INFORMATION PAPER

Public Utilities Department
December 27, 2022

SUBJECT: Nonrevenue Water Reduction Program

1. Purpose: To provide a high level overview of the City of Joliet's Nonrevenue Water Reduction Program

2. Facts:

a. The City of Joliet will be switching to a Lake Michigan water source by 2030.
b. In order to utilize Lake Michigan water an allocation from the Illinois Department of Natural Resources is required. A condition of the allocation is to reduce nonrevenue water to less than 10%.
c. Nonrevenue water is defined as water that is produced/purchased but not billed. The City's current nonrevenue water rate is 30%.
d. A nonrevenue water reduction strategy has been prepared to reduce nonrevenue water to less than 10% by 2030. The Joliet City Council demonstrated its commitment to reducing nonrevenue water to less than 10% by 2030 with a resolution approved on January 5, 2021.
e. A major component of the nonrevenue water reduction strategy is replacement of water mains that are prone to failure. The City increased its annual water main replacement to 3.2% beginning in 2022 in order to reduce nonrevenue water to less than 10% by 2030. This is estimated to cost approximately $50 million annually.
f. Another major component of the strategy is replacement of water meters. The City plans to replace 5,000 meters annually in 2023 and 2024 and 3,000 meters annually beginning in 2025.
g. The City will utilize federal and state low interest loans and/or revenue bonds to fund the water main replacement program.
h. The nonrevenue water reduction strategy includes many additional components as identified in Exhibit A.

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Submitted To: Jim Capparelli, 12/27/22

Enclosures:
Exhibit A, Nonrevenue Water Reduction Strategies

Exhibit A
Nonrevenue Water Reduction Strategies

Apparent Losses			
Short-Term			**Water Year 2022 Progress**
	A-1	Annual water loss audit completion	On-going
	A-2	Flowchart the customer billing process for various users (residential, commercial, exported)	Complete
	A-3	Initiate an Education and Outreach Program to City Staff Regarding Water Efficiency and Water Loss Reduction Strategies for Operations	Complete
	A-4	Provide fire hydrant meters to all Public Works staff to better track water used by City Staff	Complete
	A-5	Implement bulk water stations	Complete
	A-6	Perform bench testing on customer meters for accuracy	Complete
	A-7	Audit billing records and visit sites/customers to determine potential missed billings	99% Complete; On-going
	A-8	Implement procedures to meter all street sweepers	Complete
	A-9	Implement Sensus Analytics at Joint meeting(s) with Water Staff, Billing, and meter manufacturer (As of 7/1/22, campaign began to get customes on board with the Sensus customer portal.	Complete
	A-10	Prepare and implement illegal water use policies/ordinances	Complete
	A-11	Exported Water Users Improvement Install meter(s) for SEJSD	Complete
	A-12	Develop a Customer Meter Change-out Program	Complete; Continue to monitor and pivot
	A-13	Develop a Standard billing query in Sensus Analytics to query the AMI billed water use from exactly October 1 through September 30 of any given Water Year	Complete
	A-14	Implement a Customer Meter Change-out Program (Multi-year program)	In Progress
Long-Term			
	A-15	Implement improvements based on discovered AMI capabilities	TBD
	A-16	Consider simplifying rate structure to minimize potential billing errors	2030
	A-17	Conduct exported water meter replacement programs	TBD
Real Losses			
Short-Term			**Anticipated Deadline**
	R-1	Conduct water main break analysis	Complete, Continue to Monitor
	R-2	Hydraulic analysis to review pressures	Complete, Continue to Monitor
	R-3	Leak detection (Annual)	On-going
	R-4	Increase water main replacement program based on NRW desired goals	On-going
	R-5	Investigate the Potential of Implementing District Metered Areas (DMAs) or, at a minimum, areas that could potentially just be monitored to better narrow down the locations of water loss.	On-going (City continues to expand their DMA potential with 5 DMAs created to-date along with daily monitoring)
Mid-Term			
	R-6	If applicable (once DMAs are reviewed), construct the necessary valves, meters, and distribution improvements to implement smaller metered areas or DMAs to better narrow down the location of the water loss.	On-going (City continues to expand their DMA potential with 5 DMAs created to-date along with daily monitoring)
Long-Term			
	R-7	Monitor water main replacement rate and water reduction to determine impact on NRW and adjust accordingly	On-going