

Water Conservation

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Many areas of the State are once again experiencing a dry summer. Most water systems are designed to withstand times like these but just imagine if during one of the hottest and driest days of the year you lost a major part of your water supply. Does your system have a good Water Conservation Plan that you can rely on to insure that your customers have an adequate supply of safe drinking water? The following is a template of a municipal water conservation plan. It gives some good ideas of when to implement water conservation measures and what measures to employ. Each water system is unique and any plan written up needs to be written accordingly. This is where good past records are a necessity. If your system hasn't been keeping pumping records and well drawn down tests in the past there is no time like the present to begin. I hope this template is helpful in getting started with a conservation plan for your water system. If the NeRWA can be of any help with this or any other aspect of your water system please give us a call.

MUNICIPAL WATER CONSERVATION PLAN FOR THE _____

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INTRODUCTION

The _____ has undertaken a number of steps to ensure a dependable water supply for our customers during the past _____ years. The original water supply for our City was obtained from wells _____. (Add information about the addition of water sources, treatment, storage and distribution for the current water system.)

Our City water supply, water treatment plant and distribution system have ample capacity to meet current customer demands and future projected demands for several years, except during drought periods. The _____ believes that our Municipal Water Conservation Plan represents an additional major step in ensuring our customers of a dependable water supply in future years.

MUNICIPAL WATER CONSERVATION PLAN

The primary objectives of the Water Conservation Plan for the _____ are to develop long-term water conservation plans (Long-Term Water Use Efficiency Section) and short-term water emergency plans (Drought/Emergency Contingency Section) to assure the City customers of an adequate water supply to meet their needs. The efficient use of water also has the beneficial effect of limiting or postponing water distribution system expansion and thus limiting or postponing the resultant increases in costs, in addition to conserving the water resources of the State of Nebraska.

LONG-TERM WATER USE EFFICIENCY

WATER USE CONSERVATION GOALS

The _____ used _____ gallons per person per day (GPCD) in 1999. This GPCD figure included:

- a) water sold to residential customers
- b) water distributed for free public services (parks, cemeteries, swimming pools, etc.)
- c) water lost by leaks in the water distribution system
- d) water sold to commercial and industrial customers

The City desires to set a water use conservation goal for usage not to exceed GPCD based on the average of the last five years (1994 thru 1999). Our City anticipates not exceeding this goal by carrying out the specific actions that are outlined in our plan.

WATER CONSERVATION PRACTICES

This subsection of the plan summarizes the current education, management and regulation efforts that relate to the long-term conservation of water in the City. Specific practices that will be undertaken to conserve water are listed and a target date to begin each practice is also shown.

Education

The City water bills show the total number of gallons of water used during the billing period and the amount of the bill. Water conservation tips are not normally provided with the water bills. The City has not provided information on water conservation to the local news media on a regular basis and has not encouraged the Board of Education and teachers to become involved in water conservation presentations in schools.

The City has chosen the following conservation practices and target dates for the Education Component of the Long-Term Water Use Efficiency Section of our Water Conservation Plan.

Education Conservation Practices to be Taken	Target Date

Management

The _____ has hour meters on each of our raw water intake pumps. These hour meters are generally read on a monthly basis within a week of the last day of the month, unless this schedule is not convenient for our meter reader. The amount of raw water pumped is determined by multi plying the (number of hours pumped) x (60 minutes per hour) x (gallons per minute). The accuracy of the hour meter and the pumping rates of the pumps has been tested in _____. The pumping rate of _____ gallons per minute was determined at that time.

(Customize this paragraph to fit your community situation similar to the following: Water meters were installed for all residential I commercial customers by 1965; however, the amount of water provided free of charge to the High School for their football field, to the Public Golf Course and to the City government buildings and grounds are not metered. Customer meters are scheduled for an accuracy check and possible repair or replacement upon receiving a request to do so from the customer.)

The _____ reads each customer's water meter and mails a monthly water bill to each customer each month. Customer water meters are generally read during the last week of the month; however, the meter reader sometimes deviates from the scheduled time period. Customer water meters are not read during the winter season, until late March. (Modify to fit your community billing procedure.)

Water leaks from the City public water distribution systems are repaired when customers report significant leaks from the water mains. Water pressure is not checked unless customers complain that their water pressure is too low.

The water rate structure for the City was passed on _____. The minimum monthly water bill is \$ _____ for residential customers, which allows each customer to use up to _____ gallons of water each month. Water use between _____ and _____ gallons is charged at \$ _____ per 1,000 gallons per month. All water use in excess of _____ gallons per month is charged at \$ _____ per 1, 000 gallons. The sewer rate is \$ _____ for all residential customers. (Modify to fit your community rate structure.)

The _____ realizes that much greater emphasis must be placed on obtaining accurate measurement of water use at our raw water intake and at customer meters and that a water use records system must be developed that can be used to more effectively and efficiently manage the City public water distribution system. Hence, the _____ has chosen the following conservation practices and target dates for the Management component of the Long-Term Water Use Efficiency Section of our Water Conservation Plan.

Management Conservation Practices to be Taken	Target Date

Regulation

The _____ does not have any water conservation regulations in effect at the present time.

Regulation Actions to be Taken	Target Date

DROUGHT /EMERGENCY CONTINGENCY

The _____ addresses its short-term water shortage problems through a series of stages based on conditions of supply and demand with accompanying triggers, goals and actions. Each stage is more stringent in water use than the previous stage since water supply conditions are more deteriorated. The _____ is authorized by ordinance to implement the appropriate conservation measures.

STAGE 1: WATER WATCH

Triggers

This stage is triggered by any one of the following conditions:

1. The City storage has fallen below 85 percent capacity.
2. Groundwater levels have fallen five feet below the normal seasonal level.
3. Demand for one day is in excess of _____ million gallons per day (mgd).

Goals

The goals of this stage are to heighten awareness of the public on water conditions and to maintain the integrity of the water supply system.

Education Actions

1. The City will make occasional news releases to the local media describing present conditions and indicating the water supply outlook for the upcoming season.
2. Previous month's summaries of precipitation, temperature, water levels and storage will be made public at the beginning of each month.

Management Actions

1. The City wells will be cleaned and flushed to maintain them at their most efficient condition.
2. Leaks will be repaired within 48 hours of detection.
3. System pressure will be maintained below 80 pounds per square inch.
4. The City will monitor its use of water and will curtail activities such as hydrant flushing and street cleaning.

Regulation Actions

The public will be asked to curtail some outdoor water use and to make efficient use of indoor water, i.e. wash full loads, take short showers, don't let faucets run, etc.

STAGE 2: WATER WARNING

Triggers

This stage is triggered by any one of the following conditions:

1. The City storage has fallen below 70 percent capacity.
2. Groundwater levels have fallen ten feet below the normal seasonal level.
3. Treatment plant operations are at 80 percent capacity or more for three consecutive days.
4. Demand for one day is in excess of _____ mgd.

Goals

The goals of this stage are to reduce peak demands by 20% and to reduce overall weekly consumption by 10%

Education Actions

1. The City will make weekly news releases to the local media describing present conditions and indicating the water supply outlook for the upcoming week.
2. Previous week summaries of precipitation, temperature, water levels and storage will be made public each Thursday.
3. Water conservation articles will be provided to the local newspaper.

Management Actions

1. The City water supplies will be monitored daily.
2. Leaks will be repaired within 24 hours of detection.
3. Pumpage at wells will be reduced to decrease draw down and to maintain water levels over well screens.
4. The City will curtail its water usage, including operation of fountains, watering of City grounds and washing of vehicles.

Regulation Actions

1. An odd/even lawn watering system will be imposed on City residents. Residents with odd-numbered addresses will water on odd days; even addresses will water on even days.
2. Outdoor water use, including lawn watering and car washing will be restricted to before 10:00 a.m. and after 9:00 p.m.
3. Refilling of swimming pools will be allowed one day a week after sunset.
4. Excess water use charges for usage of water over the amount used in the winter will be imposed.
5. Waste of water will be prohibited.

STAGE 3: WATER EMERGENCY

Triggers

This stage is triggered by any one of the following conditions:

1. The City storage has fallen below 50 percent capacity.
2. Groundwater levels have fallen fifteen feet below the normal seasonal level.
3. Pumping lowers water levels to within five feet of the top of the well screens
4. Treatment plant operations are at 90 percent capacity or more for three consecutive days.
5. Demand for one day is in excess of _____ mgd.

Goals

The goals of this stage are to reduce peak demands by 50% and to reduce overall weekly consumption by 25%.

Education Actions

1. The City will make daily news releases to the local media describing present conditions and indicating the water supply outlook for the next day.
2. Previous day's summaries of precipitation, temperature, water levels and storage will be made available to the public each day.
3. The City will hold public meetings to discuss the emergency, the status of the City water supply and further actions, which need to be taken.

Management Actions

1. The City water supplies will be monitored daily.
2. Leaks will be repaired within 24 hours of detection.
3. System pressure will be maintained at 60 pounds per square inch.
4. Standby wells will be activated for contingency operation.
5. Pumpage at wells will be reduced to decrease draw down and to maintain water levels over well screens.
6. The City will seek additional emergency supplies from other users, the state or the federal government.

Regulation Actions

1. Outdoor water use will be banned.
2. Waste of water will be prohibited.

PLAN REVISION, MONITORING & EVALUATION

The _____ will establish a monthly management practice of reviewing monthly totals for water production, residential/commercial sales, water provided free-of-charge, and "unaccounted for water." Problems noted during the monthly review will be solved as soon as possible.

The Municipal Water Conservation Plan will be reviewed during the month of April each year and on a more frequent basis during drought or other water shortage conditions. If the water conservation GPCD goals for the previous year are not met, then the City will review the data collected from the previous year in relationship to the status and effectiveness of the conservation practices that are outlined in our plan and will provide a status report which will also include any additional water conservation practices that may need to be taken in order for the City to achieve and maintain its water use conservation GPCD goals.