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February 11, 2022

Via Electronic Mail

Christine Maloni Hoover
Senior Assistant Consumer Advocate
Office of Consumer Advocate
choover@paoca.org

In re: Docket No. R-2020-3020256
Pa. P.U.C. v. The City of Bethlehem – Water Department

Dear Ms. Hoover:

Enclosed, pursuant to the Stipulation between the City of Bethlehem and the Office of Consumer Advocate, adopted by the Public Utility Commission in its Opinion and Order entered April 15, 2021, is the City's Meter Replacement Plan. Please contact me if you have any questions or if you wish to discuss the Plan.

Very truly yours,

THOMAS, NIESEN & THOMAS, LLC

By 

Thomas T. Niesen

cc: Rosemary Chiavetta, Secretary (via electronic filing)
Edward J. Boscola, P.E. (via email, w/encl.)

CITY OF BETHLEHEM
Department of Water & Sewer Resources
10 East Church Street, Bethlehem, Pennsylvania 18018-6025
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DEPARTMENT OF PUBLIC WORKS
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Meter Replacement Plan

In its Opinion and Order in the matter of the City of Bethlehem (City) water rate case (Docket No. R-2020-3020256), the Pennsylvania Public Utility Commission approved a stipulation between the City and the Office of Consumer Advocate (OCA) to address certain quality of service issues that were of concern to the OCA. One of these quality of service issues involves customer meter age.

Specifically, the Opinion and Order states in part that "….the City will submit a schedule to OCA and the Commission indicating the number and size of meters that need to be replaced or tested in order to comply with the requirements of 52 Pa. Code § 65.8. within seven years."

The City is responsible for approximately 36,750 customer water meters of which approximately 23,000 are inside the City limits and 13,750 are outside the City limits in its PUC jurisdictional area. The City is able to replace on average approximately 1,000 to 1,500 meters per year using its own work force. In 2015, the City began a strategic program to replace aging meters. Elements of this program include:

a. Prioritizing replacement of all large industrial and commercial meters, i.e. those meters greater than 1" in size. Of these approximately 1,400 meters, 815 have been replaced in the past 7 years.
b. Target replacement of all bulk resale customer meters. Of these 29 meters, 21 have been replaced since 2017 and the remaining will be replaced by 2024.
c. Begin an organized approach to replace meters of 1" size and less, which are predominantly residential customers, and the remaining 585 larger size meters.

As of this date, approximately 12,750 meters have been replaced over the past 10+ years. This leaves approximately 24,000 aging water meters still in service, i.e. those that are 20+ years old. The bulk of these aged meters were installed during a mass meter replacement program in the mid 1990's. The City believes that replacing these aged meters is a more cost effective strategy than testing in accordance with 52 Pa. Code § 65.8. As such, the City's goal is to replace these 24,000 aging water meters over the next 7 year period through 2028.

For calendar year 2022, the City will use its in-house staff to replace approximately 1,300 residential meters up to 1" in size, 80 commercial/industrial meters ranging from 1.5" to 8", and install approximately 1,500 radio frequency endpoints as part of our ongoing program to convert our reading technology to an Advanced Metering Infrastructure (AMI) platform. Beginning in 2023, the City's in-house meter shop will replace approximately 1,500 meters per year. In order to maintain an aggressive schedule to replace the 24,000 targeted meters in 7 years, the City will engage an independent contractor to replace up to an additional 2,500 meters per year. This schedule will ensure that all aged meters are replaced by 2028.

Attached is a draft schedule which breaks down the meter replacement project by year, geographic area in the City's service territory, and the quantity assigned to City personnel (COB) and an outside contractor. Phase 1 will target the bulk of the aged meters installed in the 1990's (mechanical style meters - Rockwell vintage). Once the bulk of these old mechanical meters are replaced, Phase 2 will target replacement of our first generation magnetic style meters which will be approaching 20 years old.

At the end of 2028 all meters in the City of Bethlehem will be magnetic style/AMI ready with the oldest meter in the system installed in 2007. This would complete the outside contractors portion of the project, and the City crew would continue with the replacement of meters installed from 2007-2012 in the 2029 calendar year making the oldest meter in the system from 2013 or roughly 16 years old.

Below is a breakdown of the cost of the meter replacement project using 2023 cost estimate.

	# METERS	$ METER**	LABOR	TOTAL PER YR	# YEARS	PROJECT TOTAL
COB	1500	$ 135.00	$ -	$ 202,500.00		
OUTSIDE	2500	$ 135.00	$ 195.00	$ 825,000.00		
TOTAL	4000			$ 1,027,500.00	6	$ 6,165,000.00

**COST OF METER USING 2023 PRICING ESTIMATES, OPTION OF ADDING AN ENDPOINT REMOTE READING DEVICE FOR AN ADDITIONAL $145.00 PER METER ADDING $580,000 PER YEAR OR $3,480,000 TO THE OVERALL COST OF THE PROJECT BRINGING THE FINAL TOTAL TO $9,645,000

In parallel with the meter replacement project, the City will continue with implementation of its AMI project pending availability of funding. To date the City has converted approximately 6,500 customer meters over to the AMI platform which utilizes a radio-frequency unit mounted external to each metered property with four (4) strategically located receiver antennas in our service territory that receive and transmit meter reads to our data collection and utility billing operations.

METER REPLACEMENT AND ENDPOINT INSTALLATION PROJECT 2022-2028

PHASE 1 ROCKWELL

	NORTH	EAST	SOUTH	WEST	
	5213	6808	4154	6281	
	5213	6808	4154	6281	
	0	0	0	0	
2022					
COB	1300				
2023					
COB	1500				1500
CONTRACTOR	0		2500		2500
2024					
COB	1500				1500
CONTRACTOR	0		1654	846	2500
2025					
COB	1500				1500
CONTRACTOR	0			2500	2500
2026					
COB	713	787			1500
CONTRACTOR	0			2500	2500
2027					
COB		1500			1500
CONTRACTOR		2065		435	2500
2028					
COB					0
CONTRACTOR		2456			2456

ROCKWELL		INVENSYS	SENSUS		
5/8"	22049	522	1668		24239
3/4"	178	5	148		331
1"	219	3	90		312
1.5"	1	48	114		163
2"	2	27	80	(19) 3"	128
4"	2		8		10
6"	1		5	(4) 8"	10

PHASE 2 OTHER

	NORTH	EAST	SOUTH	WEST		
	482	382	449	224		
	482	382	449	224		
	0	0	0	0		
2022						
COB						
2023						
COB					0	1500
CONTRACTOR					0	2500
2024						
COB					0	1500
CONTRACTOR					0	2500
2025						
COB					0	1500
CONTRACTOR					0	2500
2026						
COB					0	1500
CONTRACTOR					0	2500
2027						
COB					0	1500
CONTRACTOR					0	2500
2028						
COB	438	382	449	224	1493	1493
CONTRACTOR	44				44	2500

OTHER METERS UP TO 12/31/2006

TOTAL **23993** **TOTAL METERS REPLACED**

FUTURE REPLACEMENTS

2007	52	35	62	38		187
2008	47	74	128	99		348
2009	172					172
2010	219					219
2011	94					94
2012	12					12

FINANCIALS

	METER	ENDPOINT	LABOR	TOTAL	# OF UNITS/YR		# YEARS		
COB	$ 135.00	$ 145.00	$ -	$ 280.00	1500	$ 420,000.00	6	**$ 2,520,000.00**	**COB**
OUTSIDE	$ 135.00	$ 145.00	$ 195.00	$ 475.00	2500	$ 1,187,500.00	6	**$ 7,125,000.00**	**OUTSIDE**
						$ 1,607,500.00	6	**$ 9,645,000.00**	**TOTAL**