





# **What's Happening in Flint and How is MWRA Different?**

David Coppes  
Director of Waterworks



# What's Happening In Flint And How Is MWRA Different?

- Press coverage raising questions *about water safety* around the country
- MWRA customers have questions about their water



*Images from nightly news broadcasts, newspapers, the internet, blogs, and periodicals are everywhere*



## Indications Of Problems In Flint Went Unheeded



- Public is more sensitive than ever to changes in water quality
- Need to take complaints seriously
  - Respond quickly
  - Provide good customer service
- Maintain customer's confidence in the safety of the water we provide



# MWRA Takes Customer Concerns Seriously

- Water quality hotline: **617-242-LEAD**



- Tracks complaints received from community water departments
  - A minimum of weekly calls to each community
- Provides assistance to communities in resolution of complaints
  - Investigation support
  - Sample collection
  - Chemical/biological analysis
- Consults with regulators and public health officials





# Flint Changed Source Water And Treatment



*Quabbin Reservoir, above, and Wachusett Reservoir, below, have well protected watersheds and provide high quality water to MWRA treatment facilities*



- MWRA has high quality source reservoirs
- Treatment has been stable for years
- Thorough review of any treatment changes
  - Bench and pilot testing
  - Expert panel review
- DEP and EPA involvement in review and approval



# Flint Did Not Implement Corrosion Control Treatment

- MWRA corrosion control treatment in place since 1996
- Conducted by well-trained licensed treatment plant operators
- Sodium carbonate and carbon dioxide added to reduce corrosivity and improve stability
- State approved 'Optimum Water Quality Parameters' met consistently

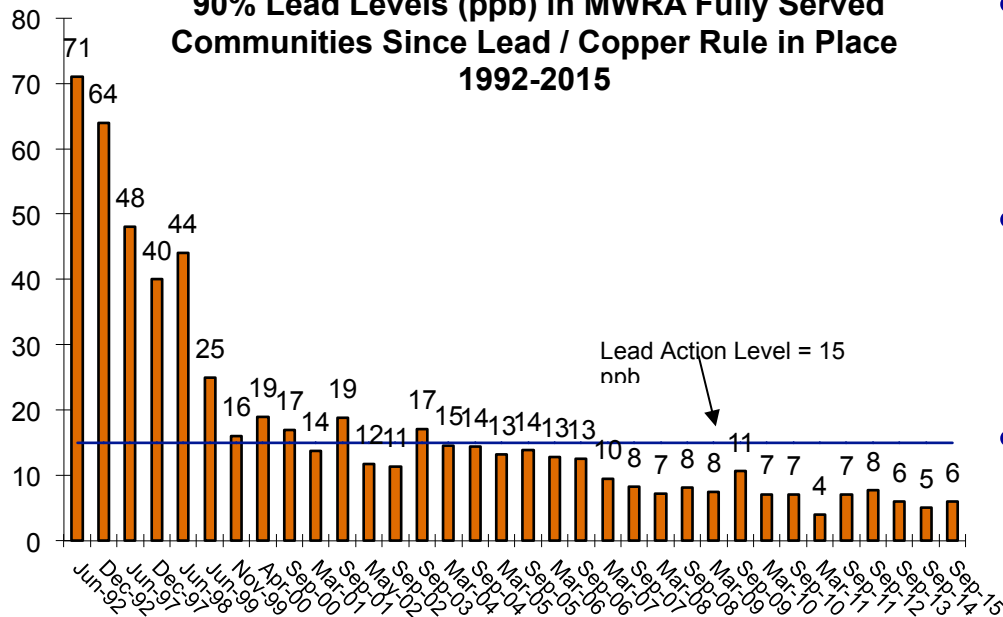


*The John J Carroll Water Treatment Plant (center) and Interim Corrosion Control Facility (foreground) provide continuous corrosion control treatment since 1996*



# Water Quality Data In Flint Was Not Made Public

**90% Lead Levels (ppb) in MWRA Fully Served Communities Since Lead / Copper Rule in Place 1992-2015**



- Lack of information undermined public confidence
- Citizen groups gathered their own data
- In contrast, MWRA publishes water quality data on [mwra.com](http://mwra.com)

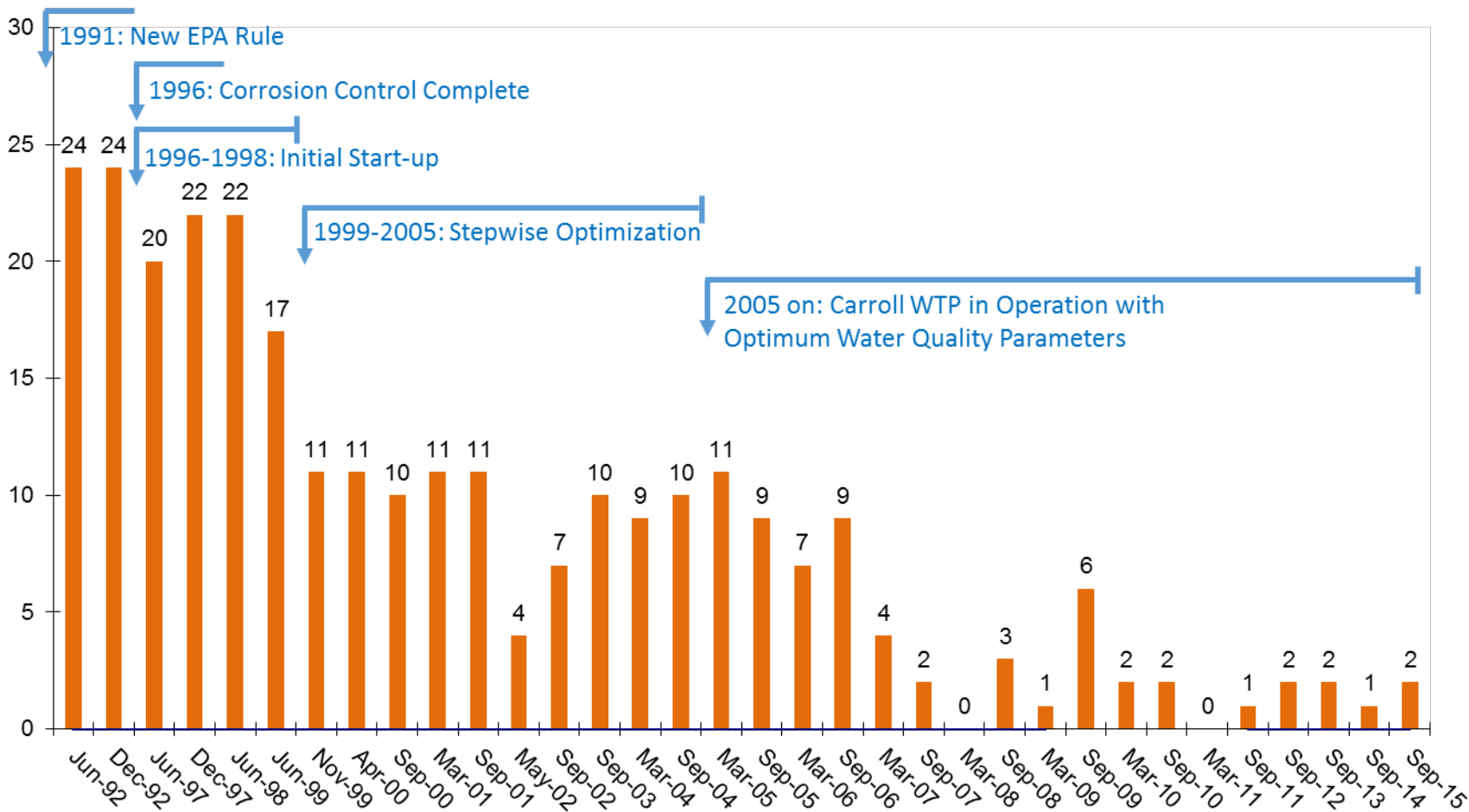
- Data that can be found on MWRA website:
  - Raw water, treated water, and distribution system data
  - All lead compliance sample results since 1992
  - Easily understood summary charts





# The Number of Communities Below The Lead Action Level Has Declined

## Number of Communities Above the Lead Action Level





# Over Half The Homes In Flint Have Lead Service Lines

- In comparison about 5 percent of services in MWRA communities are lead
- Important to maintain and update community inventories of lead service lines
- Risk of lead in water remains as long as lead service lines exist

Community	September 2015
MWRA System	6.22 Ppb

Arlington	2.59
Bedford	
Belmont	3.81
Boston	7.75
Brookline	3.06
Cambridge	
Canton	
Chelsea	11.6
Dedham/Westwood	
Deer Island TP	0.798
Everett	1
Framingham	2.84
Lexington	1.42
Lynnfield	1.57
Malden	18.5
Marblehead	6.75
Marlborough	
Medford	6.22
Melrose	15.7
Milton	13.7
Nahant	1.61
Needham	
Newton	3.04
Northborough	0.986
Norwood	7.6
Peabody	
Quincy	5.3
Reading	4.3
Revere	3.2
Saugus	2.6
Somerville	10.3
Southborough	2.52
Stoneham	11.1
Stoughton	
Swampscott	2.06
Wakefield	
Walham	2.6
Watertown	2.42
Wellesley	
Westboro State Hospital	1.52
Weston	2.29
Wilmington	
Winchester	
Winthrop	14.6
Woburn	
Chicopee	3.8*
South Hadley F. D. #1	5.4*
Wilbraham	1.4*
<b>TOTAL</b>	

Number of Services	Estimated Lead Services
Community Estimate in Black MWRA Estimate in Red	

12,585	0
4,613	0
7,745	1
87,638	3,567
10,527	100
15,486	0
7,162	0
5,100	330
13,304	0
8,126	100
18,147	4
14,145	50
1,427	0
11,815	5,205
8,065	0
10,303	1,238
14,706	2,231
8,200	772
8,473	51
1,634	0
10,192	157
25,071	1,161
4,234	0
8,649	36
13,539	5,687
23,750	1,310
7,992	249
12,000	21
9,331	0
14,423	2,298
3,210	0
6,250	13
7,387	0
5,485	0
8,410	30
13,732	0
9,165	0
8,324	1
3,613	0
7,469	0
7,215	0
4,480	1,400
11,447	2
16,527	0
4,827	0
3,347	0
<b>519,270</b>	<b>26,014</b>

\* Most recent data from 2012/2013



# **Corrosion Control**

Betsy Reilley, Ph.D.  
Director, Environmental Quality,  
Water and Wastewater



# MWRA Corrosion Control Treatment

- There are two primary corrosion control methods (for larger systems)
  - Phosphates
  - pH and Alkalinity



- Phosphates provides a protective film to control corrosion
- pH and alkalinity controls solubility rates. May also form a film depending on water chemistry (calcium carbonate film).
- MWRA performed extensive testing to determine optimal pH and alkalinity targets, while also balancing other WQ goals (iron, disinfection byproducts)



# Corrosion Indices

- Corrosion and aggressiveness of water can be evaluated based on a variety of WQ parameters:

- Larson Index

- Langlier Index

- Aggressivity Index

- CSMR (chloride:sulfate mass ratio)

- But even with all that, you need to pilot





# Flint, Michigan

Flint water quality changed significantly especially in regards to the Larson Index (which is appropriate to use for Flint water, particularly due to pH range)

Parameter	Flint Before	Flint After
pH	7.4	7.6
Hardness (as CaCO <sub>3</sub> , mg/L)	101	183
Alkalinity (as CaCO <sub>3</sub> , mg/L)	78	77
Chloride mg/L	11	<b>92</b>
Sulfate, mg/L	25	41
Inhibitor (mg/L as P)	<b>0.55</b>	<b>0</b>
Larson Ratio	<b>0.5</b>	<b>2.3</b>
Langlier Index	negative value	negative value



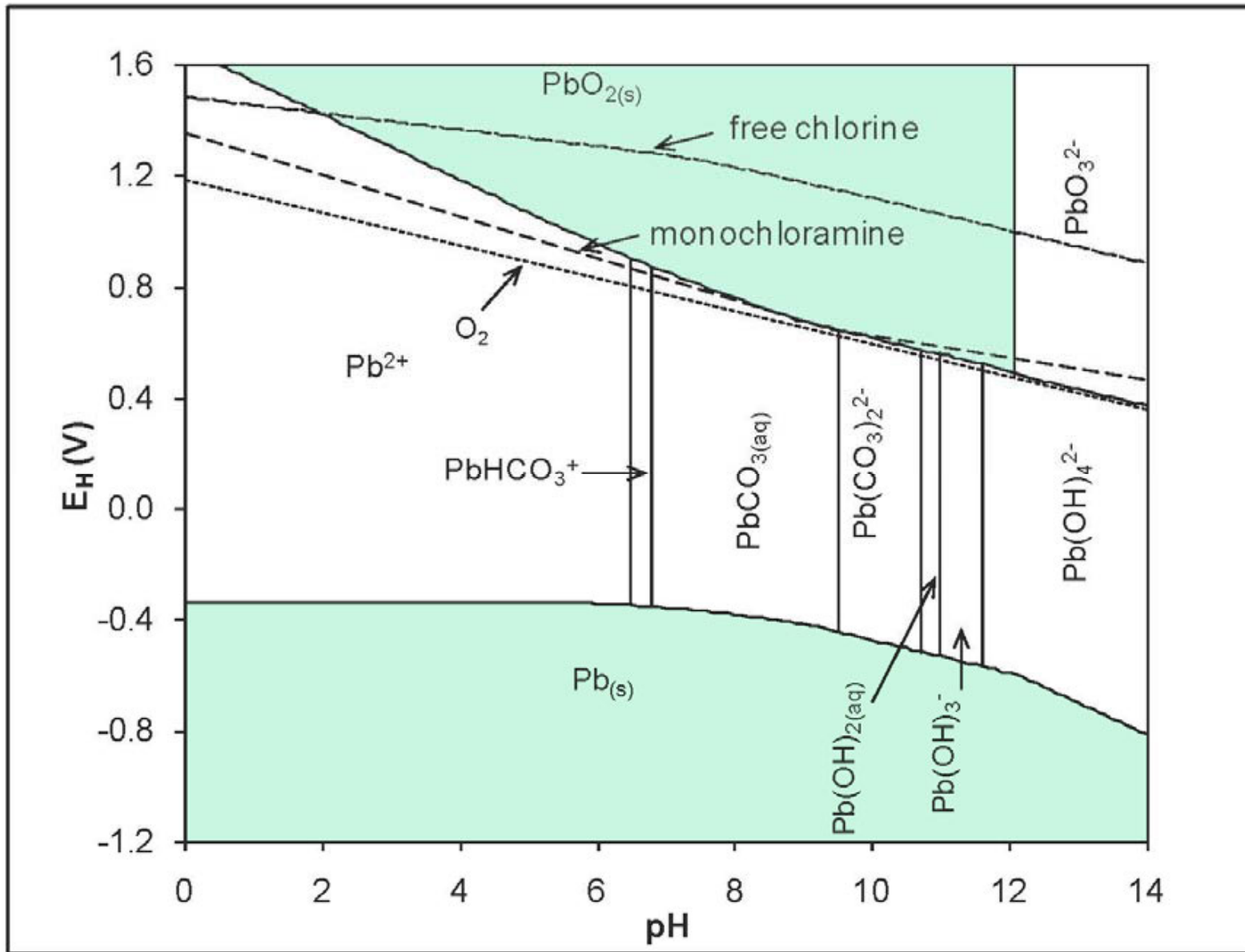
# Flint, Michigan



- Discolored water was an indicator of the problem, but discolored water alone cannot be used to evaluate.
- Biofilms and corrosion products will slough when the buildup reaches certain levels or when flushing/flow reversals, etc disrupt the products.



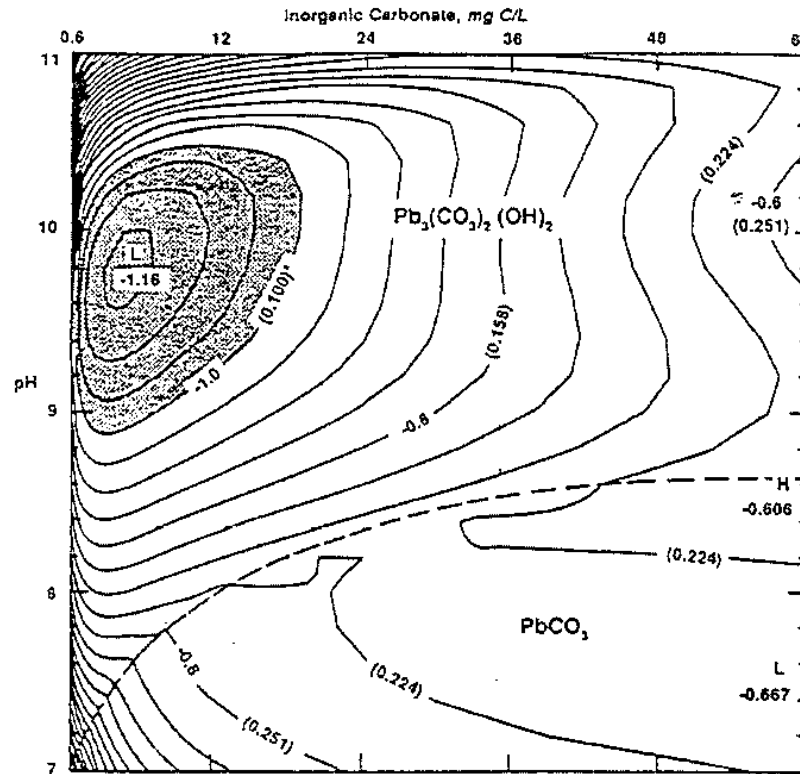
# Corrosion Control Is Complicated







# Lead Solubility Contours

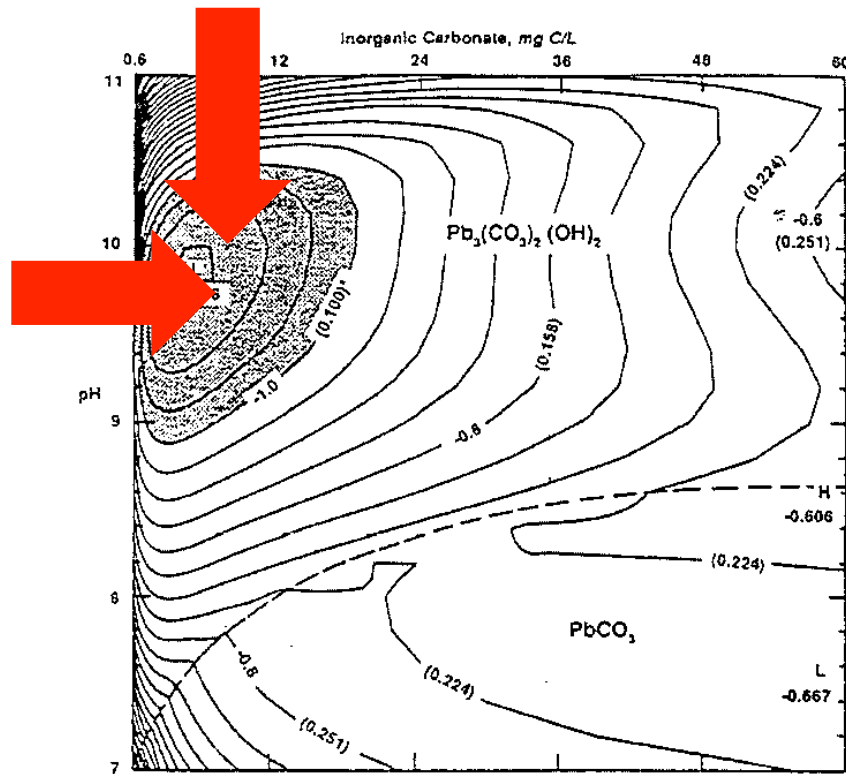


Source: EES 1990

Figure 1.5 Theoretical Pb(II) solubility diagram as a function of pH and DIC in absence of orthophosphate (I=0.005, T=25°C)]



# Lead Solubility Contours



Source: EES 1990

Figure 1.5 Theoretical Pb(II) solubility diagram as a function of pH and DIC in absence of orthophosphate (I=0.005, T=25°C)



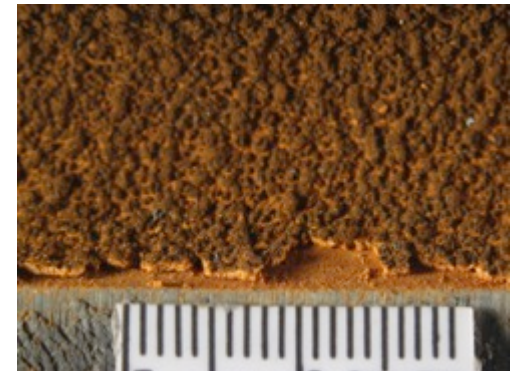
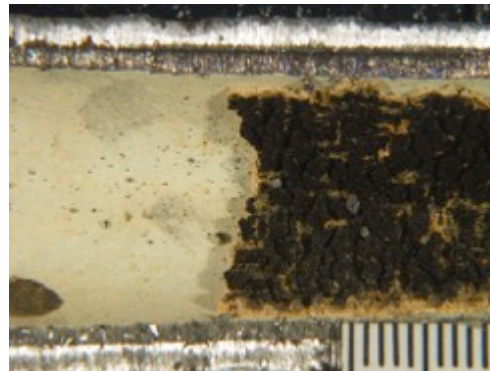
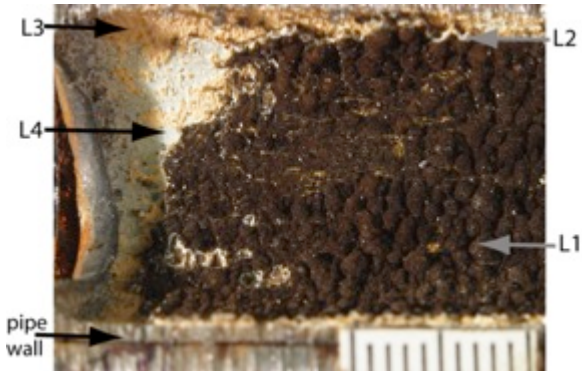
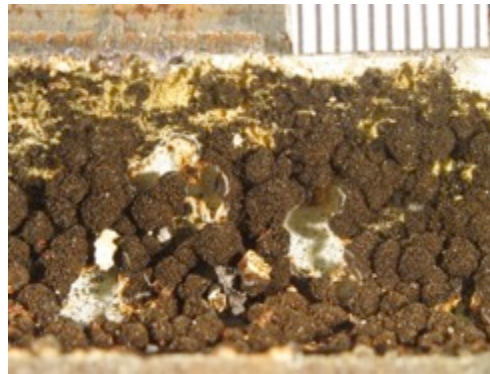
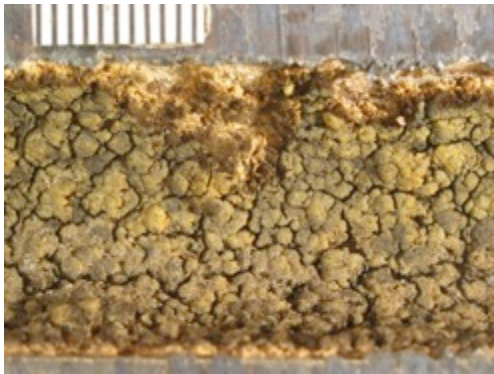
# Corrosion Control is Complicated

- Alkalinity
- Hardness
- Calcium
- Sulfate
- Chloride
- Lead
- Iron
- Copper
- Phosphates
- Bicarbonate
- pH
- Organics/NOM
- Particulate
- Dissolved
- Hard Scale
- Soft Scale
- Chemical composition of scale



# Coatings On Lead Service Lines Can Vary

- Chemical and physical disturbances can release lead particles present on the service lines





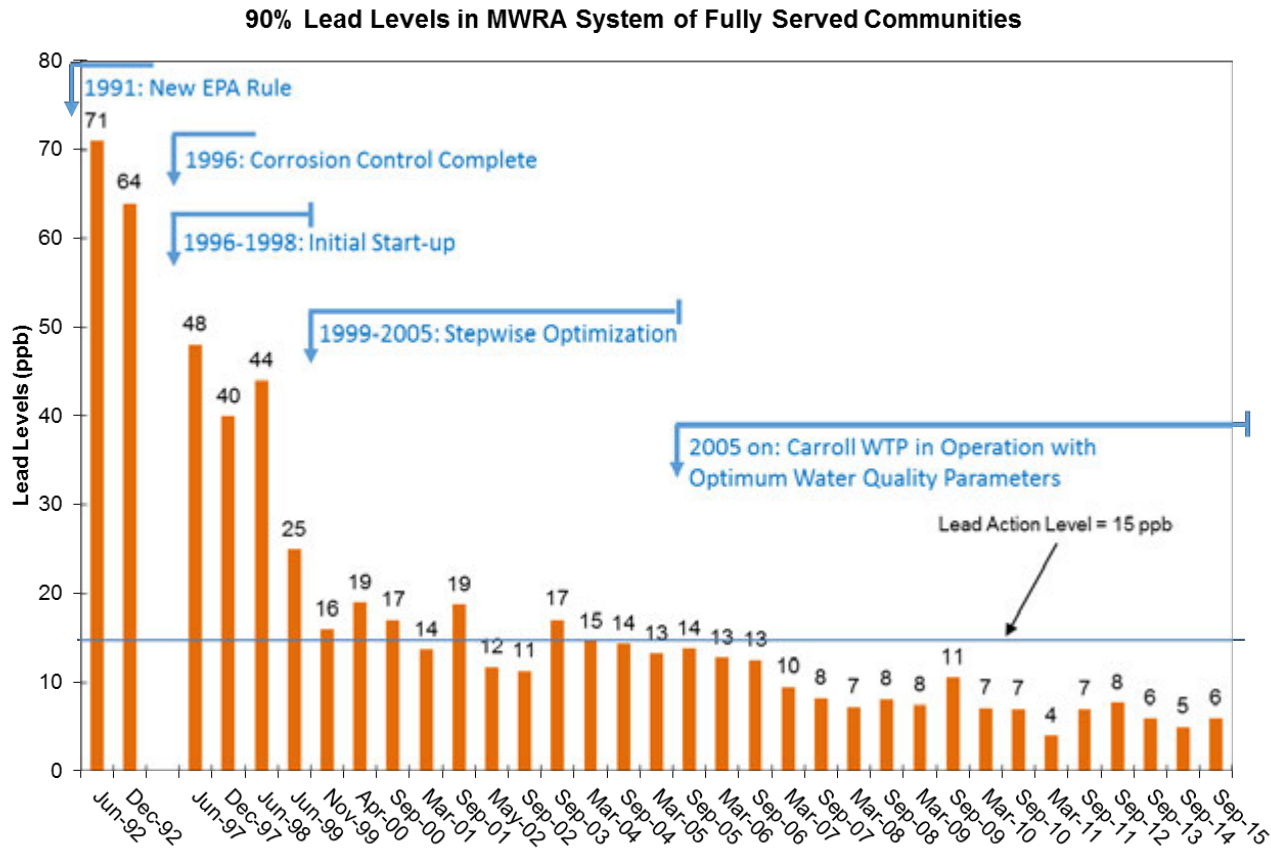
# There Are All Kinds Of Corrosion





# Over 90% Reduction In Lead Levels

- MWRA water system has now been below the lead Action Level of 15 parts per billion 20 straight rounds
- In 1992 **24** communities were above the AL, in 2015, only **2** communities are above the AL.





- Lead is found from a variety of sources and levels have declined significantly over time:
  - Gasoline
  - Paint
  - Dust
  - Soil
- MWRA water quality is stable, as is treatment
- Being responsive to water quality complaints will build confidence in the water
- MWRA staff take a science based approach to assessing water quality, treatment, and compliance.
- So long as there is lead in contact with water, risk remains.



# **Public Health Implications of Lead**



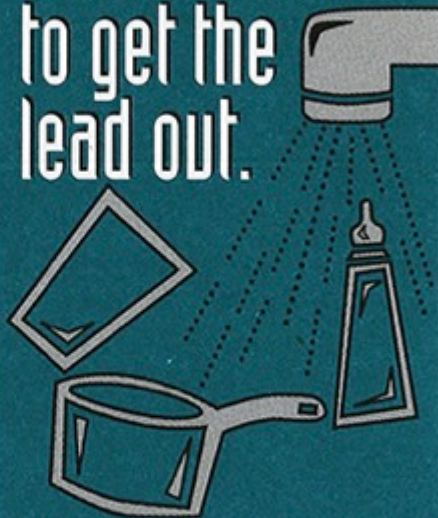


# Effective Joint Communication

Is there  
lead in my  
drinking  
water,  
and what  
can I do?



Take a minute  
to get the  
lead out.



Reduce your exposure to lead.  
Run your water until it's cold.

Massachusetts Water Resources Authority (617) 242-LEAD





# **Requirements of the Lead and Copper Rule**



# Lead And Copper Rule – Sampling Requirements

- Sample stagnant water samples at high risk homes, primarily lead service lines
  - Most MWRA communities take 15 samples, based on population
  - MWRA takes a total of ~450 samples
- 90<sup>th</sup> percentile needs to be below Action Level of 15 ppb
  - If above, take action
  - Non-enforceable goal of 0
- Two schools per sampling round
  - Fountain and faucet
  - Change locations each round





# Lead And Copper Rule Exceedance

- If 90<sup>th</sup> percentile is above Action Level of 15 ppb, community is in exceedance and must take action:
  - Service Line Replacement component
    - Need to replace 7% of total each year
  - Education component
    - Mail brochures to every customer
    - Public health outreach – schools, doctors, WIC





# **What Is Changing In LCR Implementation?**



## What Is Changing In LCR Implementation?

- EPA Has Been Working on Rule Revisions for Several Years
- National Drinking Water Advisory Council Recommendations in November 2015
- National and International Attention on Lead Issues After Flint
- EPA Letter to every Governor and State Drinking Water Program on February 29th
- Stricter attention to existing Rule requirements



## Key NDWAC Recommendations

- Improve the public education aspects of the rule
- Help customers identify and respond to the risks of lead in home plumbing – especially lead service lines
- Require the all lead service lines be completely replaced (over the long term)
- Focus sampling efforts on providing customers with information they can use to identify and reduce the risks in their homes
- Strengthen corrosion control, with better process monitoring



## EPA Changing And Emphasizing Protocol


- Keep aerator on (no change)
  - Use wide mouth bottle
  - Normal flow rate
  - Normal use before sampling, no pre-stagnation flushing
- 
- MWRA has implemented these changes
  - Increased focus on sample sites with lead service lines







# EPA Urging More Transparency With Lead Sample Results



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Updates on ongoing projects

Renewable Energy at MWRA



## Massachusetts Water Resources Authority

Charlestown Navy Yard, 100 First Avenue  
Boston, Massachusetts 02129  
(617) 242-6000




**What's Happening in Flint's Water System and How is MWRA Different (PDF)**

**More:**


- Facts about Lead in Drinking Water
- How to Get Your Water Tested

**Notice for Residents of Winchester:**



Town Will Temporarily Use of MWRA Water  
March 2 - May 15, 2016

**News**




**MWRA Pipe Repair May Cause Discolored Water in Areas of Medford and Somerville**

March 17, 2016

**Fix A Leak Week: March 14-20, 2016**

**Find and fix leaks!**

In just **10 minutes** you could **save...**



**10** percent on your water bill

**10** thousand gallons of water

Search

**Important Notice**

There are no notices at this time.

**Sign Up For Notifications**

Want to know how your water quality is? Looking for updates on the MWRA construction project in your neighborhood? What if there is a water emergency in your area? MWRA can keep you informed when you're at home, at work or on the road. Take a few minutes to **sign up** and get notifications on your phone, by email, or text message.





[Sign Up for MWRA Alerts](#)


**MWRA 24-Hour Emergency Contacts**

Water:	617-305-5950
Sewer:	617-305-5940
Security:	877-697-6972
TTY:	617-371-1903

**Non-Emergency Contacts**

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**Massachusetts Water Resources Authority**

To monitor lead levels, MWRA and your local water department test tap water in up to twenty-five homes in each community.

Lead results for the entire system and for each community are compiled by MWRA, with an average of 440 samples taken for the entire system. The regulations require that a system our size - serving over 2 million people - take only 100 samples. New York City, with around 5 times as many customers, takes only 100 samples.

We have agreed with our state regulators at the Department of Environmental Protection to uniformly sample more than 4 times as many homes across the service area to get a better idea of how our corrosion control treatment is working.

But not just any homes are sampled. Under Environmental Protection Agency regulations, homes that are likely to have high lead levels - usually older homes likely to have lead service lines or lead solder - must be tested. Also, only first flush samples, water most likely to have lead, are sampled. The EPA rule requires that 90% of these sampled homes must have lead levels below the Action Level of 15 parts per billion (ppb).

Lead levels in sampled worst case homes have dropped steadily since 1992. Average lead levels at sampled worst-case homes have dropped nearly 90%. Also, the proportion of samples has also changed over time.

**Back to "What You Need To Know About Lead in Tap Water" page**

**Lead test results - graphs**

WATER TEST RESULTS

Annual Test Results

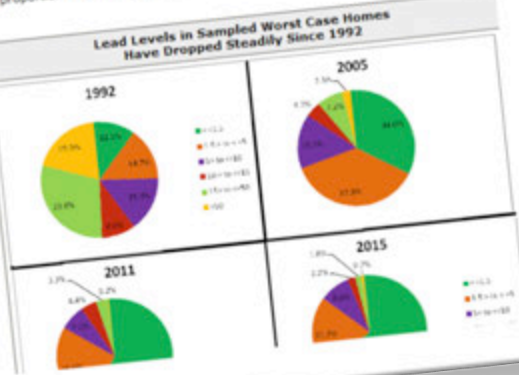
Monthly Test Results

CONTACT US

MWRA Water Quality Hotline  
617-242-5323

Email: [Joshua Das](mailto:Joshua.Das@mwra.com)

**Lead Levels in Sampled Worst Case Homes Have Dropped Steadily Since 1992**





# Transparency With Lead Results

Home
Water System
Sewer System
Harbor and Bay
School Program
About MWRA
Doing Business with MWRA
Contact MWRA

## Lead Test Results, Drinking Water: Historical Household Data Massachusetts Water Resources Authority

Linked to this page are individual results going back to 1992, when lead levels had already dropped by about 50%.

[1992-2009](#) (PDF) | [2010-2015](#) (PDF)

The results are presented with addresses eliminated to protect the individuals' privacy. Each volunteer who participated in the sampling program received his or her own individual results.

These individual results provide a snapshot of what is happening in a specific house when the water has sat stagnant. Because the sampling protocol is designed to evaluate the effectiveness of corrosion control, the results do not provide real information about the water a typical customer would typically drink.

We sample only the homes most likely to have any lead, and then sample that stagnant water most likely to have leached any lead. Most consumers do not actually consume that stagnant water.

To remove stagnant water from your home's system, and to reduce the potential of lead leaching into your tap water, run the faucet for about one minute, until the water turns noticeably colder. Visit our [What You Need to Know about Lead in Drinking Water](#) page for more information.

If you have questions or would like more information about lead in drinking water, please call our Water Quality Hotline: 617-242-5323, or email Joshua Das, Project Manager, Public Health: [joshua.das@mwra.com](mailto:joshua.das@mwra.com)

Updated December 18, 2015

<b>MORE INFORMATION</b>
<a href="#">Back to lead test results graphs</a>
<a href="#">Back to lead test results main page</a>
<a href="#">Back to "What You Need To Know About Lead in Tap Water" page</a>
<b>PRINTER-FRIENDLY DATA</b>
<a href="#">Analysis of Lead Levels from MWRA Communities 1998-2011</a> (PDF)
Individual Household Results
<a href="#">1992-2009</a> (PDF)
<a href="#">2010-2014</a> (PDF)
<b>MORE WATER TEST RESULTS</b>
<a href="#">Annual Test Results</a>
<a href="#">Monthly Test Results</a>
<b>CONTACT US</b>
MWRA Water Quality Hotline 617-242-5323
Email: <a href="mailto:Joshua.Das@mwra.com">Joshua Das</a>

*Lead and Copper Results from 2010 through 2013*  
All results in ppb

Community	Mar-10	Sept-10	Mar-11	Sept-11	Mar-12	Sept-12	Mar-13	Sept-13	Mar-14	Sept-14	Mar-15	Sept-15
1	2.91	1.09	0.936	0.37	1.09	2.05	1.19	1.84				
2	0.018	0.141	0.013	0.145	0.006	0.038	0.038	0.038				
3	1.71	1.8	1.07	1.08	20.0	1.03	1.57	2.38				
4	1.45	0.009	1.07	1.08	1.06	0.029	0.029	0.029				
5	13.5	18.2	2.13	28.3	1.1	0.625	0.676	0.676				
6	0.005	0.008	0.756	0.779	0.003	0	0	0				
7	0.289	1.42	0.163	0.088	1.48							
8							2.71	0.88				
9									0.0782			
10	1.13	2.49	1.13	1.13								
11					0.0041	0.0041	0.0041	0.0041				
12	0.127	0.04	0.007	0.042	0.124				0.005			
13						1.28	2.04					
14	0.75	0.107	0.282	0.282					0.117			
15	0.072	0.177	0.208	0.181	0.17	1.09	0.005	0.101	0.101			
16	0.289	1.28	1.22	1.09	1.17	0.005	0.005	0.005	0.101			
17	0.075	0.628	0.111	0.111	0.005	0.005	0.005	0.005	0.005			
18	0.058	0.405	0.615		0.615	0.005	0.005	0.005	0.005			
19	1.21	1.08	0.989	1.05					0.005			
20					1.35	1.34	0.903	1.76	0.903			
21	12.4	0.422	4.48	2.72	1.14				1.14			
22	3.05	1.37	0.95	1.15	0.97	1.42			1.42			
23					2.75	0.628			0.628			
24	1.48	1.15	1.11	1.1	0.417	0.758			0.758			
25	2.57	4.8	1.08	0.705	0.142							
26	0.134	0.113	0.289	0.1			0.622		0.622			
27	0.238	0.29	0.251	0.255	1.38	1.7			1.7			
28	1.32	0.293	0.282	1.09	1.38	4.28			4.28			
29	0.38	2.78	1.42	1.97	1.79	0.758			0.758			
30	4.24	2.34	1.84	1.34	1.75							
31	0.732	0.947	0.989	0.989					4.53			
32						1.19	1.19		0.005			
33	1.48	1.48	1.38	0.25	0.171	0.718			1.48			
34					2.39	1.17			0.005			
35	1.48	1.3	1.64	1.45	2.11	1.18			0.005			
36	2.74	2.22	0.278	0.589					0.278			
37	1.45	0.425	1.74	0.688					0.688			
38					0.113	0.408			0.408			
39	0.014	0.108	2.13	0.202								
40					0.172	0.484	4.27	4.38	7.89	1.82		
41					1.38	1.38	0.86	1.79				
42										0.943		
43					2.38	0.71			0.215	0.943		
44					1.91	0.943	0.162	0.247	4.27	1.36		
45					7.4	1.23	1.28	1.08	1.47	0.005		
46					0.782	0.143	0.83	0.438		0.27		
47									0.32	0.82		
48									0.006	0.006		
49					6.6	4.54	8	7.77		2.11		
50					1.32	0.727	0.118	0.86	0.817	1.39		
51					0.858	1.32	0.53	1.29	0.476	0.53		
52					19.9	14.4	15.8	14.9	17.9	7.1		
53					0.23	0.36	0.39	0.21	0.76	6.1		
54					2.38	0.67	0.39	1.11	1.1	0.8		
55					1.38	0.67	0.118	0.86	0.118	0.118		
56					0.424	0.139	0.132	0.201	17.9	10.7		
57					19.5	16.1	16.8	16.4	24.7	0.676		
58					1.34	1.11	0.5	0.25	0.897	0.476		
59					1.15	1.34	1.17	0.895				
60									1.84			
61										1.06		
62											0.15	
63												0.18
64												



# EPA Urging Public Inventory Of Lead Service Lines



Boston Water and Sewer Commission **Lead Service**

200 m  
500 ft

Table Options

Address	Lead Service
41 OAKVIEW TER Jamaica Plain	YES
73 PERSHING RD Jamaica Plain	YES
99-105 SHERIDAN ST Jamaica Plain	YES
24 BOYLSTON ST Jamaica Plain	YES



# **Improving Lead Service Line Inventories**



# Inventory Based On Water Tie Cards

**RETURN OF SERVICE PIPE** Reg. No. 1077

Date Laid *May 24-1897*  
 Owner of Premises *Chas. G. Thaxter*  
 Street *2 Dennison Ave.*  
 Main Pipe *6* inches Diam.  
 Distance Main to Curb Stop Cock *7 1/2* feet

COST TO TOWN - Main to Curb Stop Cock Inc.		COST TO OWNER	
<i>7 1/2</i> Feet	<i>1 1/2</i> Inch	<i>35</i> Feet	<i>5/8</i> Inch
	<i>1 3/8</i> Corporation Stop		<i>Lead</i> Pipe
One	Inch Curb Stop		Stop and Waste
One	Sidewalk Box		Elbows
	Couplings		Tees
	Elbows		Hours Labor
	Hours Labor		Man
	Hours Labor		Foreman
			Trucking
Total			

**RETURN OF SERVICE PIPE** Reg. No. 5538

Date Laid *10-27-2008*  
 Owner of Premises *567 WINTER ST - New House*  
 Street *567 WINTER ST - New House*  
 Main Pipe *8" inches Diam.* CLP-2008  
 Distance Main to Curb Stop Cock *20'* feet *2" Copper*  
 Foreman *TOMASZAKI*

COST TO OWNER TOWN		COST TO OWNER	
<i>28'</i> Feet	<i>2" inch</i> Pipe <i>Copper</i>	<i>123'</i> Feet	<i>2" PLASTIC</i> Inch Cement Lined Pipe
One	Inch Curb Stop		Brass
One	Gate Valve		Inch Stop and Waste
One	Sidewalk Box		Elbows, Lead Lined
	Couplings		Tees, Lead Lined
	Elbows		<i>1" x 3/4" Red. Coupling, Lead Lined</i>
	Hours Labor		Coupling, Lead Lined
	Hours Labor		Hours Labor
			Man
			Hours Labor
			Foreman
			Trucking
			10% Overhead
Total			Total



# Lead Service Line Scratch Test

If it looks like a nickel, it's lead



If it looks like a penny, it's copper



Information at [www.mwra.com](http://www.mwra.com)



# BWSC On-Line Lead Service Inventory

**Boston Water and Sewer Commission**  
980 Harrison Ave., Boston, MA 02119  
Martin J. Walsh, Mayor   Henry F. Vitale, Executive Director

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Public Outreach > Lead Resources > Lead Service Map

## Lead Service Map

**Customer Service**

- Change of Ownership
- Your Account
- Lead Certificate
- FAQs

**Forms and Permits**

- General Service Application
- Hydrant Meter
- Dewatering
- New Construction

**Programs**

- Sewer Lateral Leak Up To Owner
- Lead Service Replacement
- Currents Newsletter

**Hours of Operation**  
**Location & Directions**  
**Proposals and Bids**  
**Departments**  
**Report a Problem**  
**Water Quality Report**

Prior to 1950, lead was commonly used in the manufacture and installation of water service pipes and some private water health service lines are made of lead. If too much lead enters your body, it can pose significant health risks, especially to children. For more information, refer to our [Sources of Lead](#) page.

The following map indicates, in **yellow**, properties within the City of Boston that have private lead service pipes. If your property has a lead service pipe, consider the following:

- Owners of properties with lead service pipes can call the BWSC Lead Hotline at (617) 989-7888.
- One, two and three family homes may be eligible for BWSC's **Lead Replacement Incentive Program**.
- Tenants, whose building has a lead water service should contact their landlord or building manager.

**Instructions**

1. Begin entering an address in the search box, then select an address from the dropdown. Properties with lead service are highlighted in **yellow** and listed below the map.
2. Use the plus and minus buttons in the upper left corner to zoom in and out.
3. If you cannot find your street on the map, call the Lead Hotline at (617) 989-7888 for assistance.

**Note:**

- To view a list of the buildings in the current map extent with lead service, click the up-arrow button at the bottom center of the map.
- To export the data in the Lead Buildings table to a CSV excel file, click the 'Options' button to open a drop down list. Click 'Select Records in All Pages' to select all records, or choose your own selection. Next, click the 'Options' button again to open the drop down list, and click 'Export to CSV' at the bottom of the list. Click OK to generate the CSV file.

For more information on the health risks of lead, see our [Lead in Drinking Water brochure](#).

**CUSTOMER LOGIN**

Account Number:   
Access Number:   
**Login**  
[Need help logging in?](#)

**PUBLIC NOTICES**

- Beacon Hill Sewer Project
- BIS Information & Customer Rights
- BWSC RECEIVES PRESTIGIOUS AWARD
- Request FREE Grease Can Lid
- Sewer Lateral Bonded Contractor List
- Bonded Contractors - Full List

**DID YOU KNOW?**

Weeding your garden by hand can reduce the need for lawn chemicals that can run-off into storm drains, causing the pollution of local waterways.

**RELATED LINKS**

- Steps to Reduce Exposure
- Lead Pipe Replacement Program
- Lead Testing Centers
- Other Lead Sources

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For more information on the health risks of lead, see our [Lead in Drinking Water brochure](#).

**DISCLAIMER:** The maps provided by the Boston Water and Sewer Commission (BWSC) are based on property surveys conducted during the installation of the Automated Meter Reading system, as well as information directly provided by customers and acquired during physical inspections. BWSC does not guarantee the accuracy of these records and maps, which shall be used for the sole purpose of providing property owners and residents with information regarding their private water services, and not for any commercial, legal or other use. These records will be updated on a monthly basis, or at such alternate times as BWSC designates. BWSC reserves the right to alter, amend or terminate at any time the display of these maps and records.



# Lead Service Line Notification Letters

- Each homeowner with a lead service line should be notified
- Notified periodically or before service replacements on the street
  - Draft Letter Templates Being Developed by MWRA
  - Send with Lead Brochure or Annual Water Quality Report
- Key Points
  - You have a lead service line
  - Risk of elevated lead levels/Health Risks
  - Process for confirming if lead or not
  - Urge **FULL** replacement
  - *Details of local program for replacement – any contracting or financial assistance*





# **Lead Service Line Replacement Programs**

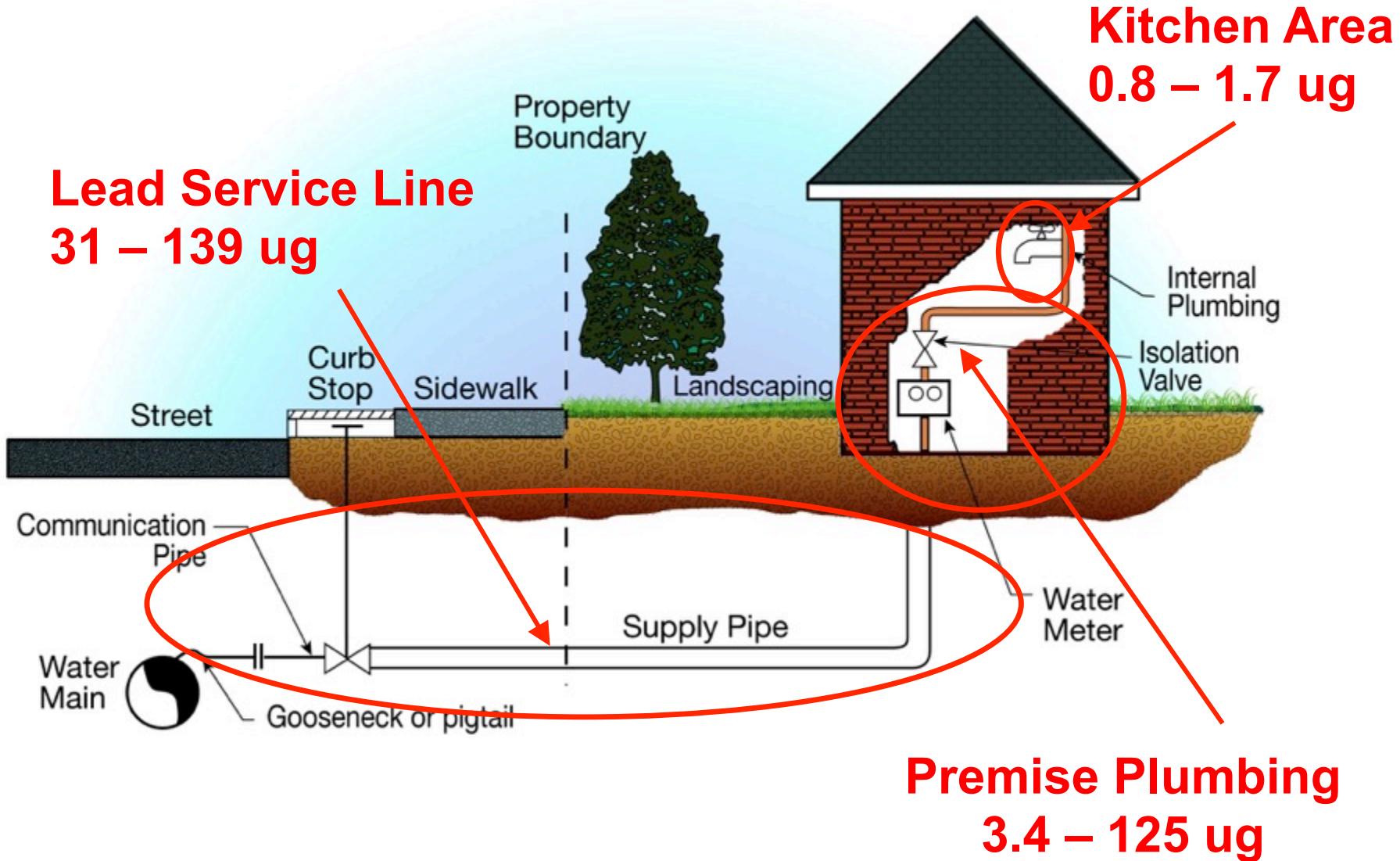


# Lead Service Line Replacement Programs

- How to Efficiently and Effectively Replace a Lead Line
- How to Work with Your Customers
- Why Partial Replacements Should Be Avoided
- Incentives to Encourage Replacement of the Private Portion
- Risk Reduction After Any Replacement



# Where Does The Lead Come From?





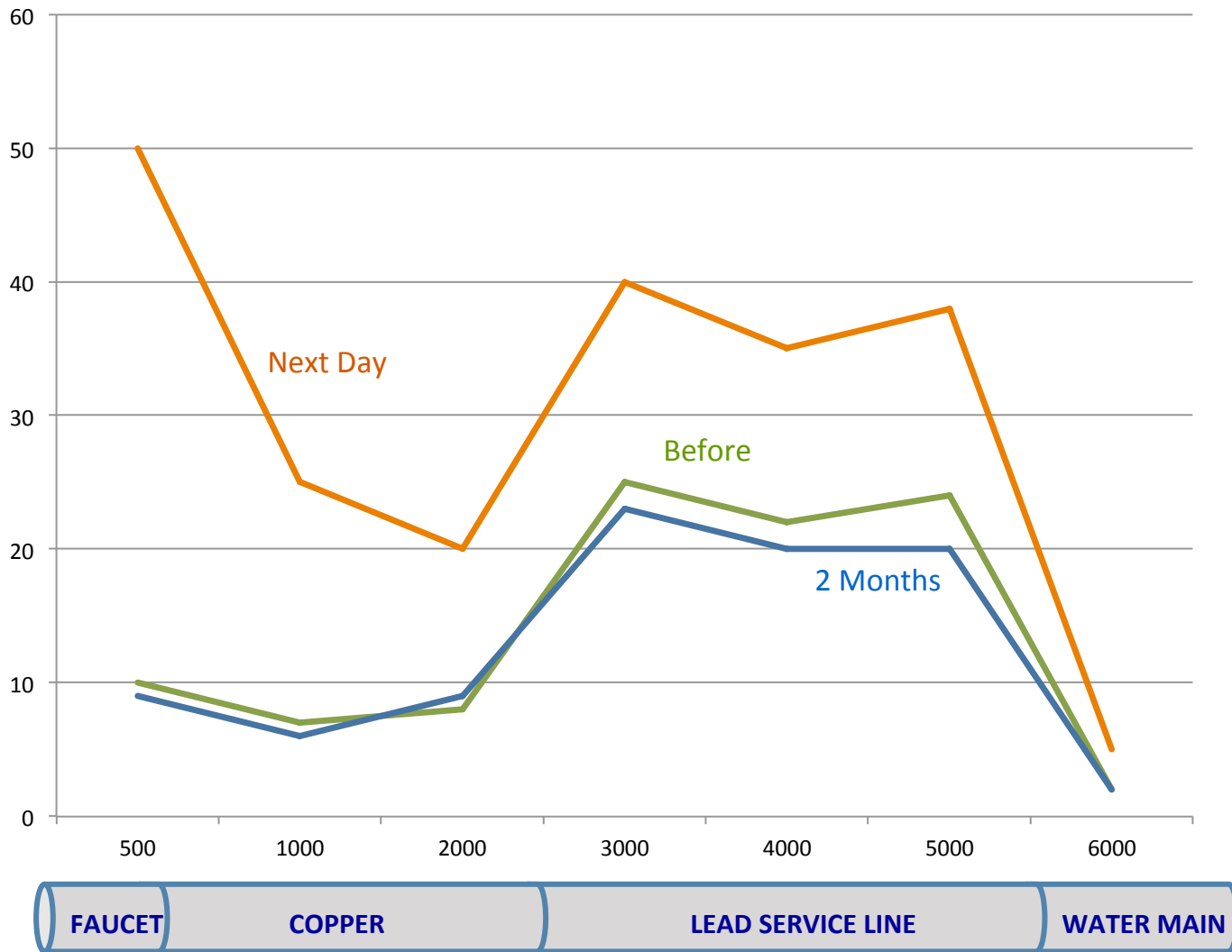
# Lead Service Line Replacement





# Partial Lead Service Replacement Provides No Benefit

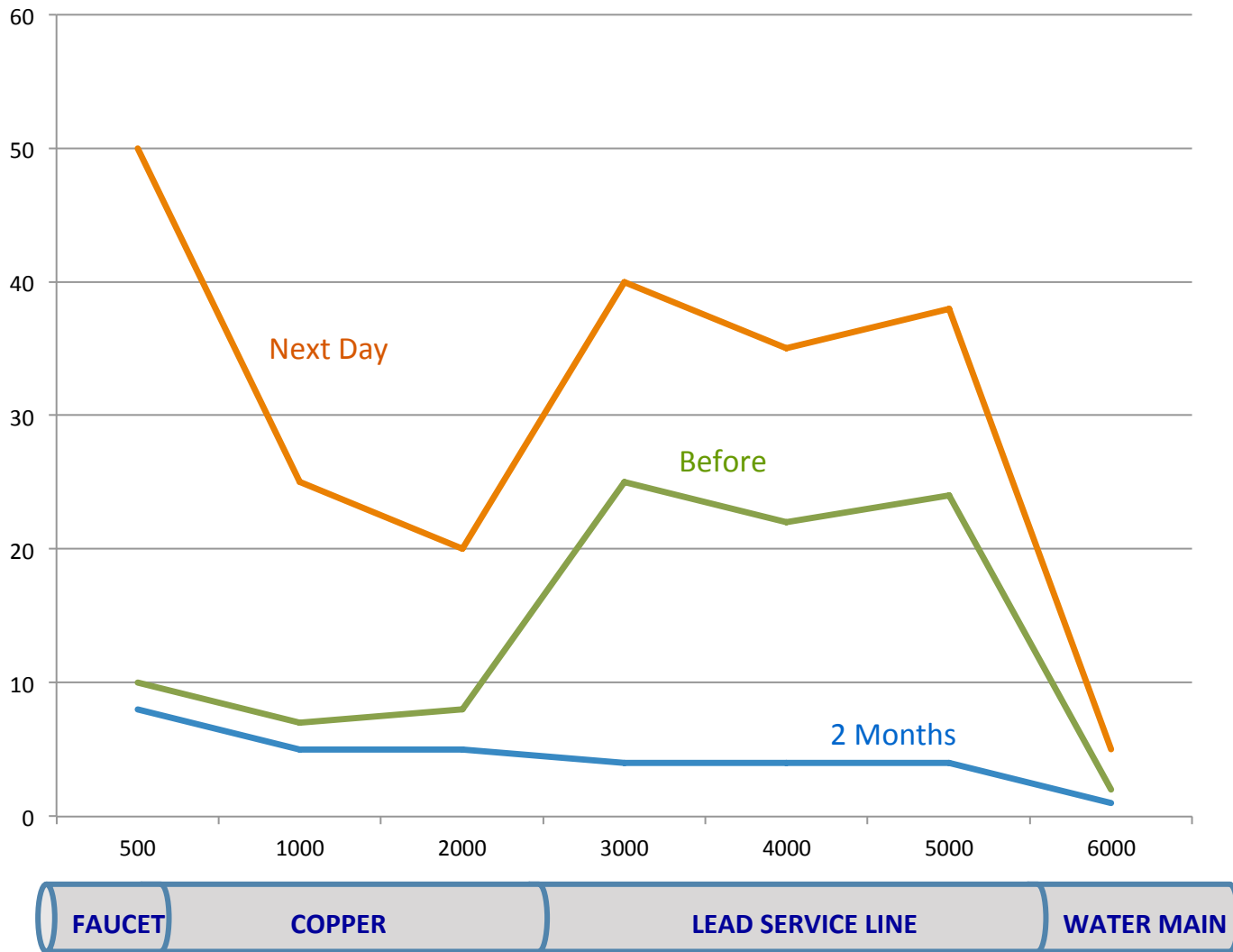
- Levels rise for days to weeks; level off similar to before





# Full Lead Service Replacement Yields Public Benefit

- Levels rise for days; long-term reduction in lead exposure





# BWSC Lead Incentive Program

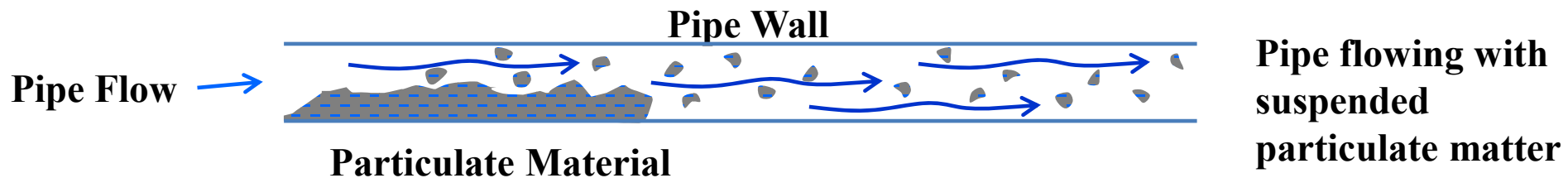
- BWSC Contractor does the replacement
- BWSC pays first \$1000
- Remainder paid on water bill over 24 months, interest free





# Flushing After Lead Service Replacement

- Lead levels can rise after full or partial replacement
- Customers must receive risk mitigation information
- Aggressive flushing, filters, or bottled water
- MWRA developing new information templates for community use







# News Coverage On Lead In Schools

## In light of lead, Newark mayor calls for N.J. water infrastructure overhaul

N.Y. / REGION

### Elevated Lead Levels Found in Newark Schools' Drinking Water

By THE ASSOCIATED PRESS - MARCH 9, 2016

NEWARK — Elevated levels of lead caused officials in New Jersey's largest school district on Wednesday to shut off water fountains at 30 school buildings until more tests could be conducted, officials said.

The district, Newark Public Schools, told the State Department of Environmental Protection on Monday that annual testing found concentrations ranging from undetected to above the department's action level for lead, which is 15 parts per billion. That level requires additional testing, monitoring and remediation.

The department, which requested test results from previous years to perform a complete analysis, said in a statement that no building had more than four samples above the action level.

The department also said lead had not been found in the city's water supply. "In the vast majority of cases where lead is found in drinking water, it enters through the water delivery system itself when it leaches from either lead



### Lead Fear Forces Water Ban in 30 New Jersey School Buildings

By THE ASSOCIATED PRESS - NEWARK, N.J. — Mar 9, 2016, 5:32 PM ET

356 SHARES

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Elevated levels of lead caused officials in New Jersey's largest school district on Wednesday to shut off water fountains at 30 school buildings until more tests are conducted, but officials said they don't believe the contamination poses any serious health risks.

Newark Public Schools notified the [state Department](#) of Environmental Protection on Monday that annual testing found levels ranging from non-detected to above the Environmental Protection Agency's action level for lead, which is 15 parts per billion. That level requires additional testing, monitoring and remediation.

The DEP has requested test results from previous years to be able to do a complete analysis. No building had more than four samples above the action level, the DEP said in a statement.

The DEP confirmed lead has not been found in the city's water supply. "In the vast majority of cases where lead is found in drinking water, it enters through the water delivery system itself when it leaches from either lead pipes, household fixtures containing lead or lead solder," the DEP said.

Notices were posted and bottled water and water coolers were delivered to the school buildings in Newark.



# Lead In Schools

- Be proactive
- Coordinate and communicate
- Parent and teacher outreach



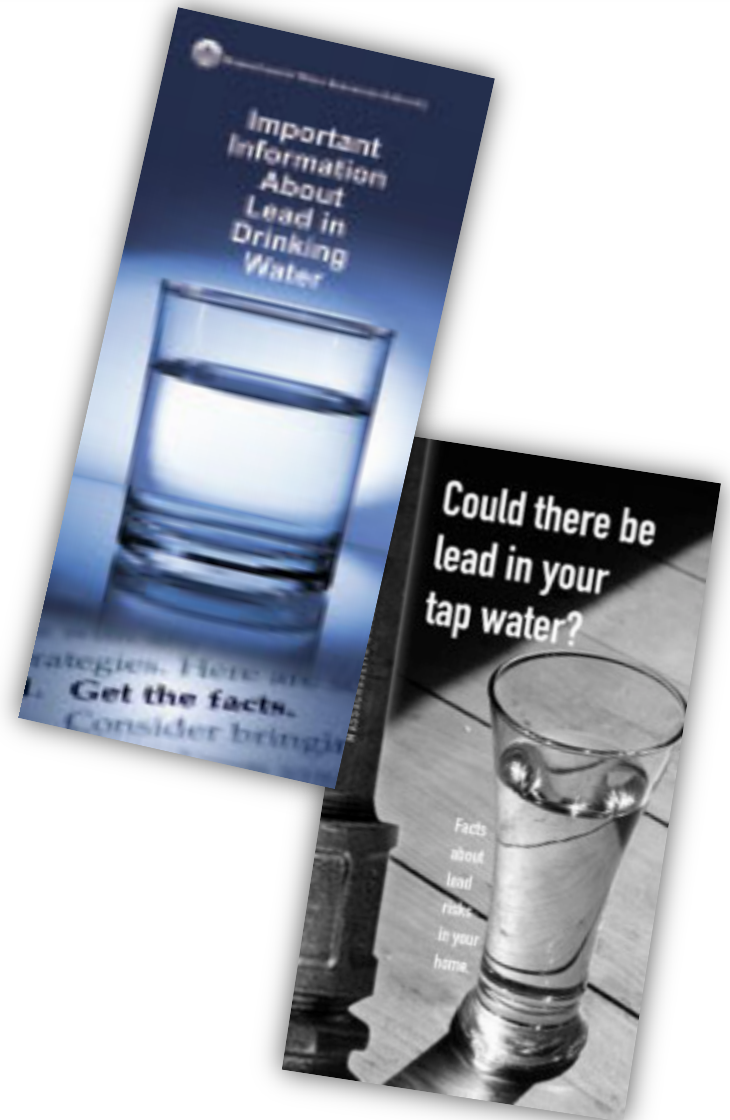


## **Developing A Long-Term Program To Get The Lead Out**



# New MWRA Resources For Communities

- New Lead Information Brochure
- Lead Line Notification Letters
- Template for post-replacement flushing
- CCR with lead focus
- On-going Technical Assistance
- Access to Water Research Foundation Reports
- Outreach and sharing of Best Practices
- MWRA zero-interest loans for community lead service line replacement programs





# Community To Do Check List

- Evaluate and improve inventory of lead service lines
  - Summer intern
  - Other opportunities: meter projects, etc
- Make inventory publicly available
  - On-line maps or list
- Notify all residents who have lead service lines
- Offer assistance for replacement
  - Logistical
  - Financial
- Improve education and outreach
  - Link to MWRA webpage – [www.mwra.com](http://www.mwra.com)
  - Send out new brochure
  - Collaborate with schools





# Annual Water Quality Report

- This year's report will be more focused on lead



## Facts About Lead

### WHAT CAN I DO TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER?

- Run the tap until after the water feels cold. To save water, fill a pitcher with fresh water and place in the refrigerator for future use.
- Never use hot water from the faucet for drinking or cooking, especially when making baby formula or other food for infants.
- Ask your local water department if there are lead service lines leading to your home.
- Check your plumbing fixtures to see if they are lead-free. Read the labels closely.
- Test your tap water. Call the MWRA Drinking Water Hotline (617-242-6333) or visit our website for more tips and a list of DEP-certified labs that can test your water.



- Be careful of places you may find lead in or near your home. Paint, soil, dust and some pottery may contain lead.
- Call the Department of Public Health at 1-800-632-8631 or EPA at 1-800-424-LEAD for information.

### FACTS ABOUT SODIUM

Sodium in water contributes only a small fraction of a person's overall sodium intake (less than 10%). MWRA tests for sodium monthly and the highest level found was 34.7 mg/L, about 9 mg per 8 oz. glass. This would be considered VERY LOW RISK by the Food and Drug Administration.

### What You Need to Know About Lead in Tap Water

MWRA water is lead-free when it leaves the reservoirs, MWRA and local pipes that carry the water to your community are made mostly of iron and steel and do not add lead to the water. However, lead can get into tap water through pipes in your home, your lead service line, lead solder used in plumbing, and some brass fixtures. Corrosion or wearing away of lead-based materials can add lead to tap water, especially if water sits for a long time in the pipes before it is used.

In 1996, MWRA began adding sodium carbonate and carbon dioxide to adjust the water's pH and buffering capacity. This change has made the water less corrosive, thereby reducing the leaching of lead into drinking water. Lead levels found in sample tests of tap water have dropped by almost 90 percent since this treatment change.



### MWRA Meets Lead Standard in 2012

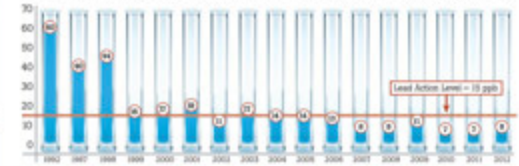
Under EPA rules, each year MWRA and your local water department must test tap water in a sample of homes that are likely to have high lead levels. The EPA rule requires that 9 out of 10, or 90%, of the sampled homes must have lead levels below the Action Level of 15 parts per billion (ppb).

Test results have met the EPA standard for 9 years straight. Results for the 450 samples taken in September 2012 are shown in the table. 9 out of 10 houses were below 7.7 ppb, which is below the Action Level of 15 ppb. Only two communities had more than one home test above the Action Level for lead. If you live in either of these communities, your town letter on page 4 will provide you with more information.

SEPTEMBER 2012 LEAD AND COPPER RESULTS					
	Range	90% Value	(Target) Action Level	(Goal) MCLG	% Homes Above AL / # Homes Tested
Lead (ppb)	0.06-65.9	7.7	15	0	13/450
Copper (ppm)	0.007-0.6	0.1	1.3	0	0/100

KEY: AL=Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Definition of MCLG available on page 2.

### 90TH PERCENTILE LEAD LEVELS FOR MWRA COMMUNITIES 1992-2012 (PPB)



### Important Information From EPA About Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. MWRA is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



“The situation has to change. We need a national conversation to make sure this never happens again.”

“States need to step up and invest to make sure all of their citizens have access to clean drinking water.”

– Gina McCarthy, EPA

“For those of us in the water profession, Flint reminds us that our first and most important job is to protect the families we serve.”

“But the Flint crisis lays bare a simple fact: As long as there are lead pipes in the ground or lead plumbing in homes, some risk remains.”

– David LaFrance, AWWA



## New Zero-Interest Loan Program

- \$100 million added to the existing water loan program
- For full lead service line replacements
- Guidelines being drafted with Advisory Board
- Available as soon as possible