

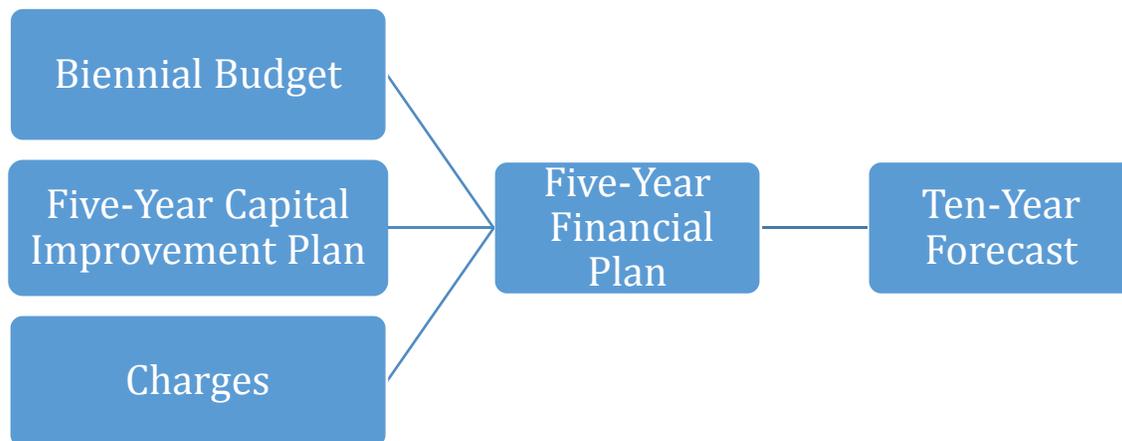


## Financial Services Audit Committee Communication

Prior month report

**Date:** October 26, 2018  
**To:** Great Lakes Water Authority Audit Committee  
**From:** Nicolette Bateson, CPA  
 Chief Financial Officer/Treasurer  
**Re:** Capital Improvement Plan Relative to Financial Plan

**Background:** The annual update to the Great Lakes Water Authority's five-year capital improvement plan and financial plan are underway. In preparing those plans, certain assumptions are required to effectively proceed with a comprehensive long-term financial plan.



**Analysis:** A key decision point in establishing a financial plan for the capital improvement plan (CIP) is establishing a realistic factor for the actual spending pace.

- ✓ Unforeseen schedule delays
- ✓ Timing interdependencies with partners
- ✓ Mix of phases of projects in CIP (what percent are concept vs. design vs. construction; earlier phases = increased likelihood or timing revisions)

- ✓ Historical performance vs. future performance
- ✓ FY 2030 financial plan consideration (under development) to address affordability and sustainability (new 10-year CIP is a key input)
- ✓ Where we are in GLWA's history (new entity, new staff, capital program management deployment in CY 2019)
- ✓ Magnitude and complexity of GLWA's CIP as a regional water authority

To better understand this topic, we drew upon two sources of input: 1) GLWA's engineering team members and 2) The Foster Group who has prepared and monitored the financing plan, debt issuance, and capital plan for GLWA and its predecessor regional operations for many years.

### **Engineering Team Member Feedback**

**1. Obtaining buy-in and acceptance of project alternatives within a study or preliminary design phase of a project.**

Example: the final route for the Water Works Park to Northeast water transmission main (\$130 million) is on hold pending acceptance from the City of Detroit. GLWA has identified a route that carries the least disruption to residents, however the route has not yet been endorsed. Result is that GLWA is on hold for the design of the pipeline.

**2. Obtaining maintenance agreements, permanent easements and property acquisitions.** These are common for new pipeline projects and require in-depth conversations and workshops with numerous property and utility owners. We build time into our planned schedules for these activities; however, there are times when circumstances are out of our control and delays occur.

Example: Achieving agreement with a county parks department for a new water transmission main which is designed to be placed in county park property.

**3. Opportunities driven by other regional stakeholders which alter priorities, timelines, and spending.** To optimize regional infrastructure investments, GLWA's goal is to engage in opportunity projects with other regional stakeholders such as Michigan Department of Transportation, county road commissions, DTE, ITC, AT&T, cities, and townships.

**4. Rebids and revisions.** There are times when projects have to be re-bid due to proposal irregularities. This causes a delay in a project's start. If it is engineering services, then the associated construction contract is delayed which impacts projected spend rates.

5. **Vendor performance.** There are times that vendors do not meet project deadlines even though GLWA issues a notice, writes notices to cure, and in the case of construction contracts assesses liquidated damages.
6. **Operational needs.** Designs include specified work limitations and periods and durations when the construction contractor will be able to take certain systems out of service to facilitate construction. These limitations are planned in collaboration with operations management during the design process. However, operational circumstances are dynamic and change which sometimes prevents system shutdowns that are required to execute and complete construction.
7. **Post-start changes.** Approval of construction change directives and change orders can consume weeks and sometimes months of time when negotiating change amounts with the contractors and internal GLWA stakeholders. This may delay a vendor's progress of work and related CIP spend.

**The Foster Group Report** (see attached)

**Recommendation:** Given the above, it is not reasonable to expect that 100% of the five-year capital improvement plan will turn into spent dollars. Nor is it appropriate to compile a financing plan (including the issuance of bonds) that reflects 100% spend rate. For this reason, a simple financial policy statement is proposed.

**Capital Program Spend Rate Assumption:** Annually, a projected spend rate assumption for the financial plan related to the upcoming capital improvement plan will be established based upon pertinent factors and data available at that time. Such factors and data will include the mix of projects and phases in the proposed CIP, interdependency risk, and other measures provided by the GLWA team members that develop and manage the CIP projects. That spend rate assumption will be presented to the Audit Committee no later than December each year after the GLWA Board and member partners have had the opportunity to review the draft capital improvement plan.

**Proposed Action:** Approve the Capital Program Spend Rate Assumption as proposed or amended.



Prior month report

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## MEMORANDUM

Review of Draft CIPs

October 24, 2018

To: Nicolette Bateson

From: Bart Foster

You have asked for observations regarding our review of the Authority’s Draft FY 2020 Capital Improvement Programs (CIPs). Specifically, you have asked for a review of how the projected expenditures in the Draft CIPs align with the expenditures that were included in the financing plans established for the recently executed revenue bond transactions. Those financing plans are set forth in the official statement disclosures for the transactions. Herewith some commentary based on our initial review.

First, some background regarding the CIP financing requirements that were utilized for the bond sales. As we prepared the financing plans, we were aware that the actually achieved capital expenditure levels in recent years were materially lower than published planning levels. This fact is not a new occurrence, nor is it atypical of large municipal utility systems. According to my records, the average “CIP expenditure achievement” ratio for the predecessor DWSD in its final 29 full years of existence was approximately 70%. (*See attached exhibit page 1*). The performance level shows some peaks and valleys, but overall the trend is consistent. The achievement of the Sewer CIP is a bit higher than that for Water (75% vs. 63%). These ratios are not inconsistent with my experience with other large municipal utility systems.

These general results have continued for the first two years of GLWA’s existence. According to the most recently published Construction Work-in-Progress Report the actual expenditure levels during FY 2017 and FY 2018 were 37% and 36%, respectively. Once again, the Sewer performance was slightly higher than the Water performance in each of those years. It was with this recognition in mind that the FY 2018 GLWA Budget anticipated a “financing level” of 80% of the published CIPs.

As the FY 2019 Budget was being prepared, it was apparent that the early years of the CIPs included reduced projected expenditure levels. The financing plan for the FY 2019 Budget assumed full achievement of the published CIP.

There are negative consequences of financing capital expenditures that do not end up being achieved, particularly for municipal utilities that rely heavily on issuance of tax-exempt debt to finance capital improvements. The ability to realize investment earnings on Bond Construction Funds is restricted, and the earnings rate is always lower than the borrowing rate. In recent years the difference between these two interest rates has been significant. Maintaining larger than needed balances in these Funds is a net income losing strategy. There are also potential tax law compliance issues when borrowed monies are not spent within the originally anticipated schedule. Negative consequences also emerge in this scenario when project expenditures are revenue financed, as rates and charges must be set at levels that produce unspent reserve balances. These instances often result in customer and stakeholder concerns.

As we prepared the financing plans for the recent bond transactions, we recognized the prudence of establishing a realistic expectation of capital expenditures to finance, and modified the CIP financing requirements accordingly. In summary, our approach for the capital financing plans for the bond sales included:

- No changes to the FY 2019 projected expenditures;
- A “financing level” of 80% of the total expenditures between FY 2020 and FY 2023;
- A phased ramp up of FY 2020 through FY 2023 expenditures, particularly for the Water CIP.

This approach is illustrated on the first 7 lines of each section of the attached exhibit page 2, and resulted in the CIP financing expenditure plan figures on Line 6 for Water and Line 16 for Sewer. In the bond official statements, we acknowledged that the CIP expenditure schedule for purposes of the bond financing plan was different from the formally approved, published CIP. See below from the official statements.

*“The Fiscal Year 2019 Water and Wastewater Capital Improvement Plan (“CIP”) was approved by the GLWA Board on June 20, 2018. The CIP is dynamic and requires continual review and modification during the course of each year. GLWA has initiated efforts to prepare the Fiscal Year 2020-2024 CIP, and the CIP expenditure schedule shown in the following table reflects the initial planning levels established as part of those update efforts.”*

As noted in the disclosure language, we expected that the FY 2020 CIP would reflect the moderated level of projected expenditures.

We have reviewed the Draft FY 2020 CIP and compared the financing requirements to those included in the bond financing plans. See the last three lines in each section of exhibit page 2. General observations:

- The Draft FY 2020 CIP (Water and Sewer combined) is ~ \$275 million higher than the target established for the bond financing plan.

- In order to align the Draft CIP with the bond financing plan, significant planned project deferrals into years 6 through 10 would be required to move this \$275 million outside the short-term financing window - or . . .
- A "capital financing level" assumption on the order of 75% to 80% would be appropriate for policy consideration.
- The Draft FY 20 CIP assumes rapid project delivery performance. The plan indicates Water expenditures will quadruple and Sewer expenditures will double compared to what was realized during FY 2018.

Exhibit page 3 provides a graphical comparison of the figures shown on exhibit page 2.

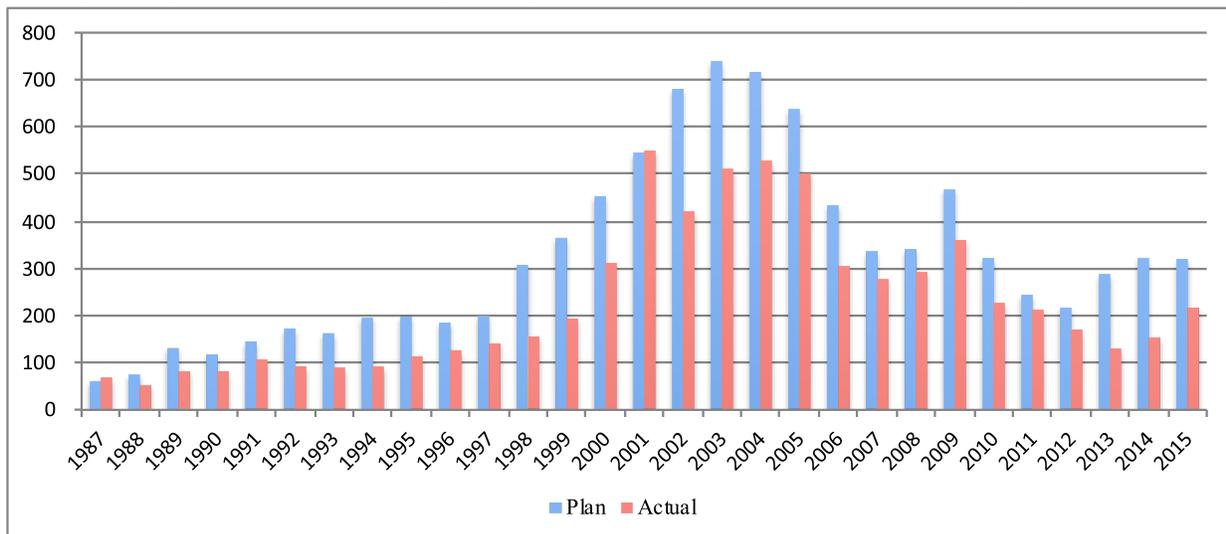
We recognize that the Authority's infrastructure plans include projects that are essential to maintaining and improving quality of service and achieving strategic objectives. This discussion is not intended to question the intent of the overall plans or individual projects. However, we do think it would be prudent to consider policy approaches that result in capital financing plans that reflect the challenges of implementing such plans, as evidenced by recent experience. We trust that this discussion provides thoughtful topics for policy consideration and we are available to present these observations and discuss this matter at your convenience.

Prior month report

DWSD CIP Performance - \$ millions

Fiscal Year	Financed / Actual Expenditures						Achievement Percentage		
	Water Supply System		Sewage Disposal System		Total DWSD		Water	Sewer	Total
	Plan (a)	Actual	Plan (a)	Actual	Plan (a)	Actual			
1987	29.4	31.4	31.2	36.5	60.6	68.0	107%	117%	112%
1988	49.1	23.4	25.5	29.1	74.6	52.5	48%	114%	70%
1989	57.3	37.4	73.2	43.7	130.5	81.1	65%	60%	62%
1990	53.9	31.5	63.6	49.2	117.5	80.7	58%	77%	69%
1991	77.9	16.5	66.2	89.9	144.1	106.5	21%	136%	74%
1992	98.7	18.2	72.9	73.8	171.6	92.0	18%	101%	54%
1993	79.7	24.5	82.4	64.3	162.1	88.8	31%	78%	55%
1994	98.9	38.5	96.6	53.7	195.5	92.2	39%	56%	47%
1995	76.7	50.3	121.3	62.5	198.0	112.8	66%	52%	57%
1996	84.2	51.9	100.0	74.3	184.2	126.2	62%	74%	69%
1997	84.6	51.3	114.3	88.0	198.8	139.2	61%	77%	70%
1998	182.3	77.6	125.0	76.5	307.3	154.1	43%	61%	50%
1999	174.5	94.8	190.0	97.8	364.5	192.6	54%	51%	53%
2000	178.5	180.0	274.0	130.0	452.5	310.0	101%	47%	69%
2001	201.2	263.0	343.0	286.4	544.2	549.4	131%	83%	101%
2002	280.8	156.3	399.3	263.5	680.1	419.8	56%	66%	62%
2003	300.3	181.5	438.4	329.9	738.7	511.4	60%	75%	69%
2004	245.6	155.3	470.2	373.7	715.8	529.0	63%	79%	74%
2005	237.0	151.8	400.7	349.8	637.7	501.6	64%	87%	79%
2006	174.3	98.1	259.2	206.8	433.5	304.9	56%	80%	70%
2007	125.8	96.7	209.6	181.1	335.4	277.8	77%	86%	83%
2008	164.8	135.6	175.4	156.4	340.2	292.0	82%	89%	86%
2009	183.3	150.5	283.6	209.4	466.9	359.8	82%	74%	77%
2010	123.3	97.0	198.9	129.7	322.2	226.7	79%	65%	70%
2011	96.6	87.8	147.0	124.1	243.6	211.9	91%	84%	87%
2012	91.0	72.7	125.6	97.0	216.5	169.7	80%	77%	78%
2013	142.8	25.0	145.1	105.0	287.9	130.0	18%	72%	45%
2014	146.3	40.0	176.1	113.7	322.4	153.7	27%	65%	48%
2015	125.2	62.5	193.7	154.5	318.9	217.0	50%	80%	68%
Total	3,963.9	2,501.2	5,401.9	4,050.2	9,365.7	6,551.4	63%	75%	70%
Average	136.7	86.2	186.3	139.7	323.0	225.9	63%	75%	70%

(a) Reflects amount financed by plan in support of proposed rates. To the extent that such financing was not required, the general impact is to carry over financing to subsequent years and defer the need for additional financing sources.



Prior month report
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CIP Planning Exercise - \$1,000s  
Comparison of Financing Plan CIP from Bond Sale vs. Draft FY 2020 CIP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>5-Year Total</u>	<u>2020-2023</u>
<b>Water</b>							
1 Approved FY 2019 CIP	66,038	137,583	155,734	178,300	175,174	712,829	646,791
2 FY 2020-23 Planning Target - %							80.0%
3 FY 2020-23 Planning Target							517,433
4 Average Annual Target FY 2020-23							129,358
5 Phased Implementation		85.0%	95.0%	105.0%	115.0%		
6 Phased Financing Plan for Bond Sale	<b>66,038</b>	<b>110,000</b>	<b>122,900</b>	<b>135,800</b>	<b>148,800</b>	<b>583,538</b>	517,500
7 Variance from Approved FY 19 CIP	0	(27,583)	(32,834)	(42,500)	(26,374)	(129,291)	
8 <b>Draft FY 2020 CIP</b>	<b>68,746</b>	<b>143,247</b>	<b>166,599</b>	<b>182,595</b>	<b>169,006</b>	<b>730,193</b>	<b>661,447</b>
9 Variance from Bond Financing Plan	2,708	33,247	43,699	46,795	20,206	146,655	143,947
10 Indicated Funding Level for Fin Plan		77%	74%	74%	88%		78%
<b>Sewer</b>							
11 Approved FY 2019 CIP	105,183	111,155	111,952	136,411	168,458	633,159	527,976
12 FY 2020-23 Planning Target - %							80.0%
13 FY 2020-23 Planning Target							422,381
14 Average Annual Target FY 2020-23							105,595
15 Phased Implementation		95.0%	95.00%	105.00%	105.00%		
16 Phased Financing Plan for Bond Sale	<b>105,183</b>	<b>100,300</b>	<b>100,300</b>	<b>110,900</b>	<b>110,900</b>	<b>527,583</b>	422,400
17 Variance from Approved FY 19 CIP	0	(10,855)	(11,652)	(25,511)	(57,558)	(105,576)	
18 <b>Draft FY 2020 CIP</b>	<b>104,931</b>	<b>139,480</b>	<b>107,430</b>	<b>139,677</b>	<b>156,884</b>	<b>648,402</b>	<b>543,471</b>
19 Variance from Bond Financing Plan	(252)	39,180	7,130	28,777	45,984	120,819	121,071
20 Indicated Funding Level for Fin Plan		72%	93%	79%	71%		78%
<b>Combined</b>							
21 Approved FY 2019 CIP	171,221	248,738	267,686	314,711	343,632	1,345,988	1,174,767
22 FY 2020-23 Planning Target - %							80.0%
23 FY 2020-23 Planning Target							939,814
24 Average Annual Target FY 2020-23							234,953
25 Phased Implementation		89.5%	95.0%	105.0%	110.5%		
26 Phased Financing Plan for Bond Sale	<b>171,221</b>	<b>210,300</b>	<b>223,200</b>	<b>246,700</b>	<b>259,700</b>	<b>1,111,121</b>	939,900
27 Variance from Approved FY 19 CIP	0	(38,438)	(44,486)	(68,011)	(83,932)	(234,867)	
28 <b>Draft FY 2020 CIP</b>	<b>173,677</b>	<b>282,727</b>	<b>274,029</b>	<b>322,272</b>	<b>325,890</b>	<b>1,378,595</b>	<b>1,204,918</b>
29 Variance from Bond Financing Plan	2,456	72,427	50,829	75,572	66,190	267,474	265,018
30 Indicated Funding Level for Fin Plan		74%	81%	77%	80%		78%

Prior month report

CIP Planning Exercise - \$ millions  
 Comparison of Financing Plan CIP from Bond Sale vs. Draft FY 2020 CIP

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Combined Water/Wastewater CIP</b>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Financing Plan CIP	110.7	171.2	210.3	223.2	246.7	259.7
Draft FY 2020 CIP	110.7	173.7	282.7	274.0	322.3	325.9
<i>Pace of Increase from FY 2018</i>		57%	155%	148%	191%	194%
<b>Water CIP</b>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Financing Plan CIP	40.0	66.0	110.0	122.9	135.8	148.8
Draft FY 2020 CIP	40.0	68.7	143.2	166.6	182.6	169.0
<i>Pace of Increase from FY 2018</i>		72%	258%	316%	356%	322%
<b>Wastewater CIP</b>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
Financing Plan CIP	70.6	105.2	100.3	100.3	110.9	110.9
Draft FY 2020 CIP	70.6	104.9	139.5	107.4	139.7	156.9
<i>Pace of Increase from FY 2018</i>		49%	97%	52%	98%	122%

