

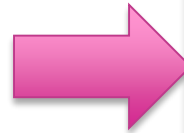
A photograph of the City of Flint skyline, featuring several large, modern buildings with brick and stone facades. A prominent building in the center has a tall, thin tower with a spherical top. The buildings are situated behind a line of green trees and a grassy embankment. In the foreground, a body of water reflects the sky and buildings. A bridge is visible on the right side of the water.

City of Flint, MI
City Council Public Works Committee
Interim Water Quality Report

Veolia Scope of Work

Week 1

- Provide a review of current actions
- Engage staff, visit facilities and analyze data
- Make interim report



Week 2

- Carry out more detailed study of initial findings
- Make recommendations for Improving water quality
- Provide a plan, cost and schedule for change

Items of Note

- **Not in scope** – studying why the change from DWSD or the history of the utility
- **What we found** – A very frustrated community and a staff trying to solve the problem, having some success but frustrated with the pace of change

Everybody Is Checking the Safety of Water



- City, state, news media, universities and other groups
- Safe = compliance with state and federal standards and required testing
 - *Latest tests show water is in compliance with drinking water standards*
 - *Monthly report available on web page*
- More than 20,000 tests required annually for city
- Strict testing requirements in place (what and how to test)

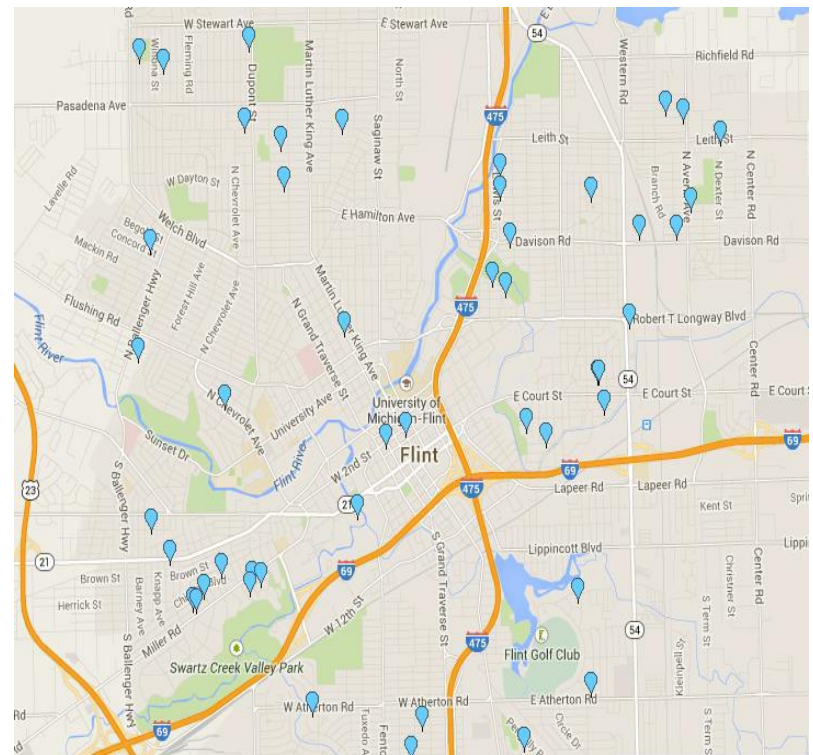
Why TTHM Notices?

- TTHM is formed as a result of the reaction between chlorine and organic material in the water
- City is required to test quarterly at 8 sites
 - *Last summer, several sites had more TTHM than allowed*
- City has reduced levels of TTHM and now all sites are in compliance
 - *Customer notification letters are required until tests are in compliance an average of four quarters*
- It will take at least 2 more quarters to lower average
 - *Even a change to DWSD water doesn't solve problem*
- Flint is not alone – hundreds of communities are facing TTHM issues

Why Discolored Water?

- Old cast iron pipes
- Always has been some discolored water problems – mostly after water breaks
- Efforts to reducing TTHM didn't help discoloration
 - *Doesn't mean the water is unsafe but it is not appealing and raises questions*
- City will test the water at your home – call 787-6537 or email flintwater@cityofflint.com
- Tracking customer complaints is important

Location of water quality complaints
The last 12 months – fewer than you think



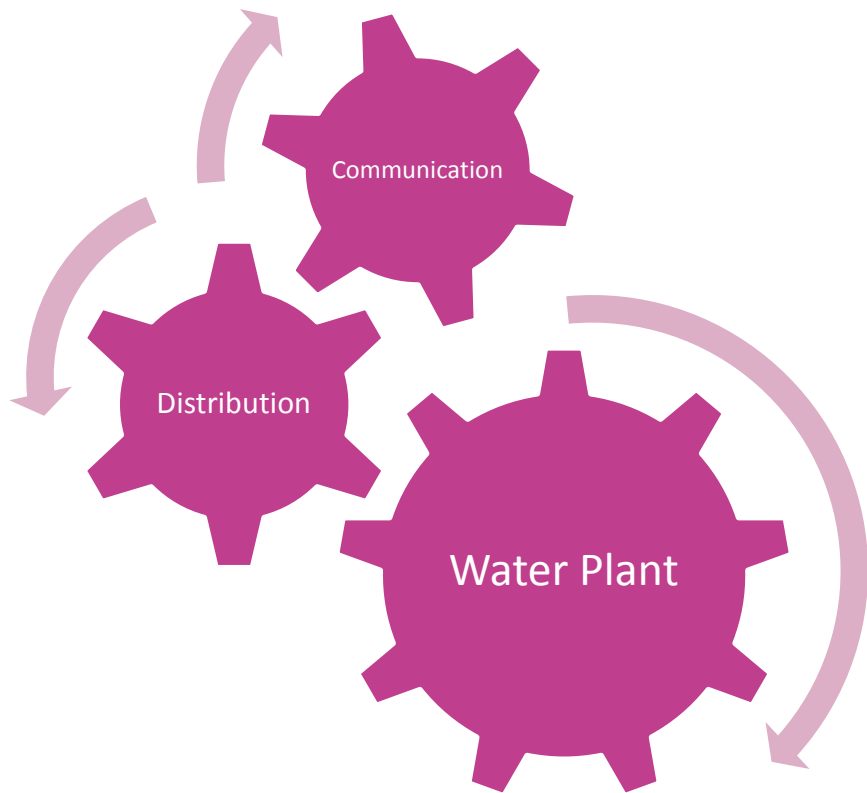
Water Quality Can Be Improved

- Adjust the chemicals being fed – stop some, increase some and change some
- Provide better monitoring of water quality to help make adjustments
- Continue repair or replacement of broken parts
- Reduce the over capacity of the distribution system
- Do a better job explaining what is happening
- Do a better job of asking for help



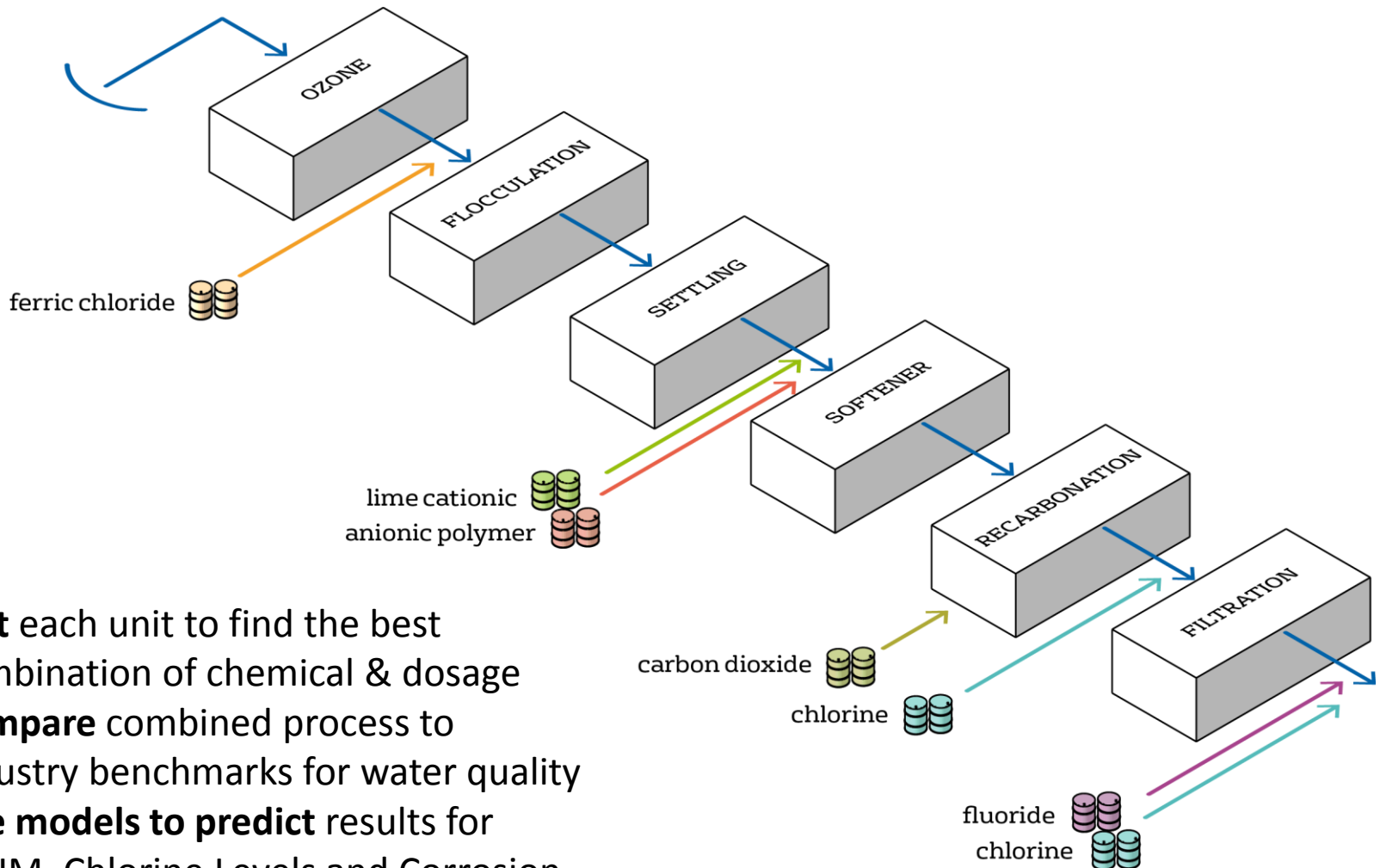
Further Explanation of Solutions

Solution Involves Coordination of 3 Activities



- Water plant improvements
 - *Optimize chemical dosages*
 - *Consider different chemicals*
 - *Change dosing points*
 - *Install granulated activated carbon*
 - *Complete plant upgrades*
 - *Implement best mgmt practices*
- Distribution system improvements
 - *Fix broken valves*
 - *Ask for customer feedback*
 - *Reduce tank storage*
 - *Target line flushing*
 - *Run a hydraulic model*
- Better communication with customers
 - *Engage advisory committees*
 - *More accessible utility*
 - *Make it easy to access information*
 - *Better customer communication*

Optimize Plant Processes



- **Test** each unit to find the best combination of chemical & dosage
- **Compare** combined process to industry benchmarks for water quality
- **Use models to predict** results for TTHM, Chlorine Levels and Corrosion

Complete Plant Construction & Re Prioritize Capital

Cost effective plan in budget

- Complete water plant renovation
 - *Target SCADA and instrumentation in plant*
- Speed up valve turning contract & provide money for replacements
- Speed up hydraulic model update to reduce tank volume
- Evaluate installing of granulated activated carbon on filters

Weather can impact timing

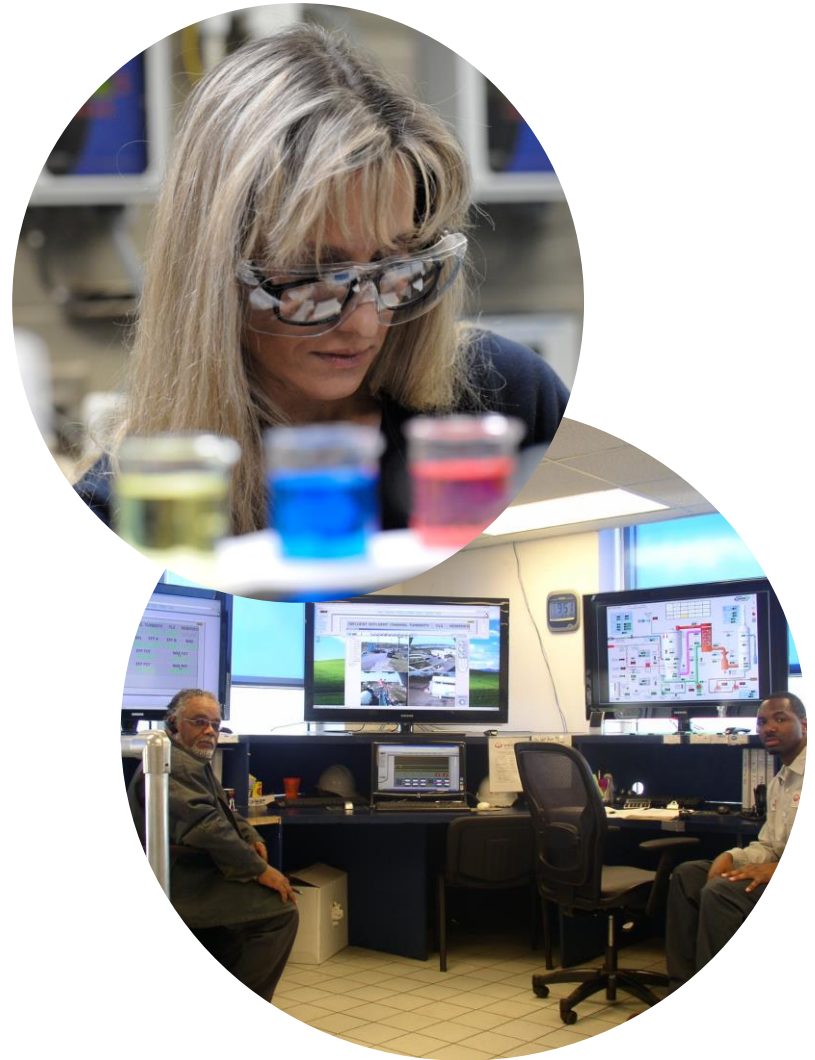
Digging up a water valve for repair
Need good weather to start



Implement Best Management Practices

Activities to Help Operators Maintain Good Water Quality

- Process Control Management Plan
- Lab QA/QC Program
- Computerized Maintenance Management System
- Asset Management System
- Training and Certification Program
- Vulnerability Plan



Distribution System Improvements

- Speed up flow of water from plant to homes – 2 weeks plant to house
 - *Find closed valves & open them*
 - *Replace broken valves*
 - *Update hydraulic model*
 - *Reduce system storage*
- Track customer complaints
 - *Test customer water*
 - *Spot flush hydrants to clean areas of stagnant water in the system*

Flushing out discolored water



Improving Customer Service

Make It Easy to Access Information and People

Develop a proactive customer communication plan

- Create advisory committees to help direct efforts and improve flow of information
- Establish a single point of contact to manage all water quality complaints
- Provide additional customer service training to staff
- Expand neighborhood and community outreach
- Change monthly billing statements from card to envelope with information

Example - Communicate in the field

NOTICE: ANNUAL FLUSHING PROGRAM

We are conducting our annual flushing program to enhance your water quality and clean the distribution system.

DC Water crews will be flushing hydrants in your area

10:00 p.m. to 6:30 a.m. on the following dates:

9/24 through 9/30

IMPORTANT INFORMATION

- Your water supply will not be shut off during hydrant flushing.
- You may notice slight water discoloration or low water pressure.
- During this time, customers can continue normal water usage, including drinking, bathing and laundry (unless water is discolored).

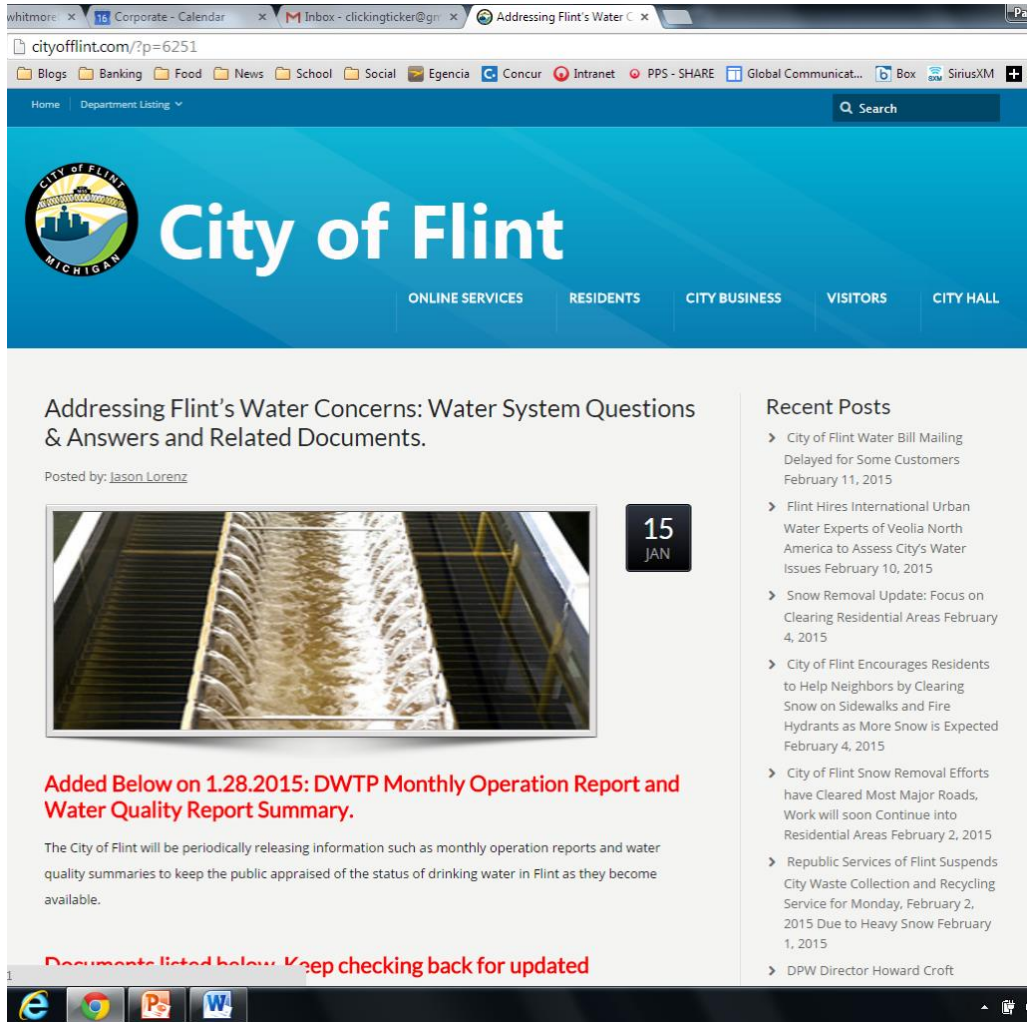
If you experience discolored water during this period:

- Run your cold water taps for 15 minutes. If it does not clear up, please contact our Drinking Water Division.
- Do not run your hot water. If you experience discolored water from your hot water tap for several hours, then it is recommended to drain and flush your water heater tank.

Provide field crews with additional communications tools to use to address questions or concerns from the public

- *Create door hangers, flyers, or yard signs to notify neighborhoods about main breaks, hydrant flushing, or system maintenance that may affect the public*
- *Create a business card or other contact card with the name and phone number of the single point of contact with the Department of Public Works who is managing information flow*
- **sample door hanger provided by DC Water & Sewer Authority*

Clear, concise information is key



The screenshot shows a web browser window displaying the City of Flint website. The browser's address bar shows 'cityofflint.com/?p=6251'. The website header features the City of Flint logo and the text 'City of Flint'. Below the header is a navigation menu with links for 'ONLINE SERVICES', 'RESIDENTS', 'CITY BUSINESS', 'VISITORS', and 'CITY HALL'. The main content area displays a blog post titled 'Addressing Flint's Water Concerns: Water System Questions & Answers and Related Documents.' The post is dated '15 JAN' and includes a photograph of a water treatment facility. Below the photo, there is a red text box that reads 'Added Below on 1.28.2015: DWTP Monthly Operation Report and Water Quality Report Summary.' The text below this box states: 'The City of Flint will be periodically releasing information such as monthly operation reports and water quality summaries to keep the public apprised of the status of drinking water in Flint as they become available.' At the bottom of the post, there is a red text box that reads 'Documents listed below. Keep checking back for updated'. To the right of the main content area, there is a 'Recent Posts' section with a list of recent articles, including 'City of Flint Water Bill Mailing Delayed for Some Customers February 11, 2015', 'Flint Hires International Urban Water Experts of Veolia North America to Assess City's Water Issues February 10, 2015', 'Snow Removal Update: Focus on Clearing Residential Areas February 4, 2015', 'City of Flint Encourages Residents to Help Neighbors by Clearing Snow on Sidewalks and Fire Hydrants as More Snow is Expected February 4, 2015', 'City of Flint Snow Removal Efforts have Cleared Most Major Roads. Work will soon Continue into Residential Areas February 2, 2015', 'Republic Services of Flint Suspends City Waste Collection and Recycling Service for Monday, February 2, 2015 Due to Heavy Snow February 1, 2015', and 'DPW Director Howard Croft'.

- Simplify the reports on the web page dedicated to addressing water system questions
 - *Create a single-page, easy to understand report for the public*
 - *Use charts or provide other examples to demonstrate water quality testing and system or treatment plant improvements underway*
 - *Provide name, phone number and email address for identified point of contact so customers can request more information*
 - *Continue to provide Monthly Operation Report and Water Quality Report Summary for those customers interested in more technical information*
 - *Use site to provide additional notice of field work that may impact customers*

What Is Next

Next Steps

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- Engage staff, visit facilities and analyze data
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Questions Being Heard

REMEMBER

We just started. Might not have an answer yet to your question

- **When will water improve** - The water has improved with current actions. More changes will occur over weeks and months because of safety reviews
- **Date of next update and final report** – An update will be provided next week and a report the following week.
- **Time frame for implementing recommendations** – The City is already started. Others a few days and some weeks or months due to State approval being required or weather.
- **Cost of changes** – Don't know yet but we are aware of the financial concerns

More Questions Being Heard

- **How are TTHM formed** – It's the reaction of chlorine to organics (leaves, dirt) in the water.
- **How to reduce TTHM** – Reduce organics before introducing chlorine and shorten time chlorine has to react with the organics
- **What causes discoloration** – Older lines, the iron parts of the system will leach iron into the water causing the discoloration. Other times its just air built up.
- **Why no discoloration with DWSD** – There was. Flint had a bad time with breaks of old line and is doing lots of construction. This stirred up the water and caused discoloration.

More Questions Being Heard

- **Can you test my water** – The city will test your water for free. But, only 2 of 20 people have taken the city up on the offer since it began offering the service.
- **Medical problems** – Some people may be sensitive to any water. Talk to your doctor. The City is communicating with the medical community.
- **Confidence that future problems will be avoided** – Recommendations will include putting programs in place to better respond to water changes and assure quality

Questions?