

PERMIT HOLDER'S GUIDE

Managing Our Water Resource Together

Making Sure
We Have Enough





Crop irrigation represents the single-largest category of water consumption in Texas. A center pivot system like this one minimizes water loss due to evaporation and reduces soil erosion.

Managing Supply and Demand

THE EDWARDS AQUIFER AUTHORITY (Authority) groundwater permit program protects our region's primary water resource by limiting authorized withdrawals from the Edwards Aquifer to 572,000 acre-feet per year as required by the Edwards Aquifer Authority Act. This program enables us to manage water supply and demand effectively, efficiently, and equitably by allocating groundwater to permitted users across a region encompassing all or parts of eight counties.

Groundwater withdrawal permits issued by the Authority allow non-exempt well owners to use Edwards groundwater for municipal, industrial, and irrigation purposes. In turn, permit holders are responsible for timely payment of management fees, filing periodic status and annual groundwater use reports, and implementing conservation plans. As a permit holder, your understanding and compliance with these requirements is essential to managing our aquifer. By working together, we can make sure there's enough water to meet our region's needs from year to year.



Man opening irrigation pipe from a reservoir, Winter Garden region of Texas, ca. 1900. Right: Farmers in South Texas began experimenting with dry-land crops and irrigation systems as far back as the late 1890's.



Managing Your Permit

PERMIT TRANSFERS— BUYING, SELLING, AND LEASING GROUNDWATER RIGHTS

Well owners or water users that need additional groundwater can buy or lease all or part of the groundwater rights authorized in an existing permit through an administrative process known as a permit transfer. In fact, municipal, industrial, and irrigation permit holders must apply for a permit transfer any time groundwater rights are sold or leased.

Permit holders are also required to notify the Authority of any other changes to a groundwater withdrawal permit through an amendment process. These amendments to permits can include changes such as alterations in the purpose or place of use; in the point and/or rate of withdrawal; or in the permit holder name due to formation of an estate or limited liability

corporation. Permit buyers and lessees, like an original permit holder, must comply with fee and reporting requirements.

Additional information, including a Sellers-Lessors List, which provides contact information for permit holders interested in selling or leasing groundwater rights, is available on the Authority's website.

CONVERTING RESTRICTED (BASE) IRRIGATION GROUNDWATER RIGHTS TO UNRESTRICTED IRRIGATION GROUND- WATER RIGHTS

Irrigation groundwater rights are classified in two sub-categories: base irrigation groundwater rights, which are significantly restricted in how they may be transferred and used; and unrestricted irrigation groundwater rights, which are less limited. Base irrigation groundwater rights are restricted

for use only on the irrigated land where the water was originally used and authorized and, consequently, these rights must be transferred with the land whenever it is sold. However, base irrigation groundwater may be leased to other users for irrigation purposes for periods of up to 10 years. Unrestricted irrigation groundwater rights, on the other hand, may be transferred (sold or leased) and used elsewhere for other (non-irrigation) purposes within the Authority's jurisdictional boundaries, except to withdrawal points east of Cibolo Creek (see Cibolo Creek Transfers below).

Base irrigation groundwater rights can be converted to unrestricted irrigation groundwater rights under two circumstances: 1) upon the installation of water conservation equipment that results in savings of base irrigation groundwater used, or 2) when there is a clear change in land use such that it no longer qualifies as agricultural. These conversions are subject to approval of an Application to Convert Base Irrigation Groundwater by the Authority Board of Directors. If you have any questions regarding historically irrigated land or base irrigation groundwater, please contact Authority staff.

CIBOLO CREEK TRANSFERS

Transfers of groundwater rights from west of the Cibolo Creek line to points of withdrawal east of the creek are prohibited,





with very few exceptions, due to their potential impact on the aquatic habitats of endangered and threatened species in the springs east of Cibolo Creek. Contact the Authority for the latest information on permit transfers in this area.

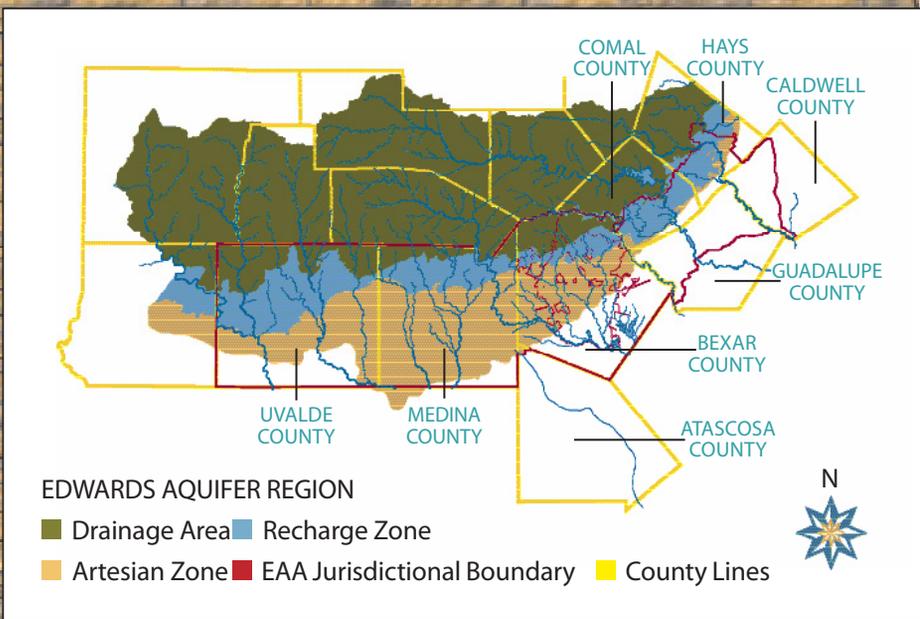
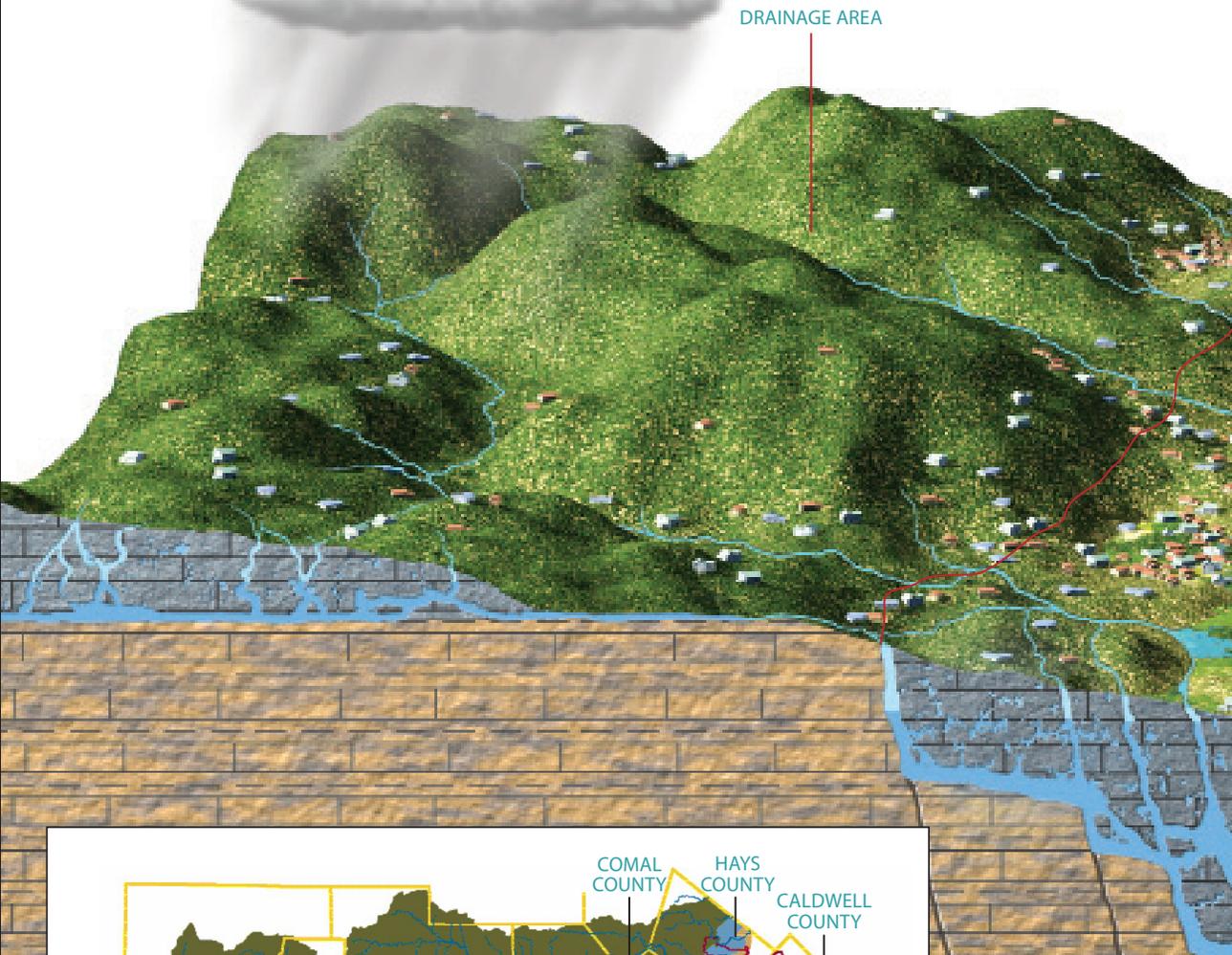
INTER-POOL TRANSFER RESTRICTIONS

The Edwards Aquifer is divided into two groundwater management pools: the San Antonio Pool, which covers all of Bexar and Medina counties,

and portions of Atascosa, Caldwell, Comal, Guadalupe, and Hays counties; and the Uvalde Pool, which covers only Uvalde County. To help manage groundwater levels during times of drought, transfers between these pools are restricted by certain limitations. To guarantee availability of transferred water from the Uvalde Pool to the San Antonio Pool during a drought year, permit holders must have filed a completed Application to Transfer Permit prior to November 1, of the previous year.

In towns without a public water supply, barrileros or aguadores would sell water from house to house, rolling barrels along by rope or hauling it by wheelbarrow, two-wheeled donkey carts or wagons.

The Edwards Aquifer System

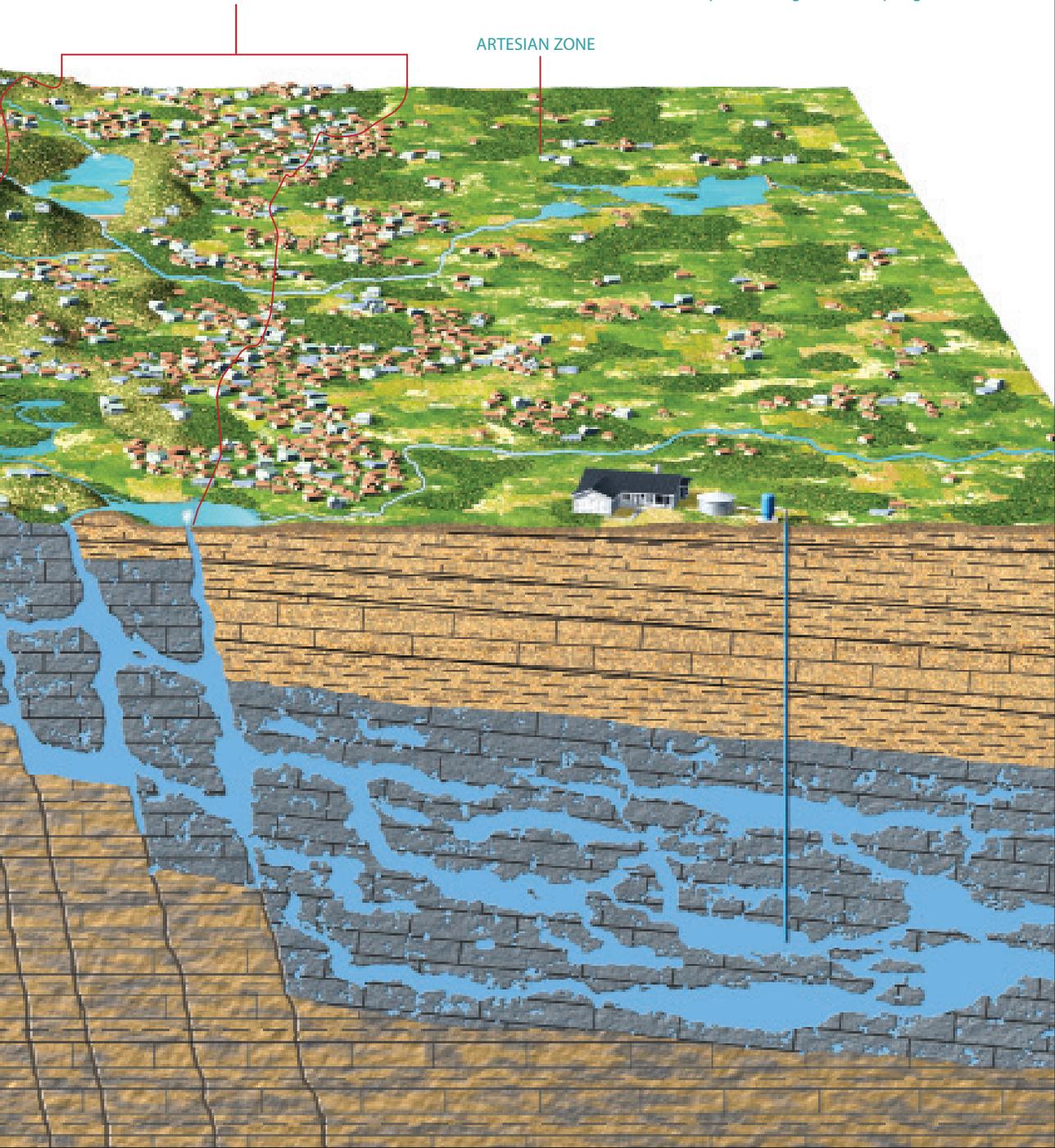


From the western-most reaches of our region in Uvalde County to points east in Hays County and many places in between, the Edwards Aquifer is the natural water resource that supports approximately 1.7 million of us.

This generalized cross section of the Edwards Aquifer region highlights the key components of the aquifer and how they inter-relate to form a natural underground watersystem. Rain falls onto the drainage area, enters the aquifer through the recharge zone, and travels underground to the artesian zone, where it is stored under pressure. Groundwater then leaves the aquifer through wells or springs.

EDWARDS AQUIFER
RECHARGE ZONE

ARTESIAN ZONE



Reporting Your Use

By providing a thorough accounting of groundwater use and conservation efforts, permit holders play a key role in helping the Authority manage the aquifer.

ANNUAL GROUNDWATER USE

As a permit holder, you are required to record your groundwater use on a monthly and annual basis, and report this information to the Authority no later than January 31 of each year. These reports include meter readings, amount of groundwater pumped, and purpose of use. Monitoring your withdrawals and evaluating monthly meter readings throughout the year can help you avoid exceeding your annual authorized withdrawal amount. Therefore, maintaining accurate meter readings is

important. If you need assistance reading your meter or if you believe your meter may not be reading accurately, please contact the Authority as soon as possible.

GROUNDWATER CONSERVATION PLAN (GCP)

Increasing water demands, extreme weather variability, and mandated reductions in use make year-round conservation an important tool in managing groundwater. To improve water-use efficiency, municipal, industrial, and irrigation permit holders are required to implement their own conservation program and then document their efforts on a triennial basis. Successful GCPs require implementation of Best Management Practices (BMPs)—practices proven to achieve measurable water savings.

MUNICIPAL AND INDUSTRIAL BMPs

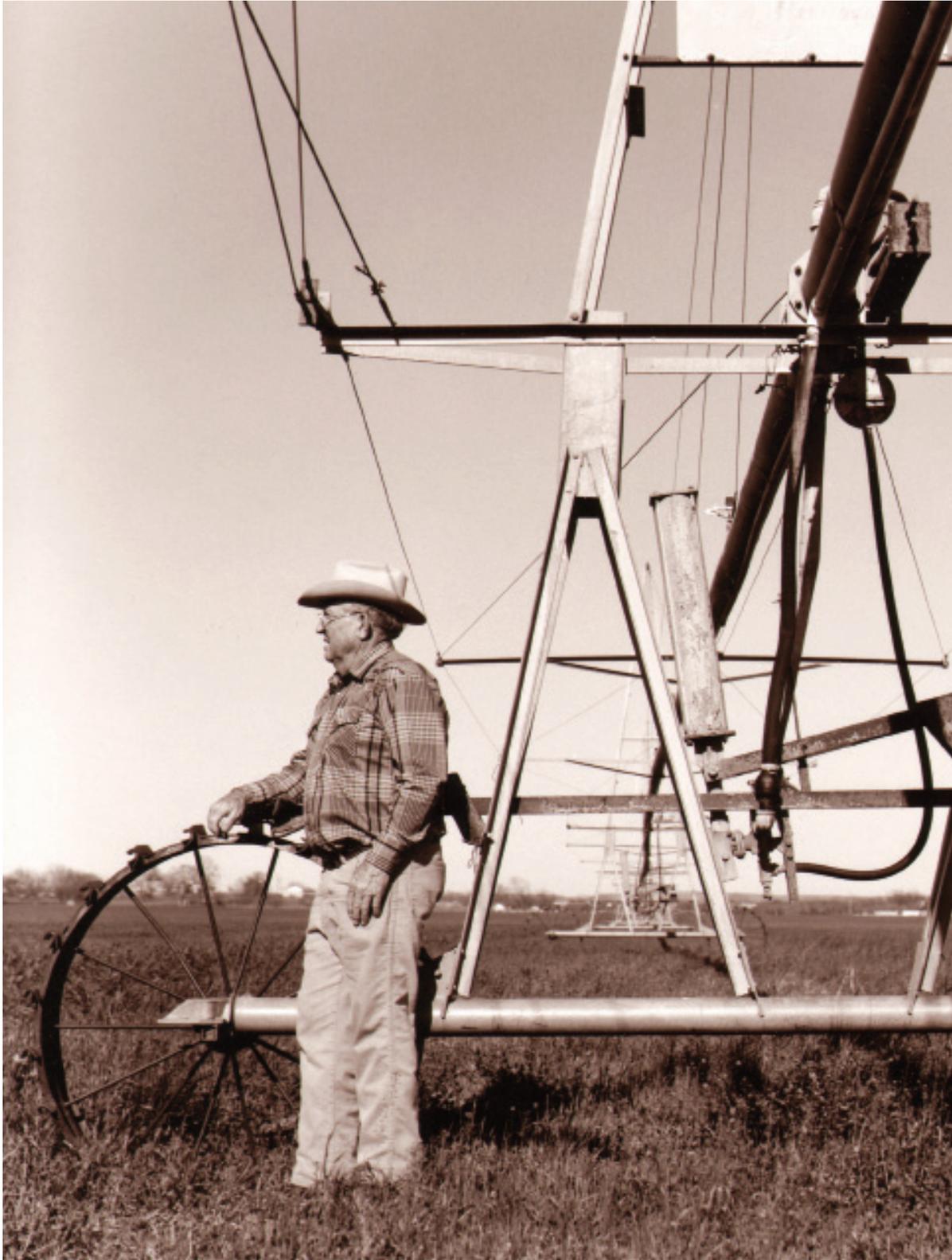
Please check with the Authority for a list of approved BMPs. BMPs may include, but are not limited to, the following measurable practices:

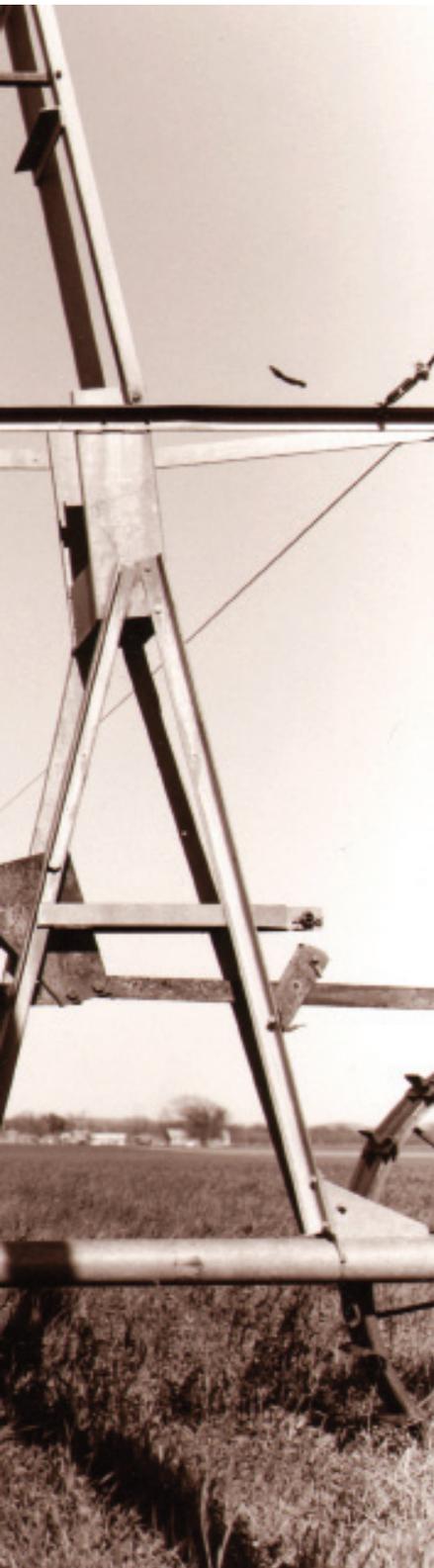
- ◆ Meters on all new connections and retrofits of existing connections to account for all water usage. (Municipal)
- ◆ Conservation pricing through quantity based pricing structures to provide economic incentives for efficient water use. (Municipal)
- ◆ Public information and school education programs to promote water conservation awareness. (Municipal)
- ◆ Appointment of a conservation coordinator to oversee GCP implementation and ongoing activities. (Municipal)
- ◆ Water survey programs to track and control water usage, and incentive programs for institutional, commercial, industrial, and residential accounts. (Municipal)



Casing, used to line well boreholes, helps prevent contaminants from mixing with groundwater. Left: D.B. Curry pokes his head through “one of the longest cement well casings ever laid,” at the Public Service Company plant in San Antonio, TX, 1941. Right: Water towers use gravity to maintain pressure throughout water distribution systems.







- ◆ Residential plumbing retrofit and rebate programs for distribution or installation of high-quality, low-flow plumbing devices, and rebates for installation of high efficiency washing machines. (Municipal)
- ◆ Reuse of available treated effluent to replace Edwards Aquifer groundwater on golf courses, in large cooling plants, and other industrial or landscape processes. (Municipal)
- ◆ Prohibition of a variety of wasteful activities from landscape watering during peak hours to non-recycling decorative water fountains. (Municipal and Industrial)
- ◆ System water audits and leak detection and repair programs to check for unaccounted water loss exceeding 15% of total system water. (Municipal and Industrial)
- ◆ Landscape conservation programs and incentives for non-residential and residential customers owning tracts of land. (Municipal and Industrial)
- ◆ Cooling tower conservation to reduce the amount of makeup water needed by increasing the cycles to the maximum level possible. (Industrial)
- ◆ Sub-metering feasibility study on facilities or equipment comprising at least 20% of total water usage to determine the benefits of replacing mixed-use meters with dedicated landscape meters. (Industrial)
- ◆ Golf course conservation with a computer controlled irrigation system using evapotranspiration or ETo-based water-use budgets, converting to non-Edwards Aquifer water when possible. (Industrial)
- ◆ Athletic field conservation, determining ETo-based wateruse budgets and installing a landscape meter if use exceeds 20% of total use. (Industrial)
- ◆ Nursery conservation using multiple watering zones, water-saving irrigation techniques and water recovery and reuse systems. (Industrial)

IRRIGATOR BMPS

- ◆ Surge flow irrigation to apply water intermittently to furrows, creating a series of on-off periods of either constant or variable time intervals and/or:
- ◆ Installation of sprinkler systems including side-roll, center pivot and linear move, and micro-irrigation systems including drip, bubbler, and micro sprinklers which use water more efficiently and reduce evaporation and percolation water loss.

Droughts can be costly to agricultural producers and businesses. Managing water supplies efficiently ensures there is enough water to meet our region's many needs.



Natural springs
across the Edwards
Aquifer region
have been favorite
gathering places for
many generations.
Shown: Frank Fikac
family at San Pedro
Springs, San Antonio,
Texas, 1932.







Through periodic water sampling and documented observation, particularly during times of low springflow, biologists monitor the effects of drought on ecosystems that give habitat to endangered and threatened aquatic species. Right: Private water vendor captured by renowned photographer Russell Lee, San Antonio, 1949

Managing Use During Critical Periods



In times of declining groundwater levels, the Authority implements a Critical Period Management (CPM) Plan to help sustain aquifer and spring-flow levels. This program helps slow the rate of decline in aquifer levels and spring discharges during periods of little or no rain by reducing the amount of groundwater permit holders may withdraw.

TRIGGERS, STAGES AND REDUCTIONS

The CPM Plan is divided into four stages of increasing restrictiveness. Triggers—10-day average spring and index well levels—are used to determine stages of mandatory water use reductions. Reduction amounts are calculated based on the number of days a CPM stage is in effect, with reductions

increasing as aquifer levels decrease. For instance, Stage 1 of CPM is declared in the San Antonio Pool, when the 10-day average level at the J-17 Index Well drops below 660 feet mean sea level (msl) or if the 10-day average springflow at Comal or San Marcos Springs falls below 225 cubic feet per second (cfs) or 96 cfs, respectively. During Stage I, permit holders must reduce groundwater withdrawals by 20% of their authorized annual withdrawal rights based on the number of days CPM is in effect. A calculator to help you determine exactly how various stages of CPM affect you as a permit holder is available on the Authority's website.

REPORTING REQUIREMENTS

During critical periods, all municipal, industrial, and irrigation users are required to submit withdrawal reports on a monthly basis. These reports are reconciled at the end of the year to ensure that every permit holder complied with the CPM reductions.

OPTIONS FOR IRRIGATORS

FINISHING OUT A CROP

Irrigators wanting to finish out a pre-critical period crop without being affected by CPM reductions, must submit a Notice of Intent to Finish Out a Crop form within 30 days after the effective date of Stage I CPM. Irrigation users who submit these forms and qualify do not need to submit monthly CPM withdrawal reports. However, for crops that do not qualify, monthly use reports are required.

PLANTING AN ADDITIONAL CROP

Irrigators wanting to plant an additional crop during a critical period stage may do so, but must submit a Notice of Planting an Additional Crop form within 15 days after the crop has been planted, along with well meter reading(s) at the time of planting. Please note however, water for irrigating these additional crops is subject to CPM reductions of a permit's remaining authorized withdrawal amounts.



5129. A PLEASANT PASTURE

The livelihood of ranchers and their families depends on healthy water resources.

HELPFUL TOOLS

A copy of the Authority's rules and groundwater conservation plan are available online at www.edwardsaquifer.org. Additionally, a chart containing Critical Period Triggers, Stages, and Withdrawal Reductions, a critical period calculator, and Frequently Asked Questions (FAQ's) page are also available.



FORMS

The following forms are also available on the website:

- ◆ Permit sellers and lessors list
- ◆ Permit transfer and amendment forms
- ◆ Application to Convert Base Irrigation Groundwater
- ◆ Critical Period information and reduction calculator
- ◆ Critical Period forms
- ◆ Meter registration forms
- ◆ Groundwater Conservation Plan application forms
- ◆ Triennial Groundwater Conservation Plan status report forms

CONTACT

Your responsible permit ownership helps to manage and protect our water supply in order to meet the needs across our region. For more information contact us at:

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