EMERGENCY WATER SOURCES—
WHAT YOU SHOULD KNOW

- An Arizona drought declaration has been in effect since the late 1990s. State law requires community water systems to submit a drought preparedness plan every five years.
- The drought preparedness plan identifies drought stages, triggers for drought stages, and drought management actions, including emergency sources of water.
- The drought preparedness plan is part of a system water plan which also includes a water supply plan and a conservation plan.

Inside this issue:

- Interconnections
- Hauling Water
- Providing Bottled Water
- Obtaining New Storage Facilities
- Constructing or Modifying Wells
- How Planning Reduces the Need for Emergency Water

Find this information online at: http://www.azwater.gov/AzDWR/StatewidePlanning/Drought/CWS.htm

All community water systems in Arizona are required to identify emergency sources of water in their drought preparedness plans. Resorting to an emergency source of water is typically a response to a "worse-case scenario" after all other strategies have been implemented.

Each community water system should evaluate its potential emergency sources of water based on feasibility, equity, cost, state regulations and other considerations.

Planning ahead is necessary for most of the emergency sources listed below to be effective.

INTERCONNECTIONS

Interconnections allow water to be redistributed from systems with excess supply or capacity to systems that need additional water. These partnerships help ensure water supplies and spread out costs. It is becoming increasingly common to have emergency contracts and water system interconnections between utilities. Systems owned by local governments are more likely to interconnect than small, private systems.

What you should know...

1. Interconnecting depends on the water system capacity constraints of potential sellers, legal requirements, political and economic issues, and supply needs. Agreements should be in place for the redistribution of water.
2. Feasible locations for interconnections are determined by distance, slope and geographic barriers such as water bodies, protected areas and existing infrastructure.
3. The cost of installation varies depending on geographic barriers, waterline size and materials.
4. Transferring groundwater supplies between groundwater basins is not allowed except in certain limited cases. (A.R.S. §§ 45-541 to 45-547)

HAULING WATER

In case of a water shortage, some community water systems plan to purchase a certified potable water truck so they can obtain water from water filling stations nearby or plan to have water delivered by professional water haulers. Homeowners, farmers, ranchers, businesses and private subdivisions in some rural areas of the state haul water because they are not close to local water sources and live outside of the reach of community water systems. For example, more than half of the people who live on the Navajo Reservation haul water, as do hundreds of people in areas surrounding Flagstaff, Williams and Kingman.

What you should know...

1. Water for hauling may be limited if several community water systems are in need of emergency sources of water at the same time.
2. Selling water for commercial use may be restricted during water shortages. Costs may rise if water haulers have to increase their travel distance.
3. Many communities have local regulations for potable water trucks, tanks and systems.
4. Water systems located on the edge of a groundwater basin boundary may not be able to construct a new well in another basin and transport the additional water. (A.R.S. §§ 45-541 to 45-547).

PROVIDING BOTTLED WATER

Many community water systems state that they will provide bottled water to their customers in case of a water shortage emergency. Bottled water is typically used for very short term periods.

What you should know...

1. The quantities of water needed should be determined ahead of time. In extreme emergencies, FEMA suggests at least one gallon of water per person for three days, but this depends on age, health, activity, diet and climate. For more information, visit the FEMA website at http://www.ready.gov/water.
2. It is important to research vendors that sell water in bulk and the quantities that may be needed and to prepare a plan for how the water will be delivered or picked up.

OBTAINING NEW WATER RIGHTS

A community water system may be able to legally obtain surface water that has been permitted to another entity. This is referred to as a "severance and transfer" of the right. However, surface water is often impacted by drought, so it may not be a good emergency source of water. Obtaining new surface water rights is a lengthy process, so planning ahead is necessary.

What you should know...

1. To sever and transfer existing surface water rights or claims, an application must be filed with the ADWR Surface Water Permitting Unit, and consent must be obtained from any irrigation district, agricultural improvement district, or water users' association if water is used on land within their boundaries or is in the same watershed or drainage area.
2. To divert or retain and use surface water, a person must apply for and obtain a permit from the ADWR Surface Water Permitting Unit.
3. Visit the ADWR Surface Water Permitting Unit, or call 602 -771-8621.

BUILDING NEW STORAGE FACILITIES

Groundwater is typically stored in tanks, and surface water is stored in both reservoirs and tanks. If a sufficient storage system is in place, it may be possible for a water system to supply an average day's demand. However, peak demands or water shortages may drain storage tanks faster than wells can refill them.

What you should know...

1. A permit is required to divert surface water and retain it in a reservoir or in a tank. Contact the ADWR Surface Water Permitting Unit at 602-771-8621.
2. If surface water or well water is to be stored in a tank, visit the Arizona Department of Environmental Quality Water Quality Division or call 602–771-2300. Some cities and towns require permits or have regulations for water storage tanks.
3. For more information, visit the National Drinking Water Clearinghouse website for their Tech Brief: on reservoirs, towers and tanks.

CONSTRUCTING NEW WELLS OR MODIFYING EXISTING WELLS

In instances where water demand cannot be met by a current well, it might be necessary to use a back-up well, deepen an existing well or drill a new well. The Arizona Department of Water Resources regulates all groundwater wells in Arizona.

What you should know...

1. If the water table is low, back-up wells are likely to be affected too. Deepening an existing well may achieve more water yield and may also buffer water table fluctuations which affect shallow wells more than deeper wells. In some areas, deeper groundwater may be more saline or laden with natural contaminants.
2. There are a series of steps and protocols that must be adhered by in order to drill or modify a well, including filing a Notice of Intent with ADWR and using a contractor licensed in Arizona to drill wells. This will take time, so prior planning is needed. Visit ADWR Groundwater Permitting and Wells online or call 602-771-8527.

ARIZONA DEPARTMENT OF WATER RESOURCES

Protecting Arizona's water supplies for its next century.

Water Planning Division
3550 N. Central Avenue
Phoenix, Arizona 85012
(602) 771-8585

www.azwater.gov

- For more information about drought planning and community water system requirements, call 602-771-8585 or visit the ADWR drought webpage.
- Drought conditions vary around Arizona depending on topography and water supply sources. Current drought status reports can be viewed online.
- In addition to ADWR regulations, approval from the Arizona Department of Environmental Quality is required before modifying a public water system. Visit www.azdeq.gov.

Drought Preparedness Plan Can Reduce the Need for Emergency Water:

An effective drought preparedness plan includes drought stages and associated actions designed to incrementally scale back water use. As drought conditions worsen, more water use reductions may be needed beyond normal conservation programs. The purpose of multiple drought stages is to prevent the final "emergency" stage from occurring.

Drought response actions requested from users can be voluntary or mandatory depending on the severity of the situation, the amount of reduction needed, and the legal authority of the water provider.

Examples of criteria used to determine when a drought stage is "triggered" include well levels, climate conditions, water supply availability, amount of supply in relationship to demand, and the infrastructure of the system. The need to declare drought stages depends on a system's vulnerability to drought.

The ultimate goal should be to plan for future water needs in order to avoid the need to declare an advanced stage of drought and the need for emergency sources of water. Conservation as well as augmenting supplies are both important in achieving this goal.

An effective conservation plan is a long-term plan that improves drought preparedness; it increases water use efficiency and reduces water waste, thereby helping to improve water supply sustainability. By managing demand through conservation, water can be stored for future use in times of drought.

A conservation plan can also result in significant cost savings to the water system by extending the life of existing infrastructure thereby delaying costs associated with building new facilities or retrofitting old facilities to handle larger capacities.

Examples of supply-side conservation programs include accurate metering, leak detection and repair, and use of reclaimed water. Examples of demand-side conservation programs include seasonal rates, education and outreach, incentives and water use restrictions. Both supply-side and demand-side conservation programs contribute to an effective conservation program.

For more information contact the Arizona Department of Water Resources, Statewide Planning and Management Division at 602-771-8585.