



**DISTRICT OF COLUMBIA  
WATER AND SEWER AUTHORITY**

**BOARD OF DIRECTORS**

***WATER QUALITY AND WATER SERVICES  
COMMITTEE MEETING AGENDA***

**Thursday, May 19, 2016  
11:00 a.m.**

**5000 Overlook Avenue, SW  
Washington, DC 20032**

**11:00 a.m. I. Call to Order**

Rachna Butani-Bhatt  
Chairperson

**11:05 a.m. II. Water Quality Monitoring**

Charles Kiely

Coliform Testing  
LCR Compliance Testing

**11:15 a.m. III. Fire Hydrant Upgrade Program**

David Wall

Status Report of Public Fire Hydrants  
Out of Service Fire Hydrant Map

**11:30 a.m. IV. Automated Meter Reading Update**

Lauren Preston

**11:45 a.m. V. Lead Service Line Inventory Update**

Maureen Schmelling

**12:00 p.m. VI. Non- Joint Use**

1. IFB No. 150080 –Anchor Construction Corp.

Charles Kiely

**12:15 p.m. VII. Executive Session\***

**Adjournment**

\*The DC Water Board of Directors may go into executive session at this meeting pursuant to the District of Columbia Open Meetings Act of 2010, if such action is approved by a majority vote of the Board members who constitute a quorum to discuss: matters prohibited from public disclosure pursuant to a court order or law under D.C. Official Code § 2-575(b)(1); contract negotiations under D.C. Official Code § 2-575(b)(1); legal, confidential or privileged matters under D.C. Official Code § 2-575(b)(4); collective bargaining negotiations under D.C. Official Code § 2-575(b)(5); facility security under D.C. Official Code § 2-575(b)(8); disciplinary matters under D.C. Official Code § 2-575(b)(9); personnel matters under D.C. Official Code § 2-575(b)(10); proprietary matters under D.C. Official Code § 2-575(b)(11); decision in an adjudication action under D.C. Official Code § 2-575(b)(13); civil or criminal matters where disclosure to the public may harm the investigation under D.C. Official Code § 2-575(b)(14), and other matters provided in the Act.

**Status Report of Public Fire Hydrants for DC Water Services Committee - May 4, 2016**

	February Cmte. Report (Feb 04, 2016)	March Cmte. Report (Mar 04, 2016)	April Cmte. Report (Apr 04, 2016)	May Cmte. Report (May 04, 2016)
Public Fire Hydrants:	9,457	9,487	9,488	9,483
In Service:	9,403	9,413	9,420	9,432
Marked Out-of-Service (OOS)	54	68	68	51
OOS - defective requiring repair/replacement	35	49	36	32
<b>% OOS requiring repair or replacement (DC Water goal is 1% or less OOS)</b>	<b>0.37%</b>	<b>0.52%</b>	<b>0.38%</b>	<b>0.34%</b>
OOS - due to inaccessibility or temp construction work	19	19	23	19

Note: The number of public hydrants in the DC Water system fluctuates; this number fluctuates as hydrants are added and removed during development or construction activities as well as at the request of the Fire Dept.

**Breakdown of Public Fire Hydrants Out-of-Service (OOS) as of May 4, 2016 51**

**Breakdown of Defective**

	0-7 Days	8-14 Days	15-30 Days	31-60 Days	61-90 Days	91-120 Days	> 120 Days	Total
Hydrant Needs Repair/Investigation	3	3	1	0	0	0	4	11
Needs Valve Investigation for Low Flow/Pressure or Shut Test for Replacement	0	1	0	0	1	1	2	5
Needs Replacement	0	0	0	0	2	1	13	16

**Defective**

**32**

**Breakdown of Others**

	0-7 Days	8-14 Days	15-30 Days	31-60 Days	61-90 Days	91-120 Days	> 120 Days	Total
Temporarily OOS as part of operations such as a main repair	0	0	1	1	0	0	3	5
Construction* - OOS	0	0	0	1	1	0	7	9
Obstructed Hydrant – OOS hydrant due to operation impeded by an obstruction.	0	0	0	0	0	0	5	5

**Others**

**19**

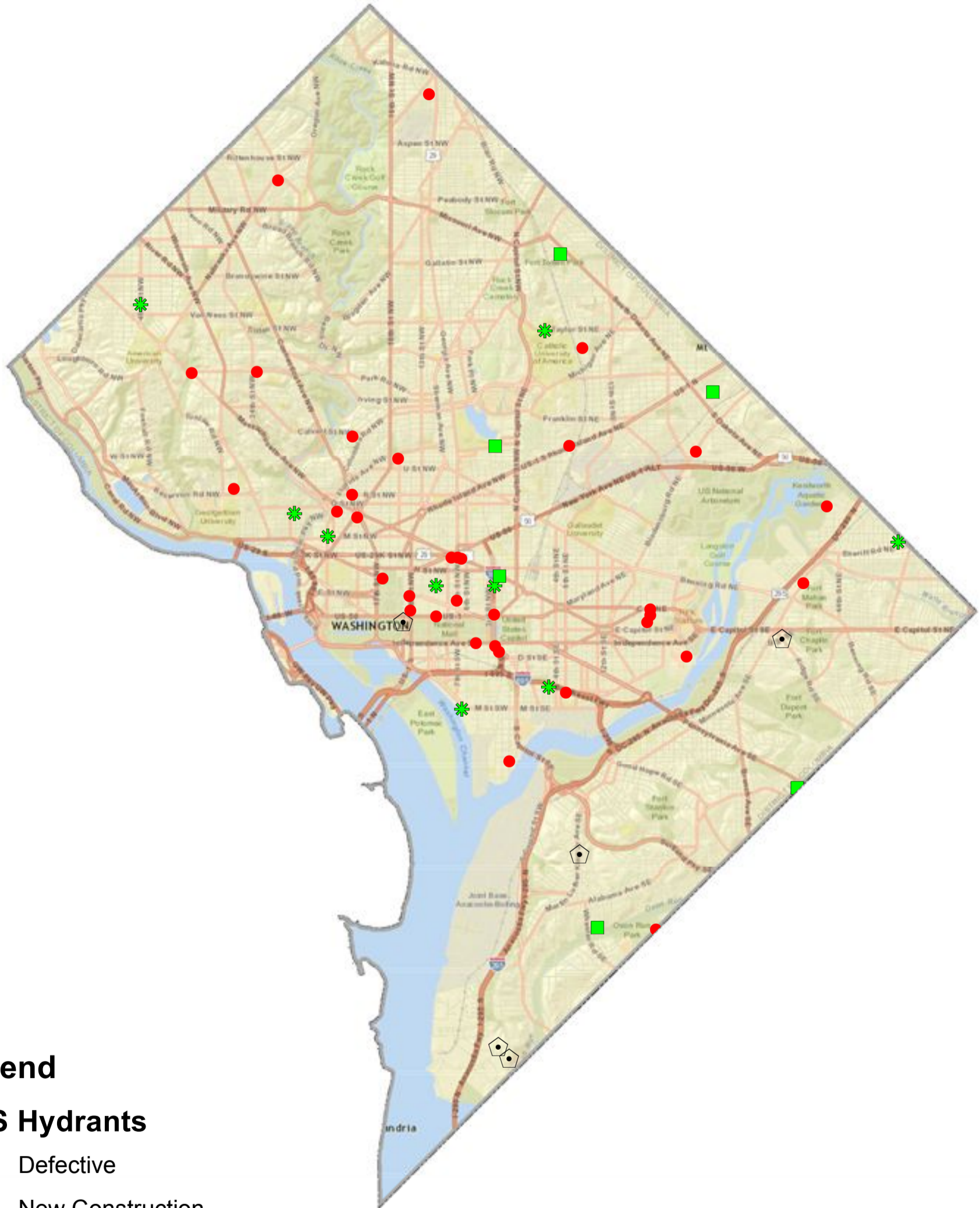
\*Fire hydrants not accessible due to construction activities. Also includes new hydrants which have not yet been commissioned or old hydrants which will be abandoned as part of ongoing construction projects.

**Status of Private Fire Hydrants-Based on FEMS Inspection Reporting**

Private Hydrants:	1,318
• In Service:	1,188
• Out-of-Service (OOS):	130

# Map of Public Out-of-Service Hydrants

May 4, 2016



## Legend

### OOS Hydrants

- Defective
- \* New Construction
- ⬠ Obstructed
- Temporary



# **ADVANCED METERING INFRASTRUCTURE (AMI)**

**WATER QUALITY AND WATER SERVICES COMMITTEE  
MAY 19, 2016**



# Automated Meter Reading Project

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- Back in late 2001, when the Automated Meter Reading (AMR) project was considered, Advance Metering Infrastructure (AMI) & Smart Metering were mere concepts in the utility industry – AMR was the show!
- DC Water was early pioneer in fixed network automated meter reading starting in March 2002
- The initial AMR project focused on
  - Realigning Business Processes
  - Organization redesign
  - Meter Replacement
  - Infrastructure Improvements



# Benefits Realized

<b>Pump/Sold Delta (Infra-Leaks)</b>	<b>36%</b>	<b>22%</b>	↓
<b>Retail Revenue</b>		<b>7%</b>	↑
<b>90-Days Receivable</b>	<b>\$26.1M</b>	<b>\$5.0 M</b>	↓
<b>Estimated Billing</b>	<b>25%</b>	<b>2%</b>	↓
<b>Meter Reading Cost</b>	<b>\$4.15</b>	<b>Cents</b>	↓
<b>Customer Call (Billing Related)</b>		<b>36%</b>	↓
<b>Bill Investigation Cost</b>		<b>50%</b>	↓
<b>Field Work Orders</b>		<b>36%</b>	↓
<b>Fuel</b>		<b>28,000 GY</b>	↓





# Early Technology Advancements

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Some examples of our technology development

- Call Center Tool
- Pre Audit Billing Analysis
- Green Button aka Web Display
- High Use Notification Alert
- Pump sold analysis
- Meter degradation analysis





# Challenges

- Current:
  - 75,991 ABB meters remain in service from 2002 and 2003 and are at the end of their useful life (sizes 5/8", 3/4" , 1", 1.5" and 2").
  - An additional 10,000 meters from different meter manufacturers are nearing the end of their useful life
  - 85,000 meter transmitting units (mtus have exceeded their useful life.
    - Approximately 23,000 have failed and are being read manually or estimated
    - Approximately 49,000 are at or near the empty threshold for battery life



## Operational Performance Upgraded System

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### **Expected**

- New technology provides two way communication to and from device
- New Technology allows us to increase data points from the field from twice daily to 15-minute interval data if desired
- Increased data points sets the foundation for improved technology advancements in consumption analysis, leak detection, and bill accuracy



## Next Steps

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- Complete determination of contracted versus internal resources for replacement project. Target June 2016.
- Enter into contract for the purchase of approximately 85,000 small diameter meters, 5/8” through 2” - target July 2016
- Perform the evaluation for two-way communication devices from central office to the meter, approximately 90 days – target August 2016
- Enter into contract for purchase of approximately 85,000 mtus – target September 2016

# Service Line Inventory and Maintenance



Water Quality and Water  
Services Committee

May 19, 2016

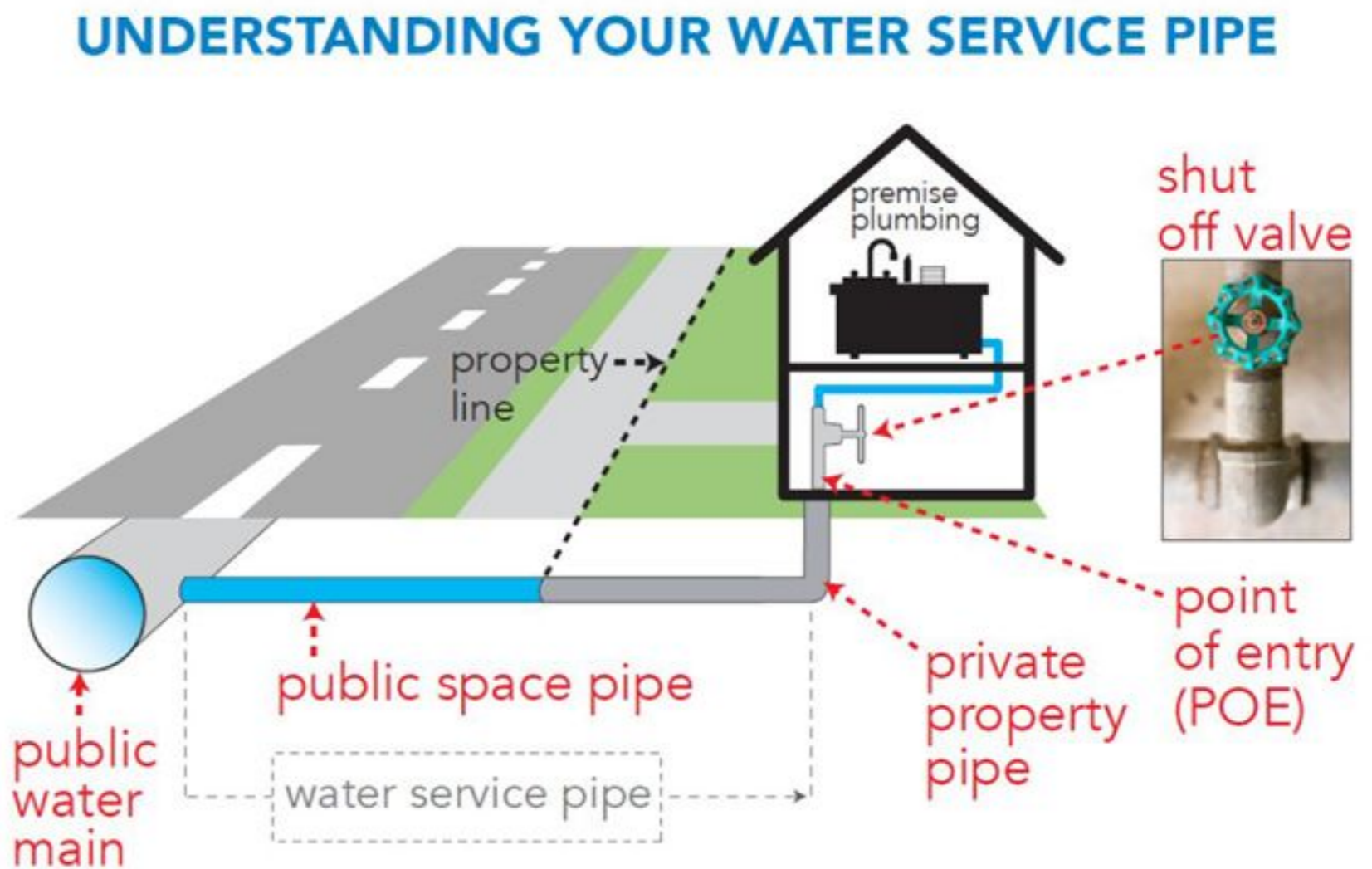
# Service Line Inventory

	Public Portion	Private Portion
Lead	12,302	7,940
<b>Unknown</b>	<b>16,276</b>	<b>87,548</b>
Galvanized Iron	79	574
Brass	9,925	556
Copper	81,949	13,229
Non-Lead	5,316	16,058
Other	83	25
Total	125,930	



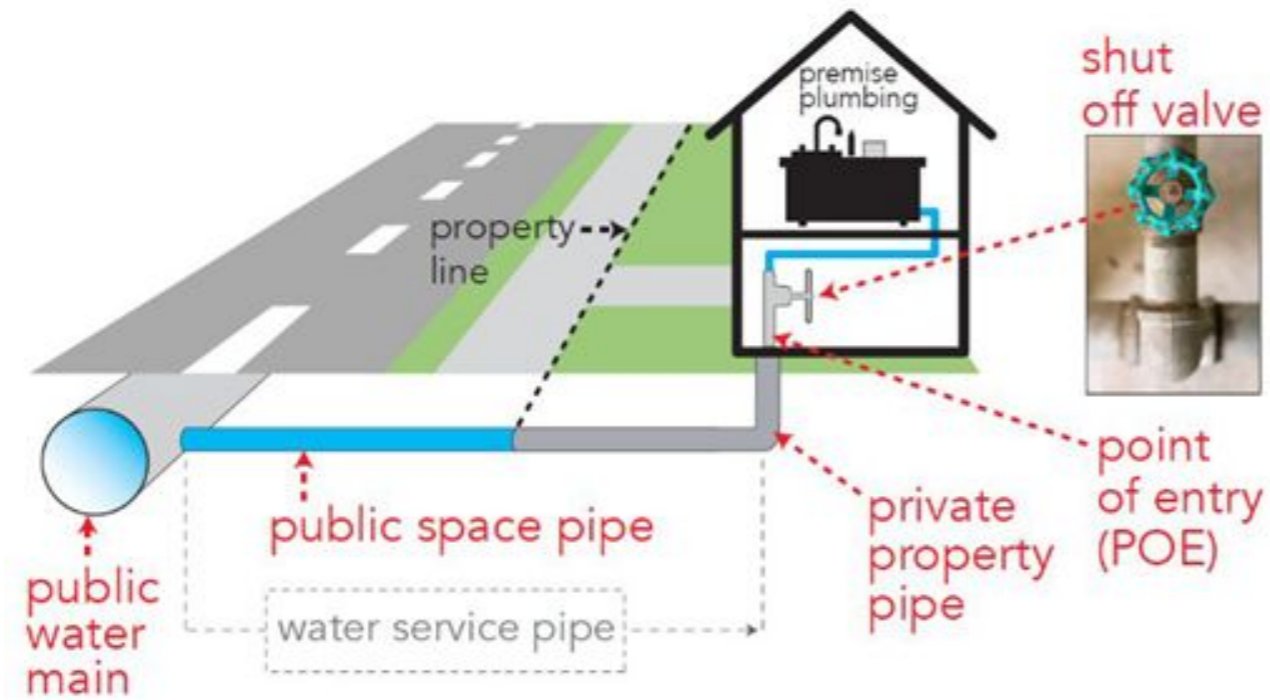
# Service Sections on District Map

- ▶ DC Water website will have interactive map
- ▶ Displays public and private pipe material data held by DC Water
- ▶ [go to website]



# Collecting More Data to Complete the Puzzle

## UNDERSTANDING YOUR WATER SERVICE PIPE

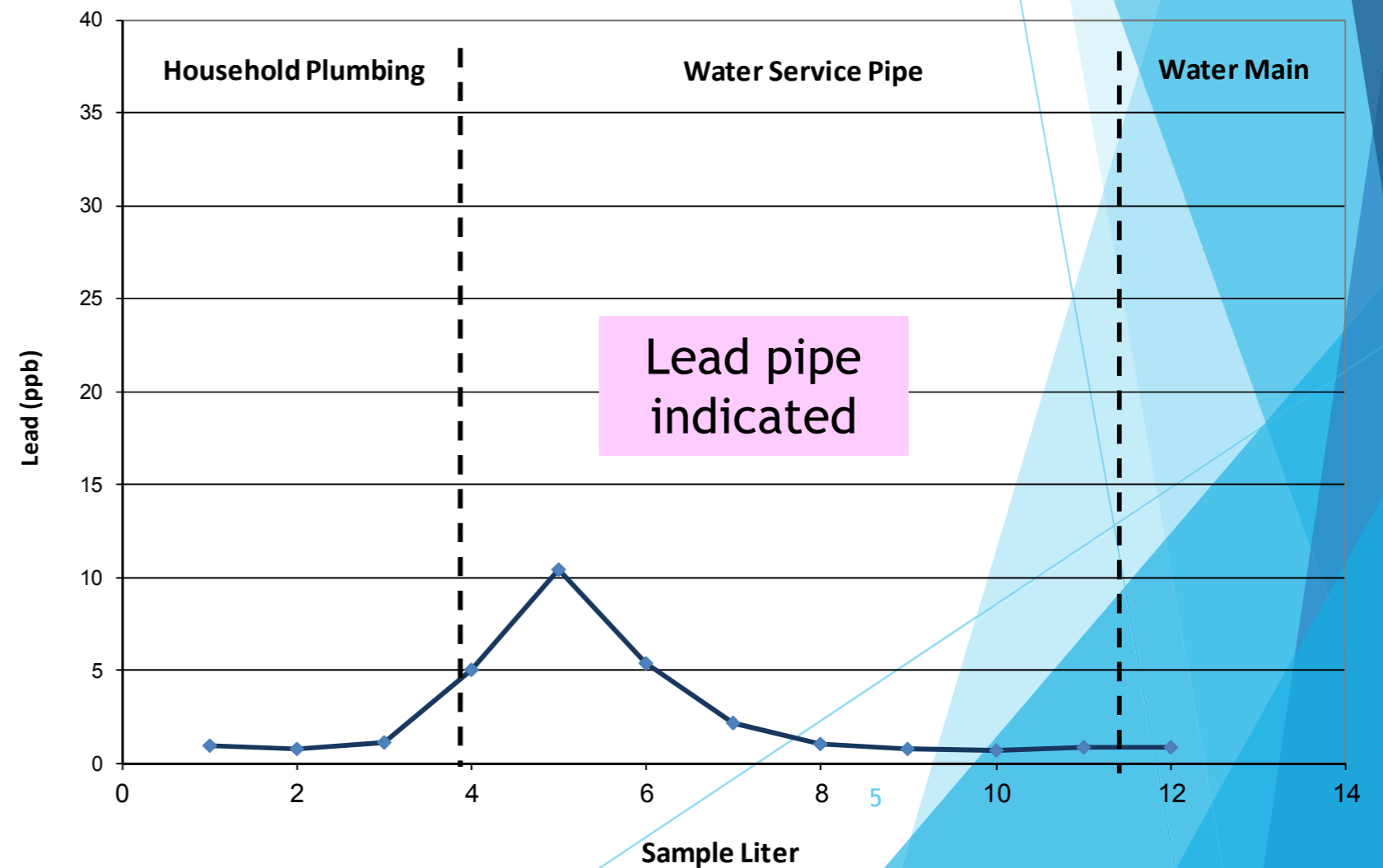




# Water Sampling “Profiling” to Identify Lead Services



- ▶ Customer collects ten 1-liter bottles consecutively
- ▶ Graph of lead levels can indicate if service line has lead



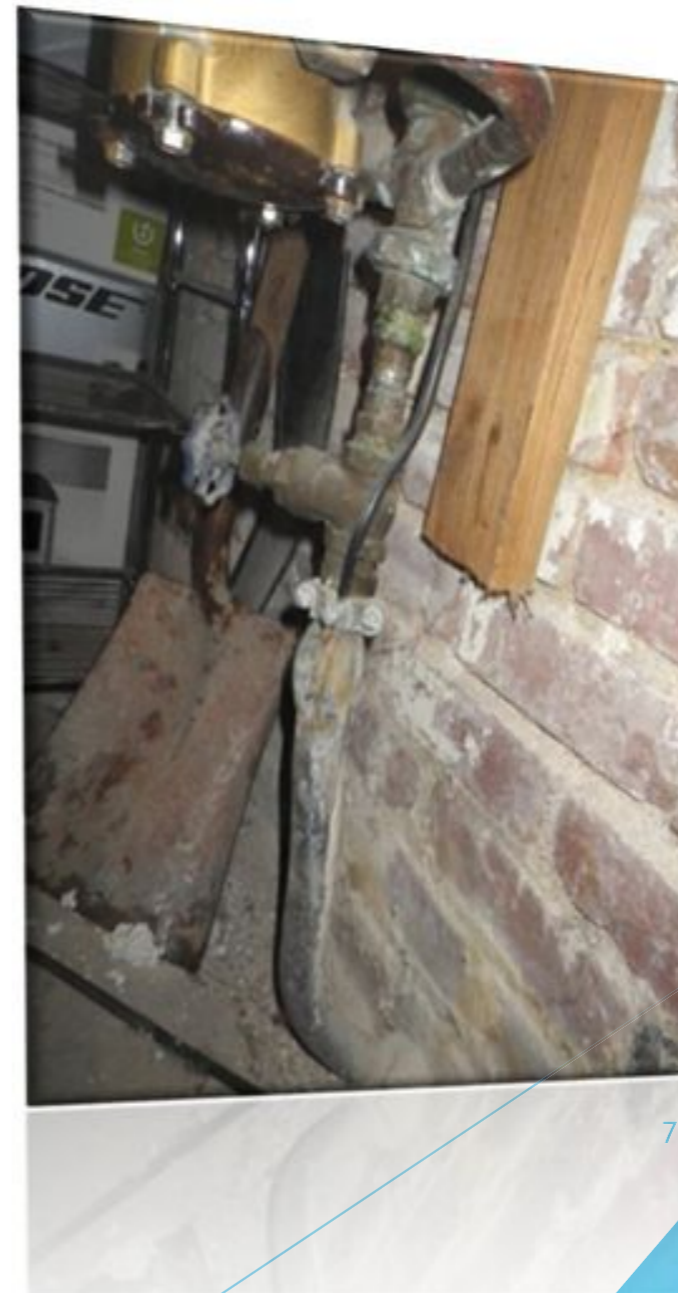
# Cost of Profiling Project

	Cost per home	Cost for 10,000 homes
Lab analyses and sample bottle	\$ 65.00	\$ 650,000
Packaging materials	\$ 0.50	\$ 5,000
Distribution		
*Drop kit by block (estimate 25%)	\$ 4.13	\$ 10,313
Mail kit (estimate 75%)	\$ 10.00	\$ 75,000
*Pickup	\$ 11.00	\$ 110,000
*Data analysis and reporting	\$ 12.00	\$ 120,000
<b>Total</b>	<b>\$ 97.03</b>	<b>\$ 970,313</b>

\*DC Water labor

# Point-Of-Entry Pictures

- ▶ Ask customer to take picture of pipe entering the home
- ▶ Indicates pipe material of private portion
- ▶ DC Water collects data to improve overall inventory



# Customer Requested Lead Service Replacement Costs

	FY 2014	FY 2015	FY 2016 (To Date)
October		69,451	93,402
November	21,182	66,383	113,841
December	37,257	76,533	155,516
January	68,005	92,700	82,652
February	49,247	56,014	72,993
March	67,820	92,902	86,893
April	87,805	65,564	71,786
Current Spending Level	331,315	450,096	583,679
Projected Spending Level			1,400,000
Number of Full LSRs	151	162	115
Number of Partial LSRs	22	6	1
Total Number of Public Side LSRs	173	168	116

# DC Schools Lead in Water

- ▶ DGS collected water samples from drinking fountains since 2007
- ▶ A small number of samples will show lead in the water
- ▶ Lead sources are likely lead solder (any copper pipes installed before 1987)
  - ▶ Small particles containing lead can get caught in tubing, reservoirs, or fixtures
  - ▶ The lead sources are small and release is infrequent, causing sporadic lead detects
- ▶ DC Water supports the effort by:
  - ▶ providing technical assistance as requested
  - ▶ working with DGS to confirm service line inventory

**DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY  
BOARD OF DIRECTORS CONTRACTOR FACT SHEET**

**ACTION REQUESTED**

**CONSTRUCTION CONTRACT:**

**Small Diameter Water Main Replacement Bloomingdale  
(Non-Joint Use)**

Approval to execute a construction contract for \$ 3,989,109.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b>	<b>SUBS:</b>	<b>PARTICIPATION:</b>
Anchor Construction Corp. 2254 25 <sup>th</sup> Place, N.E. Washington, DC 20018	Acorn Supply & Distributing, Inc White Marsh, MD (WBE)	6%
	Omni Excavators, Inc Washington, DC (MBE)	22%
	Fort Myers Construction, Washington, DC (MBE)	10%

**DESCRIPTION AND PURPOSE**

Contract Value, Not-To-Exceed:	\$ 3,989,109.00
Contract Time:	200 Day (0 Year, 6 Months)
Anticipated Contract Start Date:	06-10-2016
Anticipated Contract Completion Date:	12-27-2016
Bid Opening Date:	05-04-2016
Bids Received:	4
Other Bids Received	
Capitol Paving of DC, Inc.	\$ 3,830,460.00
Sagres Construction Corp.	\$ 3,922,255.00
Fort Myer Construction Company	\$ 4,190,427.00

**Purpose of the Contract:**

Replace water mains that have experienced failures, or have a history of low water pressure or water quality complaints.

**Contract Scope:**

- Approximately 0.9 miles of water mains and associated valves and appurtenances.
- Copper water services 2 inch and smaller in public and private space.
- Curb stops /curb stop boxes, meter boxes and penetration through building walls and connection to first fitting inside the building including installation of a shut-off valves and pressure reducing valves.
- Permanent pavement and surface restoration.

**Federal Grant Status:**

- Construction Contract is eligible for Federal grant funding assistance: inclusion in grant is pending availability of grant funds.



**PROCUREMENT INFORMATION**

<b>Contract Type:</b>	Fixed Price	<b>Award Based On:</b>	Lowest responsive, responsible bidder
<b>Commodity:</b>	Construction	<b>Contract Number:</b>	150080
<b>Contractor Market:</b>	Open Market		

**BUDGET INFORMATION**

<b>Funding:</b>	Capital	<b>Department:</b>	Engineering and Technical Services
<b>Service Area:</b>	Water	<b>Department Head:</b>	Liliana Maldonado
<b>Project:</b>	O3, BW		

**ESTIMATED USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	100.00%	\$ 3,989,109.00
Federal Funds	0.00%	\$ 0.00
Washington Suburban Sanitary Commission	0.00%	\$ 0.00
Fairfax County	0.00%	\$ 0.00
Loudoun County & Potomac Interceptor	0.00%	\$ 0.00
<b>Total Estimated Dollar Amount</b>	<b>100.00%</b>	<b>\$ 3,989,109.00</b>

  
 Gail Alexander-Reeves  
 Director of Budget  
 Date: 5/12/16

  
 Dan Bae  
 Director of Procurement  
 Date: 5/12/16

  
 Leonard R. Benson  
 Chief Engineer  
 Date: 5/12/16

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 George S. Hawkins  
 General Manager  
 Date