

City of Woodbury

Emergent Condition Evaluation

I. Background

In 2015, P.L. 2015, Chapter 18, cited as the Water Infrastructure Protection Act (WIPA) was enacted. The WIPA established legislature which declared that the maintenance and operation of water and wastewater treatment and conveyance systems is vital to ensure the protection of water quality and clean drinking water in the State of New Jersey.

In addition, the legislature declared that there are public water and wastewater systems in the State which present risks to the integrity of drinking water and the environment because of issues such as aging infrastructure system, or deterioration of the physical assets of the system.

As such, the law identified and defined conditions in a public utility system which may be classified as an “emergent condition”. An emergent condition for a utility system shall exist if the system meets one (1) of the following conditions:

- A. The system is located in an area designated by the Department of Environmental Protection as an Area of Critical Water Supply 1 or II;
- B. The owner of the system is a significant non-complier, as defined in P.L. 1977, c.7 and has been the subject of formal enforcement action initiated by the department or is substantially out of compliance with an Administrative Consent Order, settlement agreement, or judicial consent order entered into with the department. The department is defined as the New Jersey Department of Environmental Protection (NJDEP);
- C. There is a present deficiency or violation of maximum contaminant levels established pursuant to the “Safe Drinking Water Act” concerning the availability of potable water or concerning the provisions of water at adequate volume or pressure or distribution or treatment of wastewater;
- D. There is a demonstrated lack of historical investment, repair or sustainable maintenance as determined by the department or material damage to the infrastructure of the system; or
- E. The system owner lacks the financial, technical or managerial capacity to adequately address any of the foregoing on a sustainable basis or own and operate the system in a way that supports economic activity in the municipality on a sustainable basis.

II. Emergent Conditions – City of Woodbury

In 2015, the City of Woodbury authorized Remington & Vernick Engineers to tour their existing utility facilities, review current records, and interview utility personnel to prepare an evaluation of the existing utility facilities. During the evaluation, it was established that the City of Woodbury meets several of the “emergent conditions” as defined in the Water Infrastructure Protection Act (WIPA) as follows:

A. Emergent Condition #1 – NJDEP Critical Supply Area II

The City of Woodbury has five (5) permitted water wells to supply potable water for its customers. All five (5) wells are located in Critical Supply Area II as defined by the New Jersey Department of Environmental Protection (NJDEP) and United States Geological Survey (USGS). In an effort to improve the management of groundwater resources in the confined aquifers of the New Jersey Coastal Plain, reductions in withdrawals were imposed by the NJDEP to the permitted allocations from all five (5) wells.

Due to the limitations in allocation, the City does not meet their peak day water supply firm capacity demands, as promulgated by the NJDEP, without purchasing water from an alternate source.

Due to the location of the City’s potable wells in Critical Supply Area II, the City has a defined emergent condition in accordance with P.L. 2015, Chapter 18.

B. Emergent Condition #2 – Deficiency of Maximum Contaminant Level / Availability of Potable Water

In 2014, the City shutdown one (1) of their two (2) northern wells, Well No. 7. The shutdown was a pre-emptive action due to the detection of Perfluorononanoic Acid (PFNA). The sampling of the City wells for this constituent was completed due to the detection of the chemical in a surrounding municipality.

At the time, PFNA was an unregulated compound which did not have a Maximum Contaminant Level (MCL) as established by the EPA or NJDEP. However, due to the detection of PFNA at the concentration of 56 ng/l, the City terminated the use of Well No. 7 as a supply well.

Since the date of the well shutdown, the NJDEP has developed and reported a Practical Quantitation Level (PQL) and has proposed a MCL for PFNA. On July 1, 2015, the Drinking Water Quality Institute of the

NJDEP recommended a PQL of 5 ng/l and MCL of 13 ng/l; the Woodbury analytical exceeds both established standards.

To date, Well No. 7 is not active and will remain inactive until the City has funded the design, permitting and construction of an effective treatment process to remove the PFNA to within acceptable health levels. In addition, the City has one (1) remaining northern well, Well No. 8. This well is located within 500 feet and is screened within the same water bearing zone as PFNA contaminated Well No. 7. Accordingly, it is not unreasonable to have concerns regarding the potential contamination of Well No. 8 with PFNA constituents. The loss of the only other northern supply wells is concerning for the operation of the City.

Specifically, it should be noted that the City water utility infrastructure spans a vast area; crossing three (3) municipalities. Accordingly, although the City is 2 square miles, the distance between the northern supply wells and southern supply wells is approximately 6 miles. The City has made efforts to install larger diameter water mains for sufficient transmission of water. However, over 60% of the water main in the City is 6" or less. In accordance with NJDEP regulations, a water system with an average daily demand of 1 million gallons per day or greater is required to install a minimum 8" diameter pipe for new water main construction or for water main replacement projects; the exception being short dead end sections of the water main. The Woodbury Water system falls into this regulatory category. This requirement is to ensure adequate system flow is available not only to supply customer demands but also for sufficient firefighting capabilities.

Therefore, due to the expansive layout of the system and a majority of smaller diameter water mains, the proper and sustained operation of all water facilities becomes essential for the City to sustain adequate volume, pressures and transmission throughout the City. This is demonstrated based upon the hydrant testing and fire simulation calculations conducted by the City.

In 2012, the City completed hydrant testing as part of the ISO Fire Protection Rating Schedule. At that time, thirteen (13) hydrants were tested for static flows and anticipated flows during a fire event. The static pressures for the tested hydrants ranged between 39 psi and 58 psi. However, only three (3) of the thirteen (13) hydrants tested provided sufficient fire flow demand based upon use rating during a simulated fire event.

Therefore, it is our opinion that due to the termination of a critical well due to contamination, the City has a defined emergent condition in accordance with P.L. 2015, Chapter 18.

C. *Emergent Condition #3 – Lack of historical investment, repair and sustainable maintenance*

As noted in the Water and Sewer Utility Evaluation Report, the City has allocated funds to the upgrade of their water metering system, above grade reservoir and water distribution main to the reservoir. However, due to budgetary constraints, limited funds have been allocated to the long term sustainable maintenance of the infrastructure.

As part of the system evaluation, a 20 Year Capital Improvement Plan was prepared that outlined improvements necessary to maintain the sustainable operation of the system over the next 20 Years. The Capital Improvement Plan designates an *annual average* expenditure of \$2,252,000, for the utility. However, this plan is conservative; resulting in approximately 50%-70% of the infrastructure over 120 years of age at the end of the 20 Year analysis period.

In addition, the funding of these improvements result in an annual rate increase of 8.5% for the first seven years of the analysis period and an annual 3.5% rate increase for the remaining thirteen years of the analysis period. For comparative purposes, the current utility costs were compared to the rate increase costs. Based upon an assumed consumption of 300 gpd per household, the average annual cost for a typical customer are as follows:

	2015 Rates	Project 2035 Rates
Water Costs (Annual Costs Per Average Customer)	\$649.61	\$1,657.50
Sanitary Costs (Annual Costs Per Average Customer)	\$558.00	\$1,544.87
TOTAL ANNUAL AVERAGE UTILITY COSTS	\$1,207.61	\$3,202.37

Accordingly, based upon the analysis, the City customers will recognize almost triple the costs for water and sanitary services by the end of the 20 year analysis period. As stated previously, the required work to sustain the utility does not end at the end of the 20 year period and rates would likely continue to increase to support the operating and maintenance of the utility.