilities. The concept is that irrigation districts with legal rights to pump groundwater can use CAP or reclaimed water in



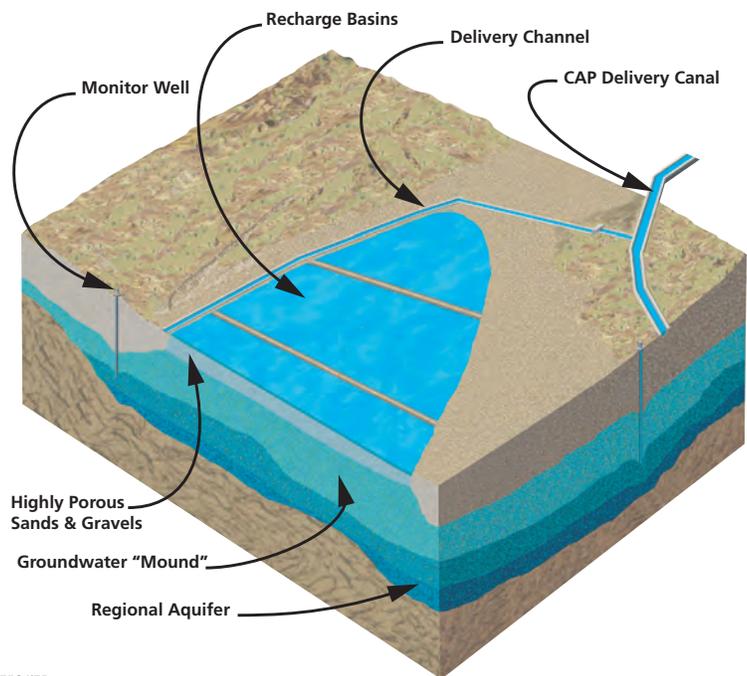
lieu of pumping groundwater. Thus, groundwater is “saved,” hence the name “groundwater savings facility,” and long-term storage credits are issued to the entity that delivered the CAP water or reclaimed water to the irrigation district. To date, the majority of the long-term storage credits managed by GRWS have been earned at groundwater savings facilities. In the Phoenix AMA, the Community is permitted to store water at the New Magma Irrigation and Drainage District, the Queen Creek Irrigation District, the Roosevelt Water Conservation District (RWCD), the Maricopa Water District (MWD), and SRP. In the Pinal AMA, the Community is permitted to store water at the Maricopa-Stanfield Irrigation and Drainage District, the Central Arizona Irrigation and Drainage District, and the Hohokam Irrigation and Drainage District.

ADWR tracks water banked underground through either direct or indirect recharge. The holder of long-term storage credits can withdraw them from the ground using a well that has been permitted by ADWR for recovery. Oftentimes, recovery can use existing infrastructure. Although in most cases it is advantageous to recover long-term storage credits from within the same area they were stored, it is not expressly required. Nevertheless, the Community has planned its water storage to ensure the resulting long-term storage credits will be recoverable in growing areas where new water supplies are needed. The credits do not expire or diminish over time. They can be purchased ahead of time and used when needed. **Long-term storage credits are protected under Arizona law and meet the renewable water supply requirement of both the Assured Water Supply program and various regulatory programs.**

What Are Long-Term Storage Credits?

Long-term storage credits are earned when water is stored or banked underground for more than one year. These credits grant the holder the right to recover the water in the future. The long-term storage credits created by the storage of CAP water or reclaimed water represent a renewable water supply. Many CAP subcontractors bank CAP water they do not need today for future use. Likewise, many water providers bank reclaimed water not needed today to yield long-term storage credits that can be used in the future. Long-term storage credits are recovered using a well that has been permitted by ADWR as a recovery well. Long-term storage credits can be recovered only from within the AMA they were stored. Although they do not have to be recovered from within the exact area they were stored, there are advantages for doing so. Long-term storage credits can be bought and sold and are thus an available water supply to support new municipal and industrial development in central Arizona.

Direct Recharge



However, most holders of significant amounts of long-term storage credits have earned the credits for their own future use. **GRWS is the largest holder of long-term storage credits available for purchase by municipal water providers, residential developers, and industrial water users.**

Why Are Long-Term Storage Credits Needed?

Throughout much of Arizona’s history, groundwater has been relied upon in areas without access to surface water supplies. Over-reliance on groundwater resulted in groundwater reserves being depleted faster than they were being replenished through natural recharge. To counter this trend, Arizona adopted the Groundwater Code in 1980 to regulate groundwater use. Groundwater is carefully regulated in the five AMAs throughout the state. The purpose of the groundwater code is to reduce reliance on groundwater in favor of the use of renewable water supplies, such as surface water and reclaimed water.



Active Management Areas

Two major management outcomes of the Groundwater Code are the Assured Water Supply program and requirements to conserve groundwater through various regulatory programs.

Assured Water Supply Program

The Assured Water Supply program is a cornerstone of Arizona's sustainable water management regulation and sets Arizona apart from other states. Before new residential or commercial development of six lots or more can be built within an AMA, the developer must obtain either a commitment of water service from a water provider designated as having an assured water supply (AWS) or a Certificate of Assured Water Supply (CAWS) for the development. Proving an AWS means showing that enough renewable water supplies exist to meet the development's demands for 100 years. This unique program ensures that new development does not compromise the water supply available for existing development.

One of the essential requirements of an AWS is the use of renewable water supplies. Groundwater, on its own, cannot be the basis of an AWS. Instead, new development must be based on the use of renewable water supplies. This is done through either the direct use of renewable supplies, which requires surface water treatment, or membership in the Central Arizona Groundwater Replenishment District (CAGRDR). Most of the large municipal water providers in central Arizona have been designated as having an AWS. Developers that receive service from these providers do not have to meet the AWS requirements on their own. As municipal growth reaches farther and farther away from these large water providers, much of it is served by water providers that do not have an AWS designation. With CAP water all but fully allocated, the only available water supply for these subdivisions is groundwater. In order to make groundwater meet the AWS requirements, the subdivision must be enrolled in the CAGRDR.

Since the AWS rules were adopted in 1995, most new subdivisions not receiving water from a designated water provider have enrolled as members of the CAGRDR. The groundwater used by members is reported, and the CAGRDR recharges a like amount of renewable water to replenish groundwater supplies and avoid groundwater depletion. Member lands pay for the cost of replenishment on their property taxes. Although this option still exists for new growth, there are some limitations. First, there must be sufficient groundwater supplies to meet projected demand for 100 years. This is not true in all areas of central Arizona. Second, the CAGRDR's water acquisition plans have been outstripped by the pace of development. As a result, the CAGRDR has considered changes to the CAGRDR, which range from enrollment limitations to significant cost increases. Lastly, the cost for CAGRDR replenishment is \$508 per acre-foot and the advisory rate for 2015 is \$575, with annual increases expected.

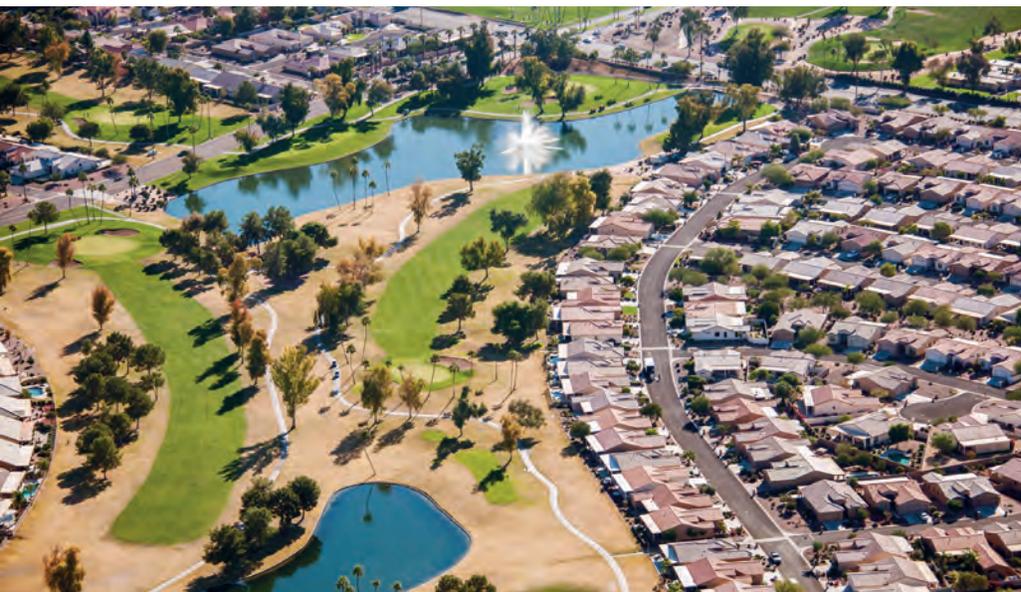
GRWS long-term storage credits from the recharge of CAP water are a renewable water supply that meets the AWS requirements for both water providers seeking an AWS designation and developers seeking a CAWS. **GRWS credits can be purchased in advance to both secure a supply and control costs.** Furthermore, credits can be recovered from the area they were stored to ensure they are physically available. **For existing CAGRDR members, there are options for using credits from GRWS to offset the cost of CAGRDR membership.**

Groundwater Conservation Requirements

The 1980 Groundwater Code ushered in regulations that sought to reduce overall groundwater consumption in all areas of water use. There are separate conservation programs and targets for agricultural, municipal, and industrial water use. In most instances, these conservation

targets can be attained through careful water management. However, in some cases there are certain site conditions or special circumstances in which the conservation requirements cannot be met easily or cost-effectively. A common response to these circumstances is to eliminate groundwater use and replace it with a renewable supply, because the conservation requirements apply only if groundwater is used. Thus, industrial water users with large turf areas subject to conservation requirements, such as golf courses or homeowners' associations, may seek out renewable water supplies.

GRWS long-term storage credits from recharged CAP water are a renewable water supply that can be



used in these situations. An existing groundwater well can be permitted as a recovery well, and the water that comes from the well is then reported as recovered long-term storage credits. The water retains the legal character of the stored supply — in this case, CAP water.

Limited Availability of Suitable Water Supplies

In addition to long-term storage credits being used to meet AWS and conservation requirements, they are also useful in providing a water supply in areas where locally available water supplies are limited. In certain areas of central Arizona, increasing density in developed areas has stressed available water supplies. **GRWS long-term storage credits can be used to fill in the gaps and still take advantage of existing infrastructure to control costs.** GRWS long-term storage credits are also useful to meet non-potable demands when potable water supplies are exceptionally expensive.

Who Needs Long-Term Storage Credits?

Renewable water supplies are a critical component in the management of water in central Arizona and are required to meet several regulatory requirements adopted to ensure the sustainability of the region's water supplies. Three broad categories of water users may need access to renewable water supplies: **municipal water providers, residential developers, and industrial water users.** However, renewable water supplies can be difficult to secure in central Arizona. Local surface water supplies available in the Phoenix area include the Agua Fria, Salt, and Verde rivers. Agua Fria River water is stored and delivered by the MWD for agricultural purposes on the west side of Phoenix. Water from the Salt and Verde rivers is managed by SRP and available for use by landowners within SRP's water service area. In fact, all of the 10 municipal water providers located within SRP's water service area use surface water from SRP, as do countless industrial water users and residential subdivisions. A portion of the water diverted by SRP from the Salt and Verde rivers is available under contract to the RWCD, located in the Southeast Valley. New developments within the service areas of the MWD, the RWCD, and SRP should be able to make use of underlying surface water rights. However, these water rights are attached to the land. This means that areas outside of these service areas must look elsewhere for renewable water supplies. The three main sources of renewable water supplies outside of the MWD, the RWCD, and SRP are CAP water, reclaimed water, and long-term storage credits.

CAP water is almost fully subscribed, and demand is high for the small amount left to be allocated. Reclaimed water is available only in certain areas and is being used by those that produce and treat the water. This leaves long-term storage credits as the main

readily available source of renewable water supplies for central Arizona. **Various types of water users could benefit from the use of long-term storage credits from GRWS.**

Industrial Water User Located Within an Existing Water Service Area

Many industrial water users, such as data centers, manufacturing facilities, and facilities with large turf areas, such as golf courses, can use non-potable water supplies to meet water demands. In most cases, long-term storage credits from GRWS can be used less expensively than potable water supplies from a municipal provider. For example, industrial water users within SRP's service area can benefit from access to SRP's existing water delivery infrastructure (wells, canals, and laterals) to provide recovery of long-term storage credits and delivery of recovered credits through SRP's non-potable system. There are other irrigation districts in central Arizona with similar recovery and delivery infrastructure, and arrangements for recovery and delivery could be made with them.



Industrial Water User Without Access to Wells or Sustainable Groundwater

Parts of central Arizona have limited access to wells or groundwater supplies but are located in proximity to the CAP canal. It is not feasible for industrial water users in these areas to recover long-term storage credits for use in their operations. However, long-term storage credits can still be put to use by trading them with a CAP subcontract holder. Many of these subcontract holders recharge all or part of their CAP supplies to earn long-term storage credits for future use. For these subcontractors, there is no difference between obtaining long-term storage credits from someone else and receiving CAP water and recharging it themselves. If such a trade can be arranged with a third party, the industrial water user can purchase long-term storage credits from GRWS and trade them with the third-party CAP subcontractor. In return, the CAP subcontractor can order a like amount of CAP water to be delivered to the industrial water user from the CAP canal.



Municipal Provider Located in the Phoenix AMA or Pinal AMA

Municipal water providers needing to expand their AWS portfolio will find long-term storage credits easily added to their AWS designation. Long-term storage credits stored at recharge facilities located closest to their wells are available from GRWS. A municipal provider can purchase a 100-year supply of credits in a lump-sum transaction or over a five- to 10-year period. Once the credits are purchased, the municipal provider would use its existing wells and delivery infrastructure to recover the long-term storage credits.

Subdivision Developer in the Phoenix AMA or Pinal AMA

A developer of a subdivision without access to water service from a designated water provider must obtain its own CAWS. For areas without sufficient groundwater or in cases where the developer wishes to avoid the costs of the CAGR, the developer can purchase enough long-term storage credits to cover the 100-year demand of the subdivision and pledge the credits to the CAWS. The credits would be recovered by the municipal provider and delivered to the subdivision just as groundwater would have been.

Getting Started

If you represent a municipal water provider, are an industrial water user, or are a land developer who needs an additional source of renewable water, long-term storage credits from GRWS can meet your needs. The first step in the process is to contact GRWS, discuss your specific situation, and let us help you find a solution.

Once the credit purchase is arranged, you will need to arrange for recovery or for trading the credits with a third party. GRWS credits have been stored with recovery in mind. Water has been banked in areas expected to need renewable supplies and, in many cases, in areas with existing infrastructure for recovery and delivery. If you will be recovering the credits from a well you own or are leasing, you will need a Recovery Well Permit from ADWR. The processing time for permitting an existing well for recovery can be up to six months, but this is only an estimate. Contact ADWR for more information about the Recovery Well Permit process.

Benefits of Long-Term Storage Credits

If your water service area or business is located in an area where water has not been stored and local groundwater supplies are scarce, you can still make use of long-term storage credits from GRWS. If you are located in close proximity to the CAP canal, you can trade credits for CAP water with a CAP subcontractor. In this arrangement, an entity with a CAP subcontract would order a portion of its CAP water to be delivered to your turnout facility, and in trade, you would transfer a like amount of long-term storage credits to the entity. Such an arrangement may involve additional costs, and GRWS would not be a party to the agreement, but it is an innovative way to convert long-term storage credits into wet water directly from the CAP canal.

Renewable water supplies are in short supply but are necessary for many purposes. Long-term storage credits represent a renewable water supply that can serve those purposes, but beyond merely being a renewable water supply, long-term storage credits have a host of unique benefits.

- ◆ They can be purchased in advance. Advance purchases allow you to control and predict costs while providing the security of an established water supply.
- ◆ Long-term storage credits do not evaporate or otherwise diminish in value over time.
- ◆ Unlike direct-delivery CAP water, long-term storage credits are not a “use it or lose it” supply. This means that a stockpile can be purchased and used as demand fluctuates over time.
- ◆ Credits are a renewable water supply that does not require surface water treatment if recovered from a well. Directly delivered CAP water requires surface water treatment for potable use. This represents a significant cost savings.
- ◆ In many instances, credits can be recovered using existing groundwater wells and delivery infrastructure. In fact, GRWS credits have been stored to take advantage of existing infrastructure as much as possible.
- ◆ GRWS credits have been stored in a variety of locations in both the Phoenix and Pinal AMAs; thus, you can purchase credits in your location of use to ensure physical availability of a water supply.

The renewable water supplies available from GRWS can be the cornerstone of your project. Contact GRWS to find out more.

Glossary of Terms

Active Management Areas: five areas of the state (Prescott, Phoenix, Pinal, Tucson, and Santa Cruz) where groundwater is carefully managed to prevent groundwater depletion

Area of hydrologic impact: lateral extent around a recharge project where recharged water has accumulated and can be directly recovered

Arizona Department of Water Resources: the state agency responsible for enforcing the Groundwater Management Act and issuing recharge and well permits

Direct recharge: process in which water is applied to the ground or injected through a well to store water underground

Groundwater: water under the surface of the ground

Groundwater savings facility: usually an irrigation district permitted to receive a surface water supply in lieu of pumping groundwater, thus saving groundwater

Indirect recharge: another term for the recharge at a groundwater savings facility

Irrigation district: a political subdivision of the state, created to provide water and drainage services to a group of farmers

Long-term storage account: a regulatory account created by ADWR to track long-term storage credits

Long-term storage credit: created through recharge, the credits entitle the holder to recover stored water from a well

Non-potable: unsuitable for drinking water

Potable: suitable for drinking water

Recharge: a means of storing excess water supplies underground so they may be used in the future

Reclaimed water: treated wastewater

Recovery: pumping long-term storage credits from a well

Safe yield: a condition where groundwater pumping is equal to or less than natural and artificial recharge of the aquifer

Surface water: water on the ground's surface, such as a stream, river, or lake

Underground storage facility: a permitted facility for direct recharge, usually specially constructed infiltration basins or injection wells

