

DROUGHT RESPONSE AND WATER CONSERVATION PLAN

Section 1. PURPOSE

The purpose of this plan is to provide for the declaration of the official phases of water supply shortages and for the implementation of voluntary and mandatory water conservation measures by the Bedford Regional Water Authority (“Authority”). This plan shall apply to the systems owned by the Authority in the event a shortage is declared.

Section 2. WATER SOURCES

- A. Water systems in Bedford County, including the Town of Bedford, are permitted and operated as several separate systems. Limited interconnection exists. This plan may be applied to all systems, or to individual systems, or to portions of the systems as required by circumstances at the time of the declaration. Where water is purchased from another locality or provider, the Authority will adhere to the provisions of any contract that has been made with that provider, and will generally follow suit with any restrictions that they may implement; this includes, but is not limited to, the following providers:
 - 1. City of Lynchburg.
 - 2. Western Virginia Water Authority.

- B. The Authority provides water under contract to other communities inside and outside of Bedford County; these contracts shall include provisions for water restrictions as are outlined in this plan. This includes, but is not limited to, the following users and/or customers:
 - 1. Franklin County.
 - 2. Western Virginia Water Authority.
 - 3. Mariners Landing.

Section 3. WATER SHORTAGE STAGES

- A. The Commonwealth of Virginia has stated that every municipality should have at least three (3) graduated stages of responses to the onset of reduced water conditions; for the Authority this includes the declaration of a water shortage advisory, a water shortage alert, and a water shortage emergency.
 - 1. WATER SHORTAGE ADVISORY stage responses are generally responses intended to raise awareness of water users in the jurisdiction to climatic or system conditions that are likely to precede the occurrence of a drought or a decreased supply of source water. Public outreach activities to raise this awareness are identified as well as conservation activities that may be used to reduce demand.
 - 2. WATER SHORTAGE ALERT stage responses are generally responses that are required when the onset of a significant drought event is imminent or a water system source has a reduced capacity. Voluntary water conservation activities are identified with the goal of reducing water use by 5 – 10%, in accordance with 9 VAC 25-780-120.A.2.b.
 - 3. WATER SHORTAGE EMERGENCY stage responses are generally responses that are required during the height of a significant drought event, or when a water source has been greatly depleted. Mandatory water conservation activities are identified with the goal of reducing water use by 10 – 15%, in accordance with 9 VAC 25-780-120.A.2.c.

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- B. The Authority will declare the above stages as their response as the conditions warrant. Some of the drought indicators that may be used to determine the stage include those criteria shown in the following tables:

1. Smith Mountain Lake Water Surface Level

Shortage Stage	Criteria
Advisory	793 to 791.5 feet mean sea level
Alert	791.5 to 790 feet mean sea level
Emergency	Below 790 feet mean sea level

2. Stoney Creek Reservoir Level

Shortage Stage	Criteria
Advisory	3.0 feet below spillway
Alert	6.0 feet below spillway
Emergency	9.0 feet below spillway

3. Stream Flow Levels

Shortage Stage	Criteria
Advisory	Representative daily stream flows between the 10 th and 25 th percentile for return flow frequencies
Alert	Representative daily stream flows between 5 th and 10 th percentile for return flow frequencies
Emergency	Representative daily stream flows below the 5 th percentile for return flow frequencies

4. Precipitation Levels (based on percentage of Normal Precipitation)

Months Analyzed	Normal	Shortage Stage		
		Advisory	Alert	Emergency
October – December	>75.0	<75.0	<65.0	<55.0
October – January	>80.0	<80.0	<70.0	<60.0
October – February	>80.0	<80.0	<70.0	<60.0
October – March	>80.0	<80.0	<70.0	<60.0
October – April	>81.5	<81.5	<71.5	<61.5
October – May	>82.5	<82.5	<72.5	<62.5
October – June	>83.5	<83.5	<73.5	<63.5
October – July	>85.0	<85.0	<75.0	<65.0
October – August	>85.0	<85.0	<75.0	<65.0
October – September (and previous 12 months)	>85.0	<85.0	<75.0	<65.0

Section 4. NOTIFICATION

- A. The Authority will provide notification to the customers that are affected by the declaration of the water shortage. This notification may be provided directly to the customers by mail or email, and/or it may be published in at least one (1) newspaper of general circulation, and/or it may also be publicized through the general news media, and/or any other appropriate method for making

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such notification public.

- B. The Authority will notify the Bedford County Administrator and the Town Manager of Bedford prior to initiating any water shortage declaration.

Section 5. DECLARATION OF A WATER SHORTAGE ADVISORY

- A. Whenever the Authority finds that a potential shortage of water supply is possible, it shall be empowered to declare that a Water Shortage Advisory exists. The Executive Director of the Authority shall, on a regular basis, monitor the supply and demands upon that supply. In addition, the Executive Director is authorized to call upon all water customers to employ voluntary water conservation measures to limit water use and eliminate the waste of water. Customers will be requested to eliminate non-essential uses of water.
- B. Non-Essential Uses of Water Defined:
 - 1. Ornamental purposes:
 - a. Examples: Fountains, reflecting pools, and/or artificial waterfalls.
 - b. Exceptions: None.
 - 2. Outdoor non-commercial watering (public or private):
 - a. Examples: Gardens, lawns, parks, golf courses (except greens), playing fields, and/or other recreational areas.
 - b. Exceptions:
 - i. Agricultural use for the maintenance of livestock to the extent that no other sources are available.
 - ii. Watering by commercial nurseries at a minimum level necessary to maintain stock, to the extent that sources of water other than fresh water are not available or feasible to use.
 - iii. The Executive Director of the Authority may grant exceptions to community facilities of particular social importance provided that sufficient supplies are available. Exceptions are to be rescinded if the supply situation worsens.
 - iv. Use of fresh water at a minimum rate necessary to implement re-vegetation following earth moving, where such re-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 fresh water are not available or feasible to use.
 - v. Watering of shrubbery, trees, lawn, grass, plants or other vegetation from a watering can or other container not exceeding three (3) gallons in capacity.
 - 3. Filling and operation of swimming pools:
 - a. Examples: Manufactured or constructed recreational pools that hold more than 30 gallons.
 - b. Exceptions (unless a contamination of water supplies initiated the shortage condition):
 - i. Residential pools which serve more than 25 dwelling units.
 - ii. Pools used by health care facilities for patient care and rehabilitation.
 - iii. Municipal pools.
 - 4. Washing of motor vehicles:

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- a. Examples: Automobiles, trucks, boats, and trailers.
- b. Exceptions:
 - i. Commercial car and truck washes.
5. Serving water in restaurants, clubs, or eating-places:
 - a. Examples: Drinking water for customers.
 - b. Exceptions:
 - i. Specific request or order by customer for drinking water.
6. Fire Hydrants:
 - a. Examples: Any purpose, including use of sprinkler caps and testing fire apparatus and for fire department drills.
 - b. Exceptions:
 - i. Firefighting.
 - ii. Health protection purposes, if specifically approved by the Bedford County Health Department.
 - iii. Certain testing and drills by the fire department, if in the interest of public safety and approved by the Authority's Board of Directors.
7. Flushing of sewers and hydrants; washing of paved areas.
 - a. Examples: Cleaning sidewalks, driveways, etc.
 - b. Exceptions:
 - i. As needed to ensure public health and safety, and approved by the Executive Director of the Authority.
8. Air conditioning:
 - a. Examples: Refilling cooling tower after draining.
 - b. Exceptions:
 - i. Refilling for startup at the beginning of the cooling season.
 - ii. Make-up of water during the cooling season.

Section 6. DECLARATION OF A WATER SHORTAGE ALERT

Whenever the Authority finds water supplies (i.e., from all available sources) to be consistently below seasonal averages, and if they continue to decline and may not be adequate to meet normal needs, or a contamination situation exists that may threaten water quality, it shall be empowered to declare that a Water Shortage Alert exists. The Authority shall continue to encourage voluntary water conservation measures defined previously under the Advisory declaration, and further shall impose a ban on all non-essential water uses for the duration of the shortage until it is declared to have ended by the Authority.

Section 7. DECLARATION OF A WATER SHORTAGE EMERGENCY

- A. Whenever the Authority finds that raw water or finished water supplies are below the level necessary to meet normal needs and that serious shortages exist, it shall be empowered to declare that a Water Shortage Emergency exists. In addition to all the provisions of the previously defined Alert declaration, the Emergency Declaration shall also ban all other uses not specifically defined as being Essential Uses. These restrictions shall be considered on going until the emergency is declared ended by the Authority's Board of Directors.

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B. Essential Uses of Water Defined:

1. Domestic Use:
 - a. Examples: Water necessary to sustain human life and the lives of domestic pets, and to maintain minimum standards of hygiene and sanitation.
 - b. Exceptions:
 - i. Watering of shrubbery, trees or ornamental plantings from watering cannot exceed three (3) gallons in capacity.
2. Health Care Facilities:
 - a. Examples: Hospitals, nursing homes, etc.
 - b. Exceptions:
 - i. Patient care and rehabilitation.
3. Public Use:
 - a. Examples: Parks, golf courses, playing fields, and other recreational areas.
 - b. Exceptions:
 - i. Firefighting.
 - ii. Health and public protection purposes, if specifically approved by the Bedford County Health Department and the Authority's Board of Directors.
4. Industrial:
 - a. Examples: Manufacturing plants and other businesses.
 - b. Exceptions:
 - i. Process water.
 - ii. Make up water for cooling towers.

Section 8. SHORTAGE WATER RATES

- A. Following the declaration of a Water Shortage Emergency, and notification and consultation with the Board of Supervisors, the Authority may adopt shortage water rates designed to conserve water supplies. Such rates may provide for, but will not be limited to, the following:
 1. Higher charges per unit for increasing usage (increasing block rates);
 2. Uniform charges for water usage per unit of use (uniform unit rate);
 3. Extra charges for use in excess of a specified level (excess demand surcharge);
 4. Discounts for conserving water beyond specified levels; or
 5. Rates to establish and enforce rationing by applying a penalty for the volume of water consumed above allocated consumption level.

Section 9. PRIVATE NON-POTABLE IRRIGATION SYSTEMS

The Authority recognizes that there exist many private non-potable water systems in Bedford County expressly for irrigation. Where such a system is in use during any water shortage condition, the owner is requested to post signs stating that a private non-potable system is used for irrigation.

Section 10. WATER CONSERVATION MEASURES

- A. Goals: The Authority encourages the routine and regular conservation of water resources at all

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times, including those times when none of the water shortage stages have been declared. The goal of these conservation measures is to reduce the long term water demand by as much as 10%.

B. Objectives:

1. Preservation and Protection of Natural Resources
 - a. Conserving water can help preserve the natural resources. Conserving water means more water is available to serve additional water needs, as well as for wildlife needs and recreation uses.
 - b. Water conservation practices can result in lower wastewater discharges which can mean an improvement in overall water quality.
 - c. Conserving water diminishes the need to find or build new water sources, leaving them in reserve for future use.
2. Savings for Customers
 - a. Conserving water can reduce the amount of money spent each month by the Authority's customers due to purchasing less water from the Authority.
 - b. The Authority saves the money by reducing the amount of money spent pumping and treating water before and after use, and the savings can then be passed along to the customers.
 - c. Reducing water demands can delay capital expenditures delayed for additional water sources and treatment facilities.
3. Insuring the Reliability of the Water Supplies
 - a. Water conservation can positively affect the reliability of the water supplies during periods of high demands (such as the summer months).
 - b. Water conservation discourages wasteful water use at all times and discourages non-essential water use during droughts.
 - c. Conservation can reduce the frequency and duration that the Authority is required to implement the Water Shortage Stages during periods of drought.

C. Methods of conservation

1. Authority conservation:
 - a. Reduce waterline flushing: Ensure that waterline designs include the smallest diameter pipes that will provide for long term capacities.
 - b. Water Meter Replacement: Replace water meters that do not accurately record the amount of water being sold.
 - c. Eliminate water connections that are not metered.
 - d. Reduce and minimize backwash water cycles to the extent practical at water treatment plants.
 - e. Repair leaking waterlines as soon as they are found.
 - f. Implement a capital replacement program when funds are available to replace older waterlines that are leaking and/or routinely require repairs.
2. Customer conservation: Customer are encouraged to regularly eliminate Non-Essential Uses of Water as defined in this policy. Information and suggestions on conserving water can be found on the Authority's website www.brwa.com.

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D. Milestones

1. The Authority will routinely monitor the accountability and water loss of the Authority's water systems. This will be performed by:
 - a. comparing the difference in the volume of water produced versus the volume of water sold
 - b. analyzing the amount of water that is metered for non-sale purposes, such as flushing or backwashing filter
 - c. routinely testing water meters to ensure that they are accurately measuring the volume of water passing through the meters
2. When the accountability drops below 70%, the Authority will attempt to identify the nature of the water losses, and take steps towards improving the accountability. By improving the accountability, it is anticipated that the goals of these water conservation measures can be accomplished.

Section 11. ENFORCEMENT

- A. Any person who violates the provisions of this policy, who fails to carry out duties and responsibilities imposed by this policy, or who impedes or interferes with any action undertaken or ordered pursuant to this policy shall be subject to the following penalties:
 1. If the Authority learns of any violation of any water use restriction imposed pursuant to this policy, a written notice shall be provided to the customer on record for the property where the violation occurred and to any other person known to the Authority who is responsible for the violation or its correction. Said notice shall describe the violation and order that it be corrected, cured, or abated immediately or within such specified time as the Authority determines is reasonable under the circumstances. If the order is not complied with, the Authority may restrict or terminate water service to the customer subject to the following procedures:
 - a. The Authority shall give the customer notice by mail, email, or messenger that, due to the violation, water services will be restricted or discontinued within a specified time. The customer will have the opportunity to appeal restriction or termination by requesting a hearing scheduled before the Board of Directors of the Authority.
 - b. If such a hearing is requested by the customer charged with the violation, he or she shall be given a full opportunity to be heard before restriction or termination is ordered.
 - c. The Board of Directors shall make finding of fact and order whether service should continue or be terminated or restricted.
 2. The Authority's standard Reconnection Fee shall be paid for the reconnection of any water service restricted or terminated due to the violation of any of the terms of this policy.

Section 12. SEVERABILITY

If any provision of this policy is declared unconstitutional, or the application thereof to any person or circumstance is held invalid, the constitutionality of the remainder of the policy and its applicability to other persons and circumstances shall not be affected thereby.

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Section 13. REFERENCES

The Bedford County Code related to this policy can be found under § 18-400 - Conservation of Water During Emergencies.

Section 14. DEFINITIONS

- A. "Advisory": as the term is used in this policy, shall mean that conditions exist which indicate the potential for serious water supply shortages.
- B. "Alert": as the term is used in this policy, shall mean that water supplies (from all available sources) are consistently below seasonal averages and, if they continue to decline, may not be adequate to meet normal needs; or a contamination situation exists that may threaten water quality.
- C. "Authority": the Bedford Regional Water Authority.
- D. "Commercial Customer": as the term is used in this policy, shall mean commercial, industrial, institutional, public, and all other such users, with the exception of hospitals and health care facilities.
- E. "Contamination": as the term is used in this policy, shall mean the addition to any watershed, reservoir, storage tank, well, well recharge area, or distribution system of any material that appears in an above-normal concentration or has high nuisance or harmful effect on the consumer or the system.
- F. "Customer": as the term is used in this policy, shall mean any person using water for any purpose from the Authority's water distribution system and for which either a regular charge is made or, in the case of bulk sales, a cash charge is made at the point of delivery.
- G. "Emergency": as the term is used in this policy, shall mean that water supplies are below the level necessary to meet normal needs and that serious shortages exist in the area, or water quality has been threatened due to a contamination situation.
- H. "Excessive Use": as the term is used in this policy, shall mean the usage of water by a water customer in excess of the water allotment provided under the water rationing provisions of this policy for that customer, over any applicable period.
- I. "May" is permissive.
- J. "Rationing": as the term is used in this policy, shall mean procedures established to provide for the equitable distribution of critically-limited water supplies, in order to balance demand and limited available supplies, and to ensure that sufficient water is available to preserve public health and safety.

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- K. "Reclaimed Water": as the term is used in this policy shall mean wastewater which has been treated to allow reuse.
- L. "Service Interruption": as the term is used in this policy shall mean the temporary suspension of water supply, or reduction of pressure below that required for adequate supply, to any customer, portion of a water supply, or entire system.
- M. "Shall" is mandatory.
- N. "Waste of Water": as the term is used in this policy, includes, but is not limited to, (1) permitting water to escape down a gutter, ditch, or other surface drain; or (2) failure to repair a controllable leak of water due to defective plumbing.
- O. "Wastewater": as the term is used in this policy, shall mean water which has been previously used for industrial, municipal, domestic, or other purpose, and has not been returned to the surface or groundwater source.
- P. "Water": as the term is used in this policy, shall mean water available to the Authority for treatment or any treated water introduced by the Authority into its water distribution system, including water offered for sale.

Section 15. REVISIONS

- A. This policy was approved and adopted by the Authority's Board of Directors on July 15, 2014.