

# **VOLUNTARY AGREEMENT BETWEEN THE CITY OF FLINT AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

## **I. PREAMBLE**

This agreement replaces the order the Department of Environmental Quality (DEQ) issued to the City of Flint (City) on October 22, 2018 under the Michigan Safe Drinking Water Act (Order). Upon execution of this agreement, the Order shall be deemed terminated and shall have no legal effect, it not having become “final” in accordance with the law.

The parties agree to work collaboratively to ensure that the City’s water system achieves the goal of long-term self-reliance: a goal shared by both parties. To achieve that shared goal, the parties agree to the following:

## **II. TERMS**

- A. No later than January 31, 2019, the City will formally adopt the cross-connection control program that the DEQ approved on December 11, 2018. (Attachment A.)
- B. The City will implement the timeline for the approval of outstanding Standard Operating Procedures that the DEQ approved on December 11, 2019. (Attachment B.)
- C. The City provided DEQ with a July 25, 2018, Technical, Management, and Financial Capacity proposal in which the City explains its plan to achieve its technical, managerial, and financial (TMF) capacity by fiscal year (FY) 2023 (Attachment C). The City acknowledges that the revenue generated by the

City's Water Department is not enough to support the operating costs of the City's water system long-term but does not believe it would be politically or financially possible to increase customer rates until several years from now. So the City's TMF proposal describes the steps the City plans to take leading up to FY 2023 to achieve TMF capacity without raising customer rates.

Beginning every six (6) months from the date of approval of the TMF plan by the MDEQ, until the City achieves TMF capacity, the City agrees to provide a signed statement to the DEQ that describes the City's progress towards completing its plan to achieve TMF capacity by FY 2023 (Progress Report). The Progress Report will also include an evaluation showing that the City can achieve TMF capacity by FY 2023 without increasing customer rates.

- D. The City will use its best efforts to implement the timeline for filling vacant positions identified in the updated organizational chart the City provided the DEQ on December 12, 2018 no later than February 5, 2019. (Attachment D.)
- E. The City confirms that it has authorized the contractor who serves as the Operator in Charge of its water plant to direct city employees in the plant not employed by that contractor to make any changes to plant operations required by the contractor, subject to the ultimate authority of the City Director of Public Works.
- F. The City agrees to complete the design of chemical feed system improvements by March 31, 2019 and submit them for DEQ review and approval. The City

agrees to complete construction of the chemical feed system improvements by December 31, 2019.

- G. The City agrees that by March 31, 2019, it will complete a preliminary inspection of the Cedar Street Reservoir using a remotely operated vehicle (which does not require taking the reservoir out of service) or, preferably, by using a method that allows the City to inspect one chamber of the reservoir at a time without taking the reservoir completely out of service. The City will then submit to the DEQ the inspection report and plan for completing any necessary improvements of the Cedar Street Reservoir identified by the preliminary inspection. The City agrees to also complete a full inspection of the Cedar Street Reservoir within 45 days of the date the Dort Reservoir is brought into service. The City agrees to submit to the DEQ an inspection report and plan for completing any necessary improvements of the Cedar Street Reservoir identified by both inspections after the Dort Reservoir is brought into service.
- H. The City agrees that by January 31, 2019, it will execute a contract for emergency services at the Cedar Street Reservoir that will guarantee the provision of a generator that is compatible with the reservoir's electrical system. The City agrees to maintain the contract until the date it successfully implements its redundancy plan involving the Dort Reservoir and Genesee County.

- I. The City agrees that by July 1, 2019, it will complete the design of upgrades to the Cedar Street Reservoir pumps and submit the design to the DEQ for review and approval. The City also agrees to complete the upgrades to the Cedar Street Reservoir by March 31, 2020.
- J. The City agrees to submit a plan by January 31, 2019 explaining how it will provide both the services currently provided by John Young once his contract is no longer funded, and the services previously provided by Nick Pizzi now that his contract is no longer funded.
- K. Attachments B, C, and D and their respective deadlines are incorporated into this agreement.

### **III. SUBMISSIONS**

- A. The City will send all submissions required by this agreement to the DWMAD Director at DEQ, DWMAD, P.O. Box 30817, Lansing, Michigan 48909-8311 or by email, as appropriate. With each submission, the City will include a cover letter that identifies the specific paragraph of this agreement to which it pertains. If appropriate, the cover letter may be email correspondence, and may refer to more than one paragraph.
- B. If the DEQ disapproves of a submission, it will notify the City, in writing, specifying its reasons for such disapproval. Within 30 days of the date of the DEQ's written disapproval, the City will deliver a revised submission that addresses the issues identified in the DEQ's notice of disapproval. If the

City's revised submission is still not acceptable to the DEQ, the DEQ will notify the City of this disapproval.

- C. In the event the DEQ approves of the City's submission subject to specific modifications, it will notify the City, in writing, specifying the modifications required to be made to the submission prior to its implementation and the specific reasons for such modifications. The DEQ may require the City to submit, prior to implementation and within 30 days of the date of DEQ's written approval subject to specific modifications, a revised submission that addresses such modifications. If the City's revised submission is still not acceptable to the DEQ, the DEQ will notify the City of this disapproval.
- D. Upon DEQ approval, or approval with modifications, of a submission, such submission shall be incorporated by reference into this agreement and shall be enforceable in accordance with the provisions of this agreement.
- E. The failure by the City to submit an approvable submission within the applicable time periods specified above constitutes a violation of this agreement and may subject the City to the enforcement provisions of this agreement.
- F. Any delays caused by the City's failure to submit an approvable submission when due shall in no way affect or alter the City's responsibility to comply with any other deadline(s) specified in this agreement.

- G. No informal comments by the DEQ regarding any submission made by the City will be construed as relieving the City of its obligation to obtain written approval when required to do so by this agreement.

#### **IV. EXTENSIONS**

- A. The City and the DEQ agree that the DEQ may grant the City a reasonable extension of the deadlines specified in this agreement. The City will submit extension requests to the DEQ in writing no later than ten (10) business days prior to the pertinent deadline. The City's extension request shall describe the circumstances the City believes will prevent the City from meeting the deadline(s); describe the measures the City has taken and/or intends to take to carry out the responsibility imposed on City under this Agreement for which a deadline extension is requested; and state the length of the extension requested and the specific date on which the obligation will be met.
- B. The DEQ will respond in writing to extension requests. No change or modification to this agreement is valid unless in writing from the DEQ and, if applicable, signed by both parties. In considering extension requests, the DEQ shall take into account the purpose of this agreement as set forth in the Preamble.
- C. Extension requests and responses may be delivered by email.

## **V. REPORTING OF VIOLATIONS**

- A. The City will report any violations of the terms in Section II of this agreement no later than the close of five (5) business days following detection of such violation(s) and will send a written report to the DEQ within ten (10) business days following detection of such violation(s). The written report will include a detailed description of the violation(s), as well as a description of any actions proposed or taken to correct the violation(s). The City will report any anticipated violation(s) of this agreement to the DEQ in advance of the relevant deadlines whenever possible.

## **VI. RETENTION OF RECORDS**

- A. Upon request by an authorized representative of the DEQ, the City will make available to the DEQ all records, plans, logs, and other documents required to be maintained under this agreement, the Safe Drinking Water Act, or its rules. All such documents will be retained by the City for at least a period of three (3) years from the date of generation of the record unless a longer period of record retention is required by law.

## **VII. RIGHT OF ENTRY**

- A. The City will allow any authorized representative or contractor of the DEQ, upon presentation of proper credentials, to enter upon the premises of those City facilities related to water storage, distribution and treatment at all reasonable times for the purpose of monitoring compliance with the

provisions of this agreement. This paragraph in no way limits the authority of the DEQ to conduct tests and inspections pursuant to the Safe Drinking Water Act or any other applicable law.

## **VIII. ENFORCEMENT**

- A. The City agrees that if it does not meet the deadlines identified in Section II without obtaining an extension under Section IV, that the DEQ is empowered to assess and to require the City to pay monetary penalties. If notwithstanding the provisions of section III regarding City submissions and DEQ responses, and if all requested extensions have been exhausted or denied, the DEQ determines it will assess monetary penalties, the City acknowledges the following penalties will apply until the day the deadline is met: \$200 per violation per day for one to seven days of violation; \$300 per violation per day for eight to 14 days of violation; and \$500 per violation per day for each day of violation thereafter. In no event shall any fines or penalties exceed those authorized by law.
- B. All assessments of penalties issued by the DEQ under this agreement must be delivered to the City in writing, which shall specifically identify by reference to sections of this agreement and reference to the City's submission (or lack thereof if the failure to make a submission is the basis for the penalty) the violation for which such penalty is being assessed. Penalty assessments may be delivered via email.



- C. The City agrees to pay all funds due pursuant to this agreement by check made payable to the State of Michigan and delivered to the Accounting Services Division, Cashier's Office for the DEQ, P.O. Box 30657, Lansing, Michigan 48909-8157. To ensure proper credit, all payments made pursuant to this agreement must include the Payment Identification No. RMD90037.
- D. The City agrees not to contest the legality of any penalties assessed pursuant to this section but reserves the right to dispute the factual basis upon which a demand by the DEQ for penalties is made.
- E. In addition to the penalties described in this section, the DEQ reserves the right to pursue appropriate action, including injunctive relief, to enforce the provisions of this agreement. The DEQ is precluded from seeking both a penalty under this agreement and a statutory fine for the same violation.
- F. This agreement does not affect the City's responsibility to comply with any other applicable local, state, or federal laws or regulations.

## **IX. TERMINATION**

- A. This agreement will remain in effect until terminated by the DEQ. If the City believes it has fully satisfied the obligations it has agreed to, it will submit a written certification to the DEQ that its obligations are satisfied, including the payment of any applicable penalties, if any. The certification will include: the date of compliance with each provision of the terms in Section II, and the date applicable penalties were paid under Section VIII; a statement that all required information has been reported to the DEQ; and

confirmation that all records required to be maintained pursuant to this agreement are being maintained.

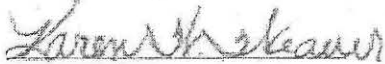
- B. The DEQ may request additional relevant information after receiving the City's certification and request but before terminating the agreement. The DEQ will not unreasonably decline to terminate the agreement.

### SIGNATORIES


The undersigned CERTIFY they are fully authorized by the party they represent to enter into this agreement and to EXECUTE and LEGALLY BIND that party to it.

#### CITY OF FLINT

#### DEPARTMENT OF ENVIRONMENTAL QUALITY


  
By: Dr. Karen W. Weaver, Mayor

Date: Dec 17, 2018 w/permission

  
By: Eric Oswald, Director  
Drinking Water and Municipal Assistance  
Division

17-PRC-16  
Date

#### APPROVED AS TO FORM:

  
By: Nathan A. Gambill (P75506)  
Assistant Attorney General  
Environment, Natural Resources, and  
Agriculture Division  
Department of Attorney General  
P.O. Box 30755  
Lansing, Michigan 48909

Date

Dec 17, 2018

## **ATTACHMENT A**



## DEPARTMENT OF PUBLIC WORKS

**Dr. Karen Weaver**  
Mayor

**Robert Bincsik**  
Director

November 14, 2018

Under part 14 of the Michigan Safe Drinking Water Act, PA 399, "A water utility shall develop and maintain a comprehensive control program for the elimination and prevention of all cross connections. A cross connection is a connection or arrangement of piping or appurtenances through which backflow of non-potable water could flow into the public drinking water supply."

The Cross Connection Control Program for the City Of Flint consists of the following:

The program, first started in 1974 and given authority under City of Flint ordinance Chapter 46 Division 4 and with reference to the Michigan Department of Environmental Quality Cross Connection Rules Manual, tracks and requires annual testing of all testable backflow prevention devices in use on plumbing systems in residential, commercial and industrial applications throughout the City. These tests come due twice a year in either January or July, depending on when the device was installed/repaired. Test reminders are mailed out at least 30 days prior to each due date. Customers that are found to be in violation of this ordinance are given 10 business days to comply, or could face termination of water service and/or fines until the hazard has been eliminated. Further, all commercial/industrial/institutional plumbing systems are examined periodically to ensure compliance with all applicable codes and rules.

Accounts that are considered to be medium and high hazard risks of backflow are to be inspected once per year. Systems deemed low hazard are to be inspected once in every three-year period. While the exact number of inspections vary almost daily due to businesses opening/closing or being remodeled, the current number of occupied low hazard accounts is 1,920. The current number of active medium/high hazard accounts in the system is 351.

As of now, the program maintains one inspector and, when budget allows, a part time clerical position. Presently, the inspector does all of the inspection and clerical duties. Inspection durations can vary from a few minutes to several days, depending on the complexity of the system. Enforcement assistance is also available from the Building Inspection department and code enforcement on a continuing basis.

Attached, is an excerpt taken from the MI DEQ Cross Connection Rules Manual that further explains what types of risks our water system may face.

Glenn Thomas

Plumbing/Mechanical/Cross Control Inspector  
City of Flint  
810-787-6537 Ext. 3516  
[gthomas@cityofflint.com](mailto:gthomas@cityofflint.com)



## CITY OF FLINT, MICHIGAN

**Dr. Karen W. Weaver**  
Mayor

Under part 14 of the Michigan Safe Drinking Water Act, PA 399 last amended in 1976, A water utility shall develop and maintain a comprehensive control program for the elimination and prevention of all cross connections. A cross connection is a connection or arrangement of piping or appurtenances through which backflow of nonpotable water could flow into the public drinking water supply.

The Cross Connection Control program for The City of Flint consists of the following.

The program, first started in 1974 and given authority under City Of Flint Ordinance Chapter 46 tracks and requires annual testing of all testable backflow prevention devices used on plumbing systems in residential, commercial, and industrial applications throughout the city. These tests come due twice a year in either July or January depending on when the device was first put into service. We mail out test reminder letters at least 30 days prior to each due date. Customers that are in violation of this ordinance are given ten business days to comply and then face shut off of water service and/or fines until the hazard has been eliminated.

Testable devices considered as medium and high hazard risk are to be inspected once a year. Systems deemed to be low hazard are inspected once in each three year period. While the exact number of inspections vary almost daily due to some businesses closing and others being started or remodeled, the current number of low hazard accounts is at 2071, and 1266 medium/high hazard devices. The program maintains one inspector and when budget allows a part time clerical position. Currently the inspector does all inspection and clerical duties. Inspection times vary from a few minutes to several days depending on the complexity of the system.

The Cross Connection Control inspector also assists City water and sewer operations as needed, works with laboratory operators, and helps to resolve customer complaints. He also inspects and consults on construction blueprints and permits as necessary to protect the integrity of our potable water system. He enforces the City Of Flint ordinance, The Michigan adopted Plumbing Code, Mechanical Code, NFPA, and the Cross Connection Rules from the Michigan Department of Environmental Quality as they pertain to maintaining the safety of our drinking water.

Attached is an excerpt taken from the Cross Connection Rules Manual that further explains what type of risks our water system may face.

Glenn Thomas

9-6-18

Cross Connection Control Inspector  
City of Flint



## DEPARTMENT OF PUBLIC WORKS

**Dr. Karen Weaver**  
Mayor

**Robert Bincsik**  
Director

Ordinance Proposal  
Cross Connection Control Program  
City of Flint

### Cross Connection Control Program for City of Flint

- I. In accordance with the requirements set forth by the MI DEQ, City of Flint has officially adopted the state of Michigan cross connection rules to protect the Flint public water supply system. **Cross Connection** is defined as, "a connection or arrangement of piping or appurtenances through which a backflow could occur". **Backflow** is, "water of questionable quality, waste, or other contaminants entering a public water supply system due to a reversal of flow". The revised Cross Connection Control program will take effect upon approval of Flint City Council and DEQ approval.
- II. The authority to carry out and enforce a local cross connection control program will be in accordance with city ordinance No. 46.
- III. The Director of Public Utilities and/or his designated agent shall be responsible for making cross connection inspections, and reinspections to check for the presence of cross connections within the municipal water system. Individuals responsible for carrying out these inspections shall have obtained necessary training to current industry best practice.
- IV. **Schedule for Inspections**
  1. All known/suspected high, medium, low hazard establishments, including all industrial, commercial and municipal buildings will be inspected upon discovery.
  2. All other building and water system connections, including residential accounts shall be inspected in a logical sequence as time permits.
- V. **Schedule for Reinspection**
  1. Reinspection of high and medium hazard accounts shall be conducted annually.

2. Reinspection of all low hazard accounts shall be performed once in every three-year period.

VI. The methods to protect against backflow as outlined in the Cross Connection Rules Manual and the current MI Plumbing Code shall be incorporated into the City of Flint cross connection control program.

- VII. Time allotted for correction or elimination of any cross connection.**
- 1. Cross connections which pose an imminent and extreme hazard shall be disconnected immediately and so maintained until necessary protective devices or modifications are made.**
  - 2. Other cross connections which do not pose an extreme hazard to the water supply system shall be corrected as soon as possible.**
- VIII. All testable backflow prevention assemblies shall be tested at the time of installation or relocation and after any repair. In addition, all testable devices shall be tested annually. These tests shall be performed by an individual certified to test/repair such devices in accordance with applicable plumbing codes. The results of such tests shall be submitted to the Utilities director or his agent no later than 30 days past the due date. The due date shall be January 1 or July 1, depending on the installation date of the device. Further, the test result shall be affixed to the device in an indelible and legible manor. Any testable device that is found to not be in compliance with any provisions of this ordinance may be liable for a fine not to exceed \$500 per device per day, and/or disconnection of water service.**
- IX. The City of Flint shall maintain sufficient and accurate records of the cross connection control program and report annually to the DEQ on a form provided by the department.**





**DRAFT**

ORDINANCE NO. \_\_\_\_\_

**An Ordinance to amend the Flint City Code of Ordinances by adopting Article II Division 4 Backflow Prevention; Chapter 46, Utilities; Section 46-34, Adoption- Cross Connection Policy and Manual.**

**IT IS HEREBY ORDAINED BY THE PEOPLE OF THE CITY OF FLINT:**

**Sec. 34. That Section 46-34 of the Code of the City of Flint shall be amended as follows.**

**§46-34 CROSS-CONNECTIONS — RESPONSIBILITIES AND MANUAL.**

**THE CITY ADOPTS BY REFERENCE THE WATER SUPPLY CROSS CONNECTION RULES OF THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY BEING R 325.11401 TO R 325.11407 OF THE MICHIGAN ADMINISTRATIVE CODE. It shall be the duty of the DEPARTMENT OF PUBLIC WORKS DIRECTOR or his or her designee to cause inspections to be made of all properties served by the public water supply where cross-connections are deemed possible. The frequency of inspections and reinspection shall be based on potential health hazards involved and shall be established by the DEPARTMENT OF PUBLIC WORKS DIRECTOR or his or her designee and approved by the Michigan Department of Environmental Quality. THE DEPARTMENT OF PUBLIC WORKS DIRECTOR SHALL ESTABLISH A CROSS CONNECTION CONTROL PROGRAM POLICY PURSUANT TO THE MICHIGAN SAFE DRINKING WATER ACT AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY CROSS CONNECTION RULES MANUAL AND MAY BE AMENDED BY THE DEPARTMENT OF PUBLIC WORKS DIRECTOR FROM TIME TO TIME BY THE DEPARTMENT OF PUBLIC WORKS DIRECTOR OR HIS OR HER DESIGNEE AS REQUIRED BY LAW. The DEPARTMENT OF PUBLIC WORKS DIRECTOR or his or her designee shall have the right to enter, at any reasonable time, any property served by connection to the public water system of the City for the purpose of inspecting the piping system or systems thereof for cross-connections. On request, the owner, lessee or occupants of any property so served shall furnish to the inspection agency any pertinent information regarding the piping system or systems on the property. The refusal of such information or refusal of access, when requested, shall**

be deemed prima facie evidence of the presence of cross-connections. The **DEPARTMENT OF PUBLIC WORKS DIRECTOR** or his or her designee is authorized and directed to discontinue water service after reasonable notice to any property wherein any cross-connection or other violation of this section exists, and to take other precautionary measures deemed necessary to eliminate any danger of contamination of the City's potable water supply system. A person or business that fails to conform with any of the requirements thereof shall be assessed a fine not to exceed \$500.00 per day per device. Water service to such property shall not be restored until the illegal water connection or cross-connection has been eliminated. Potable water supply made available on the properties served by the public water supply shall be protected from possible contamination as specified by this section and by the State of Michigan Plumbing Code and §§ 46-43.1 through 46-43.7. Any water outlet which is not supplied by potable water system must be labeled in a conspicuous manner as "water unsafe for drinking." (Ord. 3630, passed 12-13-2004; Ord. 3712, passed 5-12-2008)

**Sec. 34. This ordinance shall become effective this \_\_\_\_ day of \_\_\_\_\_ 2018.**

**Adopted this \_\_\_\_ day of \_\_\_\_\_ A.D., 2018.**

\_\_\_\_\_  
**Karen W. Weaver, Mayor**

\_\_\_\_\_  
**Inez M. Brown, City Clerk**

**APPROVED AS TO FORM:**

\_\_\_\_\_  
**Angela Wheeler, City Attorney**

**S:\AWO\Cross Connection\Revised Division 4 Backflow Prevention Chapter 46-accepted revisions.docx**

(b) The following shall be considered sufficient evidence of the presence of organisms of the colon bacillus group within 24 hours of incubation at 37°C:

(1) The appearance of red, acid forming colonies of bacteria on Endo's medium plates; and

(2) The formation of gas in fermentation tubes containing lactose peptone broth.

(c) The culture medium used for these tests shall be prepared in accordance with standard methods of water analysis of the American Public Health Association, as set forth in the last revision of *Standard Methods of Water Analysis*.

(Ord. 9, passed 8-21-1917)

#### **§ 46-30 INTERFERENCE WITH DEPARTMENT OF PUBLIC HEALTH.**

It shall be unlawful for any person to interfere with the Department of Public Health or its duly authorized representatives in the inspection of water supply of any premises in the City, or to prevent such inspection, or to prevent the abatement of a nuisance created by an unwholesome and contaminated water supply.

(Ord. 9, passed 8-21-1917)

### ***DIVISION 3. FLUORIDATION OF WATER SUPPLY***

#### **§ 46-31 FLUORIDATION REQUIRED.**

The Water Division of the Department of Public Works and Utilities, in cooperation with the Department of Public Health, is hereby authorized and directed to institute fluoridation of the water supply of the City, in the approximate amount of one part fluoride to every million parts of water, and to do all things necessary to carry out the directive set forth in this section.

(Ord. 1815, passed 1-11-1965)

#### **§ 46-32 SAME — COMPLIANCE DEPARTMENT OF PUBLIC HEALTH RULES.**

The control and testing of water before and after fluoridation, the method of determining the fluoride content of the water and tests for the purity of the fluoride chemical shall, in all respects, comply with the rules and standards promulgated by the Department of Public Health.

(Ord. 1815, passed 1-11-1965)

#### **§ 46-33 SAME — PURCHASE OF WATER FROM CITY OF DETROIT; UNFLUORIDATED WATER.**

In the event the City purchases its water supply from the City of Detroit, the City shall purchase fluoridated water. In the event the City purchases its water supply from the City of Detroit, the Department of Public Health shall certify that the safeguards, as provided for in this article, have been provided for by the City of Detroit, and, if not, the City shall purchase unfluoridated water and shall provide the fluorides to be added to the water supply as provided for in this article.

(Ord. 1815, passed 1-11-1965)

### ***DIVISION 4. BACKFLOW PREVENTION***

#### **§ 46-34 CROSS-CONNECTIONS — RESPONSIBILITIES.**

It shall be the duty of the Utilities Director or his or her designee to cause inspections to be made of all properties served by the public water supply where cross-connections are deemed possible. The frequency of inspections and reinspection shall be based on potential health hazards involved and shall be established by the Utilities Director or his or her designee and approved by the Michigan Department of Environmental Quality. The Utilities Director or his or her designee shall have the right to enter, at any

reasonable time, any property served by connection to the public water system of the City for the purpose of inspecting the piping system or systems thereof for cross-connections. On request, the owner, lessee or occupants of any property so served shall furnish to the inspection agency any pertinent information regarding the piping system or systems on the property. The refusal of such information or refusal of access, when requested, shall be deemed prima facie evidence of the presence of cross-connections. The Utilities Director or his or her designee is authorized and directed to discontinue water service after reasonable notice to any property wherein any cross-connection or other violation of this section exists, and to take other precautionary measures deemed necessary to eliminate any danger of contamination of the City's potable water supply system. A person or business that fails to conform with any of the requirements thereof shall be assessed a fine not to exceed \$500.00 per day per device. Water service to such property shall not be restored until the illegal water connection or cross-connection has been eliminated. Potable water supply made available on the properties served by the public water supply shall be protected from possible contamination as specified by this section and by the State of Michigan Plumbing Code and §§ 46-43.1 through 46-43.7. Any water outlet which is not supplied by potable water system must be labeled in a conspicuous manner as "water unsafe for drinking."

(Ord. 3630, passed 12-13-2004; Ord. 3712, passed 5-12-2008)

#### **§ 46-35 REQUIRED TESTING OF BACKFLOW PREVENTION DEVICES.**

All backflow prevention devices having external means of testing for proper operation shall be tested and the testing of these devices shall be accomplished by a State licensed journey person or master plumber who is certified in cross-connection control. A copy of the completed test results shall be filed, within 30 days after the anniversary date of the original installation. All testable devices shall be tested at the time of installation, after repair and every 12 months

thereafter, or as often as the Utilities Director or his or her designee deems necessary to ensure the public safety, and submit a report to the Cross-Connection Control Department. All testable devices which have potable water supply, shall be tested every year. The reports shall be received by the Cross-Connection Control Department by January 1 or July 1 of each year as determined by the Cross-Connection Trades Supervisor. A plastic envelope shall be permanently attached to each testable device with a chain. The envelope will contain a card to keep test results of the device, the signature and State license number of the certified person performing the test. This card shall be updated after each test.

(Ord. 3630, passed 12-13-2004; Ord. 3712, passed 5-12-2008)

#### **§ 46-36 CONNECTION TO BOILERS.**

The potable water supply to all boilers other than one- and two-family dwellings shall be protected by an approved air gap or a reduced pressure principle backflow preventer. When boilers in one- and two-family dwellings have chemicals introduced into the system, the potable water connection shall be protected by an approved air or a reduced pressure principle backflow preventer. The potable water connection to the boilers in one- and two-family dwellings without chemical additives shall be protected by a double check-valve assembly with an intermediate atmospheric vent.

(Ord. 3630, passed 12-13-2004)

#### **§ 46-37 PIPING IDENTIFICATION.**

When a secondary water supply system is exposed to the public water system, all secondary water piping shall be identified by distinguishing color or tags and so maintained that each pipe may be traced readily in its entirety. All process water piping shall also be color coded or tagged. If piping is installed so that it is impossible to trace in its entirety, it shall be necessary to protect the public water supply at the

service connection in a manner acceptable to the Superintendent of the Department of Water and Sewer.

(Ord. 3630, passed 12-13-2004)

**§ 46-38 POTABLE WATER CONNECTION TO COMMERCIAL APPLIANCES AND SINKS THAT REQUIRE AN AIR GAP ON THE WASTE DISCHARGE.**

When potable water is supplied to one-, two- and three-compartment kitchen pot, pan and food preparation sinks, the waste shall discharge into a 12 x 12 x 8 inch floor or equal sink with a removable strainer. There shall be a minimum air gap of one inch from the end of the waste pipe to the top of the rim of the floor sink (see Table P-1505.1 1.1 of the State of Michigan Plumbing Code). Ice machines may discharge into a 6 x 6 x 4 floor sink or equal.

(Ord. 3630, passed 12-13-2004)

**§ 46-39 NOTICE OF ACCIDENTAL BACKFLOW INCIDENT; PENALTY.**

In the case of an accidental backflow incident, it is the responsibility of the user to immediately notify the Superintendent of the Department of Water and the Trades Supervisor of the Building and Safety Inspections Division of the incident. The notification shall include the location of the incident, the type of contamination, and any and all corrective actions including, but not limited to, containment. The City may terminate the water service to prevent contamination if in the determination of the Superintendent of the Department of Water that this action needs to be taken to protect the public water supply. Failure to comply with this section shall be deemed a misdemeanor and may be subject to a fine not to exceed \$500.00 and/or 90 days in jail for each day that a violation remains in effect.

(Ord. 3630, passed 12-13-2004)

**§ 46-40 WRITTEN NOTICE.**

Within five days following a cross-connection incident, the user shall submit to the Building and Safety Inspections Cross-Connection Trades Supervisor a detailed written report describing the cause of the incident, and the measures that will be taken by the Supervisor to prevent future occurrences. Notification shall not relieve the user of any expense, loss, damage or other liability as a result of damage to persons or property; nor shall the notification relieve the user of any fines, civil penalties or other liability which may be imposed by this article or any other applicable law or ordinances.

(Ord. 3630, passed 12-13-2004)

**§§ 46-41 – 46-47 RESERVED.**

**ARTICLE III. RATES AND CHARGES**

**DIVISION 1. WATER**

**§ 46-48 WATER SERVICE PLACED IN NAME OF PROPERTY OWNER OF RECORD; EXCEPTION.**

(a) Effective June 1, 1986 or as soon thereafter as practicable, water service shall only be placed in the name of the property owner of record. Duplicate bills may also be sent to the service address if requested in writing by the property owner.

(b) However, in the case of industrial, commercial or residential rental property registered with the City pursuant to Ordinance 3271, or its subsequent amendments, where a legally executed lease contains a provision that the tenant, not the property owner of record, shall be liable for the payment of water or sewage system bills, and the tenant's birthdate, social security number and his or her driver's license or Michigan I.D. number, upon



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION

## 2017 WATER SUPPLY CROSS CONNECTION REPORT

Issued under authority of 1976 PA 399, as amended, MCL 325.1001 et seq., and its administrative rules.  
Failure to submit this form is a violation of the Act and may subject the water supply to enforcement actions.

Return the completed form by March 31, 2018 to the appropriate Department of Environmental Quality (DEQ) district office to comply with administrative Rule R 325.11405 that states "a water utility shall report annually to the department on the status of the cross connection control program on a form provided by the department." For district office addresses, visit [www.michigan.gov/deq](http://www.michigan.gov/deq) and click on Locations.

WSSN: 2310

A. Name of water system: City Of Flint County: Genesee

B. Year that the current written cross connection control program was approved by DEQ: 1974

C. Total number of industrial, commercial, institutional, residential, and governmental accounts that must be routinely reinspected for cross connections: 1815

Of this number,

- How many are High Hazard accounts: 305 Frequency of Reinspection: Once per: year

- How many are Low Hazard accounts: 1510 Frequency of Reinspection: Once per: 3 years

D. Number of accounts from line "C" that received an initial inspection in 2017: 0

E. Total number of reinspections required and completed in 2017 based on degree of hazard:

- High hazard reinspections required: 305 High hazard reinspections completed: 20

- Low hazard reinspections required: 503 Low hazard reinspections completed: 35

F. Number of accounts where a cross connection(s) was found to exist during inspections or reinspections in 2017: 20

G. Number of accounts from line "F" where corrective actions have been completed: 20

H. Total number of accounts from line "C" which are now in compliance with the local cross connection control program;  $H = C - (F - G)$ : 1815

I. Total number of backflow prevention devices in system requiring testing: 987

J. Number of backflow prevention devices tested in 2017: 283

Outline briefly any changes or significant findings since last reporting. Use additional sheets if necessary.

Narrative Description of Program:

Added personnel should allow our CCC program to improve in 2018.

Name: Glenn Thomas

Title: Cross Connection Control Inspector Date: 05/09/2018

## **ATTACHMENT B**

Date Submitted: November 18, 2018

**Administrative Order Paragraph 3.4 Response**

	Compliance	
	<u>Now</u>	<u>Future</u>
<u>Water Treatment Plant Standard Operating Procedures</u>		
Phosphoric Acid Addition at Control Station #2	X	
Sodium Hydroxide Addition at Control Station #2	X	
Sodium Hypochlorite Addition at Control Station #2	X	
Sodium Hypochlorite Addition at Distribution Storage Facilities	X	
Sodium Hypochlorite Testing	X	
Hydrant Inspection, Testing and Maintenance	X	
Valve Inspection, Exercising and Maintenance		2021 <sup>1</sup>
Backflow Preventer Testing and Repair	X	
Meter Installation, Inspection and Testing		2020 <sup>2</sup>
Customer Complaint Tracking		2021 <sup>3</sup>
Control Charting of Water Quality Parameters	X	
Conventional Flushing for Water Turnover		2021 <sup>4</sup>
Unidirectional Flushing		2021 <sup>5</sup>

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<sup>1</sup> Pursuant to the City of Flint Water Department TMF Capacity Plan (See Attachment), Arcadis recommended the hiring of three Water Distribution Valve and Hydrant Crew. The City will have the funding available for these positions to implement this SOP in 2021.

<sup>2</sup> The Meter Installation project will be completed by the end of 2019. Therefore the City will be able to implement this SOP in 2020.

<sup>3</sup> Pursuant to the City of Flint Water Department TMF Capacity Plan, Arcadis recommended the hiring of four Customer Service and Call Center Staff. The City will have the funding available for these positions to implement this SOP in 2021.

<sup>4</sup> Pursuant to the City of Flint Water Department TMF Capacity Plan, Arcadis recommended the hiring of two Flushing Team staff. The City will have the funding available for these positions to implement this SOP in 2021.

<sup>5</sup> Pursuant to the City of Flint Water Department TMF Capacity Plan, Arcadis recommended the hiring of two Flushing Team staff. The City will have the funding available for these positions to implement this SOP in 2021.

Maintaining Distribution System Chlorine Residual	X	
Water Age Management		2020 <sup>6</sup>
Emergency Repair of Water Mains	X	
Distribution Storage and Pumping Station Operation and Maintenance		2020 <sup>7</sup>

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<sup>6</sup> The improvements to Dort and Cedar Water Storage Facilities will be completed in 2020. Therefore the City will be able to implement this SOP in 2020.

<sup>7</sup> Based on the receipt of WIIN funding for the Dort and Cedar Street pumping stations, the City will have the funding to implement this SOP in 2020.



City of Flint Water Department  
Technical, Management and Financial Capacity

The City of Flint (COF) has identified its long-term water source and has initiated the implementation of selected projects necessary to enhance the reliability and quality of its water system. However, the enduring sustainability of its system can only be achieved if the COF has the proper technical, managerial and financial (TMF) capacity to properly operate the system. This requirement is recognized in USEPA's First Amendment to Flint's Emergency Administrative Order (Paragraph 60.b.iii) and Michigan DEQ's August, 2017 Water System Sanitary Survey.

To help define the TMF capacity requirements of the COF water system, Arcadis of Michigan LLC (Arcadis) recently completed a report entitled "Water Distribution System Optimization Plan". This analysis developed a 20-year Capital Improvement Program (CIP), an Asset Management Program, staffing requirements, performance metrics and Standard Operating Procedures (SOPs) for the COF Water Department.

The revenue generated by the COF Water Department is not sufficient to support the current operating costs of the system. This discrepancy results for several reasons – low collection rates, declining population, inaccurate meters, loss of industrial/commercial customers, and water theft. To achieve "Cost of Service" rates under current conditions, annual rate increases of 20%, 16% and 10% would be required over the next three (3) years. If collection rates were return to a level closer to industry standards (95%), three 10% rate adjustments would still be required to achieve sufficient revenue. While alternative rate design were investigated to minimizes residential customer rate impact, such as inclining block rates, none of these alternative rate designs were deemed to be politically or financially feasible.

The political and financial environment in Flint is not amenable to implementing a customer rate increase over the next several years. Therefore, revenue enhancements must be achieved through improving collections and reducing the physical and commercial water losses associated with non-revenue water. A projected five-year forecast for Water Department revenue has been developed based on the following assumptions:

- Increase Water Department revenue by adjusting the water/wastewater revenue allocation from 45%/55% to 50%/50%.
- Increased sales to General Motors (\$0.4M/year)
- Improve collection rates from approximately 70% to 80% in 2019, 90% in 2020 and 95% in 2021.
- One-half of current non-revenue water (25% of purchased water) results from commercial losses (meters and theft). These losses are converted to additional revenue by the meter replacement program and an aggressive water theft prevention program
- No customer rate increases

Based on these assumptions, the Water Department revenue would be:

	FY2019	FY2020	FY2021	FY2022	FY2023
Base revenue with improved collections	\$31M	\$35.4M	\$40M	\$42M	\$42M
Improved metering and eliminate water theft			\$5M	\$10M	\$20M
Total revenue	\$31M	\$35.4M	\$45M	\$52M	\$62M

It is assumed that the revenue benefits from the metering/theft programs would not be realized until after all meters are installed by the end of 2019. However, some theft issues could be resolved concurrent with meter replacement.

Future operating costs will be primarily impacted by staffing levels. Arcadis has recommended that the following positions be added to provide the appropriate TMF capacity.

- Laboratory Technician
- Cross Connection Program Manager
- Water Distribution Valve and Hydrant Crew (3)
- Customer Service/ Call Center Staff (4)
- Enterprise Asset Manager
- GIS Specialist/ Hydraulic Modeler
- Construction Inspectors
- Leak Detection Team
- Flushing Team (2)

The first six listed positions are considered “high priority”. The current COF Water Department budget does include the laboratory and cross connection positions because they are directly related to water quality issues. The remaining positions have not been included in the five year plan due to budget constraints and the challenge of attracting qualified personnel. The total annual costs of these positions would be approximately \$1M.

The City of Flint and its regulatory agencies are focused on assuring that adequate resources are provided to comply with all SDWA requirements, including providing optimal corrosion control and water quality monitoring. Since the City’s future water source will be finished water from GLWA, operation of a treatment plant will not be required. However, chemical feed facilities will be constructed at the current treatment plant site to provide adequate disinfection and optimal corrosion control. The size of the current Water Department operating staff is sufficient to operate the chemical feed facilities and perform water quality sampling. However, until this staff is properly licensed and trained, operation of the chemical feed facilities and sampling will be outsourced. F&V Operations and Resource Management have been contracted by the City to perform these tasks.

The currently forecasted operating costs for the COF Water Department are presented below.

	2018	2019	2020	2021	2022
Projected Operating Costs	\$34.5M	\$36M	\$37M	\$38M	\$38.3M

Given the lack of investment in the Flint water system for several decades, the future capital expenditure requirements are significant. Over the next two years, approximately \$80M of WIIN grant funds have been designated for the COF to complete numerous capital projects that enhance the water system reliability, revenue and water quality management. However, significant additional investment is required to support small main replacement, a cross connection control program, a customer service center, valve and hydrant replacement, SCADA and security upgrades and a water loss program for the COF water system. Arcadis has identified over \$300M of capital expenditure requirements over the next 20 years with the majority of these projects being small main replacement. Unfortunately, the COF will be challenged to find the funding for these projects.

The table below helps define when funds may be available to hiring additional staff and invest in the system if the revenue enhancement programs are successful.

	FY2019	FY2020	FY2021	FY2022	FY2023
Revenue	\$31M	\$35.4M	\$45M	\$52M	\$62M
Operating Costs	\$34.5M	\$36M	\$37M	\$38M	\$38.3M
Water Fund Balance*	\$8.5M	\$7.9M	\$9M	\$9M	\$9M
Funds available for staffing and/or capex			\$6.9M	\$14M	\$23.7M

\*Beginning Water Fund balance = \$12M; Water Fund balance should be approximately 25% of O&M costs

Therefore, given the above discussion, the COF proposes the following plan to achieve its TMF capacity requirement:

1. Fill all COF Water Department staffing vacancies at the earliest possible date, including the laboratory technician and cross connection program manager positions. Until all vacancies are filled, outsource critical responsibilities not covered by existing staff. For regulatory acceptance, this will require committing to specific dates for hiring each position and executing contracts for outsourcing.
2. Initiate and complete the meter replacement program by the end of 2019 to enhance system revenue with more accurate and reliable meters. In conjunction with the meter replacement program, inspect the premise of all active and inactive customer accounts to identify and resolve water theft issues. Continue with an aggressive water theft

prevention program. Additionally, in conjunction with the meter replacement program, collect data to assist with the prioritization of cross connection activities.

3. Adhere to water bill collection policies to return collection rates to industry standards by 2021 (greater than 95%)
4. Efficiently and effectively complete a majority of the WIIN funded construction projects in 2018 and 2019. Given the size of this program and Flint's history of limited capital projects within its distribution system, it would be difficult to perform any additional City-funded capital projects during this time period.
5. Closely monitor projected vs. actual revenues and identify and correct any variances.
6. Assuming projected system revenues are achieved through the meter, collections and water theft programs and revenues are further enhanced by community development activities, begin implementing the staffing and capital program recommended in the Arcadis report in FY2021.

## **ATTACHMENT C**

City of Flint Water Department  
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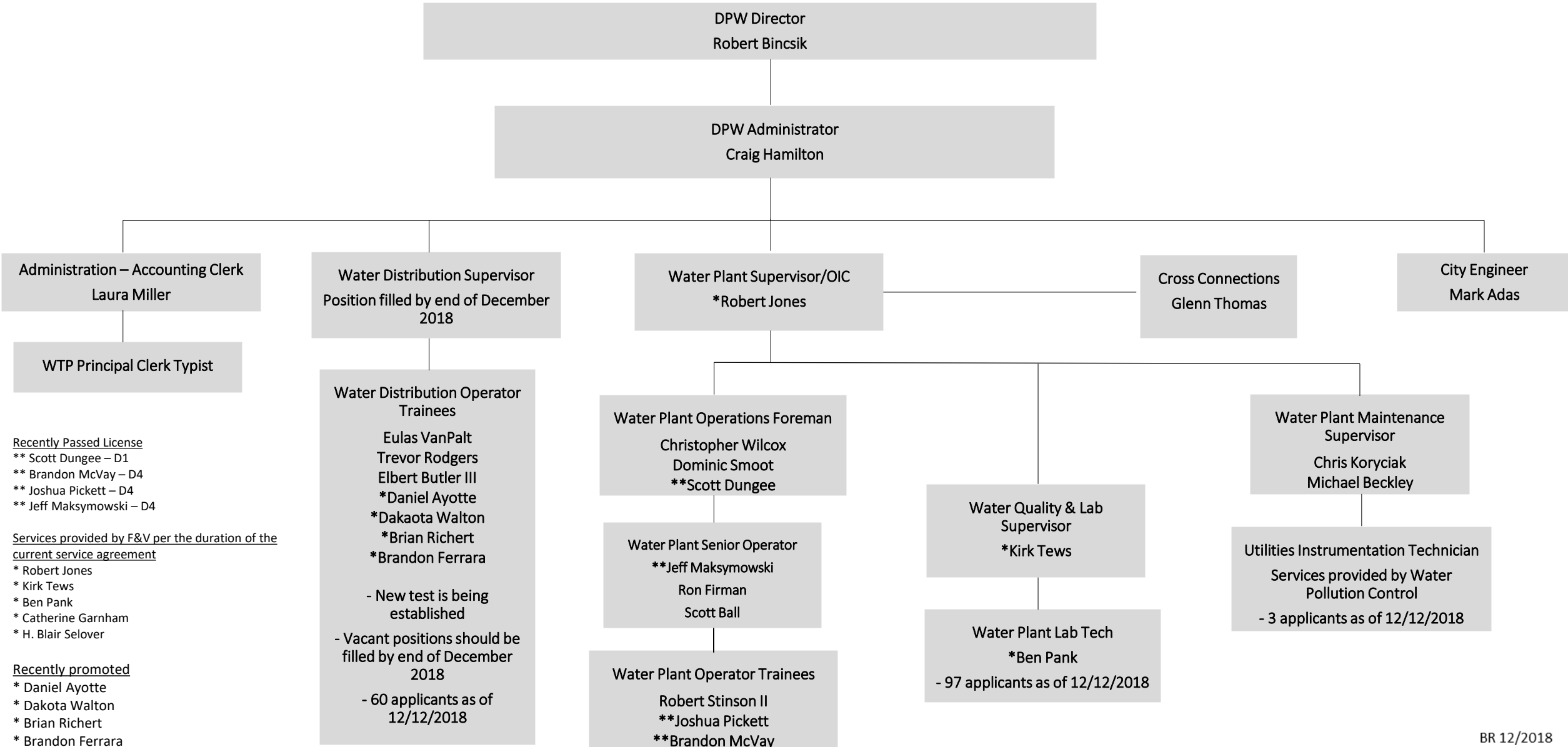
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## **ATTACHMENT D**

# Organizational Chart

## Utilities Water Division



Recently Passed License

- \*\* Scott Dungee – D1
- \*\* Brandon McVay – D4
- \*\* Joshua Pickett – D4
- \*\* Jeff Maksymowski – D4

Services provided by F&V per the duration of the current service agreement

- \* Robert Jones
- \* Kirk Tews
- \* Ben Pank
- \* Catherine Garnham
- \* H. Blair Selover

Recently promoted

- \* Daniel Ayotte
- \* Dakota Walton
- \* Brian Richert
- \* Brandon Ferrara