

Water Conservation and Drought Management in McKinley County:

A Plan for the Future



McKinley County, New Mexico Board of County Commissioners

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BACKGROUND

Historically, the citizens of McKinley County have been careful stewards of water resources and held the common belief that “water is life”. This ideal is as valid today as it was with past generations. In the Western States, especially in the Southwest, the issues of sustainable water supply, drought, and population growth seem to monopolize the headlines. Scientists, policymakers, and community leaders have elevated their focus towards planning, drought management, policy solutions, innovative financing, and new technologies.

In McKinley County’s water region (“Region 6” as identified by the New Mexico Interstate Stream Commission, i.e., McKinley and Cibola counties south of the San Juan Basin), as stated in the *Region 6 Water Plan* report dated March 1998, McKinley County and its diverse communities are encountering a number of serious constraints: “increasing demand, jurisdictional and legal considerations in developing new developments, infrastructure costs of meeting demand, operations costs, ever-increasing unit costs of water, and non-renewable water supply.” The report goes on to note that these constraints are not limited to McKinley County: “All municipal and community systems in the region utilize groundwater sources to provide water to their residents and customers.” For instance the largest community in the region, the City of Gallup is experiencing these problems now. Additionally, water planners have begun to discern a process of desertification taking place in many places in the region, evidenced by loss of plant life (“from grasslands to sand dunes”) and increased “dust bowl” phenomena – a shift, essentially from what geographers have referred to as “semi-desert” to true desert status.

The average rainfall in the Gallup Basin (except for the Zuni Mountains, whose precipitation levels are about double of the remainder of the County), is between 9 and 12 inches per year, thus establishing McKinley County as a high-desert environment. As is the case with the larger cities of the Southwest, such as Phoenix, Las Vegas, and Albuquerque, even a town the size of Gallup is a community of “considerable population” in this context, and cannot be sustained indefinitely by existing groundwater alone – at least not at the levels of consumption they have been accustomed to.

Almost all McKinley County communities rely on wells that mine nonrenewable groundwater aquifers at an increasing rate. New wells being drilled to replace dilapidated ones are utilizing deep-core mining techniques and are reaching depths of over 900 feet before hitting water. The groundwater resource is not sustainable and needs to be augmented with surface water, new re-use technologies, and conservation.

The County has already achieved remarkable marks for keeping its overall water consumption down to levels “below average” on a per capita basis. This rating is heavily influenced by rural Navajo communities that to this day are largely dependent on water-hauling. The cost of water-hauling increases with the rising gas prices and mandates efficient use of every drop of water. For example, the Navajo Nation Department of Water Resources estimates that more than 40 percent of Navajo households require water hauling to meet their daily water needs.

In this current environment, small systems and communities struggle to replace and build critical water infrastructure to deliver quality water to citizens. All across the County, increasing demand to extend domestic water service to the high number of rural homes in the County that currently have no running water or access to water distribution lines goes unmet since the level of investment by governments in maintaining water infrastructure has declined dramatically. In addition, sewer and water rates are not always reflective of the true cost of service.

The water crisis has no simple or easy solution. In order to continue to provide high quality water and meet the needs of future generations, McKinley County will need to employ a comprehensive mix of strategies including:

1. Working to secure a multi-source water supply, including current groundwater supplies and new projects, such as Navajo-Gallup Water Supply Project (NGWSP).
2. Researching and investing in re-use technologies, such as reverse osmosis.
3. Working on the regionalization of small systems to maximize economies of scale and reduce inefficiencies.

4. Encouraging water associations to adopt a tiered rate structure to promote water conservation, incorporating billing inserts promoting conservation, catalyzing a household audit program for high-use customers, targeting peak summer water demand through the implementation of time of day outdoor watering restrictions, prohibiting water waste, etc.
5. Creating subdivision regulations that mandate water conservation through design, including water metering, xeriscaping and landscaping plans, incorporating rain-harvesting techniques, etc.
6. Adopting a conservation plan including a drought plan and measures to reduce demand to encourage further conservation practices and awareness throughout McKinley County.
7. Collaborate on education programs and initiatives to inform County residents about preserving water resources, especially children and young adults, through vehicles such as Project WET, McKinley Water Awareness Day, etc.

FOCUS ON CONSERVATION

This document incorporates several strategies above but focuses mainly on the fourth strategy, which is “conservation”. Conservation is something each and every citizen of McKinley County can do to preserve water resources for future generations. This document aims to become a livable conservation plan that encourages voluntary participation from County residents. The drought plan also provides small systems a means for implementing measures that systems could not otherwise require, due to lack of authority or resources to develop ordinances.

McKinley County does not currently administer, operate, or maintain any water or wastewater systems, but rather acts as a resource and a partner to small communities and systems throughout the County. Hence, the County will depend on local communities and systems to encourage and educate people on the real “price” of water and the increasing importance of conservation.

DESCRIPTION OF CONSERVATION

The Office of the State Engineer has adopted the following definition of "water conservation":

Water conservation is defined as any action or technology that reduces the amount of water withdrawn from water supply sources, reduces consumptive use, reduces the loss or waste of water, improves the efficiency of water use, increases recycling or reuse of water, or prevents the pollution of water.

Fortunately, water conservation can delay, and in some cases actually eliminate, the need for costly infrastructure expansions. The simple fact is this: ***conservation is almost always the least-costly water supply alternative.*** Given McKinley County’s high-desert climate (less than 13 inches of annual rainfall), its rapidly depleting aquifers, increasing demands on its water supply by regional population pressures and tourist traffic, and the potentially high costs for new water supply, the citizens of McKinley County are well advised to forge a community water conservation program utilizing best practices and emerging technology being applied in various places in the world.

COUNTY’S CONSERVATION GOALS

It is very important to establish goals and benchmark progress throughout the coming years to determine the success of conservation activities. The Office of the State Engineer (OSE) has established some measurable outcomes that the OSE uses to measure success. On page 9 of *A Water Conservation Guide for Public Utilities* (hereinafter referred to as “*OSE Water Conservation Guide*”), the Office of the State Engineer mentions specific conservation goals, including but not limited to, the following:

- Reduction in gallons per capita per day (gpcd) water use based upon total annual water deliveries to service connections. Although per capita use tends to be low in McKinley County, a 10% reduction in use is considered to be a feasible goal for every community.
- Reduction in the amount of non-revenue water (the amount of water produced by systems that is not paid for). Non-revenue water includes water that is lost to leaks, and any use of unmetered water for

irrigation or other uses. The amount of non-revenue water is also dependent on the amount of meter inaccuracy and data handling error, which can be addressed by each system.

- Percent reduction in total annual withdrawals and consumptive use, including targeted limits in acre-feet. Ideally, the annual water demand should be balanced with the sustainable yield of the water supply. Sustainable yield for groundwater is described as the annual withdrawal that does not result in a long-term decline in the water table.
- The basis for the development of such goals, and a timeframe for achieving the goals.

Since the County is not a public utility, it will be difficult to monitor the success of any programs that are implemented. The County will work with small systems in an attempt to get their commitment to incorporating conservation programs and associated goals. The goals described below will enumerate the hope of the County's efforts with regards to conservation:

Goal #1: Sign on ten (8) small systems and communities to establish conservation programs and goals by 2009.

The County, through the McKinley County Water Board, will develop and deliver a presentation to many of the small systems in the County with the goal that they will implement a conservation program and system specific goals. This will help to develop ownership in the local communities and create citizen participation through understanding.

Goal #2: Reduce per capita daily water use 10% by the year 2015.

The County will work with systems to reduce per capita demand, with an overall goal of reducing per capita use 10% by 2015. Current per capita use is estimated to be approximately 105 gpcd in McKinley County, based on per capita values of 109 gpcd in Gallup and 100 gpcd on the Navajo Nation. A 10% reduction in this value would lead to average per capita use of 95 gpcd.

Goal #3: Minimize the amount of non-revenue water by 2020.

McKinley County's long term objective is to eliminate non-revenue water completely. Implementation of improved water management and water accounting in the small systems will help reduce the amount of non-revenue water. The County will reevaluate non-revenue losses every 5 years to track progress toward this goal.

Goal #4: Percent reduction in total annual withdrawals.

This goal is important because, even with a reduction in per capita use, total annual withdrawals have the potential to rise with increasing population. McKinley County will work with small systems to adopt and implement measures that reduce total annual withdrawals, regardless of any changes in the population served.

To have a sustainable water supply, annual water demand needs to be balanced with the sustainable yield of the water supply. As mentioned above, there is a major concern about aquifer levels dropping, indicating that McKinley County's water supply is not sustainable. The recommendation is for McKinley County to coordinate

with other water users in the area to develop long-term water supply projects like the Navajo-Gallup Water Supply Project, while also working to develop collaborative strategies for sustainable water use.

“Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.” ~Chief Seattle, 1855

WATER CONSERVATION PLAN

CONSERVATION STRATEGIES

There are a few basic strategies, which are used in most conservation programs. These include:

- Educating the public about water conservation,
- Offering water audits to consumers,
- Converting to xeriscaping,
- Providing retrofit information or materials to consumers,
- Offering information about or rebates to consumers for installing low water use fixtures, appliances, and landscaping,
- Modifying water rate structures,
- Developing and enforcing water conservation ordinances, and
- Decreasing non-revenue water.

The County will incorporate several other strategies to help bolster the effectiveness of the conservation program.

Metering

The McKinley County Subdivision Regulations require that all customers supplied by community water systems be metered. The County began a program several years ago to invest in community metering projects within water associations (including Mutual Domestic Water Users Associations (MDWUA) and Water & Sanitation Districts (W&SD) as defined in the New Mexico Sanitary Projects Act)). The County will continue to work to reach 100% metering of connections throughout its water associations, so they can more accurately monitor, bill, and regulate water use.

Schedule for Implementation: Ongoing

Responsible Party: Board of County Commissioners

Riparian Conservation

The McKinley Soil & Water Conservation District is currently working on a comprehensive project to address riparian restoration along the Rio Puerco. This project includes the removal of non-native vegetation, such as salt cedar and Russian olive thickets. Another phase of the project will include the revegetation of native species within the watershed and erosion control measures.

Schedule for Implementation: Ongoing

Responsible Party: McKinley Soil & Water Conservation District

Tiered-Rate Structure

The County would like to encourage its communities and small systems to develop and implement a tiered rate structure that promotes conservation. Below is an informational review of different rate structures that communities could employ, stemming from basic to complex. Also, White Cliffs MDWUA has developed a tiered system that could be easily replicated by other systems.

Raising water rates, or changing water rate structures, is a fairly standard method of inspiring people to conserve water. The simple theory is that the higher the cost of water, the less people are likely to use (the more likely they are to conserve).

Some water rate structures promote conservation, while others do not. With flat rates, the water user pays only a constant monthly fee to the utility. With this type of rate structure, cost per unit of water actually decreases with each increase in usage. For example, with a flat rate of \$10.00 per month, a household or business using 1,000 gallons pays \$0.01 per gallon, while a household or business using 10,000 gallons pays only one-tenth of that amount per gallon. In general, consumers paying flat rates have no idea how much they use and have little incentive for conservation. Customers using small amounts of water subsidize large-use customers and generally consider this system unfair. (Note that monthly service charges are, in effect, a type of flat rate.)

“Because water tends to be inexpensive, there isn’t much effort put toward conserving it,” said Keith Watkins, chief of water use efficiency, California Department of Water Resources.

With declining block rates, water is priced in blocks of consumption, with a decrease in unit price as the customer enters a larger consumption block. This rate structure was developed under the assumption that the first water used was more expensive to deliver than successive units. Obviously, this structure tends to discourage conservation practices and places a disproportionately heavy burden on small quantity users.

Uniform rates (sometimes referred to as flat rates, but see above) are based on the assumption that every unit of water is of equal value. Thus, the unit price of water is constant, so that the more water used, the higher the price. Uniform rates may be useful in encouraging conservation when they represent a change from a regressive rate structure like flat rates or declining block rates.

Preferred rate structures the County will encourage small systems to consider include:

With inclining or increasing block rates, water is priced in blocks of consumption, but the unit price increases as the consumer enters increasing volume blocks. This structure is based on the assumption that heavy users are responsible for increasing the need for expansion of a system and should therefore pay a higher unit price. Inclining rates can help promote conservation.

Seasonally increasing block rates are a specific form of inclining or increasing block rate structures. Like other increasing block rates, this structure assumes that heavy users are responsible for increasing the need for expansion of a system, or the purchase of additional water rights. What is different with this system is that it works specifically to induce conservation in the summer months, when landscape irrigation leads to heavy water use. Summer rates are higher than winter rates, specifically to discourage excessive seasonal use. The City of Gallup recently implemented a seasonally increasing block rate for residential use.

Increased rates during peak demand periods work to reduce demand for a short period of time. This pricing system is an attempt to more accurately place the increased cost of maintaining large storage facilities or obtaining new water sources on those who create the demand. Since the facilities of the utility are usually underused, the full utility costs are represented by the water demand for only a short time period. Off-peak users do not contribute to as much of the utility's costs as do peak users. Implementation of a pricing system that identifies peak users is difficult because peaks occur on an hourly, daily, and seasonal basis. Seasonally increasing rates are more commonly used.

Excess use charges are added to a uniform rate. When a consumer exceeds a certain amount of consumption, usually based on the customer's daily average, a surcharge is added for each additional unit consumed. Surcharges may be factored into the bill in a wide range of ways. Summer surcharges, which are based on the same assumptions as seasonal pricing, consider a consumer's winter use as base usage. Summer use in excess of this base (usually multiplied by some factor) is charged at a uniform base rate plus a surcharge. Although this

approach appears to encourage conservation, some users may actually attempt to increase their average daily consumption if they frequently face surcharges. With summer surcharges, consumers might increase their winter use. The City of Albuquerque has recently implemented a summer surcharge system.

McKinley County Water Board will package information on tiered rate structures for presentation to various small systems and communities, as part of the County's Small System Regionalization Project.

Schedule for Implementation: November 1, 2007

Responsible Parties: McKinley County Water Board & NWNMCOG

Low-Flow Fixtures

The McKinley County Subdivision Regulations require that water saving fixtures (including low-flush toilets, low flow showerheads, and low-flow faucets) be installed in all new residential and non-residential buildings. Retrofit programs should also be used to reduce indoor water use by existing development. Retrofit programs provide materials, which can be used to improve the efficiency of water-using fixtures. It has been noted that retrofitting residential showers and toilets with devices to reduce water consumption is perhaps the most effective way to achieve immediate and long lasting water conservation. Small-scale retrofit kits may include toilet dams, low-flow showerheads, and other items. Larger scale retrofits for indoor water use, for example, toilet replacement or irrigation system upgrades, are more likely to be part of a rebate program.



OSE expectations for indoor household uses with water conserving fixtures are 60 gpcd for bathing, toilets, food preparation, dishwashing, and clothes washing; 20 gpcd for evaporative cooling, and 5 gpcd for water softening, which totals 85 gpcd for indoor household use. Water associations and households will need to determine whether low-flow toilets are feasible, since some of the old pipes need water to flow faster in order to drain properly.

The County would like to promote this conservation strategy through a three-pronged approach:

- Produce and/or help distribute an educational brochure outlining the effectiveness of low-flow fixtures and where to purchase items. The County will work with Elizabeth Barriga, City of Gallup Water Conservation Officer on this strategy, as Gallup already has produced these types of materials.
- Ensure that all new County facilities have low-flow fixtures built into their design, and retrofit existing fixtures where appropriate and where there is adequate funding to do so.
- Develop a fund to offer incentives for County residents, to install low-flow fixtures (including directions for installation) to raise awareness for the need for water conservation.

Schedule for Implementation: December 1, 2007

Responsible Parties: McKinley County Water Board and County Manager

Water Bill Promotion

The County will encourage water associations to include water bill inserts containing conservation tips, information, and website addresses. Further, the County will recommend that customer usage history be printed on each water bill to alert customers to any spikes in their monthly bills that could be caused by a leak or fixture malfunction.

Schedule for Implementation: January 1, 2008

Responsible Parties: Water Associations

Landscaping and Xeriscaping

Although per capita use is low in McKinley County, and there is less irrigated turf to replace than in other areas of New Mexico, the County will include xeriscaping information in the public education campaign with the goal

of having some water consumers replace high water use areas with xeriscape. The existing McKinley County Subdivision Regulations require that low water use landscaping be considered and utilized as a part of landscaping, but they do not mandate that a specific percentage of landscaping be xeriscape. The County through the Smart Growth Commission plans to push for xeriscaping in new developments, and will look to conversion to xeriscaping on a certain percentage of its own properties.



Schedule for Implementation: April 1, 2008

Responsible Parties: County Manager and County Attorney

Watering Restrictions

The County recognizes that minimizing water waste, promoting irrigation efficiency through time of day watering restrictions and other measures, and targeting peak summer water demand will conserve water. Individual communities will need to pass ordinances to address water waste and watering restrictions. Small systems that do not have the authority to pass ordinances can rely on the County plan to implement watering restrictions during drought. The City of Gallup passed a new water conservation ordinance that went into effect on April 25, 2006. In addition to prohibiting water waste with multiple provisions, this new ordinance prohibits new non-recirculating conveyor car wash systems, sets new indoor plumbing equipment requirements, establishes time and day restrictions for irrigation, and gives the City Manager authority to adopt emergency water use restrictions as necessary. This ordinance could be revised and adopted by smaller systems in the County to address these issues.

The attached Drought Emergency Response Plan calls for the addition of time of day watering restrictions under its first stage of watering restrictions (water shortage advisory), odd and even day watering restrictions under its second phase of watering restrictions (water shortage alert), and bans outdoor watering under its third phase of watering restrictions (water shortage emergency). The purpose of the Drought Emergency Response Plan is to define official phases of water supply shortages and to help systems implement voluntary and mandatory water conservation measures when necessary. This document could be used in addition to or instead of the City of Gallup Conservation Plan to aid small systems in addressing water waste and watering restrictions.

Schedule for Implementation: April 1, 2008

Responsible Parties: NWNMCOG and County Attorney

High-Use Audit Program

The County will encourage its communities and small systems to develop and implement a high-user audit program that will include water audits on at least the top 10% of water users. The audits will check for leaks and encourage low-flow fixtures and other conservation measures. White Cliffs MDWUA has developed a high-user audit program that could be easily replicated by other systems.

The McKinley County Water Board will package information on high-user audit programs for presentation to various small systems and communities, as part of the County's Small System Regionalization Project.

Schedule for Implementation: December 1, 2007

Responsible Parties: McKinley County Water Board & NWNMCOG

Household Reverse-Osmosis (RO) Pilot Program

The County will consider developing a pilot program for the installation of home RO units. The County could pick users who have poor water quality and install RO systems for those users. Although, this program is not expected to have a direct impact on conservation, it could be part of a wider awareness program.

Schedule for Implementation: December 1, 2007

Responsible Parties: McKinley County Water Board & Board of County Commissioners

Leak Detection Program

The *OSE Water Conservation Guide* (Section 7) provides guidelines for a leak detection and repair program that will reduce distribution system losses. The County will encourage each water association to consult with the New Mexico Rural Water Association (NMRWA) regarding the design of a leak detection and repair program. Each individual system will need to fund their own leak detection and repair program, including specific projects. The County will look at developing a funding stream to fund 20% of the cost of community leak detection programs.

Schedule for Implementation: December 1, 2007

Responsible Parties: McKinley County Water Board, NMRWA, & Board of County Commissioners

Conservation Education

There is general agreement that public education and involvement are an integral part of conservation planning and that they are necessary components in order for conservation programs to be successful. An education effort should raise the public's awareness about the status of the community's water supply resources and system, why conservation is necessary, and ways in which residential and commercial water users can become more efficient in their water use. Public involvement activities give citizens a role in planning conservation actions and help to ensure their acceptance by water users. The County will support water conservation education through the following avenues:

- Promoting public education programs like Project WET and others, that instill the “conservation ethic”;
- Partnering with the City of Gallup to produce the McKinley Water Awareness Day;
- Distributing brochures and/or producing magnets for County residents listing simple conservation practices under the slogan “Save a Drop for the Next Generation”;
- Writing newspaper articles;
- Making public service announcements;
- Holding community events and town hall discussions on water use;
- Doing demonstration projects;
- Including a bar chart of the previous month's usage and the current month's usage on monthly bills, in addition to including inserts addressing conservation tips and providing information;



Schedule for Implementation: August 2007

Responsible Parties: McKinley County Water Board, McKinley County Recycling Council, McKinley County CARE, and Gallup's Water Conservation Officer

“We shall require a substantially
new manner of thinking if
mankind is to survive.”
~Albert Einstein

DROUGHT EMERGENCY RESPONSE PLAN

SECTION I. PURPOSE. The purpose of this Drought Emergency Response Plan is to define the official phases of water supply shortages and to provide for the implementation of voluntary and mandatory water conservation measures throughout McKinley County in the event a shortage is declared. The service area includes all areas in McKinley County within State of New Mexico's jurisdiction.

SECTION II. DEFINITIONS.

1. **“Water Shortage Advisory”** is the first stage of water shortage, and includes advisories that are issued when systems are experiencing drought or any other conditions that indicate the potential for water supply shortages (due to issues with infrastructure etc.). Systems with water shortage advisories in effect are not yet experiencing water supply shortages.
2. **“Water Shortage Alert”** is the second water shortage stage, and includes advisories that are issued when a water system's raw water supply is consistently below seasonal averages, indicating that the system is experiencing a water supply shortage. If the raw water supply continues to decline, supply may not be adequate to meet normal needs, and a water shortage emergency advisory will be issued.
3. **“Water Shortage Emergency”** is the third stage of water shortage, and includes advisories that are issued when a water system's raw water supply is below the level necessary to meet normal needs and serious water shortages exist.
4. **“Customer”** shall mean any resident in the jurisdiction of McKinley County
5. **“MSWCD”** is the McKinley Soil & Water Conservation District acting through the SWCD President to the County Manager.
6. **“Water Use Class”** shall be established as follows:

Class 1: Essential Water Uses

- Domestic Use: Water necessary to sustain human life and the lives of domestic pets, and to maintain minimum standards of hygiene and sanitation.
- Health Care Facilities: Water necessary for patient care and rehabilitation.
- Public Use: Water necessary for fire fighting and health and public protection purposes, if specifically approved by health officials and/or their governing bodies.

Class 2: Socially or Economically Important Uses of Water

- Domestic Use: All other uses other than those included in Class 1 and 3. Includes domestic water use including kitchen, bathroom and laundry use.
- Outdoor Non-Commercial Watering (public or private), including:
 - Agricultural irrigation for the production of food and fiber or maintenance of livestock.
 - Watering by commercial nurseries at a minimum level necessary to maintain stock, to the extent that sources other than local sources are not available or feasible to use.
 - Watering of golf course greens.
 - Uses of water at a minimum rate necessary to implement revegetation following earthmoving, where such vegetation is required by an erosion and sedimentation control plan adopted pursuant to law or regulation to the extent water sources other than local sources are not available or feasible to use.
 - Water use by public gardens of national, state, or regional significance where necessary to preserve specimens, to the extent water sources other than local sources are not available or feasible to use.
- Operation and filling of swimming pools, including:
 - County pools,
 - Health care facility pools used for patient care and rehabilitation.
- Washing of Motor Vehicles:
 - Commercial car and truck washes, unrestricted hours of operation.
- Commercial Laundromats, unrestricted hours of operation.
- Restaurants, Clubs, and Eating Establishments, unrestricted hours of operation.

Class 3: Non-Essential Uses of Water

- Ornamental purposes, including fountains, reflecting pools, and artificial waterfalls.
- Outdoor non-commercial watering (public or private), including gardens, lawns, golf courses, parks, playing fields, and other recreational areas.

EXCEPTIONS:

- Agricultural irrigation for the production of food and fiber or maintenance of livestock.
- Water used by commercial nurseries at a minimum level necessary to maintain stock, to the extent that sources other than local sources are not available or feasible to use.
- Use of water at a minimum rate necessary to implement revegetation following earthmoving, where such vegetation is required pursuant to an erosion and sedimentation control plan adopted pursuant to law or regulation (to the extent that sources of water other than JCDPU are not available or feasible to use).
- Water use by public gardens of national, state, or regional significance where necessary to preserve specimens, to the extent water sources other than local sources are not available or feasible to use.

EXCEPTIONS:

- Health care facility pools used for patient care and rehabilitation.
- County pools.
- Washing of motor vehicles: automobiles, trucks, boats, and trailers.

EXCEPTIONS:

- Commercial car and truck washes.
- Serving water in Restaurants, Clubs, and Eating Establishments, specific request by customer.

EXCEPTIONS:

- Fire hydrants: any purpose including the use of sprinkler caps, testing of equipment, and fire department drills.
- Fire-fighting, including:
 - Health protection purposes if specifically approved by health officials.
 - Testing and drills by fire departments, if in the interest of public safety.
 - Hydrant and sanitary sewer flushing as needed to ensure public safety with the approval of health officials and by JCDPU.

SECTION III. DECLARATION OF A WATER SHORTAGE ADVISORY.

In the event that the McKinley Soil & Water Conservation District, McKinley County Emergency Manager, or the Office of the State Engineer determines that there is the potential for a water supply shortage, indicating that adequate potable water supplies cannot be maintained, whether the shortage is caused by drought, mechanical failure, and/or limitations of water treatment facilities, the McKinley County Manager shall be empowered to declare a **“WATER SHORTAGE ADVISORY”**.

The County staff and McKinley SWCD President shall monitor the supply and demands on the system on a daily basis. The County Manager shall call upon all water customers of area to employ voluntary water conservation measures to limit water use (especially Class 3 users) and to eliminate the waste of water. The “Declaration of a Water Shortage Advisory and Statement” by the County Manager shall be published in English, Navajo, and Spanish in the newspapers of general circulation in McKinley County, or may be publicized by any other appropriate method.

SECTION IV. DECLARATION OF A WATER SHORTAGE ALERT.

In the event that the McKinley Soil & Water Conservation District, McKinley County Emergency Manager, or the Office of the State Engineer determines the raw water supply is below the level necessary to meet normal demands, and if the supply continues to decline such that there may not be sufficient water supply to meet

normal demands and/or there are water treatment facility limitations which cannot provide adequate supplies of potable water, the County Manager shall be empowered to declare a **“WATER SHORTAGE ALERT”**.

The County staff and McKinley SWCD President shall continue to encourage voluntary water conservation measures as defined by the “Advisory” declaration. The County Manager shall impose a ban on all Class 3 water uses for the duration of the shortage until the water shortage has ended as advised by the McKinley SWCD President, McKinley County Emergency Manager, or the Office of the State Engineer.

SECTION V. DECLARATION OF A WATER SHORTAGE EMERGENCY.

In the event that the McKinley Soil & Water Conservation District, McKinley County Emergency Manager, or the Office of the State Engineer determines the raw water supply is below the level necessary to meet normal demands and serious shortages exist and/or there are water treatment facility limitations which cannot provide adequate supplies of potable water, the County Manager shall be empowered to declare a **“WATER SHORTAGE EMERGENCY”**.

In the event of a Water Shortage Emergency, “CLASS 1” essential uses shall be targeted for voluntary conservation initiatives, “CLASS 2” socially or economically important uses shall be banned, as will “CLASS 3” non-essential users. These restrictions shall be enforced until the McKinley SWCD President, McKinley County Emergency Manager, or the Office of the State Engineer declares the emergency ended.