



Massachusetts Water Resources Authority

FY17 Draft Final Capital Improvement Budget



June 8, 2016



- ✓ MWRA continues to focus on Asset Protection and Long-Term Water Redundancy initiatives;
- ✓ MWRA continues to reduce debt levels, paying more principal than the current projected borrowings; and
- ✓ FY17 Draft Final CIP meets the overall 5-Year Cap requirement.



FY17 Draft Final Summary

- ✓ FY17 Draft Final Spending for FY17 \$155.7 million vs. \$160.1 million in the Proposed Budget
- ✓ FY14-18 Draft Final Spending \$661.2 million vs. \$687.7 million in the Proposed Budget
- ✓ FY14-18 Cap Spending \$618.7 million

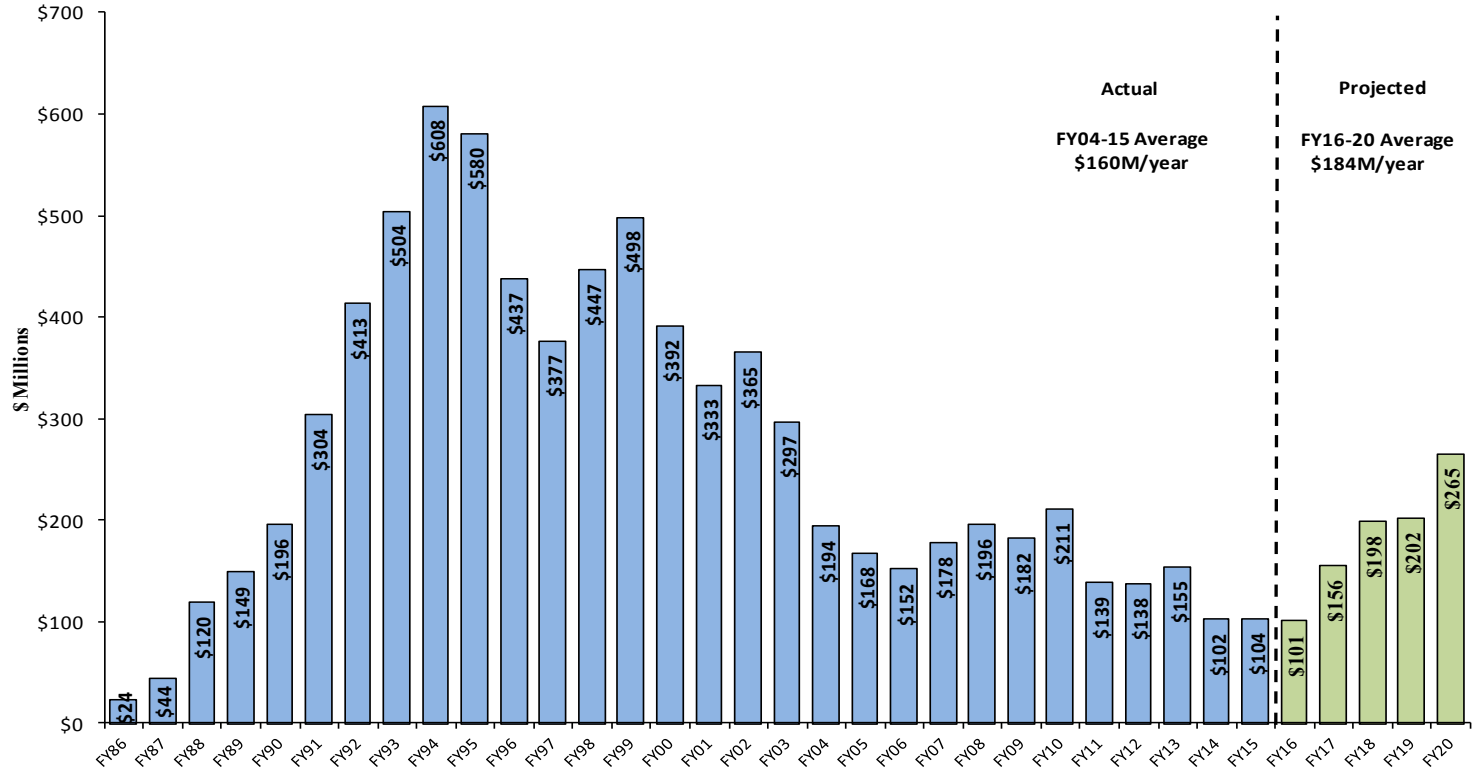


Updates, Future Risks & Uncertainties

- Long-Term Water Redundancy – Tunnel vs. Surface Pipeline vs. Hybrid options;
- Deer Island Combined Heat and Power Project; and
- New Regulatory Mandates.



Historic and Projected Capital Improvement Spending (\$ in millions)





Asset Protection & Water Redundancy (\$ in millions)

	Total Contract	FY09-13	FY14-18	FY19-23
Asset Protection	\$2,359.1	\$248.0	\$326.1	\$725.3
Carroll WTP	436.9	38.5	13.6	11.5
Water Redundancy	2,785.9	134.7	201.7	423.5
CSO	882.0	315.5	66.0	3.0
Other	560.2	88.4	53.9	13.3
Total	\$7,024.1	\$825.1	\$661.2	\$1,176.6
Asset Protection	33.6%	30.1%	49.3%	61.6%
Carroll WTP	6.2%	4.7%	2.1%	1.0%
Water Redundancy	39.7%	16.3%	30.5%	36.0%
CSO	12.6%	38.2%	10.0%	0.3%
Other	8.0%	10.7%	8.2%	1.1%
Total	100.0%	100.0%	100.0%	100.0%



FY14-18 Base-Line Cap Compared with FY17 Draft Final (\$ in millions)

FY14-18 Base-Line Cap		FY14	FY15	FY16	FY17	FY18	Total FY14-18
	Projected Expenditures	\$142.5	\$147.6	\$149.3	\$141.8	\$136.8	\$718.0
Contingency	7.6	9.5	10.1	9.8	9.3	46.1	
Inflation on Unawarded Construction	0.8	4.2	8.4	11.1	13.5	37.9	
Less: Chicopee Valley Aqueduct Projects	(5.0)	(2.2)	(1.4)	(1.3)	(0.4)	(10.3)	
FY14-18 Base-Line Cap	\$145.8	\$159.1	\$166.4	\$161.3	\$159.1	\$791.7	

FY17 Final		FY14	FY15	FY16	FY17	FY18	Total FY14-18
	Projected Expenditures	\$102.2	\$103.6	\$101.3	\$155.7	\$198.4	\$661.2
Contingency	0.0	0.0	5.2	8.7	12.1	26.0	
Inflation on Unawarded Construction	0.0	0.0	0.0	1.1	4.0	5.1	
Less: I/I Program	0.0	(17.5)	(13.7)	(18.8)	(15.5)	(65.5)	
Less: Water Loan Program	0.0	1.4	5.3	(2.5)	(4.6)	(0.3)	
Less: Chicopee Valley Aqueduct Projects	(5.6)	(1.2)	(0.4)	(0.2)	(0.4)	(7.8)	
FY17 Proposed FY14-18 Spending	\$96.6	\$86.3	\$97.7	\$144.1	\$194.0	\$618.7	

FY17 Final vs. FY14-18 Base-Line Cap		FY14	FY15	FY16	FY17	FY18	Total FY14-18
	Projected Expenditures	(\$40.3)	(\$43.9)	(\$48.0)	\$13.9	\$61.6	(\$56.7)
Contingency	(7.6)	(9.5)	(4.9)	(1.0)	2.8	(20.1)	
Inflation on Unawarded Construction	(0.8)	(4.2)	(8.4)	(10.0)	(9.5)	(32.8)	
Less: I/I Program	0.0	(17.5)	(13.7)	(18.8)	(15.5)	(65.5)	
Less: Water Loan Program	0.0	1.4	5.3	(2.5)	(4.6)	(0.3)	
Less: Chicopee Valley Aqueduct Projects	(0.6)	0.9	1.0	1.1	0.0	2.5	
FY14-18 Cap (\$ Change)	(\$49.2)	(\$72.7)	(\$68.7)	(\$17.2)	\$34.9	(\$173.0)	



FY17 Draft Final CIP Summary vs. FY17 Proposed (\$ in millions)

	FY17 Proposed Remaining Balance	FY17 Final Remaining Balance	\$ Change	% Change		FY17 Proposed FY14-18	FY17 Final FY14-18	FY14-18 \$ Change	FY14-18 % Change
Total Wastewater	\$ 1,195.2	\$ 1,216.6	\$ 21.4	1.8%		\$ 397.5	\$ 363.8	\$ (33.8)	-8.5%
Total Waterworks	\$ 1,852.2	\$ 1,867.9	\$ 15.7	0.8%		\$ 239.4	\$ 258.4	\$ 19.0	8.0%
Business & Operations Support	\$ 46.2	\$ 45.6	\$ (0.5)	-1.2%		\$ 41.8	\$ 39.0	\$ (2.8)	-6.7%
Total MWRA	\$ 3,093.6	\$ 3,130.2	\$ 36.6	1.2%		\$ 678.7	\$ 661.2	\$ (17.5)	-2.6%

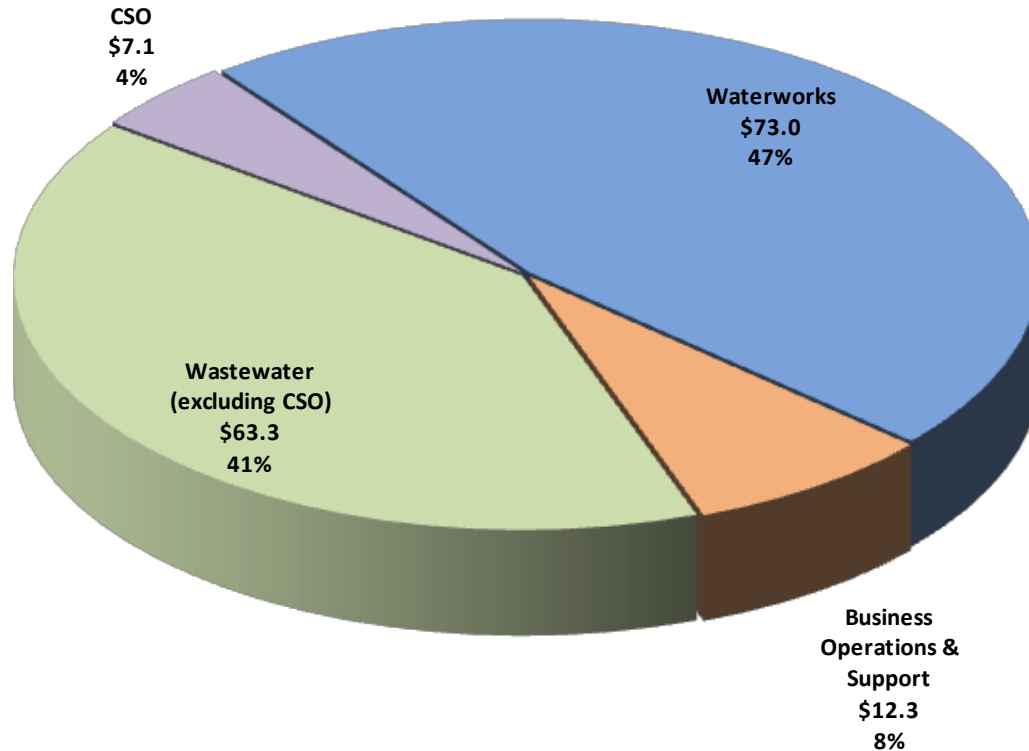
Remaining spending increased \$36.6 million over FY17 Proposed CIP, or 1.2%.

FY14-18 Expenditures decreased \$17.5 million, or 2.6%.

The budget includes \$1.4 billion placeholder for Long-Term Water Redundancy.



FY17 Draft Final CIP for FY17 by Major Program (\$ in millions)





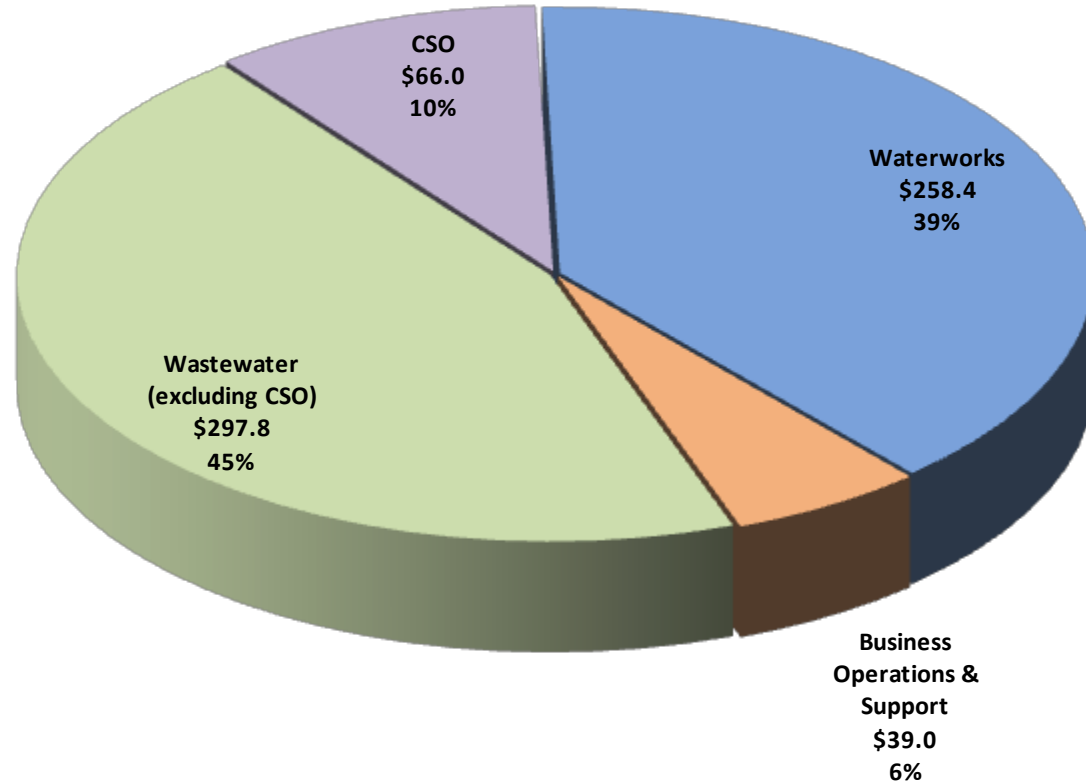
FY17 Major Projects (\$ in millions)

Projected spending for FY17 is \$155.7 million with 10 projects accounting for nearly 81%.

Project	FY17 Expenditures
Facility Asset Protection	\$25.1
Wachusett P.S. and other projects	\$20.0
I/I Local Financial Assistance	\$18.8
NIH Redundancy & Storage	\$18.5
DI Treatment Plant Asset Protection	\$13.3
SEH Redundancy & Storage	\$11.6
Cambridge Sewer Separation	\$6.9
Clinton Wastewater Treatment Plant	\$4.8
Equipment Purchase	\$4.1
Central Monitoring System	\$3.0
Top 10 Project Projected Spending	\$126.0
Total FY17 Projected Spending	\$155.7



FY14-18 Draft Final CIP by Major Program (\$ in millions)





FY16 Actual/Projected Contract Awards (\$ in millions)

Project	Subphase	NTP	FY17 Budget
Long Term Redundancy	Wachusett Aqueduct Pump Station - Construction	Mar-16	\$45.5
NIH Redundancy & Storage	Section 89 & 29 Redundancy Phase 1C Construction	Jun-16	\$17.2
SEH Redundancy & Storage	Redundancy Pipeline Section III Phase 1-Construction	May-16	\$13.5
Facility Asset Protection	Alewife Brook Pump Station Rehabilitation - Construction	Jan-16	\$12.6
DI Treatment Plant Asset Protection	Winthrop Terminal Facility VFD Replacement - Construction	Jun-16	\$11.9
NIH Redundancy & Storage	Section 89 & 29 Redundancy Phase 1B Construction	Jan-16	\$9.9
Clinton Wastewater Treatment Plant	Phosphorus Reduction - Construction	Mar-16	\$7.3
Carroll Water Treatment Plant	Existing Facilities Modifications - CP7	Aug-15	\$6.5
Facility Asset Protection	Chelsea Screenhouse Upgrades	Aug-15	\$5.0
Facility Asset Protection	Caruso Pump Station Improvements - Construction	Mar-16	\$4.1
Top Ten Planned Awards in FY16			\$133.5
Actual Awards in FY16			\$116.3



FY17 Projected Contract Awards (\$ in millions)

Project	Subphase	NTP	Award
Facility Asset Protection	Chelsea Creek Upgrades - Construction	Jul-16	\$62.0
DI Treatment Plant Asset Protection	HVAC Equipment Replacement - Construction	Jan-17	\$29.5
Central Monitoring System	Waterworks SCADA/PLC Upgrades	Oct-16	\$18.5
NIH Redundancy & Storage	Section 89 & 29 Redundancy Construction Phase 2	Jul-16	\$18.2
DI Treatment Plant Asset Protection	Gravity Thickener Rehabilitation	Nov-16	\$14.1
SEH Redundancy & Storage	Redundancy Pipeline Sect III - Construction 2	Sep-16	\$10.8
Residuals Asset Protection	Residuals Facility Upgrades - Construction	Oct-16	\$10.0
DI Treatment Plant Asset Protection	Switchgear Replacement - Construction	Apr-17	\$8.0
SEH Redundancy & Storage	Redundancy Pipeline Section III - Construction 3	Dec-16	\$7.4
DI Treatment Plant Asset Protection	Combined Heat & Power - Design	Dec-16	\$6.0
Top Ten Awards for FY17			\$184.5
41 Contract Awards Planned for FY17			\$241.1

The top ten awards account for over 76% of FY17 planned awards.



Recently Completed Capital Projects



Spot Pond Covered Storage Facility and Pump Station

NTP: November 2011
SC : December 2015



Total Contract:	\$50.5M
FY14-18 Spending:	\$32.9M
FY17 Spending:	\$ 0.7M



Cambridge Sewer Separation



Contract 9

NTP: July 1998
SC : December 2015

Total Contract:	\$102.7M
FY14-18 Spending:	\$ 52.3M
FY17 Spending:	\$ 6.9M



Contract 8B - Concord Avenue



Deer Island: North Main Pump Station Motors/VFDs



NTP: December 2011
SC : March 2016

Total Contract:	\$24.5M
FY14-18 Spending:	\$17.9M
FY17 Spending:	\$ 0.0M





Clinton Digester Tank Rehabilitation

NTP: April 2014

SC : April 2016



Total Contract:	\$3.5M
FY14-18 Spending:	\$3.5M
FY17 Spending:	\$0.04M



Upcoming Capital Projects



Chelsea Headworks Rehabilitation

Design

NTP: July 2010

SC : June 2021

Total Contract: \$8.5M

FY14-18 Spending: \$4.3M

FY17 Spending: \$0.6M



Construction

NTP: July 2016

SC : July 2020

Total Contract: \$62.0M

FY14-18 Spending: \$27.1M

FY17 Spending: \$11.6M



Winthrop Terminal Facility VFD and Motor Replacement



NTP: June 2016
SC : March 2020



Total Contract: \$12.0M
FY14-18 Spending: \$ 4.1M
FY17 Spending: \$ 0.9M



Southern Extra High Redundancy – Section 111 Construction 1,2 & 3

Design

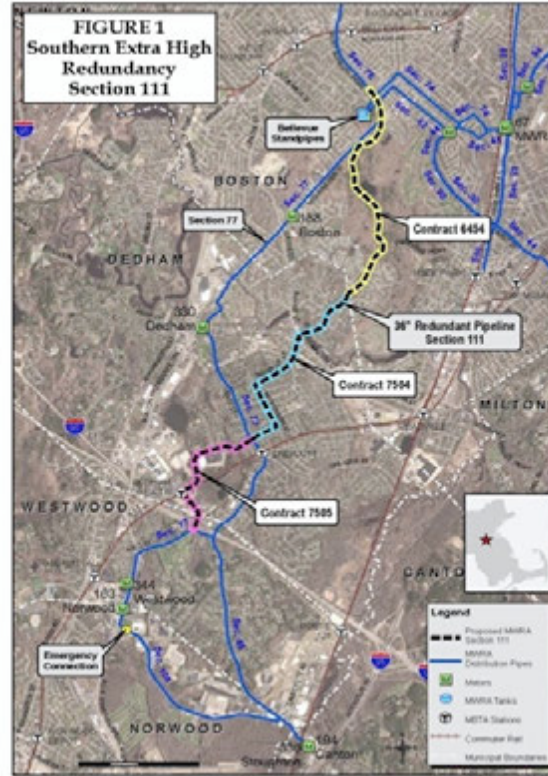
NTP: February 2014

SC : August 2021

Total Contract: \$7.7M

FY14-18 Spending: \$4.9M

FY17 Spending: \$1.4M



Construction

NTP: May 2016

SC: December 2018

Total Contract: \$31.6M

FY14-18 Spending: \$26.4M

FY17 Spending: \$10.2M

Redundancy Pipeline Section 111 Phase 1 was awarded on May 11, 2016 for \$11.8M.



Deer Island HVAC Equipment Replacement Construction

NTP: January 2017

SC : July 2020



Total Contract:	\$29.5M
FY14-18 Spending:	\$8.4M
FY17 Spending:	\$0.0M



Deer Island Gravity Thickener Rehabilitation

NTP: November 2016

SC : November 2019



Total Contract: \$14.1M

FY14-18 Spending: \$5.4M

FY17 Spending: \$0.5M



Waterworks SCADA/PLC Upgrades

NTP: October 2016

SC : October 2031



Total Contract:	\$18.5M
FY14-18 Spending:	\$1.6M
FY17 Spending:	\$0.4M



Wastewater Metering System Equipment Replacement

Design

NTP: October 2016

SC : January 2020

Total Contract: \$2.7M

FY14-18 Spending: \$1.2M

FY17 Spending: \$0.3M



Total Construction

NTP: June 2018

SC: July 2029

Total Contract: \$20.6M

FY14-18 Spending: \$ 0.0M

FY17 Spending: \$0.0M



Deer Island Combined Heat and Power

Design

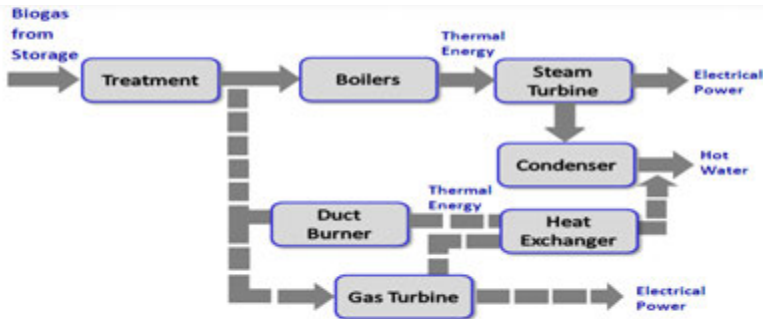
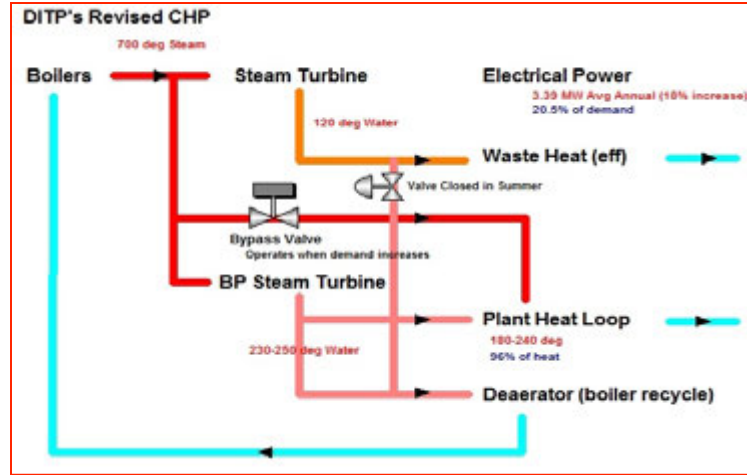
NTP: December 2016

SC : June 2026

Total Contract: \$6.0M

FY14-18 Spending: \$0.2M

FY17 Spending: \$0.1M



Construction

NTP: June 2021

SC : June 2025

Total Contract: \$83.0M

FY14-18 Spending: \$ 0.0M

FY17 Spending: \$ 0.0M



Major Decisions

- Deer Island Combined Heat and Power
- Long-Term Water Redundancy



**MWRA Fiscal Year 2017
Draft Final
Current Expense Budget**

June 8, 2016



FY17 Draft Final Assessments

- Proposed 3.9%
- Advisory Board Recommendation 3.34%
- MWRA Draft Final 3.34%

The Advisory Board shared their recommendations and comments

MWRA staff is evaluating comments and formulating responses

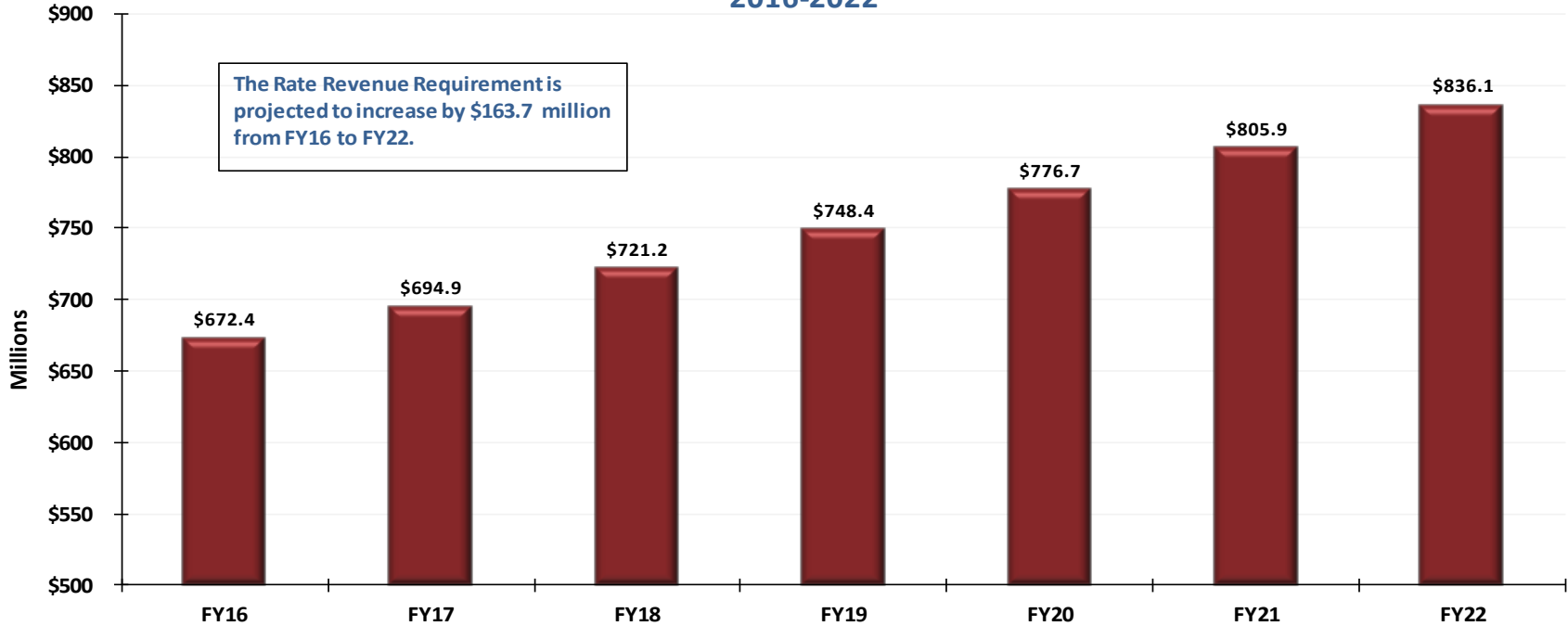
MWRA agrees with the majority of the Advisory Board recommendations

MWRA Draft Final Budget matches the 3.34% recommendation but achieves the 3.34% slightly differently



Rate Revenue Requirement (\$ in millions)

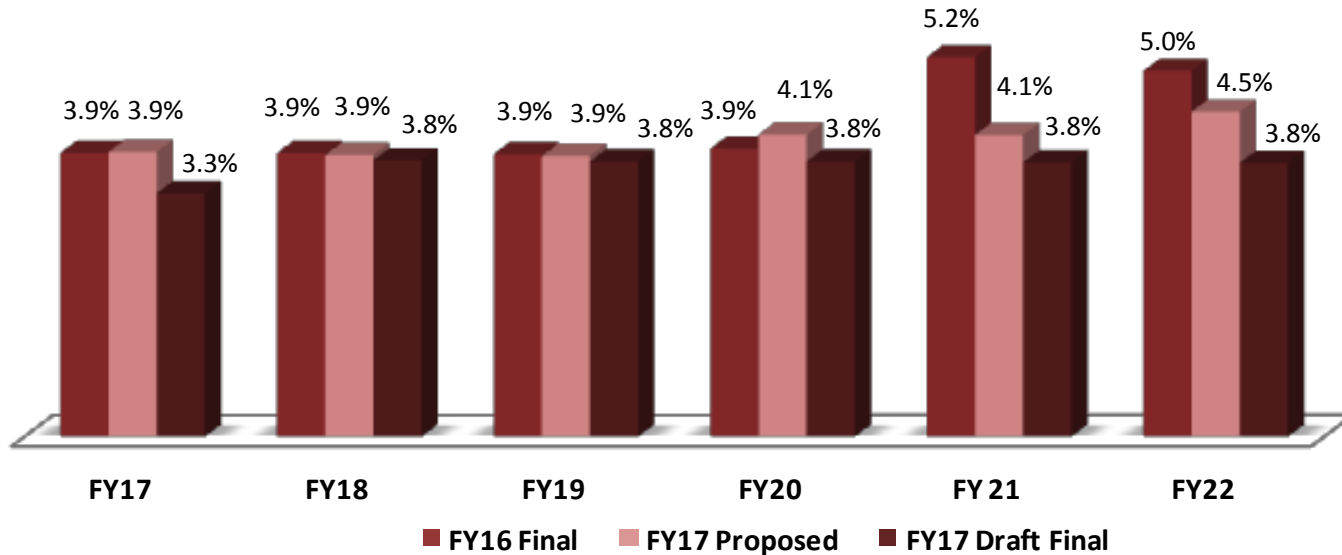
MWRA Rate Revenue Requirement 2016-2022





Assessment Forecast at Combined Utility Level

Comparison of FY16 to FY17 Proposed to FY17 Draft Final





Major Changes FY17 Draft Final vs. FY17 Proposed

Watershed Debt Prepayment

Debt Prepayment



Major Changes FY17 Draft Final vs. FY17 Proposed

- Indirect Expenses -\$6.2M
- Capital Finance +\$3.7M
- Direct Expenses -\$2.0M
- Non-Rate Revenue -\$0.6M



Major Changes FY17 Draft Final - Indirects

- ❑ Replacement of FY16 Planned Defeasance with prepayment of all outstanding Watershed land debt service obligations to the Commonwealth of \$32 million

- ❑ Current Commonwealth obligation totals \$33.7million
 - Elimination of \$5.6 million for Watershed debt service in FY17
 - Elimination of debt service payments of \$5.6 million annually in FY18 – FY22



Changes to Watershed Management Budget

MWRA Commitment to the Watershed

PILOT Funding	\$8.4 million
Debt Service	\$0.0 million
Operating Expenses	\$16.0 million
Phase 1 Capital	\$0.9 million
Phase 2 Capital (under discussion)	\$0.0 million
Revenue Offset	(\$1.0) million
Net Operating Expenses	\$15.9 million
Total	\$24.3 million



Major Changes FY17 Draft Final – Capital Finance

- Returns Current Revenue for Capital to historical practice
- Recognizes the effect of \$5 million defeasance vs. \$25 million assumed in the Proposed Budget
- Includes \$11 million for prepayment of debt in FY17
- Includes the receipt of \$874K of Debt Service Assistance in FY16



Major Changes FY17 Draft Final – Directs

- **Chemicals -\$0.9M**
 - removal of 6 months enterococcus
 - updated contract pricing;
- **Utilities -\$0.9M**
 - favorable pricing for Electricity & Diesel Fuel
- **Maintenance +\$0.8M**
 - relining hypo tanks at Carroll Plant
 - replacement of transformer at Oakdale
 - various smaller changes



Major Changes FY17 Draft Final – Directs

- **Other Services - \$0.7M**
 - mostly removal of Chelsea annex lease
- **Wages and Salaries - \$0.4M**
 - achieve goal of 1,150 FTEs in FY17
- **Fringe Benefits - \$0.4M**
 - health insurance decrease
- **Professional Services + \$0.2M**
 - water active directory consultant
 - legal services



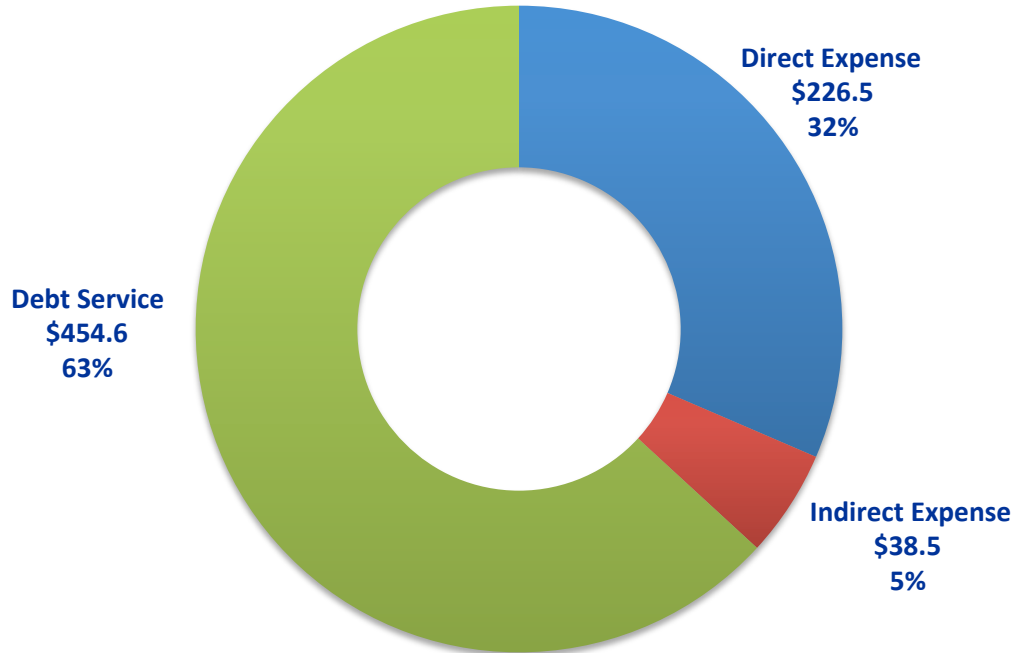
Major Changes FY17 Draft Final – Non-Rate Revenue

- **Non-Rate Revenue -\$0.4M**
 - lower energy credits
- **Investment Income -\$0.2M**
 - unforeseen investment securities called



FY17 Draft Final Current Expense Budget (\$ in millions)

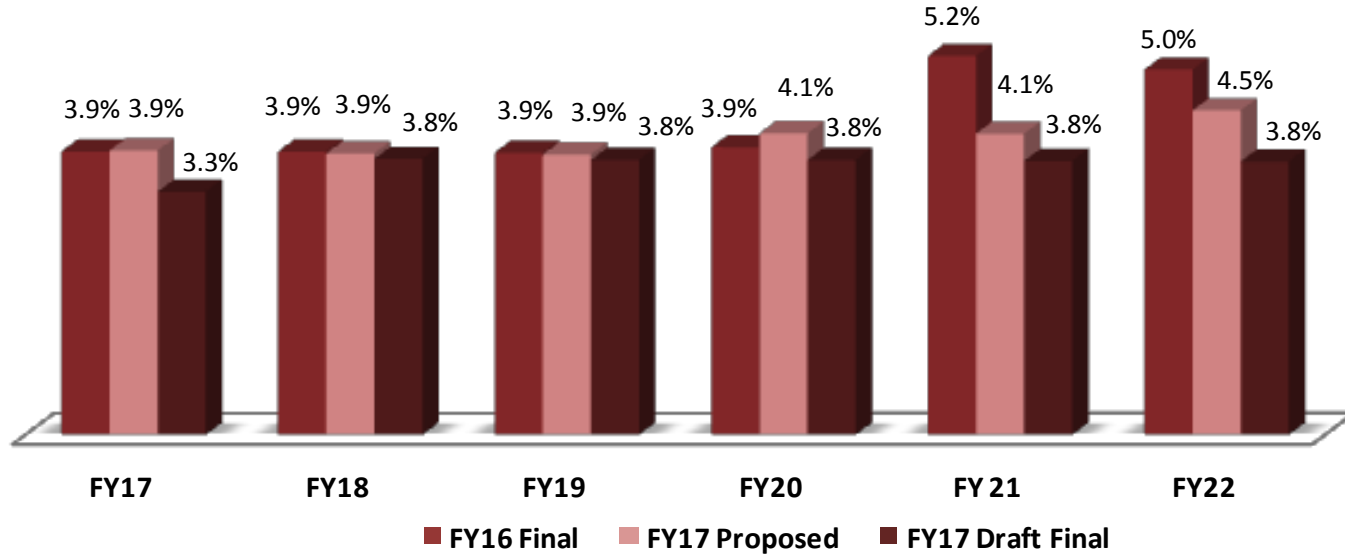
Total FY17 Draft Final Current Expense Budget: \$719.6 million





Assessment Forecast at Combined Utility Level

Comparison of FY16 to FY17 Proposed to FY17 Draft Final





Planning Estimate Assumptions

- Direct and Indirect Expenses Inflation
- **Watershed Debt Related Expenses Eliminated**
- Both Pension and OPEB Based on Latest Actuarial Valuation
- Capital Spending Levels
- Variable and Fixed Interest Rates
- **Inclusion of Debt Prepayments**
- Use of Reserves



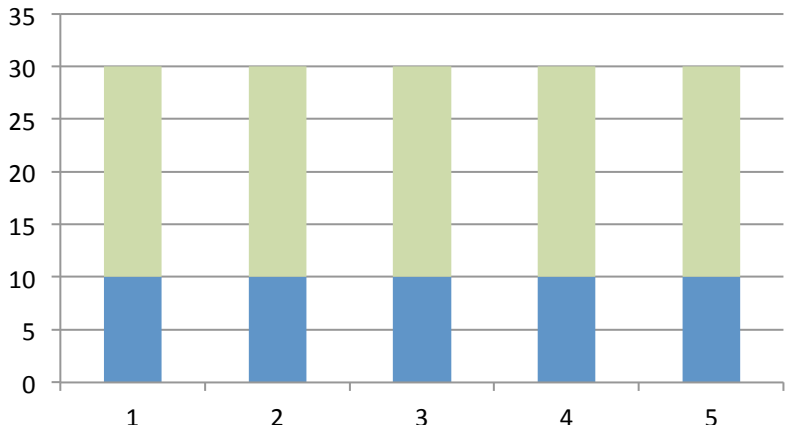
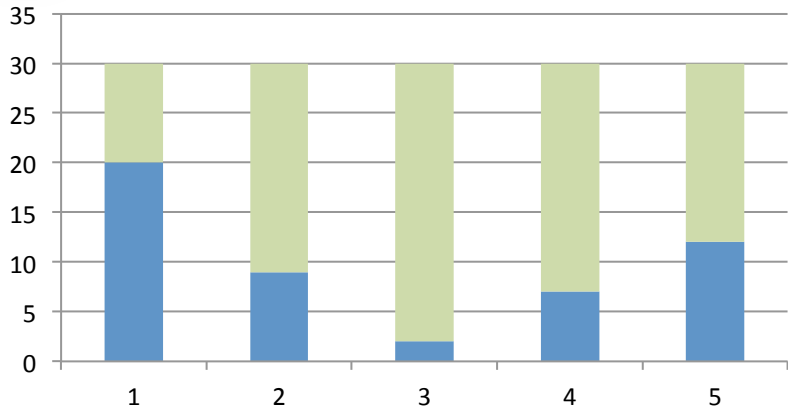
- New Initiative
 - Long-term predictable, sustainable, and reasonable rates
 - Budget certainty for communities
 - System expansion opportunities

- First Time in Proposed FY17 Budget

- Re-evaluate Annually as Part of Budget Process



Utility Level Smoothing Concept



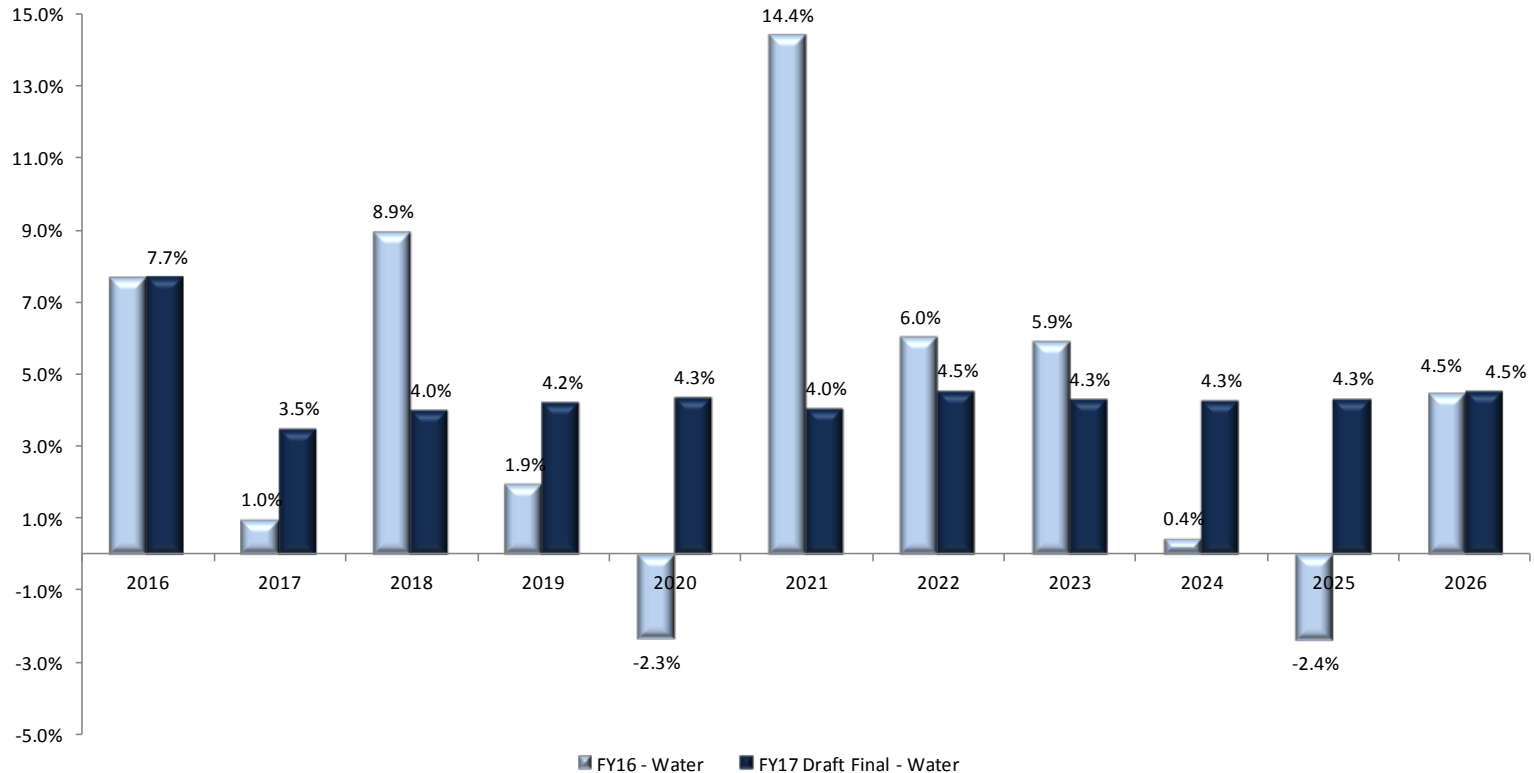
	Yr1	Yr2	Yr3	Yr4	Yr5	Total
Before						
Water	20	9	2	7	12	50
Sewer	10	21	28	23	18	100
Total	30	30	30	30	30	150

	Yr1	Yr2	Yr3	Yr4	Yr5	Total
After						
Water	10	10	10	10	10	50
Sewer	20	20	20	20	20	100
Total	30	30	30	30	30	150



Water Utility Level Smoothing

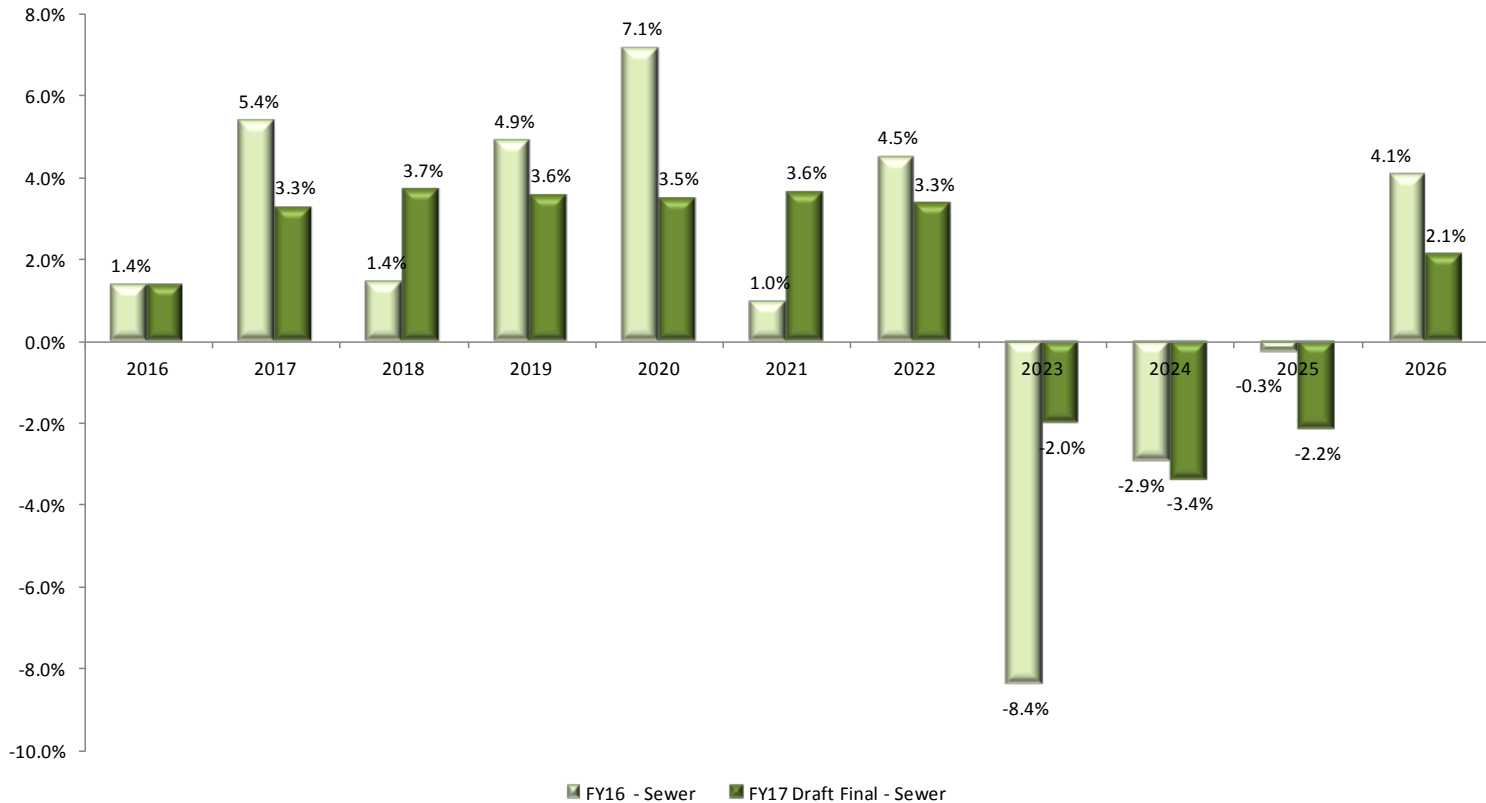
Projected Changes to the Water Utility FY16 vs. FY17 Draft Final





Sewer Utility Level Smoothing

Projected Changes to the Sewer Utility FY16 vs. FY17 Draft Final





Thank You





*Construction of Water Mains
Section 36, W11C and S9-A*

June 8, 2016



RJV Construction Corp.

Bid Amount:	\$11,235,500
Notice to Proceed:	November 4, 2014
Original Completion Date:	May 3, 2017



Project Includes:

- 4,600 ft of 24" DI (Sec 36 & Sec 28)
- 1,250 ft of 36" DI (Sec W11C)
- 2 -36", 1-48" & 2 – 54" Butterfly Valves
- 7 – 24" Gate Valves
- 1 New Meter



Section 36 Being Installed on Mass Avenue, Arlington





Removing Old Pipe from Park Circle, Arlington





New Meter Vault Being Lowered into Place Park Avenue, Arlington





36" Pipe Being Installed on Hillsdale Road, Arlington





Rock Removal on Brunswick Road, Arlington





Lowering 54" Butterfly Valve on Pleasant Street





Installing 48" Butterfly Valve on Shaft 9A Line, Mystic Avenue, Medford





Paving on Pleasant Street, Arlington





Change Order 5

- WORK:** 48" Butterfly Valve
- 10 ft by 6 ft concrete vault
- 2 - 48" couplings and spool pieces
- 6" bypass and valve
- SCADA equipment
- Electrical & communication ductwork
- Contaminated soil & groundwater handling
- Relocation of the City's 16" water main

LOCATION : Fourth Street, Medford

