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## **Willcox Groundwater Conservation Area (GCA) – concept summary**

### **Preamble:**

The intent of the Groundwater Conservation Area (GCA) is to limit, but not eliminate, the growth in groundwater pumping and minimize negative impacts to groundwater users by maximizing conservation of water use with minimal regulatory footprint. It is recognized that the Willcox basin is unique within the state, but the concept of the GCA is intended to be broadly applicable so that it may be implemented in other basins in the state where suitable conditions exist. The intent of the community committee is to target the GCA to the Willcox basin. The Willcox basin is a closed basin, in that there are no surface water drainages into or out of the basin. There are also no readily available renewable surface water supplies. And, although primarily a rural setting, there exists, municipal, industrial and agricultural uses, with opportunities for future economic expansion within these water use sectors which would all be dependent upon the limited groundwater supply available. Therefore the management area concept is to allow for economic growth on the limited existing groundwater supplies, minimizing the increase in overdraft by encouraging increased conservation and maximizing the flexibility of existing and future water users. Again the intent is to create the Willcox Groundwater Conservation Area, but leave the framework open enough so that other areas of the state may adopt the GCA framework if it suitably meets the local water management needs.

The Willcox basin specifically has been recognized as an area within the state with long-term groundwater declines dating back to the historical growth of the agricultural industry beginning in the 1940's and progressively growing through the 1950's and the 1970's. ADWR has records of steep groundwater declines in the basin as well as identified areas of severe land subsidence and some of the highest concentrations of mapped earth fissuring within the state, all of which are indicative of groundwater overdraft. As recently as the 2014 ADWR "Strategic Vision" report, it has been recognized that the Willcox basin needed some additional water management strategies. Beginning in 2014 local experiences with wells going dry and manifestations of earth fissures triggered a public outcry for additional water management in the area. After several public meetings with ADWR the local community came to the realization that the existing water management toolkits available to ADWR – namely the AMAs and the INAs - were not well-suited to the specific conditions of the Willcox basin. So a third alternative was sought with input from local water users and ADWR. The **Groundwater Conservation Area (GCA)** concept was the result of collective inputs from the various water users in the basin recognizing the unique challenges in the area and building upon the successes and complications of the existing water management structures in other parts of the state. The intent of the committee that created the GCA concept is to address the unique management issues in the Willcox basin. Although the concept may be applicable in other basins in the state, and the framework was left open for voluntary adoption in other areas of the state, the committee does not intend this concept to be placed in other areas of the state without local voluntary efforts to adopt the concept.

## **Groundwater Conservation Area Framework**

The GCA allows for the limited addition of new groundwater uses in the basin with certain conditions centered on increasing conservation. Wells with a pump capacity of 35 gallons per minute or less are generally exempt from regulation. Current groundwater users are grandfathered-in. Limited new groundwater uses are permitted with additional volumetric limits and conservation incentives.

All use sectors (agricultural, industrial, and municipal) have access to voluntary conservation programs modeled after the existing Best Management Programs in AMAs. Specific conservation practices are not dictated; participants select from a menu of practices that best fit their situation and provide the most cost effective water savings effort. Financial assistance for adoption of BMP conservation practices will be available with funds generated by withdrawal fees. Receipt of such funds will be conditioned upon adoption of BMP conservation practices. The Department should have the ability to adopt new conservation practices as new technology and practices are developed with the recommendation of the local Groundwater Users Advisory Council (GUAC).

New non-exempt wells, (other than replacement wells in the same location) and exempt wells used for irrigation will require a well impact review prior to obtaining a well permit to minimize impacts to existing surrounding well owners. Well impact standards should also minimize the transfer and concentration of withdrawal authorities from one part of the basin to another and should consider elements such as decline rates at the new well location.

Measuring and reporting will be required for most non-exempt wells as well as for exempt wells used for irrigation. Use meters will be required and estimates based on alternate calculations (such as power use) will also be acceptable in specific instances. The Department should have the ability to adopt alternate calculation methodologies as new technology and practices are developed with the recommendation of the local GUAC.

### **Specific groundwater withdrawal authorities:**

#### **Irrigation Authorities:**

Irrigation Authorities of two different sub-types will be created: Irrigation Grandfathered Authority (IGFA) and Low Water Use Irrigation Authority (LWUIA)

#### **Irrigation Grandfathered Authority; Grandfathered Irrigation Acres**

Existing groundwater uses on lands irrigated at any time in the five years prior to the creation of the GCA will be grandfathered-in as Irrigation Grandfathered Authorities (IGFAs). The IGFA and the associated certified acres will have a pumping limitation (water duty) of 5 acre-feet per acre per year. Measuring and annual reporting of groundwater withdrawals are required. In addition, the shape of the certified acres is flexible; it is not limited to the exact historical acreage irrigated; field shapes may change as irrigation technology changes (square to circle for example) as long as the lands are adjacent, the overall acreage does not increase, and overall irrigation efficiency does not decrease. Modifications, and mobility of the certified acres is also allowed for flood damaged or poor soils as long as the new irrigated area is within the same farm unit and overall acreage is not increased. An IGFA authority may be permanently retired in whole or in part down to 10 af/yr minimum. IGFA's may be converted to a Type-3 authority in whole or in part, down to a 10 af/yr minimum, with a 50% reduction in volume at

the time of conversion. Lands with substantial capital investment qualifications at the time of the creation of the GCA will qualify as certified acres and receive an IGFA withdrawal authority. Certified acres that have had their associated IGFA's retired or converted to a Type-3 that has been transferred from the original acres, may be brought back into production with the transfer of an appropriate withdrawal authority with the annual pumping limit of the new withdrawal authority. IGFA's have a one-year overrun allowance where the volume of the exceedance of the pumping limit must be made up the following year (following year pumping limit is reduced by the volume of the overrun the previous year).

### **Irrigation Grandfathered Authority – Historical Exemption**

For lands that were irrigated at any time in the 25 years prior to the creation of the GCA but not five years prior to the creation of the GCA, an IGFA irrigation authority may be issued for the historically irrigated acres with a total volumetric limit based on a water duty of 2.5 acre feet per acre instead of 5 acre feet per acre. The resulting volume of the IGFA is fully portable within the historically qualifying acres up to the volumetric limit of the IGFA. Alternatively, upon request, ADWR may issue the land owner a Type-3 right of appropriate volume based on the calculation above without the need to resume irrigation activities. Metering or alternate use calculation and annual reporting are required. Land owners must apply for this exemption and put the approved withdrawal authorities in use within five years of the establishment of the GCA, or the exemption expires. IGFA's created under this exemption have a one-year overrun allowance where the volume of the exceedance of the pumping limit must be made up the following year (following year pumping limit is reduced by the volume of the overrun the previous year). An IGFA created under this exemption may be converted to a Type-3 in whole or in part (down to a 10 af/yr minimum). A reduction of 50% of the IGFA volume will occur at the time the IFGA is converted to a Type-3. An IGFA created under this exemption may be permanently retired in whole or in part (down to a 10 af/yr minimum). A Type-3 right created under this exemption may be transferred to new owner in whole or in part (down to a 10 af/yr minimum) for any allowable use. A Type-3 right created under this exemption may be permanently retired in whole or in part (down to a 10 af/yr minimum). Type-3's created under this exemption have a one-year overrun allowance where the volume of the exceedance of the pumping limit must be made up the following year (following year pumping limit is reduced by the volume of the overrun the previous year).

### **New Low Water Use Irrigation Authority; Low Water Use Acres**

Lands over 2 acres not irrigated during the historical time frame(s) described above may be brought into cultivation with certain limitations. These new withdrawal authorities are known as Low Water Use Irrigation Authorities (LWUIA) and the lands associated with these new withdrawal authorities are known as Low Water Use Acres (LWU). These new LWU acres must be irrigated using high efficiency irrigation methods and are permanently assigned a water duty of 1.5 af/ac. Creation of new Low Water Use Irrigation Authorities (LWUIA) without the conversion of other existing irrigation acres are limited to 10% increase of the total acreage determined to be historically irrigated five years prior to the creation of the GCA. New LWUIA authorities are limited to no more than 40 acres at a time. Once LWU acres are put into production (or significant improvements made) owners may apply for additional LWU acres.

There is no upper limit of new acres converted to LWU acres with the extinguishment and transfer of IGFA irrigation authorities creating Type-3's. New LWUIA authorities created (LWU lands not irrigated with Type-3's) will be assessed a one-time aquifer impact fee at the time of the creation of the irrigation authority. Low Water Use (LWU) acres, irrigated with either a Type-3 or a LWUIA, may be reconfigured as IGFA acres above for increased efficiencies, flood damage, or poor soil conditions as long as the overall acreage is not increased and irrigation efficiencies do not decrease. LWU lands may be irrigated with exempt wells. Total volumetric pumping limit of the new LWUIA authority is based upon acreage and 1.5 af/ac. LWUIA's may not be converted to a Type-3. Total volumetric pumping limit of LWU acres irrigated with a Type-3 is the volumetric limit of the Type-3 withdrawal authority. Metering or alternate use calculation and annual reporting required. An LWUIA authority may be permanently retired. LWU lands that have had their associated LWUIA withdrawal authority retired may be brought back into production with the use of a new appropriate withdrawal authority. LWUIA's have a one-year overrun allowance where the volume of the exceedance of the pumping limit must be made up the following year (following year pumping limit is reduced by the volume of the overrun the previous year).

### **Irrigation users in general**

Annual use reports will be required as well as metering or acceptable alternative calculation methods may be used. Irrigation users will be encouraged to adopt BMP conservation practices through grant incentives programs. Irrigation users will have annual withdrawal fees. Irrigation users have a one-year overrun allowance where the volume of the exceedance of the pumping limit must be made up the following year (following year pumping limit is reduced by the volume of the overrun the previous year).

### **Type-3 Authority**

Type-3 withdrawal authorities are fully portable within the GCA, may be used for any purpose (municipal, industrial, and agricultural) and may be used via any type of well (exempt or non-exempt). Type-3's transferred more than 10 miles from its original or current place of use will require a well impact review. Irrigation authorities may be retired in whole or in part (10 af/yr minimum) and may be transferred (sold or leased) in whole or in part (10 af/yr minimum) to create a Type-3. Type-3's are created by calculation of the historically irrigated acres; for IGFA irrigation authorities a conversion factor of 5 af/ac is used with a reduction of 50% assigned at the time of conversion. Type-3's may also be created under the Historically Irrigated Acres Exemption above. The Department will also issue Type-3's for existing industrial users (non-municipal, non-agricultural users; see below). Type-3's may also be created by conversion of an industrial Type-3 (see below). Type-3's may be applied to both exempt (wells with a pump 35 gallons per minute or less) and non-exempt wells. Use of a Type-3 requires metering and reporting and annual withdrawal fees. Type-3's have a one-year overrun allowance where the volume of the exceedance of the pumping limit must be made up the following year (following year pumping limit is reduced by the volume of the overrun the previous year).

### **Industrial Type-3**

The Type-3 created for existing industrial users will be calculated upon the highest annual use in the five years preceding the creation of the GCA. A 50% reduction in volume will be applied to Industrial Type-3's at the time of conversion to a normal Type-3 for any new use (agricultural, industrial, or municipal). An Industrial Type-3 is tied to its original place of use (within ½ mile). Movement greater than ½ mile triggers the conversion to a normal Type-3 with a 50% reduction in volume. An Industrial Type-3 authority may be permanently retired in whole or in part. Use of an industrial Type-3 requires metering or acceptable alternative calculation method and reporting use. An Industrial Type-3 has a one-year overrun allowance where the volume of the exceedance of the pumping limit must be made up the following year (following year pumping limit is reduced by the volume of the overrun the previous year).

### **Exempt wells**

Exempt wells (35 gallons per minute or less) used for non-irrigation are exempt from metering and use reporting requirements. Exempt wells used for irrigation (with appropriate withdrawal authority) of two or more acres are subject to metering or acceptable alternative calculation method and reporting. Exempt wells may be used for multiple purposes on a single property (residential and livestock). An exempt well may be used to water (irrigate) crops as long as the irrigation is not 2 acres in size or more (see Irrigation definition in the Code), and volume of watering may not exceed 10 acre-feet per year. Exempt wells may be used to irrigate LWU lands larger than 2 acres in size and use more than 10 acre-feet per year but not more than 1.5 af/ac with an LWUIA authority. Exempt wells may also be used to irrigate more than 2 acres in size pursuant to a Type-3 withdrawal authority. Exempt wells used to irrigate LWU lands, or pursuant to a Type-3, must meter (or use alternate calculation methods) and report annually water use and pay withdrawal fees. Exempt wells used for domestic uses, stock watering, commercial uses, and watering lands less than 2 acres in size (not to exceed 10 acre feet per year) are not required to meter or report and do not have withdrawal fees.

### **Municipal Uses**

Municipal uses by a water provider (city, town, or private water company) are authorized to use groundwater with a service area authority for deliveries to customers within its service area. Municipal service area authorities are required to meter and report uses, pay withdrawal fees, and maintain a lost and unaccounted for factor of not more than 10%. Municipal service area authorities may increase their withdrawal authority by 25% over the uses at the time of the creation of the GCA, but further expansion must be supported with the addition of Type-3 authorities. Municipal providers will be encouraged to adopt BMP conservation practices through grant incentives programs. New municipal water providers will be required to use Type-3's. Dry-lot subdivisions are exempt. Maximum number of connections allowed without a Service Area Withdrawal Authority matches Arizona Department of Real Estate subdivision definition.

### **New Subdivisions**

Municipal water providers (cities, towns, and private water companies) may be designated as having an adequate water supply by ADWR. New subdivisions are required to have a water adequacy determination (either by a water report or served by a designated water provider).

#### **Other withdrawal authorities; use restrictions**

In general groundwater use without a specific withdrawal authority is prohibited within the GCA. Temporary well and withdrawal permits under 45-511 – 45-528 shall be included in the GCA. These include:

- Dewatering Permits
- Temporary GIU Permits
- Hydrologic Testing Permits, etc.

The Groundwater Conservation Area should be included in 45-131 (The Lakes Bill) which prohibits the use of groundwater in artificial decorative lakes with certain exceptions.

#### **Conservation requirements; Best Management Practice**

All water use sectors (agricultural, industrial and municipal) will have access to voluntary water conservation programs. Conservation programs are based upon best management practices (BMP's). Persons receiving conservation and augmentation grants from withdrawal fees require participation in BMP's. Number of and specific practice to be offered is to be set by the Director with input from the GUAC. The BMP programs shall be delineated in the Conservation Plan adopted by the Director with input from the GUAC and general public. BMP programs in the initial Conservation Plan should have a minimum of 5-year phase-in to allow time for each sector to adjust to the new programs. BMP's should allow flexibility in each sector. BMP's and Conservation Plans need to be adaptable as new uses, and technologies, and practices develop.

#### **Withdrawal fees; metering, phase in**

All non-exempt wells, and exempt wells used to irrigate lands of 2 acres in size or greater, are required to measure and report annual withdrawals and water use. An annual fee is required on an acre-foot basis. A one-time aquifer impact fee will be assessed for the issuance of each acre of new LWUIA lands. Fees collected are to be used within the GCA basin for conservation and water supply augmentation projects and may be used to permanently retire withdrawal authorities. Existing wells within the GCA that are required to meter must have installed the required meter within three years after the creation of the GCA. Special exemptions may be granted in conjunction with alternate reporting methods for up to two additional years.

#### **Collection and distribution of fees:**

ADWR shall be the authority to collect and manage the withdrawal fees.

## **Withdrawal Fees; deductions**

During the first five years after the creation of the GCA, persons who are required to install meters on wells that are existing at the time of the creation of the GCA, may deduct up to 50% of the costs to install meters from the annual withdrawal fee each year up to the full cost of the meter has been matched. For 10 years after the creation of the GCA, subsequent well owners (new wells) who must meter their wells may deduct up to 25% of the costs to install meters each year from the annual withdrawal fee up to 50% of the cost of the meter. The deduction expires after 10 years.

## **Other Authorities**

ADWR has the authority to purchase groundwater withdrawal authorities for reduction or permanent retirement within the GCA for water management purposes. This is not an eminent domain authority; it must be done in cooperation with a willing seller. In addition to other funds available to ADWR, withdrawal fees may be used for this purpose.

An AMA may not be placed on a GCA until 10-years after the creation of the GCA. After 10 years of the creation of a GCA, placement or overlay of an AMA on a GCA may only occur if the statutory requirements are met under (A.R.S. \*\*) for the creation of a subsequent AMA.

An INA may not be placed on or overlain on a GCA. A GCA may be placed upon an INA.

Creation of a subsequent GCA or the overlay of a GCA on an existing INA shall follow the same procedures as outlined under the creation of a subsequent AMA.

## **Conservation Plans**

Conservation Plans shall be drafted and adopted by the Department every 10 years. Modifications to the plan may be initiated after five years from the adoption of the initial Conservation Plan and midway through (five years after) the adoption of each subsequent Conservation Plan. The drafting of the Conservation Plans shall be conducted with the input from the local GUAC and the general public. A Conservation Plan may be modified with the input from the GUAC and general public five years after its initial adoption. The Conservation Plan shall specify the following:

- Acceptable Best Management Practices for conservation (the BMP program) for each water use sector.
- Acceptable meter standards and acceptable alternative calculation methods for annual use reports.
- Well impact review standards such as decline rates to minimize concentration of transferred withdrawal authorities and lateral cone of depression tests to minimize impacts to existing well owners.

The BMP's delineated in the initial Conservation Plan adopted by the Director with input from the GUAC and general public shall have a minimum phase-in of 5-years to allow each sector to have time to adjust to the new programs.

### **Groundwater Users Advisory Council**

The Groundwater Users Advisory Council (GUAC) is an appointed board made up of local water users representing all the water use sectors in the basin and shall not contain less than 7 members. The GUAC advises the Director in the following:

- Setting the withdrawal fees; minimum fee of \$2 per acre-foot and not to exceed \$5 per acre-foot.
- Setting the one-time Aquifer Impact fee for new LWUIA's; not to exceed \$1,500 but not less than \$500 per acre.
- Distribution of funds collected by the withdrawal fees.
- Adoption of Conservation Plans or Modification of existing Conservation Plans.
- Adoption of or changes to well impact review standards.
- Other water management issues that may arise.