**TOWN OF BLANDFORD**
**WATER DEPARTMENT**
**1 Russell Stage Rd**
**Blandford, MA 01008**
**413.848.4279 x 304**

**Water Commissioners**
Brad Curry
Michael Keier
Peter Thayer

**Water Superintendent**
Gordon Avery

# MEETING MINUTES
# BLANDFORD WATER COMMISSION
# MARCH 16, 2023
# 4:30 P.M.

## 1. OPEN SESSION

Meeting Opened at 4:35 P.M.
**In Attendance: M. Keier,** Member, **P. Thayer**, Member,
**G.Avery,** Water Superintendent, **K. Shaw**, Administrative Assistant.

## 2. EXAMINATION OF RECORDS OF PREVIOUS MEETINGS:

**a. Review of Meeting Minutes of February 16, 2023.**

**MOTION: P. Thayer made a motion to approve the Minutes of February 16, 2023.**
**M. Keier Seconded.**
**All in Favor.**

## 3. ACTION ITEMS

**a. Review and Approve Inter-Municipal Agreement Blandford/Chester**
Review of the Inter-Municipal Agreement between Blandford and Chester is tabled until the next Water Commission meeting takes place and all members of the Commission are present. The next meeting is scheduled for April 13, 2023.

## 4. UNFINISHED BUSINESS FROM PRIOR MEETINGS:

**a. Review Water System Upgrade Project – Update by Wright & Pierce**
Mariusz Jedrychowski, PE, Regional Group Leader/Senior Project Manager and Elizabeth Doerfler, EIT, Engineer II of Wright-Pierce presented an in depth review and analysis of the proposed Blandford Water System Upgrade Project. Their recommendations are attached to these minutes. The Commission raised the question relating to inspections and how they would come into play.

**b. CIP Project Update by Wright & Pierce**

The CIP Project was briefly reviewed.

**c. Revisiting Water Department Rules and Regulations – Review Commission Changes.**

For approval and posting on the Water Department page of the Town website.
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**MOTION: M. Keier made a motion to approve Water Department Rules and Regulations.**
**P. Thayer Seconded.**
**All in Favor.**

**d. Application of Blandford Country Club for Quarter 2 Water Abatement**

**MOTION: P. Thayer made a motion to approve the Quarter 2 Application for Abatement by the Blandford County Club.**
**M. Keier Seconded.**
**All in Favor.**

**5. NEW/OTHER BUSINESS:**

**a. Review Application for Water Service**
**b. Review Service Line Inspection Checklist**

For approval and posting on the Water Department page of the Town website.

**MOTION: M. Keier made a motion to approve the Application for Water Service and Review Service Line Inspection Checklist.**
**P. Thayer Seconded.**
**All in Favor.**

**c. Review Approved Contractor Qualification Application**

**MOTION: M. Keier made a motion to approve the Approved Contractor Qualification Application.**
**P. Thayer Seconded.**
**All in Favor.**

**6. MEETING ADJOURNED**

Meeting Adjourned at 6:05 p.m.

Respectfully Submitted,

Karen Shaw, Administrative Assistant
Water Department

**WATER COMMISSION**

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Brad Curry, Chairman

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Michael Keier, Member

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Peter Thayer, Member

WRIGHT-PIERCE
Engineering a Better Environment

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March 16, 2023

Blandford Water Department
1 Russell Stage Road
Blandford, MA 01008

**SUBJECT: Preliminary Design Report – Water System Study**

Dear Commissioners,

Wright-Pierce completed the Preliminary Design Report for the water system study in December 2022. This report summarizes our evaluation of the existing conditions of Blanford's water system and identifies deficiencies in the system related to storage capacity, piping, and the existing pump station. The water system is generally effective at delivering water to customers however the lack of active storage and the deteriorated conditions of critical infrastructure are of concern to the Blandford Water Department (BWD) in meeting the long-term needs of the town. This study evaluated alternatives for providing improvements to the water system to meet the needs of the community and comply with regulatory requirements and guidelines.

There is no active storage for system. Active storage is needed to establish and sustain adequate pressure throughout the system, to provide a cushion during peak demand, and for firefighting and emergency purposes. The two water storage tanks that have historically been used in the system have been abandoned and deactivated due to significant leaks. The 176,000-gallon clearwell located at the Water Treatment Plant is currently serving as the only storage in the system; however, the clearwell is not considered active storage since its volume was designed to meet chlorine contact time for disinfection. Potential locations, sizes, and construction types for a new water storage tank were considered. Potential sites for the new water tank were evaluated based on elevation (active storage should be located at an elevation to provide the required pressure and volume requirements stipulated in MassDEP and National Fire Protection Association guidelines), ownership, proximity to the water mains, and environmental constraints. The size of the proposed water storage tank was estimated based on the existing and projected demand of the system, considering potential future expansions of the water distribution system and potential high-volume customers.

Existing water mains in the southern portion of the distribution system are beyond their useful life, and are tuberculated and undersized, which results in frequency breaks and compromised reliability. Much of the southern portion of the distribution system consists of 4-inch and 6-inch cast iron pipe, installed in the early 1900s, which cannot provide adequate fire protection to the community, as demonstrated by recent hydrant testing. These small diameter pipes would also limit the operation of a future water storage tank.

The North Street Booster Pump Station (BPS) was originally constructed to supply water to the now-abandoned storage tank on Chester Road but currently supplies water to the Mass Pike Service Plazas and residences on Chester Road and North Street that are at elevations too high to be served by gravity. The pumps in the BPS

must operate continuously to maintain flows and pressures in the system. The significant friction in the small-diameter and tuberculated water mains creates significant backpressure at the pumps and results in excessive discharge pressures. The BPS building has deteriorated, and the pumps and piping are located within the clearance space of the electrical panels, violating electrical code.

The recommended improvements plan includes the following:

- Construction of an approximately 290,000-gallon, 47-foot-tall concrete storage tank on the empty lot located at 28-30 North Street (across from the North Street BPS and next to the eastbound Service Plaza). This site is most-advantageous as it provides sufficient elevation for a gravity-fed tank, is owned by the Town, is close to the BPS, and is not located near environmentally sensitive areas. Concrete tanks offer the longest service life, require minimal maintenance compared to glass-fused-to-steel and painted steel tanks, and do not heat up in the summer like steel tanks which will help limit the formation of disinfection by-products.
- Incorporating a water storage tank into the distribution system will require replacing the 4-inch and 6-inch cast iron water mains on North Street to 12-inch concrete-lined ductile iron to feed the tank and allow it to fill completely. Installing 12-inch water main on North Street from the intersection at Gore Street down to Main Street (including the bottleneck where Main Street connects with North Blandford Road) will result in a looped system capable of inflow and outflow from the tank in either direction. This offers operational flexibility and increased system reliability.
- North Street is currently pressurized by the BPS. It is recommended that the majority of North Street be converted to a 12-inch gravity-fed line and install a parallel 8-inch PVC water main along North Street to connect those residences located at elevations that cannot be served by gravity to the BPS.
- Replacement of the water mains on Russell Stage Road, Main Street, Otis Stage Road, Maple Lane, Wyman Road, and Herrick Road with 8-inch concrete-lined ductile iron pipe to provide adequate fire protection and improve system hydraulics.
- Replacement of the 1960s-era 4-inch and 6-inch asbestos cement water mains (which may be leaching asbestos into the water) on Old Chester Road with 8-inch concrete-lined ductile iron pipe to improve water quality and provide fire protection.
- If the Town constructs a new highway facility on Chester Road, the 100+ year old 4-inch and 6-inch cast iron water mains connecting the BPS to the new facility will need to be replaced with at least 8-inch diameter pipes to provide fire flow to the facility and residences on Chester Road.
- Upgrade of the BPS with a jockey pump and hydro-pneumatic tanks to maintain pressure in the system and meet demand during low flow periods without straining the larger pumps.
- Upgrade of the BPS with larger capacity pumps in duty-standby configuration so that demand can be met without both pumps running constantly.
- Equipment upgrades to the BPS will necessitate upgrades to the building to allow for sufficient space for the new equipment and upgraded electrical service. Replacing the BPS building with a prefabricated building will allow for an indoor generator to alleviate issues with weather and rodents adversely affecting the generator and will also provide space for the BWD to be headquartered.

- A preliminary evaluation indicates that the proposed water storage tank may be able to service the Mass Pike Service Plazas by gravity rather than by pressure from the BPS. Further evaluation is recommended to verify that the gravity system can provide adequate pressure when considering head losses and fire flow scenarios. Servicing the Service Plazas by gravity would reduce the demand on the BPS and may result in cost savings for the pump station improvements.

A phased implementation plan is recommended. Conceptual planning level cost estimates were developed as part of this report. All conceptual cost estimates are based on October 2022 costs and include 20% contingency. To immediately address the lack of fire protection and emergency storage in the community, the first recommended phase would include construction of the water storage tank and associated water main upgrades on North Street. The anticipated cost of the first phase of improvements is approximately $6,064,000. Phase 2 would include the replacement of the aging and undersized water mains. The anticipated cost of the second phase of improvements is approximately $9,630,000. This phase can be further broken down to prioritize the most critical areas of the distribution system such as Russell Stage Road which is in poor condition and Main Street which services a denser area of homes and businesses. Water main projects may also be coordinated with any planned Town or MassDOT paving projects. Phase 3 would include the full upgrade of the North Street BPS. The anticipated cost of the third phase of improvements is approximately $2,075,000. The recommended improvements will be included in the Capital Improvements Plan that is currently being developed by Wright-Pierce. Potential funding sources include the Massachusetts Drinking Water State Revolving Fund, Massachusetts Rural and Small-Town Development Fund, USDA Rural Development Program, and Congressionally Directed Spending Funding.

We have appreciated the opportunity to work with the BWD on this project and look forward to continuing to work with the BWD to implement the recommendations of this plan. Should you need additional information, please feel free to contact us with any questions.

Sincerely,
**WRIGHT-PIERCE**

Mariusz Jedrychowski, PE
Regional Group Leader/Senior Project Manager
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Elizabeth Doerfler, EIT
Engineer II
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