

WATER SHORTAGE RESPONSE PLAN (WSRP) WESTERN CAROLINA UNIVERSITY

WATER SYSTEM NC0150116

PURPOSE

The purpose of this WSRP is to define actions to be taken in the event of a potential water shortage or short duration or sudden water shortage.

Potential water shortages could normally be due to an extended drought condition. However, it should be noted that even during the drought conditions of the past years, the Western Carolina University (WCU) water source, the run of the Tuckasee River, has far exceeded the maximum withdrawal rate of the WCU Water Plant and no water shortages were experienced.

Short duration or sudden water shortages could be due to treatment or distribution problems, such as line breaks, flood, natural disasters, or raw water quality problems which would render the WCU Water Plant unable to meet the demand of the campus. The short duration or sudden water shortage is the most likely scenario.

AUTHORIZATION

If the availability of water so limits the water supply of the WCU Water System that unrestricted use of water may endanger the adequacy of water available to the campus community, the Associate Vice Chancellor for Facilities Management or the Director of Operations and Maintenance in the Associate VC's absence shall make a recommendation to The WCU Chancellor, or designee, to allow the implementation of the WSRP.

Mr. Joe Walker, PE
Associate Vice Chancellor for Facilities Management
Western Carolina University
828-227-7442
jwalker@wcu.edu

PUBLIC EDUCATION AND AWARENESS

Notification methods for informing the campus community about water use policies and restrictions would be primarily by use of the WCU website, campus radio station, campus wide email and the news briefs on the myWCU portal.

WATER USE CLASSIFICATIONS

Class 1 ESSENTIAL, necessary for the maintenance of public health and safety includes:

- Residence Halls

- Dining Facilities
- Public Restroom Facilities
- Firefighting Measures

Class 2 SOCIALLY OR ECONOMICALLY IMPORTANT, all uses other than those included in classes 1 and 3 includes:

- Outdoor watering using conservation measures
- Filling and operation of swimming pool
- Air conditioning make-up water

Class 3 NON-ESSENTIAL includes:

- Gardens
- Lawns
- Sports fields and other recreational areas except as required for safety

PHASED WATER SHORTAGE RESPONSE MEASURES VS YEAR-ROUND WATER USE POLICY

WCU encourages year-round efficient use of water. WCU carefully monitors demand and supply by monitoring average daily demand as a percent of available supply while checking the run of the river flow in the Tuckasegee River and flow over the WCU impoundment dam.

WCU has an active inspection program for the maintenance and repair of leaking faucets, restroom fixtures, and water distribution piping.

WCU maintains potable water storage facilities at or close to capacity.

PHASED CONSERVATION MEASURES AND WATER USE RESTRICTIONS TO REDUCE DEMAND FOR DRINKING WATER

Drought Declaration

The WCU Chancellor or designee, upon recommendation of Facilities Management personnel, will make a formal drought or shortage declaration authorizing implementation of the appropriate phase to reduce demand for drinking water (Chancellor's authority per NCGS 116).

Voluntary Phase

The specific trigger for initiating this phase would be minimal river flow over the flash boards on top of the WCU impoundment dam on the Tuckasegee River. The following actions shall apply:

1. Issue a water shortage advisory to the campus community.
2. Request voluntary conservation from all water users.
3. Advise all personnel responsible for campus buildings to strictly adhere to water conservation measures.

Mandatory Phase

The specific trigger for initiating this phase would be the lack of river flow over the flash boards on top of the WCU impoundment dam on the Tuckaseigee River. In addition to the voluntary guidelines already in effect, the following ban on water use shall apply:

1. Watering of lawns, shrubbery, trees, and gardens.
2. Washing down outside areas such as driveways, parking lots, sidewalks, buildings, and windows.
3. Use of water from fire hydrants for any purpose other than fire suppression.
4. Refilling of drained swimming pools.

Emergency Phase (due to a raw water source problem)

The specific trigger for initiating this phase would be a drop in the level of the impoundment behind the WCU dam on the Tuckaseigee River to a point six inches below the top of the flash boards on the dam. In addition to the Voluntary and Mandatory phases the following ban shall apply:

1. Addition of water into swimming pools.
2. Use of any water outside of buildings for any use other than a fire emergency.
3. Operating water-cooled air conditioning or other equipment that does not recycle cooling water.

Emergency Phase (due to a water plant infrastructure problem or inability to treat water)

Depending on the estimated duration of the emergency, the following, in addition to the previous Emergency Phase as detailed above, shall apply:

1. Water rationing would take place if necessary to maintain a minimum level of water in storage for fire suppression purposes.

In this emergency phase, if the duration is such that rationing becomes necessary, emergency application will be made to Tuckaseigee Water and Sewer Authority to utilize its water supply until the emergency condition ends.

Spikes in Demand

The WCU Water Plant, as stated earlier and as a matter of standard practice, maintains all storage facilities at or close to full capacity. This is to maintain a reserve of water to be able to ride through any unforeseen spikes in demand.

A decision would be made by Facilities Management personnel, based on the nature, duration, and rate of consumption of the spike, as to which conservation phase is appropriate.

The trigger for action is the rate of drop in level of the storage facilities when the level of water reaches 7 feet, and the rate of loss exceeds the capacity of the water plant to maintain the level of water in storage.

Return to Normal Water Use

Based on reversal of triggers and rate of reversal of triggers, Facilities Management personnel will determine which restrictions may be lifted and will notify the campus community.

Enforcement

Enforcement will be by directives from the WCU Chancellor, or designee, based on recommendations by the Associate Vice Chancellor of Facilities Management or the Director of Operations and Maintenance for Facilities Management.

Failure to comply with any of the conservation phases will result in the closing, by Facilities Management personnel, of distribution system valves feeding those restricted or banned activities.

Public Comment

The WSRP is reviewed by the University Executive Council. Upon Council approval, the WSRP is distributed by email to the campus community for comment prior to final adoption.

Variance Protocol

Water restriction variance requests are made to Facilities Management via email. The requests will be reviewed by the Facilities Management Administration. Approval is based on health/safety considerations and economic factors as well as availability of water.

Effectiveness

Effectiveness is based on daily review of water plant production with a comparison of the daily production to historic production data.

Revision

The WSRP is reviewed and revised as required if determined ineffective in conserving water. The effectiveness of the plan is reviewed daily when implemented.

The WSRP is reviewed to adapt to new circumstances such as growth of the campus, population changes, and changes to campus facilities.

The WSRP is reviewed daily to determine effectiveness after implementation of emergency restrictions.

The WSRP will be reviewed and is subject to revision at intervals not to exceed five years.

WSRP revision is the responsibility of the Director of Operations and Maintenance of Facilities Management with approval by the Associate Vice Chancellor of Facilities Management.