



Town of Andover – Department of Public Works Water Quality Evaluation

April 8, 2019



Water System – Discolored Water Complaints

- Summer, 2018 – very high number of discolored water complaints
- Fall, 2018 – discolored water complaints significantly reduced
- Fires, main breaks, flow increases, high velocity and flow reversal all can contribute to dirty water
- The majority of the complaints in Summer, 2018 were due to manganese levels in the distribution system
- 100+ miles of old, cast iron main (lined and unlined)
- Town has replaced over 8.5 miles since 2014
- Town has an engineered flushing program



Scope of Services

- Treatment Plant Evaluation
 - Perform sampling and analysis
 - Identify sources of Manganese (Mn) and Iron (Fe)
 - Optimize removal treatment
- Distribution System Evaluation
 - Update hydraulic computer model
 - Perform flow tests and collect water quality samples
 - Evaluate system hydraulics & flow patterns
 - Identify areas of concern and prioritize improvements
 - Evaluate unidirectional flushing program
- Complaint Tracking
 - Continue mapping complaint data
 - Improve procedures for logging, tracking and resolving discolored water issues
- Final Report and Recommendations



Water Treatment Plant – Findings and Actions

- Summer, 2018 Manganese made it through the treatment plant and into the distribution system causing large number of discolored water calls
- Ozone dose was increased to oxidize the high levels of Manganese, reducing dirty water complaints
- Completed sampling at locations throughout the Water Treatment Plant
- Completed our review of Water Treatment Plant operations
- Water Treatment Plant has the major processes in place to remove manganese (oxidation, sedimentation, filtration)
 - Ozone system is approximately 15 years old
 - Generator appears to function well - modern equipment has higher efficiency
 - Minor reconfiguration of injection system will likely improve dosing and efficiency



Water Treatment Plant – Findings and Actions (cont.)

- Key is to detect elevated Manganese quickly so ozone can be adjusted to oxidize the higher incoming levels
- Recommended that the operators check for Manganese at four locations daily: raw water, after clarification, after filtration and treated water
- Evaluated methods to detect Manganese on a regular or continuous basis
 - Take advantage of new technologies – on-line analyzers
 - Use existing equipment – time consuming



Distribution System – Findings and Actions

- Used the Hydraulic Model to evaluate potential flow reversals in the Distribution system
 - Under normal operation there is no indication that flow reversals are significant enough to cause dirty water
- Unidirectional Flushing Program
 - Program suspended last year due to Gas Emergency
 - Flushing to begin April 22 through June in the West High Service Area
 - Flushing Program Effectiveness will be evaluated
- Water Main Replacement program
 - Continue program to replace old cast iron water mains (lined and unlined)
 - First project this year is Shawsheen Heights - Construction start June
 - Next priority water main projects in gas effected streets - Completed in 4 years, ahead of paving
 - Applied for Emergency SRF funding
 - Priority future water main replacement based on main criticality, breakage history, complaints, future growth

Andover Department of Public Works
397 Lowell Street
Andover, MA 01810

DISTRIBUTION SYSTEM FLUSHING NOTICE

Andover Department of Public Works will conduct a
Distribution System Flushing Program in Town from:

April 22, 2019 – June 28, 2019

The purpose of the Distribution System Flushing Program is to improve drinking water quality for residents and businesses.

Flushing will take place in the western area of Town, roughly bordered Lowell Street, Beacon Street, North Street and River Road. **Please check the Town's website periodically for a listing of streets and neighborhoods that may be affected.**

Distribution system flushing will take place on weekdays between the hours of **8:30 AM and 4:00 PM**.

The flushing process may cause discolored water and a reduction in pressure. The discoloration of the water will be temporary. To help alleviate the problem, please run the outside spigot(s) until the water clears. Prior to washing any clothing, please make sure to check your water. If the condition persists, please contact the Public Works Water Division at **978-623-8862** between 7 AM to 3:30 PM or **978-623-8860** after hours.



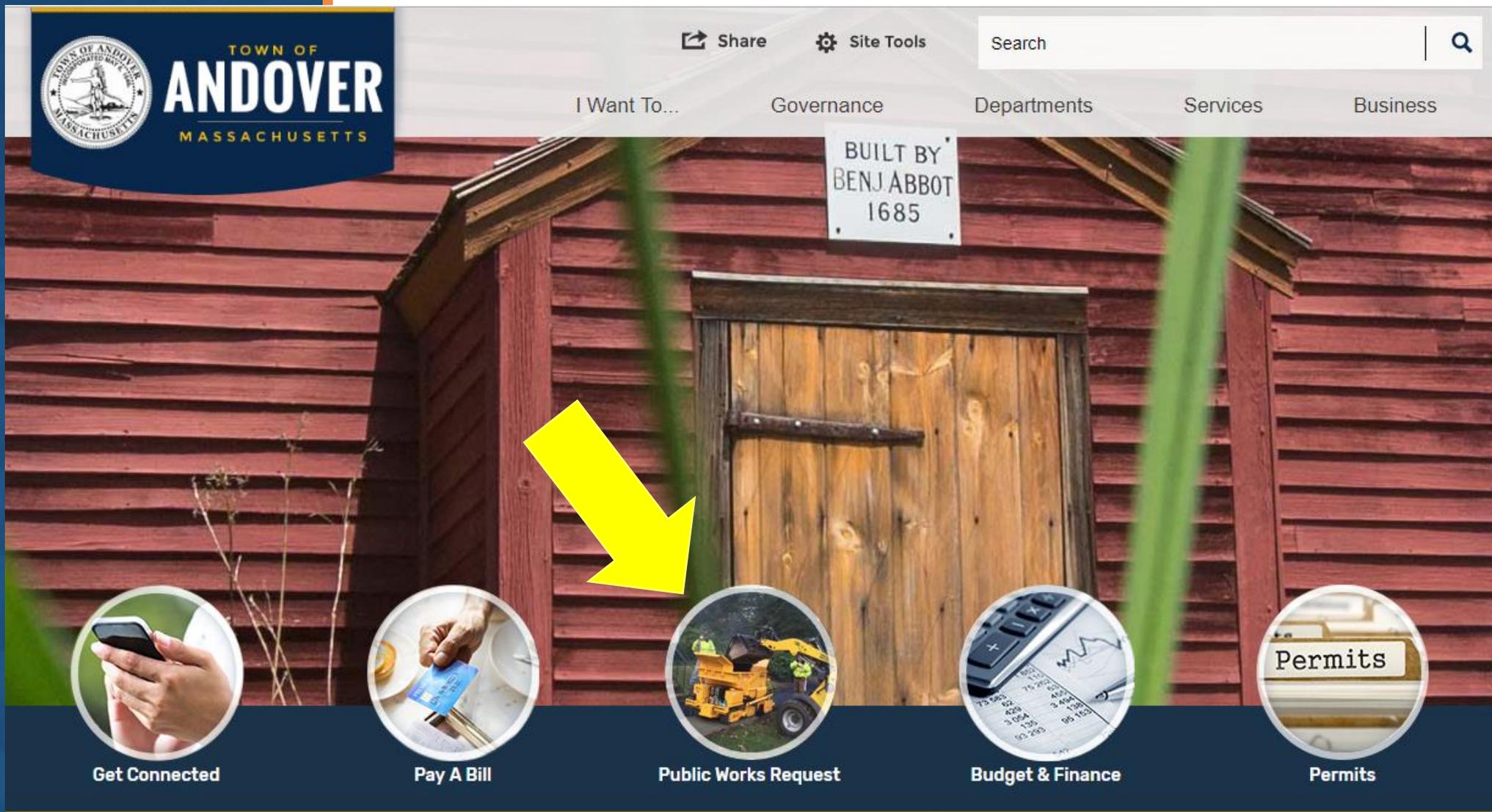
Summary

- Increased Manganese sampling in the Treatment Plant to quickly identify elevated levels of Manganese in the raw water
- Adjust Ozone as Manganese levels rise
- Replace unlined cast iron water mains in streets impacted by Gas Disaster. Take advantage of Emergency SRF Loans.
- Evaluate effectiveness of flushing program
- Identify cause of all recent discolored water calls
- Improve procedures for logging, tracking and resolving discolored water issues



How Residents Can Help

- Town Website: "Public Works Request"



MaintStar Public Works Request

New Request

Submit

* Indicates a required field

Request Location

Use my address

*If the issue being reported is at your residence, click the use my address button (your address information must be filled out in your profile). Otherwise, provide location of issue using street and cross street picker and also location description if need be.

Street Number

Street

Cross Street

enter additional information about the location

Location Description

Request Information

Please fill out the request providing as much information as possible. Please do not submit multiple requests for the same issue.

Department *

Category * (Operation at first)

Choose Issue

Click Here

enter additional information about the issue

Comments

Reset Form

↓ You can upload pictures or attachments below

Attachments

Max File Size 9Mb



Click or Drop files here to upload

Submit



How Residents Can Help

- Call DPW – 978-623-8700, press 0
- Email at DPW@andoverma.gov
 - Include location, nature of the complaint, duration
- The Town welcomes the opportunity to assist
 - A DPW representative will be happy to come to your home or business following a complaint – it helps!

