Water Shortage Response Plan
City of Kannapolis, North Carolina
March 2023

This plan and the procedures herein are written to reduce potable water demand and supplement existing drinking water supplies whenever existing water supply sources are inadequate to meet current demands for potable water.

I. Authorization

As documented in Chapter 17 of the City of Kannapolis Code of Ordinances, City Manager has the authority to and shall enact the following water shortage response provisions whenever the trigger conditions outlined in Chapter 17 are met. In his or her absence, the Water Resources Director will assume this role.

City Manager
Mr. Mike Legg
Phone: (704) 920-4300
E-mail: mlegg@kannapolisnc.gov
Address: 401 Laureate Way
Kannapolis, North Carolina 28081

Director of Water Resources
Mr. Alex Anderson
Phone: (704) 920-4252
E-mail: aanderson@kannapolisnc.gov
Address: 401 Laureate Way
Kannapolis, North Carolina 28081

II. Notification

The following notification methods will be used to inform both City water system employees and customers (citizens and wholesale customers under contract, if applicable) of a water shortage declaration:

- Use of Blackboard, an automated telephone notification system which can be used to contact all customers or selected customers as needed in instances such as a water system failure in a particular area of the City
- Notice posted on City's website homepage

- Use of employee email system
- Issuing of press releases
- Notices posted in public locations such as municipal buildings, billboards, and local radio and television stations.

III. Levels of Response

The Drought Response Plan is broken into five levels (Table 1); these levels are modeled after the Catawba-Wateree and Yadkin Pee-Dee Low Inflow Protocols (LIP) and the Water and Sewer Authority of Cabarrus County (WSACC) Drought Operational Plan (Black & Veatch, 2004), which operates the largest reservoir used by the City of Kannapolis in the Rocky River Subbasin. These drought levels and implementation of their associated actions would also apply in another water shortage situation, such as a water quality or equipment failure situation. These levels, and the associated water use reduction measures, are further defined in the attached Chapter 17 of the Code of Ordinances and the City's Drought Management Plan, which was updated in December 2007.

In Level 0, also considered a water conservation stage, all water users are permitted to use outdoor irrigation three days a week. These measures to manage daily demand have reduced overall water use compared to the baseline year of September 2006 through August of 2007, prior to the most recent drought, when refinement of these stages of water usage reduction occurred. A tiered rate structure to discourage excessive water use was in place during that baseline timeframe. Now, outdoor water use is always restricted in Kannapolis and the limitations are enforced. Kannapolis is committed to environmentally sustainable water use practices 365 days a year during normal conditions and periods of drought.

TABLE 1
Drought Management Levels
City of Kannapolis Water Shortage Response Plan

Level	Level Name	Reduction Goal
0	Drought Planning	Conservation
1	Drought Watch	Voluntary
		3 to 5% reduction (or more)
2	Drought Warning	Mandatory
		5 to 10% reduction (or more)
3	Drought Emergency Level I	Mandatory
		10 to 20% reduction (or more)
4	Drought Emergency Level II	Mandatory
		20 to 30% (or more)

Note: These levels would also apply in any water shortage situation.

IV. Triggers

Triggers developed for the City's Water Shortage Response Plan are the same as those identified in the 2007 Drought Management Plan. These triggers, presented in Tables 2, 3, and 4, were developed using the Final Catawba-Wateree LIP, the Draft Yadkin Pee-Dee LIP, and the WSACC Drought Operation Plan. As a condition of the City's interbasin transfer certificate, the City must implement its Drought Management Plan if a trigger point is reached for any of the three areas or if statewide requirements are implemented under the Water Use During Drought and Water Supply Emergencies section of 15A NCAC 02.E.0600 when a drought stage declaration is made by the North Carolina Drought Management Advisory Council (NCDMAC). Therefore, four sets of trigger points are applicable to the City.

Further, if a state of emergency related to water supply is declared by the City Mayor, an emergency action plan and vulnerability assessment will trigger these staged responses.

Final Catawba-Wateree Low Inflow Protocol

The Catawba-Wateree LIP provides trigger points and procedures for the Catawba-Wateree Hydroelectric Project, and lists all parties with vested interests in water quantity of the Catawba River Basin. The LIP provides procedures for all public water supply withdrawal within the Catawba River Basin. The trigger points are a combination of factors that are indicators of the hydrologic condition of the Catawba River Basin. These indicators include (1) the storage index (SI); (2) the Drought Monitor trigger point, the 3-month numeric average of the published U.S. Drought Monitor for the region; and (3) the United States Geologic Survey (USGS) rolling 6-month average for USGS monitored streams, calculated as a percentage of the period of record rolling average for the same 6-month period. Table 2 presents the trigger points for the Catawba-Wateree LIP drought response.

TABLE 2
Catawba-Wateree LIP Drought Response Trigger Points
City of Kannapolis Water Shortage Response Plan

Stage	Storage Index		Drought Monitor (3-month average)		Monitored USGS Stream Flow Gages
0[a]	90% < SI < 100% TSI		3 m. Ave DM ≥ 0		Ave ≤ 85% LT 6 mo. Ave
1	75% TSI < SI ≤ 90% TSI	and	3 m. Ave DM ≥ 1	or	Ave ≤ 78% LT 6 mo. Ave
2	57% TSI < SI ≤ 75% TSI	and	3 m. Ave DM ≥ 2	or	Ave ≤ 65% LT 6 mo. Ave
3	42% TSI < SI ≤ 57% TSI	and	3 m. Ave DM ≥ 3	or	Ave ≤ 55% LT 6 mo. Ave
4	SI ≤ 42% TSI	and	3 m. Ave DM = 4	or	Ave ≤ 40% LT 6 mo. Ave

[a]Stage 0 is triggered when any two of the three trigger points are reached.

Yadkin Pee-Dee Low Inflow Protocol

The LIP for the Yadkin-Pee Dee River is based on the water storage of High Rock Reservoir's normal minimum elevation (NME), which is a monthly value that ranges from 613.9 feet above mean sea level (MSL) (National Geodetic Vertical Datum [NGVD] 1929) in January to 619.9 feet above MSL from April to October. The second two trigger points for the Yadkin-Pee Dee River Basin are the same as in the Catawba-Wateree, except the monitored USGS stream flow gage data are the 3-month rolling average as a percent of the historical average. Table 3 presents the trigger points for the Yadkin-Pee Dee LIP drought response.

TABLE 3
Yadkin Pee-Dee LIP Drought Response Trigger Points
City of Kannapolis Water Shortage Response Plan

Stage	High Rock Reservoir Elevation		Drought Monitor (3-month average)		Monitored USGS Stream flow Gages
0	*< Normal Min. Elevation (NME)*	***and either***	*3 m. Ave DM ≥ 0*	***or***	*Ave <48% LT Ave*
			OR		
	<NME minus 0.5 ft		*Any*		*Any*
1	*<NME minus 1 ft*	***and***	*3 m. Ave DM ≥ 1*	***or***	*Ave <41% LT Ave*
2	*<NME minus 2 ft*	***and***	*3 m. Ave DM ≥ 2*	***or***	*Ave <35% LT Ave*
3	*<NME minus 3 ft*	***and***	*3 m. Ave DM ≥ 3*	***or***	*Ave <30% LT Ave*
4	*<1/2 (NME minus Critical Elevation)*	***and***	*3 m. Ave DM ≥ 4*	***or***	*Ave <30% LT Ave*

WSACC Drought Operation Plan

Lake Howell, operated by WSACC, represents 74 percent of the total useable storage for the combined reservoir system for the Cities of Concord and Kannapolis and has been selected as the reservoir that provides the indication of the hydrologic condition of the County's water supply watersheds within the Rocky River subbasin. Five conditions or trigger points, normal and Stages 1 through 4, were identified and are based on the useable volume available in the reservoir and the current reservoir inflow. Table 4 shows the trigger points for the Rocky River Subbasin.

TABLE 4
WSACC Regional Drought Operation Plan Drought Response Trigger Points
City of Kannapolis Water Shortage Response Plan

Stage	Lake Howell Useable Volume		Percent of Historical Mean Reservoir Inflow (cfs)
Normal	*>70%*	***and***	*>75%*
1	*>70%*	***but***	*<75%*
2	*=70%*		*----*
3	*40% to 60%*		*----*
4	*30% to 50%*		*----*

Note:
cfs = cubic feet per second

NC Drought Management Advisory Council

Drought level designation by the NC Drought Management Advisory Council is also a trigger mechanism for this WSRP and will be followed.

V. Enforcement

The following is a list of action that will be taken by the City upon customers who do not adhere to the water restrictions outlined above and in Chapter 17, Water Emergency, of the Code of Ordinances. The enforcement of the water restrictions does not only apply to individual customers, but also to municipalities that receive water from the City's distribution system. Enforcement actions include:

(1) *Penalties.* Any person violating the mandatory provisions of the water restrictions shall be issued a citation and a penalty of $100.00 for residential customers or the amount established in the Code of Ordinances for non-residential or commercial or industrial users.

(2) *Discontinuance of Service.* Water service may be temporarily discontinued for willful disregard of water restrictions. All applicable penalty fees may be applied in the event of service suspensions. In the event of continued gross noncompliance with the water restrictions,

the meter will be removed and the service will be discontinued. Connection fees and deposits will be forfeited.

(3) *Adoption and Enforcement of Drought Mitigative Measures.* Municipal customers, water corporations or company compliance municipalities as well as water corporations or companies purchasing water from the City shall adopt and enforce this entire section as a condition of continuing existing water sales agreements. Upon declaration of a water emergency, such municipalities and companies shall enforce the appropriate water use restrictions for the level of drought stage. Water service to such municipalities and companies shall be terminated for not enforcing the provisions of this section.

VI. Public Comment

Customers will have opportunity to comment on the provisions of the water shortage response plan. A public comment period will be scheduled prior to an adoption vote by the City's Council.

VII. Variance Protocols

The City understands that water restrictions can cause economic hardships on certain portions of their water customers; additionally, the restriction could be infeasible for others that have implemented water use reduction strategies into their daily practices prior to drought conditions being in place. Variances will be considered for: those showing proof of economic hardship, public health care facilities, or those that have previously implemented and documented water use reduction strategies such that achieving further water reduction goals may not be achievable. Variance requests should be directed in writing to the City Manager. The Manager, or his or her designee, will issue a ruling on the variance. A decision on the variance will be made within two weeks of the submittal.

VIII. Effectiveness

The effectiveness of the City's WSRP will be determined by comparing the stated water conservation goals with observed water use reduction data. Because the City has implemented year-round conservation measures by limiting irrigation to three days per week, data will be compared against the baseline year of September 2006 to August 2007 to determine effectiveness of its actions. Tracking will be conducted using a spreadsheet, updated monthly, which compares water use against the baseline time period seasonal data. Other factors to be considered include frequency of plan activation, notification procedures, any problem periods without activation, and total number of violation citations.

IX. Revision

This WSRP 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 in conjunction with the updating of the Local Water Supply Plan. 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 City's Council. If revisions are not recommended following a review, a memo will be filed documenting the effectiveness of the WSRP. The Director of Water Resources is responsible for initiating all subsequent revisions.

Resolution #2023-14

RESOLUTION TO APPROVE THE CITY OF KANNAPOLIS' MARCH 2023 WATER SHORTAGE RESPONSE PLAN

WHEREAS, North Carolina General Statute 143-355 (l) requires that each unit of local government that provides public water services or plans to provide such services shall, either individually or together with other such units of local government, prepare and submit a Water Shortage Response Plan; and

WHEREAS, as required by the statute and in the interests of sound local planning, a Water Shortage Response Plan for the City of Kannapolis, has been developed and submitted to the City Council for the City of Kannapolis for approval; and

WHEREAS, the City Council for the City of Kannapolis finds that the Water Shortage Response Plan is in accordance with the provisions of North Carolina General Statute 143-355 (l) and that it will provide appropriate guidance for the future management of water supplies for the City of Kannapolis, as well as useful information to the Department of Environment and Natural Resources for the development of a state water supply plan as required by statute;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Kannapolis that the Water Shortage Response Plan entitled, Water Shortage Response Plan City of Kannapolis, North Carolina dated March 2023, is hereby approved and shall be submitted to the Department of Environment and Natural Resources, Division of Water Resources; and

BE IT FURTHER RESOLVED that the City Council for the City of Kannapolis intends that this plan shall be revised to reflect changes in relevant data and projections at least once every five years or as otherwise requested by the Department, in accordance with the statute and sound planning practice.

This the 13th day of March, 2023.

Milton D. Hinnant
Mayor

ATTEST:

Bridgette Bell, MMC, NCCMC
City Clerk