

WATER SHORTAGE RESPONSE PLAN

Northern Kentucky Water District

SECTION 1 - INTRODUCTION

Northern Kentucky Water District (NKWD) provides drinking water to most of Campbell and Kenton counties and portions of Boone in Northern Kentucky for retail customers and portions of Boone and Pendleton counties as wholesale customers. The NKWD presently meets the water needs of this service area by operating 3 treatment plants having a combined capacity of 64 MGD. In addition, the NKWD has in place an Emergency Supply Agreement with the Boone Florence Water Commission, the Boone County Water District, and the City of Florence, Kentucky to supply water to NKWD through six interconnections in Kenton County in the event of an emergency.

It is necessary for NKWD to monitor the overall production, system demands, and storage levels on a continuous basis. Unrestricted demand shall be projected from past records and adjusted for changes such as new developments and weather conditions on a regular basis. Water shortages generally occur for two reasons, a reduction in available supplies or a system failure. Each of these has a distinct influence on the nature and duration of the event and response. Official declaration of a water shortage stage and implementation of the measures necessary to curtail water use shall be approved by the NKWD's President.

In addition to background information and terminology used in this document, the Plan contains three critical components:

1. Determination of water shortage state based on monitoring demand, production, and storage reserves on a daily basis (Section 5);
2. Conservation measures (Section 6); and
3. Communication and education of NKWD's customers on the shortage and water restrictions (Section 7).

Enforcement will be handled under the Kenton County and Campbell County ordinances.

SECTION 2 - PURPOSE

The purpose of this Plan is to provide for the declaration of official phases of water supply shortages and the implementation of voluntary and mandatory water conservation measures throughout the NKWD's service area in the event a shortage is declared.

SECTION 3 - DEFINITIONS

These terms are applicable only for this Plan unless specifically noted.

- A. "Customer" shall mean any person or entity using water for any purpose from the NKWD's water distribution system and for which either a regular charge is made or, in the case of bulk sales, a cash charge is made at the site of delivery.

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- B. *"Raw Water Supplies"* shall mean all water potentially available to persons in the NKWD's service area.
- C. *"Treated Water"* shall mean water that has been introduced by the NKWD into its water distribution system, including water offered for sale. Uses of treated water are classified as follows:

Class 1 – Essential Water Uses:

The following uses of water, listed by site or user type, are essential.

Domestic: water necessary to sustain human life and the lives of domestic pets, and to maintain minimum standards of hygiene and sanitation.

Health Care Facilities: patient care and rehabilitation, including related filling and operation of swimming pools.

Water Hauling: sales of domestic use where not reasonably available elsewhere.

Public Use: firefighting and health and public protection purposes, if specifically approved by health officials.

Class 2 – Socially or Economically Important Uses:

The following uses of water, listed by site or user type, are socially or economically important.

Domestic: personal, in-house water use including kitchen, bathroom and laundry.

Water Hauling: non-domestic, when other sources are not reasonably available elsewhere.

Commercial and Civic Use: commercial car and truck washes, laundromats, restaurants, clubs and eating places, schools, churches, motels/hotels and similar commercial establishments.

Outdoor Non-Commercial Watering: minimal watering of vegetable gardens and trees where necessary to preserve them.

Outdoor Commercial or Public Watering (using conservation methods and when other sources of water are not available or feasible to use):

- agricultural irrigation for the production of food and fiber or the maintenance of livestock,
- watering by arboretums and public gardens of national, state, regional or community significance where necessary to preserve specimens,
- watering by commercial nurseries at a minimum level necessary to maintain stock,
- watering at a minimum rate necessary to establish or maintain revegetation or landscape plantings required pursuant to law or regulation,



- watering of woody plants where necessary to preserve them,
- minimal watering of golf course greens.

Recreational: operation of municipal swimming pools and residential pools that serve more than 25 dwelling units.

Air Conditioning: refilling for startup at the beginning of the cooling season, makeup of water during the cooling season, and refilling specifically approved by health officials where the system has drained for health protection or repair services.

Class 3 – Non-Essential Uses:

Any waste of water, as defined herein, is non-essential. The following uses of water, listed by site or user type, are non-essential.

Public Use: use of fire hydrants (excluding Class 1 and Class 2 uses), including use of sprinkler caps, testing fire apparatus and fire department drills; flushing of sewers and hydrants except as needed to ensure public health and safety as approved by health officials.

Commercial and Civic Use: serving water in restaurants, clubs, or eating places, except by customer request; failure to repair a controllable leak; increasing water levels in scenic and recreational ponds and lakes, except for the minimum amount required to support fish and wildlife.

Ornamental Purposes: of fountains, reflecting pools and artificial waterfalls.

Outdoor Non-Commercial Watering:

- use of water for dirt control or compaction,
- watering of annual or non-woody plants, lawns, parks, golf course fairways, playing fields and other recreational areas,
- washing sidewalks, walkways, driveways, parking lots, tennis courts or other hard-surface areas,
- washing down buildings or structures for purposes other than immediate fire protection,
- flushing gutters or permitting water to run or accumulate in any gutter or street.

Outdoor Commercial or Public Watering:

- expanding nursery facilities, placing new irrigated agricultural land in production, or planting of landscaping except when required by a site design review process,
- use of water or dirt control or compaction,



- watering of lawns, parks golf course fairways, playing fields and other recreational areas,
- washing down buildings or structures for purposes other than immediate fire protection,
- flushing gutters or permitting water to run or accumulate in any gutter or street.

Recreational uses other than those specified in Class 2.

Non-commercial washing of motor and other vehicles.

Air Conditioning (see also Class 2 purposes): refilling cooling towers after draining.

D. Water Shortage Response Stages:

“Advisory” shall mean that conditions exist which indicate the potential for serious raw or treated water supply shortages.

“Alert” shall mean the raw or treated water supplies are consistently below seasonal averages, and if they continue to decline, may not be adequate to meet normal needs.

“Emergency” shall mean that raw or treated water supplies are below the level necessary to meet normal needs and that serious shortages exist in the area.

“Rationing” shall mean that procedures must be established to provide for the equitable distribution of critically-limited raw or treated water supplies, in order to balance demand and limited available supplies, and to assure that sufficient water is available to preserve public health and safety.

SECTION 4 - APPLICABILITY


The provisions of this Plan shall apply to all retail and wholesale customers of the NKWD. When implemented, this Plan becomes the NKWD’s Water Shortage Response Regulation.

SECTION 5 - DETERMINATION OF WATER SHORTAGE RESPONSE STAGE

The key parameters to monitor are the daily production and the demand based on pumping and distribution storage volume and the ability to refill storage tanks. The Operations Manager will monitor these parameters daily. A Water Shortage Response Stage will be assessed based on the following criteria:

- A. **Advisory** – A water shortage advisory may be declared when the amount of treated water or raw water available for treatment is projected to be up to 10 percent above demand (combined production of plants reaches 58 MGD) or there are periods of low water pressure in one or more areas of the system due to system failure or inadequacies.
- B. **Alert** – A water alert may be declared when the amount of treated water or raw water available for treatment is projected to be up to 7.5 percent above demand (combined production of plants reaches 59 MGD) or raw water supplies may not be adequate to meet normal needs.

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- C. Emergency - A water alert may be declared when the amount of treated water or raw water available for treatment is projected to be up to 5 percent above demand (combined production of plants reaches 61 MGD) or there are periods of no water in one or more areas of the distribution system due to low water supply or raw water supplies are below the level necessary to normal needs.
- D. Rationing – Water rationing shall be required when the amount of treated water or raw water available for treatment are below the level necessary meet essential needs, and in the opinion of the NKWD, mandatory rationing is required to ensure adequate water is available to maintain public health and safety.

The Operations Manager will immediately begin communications with the President, Department Vice Presidents, and appropriate supervisors to alert them to the situation at hand when any of these stages are observed. After consultation, the President or authorized delegate will decide what level of conservation of the Water Shortage Response Plan to implement and the affected service area(s).

SECTION 6- CONSERVATION MEASURES

Conservation measures will be implemented based on the Water Shortage Response Stage as follows:

A. Advisory or Level 1:

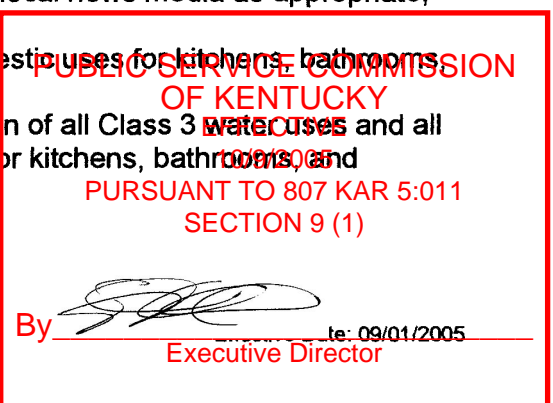
- 1) Declare a Water Shortage Advisory;
- 2) Provide proper notice to all customers and to local news media as appropriate;
- 3) Request voluntary conservation of all non-essential Class 3 water uses;
- 4) Request wholesale customers issue request for voluntary conservation of all non-essential Class 3 water uses;
- 5) Eliminate all water leaks.

B. Alert or Level 2:

- 1) Declare a Water Shortage Alert;
- 2) Provide proper notice to all customers and to local news media as appropriate;
- 3) Prohibit all non-essential Class 3 water uses;
- 4) Request wholesale customers issue prohibition of all non-essential Class 3 water uses;
- 5) Eliminate all water leaks.

C. Emergency or Level 3:

- 1) Declare a Water Shortage Emergency;
- 2) Provide proper notice to all customers and to local news media as appropriate;
- 3) Prohibit all Class 3 water uses;
- 4) Prohibit all Class 2 uses of water except domestic uses for kitchens, bathrooms and laundries.
- 5) Request wholesale customers issue prohibition of all Class 3 water uses and all Class 2 uses of water except domestic uses for kitchens, bathrooms and laundries;
- 6) Eliminate all water leaks.



D. Rationing or Level 4:

- 1) Declare a Water Shortage Rationing;
- 2) Provide proper notice to all customers and to local news media as appropriate;
- 3) Prohibit all Class 2 and 3 water uses;
- 4) Request wholesale customers issue prohibition of all Class 2 and Class 3 water uses;
- 5) Eliminate all water leaks.
- 6) Implement service interruptions to portions of system in accordance with approved published schedule. The schedule shall be provided to local media.

Once the President declares the level of conservation in the Plan, the NKWD will implement the following internal measures for all Water Shortage Response stages:


- Suspend the flushing program and all non-essential flushing. All personnel will be directed to keep essential flushing to a bare minimum.
- Leak detection will become the highest priority of the flushing crew until the shortage is declared over.
- Initiate daily meter readings of NKWD's wholesale customers.
- Suspend the flushing of new lines unless the new line will contribute towards alleviating the problem.
- Suspend the issuing of hydrant permits.

SECTION 7 - COMMUNICATION

Since this Plan primarily relies on customer conservation to ensure an adequate supply of drinking water to all customers, the most important part of the Plan will be keeping the customers informed at all times. Their awareness and understanding of the situation from the initial stages of concern and continuing through each phase of the Plan is the key to an efficient and adequate response to a water shortage problem. The President or authorized delegate will be the official spokesperson of the NKWD and will communicate with the following people:

- The NKWD Board of Commissioners.
 - The Judge Executives of Campbell and Kenton Counties even if their respective county has not entered into the conservation measures yet.
 - Employees district-wide, especially those with high customer profiles or telephone access.
 - Radio, television, and newspapers
- A. Wholesale Customers - The NKWD will convey pertinent information to wholesale customers as well as the Boone Florence Water Commission, the Boone County Water District, and the City of Florence as the situation changes, when the parties are affected by the shortage. The President or Vice President of Engineering & Distribution will be the NKWD-authorized people to communicate the need to institute the conservation measures to wholesale customers.

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- B. Fire Departments - The Vice President of Engineering & Distribution will initiate communications with all fire departments within the affected areas to suspend all wet drills and to limit water use to the bare minimum needed to provide adequate fire protection.
- C. Golf Courses - The Operations Manager will communicate daily with the Kenton County and Campbell County golf courses.
- D. Retail Customers - The Vice President of Account Services & Billing will be charged with the responsibility of communication and education on the details of the Water Shortage Response Stage including large users, public works departments (i.e. Sanitation District No. 1), police departments, and the general public and to establish a public education program that includes the following techniques:
 - Retrofit Kits (toilet tank displacement kits, shower restrictors)
 - Customer leak detection kits
 - Bill inserts and brochures on water conservation tips
 - Radio and television public service announcements
 - Videotapes
 - Newspaper and radio ads on general conservation tips
 - Use public events as educational tools.
 - Public instruction about the 4 levels of the Water Emergency Supply Plan including how the workings of odd/even watering.
 - The definition of "Non-essential Outdoor Watering".

SECTION 8 – DURATION OF WATER SHORTAGE DECLARATION

Any water shortage declaration shall remain in effect until water supplies and service conditions have returned to normal. The decision to issue, upgrade, downgrade or withdraw the level of declaration will be made by the President of NKWD or authorized delegate based on demand, storage volume, and predicted rainfall and other factors.


SECTION 9 - ENFORCEMENT

This plan will be enforced as outlined in appropriate county ordinances.

SECTION 10 – EFFECTIVE DATE

This plan shall take effect immediately upon approval by the Public Service Commission.

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