APPALACHIAN STATE UNIVESITY

WATER TREATMENT PLANT

PWS ID #NC 01-95-101

WATER SHORTAGE RESPONSE PLAN (WSRP)

Appalachian State University

Facility Operations

March 20nd, 2025

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Introduction

As a community water system subject to G.S. 143-355 (l) Appalachian State University is required to submit a Water Shortage Response Plan (WSRP) as part of their Local Water Supply Plan (LWSP). Recently adopted rules governing water use during droughts and water emergencies (15A NCAC 02E. 0607) stipulate specific issues that must be included in those plans. This plan has been submitted to comply with G.S. 143-355.

A. Authority for WSRP Implementation Responsible Authority for Enacting the Plan:

Primary Authority:

Jason Harkey
Water Plant Supervisor
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Alternate Authority:

Daniel Gryder
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B. Notification of WSRP Activation and Conservation Measures

All water users and system employees will be notified when the WSRP has been implemented. Notification will be accomplished by:

- University email system
- University web pages
- University news paper
- Radio public service announcements

Additionally, Facility Operations will publicize its water conservation program through internalcampus communications and sponsorship of workshops and special events.

C. Measuring Severity Definitions

Level 1: Voluntary Conservation

Conditions indicate potential for water supply shortages; voluntary conservation is encouraged.

Level 2: Mandatory Restriction

Water supplies are measurably lower than the seasonal norm and are diminishing. Mandatory restriction measures are imposed.

Level 3: Emergency Response

The system is experiencing a water shortage; drinking water supply is clearly inadequate and more stringent restriction measures must be imposed.

D. Triggers

The Triggers in the following table D-1 will be used for moving to more and less restrictive drinking water use reduction measures. As a reference point, normal water supply conditions will be in effect when:

The University reservoir is at or above 75% of capacity (225 million gallons in storage) and there are no threats to impede the normal operation of the reservoir, Howards Creek supplementary pumping station, treatment plant or water distribution system.

Table D-1

SYSTEM SUPPLY TYPE	**VOLUNTARY LEVEL US** Drought Monitor indicates abnormally dry or moderate drought in your area	**MANDATORY LEVEL US** Drought Monitor indicates moderate or severe drought in your area	**EMERGENCY LEVEL US** Drought Monitor indicates severe or extreme drought in your area
RESERVOIR (Monitor lake levels daily during a water shortage situation.)	- Less than 75% of remaining usable storage. - 315 days of supply remaining. - Reservoir levels less than 4 ft. of full pool.	- Less than 60% of remaining usable storage. - 270 days of supply remaining. - Reservoir levels less than 8 ft. of full pool.	- Less than 50% of remaining usable storage. - 243 days of supply remaining. - Reservoir levels less than 12 ft. of full pool.
SECONDARY SOURCE RUN-OF-RIVER HOWADS CREEK (Measure streamflow daily)	- Water demand exceeds 10% of flow above intake.	- Water demand exceeds 15% of flow above intake.	- Water demand exceeds 25% of flow above intake.
CONTAM-INATION OF RESIVOIR OR MAJOR EQUIPMENT, TANK, OR PIPELINE FAILURE			Immediate implementation of Emergency Level

E. Conservation Measures

VOLUNTARY LEVEL: Water Use Reduction

University reservoir has less than 75% water in storage with no immediate rain relief in sight. The Town of Boone and or Blowing Rock are experiencing drought conditions that may require the University to provide supplemental water through future interconnects.

Issue a voluntary water shortage advisory via campus email and APPALNET web page.
Increase conservation educational campaign.
5% potable water use reduction goal (system-wide as well as individual users).
Request voluntary conservation from all water users.
University Physical Plant and Academic Departments to suspend washing of vehicles and watering of well-established existing vegetation.

MANDATORY LEVEL: Water Use Restrictions (in addition to voluntary measures)

University reservoir has less than 60% water in storage with no immediate rain relief in sight and the Town of Boone and/or Blowing Rock are experiencing drought conditions that require the University to provide supplemental water through future interconnects.

Issue a water shortage alert.
10% potable water use reduction goal (system-wide as well as individual users).
Ban or restrict specific Class 3 (nonessential) uses.
Restrict specific Class 2 (socially & economically important) uses.
Monitor compliance with water use bans and enforce when necessary.
University Physical Plant and Academic Departments to suspend watering of all exterior vegetation.
University academic program to reduce optional water use in laboratories and classrooms.

EMERGENCY LEVEL: Water Use Restrictions/Bans (and/or Rationing)

University reservoir has less than 50% water in storage (or has experienced a major water treatment system failure or contamination) with no immediate rain relief in sight and the Town of Boone and/or Blowing Rock are experiencing drought conditions that require the University to provide supplemental water through future interconnects.

Issue a water shortage emergency.
Maximum 25% potable water use reduction goal (system-wide as well as individual users).
Ban on all Class 3 (nonessential) water uses.
Ban or restrict specific Class 2 (socially & economically important) uses.
Aggressive compliance monitoring and enforcement.

F. Levels of Response

ESSENTIAL DRINKING WATER USES

In the event of a water shortage, the following drinking water uses have been determined to be essential uses of potable water:

Residence Halls
Food Services
Infirmary
Steam plant make up water
Fire fighting

SOCIALLY/ECONOMICALLY IMPORTANT DRINKING WATER USES

In the event of a water shortage, the following drinking water uses have been determined to be socially or economically important uses of potable water:

Academic buildings
HVAC cooling towers

Landscape irrigation to establish new plantings
Science laboratory uses
Retail food services franchise restaurant use

NON-ESSENTIAL DRINKING WATER USES

In the event of a water shortage, the following drinking water uses have been determined to be non-essential uses of potable water:

General landscape irrigation
Vehicle washing (except to clean heavily soiled vehicles for maintenance reasons)
Street sweeping
Public use (e.g. non-essential use)

G. Enforcement

Upon activation of this plan, the university will activate the campus emergency operations center (EOC). The EOC is staffed by a cross disciplinary team of university administrators who will work to provide support for enactment of this plan, monitor overall compliance of outlined restrictions, allocate resources, coordinate conservation and associated enforcement measures.

Enforcement measures may include but are not limited to enhanced monitoring and reporting measures, informal or formal disciplinary actions, and revocation of facility use privileges.

H. Public Review

This plan will be published on the university's Facility Operations website with a note that public comment must be received by July 31st, 2025, in order to be considered. Comments will be received at the university's Facility Operations office.

I. Variances and Variance Criteria

Any variance request to the requirements plan will be addressed on a case-by-case basis by the University Director of Facility Operations. Variance requests must include:

-The requestors name and contact information
-A detailed explanation of why the variance is required
-A verifiable realistic estimate of the volume of water to be used as a result of the request.
-The duration of the variance request

J. Evaluation

This plan will be evaluated and modified when required if the established response actions do not achieve the desired savings to ensure adequate water supply to meet essential drinking water and fire flow requirements. Note that the plan must be reviewed at a minimum of once every five years. The following table J-1 lists potential changes.

Table J-1

Level	Reduction Goal Average daily wateruse	Trigger Days of remaining storage	Current Conservation Measures	Revised Conservation Measures
Voluntary	5%	315	- Issue a voluntary water shortage advisory via campus email and APPALNET web page. - Increase conservation educational campaign. - Request voluntary conservation from all water users. - University Physical Plant and Academic Departments to suspend washing of vehicles and watering of well established existing vegetation.	- Increase public education on the need to conserve water. - Reclassify additional water use as nonessential - Ask students in residence halls to only do full loads of laundry.
Mandatory	10%	270	- Issue a water shortage alert. - Ban or restrict specific Class 3 (nonessential) uses. - Restrict specific Class 2 (socially & economically important) uses. - Monitor compliance with water use bans and enforce when necessary. - University Physical Plant and Academic Departments to suspend watering of all exterior vegetation. - University academic program to reduce optional water use in laboratories and classrooms. - Continue conservation pricing and assess excess use surcharges - Limit socially and economically important and nonessential uses of water. - Restrict times and duration of landscape irrigation.	- Ban all nonessential uses ofwater. -Decrease times and duration ofallowable landscape irrigation.
Emergency	25%	243	- Issue a water shortage emergency. - Ban on all Class 3 (nonessential) water uses. - Ban or restrict specific Class 2 (socially & economically important) uses. Aggressive compliance monitoring and enforcement.	- Reclassify additional wateruses as nonessential. - Consider cancellation of non-essential campus activities.

K. Town of Boone Interconnect

Appalachian State University and the Town of Boone have a water system interconnection. This interconnection enhances the water security of both the University and the Town of Boone.

During emergency situations this connection allows the transfer of water between the two systems.

Jason Harkey
Appalachian State University

3/20/25