

# OVERVIEW OF THE ARIZONA GROUNDWATER MANAGEMENT CODE

## INTRODUCTION

In 1986, the Ford Foundation selected Arizona's Groundwater Management Code as one of the 10 most innovative programs in state and local government. Passage of this hallmark legislation in 1980 was a major landmark in Arizona's efforts to preserve its most vital natural resource. This achievement came about in large part because Arizonans, working together and compromising when necessary, addressed our state's unique and specific needs. The result was an innovative law establishing a comprehensive and effective approach to groundwater management.

Developing the Arizona Groundwater Management Code required answering some hard questions, including:

- How much groundwater does Arizona have?
- Who should be allowed to use that water?
- For what purposes should groundwater be used?
- How much should be withdrawn for specific uses? And,
- How can Arizonans keep track of groundwater withdrawals?

In answering these questions, Arizonans realized water is not private property, but rather is a public resource that should be regulated for everyone's benefit.

## WHY THE NEED FOR REGULATION

Historically, Arizonans have pumped groundwater faster than it was replaced naturally - a condition known as "overdraft". Groundwater overdraft creates significant problems, including increased costs for drilling and pumping and the eventual loss of supply. Water quality also suffers because groundwater pumped from greater depths typically contains more salts and minerals. In areas of severe groundwater depletion, the earth's surface may sink, or "subside", causing cracks or fissures that can damage roads, building foundations, and other underground structures.

Recognizing continued depletion of finite groundwater supplies as a threat to prosperity and quality of life, the Arizona Legislature created the framework to manage the state's water supply for the future.

## CODE PROVISIONS

The 1980 Groundwater Management Code (Code) has three primary goals, to:

1. Control severe overdraft occurring in many parts of the state.
2. Provide a means to allocate the state's limited groundwater resources to most effectively meet the changing needs of the state; and
3. Augment Arizona's groundwater through water supply development.

To accomplish these goals, the Code set up a comprehensive management framework and established the Arizona Department of Water Resources (ADWR) to administer the Code's provisions.

The Code established three levels of water management to respond to different groundwater conditions:

- The lowest level of management includes general provisions that apply statewide.
- The next level of management applies to Irrigation Non-Expansion Areas (INAs).
- The highest level of management, with the most extensive provisions, is applied to Active Management Areas (AMAs) where groundwater overdraft is most severe.

The boundaries of AMAs and INAs generally are defined by groundwater basins and sub-basins rather than by the political lines of cities, towns, or counties.



The Code created four AMAs - Phoenix, Pinal, Prescott, and Tucson. A fifth AMA, the Santa Cruz AMA, was formed from a portion of the Tucson AMA in 1994.

Three INAs were established in rural farming areas where the groundwater overdraft problem is less severe. Two INAs, at Douglas and Joseph City, were created by the Code; ADWR established the Harquahala INA in 1982.

The Department has the authority to designate new AMAs and INAs if it is necessary to protect the water supply. Local residents also may vote to create INAs or AMAs.

Most attention focuses on water management activities within AMAs. Provisions for the state's five AMAs are the most comprehensive because of the magnitude of overdraft in these areas. The AMAs include 80% of Arizona's population and 70% of the state's groundwater overdraft.

In the Phoenix, Prescott, and Tucson AMAs, which include the large urban areas of the state, the primary management goal is to attain "safe-yield" by 2025. Safe-yield is defined as a long-term balance between the annual amount of groundwater withdrawn in the AMA and the annual amount of natural and artificial recharge.

In the Santa Cruz AMA, where significant international, riparian and groundwater/surface water issues exist, the goal is to maintain safe-yield and prevent local water tables from experiencing long-term declines.

In the Pinal AMA, where a predominantly agricultural economy exists, the goal is to allow the development of non-irrigation water uses, extend the life of the agricultural economy for as long as feasible, and preserve water supplies for future non-agricultural uses.

The Code contains six key provisions:

1. Establishment of a program of groundwater rights and permits.
2. A provision prohibiting irrigation of new agricultural lands within AMAs.
3. Preparation of a series of five water management plans for each AMA designed to create a comprehensive system of conservation targets and other water management criteria.
4. Development of a program requiring developers to demonstrate a 100-year assured water supply for new growth.
5. A requirement to meter/measure water pumped from all large wells.
6. A program for annual water withdrawal and use reporting. These reports may be audited to ensure water-user compliance with the provisions of the Groundwater Code and management plans. Penalties may be assessed for non-compliance.

## 1. GROUNDWATER RIGHTS IN AMAs

Determining who may pump groundwater -- and how much they may pump -- is a vital part of groundwater management. This involves identifying existing water rights and providing means for water users to initiate new withdrawals. Within an AMA, a person must have a groundwater right or permit to pump groundwater legally, unless the person is withdrawing groundwater from an "exempt" well. A well is considered "exempt" if it has a maximum pump capacity of 35 gallons per minute.

Exempt wells may be used to withdraw groundwater for non-irrigation purposes and are generally used for domestic purposes, including watering less than two acres of grass or garden. Exempt wells must be registered with ADWR but are subject to fewer requirements than non-exempt wells within AMAs and INAs.

Non-exempt wells have a pump capacity greater than 35 gallons per minute. The following types of rights or permits are required to withdraw water from non-exempt wells in AMAs:

- Grandfathered rights,
- Service area rights, and
- Withdrawal permits.



## Grandfathered Rights

Three types of rights are derived from past individual water use; they are known as "grandfathered rights".

- Irrigation grandfathered rights,
- Type 1 non-irrigation grandfathered rights, and
- Type 2 non-irrigation grandfathered rights.

Each is described below.

An **Irrigation grandfathered right** confers the right to irrigate specific plots of land that had been irrigated with groundwater between 1975 and 1980. Land without an Irrigation grandfathered right may not be irrigated with groundwater. Under the Code, "irrigate" means to apply water to two or more acres of land to produce plants for sale or human consumption or as feed for livestock.

An Irrigation grandfathered right specifies how much groundwater may be used. That amount will vary over time, according to a formula established in the management plans. An Irrigation grandfathered right may not be sold apart from the associated land.

A **Type 1 right** is associated with land permanently retired from farming and converted to a non-irrigation use, e.g., building a new industrial plant or a subdivision. This right, like an Irrigation grandfathered right, may be conveyed only with the land. The maximum amount of groundwater that may be pumped each year using a Type 1 right is three acre-feet per acre.

Groundwater withdrawn under a **Type 2 right** can only be used for a non-irrigation purpose. The right is based on historical pumping of groundwater for a non-irrigation use and equals the maximum amount pumped in any one year between 1975 and 1980. Examples of non-irrigation uses include industry, livestock watering, and golf courses.

Type 2 rights are the most flexible because they may be sold separately from the land or well. In addition, the owner of a Type 2 right may, with ADWR approval, withdraw groundwater from a new location within the same AMA. It is possible to lease a portion of a Type 2 right, but if the right is sold, it may not be divided; instead, the entire right must be sold.

## Service Area Rights

Most Arizonans receive domestic water through service area rights. Service area rights authorize cities, towns, private water companies, and irrigation districts to withdraw groundwater to serve their customers.

## Withdrawal Permits

These permits allow new withdrawals of groundwater for non-irrigation uses within AMAs. There are eight types of withdrawal permits covering various groundwater uses that are subject to different requirements. Examples of withdrawal permits include general industrial use permits, dewatering permits, and poor-quality groundwater-withdrawal permits.

## Conditions on Water Rights and Use

Each type of permit or right is subject to certain conditions, particularly as to the quantity and purpose of the groundwater use. For example, the distinction between irrigation and non-irrigation use is critical. Note: every permit or right, except a right based on an exempt well, is subject to the conservation requirements in the management plans for each AMA.

## 2. NO NEW IRRIGATION IN AMAs

Unless agricultural irrigation occurred between 1975 and 1980 and the user received an irrigation grandfathered right for those historic agricultural acres, no land may be put into production within an Active Management Area. Only those lands that have been certified, based on historic water use, may continue to be irrigated with groundwater.



### 3. MANAGEMENT PLANS FOR AMAs

Among other things, the Code directs ADWR to develop and implement water conservation requirements for agricultural, municipal and industrial water users in five consecutive periods:

- First Management Period: 1980 - 1990
- Second Management Period: 1990 - 2000
- Third Management Period: 2000 - 2010
- Fourth Management Period: 2010 - 2020
- Fifth Management Period: 2020 - 2025

Each management plan contains water conservation and management requirements that are intended to assist the AMAs with achieving their management goals.

### 4. ASSURED WATER SUPPLY

In an AMA, anyone who offers subdivided or unsubdivided land for sale or lease must demonstrate an assured supply of water to ADWR before the land may be marketed to the public. To receive an assured water supply certificate from ADWR, a developer must demonstrate that:

1. Water of sufficient quantity and quality is available to sustain the proposed development for 100 years,
2. The proposed use is consistent with the management plan (e.g., it adheres to conservation requirements) and achievement of the AMA management goal (e.g., it does not hinder achievement of safe-yield), and
3. The water provider has the financial capability to construct water delivery and treatment systems to serve the proposed development.

Alternatively, the developer can locate the proposed development within the service area of a city, town, or private water company with a Designation of Assured Water Supply from ADWR. If the subdivision will be served by a "designated" provider, the developer need only obtain written commitment of service from the water provider.

In 1995, ADWR adopted new Assured Water Supply Rules, primarily to support the groundwater management goals. The rules require new developments to be sustained predominantly by renewable supplies, such as surface water (including effluent and Colorado River water delivered via the Central Arizona Project).

### 5. WATER MANAGEMENT

Right-holders who pump groundwater from non-exempt wells in an AMA must measure those withdrawals using an approved measuring device or method.

### 6. ANNUAL REPORTING AND WITHDRAWAL FEES

Users who pump groundwater from non-exempt wells in AMAs also must report annual pumpage to ADWR. This provision helps ADWR determine how much water is being used and where it is being used.

The Code also requires users to pay an annual groundwater withdrawal fee. The fee is used to offset the cost of managing this resource and to fund the augmentation efforts of the Arizona Water Banking Authority. Withdrawal fees also may be used for conservation assistance, augmentation projects and, after 2006, retirement of irrigated land.

