



CITY OF FLINT

Dr. Karen Weaver
Mayor

January 8, 2018

Ms. Cathy Stepp, Regional Administrator
Region 5
United States Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard (W-15J)
Chicago, Illinois 60604-3590

Sent via Email

Dear Ms. Stepp:

This correspondence is a response to USEPA's December 12 letter which outlined the "Next Steps" required for complying with USEPA's January 21, 2016 Emergency Order and the November 17, 2016 First Amendment. On April 19, 2017, the City of Flint informed USEPA that it intended to maintain Great Lakes Water Authority (GLWA) as its primary, long term water source and establish a back-up water source through an interconnection with the Genesee County Drain Commissioner (GCDC). This recommendation was subject to a Public Participation period and approvals by various parties. Recently, the Flint City Council and the Flint RTAB has approved the GLWA, GCDC and KWA contracts required to implement this water source plan on November 21, 2017 and November 29, 2017 respectively. All contracts have an effective date of December 1, 2017.

Now that Flint has established its long term water sources, many of the requirements contained in the Emergency Order and First Amendment can be addressed. These requirements include issues associated with water quality monitoring, communication with stakeholders, corrosion control optimization, delivery of required projects and future staffing/capacity of the Water Department. The status of these requirements is presented below:

Communication

Paragraph 51 of the Order requires the City of Flint and MDEQ to create and maintain a publically available website, where all data, reports and documents under the Order are posted. This website (www.michigan.gov/flintwater) will continue to be maintained and will contain:

- The written responses to USEPA and EPA's Flint Technical Support Team
- Water quality parameter measurements in the distribution system
- Lead and copper sampling results
- Distribution system water quality optimization plan (to be completed in February, 2018)
- Standard Operating Procedures (as they are finalized in January, 2018)
- Other information for the residents of Flint

Corrosion Control Treatment and Compliance

Paragraph 59 of the Emergency Order and Paragraph 60 (iii.C) of the Amended Order addresses the need to provide corrosion control for Flint's current and future water sources. The City continues to treat the current GLWA water source as it enters the Flint system. Phosphate concentrations and pH have been successfully maintained within recommended levels.

Flint's "new" water source will initially be its current GLWA source. However, to improve the long-term reliability of the Flint water system, a secondary water source will be derived from the GCDC system by the end of 2019. Because of the length and size of the pipeline providing this secondary/back-up supply to Flint, a continuous flow through the pipeline needs to be maintained to preserve water quality. Therefore, a corrosion control study needs to consider both of these water sources.

Flint has previously submitted its proposed Corrosion Control Treatment (CCT) Study Test Plan for review by USEPA. The goal of the study is to determine the optimal CCT for GLWA water and a blended GLWA/GCDC water (95/5 percent). This test plan is supported by a Lead Corrosion Control Coupon Study that was recently completed by the City. On December 20, Flint's RTAB approved the funding for the CCT Study Test Plan which will use the 16 pipe loops currently operating at the Flint Water Treatment Plant. During the first two weeks in January, the daily data collection forms and sampling protocols will be finalized. The additional equipment required to perform the evaluation will be installed and tested in late January/ early February. The formal test period is scheduled to begin during the third week in February. The study will evaluate the impact of various orthophosphate concentrations and pH levels on corrosion control.

The City recognizes that it has an obligation (under Paragraph 59) to submit a monitoring plan for the LCR compliance. However, as you are aware, Tier 1 sample sites have been identified and established based on information derived from the on-going, aggressive lead service line replacement (LSLR) program. As lead service lines are identified, many of these homes are sampled for compliance (Tier 1 sites). However, these same lines are then replaced so they are not eligible to be maintained as Tier 1 sites. Therefore, the LCR compliance monitoring is a dynamic situation.

This process will continue through 2018 and 2019. Flint has initiated hydrovac work associated with Phase 5 of its LSLR program. As lead service lines are identified, new Tier 1 sites will be established. The City will provide MDEQ and USEPA with the location of the proposed Tier 1 sites as they are established for the four (4) compliance periods in 2018 and 2019. Beginning in 2020, permanent Tier 1 sites will be established primarily focused on sites where lead solder has been used.

Water Quality Parameter Monitoring

Paragraph 53 of the Emergency Order requires the City of Flint to monitor multiple water quality parameters at 25 sites quarterly and at 10 of these sites weekly. In the attached October 30, 2015 letter, MDEQ outlined the requirements of an enhanced water quality parameter monitoring plan. These requirements were consistent with the USEPA Emergency Order. Sampling sites and sampling frequencies were established in the September, 2017 Flint RTCR Monitoring Plan (attached). The City has diligently monitored each of these sites at the required frequencies and posted the results for public review. This sampling will continue for the duration of the Order.

Technical, Managerial and Financial (TMF) Capacity

Paragraph 61 of the Emergency Order and Paragraph 60 (b.iii) of the First Amendment requires the City of Flint to demonstrate that it has the appropriate technical, managerial and financial (TMF) capacity to properly operate its water system. However, it was essential that Flint's future long-term water source be finalized before a TMF analysis could be performed. Using finished water purchased from GLWA instead of treating KWA water at a renovated Flint Water Treatment Plant significantly simplifies the operation of the Flint water system. With a long-term GLWA water source, the City's future resources can be primarily focused on the distribution of finished water and customer service without having to be concerned with complex water treatment processes.

The attached organization chart and staffing level should be adequate to provide the required TMF for the Flint system. This conclusion is based on Flint’s historical staffing levels and performance and benchmarking against other water utilities. The proposed staffing level will be supported by a Program Management team delivering a majority of the capital program and contract operation services supporting production, maintenance and water quality service.

The chart below lists the current vacant positions within the Flint Water Department. Given the challenges of attracting and retaining staffing levels and talent in Flint, several of the vacant positions and capacity needs will initially be satisfied through contract services.

Vacant Position	Strategy
Water Plant Superintendent (OIC)	Hired by June 30, 2018
Operator Supervisor (OIC)	Contracted
WQ/Laboratory Supervisor	Contracted
Laboratory Technician	Contracted
Maintenance (production) (3)	Hired by June 30, 2018
Instrument Technician	Contracted/Wastewater Treatment Plant
Distribution Superintendent	Hired by June 30, 2018
Senior Distribution Operator (3)	Hired by June 30, 2018

With the recent hiring (promotion) of the Director-Public Works and the presented organization, contract services and hiring strategy, the City of Flint believes it can fulfill the technical and managerial components required under the Order.

By authorizing the continued use of GLWA finished water as its long-term primary water source, the City of Flint avoided the significant financial challenges associated with its other water supply options. Given the Water Department’s projected operating plan and budget, a Financial Capacity analysis is being performed in the Flint 2017 Water System Asset Management Plan (to be finalized in January). This analysis will be supplemented by an on-going rate design being performed by Raftelis Financial Consultants, Inc. Similar to most water systems, future rate adjustments will be required to maintain proper water service and meet the system’s future capital requirements. However, the City will continue to examine several options to help mitigate future rate increases. These options include:

- Improving operating efficiency, including increased automation
- Improving collection rates
- Securing additional grants and DWRP funds for capital improvements
- Enhancing the low-income customer assistance programs
- Creative rate design to assist low-income customers

Standard Operating Procedures

Several paragraphs of the Emergency Order and First Amendment require the development of Standard Operating Procedures (SOPs) to support the operation and maintenance of the water system. Significant progress has been made toward finalizing the following SOPs:

- Flushing for Water Turnover
- Unidirectional Flushing
- Backflow Preventer Testing and Repair
- Customer Complaint Tracking
- Emergency Repair of Water Mains
- Hydrant Inspection, Testing, and Maintenance
- Meter Installation, Inspection, and Testing
- Phosphoric Acid Addition
- Reservoir and Pump Station

- Sodium Hydroxide Addition
- Sodium Hypochlorite Addition
- Sodium Hypochlorite Feed at Reservoirs
- Sodium Hypochlorite Testing
- Valve Inspection, Exercising, and Maintenance
- WQP and control charting

Two sample SOPs are attached to this correspondence for review. As these SOPs are finalized, they will be posted to the website.

Required Projects

To comply with the Emergency Order and operate within the requirements established in the GLWA water service contract, the construction of several projects will be required. These projects are:

- Flint's secondary water source transmission main - This project consists of the installation of approximately 5.5 miles of 36-inch transmission main through both the GCDC and Flint service area. The project will also include the construction of a meter vault within the GCDC system and control valves at the Flint WTP site that will establish flow rates from each water source and maintain the proper source blend before chemical treatment. Upon its completion in 2019, it will provide the needed water source reliability for Flint.
- Chemical Building - This project provides permanent chemical storage and feed facilities to treat the combined future GLWA/GCDC water source. The specific chemicals to be included in the project will be established by the results of the CCT Study and the future quality of water provided by GLWA.
- Dort and Cedar Street Storage and Pumping Station Improvements - The GLWA water service contract dictates the maximum daily and peak hour supply limitations from GLWA. To allow Flint to meet these conditions, sufficient equalization storage is required in the Flint system. A storage analysis has determined that maintaining the Dort and Cedar Street storage facilities can provide the required equalization/emergency storage. Additionally, operating protocol is being established to minimize water age with these facilities in service.


Additionally, to enhance the monitoring of water quality within the Flint distribution system, it is proposed to install at least six (6) water quality monitoring panels at strategic locations within the distribution system. These panels will provide real-time water quality measurements, including chlorine, pH and phosphate. Predictive models will assimilate this water quality information with operational data to predict water quality and system performance.

Since it is proposed to use WIIN funding for each of these projects and the funding eligibility will not be established until the 2nd quarter of 2018, the majority of these projects will be completed in 2019. In general, design, permitting and bidding of the projects will be completed in 2018. Other projects, such as small main replacements, are planned to utilize WIIN funding in 2018/2019.

As co-responders to the Order, Mr. Eric Oswald (Director – Drinking Water and Municipal Assistance Division, Michigan Department of Environmental Quality (MDEQ)) has reviewed this submittal on behalf of the State and concurs with the content of the document. The MDEQ and State will continue to support the City with its monitoring and compliance programs and funding approval process.

If you have clarifying questions and/or need additional information, please contact me at (810) 237-2035 or via email at kweaver@cityofflint.com.

Respectfully submitted,



Dr. Karen W. Weaver
Mayor

cc: Mr. Chris Korleski, US EPA
Mr. Rich Baird, Governor's Office
Mr. Keith Creagh, MDNR
Mr. Eric Oswald, MDEQ
Mr. Steve Branch, City of Flint

Attachments:

Flint Water Division Organization Chart
MDEQ Correspondence - Interim Water Quality Parameters
Corrosion Control Treatment Operation – October 30, 2015 MDEQ letter
Final RTCR Coliform Monitoring Plan
Sodium Hypochlorite Addition SOP
Emergency Repair of Water Mains SOP