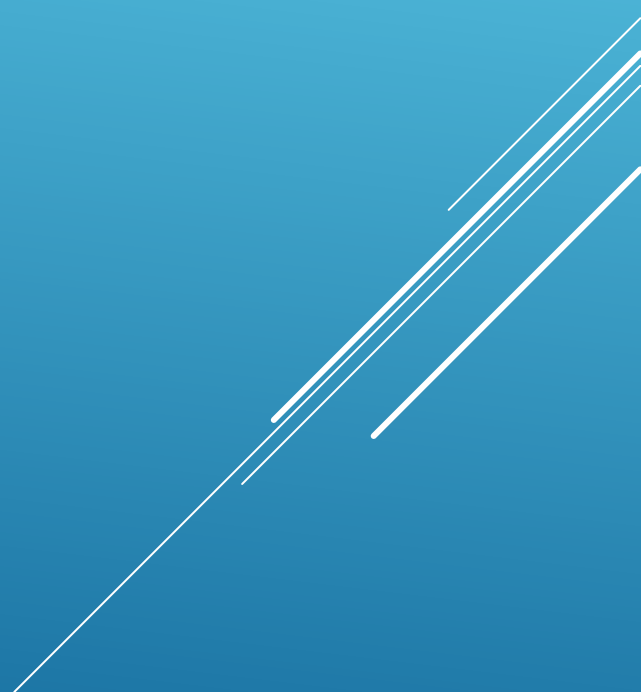





# CITY OF FLINT NON-REVENUE WATER


Presented to FWICC on 2/9/18

- ▶ What is non-revenue water?
  - ▶ AWWA's definition is: The difference between System Input Volume and Billed Authorized Consumption.
  - ▶ or in very simple terms: Water that's bought and then never accounted for thereafter.
- 
- A decorative graphic consisting of several parallel white lines of varying lengths and orientations, located in the bottom right corner of the slide.

- ▶ Non-Revenue water is made up of several components
  - ▶ Non-metered water usage
    - ▶ Sewer cleaning, street sweeping, hydrant flushing, theft
  - ▶ Under-metered water usage
    - ▶ Inaccurate meters
  - ▶ Leakage
- 

- ▶ In 2016 the City of Flint received a leak detection report from Echologics that report stated they found 82 leaks in our system totaling 327 gpm or 470,880 gpd or 630 units of water per day (748 gallons per unit).
  - ▶ Of the 82 leaks found only 2 were full blown water main breaks and were responsible for the majority of the water loss due to leaks.
  - ▶ All leaks have been repaired from that leak survey.
  - ▶ Part of the work Echologics performed was a water audit which indicated we had a non revenue water amount of 65% of all water produced at that time.
- 

- ▶ For perspective the City of Flint purchases approximately 4,380,000,000 billion gallons of water per year costing ~\$12,000,000.
  - ▶ 327 gallons per minute totals 171,871,200 gallons per year and costs the City of Flint ~\$65,000 annually.
- 

- ▶ What does this mean?
  - ▶ From the Echologics Report we didn't find much water loss from leakage.
  - ▶ Where does the water go?
  - ▶ Does it go where its suppose to?
- 

	Billing month	Billed Residential Amount	Collection Month	Residential Collected	Pymts and CR Total	Percent collected	Billing month	Billed Commercial Amount	Collection Month	Commercial Collected	Pymts and CR Total	Percent collected	Adjusted Percent collected	Net Collection Rate
6														
7														
8	Jan-17	2,620,076.77	Feb-17	1,714,768.72	1,714,768.72	65.45%	Jan-17	1,605,148.72	Feb-17	1,207,318.19	1,207,318.19	75.22%		
9	Feb-17	2,369,652.82	Mar-17	2,052,411.02	2,052,411.02	86.61%	Feb-17	1,518,173.36	Mar-17	1,681,309.28	1,681,309.28	110.75%		
10	Mar-17	3,042,003.57	Apr-17	1,804,520.77	1,804,520.77	59.32%	Mar-17	1,721,841.35	Apr-17	1,559,046.98	1,559,046.98	90.55%		
11	Apr-17	3,199,564.78	May-17	2,502,601.17	2,502,601.17	78.22%	Apr-17	1,677,469.18	May-17	1,577,572.78	1,577,572.78	94.04%		
12	May-17	2,930,659.43	Jun-17	1,806,924.36	1,806,924.36	61.66%	May-17	1,841,846.88	Jun-17	1,326,070.14	1,326,070.14	72.00%		
13	Jun-17	3,150,469.30	Jul-17	2,161,288.15	2,161,288.15	68.60%	Jun-17	1,746,778.69	Jul-17	1,281,079.79	1,281,079.79	73.34%		
14	Jul-17	3,390,683.94	Aug-17	2,522,420.85	2,522,420.85	74.39%	Jul-17	2,004,508.84	Aug-17	1,988,957.65	1,988,957.65	99.22%		
15	Aug-17	3,091,806.92	Sep-17	2,233,642.17	2,233,642.17	72.24%	Aug-17	1,691,470.37	Sep-17	1,737,899.33	1,737,899.33	102.74%		
16	Sep-17	3,066,647.24	Oct-17	2,458,844.70	2,458,844.70	80.18%	Sep-17	1,844,034.91	Oct-17	1,898,063.53	1,898,063.53	102.93%		
17	Oct-17	3,170,228.55	Nov-17	2,499,225.82	2,499,225.82	78.83%	Oct-17	1,747,859.08	Nov-17	1,387,893.22	1,387,893.22	79.41%		
18	Nov-17	2,892,534.80	Dec-17	2,024,586.13	2,024,586.13	69.99%	Nov-17	1,649,603.97	Dec-17	1,619,428.47	1,619,428.47	98.17%		
19	Dec-17		Jan-18		#VALUE!	#VALUE!	Dec-17		Jan-18	0.00	0.00	#DIV/0!		
20	Report Total	\$ 32,924,328.12		\$ 23,781,233.86	#VALUE!	72.23%		\$ 19,048,735.35		\$ 17,264,639.36	\$ 17,264,639.36	90.63%		
21														
22	<b>Uncollected</b>	-			<b>\$ 9,143,094.26</b>			-			<b>\$ 1,784,095.99</b>			<b>\$ 10,927,190.25</b>
23														
24	Net Report Total	\$ 32,924,328.12		\$ 23,781,233.86		<b>72%</b>		\$ 19,048,735.35		\$ 17,264,639.36		<b>91%</b>		<b>78.98%</b>
25														
26														

Note: City backed out July 2016 due to billing due in August and August is not part of the benchmark for 70% collection.

# COLLECTION RATE %

Month	Usage MCF	Rate	Expenditure	Fixed Monthly	KWA Debt Svc Cr	KWA Pass Through	Invoice Total	# CCF Billed	MCF Conversion	Water Billed (no svc chg)	Difference MCF	% Non Revenue Water
Jul-16	56,368.67	\$8.93	\$ 503,372.22	\$ 662,100.00			\$ 1,165,472.22	306,860	30,686	\$ 1,827,621.90	25,682.67	45.56
Aug-16	57,283.32	\$8.93	\$ 511,540.05	\$ 662,100.00			\$ 1,173,640.05	308,209	30,821	\$ 1,842,515.09	26,462.42	46.20
Sep-16	52,665.32	\$8.93	\$ 470,301.31	\$ 662,100.00			\$ 1,132,401.31	283,562	28,356	\$ 1,697,846.57	24,309.12	46.16
Oct-16	49,587.33	\$8.93	\$ 442,814.86	\$ 662,100.00			\$ 1,104,914.86	240,607	24,061	\$ 1,447,239.22	25,526.63	51.48
Nov-16	43,857.11	\$8.93	\$ 391,643.99	\$ 662,100.00			\$ 1,053,743.99	231,987	23,199	\$ 1,391,644.08	20,658.41	47.10
Dec-16	47,101.27	\$8.93	\$ 420,614.34	\$ 662,100.00			\$ 1,082,714.34	218,960	21,896	\$ 1,327,143.02	25,205.27	53.51
Jan-17	52,183.14	\$8.93	\$ 465,995.44	\$ 662,100.00			\$ 1,128,095.44	274,088	27,409	\$ 1,659,088.39	24,774.34	47.48
Feb-17	45,690.27	\$8.93	\$ 408,014.11	\$ 662,100.00			\$ 1,070,114.11	223,649	22,365	\$ 1,357,800.78	23,325.37	51.05
Mar-17	48,707.31	\$8.93	\$ 434,956.28	\$ 662,100.00			\$ 1,097,056.28	229,869	22,987	\$ 1,378,214.87	25,720.41	52.81
Apr-17	45,658.06	\$8.93	\$ 407,726.48	\$ 662,100.00			\$ 1,069,826.48	237,818	23,782	\$ 1,432,328.44	21,876.26	47.91
May-17	47,914.99	\$8.93	\$ 427,880.86	\$ 662,100.00			\$ 1,089,980.86	234,410	23,441	\$ 1,412,685.79	24,473.99	51.08
Jun-17	47,734.65	\$8.93	\$ 426,270.42	\$ 662,100.00			\$ 1,088,370.42	253,090	25,309	\$ 1,519,214.70	22,425.65	46.98
Jul-17	49,521.96	\$9.35	\$ 463,030.33	\$ 693,200.00			\$ 1,156,230.33	314,983	31,498	\$ 1,814,857.61	18,023.66	36.40
Aug-17	46,115.00	\$9.35	\$ 431,175.23	\$ 693,200.00			\$ 1,124,375.23	244,193	24,419	\$ 1,466,182.78	21,695.70	47.05
Sep-17	43,357.01	\$9.35	\$ 405,388.04	\$ 693,200.00			\$ 1,098,588.04	257,629	25,763	\$ 1,543,512.41	17,594.11	40.58
Oct-17	42,691.82	\$9.35	\$ 399,168.52	\$ 693,200.00			\$ 1,092,368.52	257,451	25,745	\$ 1,339,095.64	16,946.72	39.70
Nov-17	40,582.47	\$9.35	\$ 379,446.09	\$ 693,200.00			\$ 1,072,646.09	216,615	21,662	\$ 1,309,890.31	18,920.97	46.62
Dec-17	43,366.53	\$7.39	\$ 320,478.62	\$ 545,500.00	\$ (444,006.00)	\$ 67,917.40	\$ 489,890.02	208,377	20,838	\$ 1,258,565.80	22,528.83	51.95
							\$ 19,290,428.59					
											<b>Average %</b>	<b>47.20</b>

\*\*THESE FIGURES DO NOT INCLUDE SERVICE CHARGES (SEE BILL EXPORT SUMMARIES FOR MORE INFO)

# PURCHASED VS. BILLED WATER



▶ Options for Flint:

- ▶ Do nothing
- ▶ Leak detection
- ▶ Install new water meters
- ▶ Collect the revenue
- ▶ Ordinance “with some teeth” to protect the water meters and prevent utility tampering

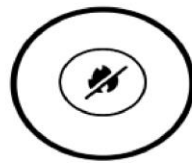
# What To Do For A: Boil Water Advisory



Fill a pot with **COLD FILTERED** water



Heat until bubbles appear. Let rapid boil for 1 min.



Turn off heat source. Let water cool.



Store water in clean container.

Use boiled filtered water OR bottled water to :



Make Coffee, Tea, Lemonade, or Ice



Wash Fruits, Veggies, or Food Prep Surfaces

## After Advisory:



Clean filter units and aerators with soapy water



Put filter unit back on faucet with a new filter cartridge



Recycle used water filter cartridges

## Be Prepared : Water Main Break



Have 3 days of drinking water stored (1 gallon per person/pet for each day).



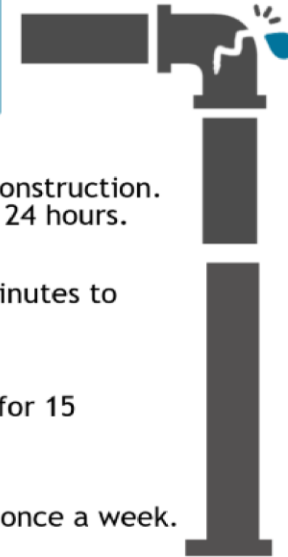
If you store water, use clean, covered containers



Keep an extra, new filter cartridge on hand to use when advisory ends

**Water Main Breaks are more common in the winter, when the pipes may freeze.**

## Water Line Construction



Your water may be tested before and after construction. Water will be shut off for a period of four to 24 hours.



After construction, flush your water for 15 minutes to remove any residue or sediment.



Next, replace filter cartridge and flush filter for 15 seconds with cold water.



We recommend cleaning your aerator at least once a week.

- ▶ City of Flint worked with GCHD, MDEQ and other stakeholders.
  - ▶ Visit medical facilities in person and talk to their water technical staff.
  - ▶ Implementing a Computer Maintenance Management System and hoping to utilize the GIS layer embedded in it to notify via an automatic system.
  - ▶ Residentials are the most challenging to notify.
  - ▶ Utilize media and our communications director.
- 