Town of North Reading

Water and Wastewater Systems

Public Workshop

May 11, 2016

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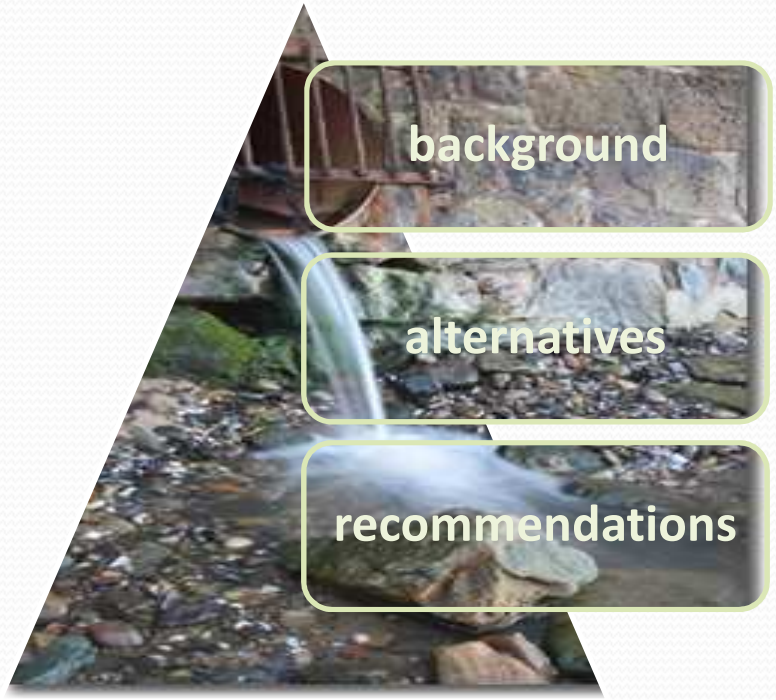
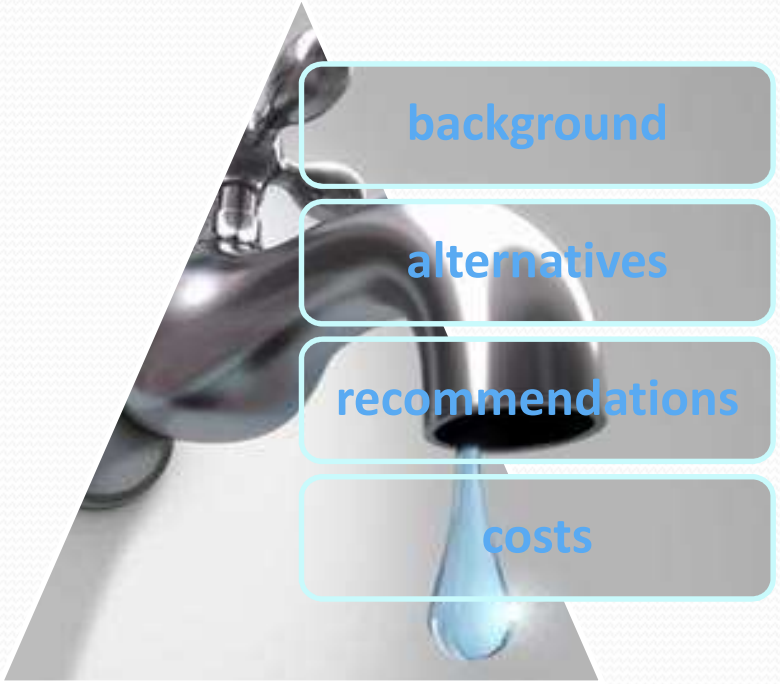
Engineering a Better Environment

Outline

Proposed wastewater service



Proposed water supply plan



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Project Background - Wastewater

- Primarily served through on-site septic systems
- Water quality impairments from inadequate systems
- Small parcels and poor soils

- Evaluated limited alternatives through Draft Environmental Impact Report (DEIR) process.

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Goals Wastewater

- Improve surface and ground water quality
- Provide long-term sustainable option(s) for wastewater treatment and disposal
- Serve existing and future customer base
- Provide for economic development

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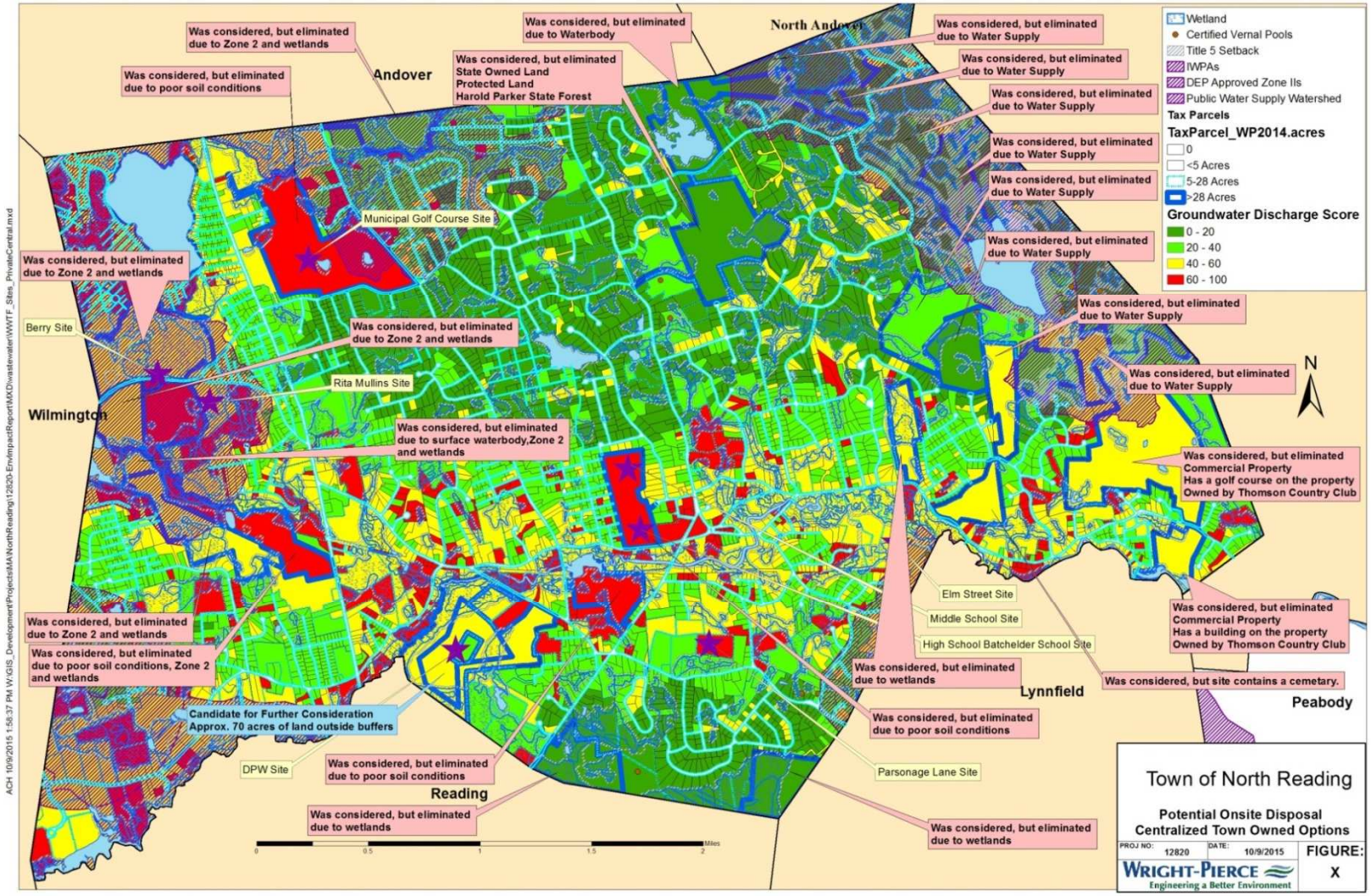
Wastewater Screening Analysis: In-Town System



Wastewater Alternatives
Out-of-Town/Out-of-Basin

- MWRA – pipes do not have capacity for NR flows
  - current Riverpark Drive flows to MWRA
  - potential Concord Street flows to MWRA (economic development initiative)
- GLSD – has capacity
  - wastewater conveyed through Andover
  - upgrades required to accommodate North Reading flows

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Recommended Plan

- Blended approach with in-town & out-of-town options
- Connection to GLSD serving:
  - Martins Pond/Main Street/Concord Street
- Optimize HS WWTP & capture users in town center
- Other users remain on individual systems

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Proposed Water Supply Plan

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Project Background

Description	*Theoretical* capacity in millions gallons/day (MGD)	*Actual* capacity in millions gallons/day (MGD)
Town Sources	0.96	0.71
Andover	1.50	1.50
Total Available Capacity	2.46	2.21
Existing Peak Demand	2.56	2.56
Current Deficit	(0.10)	(0.35)
Projected Peak Demand	2.58	2.58
Future Deficit	(0.12)	(0.37)

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Goals for Future Water Supply

- Long-term, sustainable water supply
- Simplify water system
- Contain capital and O&M costs
- Serve existing and future customer base
- Reduce stress on Ipswich River

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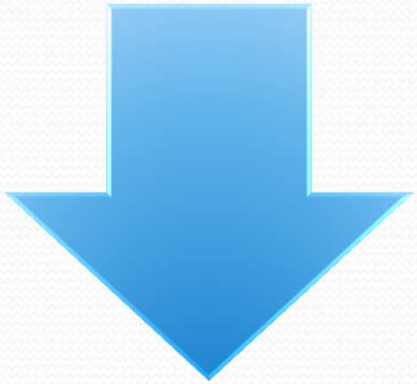
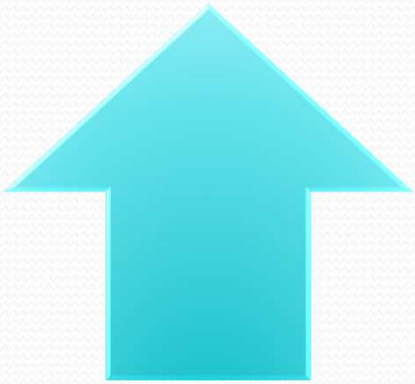
Water Alternatives Considered



Conservation

Maintain/Increase
Andover Purchases

(limited to 1.5 MDG)



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Water Alternatives Considered – cont.

- Optimize/Expand local sources
  - unreliable/declining capacity & water quality
  - Ipswich River basin – cannot increase withdrawals
  - no viable surface/groundwater supplies
  - existing facilities require significant investment

Water Alternatives Considered – cont.

- Develop alternative supply sources
  - interconnections to neighboring communities
    - limited/no excess capacity
  - MWRA – has capacity to give
    - Wilmington – poor infrastructure
    - Reading – strong pipe network; MWRA redundancy

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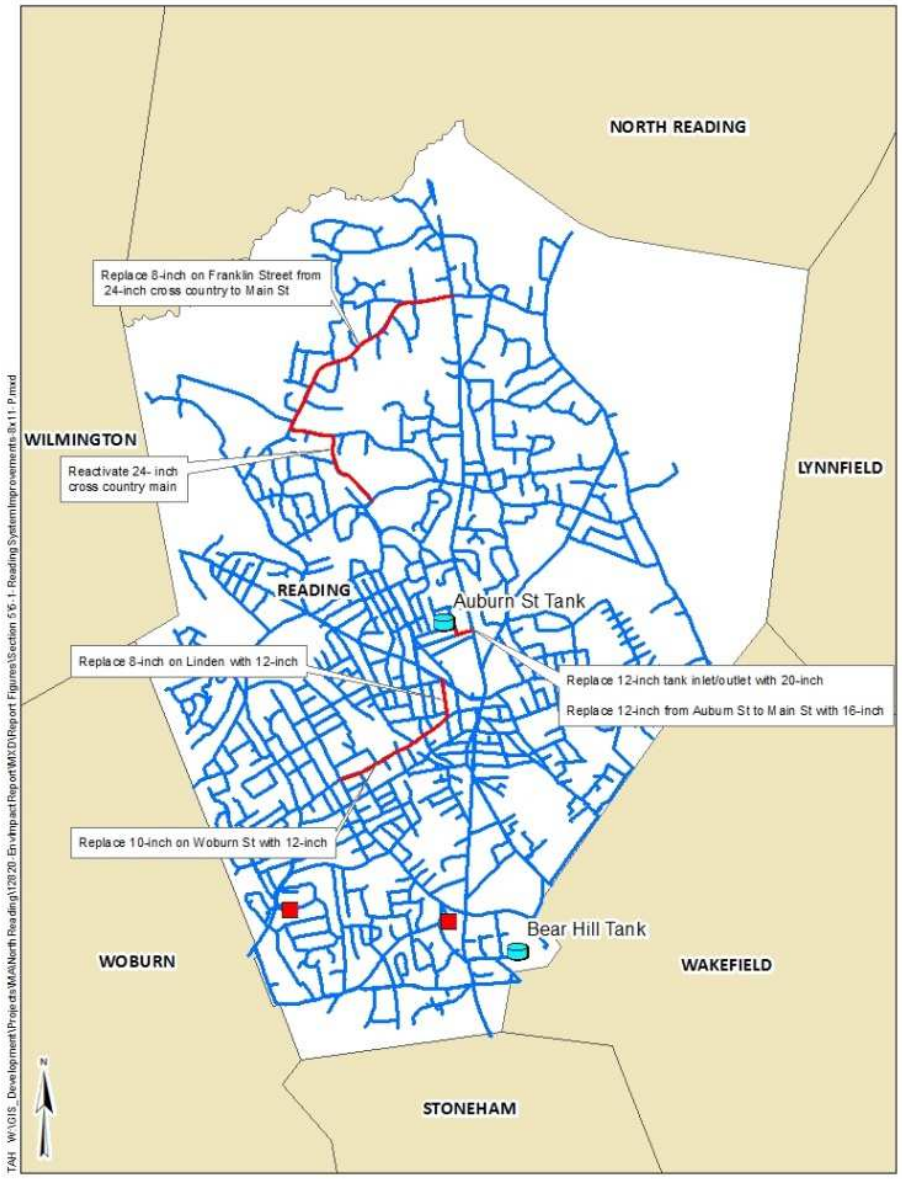
Recommended Plan

- Service from MWRA
  - capacity for the future
  - redundancy/reliability
  - reduced stress on Ipswich River



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Recommended Plan – cont.

- Pump from Reading
  - 2.5+ miles of pipe upgrades in Reading
  - booster pump station for North Reading
  - maintain Andover connections as back-up
  - abandon existing supplies and facilities

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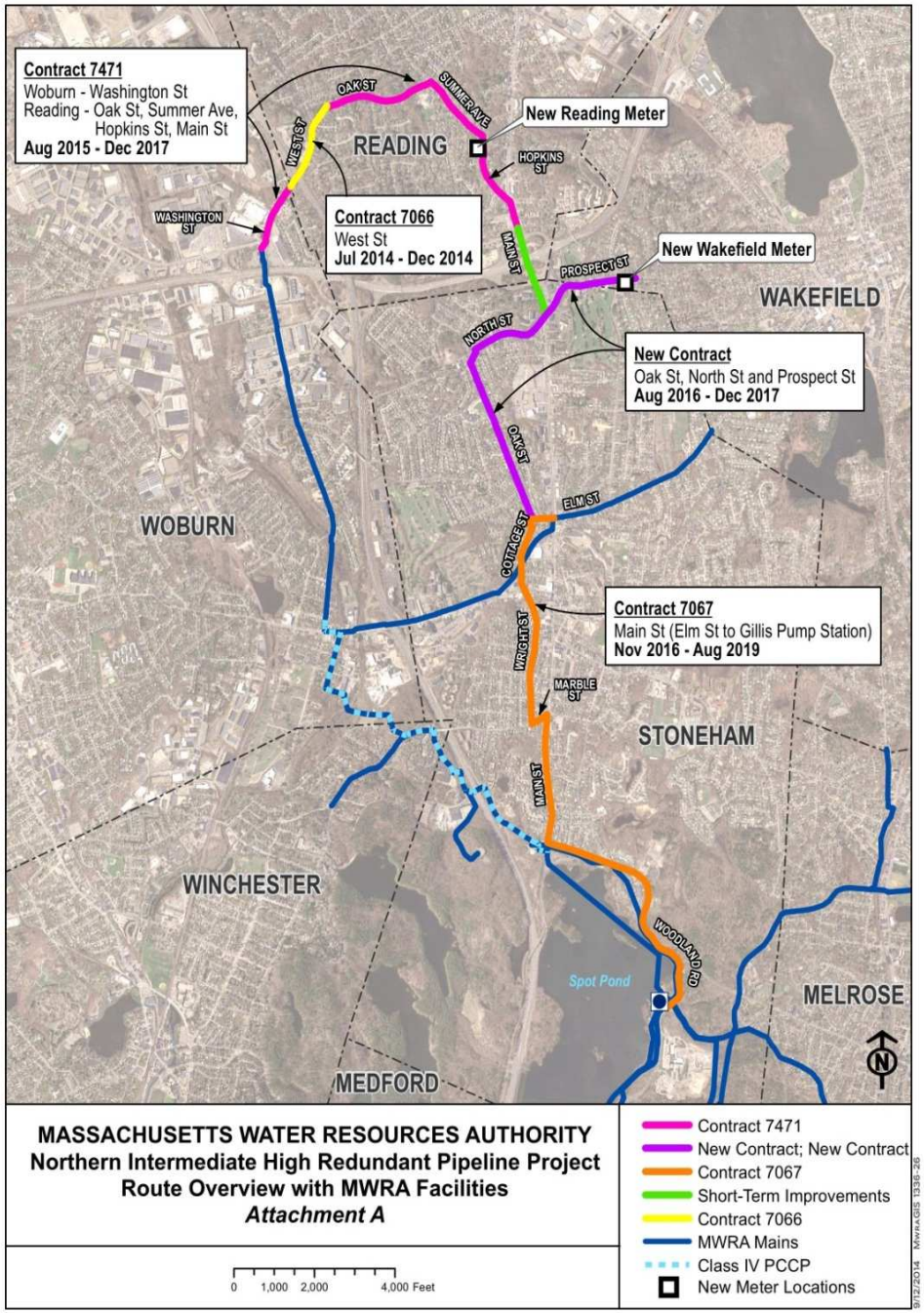
MWRA Redundancy

Increased reliability!



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Schedule

Activity	2016	2017	2018	2019	2020
Permitting/agreement	→				
Design		→			
Construction			→	→	
Connect to MWRA				★	
Decommission facilities					→

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FINANCIALS

- Capital Costs
- Rate Impacts
- Financial Aid and Assistance
- Economic Development Impacts

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Stay with Existing Infrastructure *Insufficient Capacity*	Switch to MWRA Service *Unlimited Capacity*
$9.60M in investments over next 5+ yrs	$18.13M investment over 3+ years
Cannot increase capacity	Nearly unlimited capacity
Cannot support growth	Satisfies future conditions
Andover rates unknown	Not dependent upon Andover
Major regulatory risk (Ipswich)	Minor regulatory risk
Increased manpower & O&M	Reduced labor

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Tax Rate Impact

- FY 2016 Tax Rate- $16.41
- FY 2016 Tax levy-$45,817,464.22
- FY 2016 Average Single Family Home Value-$502,195.21
- FY 2016 Average Single Family Home Tax Bill-$8,241.02
- Anticipated Annual Impact of $10,000,000 on Tax Rate - $0.22
  - Anticipated Annual Impact on Average Single Family Home Tax Bill- $109.07

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Tax Rate Impact

	FY 2016
Average Single Family Home Value	$502,195.21
Tax Rate	$16.41
Tax levy	$45,817,464.22
Average Single Family Home Tax Bill	$8,241.02
Impact of Debt Service for $10,000,000	$0.22
Annual Average Single Family Home Tax Bill Increase	$109.07

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Water Rate Impact

- Option 1 – Divide Cost Equally Across All Accounts
  - Annual Impact of $10,000,000 on 4,840 accounts is $126.02 per account
  - Annual Impact of $307,200 Buy In Cost on 4,840 accounts is $63.47 per account

- Option 2 – Divide Costs Equally Across Water Use
  - Annual Impact of $10,000,000 on water use equates to a 16.3% increase on usage charges
  - Annual Impact of $307,200 Buy In Cost on water use equates to an 8.1% increase on usage charges

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Water Rate Impact

Category	Current Bill ($)	Capital Impact ($)	Capital Impact (%)	Buy In Impact ($)	Buy In Impact (%)	Combined Impact ($)	Combined Impact (%)
Op. 1 – Low	343.20	126.02	36.7	63.47	18.5	189.49	55.2
Op. 1 – Med	935.72	126.02	13.5	63.47	6.8	189.49	20.3
Op. 1 – High	3,115.96	126.02	4.0	63.47	2.0	189.49	6.1
Op. 2 – Low	343.20	53.12	15.5	26.76	7.8	79.88	23.3
Op. 2 – Med	935.72	150.52	16.1	75.8	8.1	226.32	24.2
Op. 2 – High	3,115.76	508.96	16.3	256.32	8.2	765.28	24.6

- Notes:
  - 1. Low relates to annual use of 40,000 gallons, Medium equates to annual use of 90,000 gallons, High relates to annual use of 225,000 gallons
  - 2. Approximately 37.5% of accounts have annual use at 40,000 gallons or below, 85% of accounts have annual use at 90,000 gallons or below, and 98% of accounts have annual use at 225,000 gallons per year of below (only 2% of accounts are above that volume)

Aid and Assistance

- Community Compact Cabinet
- MassWorks Infrastructure Program
- Clean Water State Revolving Loan Fund
- State Legislators and Grants

MWRA and Town of "Reading" are making a Major Commitment and Investment

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Economic Development Impacts

- Water infrastructure system is VITAL to:
  - community long-term health
  - environment
  - economic development
- Need additional water capacity to capture new growth

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MWRA Connection through Reading

- Communities collaborating since 2014
- Estimated project cost = $10.45 million
  - bonded over 20 years, 0% interest loan eligible
- $7.68 million MWRA “buy-in”
  - financed by MWRA; re-paid by Town; grant eligible?
  - 25 years at 0% interest

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Questions / Discussion

For more information, please visit our website:
http://www.northreadingma.gov/water-division/pages/waterwastewater-deir

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