



**Drought Management Plan
A Template for Small Water Systems**

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Drought Management Plan

Introduction

Moderate to severe droughts can adversely impact a public water system's ability to supply adequate quantities of water to consumers and maintain reserves to fight potential fires. Additionally, prolonged drought conditions can adversely impact water quality. Therefore it is important for water purveyors to identify those conditions at the onset of very dry conditions that lead to droughts that produce these water supply and quality concerns.

Water managers can implement mitigation measures that if proactively employed, can greatly minimize the affects of drought and maintain emergency supplies of water. The measures must be employed in a timely manner to ensure protection of the available water supplies. These protective measures must be reasonable and at the same time effective. Thus it is important that the measures to be employed and the "triggers" that dictate their application, be contained in a written drought management plan.

I must be recognize that each water system will have unique conditions which dictate different customized procedures that fit their water system. However, experience has shown that there are certain similarities that apply to all systems and thus general guidelines can be used and tailored to fit most systems.

Intent, Purpose and Goals of the Drought Management Plan

The Drought Management Plan (DMP) establishes an effective operating procedures for managing water demand and evaluating supply options before, during and after a drought-related water shortage.

The purpose of the Drought Management Plan (DMP) is to maximize the efficient use of limited water resources under the water system's control in order to protect the health and safety of the public and the environment.

The goals of the DMP are to achieve the greatest public benefit for domestic water use, sanitation, and fire protection while providing water to all users in an equitable manner. The DMP outlines the framework by which the water system will prepare for water shortages and when and how procedures for mitigating the affect of the drought will be implemented.

Where the water systems has governmental authority, it is necessary that the authority and conditions, and regulations for implementing the DMP be stated in a Drought Emergency Ordinance. For non-municipal water systems a Drought Emergency Policy must be developed by the water system owner. Examples of these documents are included in the Appendix.

Definition of Terms Used in the Drought Management Plan

The following definitions will apply when used in the Drought Management Plan:

Aesthetic Water Use	Water use for ornamental or decorative purposes such as fountains, reflecting pools and waterfalls.
Commercial and Industrial Use	Water use integral to the production of goods and/or services by any establishment having profit as its primary aim.
Conservation	Reduction in water use to prevent depletion or waste of the resource
Customer	Any person, company or organization using finished water supplied by the Water System
Domestic Water Use	Water use for personal needs or for household purposes such as drinking, bathing, heating, cooking, sanitation or for sanitary cleaning in a residence, business, industry or institution.
Drought Alert Phases	There are four drought alert phases: 1) Incipient Drought 2) Moderate Drought 3) Severe Drought 4) Extreme Drought
Drought Management Plan Administrator	Person responsible for initiating and administrating the Drought Management Plan
Essential Water Use	Water used specifically for fire fighting, maintaining legal requirements to satisfy Federal, State or local public health and safety requirements
Finished Water	Water distributed for use after treatment
Water Use	The terms “water use,” “water user,” and “water customer” refer to finished water use unless otherwise defined.
Institutional	Water used by government, public and private educational institutions, churches and places of worship, water utilities, and organizations within the public domain
Irrigation Water Use	Finished water used for gardens, trees, lawns, shrubs, flowers, athletic fields, rights-of-way and medians, etc., to maintain healthy growth.
Non-essential Water Use	Categories of water use other than Essential Water Use. Examples of non-essential water use include irrigation water use and used for washing other than food preparation.
Water Supply Shortage	Lack of adequate, available water caused by drought to meet normal demands
Water Rationing	Operation of the Water System in such a manner to intentionally limit water system volumes or pressures to customers to conserve available water
Tier I Water Rate	The lowest water rate step currently in-place for residential water customers, for example: the rate might be set for 0 to 10,000 gallons of monthly use at a initial rate and then step to a higher rate for additional consumption above the maximum volume.
Water Purveyor	A Public Water System as defined by FAC 62.555.200(70). The Water Purveyor may be publicly or privately owned.

Drought Management Plan Supporting Documentation

Introduction

To ensure that a Water Supply System effectively manages its water system during drought-related conditions, a written plan is necessary for system operation and reliability, proper communications, effective coordination and ultimate allocation of water to customers and other designated users to respond to drought conditions and to enforce the water use restrictions where applicable.

Designation and Duties of Drought Management Plan Administrator

The official responsible for initiating and administering the Drought Management Plan will be designated in the Plan. This person is responsible for resolving water equity issues that will arise from enforcement of the mandatory descriptive program. This person will also inform system users about the Plan requirements and will serve as the principal contact for the news media as the water system's drought response representative.

Water System Layout, Water Sources, Capacities and Yields

The Drought Management Plan includes a schematic of the water system's service area, describes the systems well and water treatment plant capacity, and identifies the water system's water storage capacity for meeting average day and peak day water demand.

Recognized Drought Management Operational Triggers

Operational triggers are those operating conditions that appear in combination and indicate deteriorating operating conditions that may exist in a water system. A combination of these operating triggers adversely impacts that water system's ability to provide an adequate and sustainable water supply to meet customer demand. Generally triggers will indicate the level of drought mitigation measures that need to be immediately employed by the responsible water administrator.

It should be noted that once triggers are set they must be used or the system's drought management plan is compromised and will likely not be effective. The DMP can always be modified to meet newly discovered conditions based on experience, but changes should never be made ad hoc to fit political pressures and should follow sound technical operating conditions that can be supported by sound data collected during a drought incident.

The following are some trigger mechanisms that have been found useful to small and medium water systems:

Examples of Triggers Used by Small and Medium Water Systems

- ❑ Difficulty in Refilling Storage Tank(s)
- ❑ Inability to Refill Storage Tank(s)
- ❑ Draining of Storage Tank Under Peak Demand Conditions
- ❑ Daily Well Production at 30% over Previous Month Average
- ❑ Daily Well Production at 50% over Previous Month Average
- ❑ Well run log that exceeds 2 times daily average
- ❑ Monthly Water Use that is 30% above Previous Month Average
- ❑ Monthly Water Use that is 50% above Previous Month Average
- ❑ Drop in Static Well Level that Exceeds 5 feet (vertical turbine)
- ❑ Drawdown Interference noted when running wells in combination
- ❑ Low Pressure Complaints During Peak Demand Periods
- ❑ Low Pressure Complaints During Peak and Non-Peak Periods
- ❑ Areas in the Water System with Pressure below 20 psi
- ❑ Difficulty maintaining pressures at hospitals and critical care facilities
- ❑ Demands that exceed WTP permitted capacity
- ❑ Deterioration of Water Quality Caused by High Flow Conditions
- ❑ Exceeding Engineering Demand Estimates for Current Period
- ❑ No Measurable Precipitation for 7 days
- ❑ No Measurable Precipitation for 2 weeks
- ❑ No Measurable Precipitation for 4 weeks
- ❑ Water Management District issued water restrictions, advisory, etc.
- ❑ Significant Increases in authorized or unauthorized water usage

Drought Management Plan Conditions and Phases

Specific Drought and Water Shortage Indicators

The DMP includes a description of the water system indicators that will be used to identify the drought conditions that must exist in order for the water supply to become compromised and thus may not be adequate to meet system demand.

The successive deterioration of operating conditions that lead to shortages in supply are based on historical operating trends that will be used as triggers for the various designations of water shortage conditions that will initiate specific courses of action. Florida Rural Water Association can assist small systems in developing effective Drought Management Indicators that are custom for their systems.

In general 3 conditions are necessary to produce a drought emergency:

1. A combination of dry and high temperature conditions that result in above average water demands on the water system,
2. Higher than average rising water demand on a water system that may prevent refilling of water storage or which may result in rapid depletion of system storage during high demand periods and
3. Cumulative effects on the aquifer from dry conditions which lower pumping levels in system wells. Lower well pumping levels adversely affect well capacity and may prevent existing wells from providing necessary flow volumes and/or may jeopardizing the well stability when certain well combinations are used together.

Drought conditions are tracked by the US Department of Agriculture and are updated weekly. The information can be accessed at http://www.drought.unl.edu/dm/DM_southeast.htm.

Water demands are determined by the analysis of water system production and water tank level recorders. Historical trending indicates problem areas. Well levels may be monitored by the water system through the use of sounding (measuring static and pumping water levels).

Generally sounding can be performed where the systems uses vertical turbine pumps. Monitoring is performed by the use of a small compressor fitted with a pressure gauge. A small ¼” tube is fitted through the well vent and the end of the tube is then submerged below the static water level in the casing pipe. As long as the tube remains submerged below the pumping level, the drawdown may be determined by the difference between the pressure reading when the well pump is off and the highest pressure reading recorded when the well pump is activated.

Sounding can not be performed when using a submersible pump since the pump uses a footer valve that maintains the column of water when the pump shuts down. In these cases information must be inferred from regional well monitor locations maintained by USGS found at <http://waterdata.usgs.gov/nwis/gw> or from information that can be obtained directly from the governing water management district. Water Management agencies produce monthly aquifer level updates.

Drought related impacts on aquifer levels and stream flows can be found at <http://www.drought.unl.edu/risk/us/florida.htm> . Generally, the best source of information on the effects of droughts on aquifer levels can be obtained directly from the governing Water Management Districts that are provided below:

Water Management District	Location	Phone	Toll-Free Number
Northwest Florida WMD	81 Water Management Dr, Havana, FL 32333	850-539-5999	
Suwannee River WMD	9225 CR 49 Live Oak, FL 32060	386-362-1001	800-226-1066 (Florida only)
St. Johns River WMD	P.O. Box 1429 Palatka, FL 32178	386-329-4500	800/-451-7106
Southwest Florida WMD	2379 Broad Street Brooksville, FL 34609	352-796-7211	800-423-1476 (Florida only)
South Florida WMD	3301 GunClub Road West Palm Beach, FL 33416	561-686-8800	800-432-2045 (Florida only)

Description of Pre-Drought Planning Efforts

Before the occurrence of a water supply shortage and the need to implement the emergency provisions of Drought Management Plan, it is important that certain pre-response measures be taken with the aim of conserving the system's source water, as well as the water distributed to the customer.

These actions include:

1. Identification of all major water users of the system obtained from billing records that include at least 10%, include wholesale customers.
2. Implementing a customer education program for the purpose of achieving water use reductions. An effective customer outreach program will keep the customer informed about the water supply situation, the actions to be taken to mitigate drought emergency problems, and how well the water systems is doing in terms of meeting the DMP goals. Keeping the customer involved, informed, and participating in the decision-making process is key to implementing an effective Drought Management Plan!
- 3.) Informing the local media, (if appropriate) in both print and local news programs. Information may also be posted on the water system's web site as necessary.

Designation of Drought and Water Shortage Conditions:

The Drought Management Plan must be developed by the water purveyor and consists of a combination of conditions that trigger or initiate water supply mitigation activities.

Typically, the water systems will use the following categories of Drought Action Phases:

Moderate Drought Phase

A Drought classified as a DO to D1 (Dry or Moderate) as designated by the US Department of Agriculture for the water purveyor location found at: http://www.drought.unl.edu/dm/DM_southeast.htm and *(include the relevant examples:)*

- ❑ Difficulty in Refilling Storage Tank(s)
- ❑ Daily Well Production at 30% over Previous Month Average
- ❑ Monthly Water Use that is 30% above Previous Month Average
- ❑ Drop in Static Well Level that Exceeds 3 feet (vertical turbine)
- ❑ Some Low Pressure Complaints Received During Peak Demand Periods
- ❑ No Measurable Precipitation for 7 days

Severe Drought Phase

A Drought classified as a D2 (Severe) as designated by the US Department of Agriculture for the water purveyor location found at: http://www.drought.unl.edu/dm/DM_southeast.htm and *(include the relevant examples:)*

- ❑ Inability to Refill Storage Tank(s)
- ❑ Daily Well Production at 50% over Previous Month Average
- ❑ Monthly Water Use that is 50% above Previous Month Average
- ❑ Drop in Static Well Level that Exceeds 5 feet (vertical turbine)
- ❑ Drawdown Interference noted when running wells in combination
- ❑ Low Pressure Complaints During Peak Demand Periods
- ❑ Areas in the Water System with Pressure below 20 psi
- ❑ Some Deterioration of Water Quality Caused by High Flow Conditions
- ❑ No Measurable Precipitation for 2 weeks
- ❑ Problems maintaining water pressure at critical facilities such as hospitals or urgent care centers

Extreme Drought Phase

A Drought classified as a D3 or D4 (Extreme or Exceptional) as designated by the US Department of Agriculture for the water purveyor location found at: http://www.drought.unl.edu/dm/DM_southeast.htm and *(include the relevant examples:)*

- ❑ Inability to Refill Storage Tank(s)
- ❑ Draining of Storage Tank Under Peak Demand Conditions
- ❑ Daily Well Production at 50% over Previous Month Average
- ❑ Well run log that exceeds 2 times daily average
- ❑ Monthly Water Use that is 50% above Previous Month Average
- ❑ Drop in Static Well Level that Exceeds 5 feet (vertical turbine)
- ❑ Drawdown Interference noted when running wells in combination
- ❑ Low Pressure Complaints During Peak Demand Periods
- ❑ Low Pressure Complaints During Peak and Non-Peak Periods
- ❑ Areas in the Water System with Pressure below 20 psi
- ❑ Demands that exceed WTP permitted capacity
- ❑ Deterioration of Water Quality Caused by High Flow Conditions
- ❑ Exceeding Engineering Demand Estimates for Current Period
- ❑ No Measurable Precipitation for 4 weeks
- ❑ Problems maintaining water pressure at critical facilities such as hospitals or urgent care centers

Cooperative Agreements and Alternative Water Suppliers

Successful drought management requires a comprehensive program by the water system. Where physical connections are in-place, Agreements with alternative water purveyors are included in the DMP. When these alternative water sources are available the Agreement shall include the maximum water volume, flow rate and pressure that will be supplied by the alternate water supply and any special conditions placed on the water purchaser that may interrupt this water supply when needed.

Where water may be provided by tankers, the Agreements with contractors to provide this service will be included in the DMP. The Agreement shall the maximum amounts of water volume to be transported, the method of providing the water to customers, and the times, numbers of transport vehicles and frequency of trips to be used in supplying water to the purchaser. Any special conditions placed on the water purchaser that may interrupt this water supply when needed will also be stated in the Agreement.

Drought Management Plan Mitigation Efforts

Description Water System Ability to Maintain System Reliability

Florida Rural Water Association will assist the water system in identifying current water system capabilities and in identifying and recommending capital improvements to improve the water system's ability to get through times of drought.

It is important that every water utility aggressively plan and build for future needs. This often means that the water system must continue to provide for system operation flexibility while providing improved pumping and storage capacity and new technologies to meet the demands of tomorrow. Florida Rural Water Association can assist the water system in developing a **Capacity Analysis**. This analysis is essential in identifying how past efforts have enhanced the system's ability to meet demand during drought conditions. Typically it will be necessary to also update the system's ongoing capital improvement program over the next five years.

Florida Rural Water Association assists small systems in performing a **Cost of Service Study** for their water system. The study evaluates the true and proposed costs associated with providing water to customers under drought conditions. Cost based rates are identified by a systematic analysis of the current and future costs for providing peak water service. The analysis takes into consideration the impact of using remaining treatment capacity, the timing of future expansions, maintaining regulatory compliance, funding operating requirements and the costs of, engineering design, and permitting.

Water Conservation Planning Benefits

Florida Rural Water Association can assist small utilities in implementing common water conservation measures that have been demonstrated to be effective for small water systems. Florida Rural Water Association has published "**Water Conservation Techniques For Small and Medium Water Systems**" that is available off the Florida Rural Water Association web site at www.frwa.net. This document identifies techniques that may be used by small and medium water systems to reduce water consumption. Generally conservation measures will be implemented in three phases. These include: Basic Water Conservation, Intermediate Water Conservation, and Advanced Water Conservation measures. These measures are implemented over a period of one to ten years. Florida Rural Water Association can help small water systems in implementing General Water Conservation Procedures that can be implemented at any time. Implementing conservation measures generally leads to a long-term water conservation plan.

Drought Management Response Authority and Policies

Declaration of Policy and Authority:

In order for any water system to issue a drought emergency, it must have the legal authority to do so. Where the water purveyor has governmental authority a Drought Response Ordinance is appropriate. The ordinance should be enabling but not prescriptive. This will allow the water system to modify the plan continuing to improve the plan's effectiveness without going back to the enabling body for approval.

When the water system is privately owned a Drought Response Policy is appropriate.

Purpose of Drought Response Ordinance or Policy

The objective of this Drought Response Ordinance or Policy is to establish authority, policy and procedures that describe the proper actions necessary for the protection of customer health, safety and welfare under described operating and drought conditions. Upon its adoption, the Drought Administrator can then effectively manage water demand during a drought-related shortage. The goal is to achieve the greatest customer benefit from limited supplies of water needed for domestic water use, sanitation, and fire protection and of allocate water for other purposes in an equitable manner.

This Ordinance or Policy outlines the actions to be taken for the conservation of water supplied by water purveyor. These actions are directed both towards an overall reduction in water usage and the optimal use of available supply.

This Ordinance or Policy authorizes and enables the Drought Administrator to declare the Drought Emergency and to enact the Phases of the Plan based on the system operating conditions that have been identified..

If it becomes necessary to conserve water in the Water System's service area due to drought, the Water System Administrator is authorized to issue a proclamation ("**Proclamation**") that existing conditions prevent or greatly inhibit supplying water demands. The Proclamation is an attempt to prevent depleting the water supply to the extent that water-use for human consumption, sanitation, fire protection, and other essential needs becomes endangered. Immediately upon issuance of such a Proclamation, regulations and restrictions set forth under the Ordinance or Policy become effective and remain in effect until the water supply shortage has ended and the Proclamation rescinded by the Drought Administrator.

Drought Management Phases, Conservation Goals, Metrics and Water Conservation Measures

Drought Designations and Water Use Requirements

Water uses that are regulated or prohibited under the Ordinance or Policy are considered to be “Non-Essential” and continuation of such uses during times of water supply shortages is deemed to constitute a waste of water that may subject the offender(s) to penalties and/or including discontinuation of service.

To reduce non-essential water demand, regulations and restrictions on the delivery and consumption of water are adopted by the water system. These restrictions are keyed to the declared drought phase.

Moderate Drought Phase Goals and Restrictions:

The Drought Administrator will make the determination if a moderate water supply shortage exists based on trigger levels. Upon this determination, the Water System will seek voluntary reductions from its customers in the use of water for all purposes and voluntary reductions on using water during certain peak water demand periods.

The goal during a Moderate Drought Phase is to achieve at least a reduction of 20% in residential water use and 15% in other water uses such as commercial, industrial, institutional and irrigation; and a reduction in overall water use of 15%.

To accomplish these goals, the Water System will use the following metrics:

Reduce average domestic water use to at minimum an average of 130 gallons per customer per day or 8,000 gallons per household per month.

The above goals will be accomplished by:

- a. Issuing a Proclamation to be released to local media, and/or its customers that Moderate drought conditions are present and Voluntary Conservation Measures are in-place.
- b. Publish in a newspaper of general circulation in the service area of the water system that the voluntary conservation measures are in-place in the water systems.
- c. The following Voluntary Water Conservation Measures that will be in force until lifted by the water purveyor:

**Voluntary Water Conservation Measures
To be Implemented During the Moderate Drought Phase**

1.	Eliminate the washing down of sidewalks, walkways, driveways, parking lots, tennis courts and other hard surfaced areas;
2.	Eliminate the washing down of buildings for purposes other than immediate fire protection;
3.	Eliminate the flushing of gutters;
4.	Eliminate the domestic washing of motorcycles, motorbikes, boats, cars, etc.;
5.	Eliminate the use of water to maintain fountains, reflection ponds and decorative water bodies for aesthetic or scenic purposes, except where necessary to support aquatic life
6.	Reduce watering of lawns, plants, trees, gardens, shrubbery and flora on private or customer property to the minimum necessary. Encourage outdoor watering to be done during off-peak hours.
7.	Reduce the amount of water obtained from fire hydrants for construction purposes,
8.	Discontinue fire drills or for any purpose other than fire-fighting or flushing necessary to maintain water quality;
9.	Limit normal water use by commercial and individual customers including, but not limited to, the following: Stop serving water in addition to another beverage routinely in restaurants; Stop maintaining water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support aquatic life
10.	Cease water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so.
11.	Intensify maintenance efforts to identify and correct water leaks in the distribution system.
12.	Cease to install new irrigation taps on the water system.
13.	Continue to encourage and educate customers to comply with voluntary water conservation.

Severe Drought Phase Goals and Restrictions:

The Drought Response Administrator will make the determination if a Severe Water Supply Shortage exists based on trigger levels.

Upon this determination, the Water System will seek mandatory reduction in the use of water for all purposes and mandatory restrictions on non-essential usage and restrictions on times when certain water usage is allowed. Specifically, the goal during this phase is to achieve at least a reduction of 25% in residential water use, 20% in all other water use categories, and a reduction in overall water use of 20%.

To accomplish these goals, the Water System will use the following metrics:

The water reduction goals during a Severe Drought Phase is to achieve a reduction of average water use by domestic customers to 120 gallons per household per day or an average of 6,000 gallons per household per month;

The above goals will be accomplished by:

- a. Issuing a mandatory water restrictions through a proclamation by the governmental body or by the water system owner.
- b. Provide written notification to the water customers by direct mail and at routine publication in a newspaper of general circulation in the service area of the water system.
- c. The following Mandatory Sever Drought Water Conservation Measures that will be in force until lifted by the water provider:

Mandatory Water Conservation Measures Implemented During the Severe Drought Phase

1.	Eliminate the washing down of sidewalks, walkways, driveways, parking lots, tennis courts, streets and other hard surfaced areas;
2.	Eliminate the washing down of buildings for purposes other than immediate fire protection;
3.	Eliminate the flushing of gutters
4.	Eliminate the domestic washing of motorcycles, motorbikes, boats, cars, etc.;
5.	Eliminate the use of water to maintain fountains, reflection ponds and decorative water bodies for aesthetic or scenic purposes, except where necessary to support aquatic life
6.	Reduce watering of lawns, plants, trees, gardens, shrubbery and flora on private or customer property to the minimum necessary. Encourage outdoor watering to be done during off-peak hours.
7.	Reduce the amount of water obtained from fire hydrants for construction purposes,
8.	Discontinue fire drills or for any purpose other than fire-fighting or flushing

	necessary to maintain water quality;
9.	Limit normal water use by commercial and individual customers including, but not limited to, the following: Stop serving water in addition to another beverage routinely in restaurants; Stop maintaining water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support aquatic life
10.	Cease water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so.
11.	Intensify maintenance efforts to identify and correct water leaks in the distribution system.
12.	Cease to install new irrigation taps on the water system.
13.	Control landscape irrigation by the utility's customers by staggering watering times
14.	Continue to encourage and educate customers to comply with mandatory water conservation.

Extreme Drought Phase:

The Drought Response Administrator will make the determination if an Extreme Water Supply Shortage exists based on trigger levels.

Upon this determination, the Water System will seek mandatory reduction in the use of water for all purposes and mandatory restrictions on non-essential usage and restrictions on times when certain water usage is allowed. Specifically, the goal during this phase is to achieve at least a reduction of 30% in residential water use, 25% in all other categories of water uses and a reduction in overall water use of 25%.

To accomplish these goals, the Water System will use the following metrics:

- a. Specifically, the goal during a Severe Drought Phase is to achieve a reduction of residential water use by the utility's customers to 100 gallons per household per day or 5,000 gallons per household per month
- b. Provide written notification to the customers and routinely publish in a newspaper of general circulation in the service area of the water system the Severe Conservation measures that the customers are requested to follow during Moderate Drought conditions.
- c. Eliminate all landscape irrigation by the utility's customers.
- d.. The following Mandatory Extreme Drought Water Conservation Measures that will be in force until lifted by the water provider:

**Mandatory Water Conservation Measures
Implemented During the Severe Drought Phase**

1.	Eliminate the washing down of sidewalks, walkways, driveways, parking lots, tennis courts, streets and other hard surfaced areas;
2.	Eliminate the washing down of buildings for purposes other than immediate fire protection;
3.	Eliminate the flushing of gutters
4.	Eliminate the domestic washing of motorcycles, motorbikes, boats, cars, etc.;
5.	Eliminate the use of water to maintain fountains, reflection ponds and decorative water bodies for aesthetic or scenic purposes, except where necessary to support aquatic life
	Eliminate filling or maintaining customer or private swimming pools;
6.	Reduce watering of lawns, plants, trees, gardens, shrubbery and flora on private or customer property to the minimum necessary. Encourage outdoor watering to be done during off-peak hours.
7.	Reduce the amount of water obtained from fire hydrants for construction purposes,
8.	Discontinue fire drills or for any purpose other than fire-fighting or flushing necessary to maintain water quality;
9.	Limit normal water use by commercial and individual customers including, but not limited to, the following: Stop serving water in addition to another beverage routinely in restaurants; Stop maintaining water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support aquatic life
	Limit irrigating golf courses and any portion of their grounds that use finished water
10.	Cease water service to customers who have been given a 10-day notice to repair one or more leaks and have failed to do so.
	Limit expanding commercial nursery facilities, placing new irrigated agricultural land in production, or planting or landscaping when required by site design review process.
11.	Intensify maintenance efforts to identify and correct water leaks in the distribution system.
12.	Cease to install new irrigation taps on the water system.
13.	Control landscape irrigation by the utility's customers by staggering watering times
14.	Continue to encourage and educate customers to comply with mandatory water conservation.

Water Rationing

If in the opinion of the Water Purveyor, if any level of drought threatens the protection of customer health and safety, the Water Purveyor is authorized to ration water.

In the opinion of the water purveyor, if a violation of Water Conservation Measures is observed on a customer's property, and after receiving a verbal or written warning is issued at the location where the violation is observed, water rationing to an individual customer may be initiated by the Water Purveyor. Enforcement procedures and fines may also be assessed.

Enforcement of Mandatory Water Conservation Measures

If any customer or customer employees, contractors or agents violates a Mandatory Water Conservation Measure, the customer shall be warned and/or served by written notice by registered mail, of such failure to comply. The citation shall include the date, time and type of water use violation.

After a warning has been issued, fines may be assessed individually for each occurrence, for any type of prohibited activity.

Fines may be assessed as surcharges that will be added to the amounts assessed on the monthly water bill in accordance with the following schedule:

Verbal Warning – A customer may be notified at any time by any means in writing such as a door hanger or in person by the water purveyor, water regulator, law enforcement officer or water purveyor's authorized agent, that a water violation has been observed on the customer's premises. A verbal warning is optional by the water purveyor and will depend on the severity of the drought emergency.

First Violation – A written warning issued to the customer's billing address that describes the violation(s) and that Mandatory Water Conservation Measures are In-Place. This warning is to be delivered by registered mail.

Second Violation – A \$50.00 surcharge may be added to the customer's water bill for each violation noted by the Water Purveyor after the written warning has been received by the customer by registered mail;

Third Violation - An additional \$100.00 surcharge shall be added to the customer's water bill for each and any violation(s) after the Second Violation;

Fourth Violation - The customer's water service may be immediately terminated and restored only after payment of a surcharge of \$500.00 in addition to all previously assessed surcharges and water charges that may be due.

Nothing in this section will prevent the water purveyor from rationing water to any customer location, where in the purveyor's opinion, violations of the mandatory Water Conservation Measures are occurring.

Law enforcement agencies, other authorized water regulatory agencies, or designated water system agents or employees, may enforce the provisions of Mandatory Conservation Measures.

Variances to the Drought Management Ordinance

It is recognized that situation may occur where customers, who in their belief, are unable to comply with the mandatory water use restrictions. Any customer may petition for a variance from restrictions by filing a written petition, with the water purveyor, within ten (10) working days after the issuance of the Proclamation requiring water use restrictions.

All petitions for variance shall contain the following information:

- a. Name and address of the customer and the name and address of the person filing the petition if different
- b. Purpose of water usage
- c. Special provision from which the petitioner is requesting relief
- d. Detailed statement as to how the curtailment declaration adversely affects the petitioner
- e. Description of the relief desired
- f. Period of time for which the variance is sought
- g. Economic value of the water use
- h. Damage or harm to the petitioner or others if petitioner complies with the Water Conservation Measures
- i. Restrictions with which the petitioner is expected to comply and the compliance date
- j. Steps the petitioner is taking to meet the restrictions from which the variance is sought and the expected date of compliance
- k. Any other information that the petitioner believes pertinent.

In order for the variance to be granted, the petitioner must demonstrate clearly that compliance with the Water Conservation Measures cannot be technically accomplished during the duration of the water supply shortage without having an adverse impact upon the petitioner's interests.

In order for the variance to be granted, the petitioner must demonstrate clearly that compliance with the Water Conservation Measures cannot be technically accomplished during the duration of the Declared Phase without having an adverse impact upon the petitioner's interests.

Variations will not be granted under conditions that in the Water Purveyor's opinion, may result in adverse impact on the water supply or may result in setting of precedents that may collectively cause adverse impact to the water supply.

Where variations are granted, other penalties provisions may be imposed incorporated as a condition for the granting of the variance.

Legal Status of the Ordinance or Drought Management Policy

- 1) If any portion of this Ordinance or Policy is held to be unconstitutional for any reason, the remaining portions of the Drought Response Ordinance shall not be affected.
- 2) The provisions of this Ordinance or Policy shall prevail and control in the event of any inconsistency between this Ordinance and other rules and regulations of the Water System.
- 3) Nothing in this Ordinance or Policy shall be deemed to invalidate or be interpreted in a manner inconsistent with any covenants now in effect and given as security to holders of bonds secured by revenues of the system.
4. All water requirements of regulatory agencies that have been enacted by law shall be adhered to and hold precedence over any rules in the Drought Management Plan, Drought Management Policy or the Drought Management Ordinance.

Appendix 1 - Sample Drought Management Ordinance

Sec. 1. The Mayor may declare a Drought Emergency.

(a) *State of emergency.* The mayor, or mayor pro-tem if the mayor is unavailable or his/her designee, may declare a state of emergency pursuant to authority granted by law and exercise the powers granted therein.

(b) Drought Emergency.

(1) *Declaration of Drought Emergency.* Upon the recommendation of the designated Drought Emergency Manager or his/her designee, the mayor may declare a Drought Emergency, and in consultation with Drought Emergency Manager, impose water use restrictions up to and including water rationing by the city's water utility and the prohibition of any and all uses as may be nonessential and make such other orders relating to the potable water supply as may be necessary to protect the public health, safety and welfare.

(2) *Definition of nonessential water use.* For purposes of this section, nonessential water uses include those uses that are deemed by the Drought Emergency Manager in the Drought Management Plan as not essential for the preservation of public health and safety. The term "nonessential uses" may include but is not limited to water used for the irrigation of vegetation.

(3) *Special relief.* Any order issued under authority of this section shall include a provision whereunder consumers who believe they will suffer undue hardship or believe their health and/or safety is jeopardized under the provisions of the order may request that the Drought Emergency Manager or his/her designee grant special, administrative relief from the water use restrictions and be afforded an opportunity to be heard on such request.

(4) *Enforcement.* Enforcement of the provisions of orders issued under the authority of this section shall be as provided under City Code. In addition to the foregoing, the Drought Emergency Manager or his/her designee is authorized to discontinue water service to any consumer as necessary to enforce such orders. The Drought Emergency Manager shall adopt rules regarding such discontinuance to afford the consumer notice and an opportunity to be heard.

(5) *Penalties.* Penalties for violation of orders issued under the authority of this section shall be as provided in the Drought Management Plan.

(c) *Penalties.* Except as provided in subsection (b)(5) above:

(1) Any violation of a provision of any emergency measure established pursuant to F.S. § 870.043 shall be misdemeanor of the first degree, punishable as provided in F.S. § 775.082 or § 775.083.

(2) Any violation of a provision of any emergency measure established pursuant to F.S. § 252.38 shall be a misdemeanor of the second degree, punishable as provided in F.S. § 775.082 or § 775.083.

State law references: State Disaster Preparedness Act, F.S. Ch. 252; emergency continuity of government, F.S. Ch. 22; enabling authority for local officers, F.S. § 22.05; Florida Mutual Aid Act, F.S. § 23-12 et seq.; emergency measures by local authorities, F.S. § 870.041 et seq.

Appendix 2 - Sample Drought Management Policy for Private System

Drought Management Authority

The purpose of this policy is to establish authority to implement Drought Emergency measures when necessary to do so based on a Drought Management Plan for the public water supply system at _____.

The Plan shall be initiated by the Owner _____ based on weather and water operating conditions described in the plan that occur simultaneously. The owner will notify each water system customer about the problems that may be caused by drought by posting the Drought Management Plan in a conspicuous location at the site visible to all customers.

Water System Customer Responsibilities

Each customer connecting to the system will be provided an educational brochure that describes the Drought Management Plan.

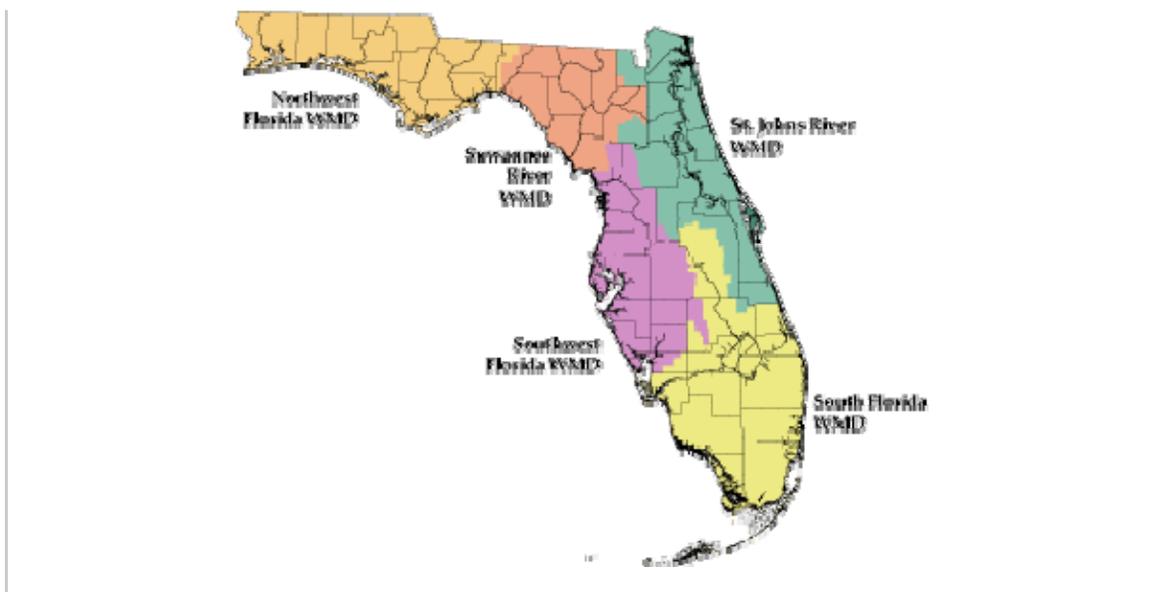
Each customer, as a condition to connection to the water system, shall be required as a condition of water service, to allow access to private property by authorized water system owner's representative(s) for the purposes of locating violations of this policy during a declared drought condition by the Owner.

Water System Operators Responsibilities

The water system owner shall be responsible to inform water system operators that operate and maintain the public water system. Each employee and each contract employee will be provided with a copy of this policy. As a condition of employment they shall be required to become familiar with the Drought Management Plan and the provisions described in it. System operators will ensure that the Plan is adhered to when a Drought Emergency has been declared by the Owner.

Appendix 3 – Florida Water Management Drought Restrictions

Florida has five regional water management districts who are responsible for maintaining the State's water supplies and integrity of environmental sensitive lands such as wetlands, streams, lakes and rivers within set drainage districts. The water management districts administer flood protection programs and perform technical investigations into water resources. The districts also develop water management plans for water shortages in times of drought and to acquire and manage lands for water management purposes under the Save Our Rivers program. Regulatory programs delegated to the districts include programs to manage the consumptive use of water, aquifer recharge, well construction and surface water management.



Unnecessary high withdrawal of water for public supplies can result in reduced water supplies and environmental degradation under drought conditions. Therefore the state's water management districts issue water use restrictions under declared drought conditions. The reader should contact the specific water management district where the water system resides to determine the drought requirements for that area.

WMD	JURISDICTION	OFFICE
Northwest Florida WMD <small>EXIT Disclaimer</small>	Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson (western half), Leon, Liberty, Okaloosa, Santa Rosa, Wakulla, Walton, & Washington	81 Water Management Drive Havana, FL 32333 850/539-5999
Suwannee River WMD <small>EXIT Disclaimer</small>	Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Madison, Suwannee, Taylor, Union and portions of Alachua, Baker, Bradford, Jefferson & Levy	9225 CR 49 Live Oak, FL 32060 386/362-1001
St. Johns River WMD <small>EXIT Disclaimer</small>	Brevard, Clay, Duval, Flagler, Indian River, Nassau, Seminole, St. Johns, Volusia, and portions of Alachua, Baker, Bradford, Lake, Marion, Okeechobee, Orange, Osceola & Putnam	P.O. Box 1429 Palatka, FL 32178-1429 386/329-4500
Southwest Florida WMD <small>EXIT Disclaimer</small>	Citrus, DeSoto, Hardee, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Sarasota, Sumter, and portions of Charlotte,	2379 Broad Street Brooksville, FL 34604-6899 352/796-7211



Highlands, Lake, Levy,
Marion & Polk

[South Florida](#)
[WMD](#)
[EXIT Disclaimer](#)

Broward, Collier, Dade,
Glades, Hendry, Lee,
Martin, Monroe, Palm
Beach, St. Lucie, and
portions of Charlotte,
Highlands, Okeechobee,
Orange, Osceola & Polk

3301 GunClub Road
West Palm Beach, FL
33406
561/686-8800

Water Restrictions

Petition for variance from restrictions

Please check with our staff to confirm that your situation requires a variance. Some circumstances have automatic exemption.

Download the [petition for variance application](#) .

Hydrologic conditions reports

A historical record for long-term local and regional analysis.

Fact sheets for phase II severe water shortage

- [Agriculture](#)
- [Athletic play areas](#)
- [Commercial and industrial water use](#)
- [Golf courses](#)
- [Local governments & water utilities](#)
- [New plant establishment](#)

Drought links

- [USGS Drought Watch](#)
- [Florida Water Watch](#)

Extended water restrictions limit lawn watering to once per week.

In its November 26, 2007 meeting, the Governing Board passed the third [Board Order Modifying Water Shortage Order SWF 07-02](#) extending the modified Phase II (Severe Water Shortage) restrictions through June 30, 2008. A water shortage was originally declared by [Order SWF 07-02](#) and passed by Executive Director David L. Moore on January 9, 2007. [A news release is also available.](#)

Follow these water restrictions:

(unless your city or county has stricter rules)

If your address (house number) ends in...

- ...0 or 1, water only on Monday
- ...2 or 3, water only on Tuesday
- ...4 or 5, water only on Wednesday
- ...6 or 7, water only on Thursday
- ...8 or 9*, water only on Friday

** and locations without a discernible address*

These restrictions remain in effect through June 30, 2008 for use of water from public and private utilities, wells and surface water sources (ponds, rivers, etc.).

Lawn & landscape watering

- If your [city or county](#) already has special once-per-week schedule in effect, continue following it; otherwise refer to the schedule above.
- Lawn and landscape watering remains limited to a once-per-week schedule.
- Unless your city or county already has stricter hours in effect, properties under two acres in size may only water before 8 a.m. or after 6 p.m.
- Unless your city or county already has stricter hours in effect, properties two acres or larger may only water before 10 a.m. or after 4 p.m.
- Variances are available if a property proposes an alternative irrigation plan (such as splitting a large property into two pieces and assigning a different day to each piece).
- Handwatering or microirrigation of non-lawn landscape is allowed.
- Certain exemptions are available, such as allowances for [new plant material](#) .

Local governments & water utilities

- Assist the District with water shortage restriction enforcement, including “any time” coverage for cases referred by the District (when a Water Use Permit is not involved).
- Review the availability of backup water supplies for potable and fire-fighting purposes.
- Institute/accelerate local water conservation efforts, including a water system audit.

- Implement appropriate changes to water system flushing, including on-site signage.

Golf courses, agricultural operations & other water users

- Fountains and other aesthetic-only water features may only operate 8 hours per day.
- Car washing is limited to once per week; however, fundraiser events are still allowed.
- Comply with all Water Use Permit conditions, including allowable drought quantities.
- Reduce off-site discharge and mobile equipment washing.
- Follow applicable best management practices, including watering times and applications.

Contact

If you have additional questions or if you wish to report a possible violation, please contact us:

Email

water.restrictions@watermatters.org

Water restriction hotline: 1-800-848-0499 (Florida only)

Automated response system; personal assistance is available during business hours.

Telephone

1-800-423-1476, ext. 4498 (Florida only)
or (352) 796-7211, ext. 4498

Fax

(352) 544-5148 (for sending in “petition for variance” applications or ADA-related communication)

Address

**Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899**