



Water Shortage Response Plan
PWSID NO. 01-45-010
June 2023

The procedures herein are written to reduce potable water demand and supplement existing drinking water supplies whenever they are in danger of being inadequate to meet customer needs.

I. Authorization.

The City of Hendersonville's ("City") city manager is authorized to enact water shortage response provisions whenever the trigger conditions outlined in Section V are met. In the city manager's absence, the utilities director will assume this role.

Mr. John Connet
City Manager
Phone: (828) 697-3000
E-mail: jconnet@hvlnc.gov

Mr. Adam Steurer
Utilities Director
Phone: (828) 233-3211
E-mail : astuerer@hvlnc.gov

II. Notification.

The following notification methods will be used to inform water system employees and customers of a water shortage declaration: employee e-mail announcements, notices at city buildings and facilities, notices in utility bills and on the City's website homepage (www.hendersonvillenc.gov) and through the use of the City's notification system, RAVE, whenever possible. Required water shortage response measures will be communicated through the local and regional media, including but not limited to, the *Hendersonville Times-News*, *Asheville Citizen-Times*, *Hendersonville Lightning*, *WLOS-TV*, *WYFF-TV*, *WSPA-TV*, *Fox Carolina-TV*, *WHKP*, *WGCR*, and *WTZQ*. Communications will include public service announcements and/or press releases from the City's communication department. Declaration of emergency water restrictions or water rationing will be communicated to our customers using one or a combination of several forms of media referenced above. The City of Saluda, a wholesale purchaser of City water, will be notified by telephone, the City's notification system RAVE, and/or email to alert them of this declaration. The City of Saluda will be required to implement the same level of restrictions as implemented by the City.

III. Classification of Water Uses.

A. Class I: Essential Uses of Potable Water

Domestic	Water to sustain human and domestic pet life, maintain hygiene and sanitation standards.
Patient Care	Patient care and rehabilitation, including swimming pools used for patient care and rehabilitation as prescribed by medical personnel.
Public Safety	Firefighting and approved flushing of hydrants and sewer mains to ensure public health and safety.

B. Class II: Socially or Economically Essential Uses of Potable Water

Domestic	Minimal use for kitchen, bathroom and laundry; minimal watering of vegetable gardens and trees needed to sustain them.
Patient Care	Patient care and rehabilitation, including swimming pools used for patient care and rehabilitation as prescribed by medical personnel.
Public Use	Filling and operation of public swimming pools, which serve more than 25 dwellings.
Commercial	Commercial vehicle washers, laundromats, restaurants, hotels/ motels, irrigation of golf course greens, minimal water usage by commercial nurseries required to sustain stock, minimum amounts required to sustain essential cooling operations.
Agricultural	Minimal amounts required to sustain crops, livestock and associated activities.
Industrial	Minimal use necessary to operate production facilities and sustain jobs, minimal amounts required to sustain essential cooling operations.
Institutional	Efficient use of water by schools, churches, and government facilities.

C. Class III: Non-Essential Uses of Potable Water

All	Ornamental uses (fountains, reflecting pools, artificial waterfalls, etc.); residential lawn irrigation; non-commercial washing of motor vehicles; wash down of impervious surfaces; filling and operation of recreational swimming pools serving less than 25 dwellings.
Public Use	Gardens, lawns, parks, golf courses (except greens), city/town/county playing fields and recreational areas.
Commercial	Serving water in restaurants except by request.

IV. Levels of Response.

Four stages of water shortage response are outlined in the table below. The three levels of water shortage response are: water shortage advisory (voluntary restrictions/reductions), water shortage alert (mandatory restriction/reductions) and water shortage emergency (escalated mandatory restrictions/reductions and water rationing). A detailed description of each response level and corresponding water reduction measures follow below.

Stage	Response	Description
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1	Water Shortage Advisory	Voluntary Restrictions - Water users are encouraged to “voluntarily” reduce their water use and improve water use efficiency; however, no penalties apply for noncompliance. Water supply conditions indicate a potential for shortage.
2A	Water Shortage Alert, Level 1	Mandatory Restrictions - Water users must abide required water use reduction and efficiency measures by reducing water usage by 10% of the prior months water bill, or reduce water usage by 20% of the average water usage amount during non-water shortage months; penalties apply for noncompliance. Water supply conditions are significantly lower than the seasonal norm and water shortage conditions are expected to persist.
2B	Water Shortage Alert, Level 2	Mandatory Restrictions - Water users must abide required water use reduction and efficiency measures, including reduction of an additional 10% of water usage from the prior months water bill, or reduce water usage by 30% of the average water usage amount during non-water shortage months; penalties apply for noncompliance. Water supply conditions are significantly lower than the seasonal norm and water shortage conditions are expected to persist.
3	Water Shortage Emergency	Water supply conditions are substantially diminished and pose an imminent threat to human health or environmental integrity; remaining supplies must be allocated to preserve human health and environmental integrity.

In Stage 1, *Water Shortage Advisory*, all water users will be asked to reduce their normal water use by 10%. Customer education and outreach programs (i.e., articles in local publications; City’s website; local radio and television stations ads and public service announcements; public/private school education; presentations to civic groups) will encourage water conservation and efficiency measures including: irrigating landscapes as needed to insure survival of plants (a maximum of water usage will be one inch of water depth x the area of the irrigated landscape per week) . Example: Beginning on May 1, 2023 it will be required that all lawn and landscaping irrigation occur between 7:00 pm and 9:00 am from May 1 through September 30 each subsequent year in stage 1; preventing water waste, runoff and watering impervious surfaces; watering plants deeply to encourage root growth; washing only full loads in clothes and dishwashers; using spring-loaded nozzles on garden hoses; identifying and repairing all water leaks and minimize vehicle washing.

In Stage 2A, *Water Shortage Alert, Level 1*, all customers are expected to reduce their water use by an additional 10% in comparison to their previous month’s water bill. In addition to continuing to encourage all voluntary reduction actions, the following restrictions apply: irrigating landscapes as needed to insure survival of plants; beginning on May 1, 2023 it will be required that all lawn and landscaping irrigation occur between 7:00 pm and 9:00 am from May 1 through September 30 each subsequent year; washing of vehicles is prohibited unless done by a vehicle washing facility that is registered with the City and in compliance with Session Law 2009-480, House Bill 1236; please contact the Water and Sewer Department to register; outdoor use of drinking water for washing impervious surfaces is prohibited; and all

testing and training purposes requiring drinking water (e.g. fire protection) will be limited. Additionally, in Stage 2A, a drought surcharge of 1.10 times the normal water rate may be applied.

In Stage 2B, *Water Shortage Alert, Level 2*, all customers are expected to reduce their water use by an additional 10% in comparison to their previous month’s water bill. In addition to continuing to encourage all voluntary reduction actions, the following restrictions apply: irrigating landscapes as needed to insure survival of plants; beginning on May 1, 2023 it will be required that all lawn and landscaping irrigation occur between 7:00 pm and 9:00 am from May 1 through September 30 each subsequent year; washing of vehicles is prohibited unless done by a vehicle washing facility registered with the City; outdoor use of drinking water for washing impervious surfaces is prohibited; and all testing and training purposes requiring drinking water (e.g. fire protection) will be limited. Additionally, in Stage 2B, a drought surcharge of 1.20 times the normal water rate may be applied.

In Stage 3, *Water Shortage Emergency*, customers must continue actions from all previous stages and further reduce water use by 10% compared to their previous month’s water bill. All non-essential uses of drinking water are banned and garden and landscape irrigation must be reduced to the minimum amount necessary for survival. Water rationing, if deemed necessary by the city manager and utilities director, is to provide drinking water to protect public health (i.e. residences, residential health care facilities and correctional facilities). All customers are only permitted to use water at the minimum required for public health protection. Firefighting is the only allowable outdoor water use and pickup locations for distributing potable water will be announced by the City. Additionally, in Stage 3, a drought surcharge of 1.30 times the normal water rate may be applied.

V. Triggers and Responses.

Triggers for the City are provided below in relationship to the City’s “run of river” water supply system:

A. Triggers.

If the City’s water source, the Mills River, experiences the following stream flow measurements and/or production capacities trigger entry into corresponding water restriction stages.

Stage	River Operating Conditions
1	A reduction in the normal, seasonal rainfall which causes a corresponding reduction in the flow of water in the Mills River to between <32.5 to 25 percentile of historical annual mean stream flow (See Table 1), as measured at the USGS monitoring station located up stream of the City’s intake structure on the Mills River; or >75% of the system’s capacity (~9.0 million gallons per day - MGD) is being used during seven consecutive days; or any combination of the above conditions for seven consecutive days within a 30-day period; or if damage, failure or contamination of the City’s treatment and/or distribution

	systems occurs thus restricting or otherwise limiting the City's ability to maintain normal operation of its water system, as so determined by the City's utilities director or authorized representative.
2A	A reduction in the normal, seasonal rainfall which causes a corresponding reduction in the flow of water in the Mills River to between <24.5 to 19 percentile of historical annual mean stream flow (See Table 1), as measured at the USGS monitoring station located up stream of the City's intake structure on the Mills River; or >85% of the system's capacity (~10.2 million gallons per day) is being used for three consecutive days; or failure of Stage 1 measures to meet or exceed the 10% water use reduction goal; or if damage, failure or contamination of the City's treatment and/or distribution systems occurs thus restricting or otherwise limiting the City's ability to maintain normal operation of its water system, as so determined by the City's utilities director or authorized representative.
2B	A reduction in the normal, seasonal rainfall which causes a corresponding reduction in the flow of water in the Mills River to between 14.5 to 11.5 percentile of historical annual mean stream flow (See Table 1), as measured at the USGS monitoring station located up stream of the City's intake structure on the Mills River; or >90% of the system's capacity (~10.8 million gallons per day) is being used for three consecutive days; or failure of Stage 2A measures to meet or exceed the 20% water use reduction goal; or any combination of the above conditions for three consecutive days or if damage, failure or contamination of the City's treatment and/or distribution systems occurs thus restricting or otherwise limiting the City's ability to maintain normal operation of its water system, as so determined by the City's utilities director or authorized representative.
3	A reduction in the normal, seasonal rainfall which causes a corresponding reduction in the flow of water in the Mills River to less than 11 percentile of historical annual mean stream flow (See Table 1), as measured at the USGS monitoring station located up stream of the City's intake structure on the Mills River; or >95% of the system's capacity (~11.4 million gallons per day) is being used for three consecutive days; or failure of Stage 2B measures to meet or exceed the 30% water use reduction goal; or any combination of the above conditions for three consecutive days or if damage, failure or contamination of the City's treatment and/or distribution systems occurs thus restricting or otherwise limiting the City's ability to maintain normal operation of its water system, as so determined by the City's utilities director or authorized representative.
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B. Responses.

Stage	Response
1	The city manager shall declare a <u>Water Shortage Advisory</u> (referred to in <i>Chapter 52, Section 440</i> of the City Code of Ordinances): Require all purchase systems to declare same level of conservation measures; City will begin public notification process, as described above, and will disseminate water conservation tips and advisories; request voluntary conservation by all

	<p>water users of the City’s water system; request Class III non-essential uses to be reevaluated by all affected water users; large commercial, institutional and industrial water users (See Table 2) will be required to prepare a 10% water use reduction plan to be submitted to the City’s utilities director or authorized representative within 10-working days of the water shortage advisory declaration; only if said shortage is drought related or as otherwise specified by the City. Car washes and Nurseries are to register with the city by contacting the Water and Sewer dept. Registration of these business will be required for operation during Stage 2A and/or Stage 2B.</p>
<p>2A</p>	<p>The city manager shall declare a Water Shortage Alert, Level 1 (referred to in <i>Chapter 52, Section 441</i> of the City Code of Ordinances): Require all purchase systems to declare the same level of conservation measures; all voluntary measures become mandatory; Class III non-essential uses to be prohibited; in addition to the following measures – enforce system-wide water use reduction goal of 20% (including industrial and commercial plans) from normal levels, as determined by the utilities director; notify water customers by any and all methods previously described; ban car washing except for those facilities equipped to recycle water and are that registered as such with the City, and lawn/grounds irrigation, except for nurseries that are registered with the city, while said nurseries will be allowed to operate they shall be required to reduce average consumption by no less than 20% or shall be utilizing water conservation technology such as smart controllers on their irrigation systems or drip irrigation, if not, water use will be prohibited; ban all non-commercial pressure washing and all wash down of impervious surfaces (i.e., driveways, sidewalks, parking lots, etc.); ban the filling of newly constructed or recently drained pools; all non-public hydrant use by permit only, only if for uses other than fire suppression and public safety; ban ornamental uses; enact water conservation rates, as described below; city manager may authorize additional water use restrictions or bans, if 20% water use reduction goal is not met, to be enforced at some time after public notification of water shortage alert, in accordance with Stage 2A of City’s water shortage response and conservation ordinance (Chapter 52, Section 441).</p>
<p><u>2B</u></p>	<p>The city manager shall declare a Water Shortage Alert, Level 2 (referred to in <i>Chapter 52, Section 442</i> of the City Code of Ordinances): Require all purchase systems to declare same level of conservation measures; in addition to the above measures the following will also be imposed; notify water customers by any and all methods previously described; reevaluate Class II uses; limit the use of commercial car washes; ban all uses of fountains and reflection pools; request additional conservation from Class I (essential) users as may be possible; enact water conservation rates, as described below, if so approved by city council; limit personal vegetable garden irrigation to no more than one inch of water per week; ban all landscape irrigation (including golf course greens, school grounds, residential), except for nurseries that are registered with the city, said nurseries may be allowed to operate but shall be required to reduce average consumption by no less than 30% overall or shall be utilizing water conservation technology such as smart controllers on their</p>

	irrigation systems or drip irrigation; if not, water use will be prohibited; ban all recreational uses.
3	The city manager shall declare a Water Shortage Emergency (referred to in <i>Chapter 52, Section 443</i> of the City Code of Ordinances): Require all purchase systems to declare same level of conservation measures; continue purchase of water from City of Asheville as needed; in addition to the above measures the following will also be imposed; notify water customers by any and all methods previously described; reevaluate Class II uses; ban commercial car washes; ban all uses of fountains and reflection pools; request additional conservation from Class I (essential) users as may be possible; enact water conservation rates, as described below, if so approved by city council; limit personal vegetable garden irrigation to no more than one inch of water per week; ban all landscape irrigation (including golf course greens, school grounds, residential), except for nurseries that are registered with the city, said nurseries may be allowed to operate but shall be required to reduce average consumption by no less than 30% overall or shall be utilizing water conservation technology such as smart controllers on their irrigation systems or drip irrigation; if not, water use will be prohibited; ban all recreational uses.
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VI. Enforcement and Penalties.

The provisions of the water shortage response plan will be enforced by the City’s water and sewer department and police department. Violators may be reported to the City by completing the Water Shortage Violation Report form, which will be available on the City’s website during Water Shortage periods. Violations are assessed according to the following schedule depending on the number of prior violations and current level of water shortage.

Offense	Stage 1: Water Shortage Advisory (Voluntary Restrictions)	Stage 2A, Level 1: Water Shortage Alert (Mandatory Restrictions)	Stage 2B, Level 2: Water Shortage Alert (Mandatory Restrictions)	Stage 3: Water Shortage Emergency (Mandatory Restrictions)
First	N/A	Notice of Violation (NOV)	Notice of Violation (NOV)	Disconnection of water service (24-hr. shut-off)
Second	N/A	Disconnection of water service (24-hr. shut-off)	Disconnection of water service (24-hr. shut-off)	Up to \$500 fine and disconnection of water service at the main
>2	N/A	Up to \$500 fine and disconnection of water service at the main	Up to \$500 fine and disconnection of water service at the main	Up to \$500 fine and disconnection of water service at the main

Drought surcharge rates may be effective in Stages 2A, 2B and 3.

VII. Public Comment.

Upon Approval from the North Carolina Department of Environmental Quality on any updated version of this plan, the plan will be subject to public comment and all subsequent revisions to the plan will be published on Hendersonville's website at least 10-days prior to an adoption vote by the Hendersonville city council. City Council is held the first Thursday of the month in the assembly room at City Operations 305 Williams Street, Hendersonville, NC 28792.

VIII. Variance Protocols.

Applications for water use variance requests can be filled out online at the City's website. All applications must be submitted via the online form for review by the utility's director or the director's designee. A decision to approve or deny individual variance requests will be determined within two weeks of submittal after careful consideration of the following criteria: impact on water demand, expected duration, alternative source options, social and economic importance, purpose (i.e. necessary use of drinking water) and the prevention of structural damage.

IX. Effectiveness.

The effectiveness of the City's water shortage response plan will be determined by comparing the stated water conservation goals with observed water use reduction data. Other factors to be considered include frequency of plan activation, any problem periods without activation, total number of violation citations, desired reductions attained and evaluation of demand reductions compared to the previous year's seasonal data.

X. Revision.

The water shortage response plan will be reviewed and revised as needed to adapt to new circumstances affecting water supply and demand, following implementation of emergency restrictions, and at a minimum of every five years, as required by the provisions of G.S. 143-355 (l). Further, a water shortage response planning work group will review procedures following each emergency or rationing stage to recommend any necessary improvements to the plan to the Hendersonville city council. The City's utilities director, or the director's designee, shall be responsible for initiating all subsequent revisions.