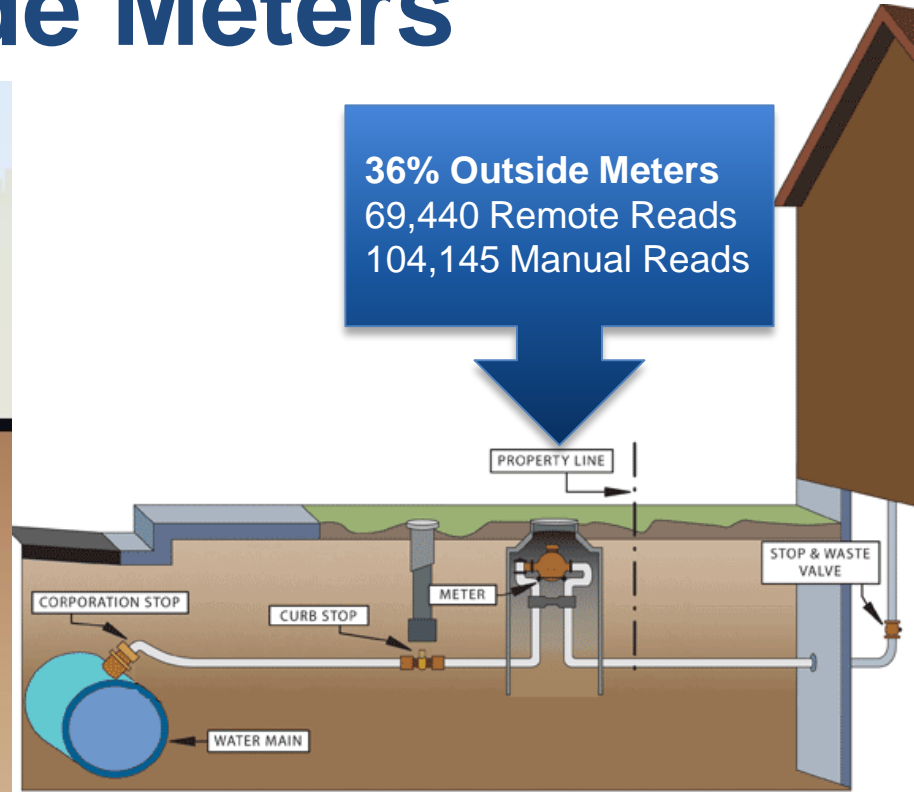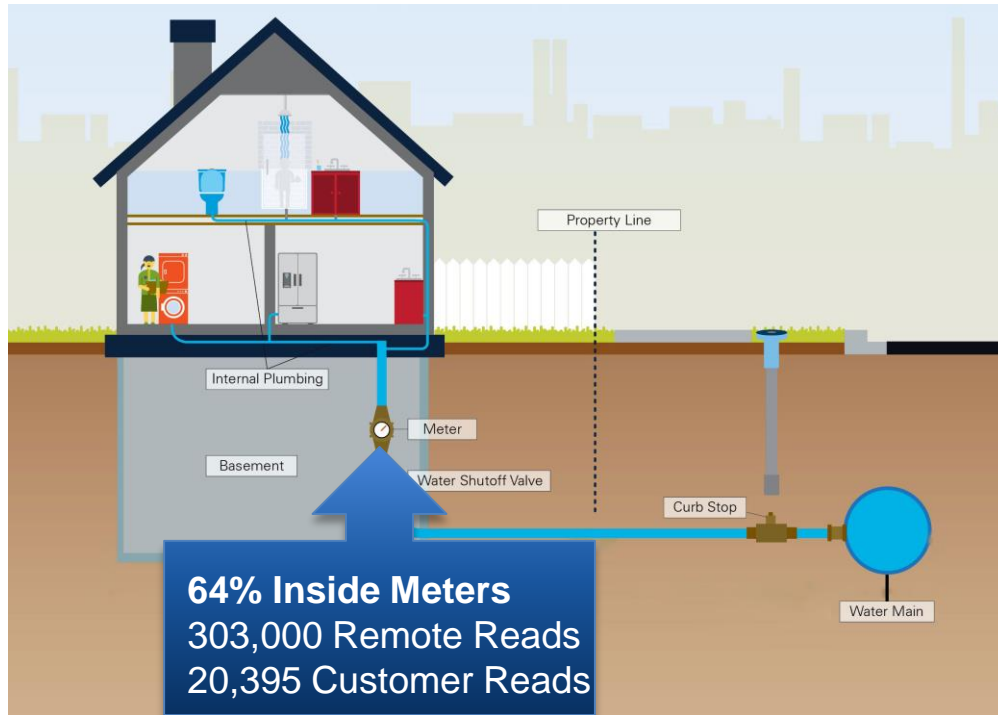# Advanced Metering Infrastructure (AMI) Implementation

Commission Meeting
July 17, 2019

Agenda

- Meter Reading- Current State

- AMI Benefits

- Opt-Out Options

Inside vs Outside Meters

36% Outside Meters
69,440 Remote Reads
104,145 Manual Reads

PROPERTY LINE

CORPORATION STOP

CURB STOP

METER

STOP & WASTE VALVE

WATER MAIN

Property Line

Internal Plumbing

Meter

Basement

Water Shutoff Valve

Curb Stop

Water Main

64% Inside Meters
303,000 Remote Reads
20,395 Customer Reads

Challenges with Meter Reading

- Increased estimated bills:

  ◦ WSSC estimated over 89,000 bills in FY19

- Estimated bills cause numerous issues:

  ◦ Adjustments and bill corrections

Estimated Bills

FY	Estimated Bills
FY17	69,732
FY18	82,664
FY19	89,747
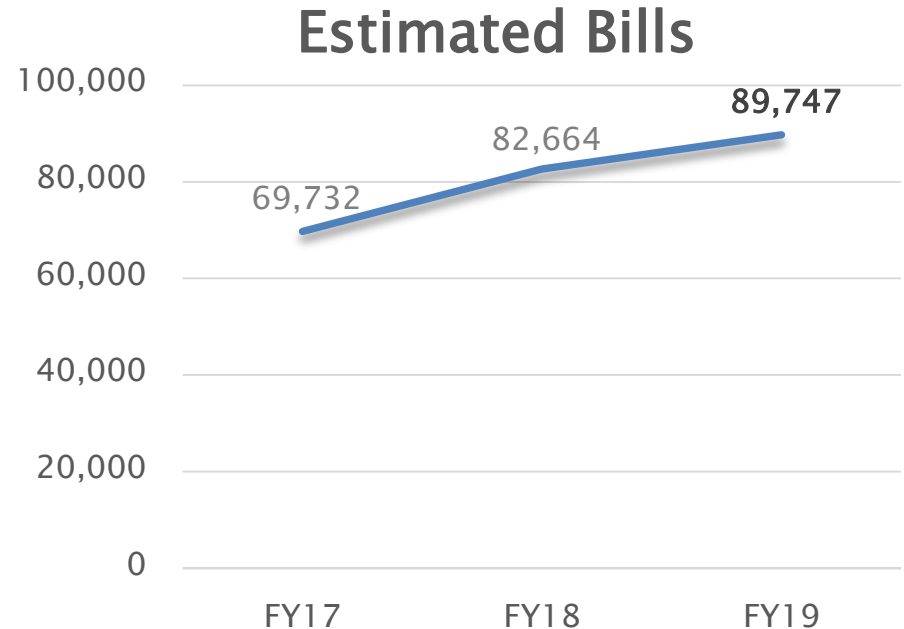
Common Reasons for Estimated Bills

▸ Customer failed to call/send reads - Inside Meters

▸ Meter reader input errors - Manual Reads

▸ Inaccessibility - Inside/Outside Meters

▸ No/Bad Remote - Inside/Outside Meters

▸ Meter slowing down - Inside/Outside Meters

AMI Benefits

Customer	WSSC

More accurate billing	Reduces estimated bills
	    Less customer dependency
	    Less meter reading errors

On-property leak detection Customer can be alerted if there is abnormal usage	Reduces meter staff field visits
Water usage information Customer receives information to better manage their water usage	Improved meter management Detection of water theft
Enables monthly billing Smaller, more frequent bills provide for easier budgeting	Distribution system leak detection Distribution system planning Water quality monitoring

Data Collection: Current vs Future

Current	Future
Address/Location	Address/Location
Quarterly reads - dial numbers	Near-Real time Reads- Dial Numbers
Meter Interface Unit (MIU) serial numbers	MIU serial numbers
Meter serial numbers	Meter Serial Numbers
	Distribution system pressure
	Water temperature
	Chlorine residuals
	Distribution System/Customer Outages
	Meter Operability Status
	Flow characteristics

AMI Opt-Outs and Alternatives

▶ Considerations for Opt-Out Program

  • An Opt-Out Program would make provisions for customer(s) to decline the installation of AMI equipment at their location, requiring manual reading of their meter.

▶ Opt-Out Alternatives

  ◦ **Opt-Out for a Fee**

    • Customers can optionally decide to not receive the AMI equipment, but are required to pay miscellaneous fees to cover utility expenses associated with the opt-out

  ◦ **Opt-Out No Fee**

    • Customers can optionally decide to not receive the AMI equipment, and the utility absorbs the additional costs associated with manual meter reads

  ◦ **No Opt-Out**

    • All customers required to accept the AMI equipment

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Opt-Out Pros and Cons

Opt-Out for a Fee	
Pros	**Cons**
• Customers have an option to participate or a fee will be assessed for incurred expenses to perform a manual read • Costs associated with the opt-out are born directly by the customers who choose to do so	• Requires the maintenance of duplicate meter reading systems, processes, and staffing • Requires the maintenance and administration of misc. fees. • Reduces successful AMI installs and erodes project benefits • Added costs for customers • Limits WSSC ability to manage the water distribution system • Reduces customer benefits

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Opt-Out Pros and Cons

Opt-Out No Fee	
Pros	Cons
• Allows an unknown percentage of customers the ability to opt-out for no fee	• Costs associated with the opt-out are born directly by all customers for those choosing to opt-out
	• Requires the maintenance of duplicate meter reading systems, processes, and staffing
	• Requires the maintenance and administration of misc. fees
	• Reduces successful AMI installs and erodes project benefits
	• Limits WSSC ability to manage the water distribution system
	• Reduces customer benefits

Opt-Out Pros and Cons

No Opt-Out	
Pros	**Cons**
• Results in most complete AMI deployment • No erosion of project benefits • Eliminates the need for duplicate meter reading systems, processes, and staffing • No additional monthly costs born by customers • Ability to maintain the entire distribution system without a break in service • Reduced estimated reads	• Small percentage of customer complaints

National Opt-Out Trends

	Location	Opt-out Offered?
Carpinteria Valley Water District (CA)	CA	Y
City of Davis (CA)	CA	Y
City of Elmhurst	IL	N
City of Fountain Valley (CA)	CA	N
City of Houston	TX	N
City of Phoenix (AZ)	AZ	N
City of Tempe (AZ)	AZ	N
Cleveland Water Department (Cleveland, OH)	OH	N
East Bay Municipal Utilities District (EBMUD)	CA	N
Greater Cincinnati Water Works	OH	N
Indian Wells Valley Water District (CA)	CA	Y

|	Location	Opt-out Offered?
Kansas City Water	MO	N
Las Virgenes Municipal Water District (CA)	CA	Y
Madison Water Utility	WI	Y
Mount Pleasant Waterworks	SC	N
Palm Beach County (FL)	FL	N
Plymouth County Water Works Association	MA	Y
San Jose (CPUC regulated)	CA	N
Toronto Water	Canada	Y
Town of Cary (NC)	NC	N
Wichita Falls (TX)	TX	N

Local Opt-Out Trends

Comparable water utilities in the region don't offer an AMI opt-out.

	Location	Utility Services Offered	Opt-out Offered?
DC Water	DC	W/WW	N
Loudoun Water	VA	W	N
Arlington County	VA	W/WW	N
Baltimore City	MD	W/WW	N
Howard County	MD	W/WW	N
City of Bowie	MD	W/WW	N
City of Rockville	MD	W/WW	N
Fairfax Water	VA	W	N

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Water Utilities Offering AMI Opt-Out Programs

▸ A survey of 29 water-only national utilities showed the majority do not offer an AMI opt-out.

▸ Utilities were selected based on their experience with AMI or AMR, similarity and proximity to WSSC, willingness to talk to the project team, and availability of public information.

7, 24%

22, 76%

■ Yes ■ No
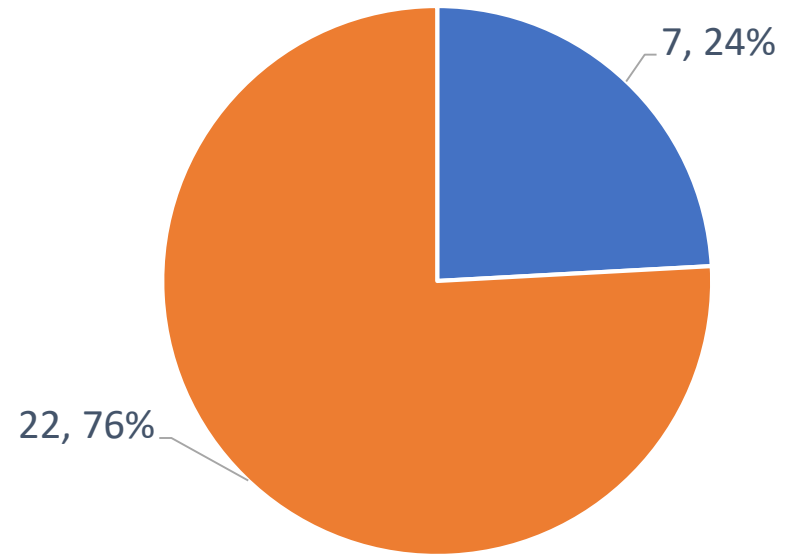
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Next Steps

▸ Requests for Proposals will be advertised by the end of July 2019

▸ WSSC is seeking assistance to conduct an independent study of literature on the effects of Radio Frequency from AMI systems for water meters to be presented to the Commissioners.

▸ WSSC management staff will bring forth a recommendation on an opt-out program in August.

▸ Develop outreach plan

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Questions?