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MEMORANDUM

D+ SHARE Calculations

November 13, 2020

To: Sue McCormick

From: Bart Foster

The intent of this memorandum is to document the process we have used to compute the individual FY 2022 Sewer SHARE allocations for the Member Partners in the D+ Customer Class. Through the deliberative process undertaken via the Outreach process, the “Think Tank” collaboratively established a recommended new SHARES methodology proposed to be implemented with the FY 2022 wholesale sewer charges. That process largely focused on establishing a methodology to determine SHARES for the metered wholesale communities and the D+ customer class at large. The Think Tank’s recommended methodology was set forth in a collaboratively authored memorandum dated October 20, 2020. As noted in that memorandum, the Think Tank did not focus on ways to allocate responsibility to individual D+ communities – leaving that for GLWA to address.

Background

The original SHARES established via the Rate Simplification Initiative resulted in the FY 2015 wholesale sewer charges. These SHARES were determined based on flow volume data from FY 2008 through 2012. Calculations of SHARES for the master metered communities were based on the master meter data. Calculation of SHARES for the “D+” customer class at large was based on total flow reported for the System, less the master metered data, less an assumed amount of “common<sup>1</sup>” non-sanitary flow volume. The flow balance protocol utilized for the original SHARE calculations did not contain sufficient verifiable data to isolate non-sanitary flow volumes for individual D+ communities, nor was any analysis available to identify which D+ communities should receive reductions related to the “common” flow assumptions. Therefore each D+ community was assigned relative responsibility for the D+ customer class SHARE based on the relative revenue common to all revenue requirements they were then paying under the FY 2014 wholesales sewer charges.

This process was extended to the second SHARE period, which was originally implemented with the FY 2018 wholesale sewer charges. Those SHARES (which are still in effect) were determined based on flow volume data from FY 2013 through 2016. The same basic process

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<sup>1</sup> The concepts of “Common” or “Regional” flow have been used interchangeably in recent discussions regarding SHARES. The terms refer to the portion of flow volume generated within the D+ area that should be recognized as a System responsibility and not included in SHARE and charge determination for any specific Member Partner.

was executed, and the same challenges existed with respect to isolating individual D+ community non-sanitary flows and the “source” of the common non-sanitary flows. Again, each D+ community was assigned relative responsibility for the D+ customer class SHARE based on the original FY 2014 allocation.

#### Recommended FY 2022 SHARES

As noted earlier, the Think Tank has established a recommended methodology for determining future SHARES via a simplified process. The new methodology still focusses heavily on flow volumes, and the recommended FY 2022 SHARES are based on flow volume data for a seven year period from FY 2013 through 2019. The flow balance protocol remains the same, and the same challenges exist with respect to isolating individual D+ community non-sanitary flows and the “source” of the common non-sanitary flows. The recommendation from the Think Tank is to assign 50% of all non-sanitary flow from the D+ area as “Common” for purposes of calculating SHARES.

The results summary on page 6 of the Think Tank memorandum indicates a reduction in the proposed “All In” SHARE for the D+ customer class at large from 44.894% to 44.639%, which equates to a decrease of approximately 0.6% of allocated revenue requirements. Our assignment is to allocate the 44.639% D+ share to individual D+ Member Partners based on the best available, verifiable information we have.

One significant data change within the D+ communities is the estimate of sanitary flow volumes from Highland Park. We’ll not elaborate on the specifics<sup>2</sup>, but as part of the flow balance analysis for FYs 2017 through 2019, the estimated annual sanitary volumes for Highland Park were reduced by approximately 60,000 Mcf. This, in part, was a contributing factor to the small decrease in the SHARE for the D+ customer class at large. Highland Park’s sanitary flow estimate for purposes of SHARE calculations was based solely on the three most recent years (instead of seven) in order to honor the new verified data. We believe it is appropriate to reflect this fact in the allocation of D+ SHARES, while still acknowledging that we still do not possess any new, more accurate, verifiable data with which to assign individual D+ community non-sanitary flows and the “source” of the common non-sanitary flows.

Our recommended approach to establishing individual SHARES for the D+ customer class consists of three simple steps:

**Step 1:** Recompute the original FY 2014 D+ allocation to reflect a shift in 60,000 Mcf of Highland Park dry weather flow contribution from sanitary to Dry Weather Infiltration. This is illustrated in the table below. Under the methodology then in place Highland Park’s hypothetically calculated share of treatment and conveyance costs within the D+ customer class would have been reduced from 2.928% to 2.633%. The calculated share of treatment and conveyance costs for all other D+ communities would increase slightly. Share of the “Wholesale Only and CSO cost pools would not be impacted.

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<sup>2</sup> This overall topic was reviewed at length with the Wastewater Analytics Task Force (WATF).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Original FY 2014 D+ SHARES				Adjusted* FY 2014 D+ SHARES			
	Treatment/ Conveyance	CSO	Wholesale Only	Total <i>wtd avg (1)-(3)</i>	Treatment/ Conveyance <i>Reallocate (1)</i>	CSO <i>from (2)</i>	Wholesale Only <i>from (3)</i>	Total
1 Grosse Pointe	0.475%	0.262%	7.502%	0.444%	0.477%	0.262%	7.502%	0.445%
2 Hamtramck	1.956%	1.831%	36.460%	1.987%	1.961%	1.831%	36.460%	1.992%
3 Harper Woods	0.123%	0.015%	2.193%	0.105%	0.123%	0.015%	2.193%	0.105%
4 Highland Park	2.928%	2.371%	51.440%	2.895%	2.633%	2.371%	51.440%	2.660%
5 Redford Township	0.112%	0.153%	2.062%	0.123%	0.112%	0.153%	2.062%	0.124%
6 Wayne County #3	0.016%	0.040%	0.342%	0.021%	0.016%	0.040%	0.342%	0.021%
7 Detroit	94.391%	95.327%	0.000%	94.424%	94.678%	95.327%	0.000%	94.653%
8 Total D+	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

\* Moving 60,000 Mcf of Highland Park units from Sanitary to DWII

**Step 2:** Use the recalculated treatment / conveyance D+ allocation factors from Step 1 as the basis for allocating the same cost pools in the updated, simplified methodology<sup>3</sup>. Maintain the relative CSO allocation factors dictated by existing legal agreements. The resulting D+ allocation factors are shown in the first three columns of the table below.

	(1)	(2)	(3)	(4)	(5)	(6)
	Calculation of FY 2022 D+ SHARE Allocation			Calculation of FY 2022 D+ SHARES		
	Treatment/ Conveyance	CSO	Total <i>wtd avg (1)-(2)</i>	Treatment/ Conveyance <i>~ (1)</i>	CSO <i>~ (2)</i>	Total <i>wtd avg (4)-(5)</i>
				<b>38.017%</b>	<b>87.069%</b>	<b>44.639%</b>
1 Grosse Pointe	0.477%	0.262%	0.425%	0.181%	0.228%	<b>0.190%</b>
2 Hamtramck	1.961%	1.831%	1.911%	0.746%	1.595%	<b>0.853%</b>
3 Harper Woods	0.123%	0.015%	0.103%	0.047%	0.013%	<b>0.046%</b>
4 Highland Park	2.633%	2.371%	2.564%	1.001%	2.065%	<b>1.144%</b>
5 Redford Township	0.112%	0.153%	0.128%	0.043%	0.133%	<b>0.057%</b>
6 Wayne County #3	0.016%	0.040%	0.025%	0.006%	0.035%	<b>0.011%</b>
7 Detroit	94.678%	95.327%	94.844%	35.994%	83.000%	<b>42.338%</b>
8 Total D+	100.000%	100.000%	100.000%	38.017%	87.069%	<b>44.639%</b>

**Step 3:** Use the new D+ allocation factors to assign responsibility for the **total** D+ SHARES for each cost pool established by the Think Tank memorandum. These calculations are shown in the last three columns of the table above.

The results of this analysis are then used to consolidate the D+ communities into the overall impact summary table that was originally contained in the Think Tank memorandum. We can then append the original impact summary to match that shown below. The D+ Member Partners are highlighted in the table.

<sup>3</sup> Note that the “Wholesale Only” Cost Pool is not maintained in the new methodology.

## GLWA Wastewater Charge Methodology / SHARES Development - Impact Summary

	Existing SHARES				Proposed "All in" SHARE	Change in SHARE	
	CTA Treat / Collection	CSO Facility	Suburban Only	"All in"		Variance	% Variance
	Cost Pool	Cost Pool	Cost Pool	SHARE	SHARE		
	(a)			(b)	(c)		
1 OMID	16.436%	2.651%	22.182%	14.660%	14.589%	-0.071%	-0.5%
2 Rouge Valley	12.893%	2.956%	20.347%	11.682%	11.804%	0.122%	1.0%
3 Oakland GWK	10.735%	2.256%	18.625%	9.735%	9.788%	0.053%	0.5%
4 Evergreen Farmington	8.378%	1.485%	12.719%	7.521%	7.639%	0.118%	1.6%
5 SE Macomb San Dist	5.910%	1.174%	10.020%	5.345%	5.291%	-0.054%	-1.0%
6 Dearborn	4.518%	1.631%	8.048%	4.194%	4.284%	0.090%	2.1%
7 Grosse Pointe Farms	0.596%	0.504%	1.075%	0.593%	0.580%	-0.013%	-2.2%
8 Grosse Pointe Park	0.435%	0.062%	0.746%	0.390%	0.402%	0.012%	3.1%
9 Melvindale	0.367%	0.074%	0.568%	0.331%	0.332%	0.001%	0.3%
10 Farmington	0.275%	0.052%	0.445%	0.248%	0.253%	0.005%	2.0%
11 Center Line	0.247%	0.055%	0.368%	0.223%	0.220%	-0.003%	-1.3%
12 Allen Park	0.206%	0.031%	0.316%	0.184%	0.179%	-0.005%	-2.7%
13 Highland Park	1.065%	2.065%	2.165%	1.222%	1.144%	-0.078%	-6.4%
14 Hamtramck	0.717%	1.595%	1.764%	0.857%	0.853%	-0.004%	-0.5%
15 Grosse Pointe	0.180%	0.228%	0.417%	0.1920%	0.190%	-0.002%	-1.0%
16 Harper Woods	0.051%	0.013%	0.112%	0.047%	0.046%	-0.001%	-2.1%
17 Redford Township	0.045%	0.133%	0.073%	0.057%	0.057%	0.000%	0.0%
18 Wayne County #3	0.007%	0.035%	0.011%	0.011%	0.011%	0.000%	0.0%
19 Subtotal Suburban Wholesale	63.058%	17.000%	100.000%	57.492%	57.662%	0.170%	0.3%
20 Detroit Customers	36.942%	83.000%	0.000%	42.508%	42.338%	-0.170%	-0.4%
21 Total	100.000%	100.000%	100.000%	100.000%	100.000%	0.000%	0.0%

(a) The existing published **SHAREs** reflected proportional allocation factors for revenue requirements excluding CSO and Suburban only costs.

(b) The effect of the prior methodology established "All in" **SHAREs** after recognizing the CSO and Suburban only cost pools.

(c) The proposed methodology establishes effective "All in" **SHAREs**, inclusive of all cost pools.

Our recommended approach results in a reduction in Highland Park's share of approximately 6.4% compared to the overall D+ reduction of 0.6%. This reflects the new data regarding Highland Park's sanitary flow volume contribution. The individual impacts on all other D+ communities are closer to the class average reduction of 0.6%. Differences are largely associated with relative CSO cost pool responsibility compared to the average, and to the fact that the new methodology eliminates the "Wholesale Only" cost pool, which results in a slightly larger reduction for the suburban D+ customers than the Detroit customers.

We firmly believe that this approach is the most reasonable method to address the verified reduction in Highland Park sanitary volumes while acknowledging the lack of information with which to allocate responsibility for D+ non-sanitary volumes, including those volumes treated as "common" and those remaining volumes assigned to the class.

We are prepared to discuss this matter at your convenience.