

**From:** Flint Mayor [<mailto:mayor@cityofflint.com>]

**Sent:** Friday, May 19, 2017 5:11 PM

**To:** [korleski.christopher@epa.gov](mailto:korleski.christopher@epa.gov)

**Cc:** Baird, Richard (GOV); Sylvester Jones; [kaplan.robert@epa.gov](mailto:kaplan.robert@epa.gov); Creagh, Keith (DNR); Feighner, Bryce (DEQ)

**Subject:** Fwd: Response to May 4 letter

Dear Mr. Korleski:

This correspondence is in response to your May 4, 2017 letter in which you requested the City of Flint to provide updates to its Public Participation Plan and responses to USEPA's comments on the Corrosion Control Study (CCS) Plan. Both of these documents supported Flint's water source recommendation that designated Great Lakes Water Authority (GLWA) as the City's long-term, primary water source and Genesee County Drain Commissioner as its back-up water source.

A revised Public Participation Plan is attached. This Plan summarizes the numerous community outreach activities, media announcements/postings and other communication techniques that have been used to inform the public on the water source selection process and recommendation. Additionally, the public has been encouraged to e-mail their questions and feedback to the City. The public feedback period will end on May 20, 2017 but the City will continue to inform the public on the water source recommendation after that date. All comments will be considered. In early June, all legal Agreements and contracts will be finalized and the approval process will commence with all stakeholders including the Flint City Council, Flint RTAB, Great Lakes Water Authority, Genesee County Drain Commissioner, Karegnondi Water Authority and State of Michigan. The goal is to obtain all necessary approvals in June, 2017. Also attached is a revised CCS Plan concept that incorporates the City's responses to USEPA's comments regarding the proposed CCS Plan. We request an expedited review of these responses and the revised Plan concept so the CCS Plan design can be completed and the CCS can begin.

As co-responders to the Order, Mr. Bryce Feighner (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.

We encourage USEPA to proactively support the City and its water source selection as we proceed through the 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](mailto:kweaver@cityofflint.com).

Respectfully submitted,

Dr. Karen W. Weaver, Mayor  
City of Flint  
City Hall, 1101 S. Saginaw Street  
Flint, Michigan 48502  
810-766-7346  
[mayor@cityofflint.com](mailto:mayor@cityofflint.com)

**CITY OF FLINT**  
**DRINKING WATER SOURCE SELECTION**  
**PUBLIC PARTICIPATION PLAN**  
**May 15, 2017 (Updated)**

## **Background**

This Public Participation Plan has been prepared in response to the United States Environmental Protection Agency's (EPA's) November 17, 2016, First Amendment to the Emergency Administrative Order (Amended Order). Under the Amended Order, *Paragraph 60* required a submittal addressing a *New Source Treatment Plan ("NSTP" (60.b.iii))* by March 1, 2017. The Amended Order also required that, "The NSTP shall be developed in consultation with appropriate experts and the public through adequate advanced notice and opportunity for comment." This Public Participation Plan will also address the additional requirements contained in the February 21, 2017, EPA letter to Mayor Weaver; specifically:

- 1) *a description of how the public has been or will be engaged in the ongoing alternatives analysis process;*
- 2) *a description of how the public has been or will be engaged in the ultimate selection of the City's new water source(s);*
- 3) *a description of how the public has been or will be involved in any DWSRF-related public participation opportunities; and*
- 4) *the City's plan and timeline for vetting the relevant economic, social, political, and public health issues associated with the alternatives evaluation.*

In a letter dated November 30, 2016, City of Flint Mayor Karen W. Weaver informed the EPA that Flint's long-term, primary source of drinking water will be the Flint Water Treatment Plant. The back-up source of supply would be an on-site raw water reservoir supplemented with an emergency finished water interconnection with Genesee County.

The City and its federal, state and local partners have been actively engaged in communicating with the public and seeking their input throughout this Flint water event. These public engagement activities have included numerous community conversations, mailings to organizations and individual residents, press releases, publication distribution, and presentations at the Governor's Flint Water Interagency Coordinating Committee meetings and Flint City Council meetings.

Regarding *DWSRF-related public participation opportunities*, a public hearing was held June 13, 2016, at 6:00 p.m., at Flint City Hall in Council Chambers to give residents an opportunity to weigh in on the City of Flint's plan to submit an application for the Drinking Water Revolving Loan Fund (DWRLF). Rowe Professional Services Company presented the project plan including costs and alternatives related to water main improvements and service line replacements to the Flint City Council and members of the public in attendance. At the conclusion of the presentation, the hearing was opened to the public for questions and several residents made remarks regarding the project

plan and presentation. A resolution on the plans adoption was passed by City Council on June 27, 2016, and by the Receivership Transition Advisory Board (RTAB), on June 29, 2016.

Meter replacement procedures and water treatment plant improvements were not discussed at the public hearing, however there is a requirement for those items to be included in a yet to be scheduled public hearing. By law a public hearing advertisement must be published 30 days prior to a hearing. The City plans to wait until the alternatives analysis is complete and the drinking water source selection is made before scheduling that hearing.

Public outreach especially pertinent to this NSTP submittal included a direct mailing from the City to residents on January 3, 2017, regarding the current drinking water quality. Among other things, this mailing informed residents that the City was consulting with experts to develop standard operating procedures, corrosion control studies and performance testing for the Flint Water Treatment Plant in accordance with the March 1, 2017, NSTP submittal requirements. Further, on January 11, 2017, the City hosted a Town Hall meeting to share the latest water quality data, future plans for treating water at the Flint Water Treatment Plant, and receive input from residents.

Subsequent to the January 11, 2017, town hall meeting, the City and its consultants began evaluating water source alternatives as required by the Drinking Water Revolving Fund (DWRf) process. Since more alternatives are now being evaluated than previously presented to the public, additional public input will be sought as indicated below.

## **Timeline**

**Month of March 2017** – The City’s consultants continue to gather input from potential water source providers regarding costs and technical feasibility and perform economic analyses on the alternatives.

**April 5, 2017** – Meet with Flint City Council to discuss the Public Participation Plan for drinking water source selection.

**Week of April 17, 2017** - Initiate the Public Participation Plan to obtain feedback on the recommended water source solution, alternatives evaluated, and the relevant economic, social, political, and public health issues associated with the alternatives evaluated. Initiate cost of service/rate design study based on recommended water source options and projected capital and operating plans associated with those options.

**April 18, 2017** – Press conference and coordinating press release to announce that Flint City leaders have received the alternatives evaluation and recommendations on the drinking water source solutions from their consultants. At the presser, the mayor/city officials/consultants will go through the primary alternatives considered and present the pros and cons of each alternative considering the related economic, social,

and public health issues. The mayor would encourage residents to express their opinions regarding the alternatives via the upcoming Town Hall meeting, E-mail comment box, or in writing. Update: The Mayor met with two City Council members on this date prior to the 10:00 a.m. press conference.

**April 19, 2017** - Town Hall meeting for residents to learn about the water source alternatives evaluated and to provide input. City leaders will go through the primary alternatives considered and present the pros and cons of each alternative considering the related economic, social, and public health issues. Residents will be provided the opportunity to express their opinions and have their questions answered. Subsequent to the Town Hall meeting residents can continue to provide input via E-mail or in writing through April 30, 2017. Update: The date of this Town Hall meeting was changed from April 19, 2017 to April 20, 2017 for logistical reasons. The public comment period was extended from April 30, 2017 to May 20, 2017 to allow for a full 30 days of comment.

**April 19, 2017** – The water source recommendation was discussed at a City Council work session and questions related to the scope, timing, public health implications and financial impact of the recommendation were addressed.

**The following actions have also been/are being taken to promote public input:**

- The mayor and members of her administration have attended several community meetings to discuss the water source recommendation and encourage residents to send questions and feedback to the email address:  
[flintwatersourceinfo@cityofflint.com](mailto:flintwatersourceinfo@cityofflint.com).  
Community meetings held/attended:  
Concerned Pastors for Social Action May 2, 2017  
Brennan Senior Center May 15, 2017  
City of Flint Technical Advisory Board May 15, 2017
- The following meetings are also planned:  
Flint & Genesee Chamber of Commerce May 17, 2017  
Berston Field House May 18, 2017  
Neighborhood Advisory Council May 18, 2017  
Hispanic Technology & Community Center of Greater Flint May 18, 2017  
Flint Water Interagency Coordinating Committee (FWICC) May 19, 2017
- Information and documents related to the water source recommendation are posted on the City of Flint website for the public to review. The information can be found under a special tab created at the top of the home page of [www.cityofflint.com](http://www.cityofflint.com).  
(some example documents posted online and sent to Flint City Council are also attached to this email)
- A public service announcement (PSA) has been created. Residents can hear the



PSA on the radio, and view it on TV, as well as on social media and the City of Flint website. The PSAs were distributed to local media on May 2 for airing throughout the public comment period.

- Community Outreach Resident Education (CORE) workers, who check and distribute filters and water in Flint neighborhoods, are also providing residents with bright orange door hangers with information about the water source recommendation. CORE members distributed over 4,000 door hangers between May 4 and 5 until the citywide mailing began the following week.
- The City has also mailed 30,000 postcards to water customers containing details of the plan (see attachment). Information on the door hangers and postcards is printed in both English and Spanish. Flyers are also available at the Flint City Hall Information Desk and water distribution sites.
- Print ads with information about the water source recommendation appeared in community newspapers, The Courier and in The Flint Journal.
- Digital ads will also be shown on Mlive.com
- For the hearing impaired, a video has been created featuring a Sign Language interpreter. The video is posted on the City of Flint website [www.cityofflint.com](http://www.cityofflint.com) and the City's Facebook page.

The public feedback period will end on May 20. However, the City will continue to inform the public on the water source recommendation after that date. By late May, all legal Agreements should be finalized and the approval process will begin. Input provided by the public will be reviewed and incorporated in the final water source selection.

On May 22, 2017, City Council should meet to discuss the feedback received during the public participation process and further review the proposed water source selection. Approval of the water source selection and associated Agreements is set to take place in June. Concurrent with approval from City Council, approval of the contract must also be obtained from the Great Lakes Water Authority, Genesee County Drain Commissioner, Karegnondi Water Authority and State of Michigan.



## **Primary and Secondary Water Source Recommendations**

### **Frequently Asked Questions**

#### **How can I submit question or feedback on the water source recommendation?**

Questions and comments can also be shared with city officials at the following email address as part of the 30-day public comment period regarding this recommendation: **[flintwatersourceinfo@cityofflint.com](mailto:flintwatersourceinfo@cityofflint.com)**

#### **What is the primary and back-up water source recommendation?**

Mayor Karen Weaver and City of Flint officials recommend that the City of Flint stay with Great Lakes Water Authority (GLWA) as its primary source of water and utilize Genesee County as its secondary (back-up) water source.

#### **What are some of the cost savings under this recommendation?**

- **Relief for residents:** Flint residents would gain access to GLWA's WRAP Program which provides low income customers with assistance to help pay their water bills;
- **Pipe replacements:** It allows the City of Flint to use federal funds to update the city's aging distribution system, through programs like the FAST Start Pipe Replacement Initiative, through the Drinking Water Revolving Fund Program;
- **Bond Payment Debt relief:** While Flint remains ultimately responsible for its 28-year, \$7 million average annual bond obligation to the Karegnondi Water Authority (KWA), the burden of that debt service will be offset by contract credits Flint will receive based upon transfer of its raw water rights to GLWA; and
- **The 72-inch transmission line would be returned back to the City of Flint**

#### **What are some other benefits of this recommendation?**

This recommendation helps Flint position itself to build a new state-of-the-art Water Distribution System that is sized appropriately for the City of Flint and equipped with features such as real-time monitoring of water quality, new pumps, and smart meters.

#### **How many water source options were reviewed?**

More than a dozen water source options were analyzed. In the end, protecting public health was the primary consideration. *(See link to Water Supply Option Review provided on Details & Documents page)*

#### **How long did it take to reach this recommendation?**

After months of research, analysis, and collaboration, Mayor Weaver chose to recommend that Flint stay with GLWA as its primary water source because it was found to be protective of public health, fiscally responsible, and addresses social and economic concerns that are critical to the City of Flint.

(cont')

**What does this recommendation mean for Flint residents?**

Continuing with GLWA means Flint would not have to switch its water source again. This reduces concerns or uncertainties that may result from another change in the water source, especially at a time when the water has improved and is now meeting federal and state lead action level standards. Continuing with GLWA maintains a known and approved water supply.

**Will this recommendation impact my water bill?**

As a GLWA customer, Flint residents would have access to a low income assistance program to help with water bills. This recommendation is the lowest-cost water source solution, which will minimize rates in the long-term.

**Does this recommendation only impact Flint?**

This recommendation provides for a regional approach, which not only benefits the City of Flint, but also Genesee County, as well as GLWA customers in the area who are provided additional redundancy and reliability through this new regional partnership.

Reaching this tentative agreement was a collaborative effort and partnership between the City of Flint, Genesee County, GLWA, KWA, and the State of Michigan to make sure residents of Flint have access to high-quality, affordable drinking water

**What happens next?**

After the 30-day public comment period on the proposed recommendation, City leadership will meet with Flint City Council members to discuss the results of the public participation period and recommend a specific drinking water source. A press conference will be held and a coordinating press release will then be issued to announce the final decision that takes into account community feedback.

###

## Flint's Future Water Sources

Primary – Great Lakes Water Authority (GLWA)

Back-up/Emergency – Genesee County Drain Commissioner (GCDC)

### Project Plan

- City of Flint acquires 72-inch pipeline from GCDC to maintain access to GLWA finished water. Flow continues through this pipeline as Flint's primary, long-term supply.
- GCDC reinforces their distribution system to replace the hydraulic capacity lost by sale of the 72-inch pipeline. This work needs to be completed before exclusive use of the 72-inch pipeline by Flint commences.
- GCDC makes improvements to their distribution system to provide an independent back-up water source for Flint (northern route). This interconnection with the Flint system will be capable of providing average-day flows and requires a continuous flow of approximately 0.5 MGD to maintain water quality.
- GLWA becomes Flint's primary provider and assumes Flint's benefits and obligations with respect to the KWA, including associated bond obligation. This position gives GLWA access to 18MGD of Lake Huron water that can be treated at the GCDC plant and then distributed to GLWA customers.
- Agreements between all parties (Flint, GCDC, GLWA and KWA) need to be developed to facilitate the activities above.

### Regional Benefits

#### City of Flint

- Preferred public health option since switching of water sources is not required
- Lowest cost water source solution
- Allows Federal funds (through the DWRF program) to be spent on Flint's deteriorated distribution system rather than a treatment plant renovation
- Returns the valuable 72-inch pipeline asset to Flint
- Eliminates Flint's current 28 year, \$7.02M KWA bond obligation
- Quickest implementation time of any of the water source alternatives
- As a contract GLWA customer, Flint will benefit from GLWA's model contract, which allows for immediate cost savings
- As a contract GLWA customer, Flint's customers can participate in GLWA's low income assistance program (WRAP)
- GLWA's future increase in annual revenue requirements controlled at 4% by the MOU created by GLWA.

### GCDC

- Provides significant reinforcement to the GCDC distribution system
- Adds Flint/GLWA as a customer (directly or indirectly) through the back-up water source interconnection with Flint
- Adds GLWA as a potential revenue source through the treatment of GLWA's KWA allocation
- Adds system reliability through a mutual-aid agreement with GLWA
- Adds possible future collaboration with GLWA through back-up water sales

### GLWA

- Reduces the revenue loss associated with the loss of Flint as a wholesale customer
- Avoids capital projects that are required to maintain water quality to other GLWA customers if Flint were to terminate service from GLWA
- Provides flexibility in supplying GLWA's regional wholesale customers
- Adds system reliability through a mutual-aid agreement with GCDC
- Provides a valuable raw water resource (KWA)
- Adds possible future collaboration through back-up sales

KWA gains access to a strong financial and operational partner (GLWA)

USEPA and MDEQ are provided with a water source solution that delivers optimal public health protection (no switching of water sources in the future)

This water source solution is consistent with the State of Michigan's strategy which promotes cost-effective regional/partnership approaches to water supply

# WE NEED TO HEAR FROM YOU

As the City of Flint continues to recover from the water emergency, officials must determine a permanent primary and back-up drinking water source. It is important that you are informed and involved in the process before a final decision is made.

## What is being recommended?

City officials are recommending the City of Flint stay with Great Lakes Water Authority (GLWA) as its primary source of water and use Genesee County as its back-up water source.

## What are some highlights of this recommendation?

- **Protects public health:** There would not be another water switch, which reduces concerns that may result from another change in the water source;
- **Relief for residents:** Flint residents would gain access to a low income assistance program to help pay their water bills;
- **Lowest cost option:** This is the lowest cost option, which could help minimize water rates;
- **Pipe replacement:** More funding for the FAST Start pipe replacement initiative and other improvements to Flint's water quality monitoring and delivery system; and
- **Upgrades to the system:** Helps Flint position itself to build a state-of-the-art, 21st-century water distribution system that is right-sized and equipped with features such as real-time monitoring of water quality, new pumps, and smart meters.



## How can I get more information?

There is a 30-day comment period, visit [CityofFlint.com](http://CityofFlint.com) for more information.

## How can my voice be heard?

Questions and comments can be shared at [flintwatersourceinfo@cityofflint.com](mailto:flintwatersourceinfo@cityofflint.com) during the 30-day comment period ending on May 20, 2017.

# NECESITAMOS OÍR DE USTED

Mientras la ciudad de Flint sigue recuperándose de la emergencia de agua, los oficiales deben determinar una fuente de agua potable que sea principalmente permanente. Es importante que usted este informado y participe en el proceso antes de una decisión final.

## ¿Que es lo que se recomienda?

Los oficiales de la ciudad están recomendando que la ciudad de Flint siga usando el Great Lakes Water Authority (GLWA) como su fuente primaria de agua y utilizar el condado de Genesee como su fuente alternative de agua.

## ¿Cuáles son algunos aspectos destacados de esta recomendación?

- **Protege la salud del público:** No habría otro interruptor de agua, que reduce la preocupación de que pueda resultar otro cambio en la fuente de agua;
- **Alivio para los residentes:** Los residentes de Flint podrían acceder un programa de asistencia para personas de bajos ingresos para ayudar a pagar sus facturas de agua;
- **Opción de costo más bajo:** Esta es la opción de costo más bajo, que podría ayudar a reducir al mínimo las tarifas de agua;
- **Reemplazo de tuberías:** Más fondos para la iniciativa de sustitución de tubería FAST Start y otros mejoramientos de Flint en el monitoreo de la calidad del agua y sistema de entrega; y
- **Mejoramientos al sistema:** Le ayuda a Flint a posicionarse para construir un estado técnico, un sistema de distribución de agua del siglo 21 que es adecuado y equipado con funciones como la monitorización en tiempo real de calidad de agua, bombas nuevas e medidores inteligentes.

## ¿Cómo puedo obtener más información?

Hay un periodo de 30 días para comentarios, visite [CityofFlint.com](http://CityofFlint.com) para más información.

## ¿Que se necesita para que se oiga mi voz?

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**Dr. Karen W. Weaver**  
Mayor

## **CITY OF FLINT, MICHIGAN**

### **Department of Finance**

**Sylvester Jones**  
City Administrator

**David L. Sabuda, CPA**  
Chief Financial Officer

**Dawn Steele**  
Deputy Finance Director

Date: May 8, 2017

To: Council President Nelson  
Inez Brown, City Clerk  
Davina Donahue

From: David L. Sabuda ICFO 

Re: Council Member Fields Request – Number 170207 – Additional Water Option  
Documentation

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On 5/3/2017, City Administration provided water option documentation that included the following documents:

1. Water Supply Options – Staff Review.
2. Water Supply Option Analysis with Criteria – Summary.
3. Water Supply Options – Cost Categories and Comments.
4. Flint Water Treatment Plant Capital and Operating Costs.
5. Water Supply Options – Rates Used in Net Present Value Calculation 4/10/17.
6. Water Supply Options – Net Present Value for Each Cost Category.

Upon presentation Councilwoman Fields requested any third party support documentation from Great Lakes Water Authority (GLWA), Karegnondi Water Authority (KWA) or the Genesee County Drain Commissioner (GCDC) that supports the Water Supply Options and analysis.

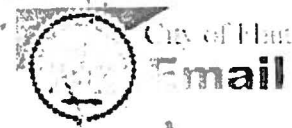
Attached, please find three support documents. Those documents are:

1. KWA Cost per unit at the unit of MCF and CCF dated 1/27/17.
2. Summary of Projected Fiscal Year 2018 GLWA Water Charges to Flint dated 4/16/17.
3. GCDC Interim, Long-term and Emergency Backup Supply communication highlighting costs.

This is being sent to you to fulfill the request of Council Member Fields. It is requested that you present this information to City Council in the usual distribution manner.

Please contact me if you have questions.





David Sabuda &lt;dsabuda@cityofflint.com&gt;

**FW: KWA Budget Figures for City of Flint**

1 message

**Karl Kramer** <kkramer@gcdcwws.com>

Fri, Jan 27, 2017 at 8:30 AM

To: "David Sabuda (dsabuda@cityofflint.com)" &lt;dsabuda@cityofflint.com&gt;

Cc: John O'Brien &lt;jfobrien@gcdcwws.com&gt;

David,

In response to your phone message yesterday, I'm resending this email from earlier this month that answered your question. For clarity, I would only add that the per unit costs Flint might use for budgeting would be either \$2.50 per MCF, or \$.25 per CCF if you are accustomed to using CCF in your calculations.

Karl

**From:** Karl Kramer**Sent:** Tuesday, January 03, 2017 5:18 PM**To:** David Sabuda (dsabuda@cityofflint.com) <dsabuda@cityofflint.com>**Subject:** KWA Budget Figures for City of Flint

David,

Per our conversation, here are several figures and calculations which should be helpful. First, let me point out a few documents which are included. Appendix A to the Jones & Henry Engineering report has some pertinent data, especially on page 3 in regards to the KWA operations and maintenance cost projections and the volume splits between Flint and GCDC. Appendix C contains additional specifics regarding the City of Flint projections. Both of these documents are included in the full J&H engineering report that you have in your copy of the 2014 KWA \$220.5MM bond OS. I've also attached the Bond Cost Allocation spreadsheet again, as it has the data on the existing and future portions of the debt service payable by both Flint and GCDC.

The Jones & Henry report projected KWA O&M costs of approximately \$2,500,000 to \$2,600,000 for calendar year 2018 based on approximately 24 total average MGD. In the report, they also projected the City of Flint utilizing 43.6% of the water produced by the KWA, with GCDC utilizing the remaining 56.4%. However, in reviewing water purchased over the past 12 months, it looks like the current split would be more like 52% Flint and 48% GCDC, while the combined 24 average MGD does seem to currently be accurate. So, \$2,500,000 divided by 8,760 (24MGD x 365 days) would yield a cost per MG of approximately \$285, or cost on an MCF basis of approximately \$2.15. If the O&M cost to produce raw KWA water was closer to \$3,000,000 in 2018, the per MGD cost would be closer to \$342, and the MCF cost would be approximately \$2.56. Either way, it looks like Flint should be budgeting for closer to 52% of the total KWA O&M cost, with GCDC at 48%. I would also point out that in our internal budgeting for KWA O&M costs we are using a \$2.50 per MCF figure.

The KWA Bond Cost Allocation spreadsheet has the detailed calculations on all three bonds involved with the KWA project, including the 2016 bond which needs to be refinanced by May 1, 2018. My estimates on the ultimate amount borrowed and potential borrowing costs were perhaps a bit conservative at the time, but given the upward movement in interest rates over the past couple of months, the final figures may be closer to my overall projections. With that said,



the approximate final borrowing costs for the City of Flint of \$7,020,000 beginning in calendar year 2018 seem prudent for budgeting at this time.

Certainly let me know if you have questions on any items.

Thanks,

Karl

Karl Kramer

Deputy Treasurer, CPFO

Karegnondi Water Authority

4610 Beecher Road

Flint, MI 48532-2617

(810) 600-4120 Direct Line

(810) 732-7870 Main Office

kkramer@gcdcwws.com

**3 attachments**

 **2 Appendix A - Revised 03-17-14.pdf**  
2458K

 **4 Appendix C - Revised 03-17-14.pdf**  
136K

 **KWA Bond Cost Allocation to GCDC and Flint.xlsx**  
37K





## Summary of Projected FY 2018 GLWA Water Charges to Flint

	Existing Charges	GLWA Proposal	Variance	% Variance
<u>Flint Demand Assumptions</u>				
1 Annual Water Sales - Mcf	615,000	615,000	0	0.0%
2 Average Daily Sales - mgd	12.60	12.60	0.00	0.0%
3 Max Day Demand - mgd	15.00	15.00	0.00	0.0%
4 Peak Hour Demand - mgd	15.00	15.00	0.00	0.0%
5 Max Day Peaking Factor	1.19	1.19	0.00	0.0%
6 Peak Hour Peaking Factor	1.19	1.19	0.00	0.0%
7 Sales via GCDC Treatment	0	24,400	24,400	NA
8 Net Sales via GLWA Treatment	615,000	590,600	(24,400)	-4.0%
9 Annualized Revenue Req't - Direct GLWA Service	14,068,700	11,129,900	(2,938,800)	-20.9%
10 Fixed Monthly Charge	693,200	556,400	(136,800)	-19.7%
11 Commodity Charge - \$/Mcf	9.35	7.54	(1.81)	-19.4%
12 KWA Debt Service	7,000,000	0	(7,000,000)	-100.0%
13 KWA/GCDC Pass Thru Water Costs (a)	0	1,108,700	1,108,700	NA
14 Adj Annualized Flint Revenue Requirement	21,068,700	12,238,600	(8,830,100)	-41.9%

(a) KWA/GCDC Pass Thru Water Costs	Units	Charge	Annual Cost
Fixed Capacity Reservation - mgd	1.50	203,000	304,500
Commodity Charges - Mcf	24,400	32.96	804,200
Total			1,108,700





GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

- DIVISION OF -

WATER & WASTE SERVICES

G-4610 BEECHER ROAD - FLINT, MICHIGAN 48532-2617

PHONE (810) 732-7870 - FAX (810) 732-9773

JEFFREY WRIGHT  
COMMISSIONER

February 9, 2017

Mr. David Saboda  
City of Flint  
1101 S. Saginaw Street  
Flint, MI 48502

Re: Request for Water Supply

Dear Mr. Saboda:

This letter proposal is in response to your request and our clarification of that request (Appendix 1) for alternative water supply. The proposal is based on a very quick analysis of our ability to deliver, and the City's ability to receive finished water. If the City chooses to move forward with any of the proposals contained herein, we believe it is appropriate to refine the scope of services and to jointly analyze the alternative, prior to execution of any contract or term sheet.

**Scope**

The City of Flint has requested that the Genesee County Drain Commissioner Division of Water and Waste Services provide them with three proposals for finished water supply. The requests are as follows:

1. Interim water supply, October 2017-October 2019
2. Long term water supply, October 2019- 2047
3. Emergency backup supply, October 2019- 2049

The request and clarification can be found in Appendix 1

**Background**

In the Spring of 2013 the City of Flint and the Genesee County Drain Commissioner's Division of Water and Waste Services (County Agency) entered into separate water purchase agreements with the Karegnondi Water Authority (KWA). Flint and the County Agency contracted for capacities of 18 mgd and 42 mgd respectively. KWA agreed to provide lake water to each community for treatment and delivery to their respective customers. When those agreements were signed, DWSD terminated the City of Flint's contract effective April 2014.

Due to the termination, Flint chose to rehabilitate its existing water treatment plant, having a capacity of 36 mgd and use the Flint River as its backup water supply. The County Agency chose to construct a new water treatment plant with an onsite water impoundment as its backup water supply. KWA construction commenced with a planned completion date of June 2016. In April 2014, the City of Flint chose to activate its treatment plant and treat the Flint River until KWA water was available. The County Agency chose to stay with Detroit, understanding it would pay a higher rate, until such time as its water plant would be online presumably in October 2017.

Since the City was going to treat the treating river water, in the short term, and Lake Huron water in the long term. The 72 inch main in Genesee County was no longer of value to Flint. The County Agency was developing plans to build a new transmission main from east to west to tie all its service feeds to a common header pipe. Flint approached the County Agency offering to sell the 72 inch main to the County Agency. This allowed the County Agency to forego construction of the new transmission main. The County Agency accepted Flint's offer, and entered into a memorandum of understanding that resulted in the transfer of ownership of the 72 inch main.

In October of 2015, the City made the decision to return to the Detroit water system. To access the Detroit system, the City had to again receive water through the 72 inch main, now owned by the County Agency's water system. The County Agency granted access to the City for use of the 72 inch in a License to Transmit Agreement (Appendix II). The Agreement is clear that when the County Agency's water treatment plant comes online, the Agreement shall be terminated.

Construction of the County Agency's water plant is on schedule. Flint has received a draft report that indicates the renovated Flint water plant will be able to produce finished water from KWA no earlier than October 2019. When the County Agency's plant comes online in October 2017, Flint will not have access to the Great Lakes Water Authority (GLWA) system. (Note: In 2016, Detroit Water System reorganized to become GLWA.) In addition to the interim supply, the City is also looking at alternatives to its water plant, as a long term supply. With the Flint River no longer considered a viable alternative as a backup supply, Flint also needs a second source of finished water to provide redundancy.

The County Agency was created under Public Act 342 of 1939. The County Board of Commissioners appointed the County Drain Commissioner as County Agency who then created the Division of Water and Waste Services. Currently the County Agency has 17 local community customers drawing water from its system. The rates and fees for the system are common to all communities, unlike the GLWA water system. The County Agency's members are customers/owners of the water system, and therefore they are not in a buyer-seller arrangement.

At the time of the contract with KWA, the County Agency's flow rates were 14 mgd and 22 mgd annual average day and maximum day, respectively. The County Agency recognized that an undertaking of the magnitude of the KWA requires long range planning and evaluation. Based on our own growth projections, the County Agency purchased 42 mgd from KWA and began the design and construction of its water treatment plant. The County Agency designed a 45 mgd plant with the initial construction of 30 mgd. The basis of design set its filter rates at 3 gpm per square foot. This is an acceptable, but conservative rate for treating Great Lakes water. It is anticipated that the Division will be able to increase this rate during the summer months with warmer lake water and be able to deliver more water during the County's peak demand.

The impoundment is 150 million gallons with 25 million gallons for daily use and 125 million gallons for emergency supply. This represents 10 days of water supply during emergency conditions.

The County Agency's operational philosophy for the water plant and distribution system is as follows:

1. Water plant will be designed to deliver the maximum 30 million gallons per day
2. Distribution storage and pumpage will be designed to handle maximum day flow, fire protection and water main break flow
3. Elevated storage will be designed to maintain distribution pressures and peak hour flows.

This philosophy does result in excess storage during the winter period. The County Agency takes 50% of its storage off line during this period, typically November through April.

**1. Interim Water Supply**

The City of Flint has requested a proposal for interim supply from October 2017 until at least October 2019.

The City represented that recent history shows an average daily flow of 13 mgd, a maximum monthly average daily flow of 16 mgd and a maximum daily flow of 24 mgd. The maximum daily flow occurs in January and February, and is related to water main breaks. This is when filter rates are the lowest, due to the incoming temperature of the lake water. Flint indicated that they are looking for maximum day flow, and for the County Agency to assume that the City would have no water storage available at the plant site or its distribution system.

In essence, the City is requesting 80% of the capacity of the designed Genesee County Drain Commissioner's water treatment plant.

Based on those terms, the Division cannot provide a proposal for interim supply at the requested term.

The Division will however, make two other proposals:

**A. Interim Supply Beginning October 2017**

The County Agency will provide the City of Flint with 13 mgd annual average day (AAD) flow with a maximum day flow of 16 mgd. The water would be delivered to the Dort reservoir on City property through the existing 72 inch diameter pipeline, the Dort reservoir would be a flow through reservoir. At 25 Million gallons this would provide the city with three days of supply for the maximum day of 24 mgd.

**B. Interim Supply after June 2018**

The capacity at the County Agency's water plant is based on the Preliminary Design Report. The treatment plant is under construction, and is scheduled to be completed in April of 2017. The County Agency has developed a 3-5 month plan to start up the plant, perform shakedown of all the equipment and most importantly, optimize treatment. Once optimization is demonstrated to the MDEQ, the County Agency will begin distribution of the water to its community customers. This optimization will occur during the summer months, during the easiest periods to treat water. To accurately determine capacity, the plant must operate with water temperatures in the 1° to 5°C range. This will not occur until the following winter, January or February 2018. The initial five month start up period is not a sufficient time to perform a detailed analysis of filter rates in excess of 3 gpm/sq ft. As a result the County Agency will not be able to determine what capacity in our plant is available for Flint until March of 2018. We are comfortable in offering 13 mgd AAD to the City of Flint beginning in October 2017, and as our Plant Performance is verified to increase that volume. We anticipate being able to offer 16-18 mgd but cannot guarantee volume greater than 13 mgd AAD until after February 2018.

**Costs**

The common to all rate is based on a long term supply agreement (30 years). Since the interim agreement is a short term, 2-3 year, agreement, we would provide water to the City at an individual rate. The rate would cover treatment costs, and transmission costs. Note our long term customers pay this cost along with distribution and debt service costs.

While our plant is not operational, we have projected our costs for treatment and transmission at \$3.50 per mcf. This rate would be adjusted as more accurate data, cost and bills, are accumulated. The rate would be adjusted for all customers, not just City of Flint. With the current rate estimate of \$5.00 per mcf, and based on 13 mgd annual average day flow, the annual cost would be just over \$3.17 million annually.

**2. Long Term Supply**

The City of Flint has requested a proposal for long term supply. This assumes the City of Flint will abandon its plans to refurbish and activate the Flint Water Treatment Plant to treat Lake Huron water. Flows are 13 mgd annual average day flow and 24mgd maximum day flow.

As indicated in the previous section, the County Agency is not in a position to offer a long term agreement without having completed the construction of the water plant and placing it in operation.

In addition to the treatment capacity, the County Agency would also need to examine its raw water impoundment sizing. The impoundment will need to serve as back up to both the County Agency and City.



Our preliminary analysis would require the addition of a 15 mgd treatment train and an additional 100 mg in storage to our system, to meet the City of Flint's request and the County Agency's future demands. The long term arrangement would require a contract term, no less than the term of a bond to cover necessary capital improvements.

Based on the cost of these improvements, the County Agency would be able to offer a long term water supply agreement for July 1, 2018 through June 2048.

The rate for services would be equal to all our existing customers. Again, the current estimate for treatment is \$5.00 per mcf and \$7.90-\$11.10 per mcf for debt coverage. Debt coverage would be converted to a fixed monthly charge.

If the City of Flint wants to pursue this alternative, the County Agency would first be required to obtain authorization from the County Board of Commissioners to supply the City, since they are currently outside our water district. Next, the City of Flint would execute a standard Public Act 342 supply agreement with the County Agency. Providing the capital required to construct the improvements would be the responsibility of the County Agency.

Please note, the debt service would be fixed cost and the treatment cost would be subject to annual adjustments as necessary to cover costs.

While the City requested three specific alternatives from the County Agency, there are other options that could be more viable for the City and County Agency.

### **3. Emergency Backup Supply**

The City of Flint is considering three alternatives for primary supply; Flint Treatment Plant, County Agency Treatment Plant and GLWA. Therefore, there are alternatives for back up supply with varying degrees of effectiveness, we will try to expand on those below:

#### **A. Flint Plant as Primary Supply**

The County Agency can provide a backup supply directly to the treatment plant through the 72 inch diameter water main. The County Agency would add a new meter to the 72 inch line, and would be able to deliver daily water for freshness and emergency water up to 16 mgd. The agreement would be a \$50,000.00 fixed monthly fee, and at our commodity rate, current estimate of \$5.00 per mcf.

**B. Genesee County as Primary Supply**

Since the County Agency is delivering primary water down the 72 inch line, an alternate route will be required. To meet the demands required and to maintain separation from the 72 inch line, the water would be delivered from the County Agency's transmission main located north of the plant on Francis Road. This plan assumes the City can repurpose the 24 inch water main coming out of the Flint water treatment plant and going north on Dort to Coldwater Road. The cost opinion for this work is \$6,342,326 (Appendix III). This line can deliver daily water for freshness and emergency water up to 16 mgd. The agreement would be 30 years, and the fixed cost would be \$100,000.00 per month, and a commodity rate of \$5.00 per mcf.

**C. GLWA as Primary Supply**

The County Agency at this time does not know how GLWA will deliver water to the City, so it is difficult to determine a cost effective alternative for back up supply. Therefore, all we can offer at this time would be Alternate B as described above.

We conclude this response with the following comment:

The County Agency is providing these proposals at the request of the City of Flint. These proposals were prepared in less than two weeks, and based on the simplest understanding of Flint's needs. The County Agency is willing to pursue each alternative and believes that with a better understanding of Flint's needs, more cost effective solutions can be developed.

As stated earlier, the County Agency is a cooperative of local communities, we are different from the typical buyer-seller relationship. The local communities are partners in the County Agency and actively work with staff to develop long term and short term plans. The local communities are an integral part of our budget and rate processes, we are a true regional effort.

The request by the City was tailored to solicit cost proposals only, we would be remiss in not including our concerns and conditions.

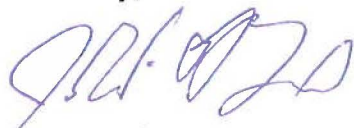
As previously indicated, the County Agency has 17 existing community customers. As part of the agreement, the County Agency exercises authority over the manner in which the communities maintain and operate their distribution systems, as well as the handling of their point of use customers. Each community agrees to comply with the County's standards of construction and all plans and construction are approved by the County Agency.

Since this will not be the case with Flint, the County Agency and Flint will be required to designate a point of delivery. That point of delivery shall be the point of commerce, ownership, and responsibility for water quality. The County Agency can only provide water quality to the point of delivery, and cannot make any representations after it enters into the City of Flint water system.

Once the City selects their interim supply, we believe this will provide more time to identify the most effective alternative for long term supply and will in turn clarify the backup supply. You have assured us that irrespective of the choices the City makes as to its permanent, temporary and back up water supply, the City of Flint will timely make all payments due and perform all of the City's obligations under the June 28, 2013 Raw Water Supply Contract, the August 1, 2013 Karegnondi Water Authority Financing Contract, and the Bond Purchase Agreements signed in connection with the financing of KWA. With that said, find below our proposals.

On a final note, the County Agency believes that it is imperative for the City to select its interim supply. Once this supply is established, the City could delay the decision on the long term supply until all alternatives can be fully developed. As we indicated early in this letter, the County Agency will be able to provide a more detailed proposal on long term supply in March of 2018. We have provided the best answers we could under the circumstances. Should you have any more questions or need further clarification, do not hesitate to contact this office.

Sincerely,



John F. O'Brien, P.E., Director

Division of Water and Waste Services

JFO/NN

CC: Jeff Wright  
Kevin Kilby, Esq.  
John Young  
Bryce Feighner

Enclosure



GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

DIVISION OF

WATER & WASTE SERVICES

G-4610 BEECHER ROAD - FLINT MICHIGAN 48532-2617

PHONE (810) 732-7870 - FAX (810) 732-9773



JEFFREY WRIGHT  
COMMISSIONER

January 25, 2017

Mr. David Saboda  
City of Flint  
1101 S. Saginaw Street  
Flint, MI 48502

Re: City of Flint Request

Dear Mr. Saboda:

This letter is a follow up to our meeting on January 24, 2017, where the City of Flint requested options from the Genesee County Drain Commissioner's office in regards to water supply for the City of Flint on an interim basis, long term basis and a backup supply for the water treatment plant. As indicated in the meeting we have prepared the enclosed outline for service. Please review, correct or comment on the service plan enclosed. Once we receive your acceptance we will finalize the plan costs.

While we recognize the importance of the project, and the City's time constraints, we must point out that our proposed alternative with cost will be prepared in a three week period. This means that there will be a significant number of assumptions required to develop and to cost out the alternate. Due to the scrutiny applied to the process, GCDC will prepare the cost opinion on the high side to cover all costs of the assumptions and unknown components, in preparation of the alternates. This may result in 40% - 50% cost contingencies

Again, please provide comments or acceptance of our understanding of the scope, so that we may prepare our cost opinion.

Should you have any questions or need further comment, do not hesitate to contact this office.

Sincerely,

John F. O'Brien, P.E.  
Deputy CEO

JFO/NN

CC: Jeff Wright  
John Young  
Dave Janson

Enclosure

## **Scope of Service**

### **1. Interim Service**

A. Provide the City of Flint primary water supply for the interim period. The interim period is from the day Genesee County's water plant comes online to the day the Flint water plant comes online; October 2017 thru December 2017

### **B. Assumptions**

#### **a. Flint's demand**

i. 13mgd Annual Average Day (Annual)

ii. 16 mgd Maximum Month

iii. 24 mgd Maximum Day

#### **b. Point of Deliver**

i. 72" pipeline and Station #2 meter A & B on Flint's property

#### **c. Pressure 70 PSI**

#### **d. Flint responsible for peak hour demand**

#### **e. No backup supply required**

#### **f. Delivery should assume Dort reservoir is out of service, and therefore maximum day supply is required**

#### **g. Uninterruptable supply**

#### **h. Water quality same as delivered to County customers**

### **C. Request cost for**

#### **a. Capital outlay requirements**

#### **b. Cost of service- Monthly fixed fee and commodity charge**

Based on the infrastructure improvements, availability of service

## **2. Long Term Service**

A. Provide the city long term water supply service. This assumes that the city abandons the renovation of its water treatment plant and enters into a long term contract with GCDC for primary water supply and backup water supply.

### **B. Assumptions**

#### **a. Flint's demand**

- i. 13mgd Annual Average Day
- ii. 16 mgd Maximum Month
- iii. 24 mgd Maximum Day
- iv. 13 mgd Emergency

#### **b. Point of delivery**

- i. Primary supply- 72" at Station #2 meter A & B
- ii. Emergency supply- To be determined
- iii. Pressure 70 psi
- iv. Flint responsible for peak hour demand
- v. Water delivery assumes Dort reservoir is out of service, and therefore maximum day supply is required
- vi. Uninterruptable supply
- vii. Water quality same as County customers
- viii. Contract term not less than 20 years

### **C. Request cost for**

- a. Capital outlay requirements
- b. Cost of service- Monthly fixed fee and commodity charge

Based on the infrastructure improvements, availability of service

### **3. Emergency Backup Service**

#### **A. Provide the City of Flint with a backup water supply to the City of Flint's treated water or GLWA water as primary source**

##### **a. Flint's Demand**

- i. 13 mgd Emergency flow**

##### **b. Point of Delivery**

- i. Flint plant- 72" pipe at Station #2, meter A & B**
- ii. GLWA- To be determined**

##### **c. Water Quality**

- i. Water quality for emergency supply will be available on 2 hour notice, which may require continuous flow at reduced volume to maintain quality.**
- ii. Water quality same as delivered to County Customers**

##### **d. Request cost for**

- i. Capital outlay requirements**
- ii. Cost of service- Monthly fixed fee and commodity charge**

**Note: Monthly fixed fee will change if Flint's water treatment plant could provide emergency supply to GCDC**



## John O'Brien

---

**From:** John Young <j.young109@comcast.net>  
**Sent:** Friday, January 27, 2017 7:19 AM  
**To:** John O'Brien  
**Subject:** Draft Letter

I reviewed the draft "Scope of Services" that you provided to me at our meeting on Wednesday. Based on the discussions/conclusions at our meeting, I am assuming the County will no longer consider providing an "interim" supply. Regarding the long-term supply, your assumptions look appropriate. Regarding the emergency/back-up supply, I think you should assume either of two conditions:

- GLWA provides a primary supply through the existing 72" line and GCDC provides an independent emergency supply or,
- GLWA provides an separate primary supply to Flint and GCDC provides the emergency water source through the 72" line

The City is willing to provide an emergency supply to GCDC if it builds its treatment plant or has GLWA as its primary supply.

As discussed at the meeting, we would like to receive your proposal by February 10.

Please let me know if you have any questions.

Thanks,

John

## John O'Brien

---

**From:** John Young <j.young109@comcast.net>  
**Sent:** Monday, January 30, 2017 8:12 AM  
**To:** John O'Brien  
**Subject:** Flint

As you perform your assessment of the options for providing Flint either its primary supply and/or emergency/back-up supply, please let us know the following:

- Assuming the GCDC would need to be comfortable with their rated plant capacity and possibly undertake improvements/additions at their plant and distribution system to serve Flint, when (what year) should we assume that a primary water source from GCDC could be available?
- Regarding the emergency/backup water source, when should we assume that a back-up water source from GCDC would be available that is totally independent from the 72" line (northern route or use of the 36" KWA line)?

Would it be possible to meet the afternoon of February 8 or morning of February 9 to discuss your conclusions/pricing for providing service to Flint?

Thanks,

John

## LICENSE TO TRANSMIT WATER

This License to Transmit Water ("License") entered into on October 14, 2015, (the "License Date" and "Effective Date") is made between the City of Flint, a Home Rule City (the "City"), and the Genesee County Drain Commissioner, as County Agency, a county agency pursuant to the County Public Improvement Act 342 of 1939, as amended, ("GCDC"). The City and GCDC may be referred to individually as a "Party" or collectively as the "Parties."

### RECITALS

**WHEREAS**, the City has requested the Detroit Water and Sewerage Department ("DWSD") to provide the City with potable water; and

**WHEREAS**, DWSD water distribution system has no physical connection to the City water distribution system; and

**WHEREAS**, GCDC is currently purchasing potable water from DWSD and GCDC is receiving DWSD water at the water meter GN-01 near Baxter and Potter Roads, located in Genesee County and more fully set forth in Exhibit 1 (hereinafter known as "GCDC/DWSD Connection"); and

**WHEREAS**, GCDC has a physical connection to the City water distribution system near Center Road and Pierson Road in Genesee Township, Genesee County, Michigan, which is more fully set forth in Exhibit 2 (hereinafter known as "GCDC/City Connection"); and

**WHEREAS**, GCDC owns nine (9) miles of water transmission pipeline ("Pipeline") that connects the GCDC/DWSD Connection to the GCDC/City Connection; and

**WHEREAS**, GCDC has the ability to allow Flint to transmit water through the Pipeline from the GCDC/DWSD Connection to the GCDC/City Connection so DWSD may service the City with DWSD treated potable water; and

**WHEREAS**, this License shall govern the terms and conditions of Flint transmitting water through the Pipeline from the DWSD/GCDC Connection to the GCDC/City Connection; and

**WHEREAS**, the Parties hereto acknowledge and agree that DWSD may assign its contract to provide potable water to the City to another entity, including, but not limited to, the Great Lakes Water Authority, and, if DWSD assigns its contract to provide water to the City, all reference to DWSD in this License shall be replaced by the party to whom DWSD assigns its contract.

**NOW, THEREFORE, THIS LICENSE** is hereby made and mutually entered into by the City and GCDC for the mutual consideration stated herein and the Parties agree to the following:

1. **Adoption of Recitals.** All of the matters stated in the Recitals of this License are true and correct and are hereby incorporated into the body of this License as though fully set forth in their entirety herein. However, in cases of conflict, provisions of this License shall prevail over the matters stated in the Recitals.

2. **Contract for Water.** As a condition precedent to this License being effective, the City shall enter into a contract with DWSD for DWSD to supply the City with water and said contract shall require the City to pay DWSD directly for all water consumed by the City and any applicable charges, fees, or other amounts charged by DWSD. The City shall hold GCDC harmless from any and all debts the City incurs from receiving water from DWSD and any and all costs that DWSD may impose on GCDC as a result of the City receiving water from DWSD.

3. **Term.** The Parties hereto understand and acknowledge that GCDC needs the Pipeline to transmit its potable water to its customers once GCDC starts receiving raw water from KWA. The Parties agree and acknowledge that this License shall expire sixty (60) days after the City has received notice from KWA that raw water is available for the City for treatment; however, the City may request GCDC to extend this License until GCDC starts receiving raw water from KWA. The City shall not transmit water through the Pipeline after GCDC begins to transmit its potable water to its customers. The City acknowledges and consents to GCDC terminating any water transmission in the Pipeline for the benefit of the City once GCDC begins to produce and sell its potable water to its customers. The City may terminate this License by providing GCDC with thirty (30) days written notice of termination.

4. **Consideration.** In exchange for GCDC allowing the City to transmit water through the Pipeline, the City shall pay GCDC one dollar (\$1.00) per month for the term of this License. The City is allowed to pay the first nine (9) months in a lump sum payment.

5. **Meters and Billing.** The City hereby grants GCDC complete access to and upon verbal request by GCDC complete control of Station 2, including, but not limited to, all meters, valves, structures, and appurtenances until the Karegnondi Water Authority ("KWA") has notified the City that water is available to the City for treatment or GCDC has provided the City with thirty (30) days notice that GCDC no longer requires access to Station 2. GCDC shall have the meter calibrated within fifteen (15) days of the execution of this License and all costs for the calibration shall be the responsibility of the City. The City shall be entitled to all data, meter reads, and other information that is collected by GCDC at Station 2. The City shall be responsible for all utility costs associated with the operation of Station 2. The City shall be responsible for all repairs to the meter and meter pit. GCDC shall notify DWSD of the monthly meter read for Station 2.

6. **Transmission of Water.** GCDC shall use reasonable diligence to allow the City regular and uninterrupted transmission of water through the Pipeline from the GCDC/DWSD Connection to the GCDC/City Connection; however, Flint shall hold harmless and indemnify GCDC for any damages, breach of contract, or otherwise for interruption of service or curtailment of supply for any cause beyond the control of GCDC. These could include, but are not limited to, Acts of God, strikes, lockouts or other industrial disturbances, acts of public enemy, orders of any kind of the Government of the United States or the State, or any civil or military authority, insurrection, riots, epidemics, landslides, lightning, earthquake, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraint of government and people, civil disturbances, explosions, breakage or accidents to machinery, pipelines or canals, partial or failure of the Pipeline or appurtenances. The City shall further hold GCDC harmless from any claim for damages related to continuity of service by third parties, including DWSD, for GCDC's inability to allow the transmission of water due to any cause beyond the control of GCDC.

7. **Water Quality.** The City shall hold GCDC harmless from any water quality related claim for damages by third parties, including DWSD, served by the City, which are asserted against, or are imposed upon or incurred by GCDC and which result from, relate to, or arise out of a claim regarding the treatment of water or the quality of water.

8. **Volume Available.** The City shall hold GCDC harmless in the event that DWSD cannot meet the volume demands of both GCDC and the City. GCDC shall be entitled to receive the quantity of water requested by GCDC and the City shall be entitled to any remaining volume of water. The City shall notify GCDC daily of its anticipated water volume for that day and GCDC shall be responsible for notifying DWSD of the water volume demands for both GCDC and the City.

9. **Pipeline Malfunction.** If the Pipeline shall malfunction for any reason while the City is transmitting water through the Pipeline, GCDC shall notify the City within two (2) hours of verifying the Pipeline malfunction. Thereafter, the malfunction shall be promptly repaired by GCDC and a detailed invoice for one-half (1/2) of the total cost of the repair shall be submitted to the City. The City shall have thirty (30) calendar days to process and authorize the payment for the repair to GCDC. Payment shall be made to GCDC within thirty-two (32) calendar days by either check or wire transfer. Wire transfer instructions are available from the GCDC Chief Financial Officer. The City shall indemnify and hold GCDC harmless for any and all claims from the City or third parties that relate to the City not being able to supply water to its customers due to the malfunction.

10. **Severability.** The Parties hereto specifically agree that in case any one or more of the sections, subsections, provisions, clauses or words of this License or the application of such sections, subsections, provisions, clauses or words to any situation or circumstance should be, or should be held to be, for any reason, invalid or unconstitutional, under the laws or constitutions of the State or the United States of America, or in contravention of any such laws or constitutions, such invalidity, unconstitutionality or contravention shall not affect any other sections, subsections, provisions, clauses or words of this License or the application of such sections, subsections, provisions, clauses or words to any other situation or circumstance, and it is intended that this License shall be severable and shall be construed and applied as if any such invalid or unconstitutional section, subsection, provision, clause or word had not been included herein, and the rights and obligations of the Parties hereto shall be construed and remain in force accordingly.

11. **Governing Law and Venue.** It is specifically agreed among the Parties to this License that Genesee County, State of Michigan is the place of performance of this License. In the event that any legal proceeding is brought to enforce this License or any provision hereof, the same shall be brought in the Genesee County Circuit Court.

12. **Interpretation and Construction.** For purposes of interpretation and construction of this License, both the City and GCDC shall be deemed to have been the drafter of this License and this License shall not be construed against any Party to this License.

13. **Modification.** This License shall not be modified, altered, or amended except through a written amendment signed by the Parties.

14. **No Third Party Beneficiaries.** This License is not intended to confer upon any person or entity, other than the Parties hereto, any rights or remedies of any kind or nature whatsoever.

15. **Notices.** Other than invoices and payments, any notice, communication, request, reply or advice (herein severally and collectively, for convenience, called "Notice") herein provided or permitted to be given, made or accepted by any Party to any other Party must be in writing and may be given or be served by depositing the same in the United States mail postpaid and registered or certified and addressed to the Party to be notified, with return receipt requested, or by delivering the same to an officer of such Party, or by prepaid telegram when appropriate, addressed to the Party to be notified. Notice deposited in the mail in the manner described above shall be conclusively deemed to be effective, unless otherwise stated herein, from and after the expiration of three (3) days after it is so deposited. Notice given in any other manner shall be effective only if and when received by the Party to be notified. For the purposes of notice, the addresses of the Parties shall, until changed as hereinafter provided, be as follows:

To GCDC: Genesee County Drain Commissioner's Office, Division of Water and Waste Services, G-4610 Beecher Road, Flint, Michigan 48532.

To the City: City of Flint, 1101 South Saginaw Street, Flint, Michigan 48502.

The Parties hereto shall have the right from time to time and at any time to change their respective addresses and each shall have the right to specify as its address any other address by at least fifteen (15) days written notice to the other Party hereto.

IN WITNESS WHEREOF, the Parties hereto acting under authority of their respective governing bodies have caused this License to be duly executed in several counterparts, each of which shall constitute an original, all as of the day and year first above written, which is the License and Effective Date.

GCDC

By: Jeff Wright

Its: Drain Commissioner

CITY:

By: Natasha Henderson

Its: City Administrator

By: Dayne Walling

Its: Mayor

Attest:

By:

By:

This License was prepared by:  
Attorney Kevin Kilby (P68599)  
McGraw Morris P.C.  
2075 West Big Beaver Road  
Suite 750  
Troy, Michigan 48064  
Phone: (248) 502-4000  
Facsimile: (248) 502-4001  
Email: [kkilby@mcgrawmorris.com](mailto:kkilby@mcgrawmorris.com)

Approved as to form by:

Peter M. Bade (P47546)  
Chief Legal Officer  
City of Flint  
1101 South Saginaw Street, Room 307  
Flint Michigan 48502

RESOLUTION NO.: \_\_\_\_\_

PRESENTED: 10-12-15

ADOPTED: \_\_\_\_\_

**RESOLUTION AUTHORIZING THE CITY ADMINISTRATOR TO TAKE  
NECESSARY ACTION TO CONVERT TO THE DETROIT WATER SYSTEM**

**BY THE CITY ADMINISTRATOR:**

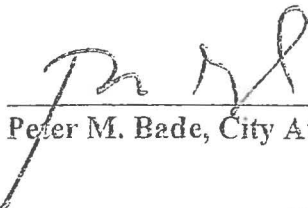
In order to promote the health, safety and welfare of this community, it is in the best interests of the City of Flint for the Detroit Water and Sewer Department (DWSD) to supply the City with treated water pending completion of the Karegnondi Water Authority; and

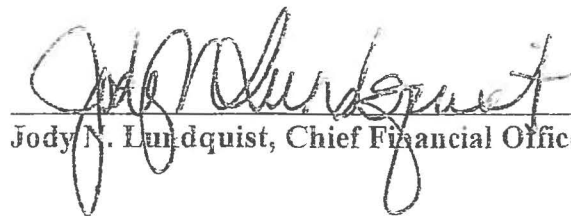
In order for DWSD to supply the City with water, it will be necessary to utilize pipe owned by the Genesee County Drain Commission (GCDC); and

The City, DWSD and GCDC are actively negotiating the terms of the necessary agreements to ensure this transition occurs as soon as possible; and

**IT IS RESOLVED** that the City Administrator is hereby authorized to enter into agreements with DWSD and GCDC for conversion to the Detroit Water System.

**APPROVED AS TO FORM:**

  
\_\_\_\_\_  
Peter M. Bade, City Attorney

  
\_\_\_\_\_  
Jody N. Lundquist, Chief Financial Officer

**FOR THE CITY OF FLINT:**

  
\_\_\_\_\_  
Natasha L. Henderson, City Administrator

**APPROVED BY CITY COUNCIL:**


  
\_\_\_\_\_  
PRESENTED TO CITY COUNCIL: 10/12/2015  
ADOPTED BY CITY COUNCIL: 10/12/2015

Exhibit 'B'  
 Cost Opinion For  
**Proposed Watermain Extension**  
**GCDC-WWS**  
**Lewis Road WM Extension**  
 11/19/2015

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Price</u>	<u>Total</u>
Connect to Existing WM	2	EA	\$ 10,000.00	\$ 20,000.00
24" DI Watermain & Appurtenances, Open Cut	16,400	LF	\$ 160.00	\$ 2,624,000.00
24" DI Watermain & Appurtenances, Bore & Jack	550	LF	\$ 550.00	\$ 302,500.00
Meter Pit	1	EA	\$ 230,000.00	\$ 230,000.00
24" Gate Valve & Box	4	EA	\$ 10,000.00	\$ 40,000.00
Driveway Restoration (Concrete & Asphalt)	1,400	SY	\$ 55.00	\$ 77,000.00
Driveway Restoration (Gravel)	2,900	SY	\$ 15.00	\$ 43,500.00
Culverts (12" and 18")	2,300	LF	\$ 36.00	\$ 82,800.00
Fire Hydrant Assembly	32	EA	\$ 4,500.00	\$ 144,000.00
Trench Restoration	17,800	LF	\$ 10.00	\$ 178,000.00
Audio-Video Electrography	1	LS	\$ 6,000.00	\$ 6,000.00
Soil Erosion and Sedimentation Control	1	LS	\$ 50,000.00	\$ 50,000.00
<b>SUBTOTAL</b>				<b>\$ 3,797,800.00</b>
<b>ACCELERATED CONSTRUCTION (20%)</b>				<b>\$ 759,560.00</b>
<b>CONSTRUCTION CONTINGENCY (15%)</b>				<b>\$ 569,670.00</b>
<b>DESIGN CONTINGENCY (15%)</b>				<b>\$ 569,670.00</b>
<b>ENGINEERING (9%)</b>				<b>\$ 341,802.00</b>
<b>BOND/LEGAL (3%)</b>				<b>\$ 113,934.00</b>
<b>INSPECTION (5%)</b>				<b>\$ 189,890.00</b>
<b>TOTAL</b>				<b>\$ 6,342,326.00</b>

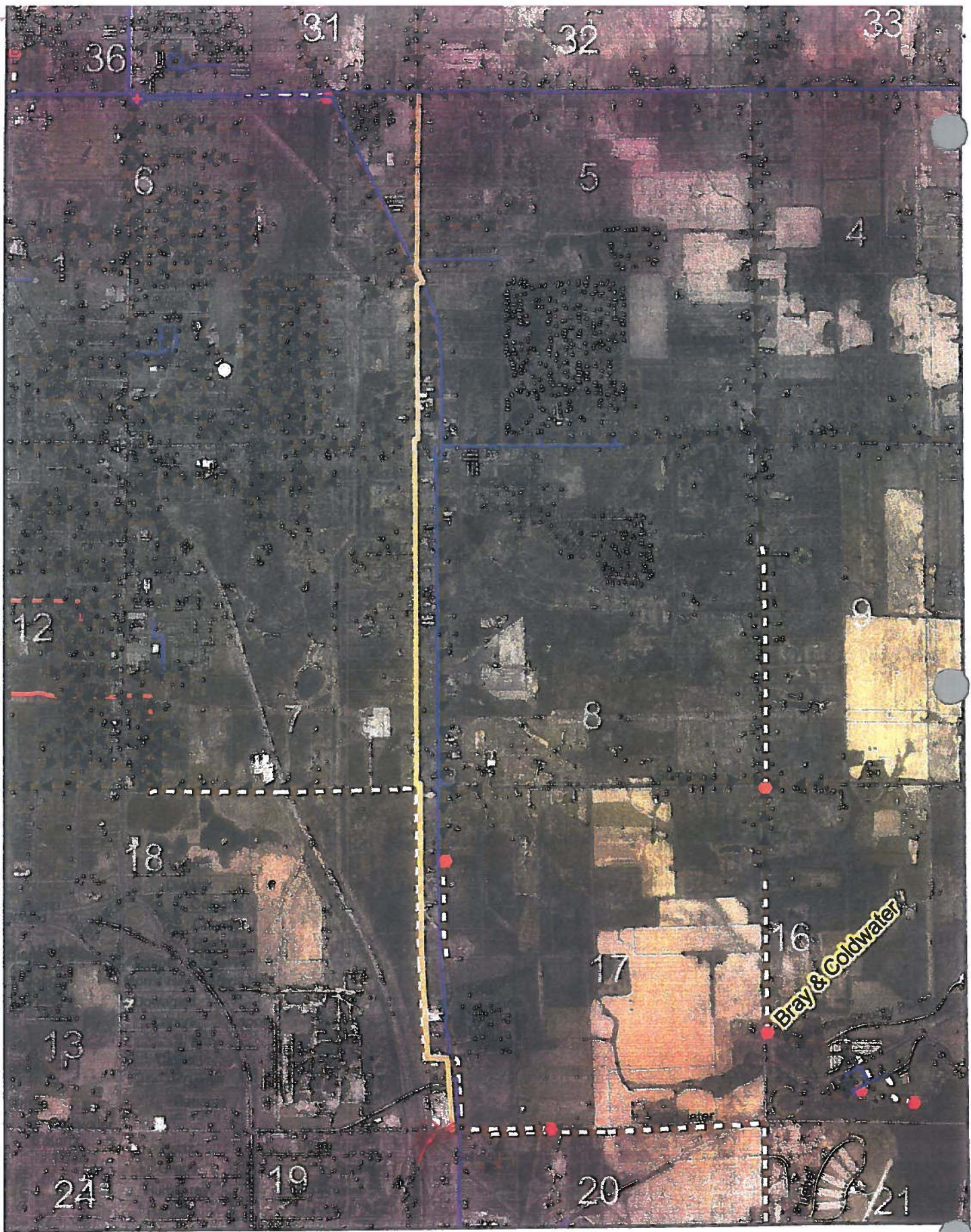
NOTE: This estimate does not include the following items:

- |                        |   |                         |
|------------------------|---|-------------------------|
| *Watermain Tap-In Fees | *Traffic Control  | *Utility Conflicts      |
| *Clearing & Grubbing   | *Geotechnical Reports   | *Protective Pipe Lining |
| *Land Acquisition      | *Aerial Mapping   | *Road Repair            |
| *Wetland Mitigation    | *Any Permits Required by Local, State, Federal, or Private Agencies |                         |

NOTE: No field or survey work was performed in creating this estimate.

M:KWA Lewis Road WM Extension\2015 11-18 Lewis Road WM extension.xls





24" Lewis Road  
Watermain  
1 inch = 2,000 feet



11/19/15



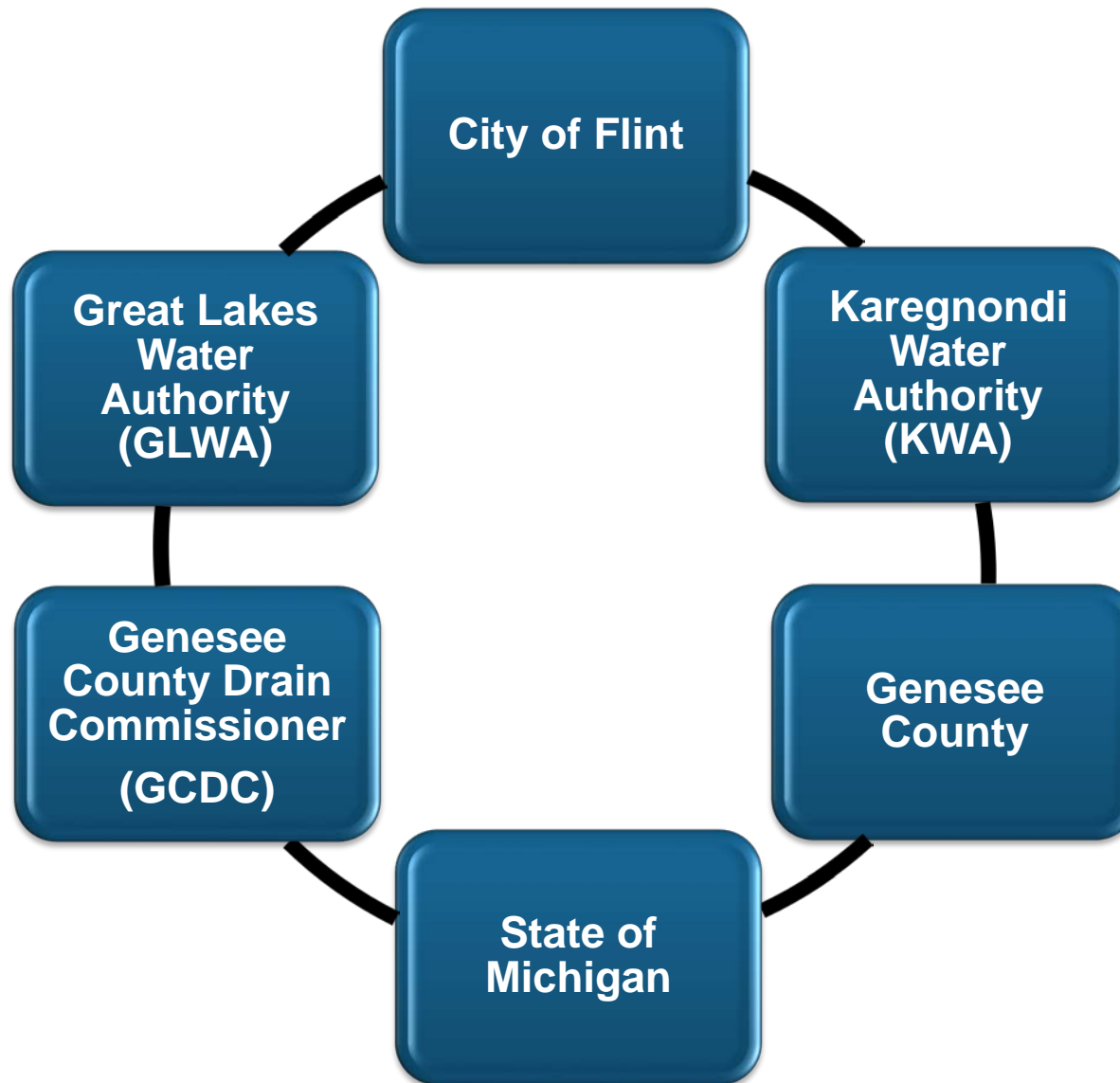
# City of Flint Water Service

*Catalyst for a New Era of Regional Collaboration  
Presentation to the GLWA Board of Directors  
April 19, 2017*



*Note: This is preliminary information subject to change and reflects the opinion only of the GLWA.*

# Collaboration Partners

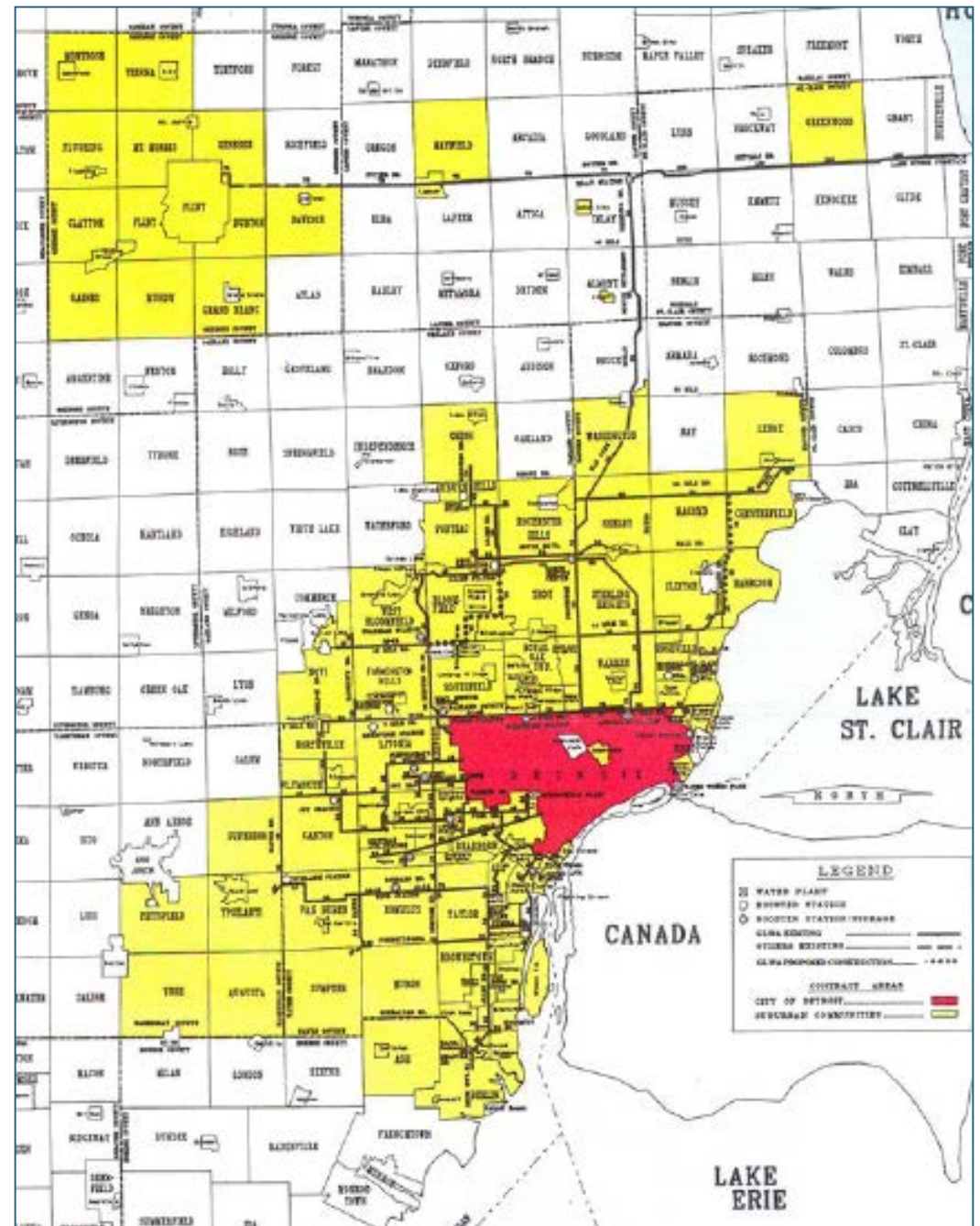


# Objectives Set – Objectives Met

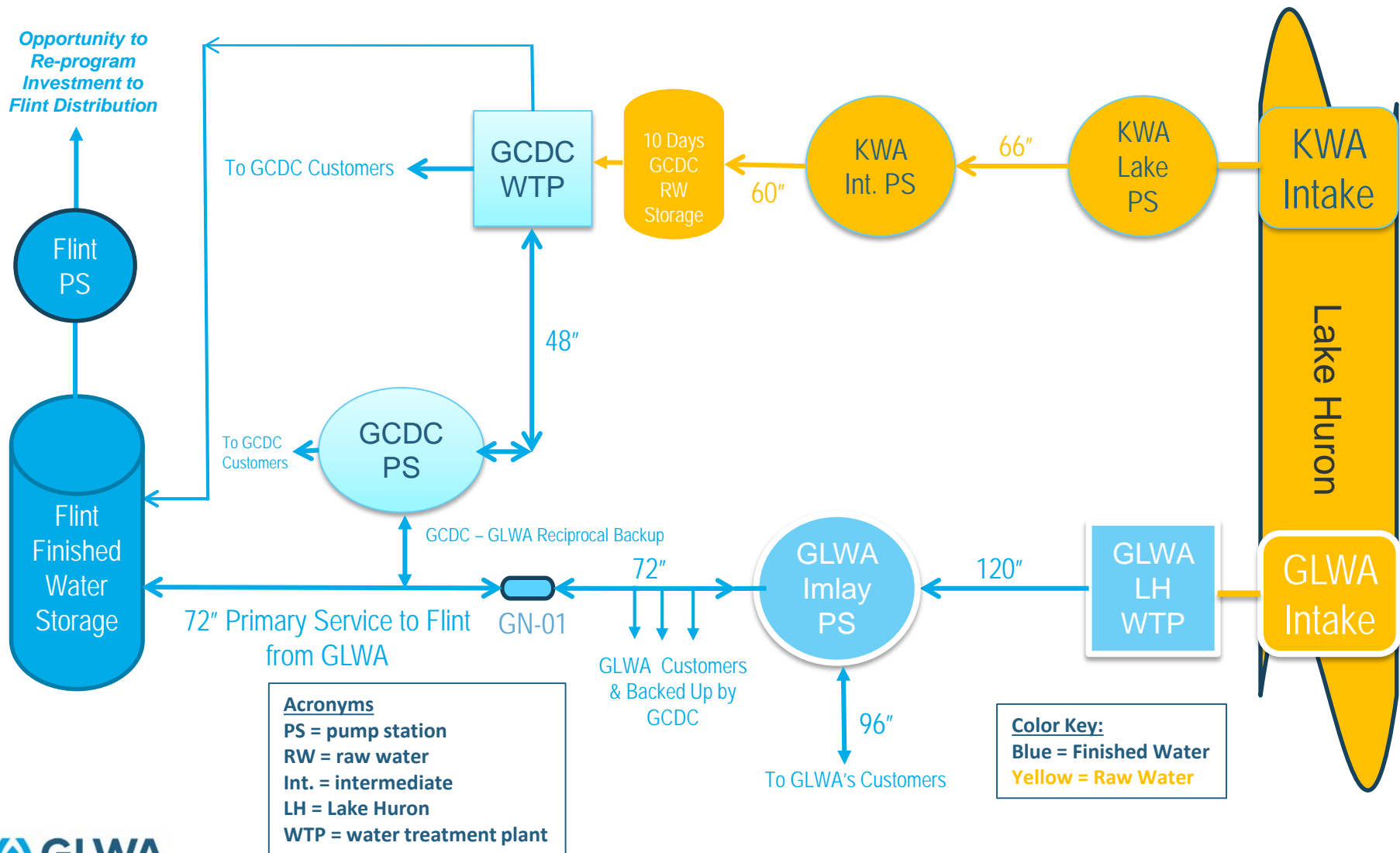
- ✓ Establish a framework for Environmental Protection Agency/Flint deadline of April 19, 2017
- ✓ Stabilize source of supply approach for Flint that is high quality, safe, reliable, and cost-effective
- ✓ Optimize the use of available federal and state funding for capital investment for Flint's existing infrastructure rather than build additional redundant systems
- ✓ Establish reciprocal back-up water service network for the city of Flint, GCDC, and GLWA's Lapeer County area customers served by the existing 72" main with minimal investment – Leveraging the existing investments of all parties
- ✓ Control the cost of water service for all parties through long-term contractual and mutually beneficial commitments
- ✓ Assure that prior and future financial plans are preserved or improved through collaborative and transparent analysis
- ✓ Establish mutual contractual collaboration which clarifies payment security for stakeholders
- ✓ Establish a solid foundation for a new era of regional collaboration to support the state of Michigan's economy, infrastructure needs, and best in class water service delivery

# Outcomes

- Improved Service & Controlled Cost for ALL
- A regional collaboration that spans nearly 40% of the State of Michigan's population



# The Proposal: A Regional Water Network Provides Mutual Water Service Backup with Minimal Capital Requirement



# Flint, GLWA, GCDC & KWA Customers

## Flint

- Stabilize source of treated quality water
- 30-year known water supply solution from GLWA (up to 5% blended water from GCDC) based on model contract
- GLWA model contract cost savings in year 1+ (approximately \$1.8 million)
- GLWA credit of approx. \$7 million annually of KWA debt service for raw water rights at end of first 30-year contract
- Focused capital outlay for Flint local system
- Back-up service supply
- Flint participation in WRAP
- Ownership of 72" water main returned

## GLWA

- Flint becomes a contract customer for first time in 17+ years
- 30-year Flint contract customer relationship (FY 2018 net revenue of \$4.1 million) benefits all customer communities
- Interim treated water service model contract with GCDC
- 30-year reciprocal back-up water supply with GCDC
- No write-off of decommissioned assets and avoided cost of new chlorination facilities
- Defined payment terms
- Licensed use of KWA raw water previously purchased by Flint
- Guaranteed use of 72" water main to service Flint AND emergency back-up to other GLWA customers

## KWA

- Preserves existing debt security
- Add Trust account for debt payments
- Ongoing source of payments
- Operating cost recovery preserved with GCDC/KWA\*

## GCDC

- Contract customer pricing for interim GLWA service retroactive to 1/1/2017
- Short-term GLWA full service water supply cost reduction of \$4 million on an annual basis
- Proceeds from sale of 72" water main for capital costs
- Debt payments via Trust account
- Mutually established equivalent provider/supplier back-up water service changes for GCDC/GLWA when either is provider or supplier
- Operating cost recovery preserved (\*GCDC/KWA FY 2018 approx. \$1.1 million)

## Genesee County

- Preserves existing debt security
- Add Trust account for debt payments
- Ongoing source of payments

## State of Michigan



# Water Residential Assistance Program (WRAP)

As a long-term model contract customer, the residents of Flint are eligible to participate in GLWA's WRAP

1. WRAP is the first sustainable water assistance program in Michigan which launched in March 2016
2. Depending on the participation level selected by the city of Flint, WRAP can assist qualified households within the city of Flint with:
  - a) Assistance up to \$300 per year in the form of \$25 monthly bill credits as long as client continues to pay all current charges
  - b) Up to \$700 in arrearage assistance to be paid 50% (up to \$350) after six months in the program, and 50% (up to \$350) after one year. Enrollees are eligible for a second year arrearage assistance totaling \$700
  - c) One-time home water audit for households above 120% of average usage
  - d) Home repairs up to \$1,000 per household to fix minor plumbing issues leading to high usage and/or minor lead replacement assistance
3. Initial funding was \$4.5 million for Fiscal Year 2016 and \$4.7 million for Fiscal Year 2017, which will provide assistance to nearly 5,000 households in Southeast Michigan each year
4. WRAP funds are currently allocated in proportion to the total budgeted water and sewer revenue requirements by County
5. More information on eligibility and other WRAP details can be found at:

[www.glwater.org/wholesale-customers/water-residential-affordability-program-wrap/](http://www.glwater.org/wholesale-customers/water-residential-affordability-program-wrap/)



# Statement of Principles Signed on April 18, 2017



## CITY OF FLINT

Dr. Karen W. Weaver  
Mayor

### Statement of Principles Long Term Water Delivery to the City of Flint

*The below represents a statement of the structure for a set of inter-related transactions that will comprise an overall agreement resulting in primary and backup water for the City of Flint and system improvements for all parties. The signatories agree to work in good faith to promptly agree to the necessary legal documents (in the form of an overall master agreement with each individual agreement as an exhibit to that master agreement). They further agree to use their best efforts to secure all authorization or approvals required by the entity's policies, ordinances, and governing law for those agreements from all governing bodies necessary to put these agreements into effect as soon as is practicable.*

1. The Great Lakes Water Authority (GLWA) will provide long-term wholesale finished water services to Flint, with pricing for the services that treats Flint similarly to all other GLWA wholesale model contract customers, including access to Water Residential Assistance Program funds to assist low-income customers. GLWA will receive the right that Flint has to purchase raw water through the Keweenaw Water Authority (KWA) and credit Flint in like amount to the debt paid during the contract period.
2. Certain trust arrangements will be put in place for ease of flow of funds from Flint to GLWA and the KWA in normal operation. Additionally, in the event Flint does not fully meet its obligations to the KWA, the Genesee County Drain Commission (GCDC), and GLWA, an alternative trust will come into operation. That trust would receive all Flint customer collections and ensure a flow of funds to meet obligations to the KWA, GCDC, and GLWA. Additionally, Flint will provide a customer security deposit of \$3.75M with GLWA, for no less than two years and no greater than six years (as long as timely payments are made and agreed upon performance objectives met). KWA has a conditional right to access the customer security deposit under certain circumstances.
3. GLWA will provide short-term wholesale finished water services to the GCDC until the GCDC water treatment plant is operational and servicing GCDC's customers, with pricing for the services that treats GCDC similarly to all other GLWA wholesale model contract customers.
4. GLWA and the GCDC will provide one another with reciprocal backup water services. The price for backup water services will be established through an agreed upon detailed pricing methodology in the contract and it will be the same for both parties.
5. The State of Michigan (State), through its Department of Environmental Quality (DEQ), will provide a grant in an amount of \$7.5M to the GCDC for installing a 42-inch transmission main parallel to the existing 72-inch transmission main that currently supplies treated water from the GLWA to GCDC customers and Flint. This will allow GCDC to supply treated water from its new water treatment plant to its customers on or after October 2017. The 72-inch transmission line will be returned to Flint's ownership.
6. The State will provide assistance, in compliance with all existing laws, to GCDC, Flint and the KWA in obtaining refinancing of the 2016 KWA bond issue and in completing the approval process for the GCDC to use its water treatment plant.

Page 1 of 2

City of Flint • 1101 S. Saginaw St., Rm 101 • Flint, Michigan 48802  
www.cityofflint.com • (810) 766-7346 • Fax: (810) 766-7218

7. Flint will build a new supply connection from the end of the GCDC service system north of Flint to the Flint water system to provide a backup water supply. Flint intends to utilize WIDN funding to complete this project.

Signed by:

City of Flint

By: Dr. Karen W. Weaver, Mayor

KWA

By: John O'Brien, Deputy CEO

GLWA

By: Sue P. McCormick, CEO

GCDC-WWS

By: Jeffrey Wright, Drain Commissioner

State of Michigan

By: Keith Cragg, Director

Page 2 of 2

# Next Steps

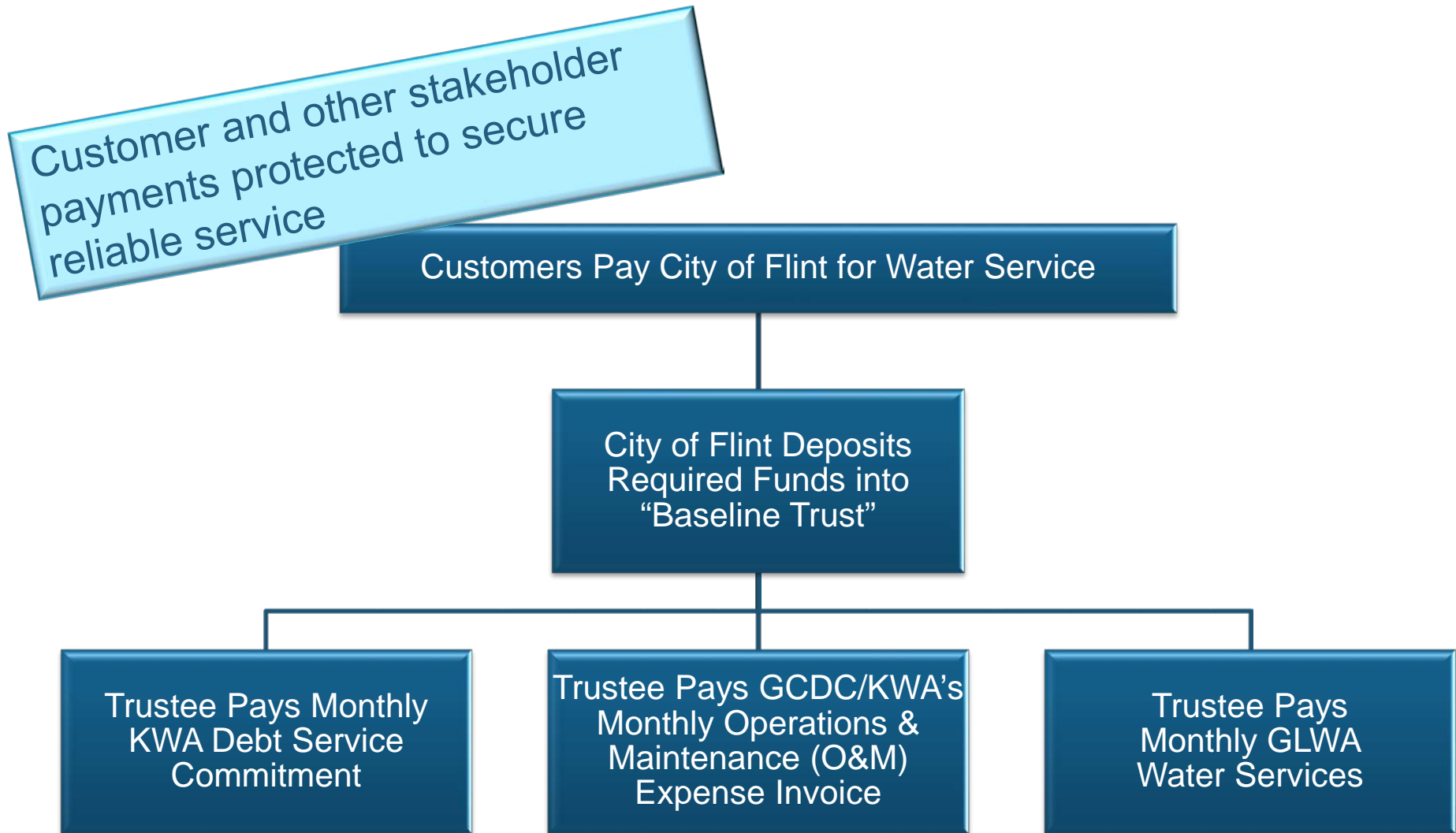
1. **Statement of Principles:** Signed April 18, 2017
2. **30-day public comment period**
3. **Drafting and execution of the Master Agreement**

# Master Agreement: Regional Cooperation = Regional Benefit

Master Agreement Supports Cooperation – Statement of Principles outlines next steps for a Master Agreement encompassing coordinated agreements among the partners

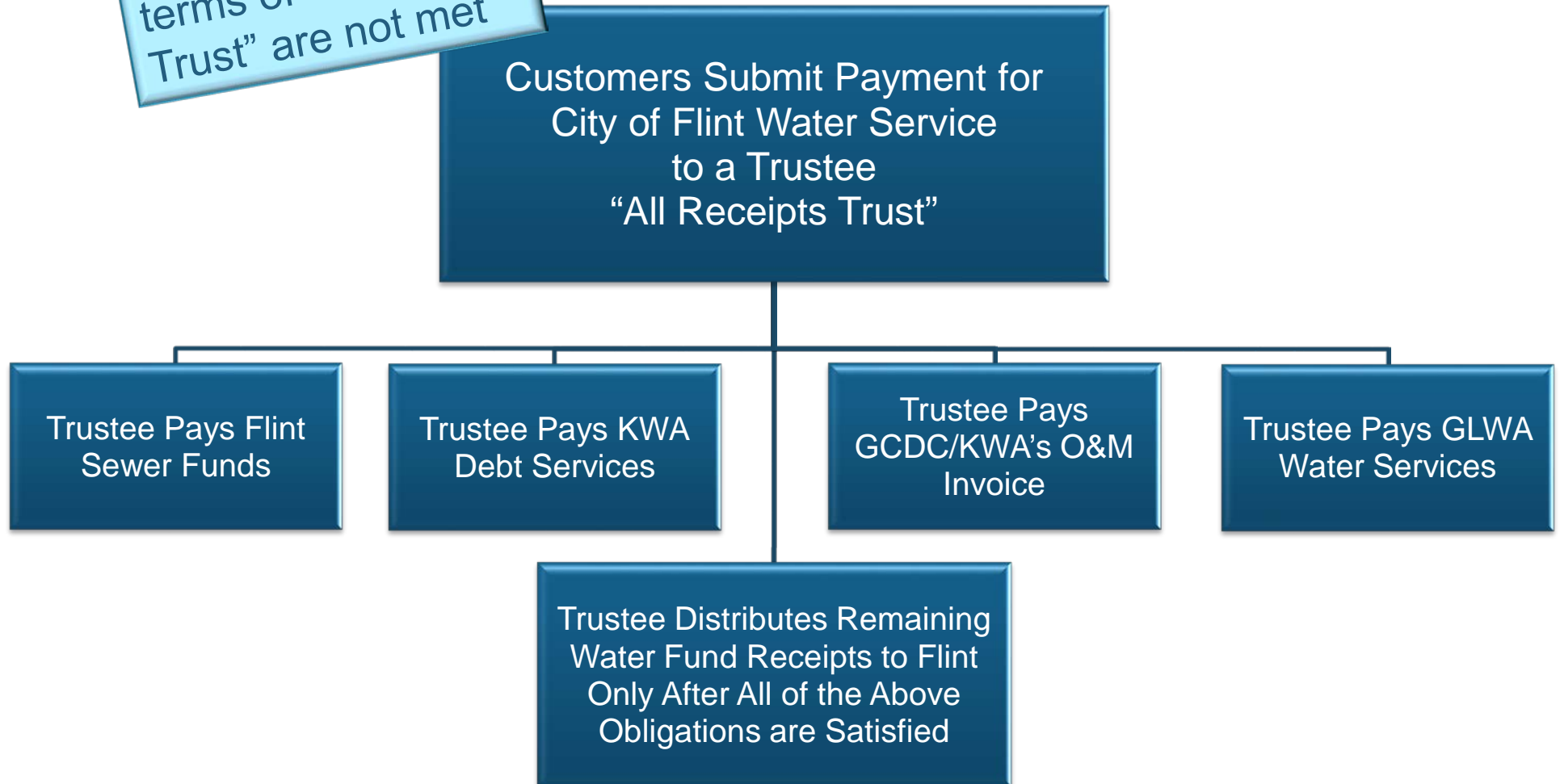
1. **Flint & GLWA:** 30-Year Water Services Agreement
2. **GCDC & GLWA:** 30-Year Reciprocal Back-Up Services Contract
3. **GLWA, KWA, & Flint:** Payments Trust
4. **Flint, KWA, & GLWA:** Addendum to KWA – Flint Raw Water Contract
5. **State, Flint, & GCDC:** 72" Main Transfer
6. **State & GCDC:** 42" Main Agreement
7. **State & Flint:** GCDC North 36" Main Agreement

# Baseline Trust Defines Payment Arrangements



# If Needed, Trust May be Expanded

Only effective if  
terms of "Baseline  
Trust" are not met



# Anticipated Considerations for Each Partner



*Note: This is preliminary information subject to change and reflects the opinion only of the GLWA.*

# City of Flint

1. Safe, reliable water service; no further switching of primary water source
2. 30-year, cost effective water supply solution from GLWA
  - a) Based on GLWA Water Model Contract
  - b) As a GLWA Model Contract wholesale water customer, Flint would save approximately \$1.8 million compared to non-contract charges
  - c) In consideration for the transfer of raw water rights with KWA, Flint will receive contract rights credits (approximately \$7 million per year) which will off-set debt service payments made to KWA
3. Over \$100 million of federal funds identified to improve Flint's water treatment plant and storage facility could be redirected to fund years of deferred water distribution system capital investment
  - a) Flint's water treatment plant becomes pumping station and provides storage to reduce Flint's local system operating costs
  - b) Future opportunity to reduce cost of water purchased in its operating budget by directing capital funds to reduce sources of water loss
4. Eligibility for Flint households to participate in GLWA's WRAP (Water Residential Assistance Program)
5. Ownership of 72" water main is returned to Flint
6. Flint may participate in the GLWA Technical Advisory Committee for the term of the contract

# Great Lakes Water Authority

- 1. Flint becomes a long-term contract customer for the first time in 17 years**
- 2. 30-year Flint Model Contract benefits all GLWA customer communities:**
  - a) Approximately \$4.1 million of annual net revenues in FY 2018
  - b) Revenue stability
- 3. Increased security for Flint payments to GLWA:**
  - a) Security Deposit Account
  - b) Trust accounts set up for deposit of Flint monthly GLWA payments
- 4. Support expanded regional collaboration to strengthen the state of Michigan's infrastructure network and improve reliability for GLWA customers by optimized use of existing infrastructure**

*(continued)*



# Great Lakes Water Authority *(continued)*

5. **GLWA entitled to use of Flint's previously purchase raw water capacity with KWA which avoids:**
  - a) Cost of new chlorination facilities along GLWA 72" water main – approximately \$8.5 million
  - b) Additional annual O&M costs of chlorination facilities - \$150,000
  - c) Material write-off and cost of decommissioning GLWA assets while addressing a long-standing redundancy concern for our customer communities in this region
6. **Use of the 72" main to provide service to Flint, as well as emergency back-up to other GLWA customers**
7. **A 30-year reciprocal back-up water supply contract between GCDC and GLWA**
  - a) GLWA will continue to supply finished water to GCDC on a full-service basis until GCDC's water plant is operational and delivering water to its customers, which is estimated to be October 1, 2017. GLWA charges for this service treats GCDC as all other GLWA wholesale model contract customers are treated, and will be retroactive from January 1, 2017
  - b) GCDC will provide a daily supply of finished water to GLWA not to exceed 5% of Flint's daily flow requirements, estimated at 0.5 MGD. It is necessary to keep the 24/36" line fresh in the event emergency back-up services are required
  - c) GLWA and GCDC will provide one another with reciprocal back-up water services for use during periods of planned maintenance, system repairs, system outages, loss of power supply, contamination, or for other mutually agreed upon reasons

# Great Lakes Water Authority *(continued)*

## Summary of Projected FY 2018 Charges to Flint

		Existing	Current	Variance	% Variance	(b) Current Proposal Allocated to Recipient		
		Charges	Proposal			GLWA	KWA	KWA / GCDC
		(b)						
<u>Flint Demand Assumptions</u>								
1	Annual Water Sales - Mcf	615,000	615,000	0	0.0%			
2	Average Daily Sales - mgd	12.60	12.60	0.00	0.0%			
3	Max Day Demand - mgd	15.00	15.00	0.00	0.0%			
4	Peak Hour Demand - mgd	15.00	15.00	0.00	0.0%			
5	Max Day Peaking Factor	1.19	1.19	0.00	0.0%			
6	Peak Hour Peaking Factor	1.19	1.19	0.00	0.0%			
7	Sales via GCDC Treatment	0	24,400	24,400	NA			
8	Net Sales via GLWA Treatment	615,000	590,600	(24,400)	-4.0%			
9	Annualized Revenue Req't - Direct GLWA Service	14,068,700	11,129,900	(2,938,800)	-20.9%	11,129,900		
10	Fixed Monthly Charge	693,200	556,400	(136,800)	-19.7%			
11	Commodity Charge - \$/Mcf	9.35	7.54	(1.81)	-19.4%			
12	KWA Debt Service	7,000,000	7,000,000	0	0.0%		7,000,000	
13	Contract Rights Credit	0	(7,000,000)	(7,000,000)	NA	(7,000,000)		
14	KWA/GCDC Pass Thru Water Costs (a)	0	1,108,700	1,108,700	NA	0	0	1,108,700
15	Adj Annualized Flint Revenue Requirement	21,068,700	12,238,600	(8,830,100)	-41.9%	4,129,900	7,000,000	1,108,700
						33.7%	57.2%	9.1%

(a) KWA/GCDC Pass Thru Water Costs	<u>Units</u>	<u>Charge</u>	<u>Annual Cost</u>
Fixed Capacity Reservation - mgd	1.50	203,000	304,500
Commodity Charges - Mcf	24,400	32.96	804,200
Total			1,108,700

# Genesee County Drain Commissioner

1. Preserves existing security to Genesee County bondholders
2. Improves reliability of service to GCDC customers through reciprocal back-up
3. Sale of the 72" water main section purchased by GCDC from Flint and use of those proceeds to support construction of replacement water mains necessary to serve GCDC customers
4. MDEQ grant in an amount of \$7.5 million for installing a 42" transmission main parallel to the existing 72" transmission main that currently supplies treated water from the GLWA to GCDC customers and Flint
5. A 30-year reciprocal backup water supply contract between GCDC and GLWA
  - a) GLWA will provide short-term wholesale finished water services to GCDC until the GCDC WTP is operational and delivering water to its customers. GLWA charges for this service treats GCDC as all other GLWA wholesale model contract customers are treated and will be retroactive from January 1, 2017
  - b) GLWA short-term service is expected to go through October 1, 2017, or as otherwise requested
  - c) Estimated annual cost reduction of almost \$4 million compared to non-contract customer charges retroactive to January 1, 2017, upon execution of final documents
  - d) GCDC will provide a daily supply of finished water to GLWA not to exceed 5% of Flint's daily flow requirements as required by EPA (estimated at 0.5 MGD) which is necessary to keep the 24/36" line fresh in the event emergency backup services are required
  - e) GLWA and GCDC will provide one another with reciprocal backup water services for use during periods of planned maintenance, system repairs, system outages, loss of power supply, contamination, or for other mutually agreed upon reasons
  - f) GCDC may participate in the GLWA Technical Advisory Committee for the term of the contract

# Karegnondi Water Authority

1. Preserves existing security to KWA bondholders:
  - a) Flint's obligation to make Capacity Fee and Debt Fund fee payments (\$7 million) would be preserved, as these fees under the Raw Water Contract are linked to debt service payments under the Financing Contracts
  - b) Any lien rights existing under the Raw Water Contract for payment of these fees would also be preserved
2. Increased security for Flint debt service payments to KWA:
  - a) Trusts accounts for deposit of Flint monthly payments
  - b) Access to Security Deposit Account, provided that KWA has exhausted its other remedies
3. Operating cost recovery preserved - Estimated \$1.1 million of combined annual O&M revenues for GCDC and KWA services
4. Neutral impact on future KWA system marketing opportunities

# Genesee County

1. Preserves existing security to its bondholders
2. Ongoing source of payments for Genesee County backed bonds
  - a) GCDC charges recover debt service on existing bonds issued through Genesee County with its Limited Tax General Obligation Pledge
  - b) Estimated \$1.1 million of combined annual O&M revenues for GCDC and KWA services from Flint
3. Trust accounts for payment of Flint's obligations to GCDC and KWA

# State of Michigan

1. Safe, reliable, long-term, cost-effective solutions for City of Flint constituents
2. Fostering regional cooperation
3. Optimize infrastructure investment



**GLWA**

*Great Lakes Water Authority*

*Note: This is preliminary information subject to change and reflects the opinion only of the GLWA.*





## CITY OF FLINT

### Statement of Principles

Dr. Karen W. Weaver  
Mayor

### Long Term Water Delivery to the City of Flint

*The below represents a statement of the structure for a set of inter-related transactions that will comprise an overall agreement resulting in primary and backup water for the City of Flint and system improvements for all parties. The signatories agree to work in good faith to speedily agree to the necessary legal documents (in the form of an overall master agreement with each individual agreement as an exhibit to that master agreement). They further agree to use their best efforts to secure all authorization or approvals required by the entity's policies, ordinances, and governing law for those agreements from all governing bodies necessary to put these agreements into effect as soon as is practicable.*

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2. Certain trust arrangements will be put in place for ease of flow of funds from Flint to GLWA and the KWA in normal operation. Additionally, in the event Flint does not fully meet its obligations to the KWA, the Genesee County Drain Commission (GCDC), and GLWA, an alternative trust will come into operation. That trust would receive all Flint customer collections and ensure a flow of funds to meet obligations to the KWA, GCDC, and GLWA. Additionally, Flint will provide a customer security deposit of \$3.75M with GLWA, for no less than two years and no greater than six years (as long as timely payments are made and agreed upon performance objectives met). KWA has a conditional right to access the customer security deposit under certain circumstances.
3. GLWA will provide short-term wholesale finished water services to the GCDC until the GCDC water treatment plant is operational and servicing GCDC's customers, with pricing for the services that treats GCDC similarly to all other GLWA wholesale model contract customers.
4. GLWA and the GCDC will provide one another with reciprocal backup water services. The price for backup water services will be established through an agreed upon detailed pricing methodology in the contract and it will be the same for both parties.
5. The State of Michigan (State), through its Department of Environmental Quality (DEQ), will provide a grant in an amount of \$7.5M to the GCDC for installing a 42-inch transmission main parallel to the existing 72-inch transmission main that currently supplies treated water from the GLWA to GCDC customers and Flint. This will allow GCDC to supply treated water from its new water treatment plant to its customers on or after October 2017. The 72-inch transmission line will be returned to Flint's ownership.
6. The State will provide assistance, in compliance with all existing laws, to GCDC, Flint and the KWA in obtaining refinancing of the 2016 KWA bond issue and in completing the approval process for the GCDC to use its water treatment plant.



7. Flint will build a new supply connection from the end of the GCDC service system north of Flint to the Flint water system to provide a backup water supply. Flint intends to utilize WIIN funding to complete this project.

Signed by:



City of Flint

By: Dr. Karen W. Weaver, Mayor



KWA

By: John O'Brien, Deputy CEO



GLWA

By: Sue F. McCormick, CEO



GCDC-WWS

By: Jeffrey Wright, Drain Commissioner



State of Michigan

By: Keith Creagh, Director

**City of Flint**

**Responses to Observations from EPA's Flint  
Technical Support Team on Flint CCT Study  
Test Plan (April 13, 2017) by EE&T, Inc.**

*(Attachment to April 19, 2017 Letter to EPA from Mayor Weaver, City of Flint)  
EPA Technical Support Team's initial comments provided by Heather Shoven on  
5/16/2017 per John Young's request via email on 5/11/2017.*

*We appreciate the comments below and are in agreement with the points raised.  
All of them will be incorporated into our planning. A few specific responses are  
presented below in italics.*

Members of EPA's Flint Technical Support Team reviewed the City's revised corrosion control study (CCS plan) and developed initial feedback for the City to consider. EPA believes that the City needs to further examine five different areas of its revised CCS plan in order to strengthen it. These five areas are listed below along with EPA's observations of additional information needs and considerations.

**1. Confirmation of the degree and location of blending the Great Lakes Water Authority (GLWA) and the Genesee County Drain Commissioner (GCDC) waters.**

- a. An estimation of the range of percent blend per month. It is assumed that it is a percentage of the water usage in Flint; therefore, a percent blend for each month of the year should be easily calculated based on historical data.
- b. EPA suggests that the plan consider the location where the blending will be done. It should consider and account for whether the percent blend will be consistent across the city of Flint or different across the distribution system. If the latter, it should account for projected blending ratios for differing areas of the city. It should also account for changes that might occur diurnally or seasonally.

*Both the 72-inch primary GLWA supply and secondary 36"/24" GCDC supply for Flint will be derived through transmission mains that meet at the Flint WTP site. No Flint customers will be served from these lines before they are blended upstream of the chemical feed facilities located at the WTP. Both lines will be equipped with flow control valves which allows the blend to be regulated under all flow conditions. It is anticipated that a 5% blend will be maintained under low flow conditions and a 4 to 5% blend would be achieved under peak flow conditions. Therefore, a 5% GCDC/GLWA blend will be used for Phase 2 of the corrosion study.*

**2. Information about the water quality of the GCDC water and Genesee County's corrosion control study results.**

- a. The results from Genesee County's CCS study will add strength to this analysis. Knowledge about the County's water quality goals, treatment scheme, including coagulant type, and the finished water

chemistry of the County water will help with the review of the corrosion control study plan.

- b. Upon completion of GCDC's and the City's corrosion control studies, data from both projects should be compared to add additional weight to the City's results.

Yes, we agree that this is important information. As it becomes available we will utilize the information to better design and conduct our study. We should have access to GCDC's corrosion control plan by the end of May.

### 3. Specific Corrosion Control Study Plan information

- a. As the City's CCS planning unfolds, additional critical decisions will need be made as to the experimental plan. These decisions may be critical to the success of the plan. For example, the City should consider the following:
  - How will the 5-percent blend be obtained for the subsequent pipe rig test for Phase 2 of the City's CCS plan?

Water from Genesee County will be trucked in to the Flint WTP where the pipe loops are located. Water will be blended into GLWA water at a 5 % blend through flow controllers.

- Is the City taking into account the time needed to equilibrate the pipes to the blended water before the phosphate and pH tests are conducted?

The pipes should already be equilibrated with Flint treated GLWA water. After the new orthophosphate dose and pH are introduced to the existing the pipes, the pipes will be allowed to re-equilibrate. After re-equilibration, the blended water will be introduced to the pipes at the equilibrated pH and orthophosphate conditions and re-equilibrated. Therefore, the blend tests will be done on already equilibrated pipes that would be similar to the full-scale situation.

- How will the chemical feeds be designed and maintained?

Chemicals will be made in chemical feed tanks and fed to the pipe loop via peristaltic pumps.

- Who will conduct the studies and how will they be trained?

Engineers will staff the loop studies with a graduate engineer who has previously been trained by the EE&T. Senior staff plan to visit the pilot twice per month and will be in daily contact with on-site personnel. Flint may also be able to provide a WTP operator to assist.

- b. The City needs to be able to maintain consistent pH (7.2 and 7.5) so that conclusions may be drawn from the data.

Agree.

- c. The City needs to determine if EPA's pipe loops will be reconfigured, or if additional loops will be employed. If additional loops are constructed, the City needs a plan for equilibration.

Current plan is to utilize EPA's pipes. We are waiting for EPA data to confirm the pipes'

**Commented [ST1]:** EPA - Is this a modified, or new, corrosion control plan? EPA was informed by MDEQ that the County submitted a CCS plan to the State in the Fall of 2016 – has that or is that plan being modified?

**Commented [SH2]:** EPA – What is the timeline for constructing a pipe that will provide the finished county water to the Flint WTP and pipe loops? Would the pipeline be completed in time to study the blend? There are many logistics to address with trucking and storing water. You don't want the water chemistry/temperature to change due to stagnation or during storage.

**Commented [ST3]:** EPA - How will unaugmented GLWA water be piped to the pipe loops (which should not be moved). A tank (batch approach) is problematic due to water quality changes as water age (see pH in 3.b).

**Commented [SH4]:** EPA – Again, the City needs the capability to pipe non-Flint treated (augmented) GLWA water to the pipe loops to achieve the lower orthophosphate test goals. Moving the pipe loops closer to GLWA source prior to orthophosphate addition is not an option given the damage that could be done to the pipe surfaces.

conditions.

**4. Definition of acceptable results that will justify a decision that the studies can be concluded.**

- a. As discussed in the past, the proposed timelines are reasonable and are good for general planning; however, the six months for the GLWA water study (Phase 1) and the three months for the GLWA-GCDC blended water study (Phase 2) are arbitrary. Additional information is needed to know what data sets and results will be deemed conclusive, including a decision on what is the acceptable lead concentration criteria and other water quality parameter ranges for either water source.

A specific target lead value is not set as the end point. Rather, the end point will be when the pipe has stabilized with respect to the given conditions. A goal is to have a four week stable period to confirm that the pipe has reached steady state. The various stabilized conditions are then compared against each other. This comparison requires a judgement call as to the significance of differences seen among the different treatment conditions. The six-month estimate for phase 1 was based on needing to re-equilibrate the pipes from Flint treated GLWA water to the different pH and orthophosphate conditions. As indicated in the comment, the actual time required will need to be determined in the field. The time required after blending was estimated to be shorter since the pipes at that point would have equilibrated and the 5% blend is not anticipated to have a large effect.

**Commented [SH5]:** EPA - Don't want to tie yourself to a time. Need to base these decisions on data. It's hard to predict how the pipes will respond.

**5. The use of a wider phosphate dose range.**

- a. Since the current phosphate dose is 3.5 mg/L to maintain 3.1 mg/L in the distribution system, the phosphate dose range needs to be wider to bracket the current dose. The range defined in the proposed CCS plan only evaluates whether the current dose is too high. It is possible that the optimal phosphate dose is higher than 3.1 mg/L.
- b. In addition, if there are turbidity issues, or an issue arising from aluminum or calcium, then the phosphate dose needs to be identified at the high end where it can be more easily observed. EPA recommends something on the order of 1 mg/L (as received), 2 mg/L, 3 mg/L, and 4 mg/L. If only one pH is used, then an even wider range could be studied.

The City is willing to test the doses as recommended up to the 4 mg/L value. There is some concern that phosphate precipitation is already being observed in the distribution system at the current dose. There will be to be pre-screening of phosphate doses using coupons and those results may alter the final scheme for pipe testing; especially if precipitation is observed.

**Commented [SH6]:** EPA - Again, need to get 100% GLWA water to the pipe loops. Right now the pipe loops are being fed with the Flint-treated GLWA water.

**Commented [SH7]:** EPA - What does the City think it will be learning through the pre-screening effort? How will testing with new coupons (our assumption here) reflect full-scale response? Are there other ways to evaluate post precipitation concerns?

**Commented [SH8]:** EPA - How is the City determining there is an issue with precipitation?  
If a precipitate is already being observed the City should follow-up on it now and identify the material in the precipitate – is it an orthophosphate issue or something else with the water chemistry?

# CITY OF FLINT

## OVERVIEW OF CCT STUDY TEST PLAN

May 16, 2017

EE&T, INC.

### BACKGROUND SUPPLY ASSUMPTION

The recommended primary water source for Flint is the Great Lakes Water Authority (GLWA). The recommended back-up or secondary water supply for Flint is from the Genesee County Drain Commissioner system (GCDC). In order to provide GCDC treated water to Flint, a new pipeline will be installed. To maintain proper water quality, a minimum flow of approximately 0.5 mgd will be maintained in this transmission main to Flint. The GCDC supplied water will be continually blended with the GLWA water. Therefore, the water supplied to the Flint distribution system will be a blend of GLWA and GCDC water.

Flow control will be used to maintain the GCDC water volumes at no more than 5 percent of the GLWA supply. Both the 72-inch primary GLWA supply and secondary 36"/24" GCDC supply for Flint will be derived through transmission mains that meet at the Flint WTP site. No Flint customers will be served from these lines before they meet upstream of the chemical feed facilities located at the WTP. It is anticipated that a 5% blend will be maintained under low flow conditions and a 4 to 5% blend would be achieved under peak flow conditions. Therefore, a 5% GCDC/GLWA blend will be used for Phase 2 of the corrosion study.

### OBJECTIVE

It is necessary to fully evaluate the corrosion control treatment (CCT) required for a blend of GCDC and GLWA water prior to this water being introduced to the Flint system. Flint currently has an orthophosphate residual leaving the plant of about 3.5 mg/L (maintaining above 3.1 mg/L in the distribution system) and a pH goal of about 7.4 leaving the plant. Currently, it is not known what CCT conditions the GCDC will set, but they may be different than current Flint water. *One key objective therefore is to determine proper CCT when the two waters are blended.*

When Flint switched back from the Flint River supply to the GLWA supply, it was necessary to quickly set CCT conditions. Using theoretical solubility relationships and experience, EPA selected a minimum orthophosphate residual in the distribution system of 3.1 mg/L. Time constraints did not allow for a robust test to determine the ideal orthophosphate dose or pH. *Therefore, a second objective of this CCT study is to determine the optimal CCT for GLWA water.* These optimal GLWA conditions will also be used to better set the blend conditions, especially since the blend will be no more than 5 percent GCDC water and is therefore GLWA water dominated.

## CCT STUDY PLAN OVERVIEW

All pipe loop studies will be overseen by the EE&T staff. An engineer will be on site for the study. In addition to the on-site engineer, EE&T senior staff will visit the site twice per month and will be in daily contact with on-site personnel. The City may also supply a WTP operator to assist. Prior to beginning the study, detailed sampling protocols and schedules, data recording spreadsheets, etc. will be developed.

All tests will be completed in the 16 pipes that have already been equilibrated by EPA. No additional pipes are anticipated to be used. If additional pipes are deployed, a plan will be developed for their proper testing.

*Phase 1* - At the Flint WTP there are 16 pipe segments available in 4 loop rigs. These test rigs were assembled by EPA and EPA has stabilized the pipe segments on existing Flint distributed water. Therefore, these pipes can be initially used to evaluate pH and the appropriate orthophosphate dose since they are already stabilized. By using these pipes for testing, an optimal pH and orthophosphate dose going forward for GLWA water can be selected.

*Phase 2*. Having determined the best pH and orthophosphate dose for GLWA water using the existing loops, those conditions can serve as a starting point for testing the 5 percent blend of GCDC treated water. The likely proper course of action for the final treatment will be to blend GCDC and GLWA water at the Flint WTP site, where the blended water could then be adjusted to the CCT conditions found to be optimal for the blend. A modified GCDC corrosion control plan will be available by the end of May and it will be considered in the Phase 2 design.

## SCHEDULE CONSIDERATIONS

*Phase 1* - The existing loop system at the WTP will be used for orthophosphate dose and pH evaluations as soon as possible after contract finalization and loop set up; approximately July 2017. The pH and orthophosphate evaluations on GLWA water will continue for 6 months (all times are approximate. Actual testing time will be based on results).

*Phase 2* - After the 6-month testing on GLWA water, testing will be conducted at a 5 percent GCDC treated water blend on the already stabilized pipes. Testing of the blend conditions will take place for 3 months or as results dictate.

## TEST PLAN OVERVIEW

*Phase 1* - The first phase study will be used to evaluate pH and orthophosphate dose on the existing rigs using pipes that have been already been equilibrated with Flint water (pH in the 7.4 range and orthophosphate of about 3.5 mg/L as PO<sub>4</sub> which is the approximate residual at the plant site). The incoming GLWA water line at the water plant will be tapped and direct GLWA water will be used prior to Flint adding additional treatment chemicals.

*Note that there will be coupon studies conducted before the loops start that may inform or alter the loop study plan.*

Two pH values will be tested at four (4) orthophosphate doses. Duplicates will be conducted for each test condition, which will use all 16 of the available pipes. The two pH values selected are 7.5 and 7.2. These pH values will be achieved through pH adjustment to the loops as required using caustic soda or sulfuric acid. The higher pH (7.5) was selected based on it being the almost ideal pH based on theoretical and experimental solubility curves, while the lower pH value (7.2) was selected to represent a lower bound for orthophosphate performance. Therefore, if similar performance is achieved by both pH values, then the distribution system water quality can be allowed to fluctuate across the entire 7.2 – 7.5 pH range. However, if pH 7.5 provides better control of lead solubility, then an operating target will be set at the higher pH. In the latter case, additional pHs may be evaluated along with the Phase 2 work to better define pH conditions.

The four orthophosphate doses will be:

1. The current Flint orthophosphate residual goal is 3.1 mg/L. This dose will be used to represent current practice. The residual used will be 3 mg/L.
2. The lowest orthophosphate dose tested will be GLWA water, as received by Flint. The residual will not be adjusted and will be used as received. Recent average GLWA orthophosphate residual at the Flint WTP is 1.2 mg/L. This dose will represent the lowest dose tested.
3. Two doses will be used to bracket the optimal range. The high dose will be 4 mg/L as an upper bound and a 2 mg/L dose will be used as an intermediate level.

Therefore, doses tested will be 1 (1.2), 2, 3, 4 mg/L as orthophosphate. As noted above, the test conditions could be altered based on coupon testing or information on the GCDC CCT conditions. If that happens, EPA will be informed and consulted.

This first phase of the study will recommend how to transition the current Flint-treated GLWA conditions to the optimal pH and orthophosphate conditions.

*Phase 2* - During the second phase, the pipes tested in the first phase will be used. The pipes will receive 5 percent GCDC water and 95 percent GLWA water. The blended water will be evaluated at the four (4) orthophosphate doses tested above using the corresponding pipe. For example, the pipes stabilized in Phase 1 at an orthophosphate residual of 2 mg/L will receive blended water treated to 2 mg/L orthophosphate residual. This will follow for all four orthophosphate residuals used in Phase 1. However, if the first phase finds some doses were not acceptable, the dose may be eliminated or modified. One pH condition will be tested in Phase 2, based on the optimal pH level determined from the first phase. Tests will be in duplicate for a total of 8 pipe loops. The remaining pipes could be used to better refine pH or orthophosphate dose. Water from GCDC will be trucked in to the Flint WTP where the pipe loops are located.

This approach is necessary since the GCDC back-up pipeline will not be completed until 2019. It is planned to use small tanks on a flat bed and truck fresh water in two or three times per week. In this way storage time of GCDC water at the plant site will be less than typical distribution system storage times. Water will be blended into GLWA water at a 5 % blend through flow controllers.

The pipes will already be equilibrated with Flint treated GLWA water prior to this plan starting. After the new orthophosphate dose and pH are introduced to the existing the pipes, the pipes will be allowed to re-equilibrate. After re-equilibration the blended water will be introduced to the pipes at the equilibrated pH and orthophosphate conditions and re-equilibrated. Therefore, the blend tests will be done on already equilibrated pipes as would be similar to the full-scale situation.

These results will allow for a final selection for CCT conditions to be set for the normal situation of GCDC and GLWA blended water. In order to interpret results and make recommendations on CCT, a specific target lead value in the pipe segments is not set as the end point. Rather, the end point will be when the pipe has stabilized with respect to the given conditions. Determination of a stable condition is based on data collected. The various stabilized conditions are then compared against each other. This comparison requires a judgement call as to the significance of differences seen among the different treatment conditions.

The six-month estimate for phase 1 was based on needing to re-equilibrate the pipes with Flint treated GLWA water and onto the different pH and orthophosphate conditions. The actual time required will need to be determined in the field. The time required after blending was estimated to be shorter since the pipes at that point would have equilibrated and the 5% blend is not anticipated to have a large effect.





# CITY OF FLINT

**Dr. Karen Weaver**  
**Mayor**

May 19, 2017

Mr. Chris Korleski, Director  
Water Division, 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 Mr. Korleski:

This correspondence is in response to your May 4, 2017 letter in which you requested the City of Flint to provide updates to its Public Participation Plan and responses to USEPA's comments on the Corrosion Control Study (CCS) Plan. Both of these documents supported Flint's water source recommendation that designated Great Lakes Water Authority (GLWA) as the City's long-term, primary water source and Genesee County Drain Commissioner as its back-up water source.

A revised Public Participation Plan is attached. This Plan summarizes the numerous community outreach activities, media announcements/postings and other communication techniques that have been used to inform the public on the water source selection process and recommendation. Additionally, the public has been encouraged to e-mail their questions and feedback to the City. The public feedback period will end on May 20, 2017 but the City will continue to inform the public on the water source recommendation after that date. All comments will be considered. In early June, all legal Agreements and contracts will be finalized and the approval process will commence with all stakeholders including the Flint City Council, Flint RTAB, Great Lakes Water Authority, Genesee County Drain Commissioner, Karegnondi Water Authority and State of Michigan. The goal is to obtain all necessary approvals in June, 2017.

Also attached is a revised CCS Plan concept that incorporates the City's responses to USEPA's comments regarding the proposed CCS Plan. We request an expedited review of these responses and the revised Plan concept so the CCS Plan design can be completed and the CCS can begin.

As co-responders to the Order, Mr. Bryce Feighner (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.

We encourage USEPA to proactively support the City and its water source selection as we proceed through the 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](mailto:kweaver@cityofflint.com).

Respectfully submitted,



Dr. Karen W. Weaver  
Mayor

cc: Mr. Robert Kaplan, US EPA  
Mr. Rich Baird, Governor's Office  
Mr. Keith Creagh, MDNR  
Mr. Bryce Feighner, MDEQ  
Mr. Sylvester Jones, City of Flint

Attachments:  
Revised Public Participation Plan  
Responses to EPA's Flint Technical Support Team