



PIEDMONT TRIAD REGIONAL WATER AUTHORITY

Water Shortage Management Response Plan



February 2018

The procedures contained in this plan represent the Piedmont Triad Regional Water Authority's (PTRWA) formal response in the event of water shortages. The goal of the PTRWA is to provide a safe and dependable water supply to its partners for the next 50 years. In doing so, this will promote growth for our partners as well as assist in meeting water demand needs. As a water wholesaler, we are obligated to supply water to our partners pursuant to our contractual guidelines. This Water Shortage Management Response Plan will be used as a guide for meeting our contractual and permit required obligations during times of drought.

I. Authorization:

The Executive Director of the Piedmont Triad Regional Water Authority or the Board of Directors' designee shall enact the following water shortage response provisions whenever conditions are met as defined in Section III.

II. Notification:

In the event of a water shortage and implementation of the Water Shortage Management Response Plan, all partners receiving water from the Authority shall be notified immediately. Coordination and communication among the Authority's partners will be critical to maximizing water conservation efforts. The PTRWA Executive Director will be responsible for coordination with the partners. Present partnering jurisdictions include: City of Archdale, City of Greensboro, City of High Point, Town of Jamestown, City of Randleman, and Randolph County. Additional notification will be made to the Public Water Supply Section of the North Carolina Department of Environmental Quality, and the Emergency Management Coordinators of Guilford and Randolph Counties when this Plan is implemented. In the event of implementation of this Plan, the partners will initially be contacted via direct verbal communication by the Executive Director. Agency and employee notifications will occur by email.

III. Levels of Response:

Due to the nature and the scope of the Piedmont Triad Regional Water Authority as a wholesale water supplier, responding to the needs of participating partners is of paramount importance. In the event of region wide water shortages, partners

will enact their own response plans specific to their jurisdiction. The goal of the PTRWA is to provide a continuous water supply based on mutually agreed upon contracts until water levels at the Randleman Regional Reservoir prohibit operation of the water treatment facility. The Reservoir’s full ‘pool level’ is 682 feet above mean sea level (AMSL). If the water level reaches 645 feet AMSL, which is the lowest intake level from the reservoir, operations at the John F. Kime Water Treatment facility would be reduced to minimum withdrawal levels with priority distribution being given to those systems where PTRWA water is the primary source of supply. The following phases of response shall be in conjunction with the noted lake levels:

Phase	Response	Description
Phase 1	Water level ADVISORY occurs when water levels drop to 677 feet AMSL (5 feet below full).	All partners shall be advised that the PTRWA is implementing the Water Shortage Management Response Plan and operating at Phase 1 which denotes the first level of response to water levels. Partners will be advised to implement conservation efforts.
Phase 2	Water level WARNING occurs when water levels drop to 672 feet AMSL (10 feet below full).	All partners shall be advised that the PTRWA is operating at Phase 2 which indicates the second level of response to water levels. Mandatory conservation efforts are required.
Phase 3	Water level EMERGENCY NOTIFICATION that the Reservoir has dropped to 662 feet AMSL.	All partners shall be notified that the PTRWA may have to suspend water production and ability to produce water.
Phase 4	Water levels indicating imminent plant SHUTDOWN to prevent damage to equipment due to water levels falling to 645 feet AMSL or below.	All partners would be notified that water production will be reduced to minimum withdrawal levels until Reservoir levels increase.

PHASE 1: When water levels at the Randleman Regional Reservoir reach 5 feet below the noted full level of 682 feet AMSL, Phase 1 is initiated. Notification to the partners will be performed by the Executive Director. This first level or *advisory* condition will be the first phase of the Water Shortage Management

Response Plan. Phase 1 implementation will advise all PTRWA partners to implement conservation efforts.

PHASE 2: Phase 2 is considered a *warning* to the PTRWA partners. Again, notification by the Executive Director will commence when the water level drops to 672 feet AMSL or 10 feet below full reservoir levels. Phase 2 implementation will require the partners to implement mandatory conservation efforts. PTRWA is required by permit to reduce reservoir withdrawals by 10 percent. The goal will be for all partners to cut usage by 10 percent to meet this requirement. PTRWA will also reduce discharge from the dam from 30 cubic feet per second (cfs) to 20 cfs.

PHASE 3: The *emergency notification* occurs when the reservoir drops to 662 feet AMSL which is 30 percent of the usable volume remaining in the reservoir. Partners will be notified of Phase 3 implementation by the Executive Director. Phase 3 implementation will require PTRWA to further reduce withdrawal from the reservoir by an additional 10 percent. The goal will be for each of the partners to reduce their demand from PTRWA through conservation or supplementing their water needs by purchasing from other supplies. PTRWA will reduce discharge from the dam from 20 cfs to 10 cfs.

PHASE 4: Phase 4 is the most critical of water shortage conditions. When water levels fall below 645 feet AMSL, safe operation of the plant is not possible without equipment damage and an imminent plant *shutdown* is possible. All partners will receive notification that production will be curtailed to minimal possible withdrawal levels. Alternate equipment may be necessary to allow withdrawal and production at reduced levels. Partners who have PTRWA as their primary supply will be given preference for water delivery.

IV. Triggers:

Piedmont Triad Regional Water Authority as a reservoir based water system will implement the Water Shortage Management Response Plan when the following phases occur:

Phase	Usable Storage	Reservoir Level
Phase 1	< 75%	5feet below full pool
Phase 2	<60%	10 feet below full pool

Phase 3	<30%	20 feet below full pool
Phase 4	<0%	37 feet below full pool

When a phase of response has been triggered, the water system will stay at that phase until water levels either: a.) fall to a level which would require the next phase of response or b.) until the water levels recover to two (2) feet above the water level that triggered the phase that the system is in.

When the water level recovers to two (2) feet above the water level that triggered the current phase the system will then be moved to the next lowest phase of response or in the event the system is in Phase 1 and recovers to 3 feet below full pool implementation of the plan would cease.

V. Variance Requests:

Given the restrictive nature of the downstream discharge requirements from the reservoir, the principle method in allow flexibility in this plan would be if one partner achieves a greater percent reduction than required which could then be credited to another partner. If a partner is not able to achieve the required curtailments requests for variances for the plan will need to be made directly to the PTRWA Executive Director. The Executive Director will then consult with the other partners to determine the usage reductions that they have achieved and evaluate this against the permit required withdrawal reductions to determine if a variance can be granted. The PTRWA Executive Director has sole authority with regard to making decisions on variance requests and has the authority to terminate granted variances at any time.

VI. Comment:

Details of the Water Shortage Management Response Plan will be published on the Piedmont Triad Regional Water Authority’s website. Any subsequent revisions will be posted and updated. Any changes to the Water Shortage Management Response Plan will be distributed for review and comment by the partner’s representatives at the PTRWA Board meeting. The final plan will require approval by the PTRWA Board of Directors.

VII. Effectiveness:

The effectiveness of the Piedmont Triad Regional Water Authority's Water Shortage Management Response Plan will be analyzed in accordance with the overall goals and objectives of the Authority as well as the contractual agreements with the partners. All partners' needs and the operational plans to fulfill these needs will be considered in the effectiveness evaluation of the response plan.

VIII. Revision:

The Water Shortage Management Response Plan will be reviewed and revised as necessary to respond to any circumstances affecting water supply and demand. This plan shall be reviewed at a minimum of every five years. The Executive Director shall review any comments or suggestions from the partners and the Piedmont Triad Regional Water Authority's Board of Directors will approve modifications or changes to the plan as necessary.