



MASSACHUSETTS WATER RESOURCES AUTHORITY

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COMMITTEE OF THE WHOLE

HEARINGS ON THE DRAFT FINAL FY17 CAPITAL IMPROVEMENT PROGRAM AND CURRENT EXPENSE BUDGET

to be held on

Wednesday, June 8, 2016

Location: 100 First Avenue, 2nd Floor
Charlestown Navy Yard
Boston, MA 02129

Time: 10:00 a.m.

AGENDA

- Advisory Board Integrated Comments and Recommendations on the MWRA's Proposed FY17 CIP and CEB
- MWRA's FY17 Draft Final Budget Hearings Presentation



FY 2017

Integrated Comments and Recommendations

on the MWRA's Proposed
Capital Improvement Program
and
Current Expense Budget

MWRA

Advisory Board

**The Community Advisory Board to the Massachusetts Water
Resources Authority**

June 2016

The MWRA Advisory Board...

was established by the State Legislature to represent the 60 communities in the MWRA service area. Through annual comments and recommendations on the Authority's proposed capital and current expense budgets and rates, the Advisory Board provides a ratepayer perspective on the MWRA's plans and policies to improve the region's water and sewer systems.

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<http://www.mwraadvisoryboard.com>

Integrated Comments and Recommendations

on the MWRA's Proposed
Fiscal Year 2017
Capital Improvement Program
and
Current Expense Budget

June 2016

Joseph E. Favaloro |

Executive Director |

Preface

Pursuant to its responsibility under Sections 8 and 23 of Chapter 372 of the Acts of 1984, the MWRA Advisory Board has undertaken a comprehensive review of the Authority's proposed Current Expense Budget and Capital Improvement Program and Budget for the fiscal year beginning July 1, 2016 (FY 2017). The Advisory Board's review has produced these *INTEGRATED COMMENTS AND RECOMMENDATIONS*, which state the Advisory Board's opinions on a number of issues and policies, plus recommendations on proposed spending in each MWRA department. These *Comments and Recommendations* were approved at the May 19, 2016 meeting of the full Advisory Board.

These *Comments and Recommendations* were prepared by Joseph Favaloro, Matthew Romero, James Guidod, and Cornelia Potter of the Advisory Board staff. Overall direction was provided by Vice Chairman for Finance, Bernard Cooper, with the participation of Advisory Board members.

All base information for figures and tables, schematics and photographs contained within the *Comments and Recommendations* document are provided by MWRA or their consultants, unless otherwise noted.

The Advisory Board extends its appreciation to MWRA staff for their assistance in reviewing the FY17 Capital and Current Expense Budgets.

This year's document is dedicated to the memories of Mary Ann McClellan, long-time Advisory Board staff member, and David Whelan, long-time MWRA employee who was integral to the Advisory Board's budget review process for years.

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* Mr. William Hadley representing the Town of Lexington served as Secretary through May 2016.

** Mr. Manugian represented the Town of Ashland through May 2016

*** Ms. Dunphy represented the Town of Milton through May 2016

Table of Contents

| | |
|---|-----------|
| Table of Tables | 4 |
| Table of Figures | 7 |
| Introduction | 11 |
| Proposed FY17 Capital Improvement Program | 12 |
| Shift from Mandated Spending to Asset Protection | 14 |
| Changes in Proposed Spending for FY14-18 | 16 |
| FY17-18 Capital Spending | 18 |
| Wastewater Spending Highlights | 19 |
| Interception and Pumping (I&P) Projects | 20 |
| Wastewater Treatment..... | 23 |
| Deer Island Wastewater Treatment Plant | 23 |
| Clinton Wastewater Treatment Plant..... | 26 |
| Residuals | 27 |
| Residuals Asset Protection..... | 27 |
| Combined Sewer Overflow Control Program | 28 |
| Other Wastewater Projects | 29 |
| Infiltration/ Inflow Local Financial Assistance Program..... | 29 |
| Drinking Water Quality Improvements..... | 32 |
| Transmission | 33 |
| Distribution and Pumping | 34 |
| Other Waterworks Projects | 34 |
| Background for Setting a Five-Year Cap on Capital Spending, a Recap of the Cap..... | 39 |
| The First Five-Year Cap: FY04-08..... | 39 |
| The Second Five-Year Cap: FY09-13 | 39 |
| The Third Five-Year Cap: FY14-18 | 39 |
| Proposed FY17 Current Expense Budget | 43 |
| Direct Expenses | 45 |
| Indirect Expenses | 46 |
| Capital Financing Expense..... | 46 |
| Revenues..... | 47 |
| MWRA Debt Financing and Principal | 53 |
| Debt Service on Senior Debt | 53 |

Debt Service on Subordinate MWRA Debt 53

SRF Borrowings 54

Bond Defeasance and Refunding 54

Other Components of Capital Financing Expense..... 55

Debt Service Offsets..... 55

Longer Term Outlook for Principal and Interest Payments 56

Fringe Benefits 59

Workers’ Compensation 59

Overtime 60

Other Post-Employment Benefits (OPEB) and Pension 62

Insurance..... 63

Additions to Reserves 63

Watershed Reimbursement..... 64

Deer Island Maintenance Totals \$13.24 Million 68

Field Operations Department (FOD) Maintenance Totals \$10.7 Million 69

Clinton Wastewater Treatment Plant (CWWTP) Maintenance Totals \$464 Thousand..... 70

Sludge Pelletization..... 72

Grit and Screenings 73

Lease Costs 73

Other Services 73

Electricity..... 75

Diesel Fuel 76

Natural Gas..... 76

Regulatory Changes Impacts..... 78

Chemicals Changes by Location 79

Laboratory, Testing, and Analysis Services 81

Other Engineering Services Expenses 82

Security Services 82

All Other Professional Services 82

Computer Hardware Purchases 85

Vehicle Purchases 86

Non-Rate Revenue 89

Investment Income 91

Debt Service Assistance 91

Policy Section 94

Current Revenue for the Capital Program..... 95

 In Brief..... 95

 In Depth..... 95

 In Conclusion..... 100

System Expansion – Connection Costs.....101

 In Brief..... 101

 In Depth..... 101

 In Conclusion..... 102

Wastewater Primacy103

List of Appendices104

Table of Tables

| | |
|--|----|
| Table 1 | |
| Currently Active Projects and MWRA Spending Since 1985 | 13 |
| Table 2 | |
| Capital Spending by Initiative | 15 |
| Table 3 | |
| FY14-18 Capital Spending by Program | 16 |
| Table 4 | |
| Largest 10 Projects – FY17-18 | 18 |
| Table 5 | |
| Largest 10 Wastewater Projects – FY17-18 | 20 |
| Table 6 | |
| Chelsea Creek Headworks..... | 22 |
| Table 7 | |
| Columbus Park & Ward Street | 22 |
| Table 8 | |
| Cottage Farm..... | 22 |
| Table 9 | |
| Prison Point..... | 22 |
| Table 10 | |
| Alewife Brook Pump Station | 23 |
| Table 11 | |
| Electrical Equipment Upgrade | 23 |
| Table 12 | |
| Combined Heat & Power | 24 |
| Table 13 | |
| HVAC Equipment Replacement | 24 |
| Table 14 | |
| Fire Alarm System Replacement..... | 24 |
| Table 15 | |
| Largest Deer Island Projects..... | 25 |
| Table 16 | |
| Clinton Wastewater Treatment Plant..... | 27 |

| | |
|---|----|
| Table 17 | |
| CSO Spending | 29 |
| Table 18 | |
| Largest 10 Waterworks Projects – FY17-18 | 32 |
| Table 19 | |
| Water Loan Program Summary..... | 35 |
| Table 20 | |
| Phase 2 Tier Allocation Example | 35 |
| Table 21 | |
| Largest Business & Ops Projects – FY17-18 | 37 |
| Table 22 | |
| FY14-18 Baseline Cap Calculation versus Updated Spending Projections..... | 40 |
| Table 23 | |
| Proposed FY17 CEB Highlights | 44 |
| Table 24 | |
| Proposed FY17 CEB Major Categories of Spending | 50 |
| Table 25 | |
| Capital Financing Summary..... | 51 |
| Table 26 | |
| Personnel Expenses Summary | 57 |
| Table 27 | |
| Indirect Expenses Summary..... | 61 |
| Table 28 | |
| Watershed Reimbursement..... | 64 |
| Table 29 | |
| Watershed Revenues..... | 64 |
| Table 30 | |
| Maintenance Expenses Summary | 67 |
| Table 31 | |
| Other Services Summary..... | 71 |
| Table 32 | |
| Utilities Summary..... | 74 |
| Table 33 | |
| Chemicals Summary..... | 77 |

Table 34
Professional Services Summary 80

Table 35
Other Materials Summary..... 84

Table 36
Training and Meetings 87

Table 37
Revenue Summary 88

Table 38
Other User Charges..... 90

Table 39
Other Revenue 90

Table 40
Coverage Expenses Household Analogy Table 96

Table 41
Entrance Fee/Connection Fee Repayment Example 102

Table of Figures

| | |
|---|----|
| Figure 1 | |
| Asset Protection and Water Redundancy Projects Dominate Future Spending..... | 14 |
| Figure 2 | |
| Actual and Proposed Capital Spending FY08-23 | 16 |
| Figure 3 | |
| Changes in FY14-18 Spending Proposed Spending | 17 |
| Figure 4 | |
| Wastewater Capital Spending FY09-23..... | 19 |
| Figure 5 | |
| Deer Island Treatment Plant versus Clinton Treatment Plant Spending FY14-18 | 26 |
| Figure 6 | |
| Waterworks Capital spending FY09-23 | 31 |
| Figure 7 | |
| FY14-18 Capital Spending Cap - Actual versus Baseline Cap | 41 |
| Figure 8 | |
| Proposed FY17 CEB by Major Category | 45 |
| Figure 9 | |
| Delta Report - Proposed FY17 CEB..... | 47 |
| Figure 10 | |
| Annual Rate Revenue Requirement Increases in Dollars..... | 48 |
| Figure 11 | |
| Annual Rate Revenue Requirement Increases Over Time | 49 |
| Figure 12 | |
| Delta Report - Capital Financing | 52 |
| Figure 13 | |
| Capital Financing versus Operating Expenses..... | 52 |
| Figure 14 | |
| Outstanding Principal..... | 53 |
| Figure 15 | |
| Proposed FY17 Debt Services..... | 53 |
| Figure 16 | |
| Impact of the FY06 - Proposed FY17 Defeasances..... | 54 |

Figure 17
CIP Spending vs. Capital Financing Repayment 56

Figure 18
Personnel Expense vs. Funded Positions 57

Figure 19
Delta Report - Personnel Expenses 58

Figure 20
Proposed FY17 Fringe Benefits Expenses 59

Figure 21
Workers' Compensation: Historical and Projected 59

Figure 22
Indirect Costs by Type 61

Figure 23
Delta Report - Indirect Expenses 62

Figure 24
Watershed Operating Expenses - Historical Trends 65

Figure 25
Maintenance Spending by Department 67

Figure 26
Delta Report - Maintenance 68

Figure 27
Deer Island Maintenance 68

Figure 28
Maintenance Historical Spending 69

Figure 29
Maintenance Expense Changes by Type from FY16 to FY17 70

Figure 30
Other Services by Type 71

Figure 31
Delta Report - Other Services 72

Figure 32
Proposed FY17 Utilities by Type 74

Figure 33
Delta Report - Utilities 75

Figure 34
Proposed FY17 Electricity Expense 75

Figure 35
Chemicals by Department..... 77

Figure 36
Delta Report - Chemicals..... 78

Figure 37
Chemicals Changes by Location from FY16 to FY17 79

Figure 38
Professional Services by Type 80

Figure 39
Delta Report - Professional Services 81

Figure 40
Professional Services Changes by Type from FY16 to FY17 83

Figure 41
Other Materials Historical Spending..... 84

Figure 42
Delta Report - Other Materials 85

Figure 43
MWRA Vehicles by Age..... 86

Figure 44
MWRA Vehicles by Fuel Type 86

Figure 45
Training and Meetings Historical Spending 87

Figure 46
Proposed FY17 Revenue by Source..... 88

Figure 47
Delta Report - Revenue..... 89

Figure 48
Historical Investment Income 91

Figure 49
Unsmoother Utilities Increases - Final FY16 CEB 92

Figure 50
Smoothed Utility Increases - Proposed FY17 CEB..... 92

Figure 51

Types of Expenses for Coverage 96

Figure 52

Coverage Calculation Flowchart 97

Figure 53

Pay-Go Historical and Projected Spending 98

Introduction

By statute the Advisory Board for MWRA communities is charged with reviewing the Massachusetts Water Resources Authority's proposed Capital Improvement Program (CIP) and proposed Current Expense Budget (CEB). Beginning in 2009, the Advisory Board consolidated its review into one *Integrated Comments and Recommendations* document.

The Authority's proposed FY17 rate revenue requirement combined increase is 3.91%, consistent with the Advisory Board's mantra of "Four No More." In fact, the Authority's current projections have increases of 3.9% for the next three years, and 4.1% the two following that, with the intention of reducing those as well. The Advisory Board applauds the Authority for its continued efforts to work toward this goal.

That said, the Authority is also in a different place than in recent years. The Advisory Board had made this recommendation when three large liabilities hovered over the Authority: the pension, other post-employment benefits (OPEB), and, of course, outstanding debt to be paid. Since then, the Authority has achieved full funding of its pension, began to fund its OPEB trust, and strategically used released reserves to help reduce outstanding debt. The "mountain of debt" still looms large, but the peak is nearer and there are strategies in place to continue to address the upcoming years if conditions remain favorable for the MWRA.

In the CIP, the story is similar. The major court-mandated spending is largely behind the MWRA, and future years see the focus shifting to asset protection as well as water redundancy projects. In fact, with the largely completed CSO Control Program, and potentially increased spending for the Metropolitan Tunnel Redundancy project, what had largely been a wastewater-driven capital program becomes more balanced further out.

With a new phase comes a new opportunity to revisit the MWRA's goals and options moving forward. This year's review places considerable focus on the long-term outlook for the MWRA both in shaping the capital program as well as aggressively targeting the outstanding debt, particularly in the upcoming challenging years. As always, we thank MWRA staff for all of their hard work and assistance in our review, and look forward to discussing the goals for MWRA's next phase.

Proposed FY17 Capital Improvement Program

Proposed FY17 CIP Highlights

- Currently open capital projects total nearly \$7.0 billion (columns 2 plus 4)
- Nearly \$4.0 billion has been spent on these projects through FY 2015 (column 2)
- A net total of \$4.05 billion is treated as completed (and closed out) and removed from the open project list (column 1)
 - Most notable among these is \$3.51 billion for the Boston Harbor Project¹
- From the inception of the Authority in 1985 through FY 2015 capital spending totals 7.95 billion (column 5)

Table 1

| Currently Active Projects and MWRA Spending Since 1985 | | | | | |
|--|-------------------------------------|---------------------------------------|-----------------------|----------------------|-----------------------------------|
| (\$ millions) | | | | | |
| Program | Completed (and closed out) Projects | Active Projects Spending through FY15 | TOTAL SPENT 1985-2015 | MWRA Future Spending | TOTAL (Spent and Future Spending) |
| Wastewater System Improvements | \$3,851.8 | \$1,867.1 | \$5,718.8 | \$1,195.2 | \$6,914.1 |
| Waterworks System Improvements | \$168.4 | 1,938.4 | 2,106.7 | 1,852.2 | \$3,958.9 |
| Business & Operations Support | \$32.4 | 88.5 | 120.8 | 46.2 | 167.0 |
| TOTAL MWRA (w/o Contingency) | \$4,052.5 | \$3,893.9 | \$7,946.4 | \$3,093.6 | \$11,040.0 |

- Future project spending of nearly \$3.1 billion is proposed (column 4)
- Total spending, both past and future (as identified to date in the proposed CIP) is just over \$11.0 billion (column 5)
- Each year, the Authority includes new projects, as identified in the Master Plan, although not all projects in the Master Plan are in the annual budget document
- The Master Plan, published first in 2006, identified and prioritized \$3.1 billion in water and wastewater projects:
 - FY 2007 – 2018 (12 years): nearly \$2.034 billion in project needs were identified (66% of the total)
 - FY 2019 – 2048 (30 years): \$1.044 billion in future project needs were identified
- The Master Plan was updated in September 2013 with a 40-year look at potential capital expenditures to 2053. The updated Plan identifies (approximately):
 - Wastewater needs: \$2.5 billion
 - Waterworks system needs: \$1.5 billion
 - Updated total: \$4.0 billion
 - FY14-33: \$2.0 billion
 - For consideration in future capital budgets: \$2.0 billion
 - Updated Master Plan is available at www.mwra.com

¹ On Deer Island. Including spending on residuals processing facilities, the Boston Harbor Project total is \$3.8 billion.

Shift from Mandated Spending to Asset Protection

- Nearly 80% of all spending since 1985 has been for court-mandated projects or major new facilities, including:
 - Deer Island Wastewater Treatment Plant/Boston Harbor Project: \$3.51 billion
 - Residuals facilities at Fore River/Quincy: \$0.18 billion
 - CSO Control Program: \$876.8 million through FY 2015
 - MetroWest Water Supply Tunnel: \$696.8 million through FY 2015
- Carroll Water Treatment Plant: \$416.0 million through FY 2015
- Going forward, the Authority’s focus is on Water and Wastewater Asset Protection and on Water System Redundancy projects
- Asset Protection and Water Redundancy spending more than doubles from nearly \$550 million during the FY14-18 period to nearly \$1.2 billion during FY19-23
- CSO Control Program has reached substantial completion (December 2015)
 - Program budget totals \$906.6 million²
 - FY 17-18 spending: \$7.8 million
 - Spending going forward will be for ongoing monitoring
- Negative spending beyond FY 2018 reflects repayments of the loan portions of the community assistance programs

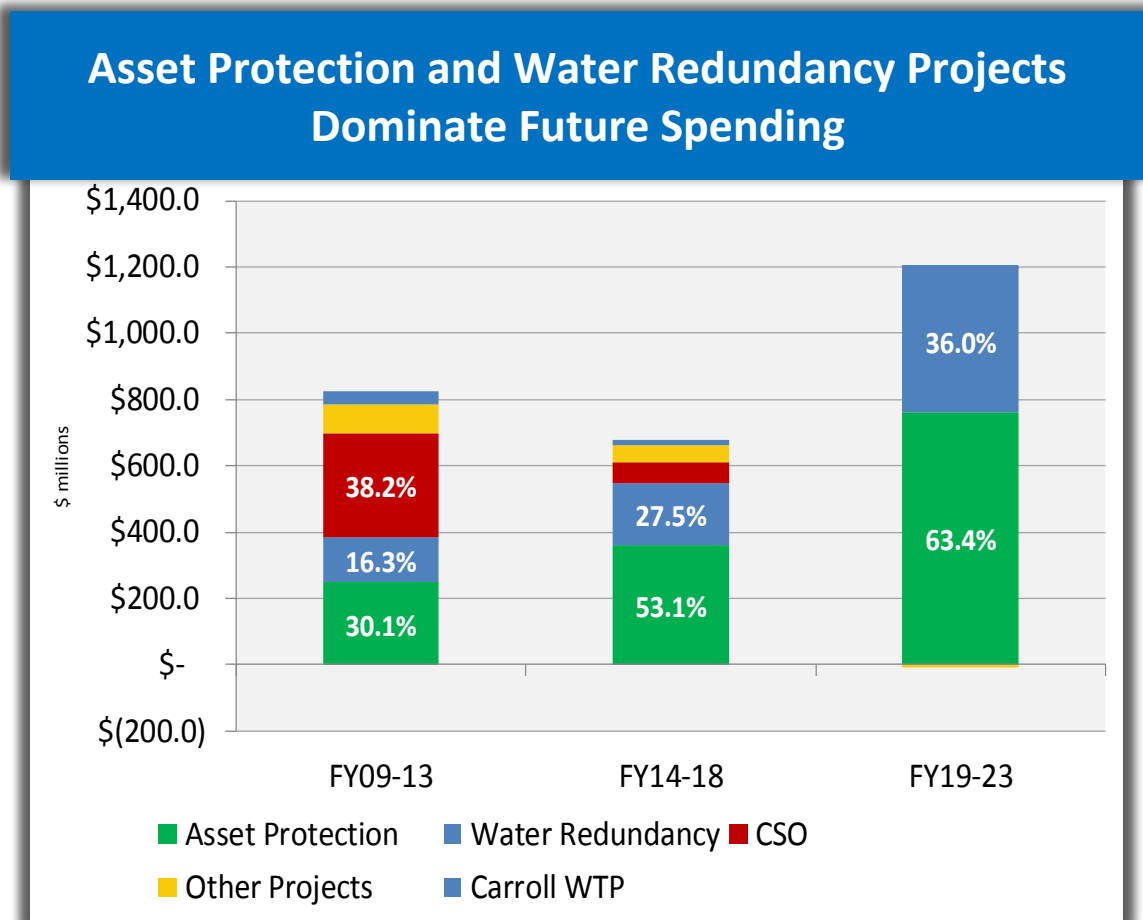


Figure 1

² Since updated.

Table 2

| Capital Spending by Initiative³ | | | | | |
|---|-----------------------|----------------|----------------|------------------|--------------------|
| \$ millions | | | | | |
| | Total Contract | FY09-13 | FY14-18 | FY19-23 | Beyond FY23 |
| Asset Protection | \$2,335.7 | \$248.0 | \$359.8 | \$760.7 | \$331.7 |
| Water Redundancy | \$2,772.3 | \$134.7 | \$186.5 | \$431.8 | \$1,156.7 |
| CSO | \$881.9 | \$315.5 | \$65.9 | \$3.0 | \$0.0 |
| Carroll WTP | \$438.1 | \$38.5 | \$15.0 | \$11.2 | \$0.6 |
| Other Projects | \$559.5 | \$88.4 | \$51.5 | (\$6.3) | (\$68.7) |
| Total | \$6,987.5 | \$825.1 | \$678.7 | \$1,200.4 | \$1,420.3 |
| <hr/> | | | | | |
| Asset Protection | 33.4% | 30.1% | 53.0% | 63.4% | 23.4% |
| Water Redundancy | 39.7% | 16.3% | 27.5% | 36.0% | 81.4% |
| CSO | 12.6% | 38.2% | 9.7% | 0.2% | 0.0% |
| Carroll WTP | 6.3% | 4.7% | 2.2% | 0.9% | 0.0% |
| Other Projects | 8.0% | 10.7% | 7.6% | -0.5% | -4.8% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

³ Source: MWRA, Proposed FY17 CIP, page 7

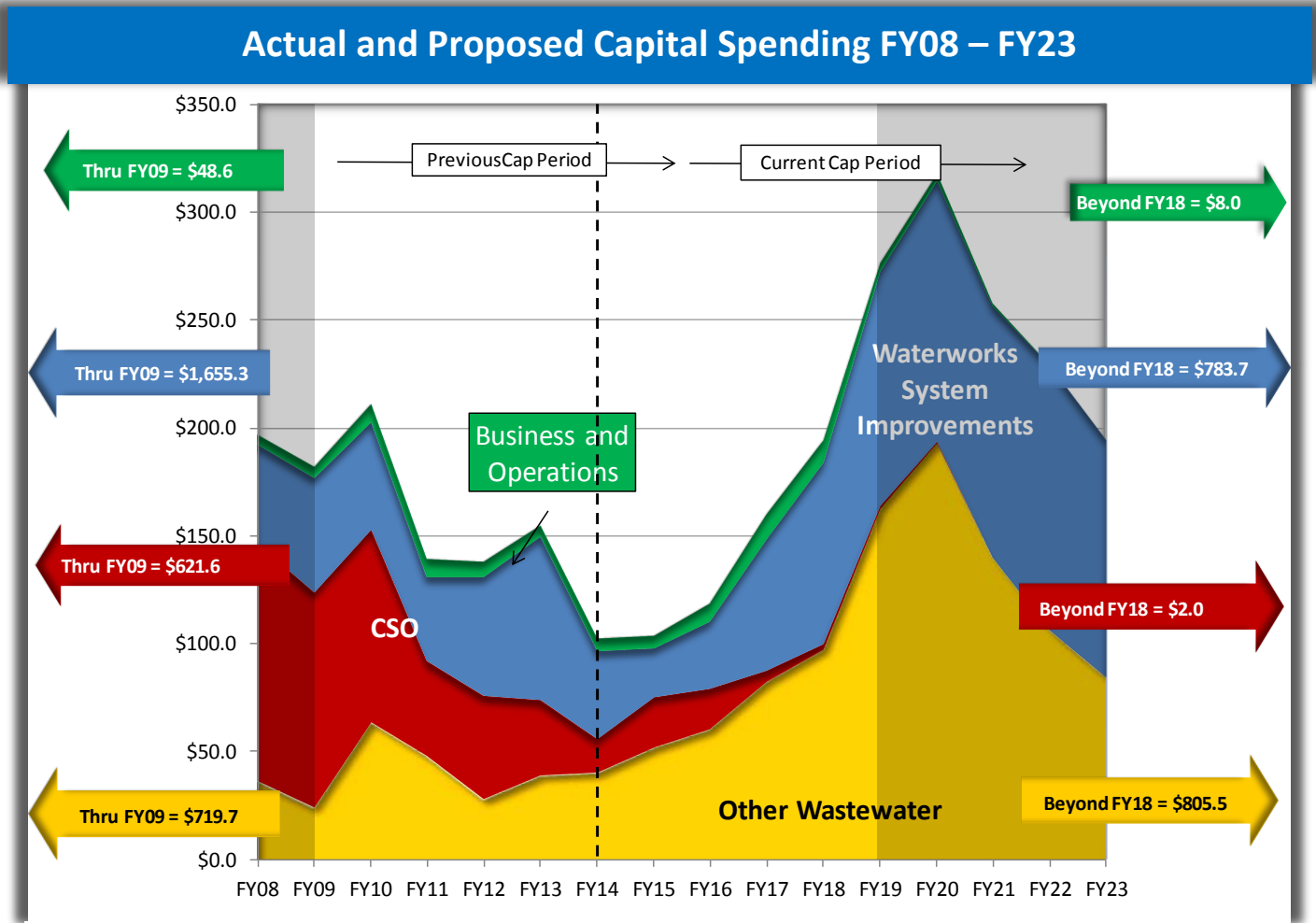


Figure 2

Changes in Proposed Spending for FY14-18

Table 3

| FY14-18 Capital Spending by Program | | | | | | | | | |
|--|------------------|-----------------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| (\$ millions) | | | | | | | | | |
| Program | Total Contract | Spending through FY15 | Remaining Balance | FY14 Actual | FY15 Actual | FY16 Projected | FY17 Proposed | FY18 Projected | FY14-18 |
| Wastewater System Improvements | \$3,062.3 | \$1,867.1 | \$1,195.2 | \$55.7 | \$75.4 | \$79.4 | \$87.3 | \$99.8 | \$397.5 |
| Interception & Pumping | 926.8 | 536.0 | 390.8 | 6.9 | 8.6 | 10.7 | 29.3 | 31.2 | 86.8 |
| Treatment | 818.4 | 239.6 | 578.9 | 29.1 | 25.7 | 30.3 | 31.1 | 46.9 | 163.1 |
| Residuals | 167.6 | 64.6 | 103.0 | 0.1 | 0.0 | 0.0 | 2.9 | 1.6 | 4.6 |
| CSO | 906.6 | 876.8 | 29.8 | 15.6 | 23.6 | 19.0 | 5.0 | 2.8 | 65.9 |
| Other | 242.9 | 150.1 | 92.8 | 4.0 | 17.5 | 19.4 | 19.0 | 17.3 | 77.2 |
| Waterworks System Improvements | 3,782.6 | 1,938.4 | 1,852.2 | 41.0 | 22.7 | 30.6 | 61.0 | 84.1 | 239.4 |
| Drinking Water Quality Improvements | 665.9 | 637.8 | 28.1 | 30.2 | 12.4 | 8.4 | 3.6 | 3.9 | 58.5 |
| Transmission | 2,285.7 | 762.0 | 1,523.7 | 4.5 | 2.5 | 7.5 | 23.2 | 36.3 | 73.9 |
| Distribution and Pumping | 760.5 | 386.5 | 382.0 | 4.8 | 8.9 | 14.1 | 31.5 | 40.6 | 100.0 |
| Other | 70.4 | 152.1 | -81.7 | 1.5 | -1.1 | 0.6 | 2.7 | 3.4 | 6.9 |
| Business & Operations Support | 134.7 | 88.5 | 46.2 | 5.5 | 5.5 | 8.3 | 11.9 | 10.6 | 41.8 |
| TOTAL MWRA w/o CONTINGENCY | \$6,979.5 | \$3,893.9 | \$3,093.6 | \$102.2 | \$103.6 | \$118.3 | \$160.1 | \$194.6 | \$678.7 |

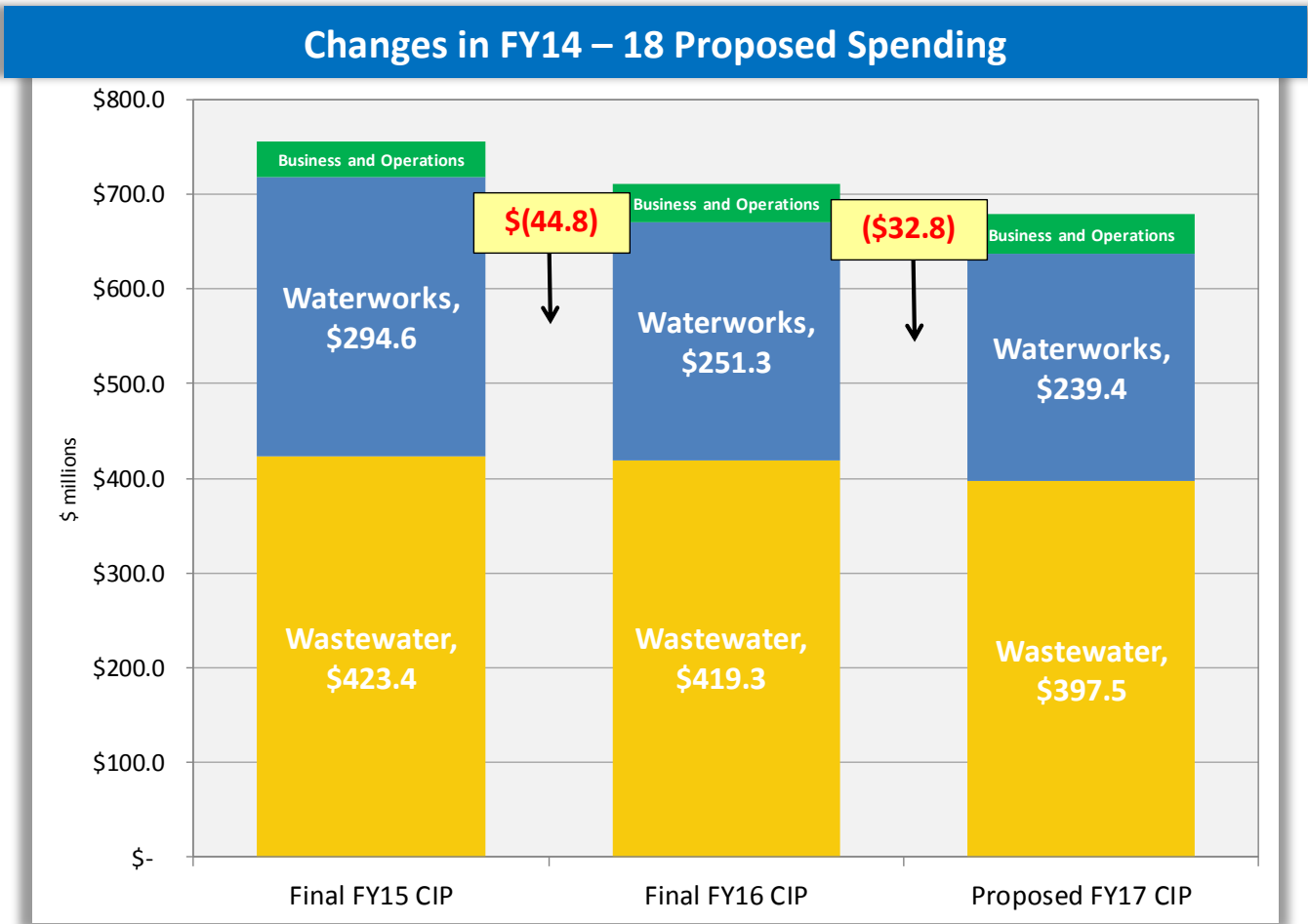


Figure 3

- Final FY15 capital spending (actual spending plus budgeted and projected spending) totaled \$756.3 million
- Final FY16 spending level for the cap period was revised to \$711.5 million, a reduction of nearly \$45 million
- The proposed FY17 CIP spending for the five-year cap period is further revised downward to \$678.7 million, an additional reduction of nearly \$33 million. The reductions reflect slower and later assumptions for the pace of spending. Some of this spending includes slight increases to FY18 projected amounts
- FY14-18 wastewater spending as of the proposed FY17 CIP: \$397.5 million
 - Represents nearly 60% of total spending for the period
- FY14-18 waterworks spending: \$239.4 million
 - Another \$9 million lower than assumed in the proposed FY16 CIP
 - Represents 35% of total spending for the five-year period
- Twenty-seven contracts with a value totaling \$101.7 million are projected to be awarded in FY17
 - The ten largest contract awards total \$86.1 million and represent nearly 85% of the planned awards

FY17-18 Capital Spending

Table 4

| Largest 10 Projects FY17-18 \$ millions | | | | |
|---|-------------------------------------|---|------------------|---------------------------------|
| Utility | Program | Project | FY17-18 Spending | % of Total CIP FY17-18 Spending |
| Wastewater | Treatment | Deer Island Treatment Plant Asset Protection | \$69.50 | 19.6% |
| Wastewater | Interception & Pumping | Facility Asset Protection | 58.20 | 16.4% |
| Waterworks | Transmission | Long-Term Redundancy | 47.80 | 13.5% |
| Wastewater | Other | I/I Local Financial Assistance | \$36.20 | 10.2% |
| Waterworks | Distribution & Pumping | Northern Intermediate High Redundancy & Storage | 33.90 | 9.6% |
| Waterworks | Distribution & Pumping | Southern Extra High Redundancy & Storage | 26.30 | 7.4% |
| Wastewater | Treatment | Clinton Wastewater Treatment Plant | \$8.50 | 2.4% |
| Waterworks | Drinking Water Quality Improvements | Carroll Water Treatment Plant | 6.80 | 1.9% |
| Business & Operations | Support | Application Improvement Program | 6.70 | 1.9% |
| Wastewater | CSO Community Managed | Cambridge Sewer Separation | \$5.00 | 1.4% |
| Top 10 Spending in FY17-18 | | | \$298.9 | 84.3% |
| Total MWRA FY17-18 Spending | | | \$354.7 | 100.0% |

- Proposed and projected spending for actual and projected spending for FY14, 15, 16 and 17 have declined from the previous year’s proposed CIP spending while FY18 spending increased slightly
- Just over one-half (52%) of all spending in the FY14-18 cap period is now planned for FY17 and 18: \$354.7 million of \$678.7 million
- The ten largest projects during this two-year period account for nearly \$300 million or 84% of all spending planned for the period

Wastewater Capital Spending

Wastewater Capital Spending by Program FY09 – 23

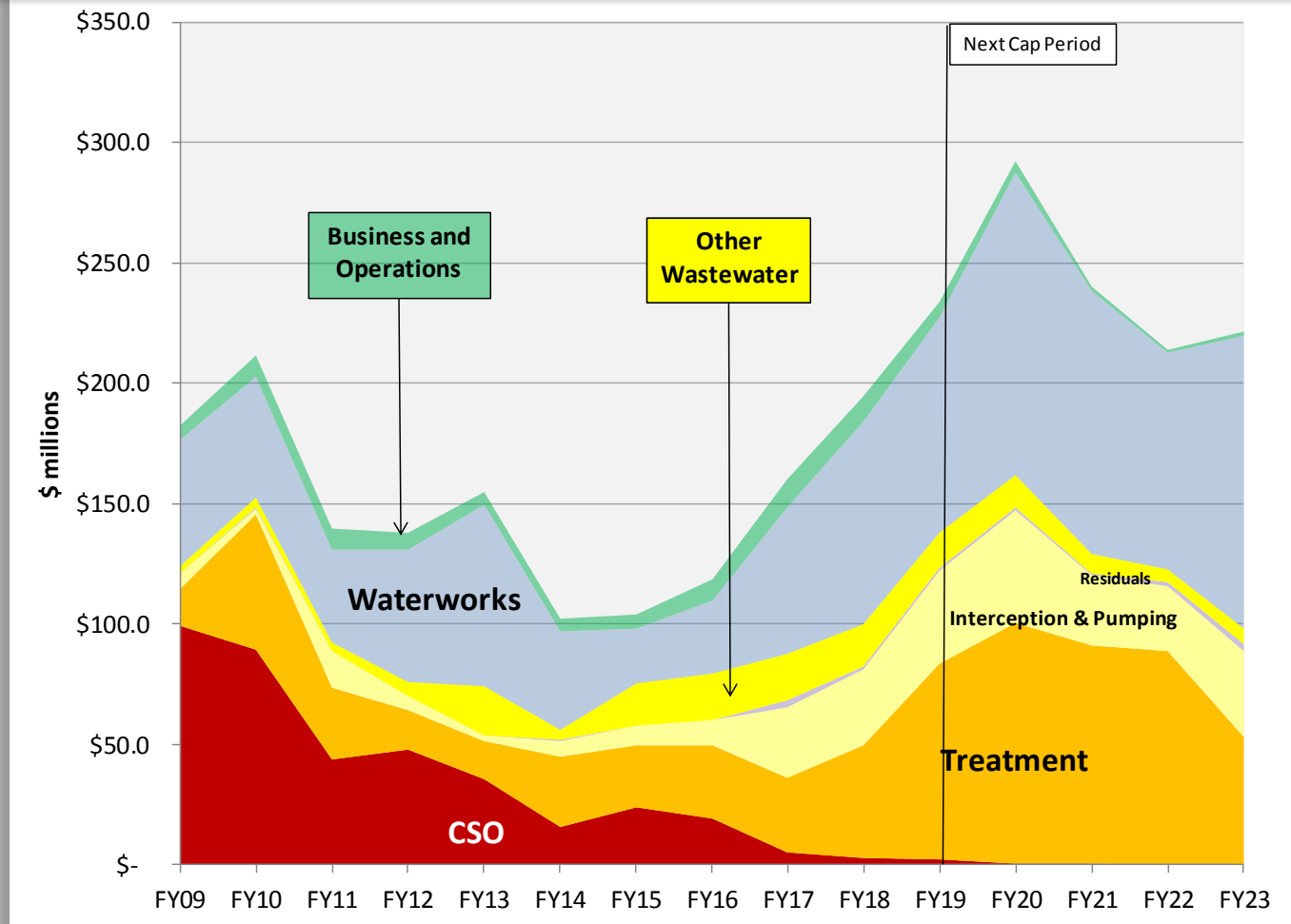


Figure 4

- Wastewater system improvement projects are divided into five categories:
 - Interception and Pumping projects
 - Treatment projects (Deer Island and Clinton wastewater treatment plants)
 - Residuals
 - Combined Sewer Overflow Program projects
 - Other (including the I/I Local Financial Assistance program)

Wastewater Spending Highlights

- FY17 spending on wastewater projects is proposed at \$87.3 million or 55% of all capital spending proposed for the year
- FY18 spending grows to nearly \$100 million or just over half of all capital spending for the final year of the current cap period
- Together, wastewater capital spending is expected to be 53% of all spending for the two-year period

Table 5

| <p style="text-align: center;">Largest 10 Wastewater Projects FY17-18 \$ millions</p> | | | | |
|---|------------------------|--|------------------|--|
| Utility | Program | Project | FY17-18 Spending | % of Total Wastewater FY17-18 Spending |
| Wastewater | Treatment | Deer Island Treatment Plant Asset Protection | \$69.50 | 37.1% |
| Wastewater | Interception & Pumping | Facility Asset Protection | \$58.20 | 31.1% |
| Wastewater | Other | I/I Local Financial Assistance | \$36.20 | 19.3% |
| Wastewater | Treatment | Clinton Wastewater Treatment Plant | \$8.50 | 4.5% |
| Wastewater | CSO Community Managed | Cambridge Sewer Separation | \$5.00 | 2.7% |
| Wastewater | Residuals | Residuals Asset Protection | \$5.00 | 2.7% |
| Wastewater | CSO Community Managed | Dorchester Bay Sewer Separation (Commercial Point) | \$2.40 | 1.3% |
| Wastewater | Interception & Pumping | Wastewater Meter System - Equipment Replacement | \$1.20 | 0.6% |
| Wastewater | Interception & Pumping | Corrosion & Odor Control | \$0.62 | 0.3% |
| Wastewater | CSO Planning & Support | CSO Support | \$0.43 | 0.2% |
| Top 10 Wastewater Spending in FY17-18 | | | \$187.1 | 100.0% |
| FY17-18 Wastewater Spending | | | \$187.1 | 100.0% |

- Ten wastewater projects account for nearly all wastewater spending during FY17-18; the largest are:
 - Deer Island Treatment Plant Asset Protection
 - Wastewater Facility Asset Protection
 - I/I Local Financial Assistance (net of loan repayments)
 - Clinton Wastewater Treatment Plant
- One new wastewater project is proposed for the FY17 budget: DeLauri Pump Station Screens and Security, part of the Facility Asset Protection project in the Interception and Pumping Program. Contract amount is estimated at \$1.03 million
- A new project subphase – Rehabilitation Study Sections 186, 4, 5, 6 – has also been added to determine rehabilitation methods for the North Metropolitan Trunk Sewer in Winthrop (\$1.0 million)

Interception and Pumping (I&P) Projects

- Includes projects that address the wastewater collection system facilities, sewers and tunnels. Among them are:
 - Four remote headworks facilities

MWRA Advisory Board

- Twenty pump stations and CSO facilities
- More than 250 miles of sewer pipes
- Four cross harbor tunnels to the Deer Island plant totaling 18 miles
- Proposed FY17 -18 spending: \$60.5 million
- Wastewater Facility Asset Protection is the largest group of contracts in the I&P projects category
 - FY17-18 spending: \$58.2 million (over 95% of all I&P spending for the two-year period)
 - Total future spending is \$312.5 million (from FY16 going forward); nearly \$250 million of this amount is scheduled for the next two cap periods (FY19-28). Over \$130 million is proposed for the rehabilitation/upgrades of the Chelsea Creek, Ward Street and Columbus Park Headworks
- Recent awards include:
 - Alewife Brook Pump Station Rehabilitation construction (\$12.6 million)
 - Prison Point Piping Rehabilitation (\$0.4 million)
 - Chelsea Creek Screen House Upgrade (\$4.89 million); completion anticipated in August 2016
- Upcoming wastewater facility asset protection contract awards include:
 - Chelsea Creek Headworks Upgrades construction (\$62.0 million) and resident engineering (\$3.6 million); design \$8.5 million
 - Reading Extension Sewer construction (\$3.66 million)
 - Caruso Pump Station Improvements construction (awarded at \$4.1 million)
 - Cottage Farm PCB Abatement (construction budget \$2.2 million)
 - Pump Stations and CSOs Condition Assessment (\$3.1 million)
 - Headworks Effluent Shafts study (\$0.5 million)
 - DeLauri Pump Station Screens and Security (\$1.03 million)
 - Dorchester Interceptor Sewer Design (\$1.0 million)
 - Cambridge Branch Sewer Study (\$1.0 million); construction Sections 27, 26: \$14.5 million; Sections 24, 23: \$10 million
- Other I&P projects with measurable future spending after the current cap period include:
 - Braintree-Weymouth Improvements (\$3.2 million)
 - Siphon Structure Rehabilitation construction (\$4.3 million)
 - Corrosion and Odor Control (several contracts, \$20.4 million); Nut Island Headworks contracts under review due to recent fire
 - Wastewater SCADA/PLC Upgrades (\$7.0 million)
 - Wastewater Meter Equipment purchases (\$4.0 million during the next cap period)
 - Deer Island Cross Harbor Tunnel (\$5.0 million)
 - Randolph Trunk Sewer Relief Study (\$0.75 million)
 - Ward Street and Columbus Park Headworks Upgrades Design (\$10.3 million) and Construction (\$101 million) with a notice to proceed of August 2022
 - North Metropolitan Trunk Sewer Sections 186, 4, 5, 6 Design \$3.0 million and Construction \$16 million
 - Dorchester Interceptor Sewer construction \$4 million

Table 6

| Chelsea Creek Headworks | | | | | | | |
|--|---------------------|--|----------------------|----------------------|--------------------------------|------------------|----------------------|
| All three remote headworks were built in 1967 and upgraded in 1987. All three facilities operate 24 hours per day. | | | | | | | |
| Chelsea Creek Headworks in located in Chelsea and has an average daily flow of 135 mgd. It serves 16 north system communities. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| Chelsea Creek Upgr Design/CA | \$ 4,691,564 | \$ 693,492 | \$ 730,488 | \$ 730,488 | \$ 1,643,599 | \$ - | \$ 8,489,631 |
| Chelsea Creek Upgrades REI | \$ - | \$ 74,756 | \$ 897,075 | \$ 897,075 | \$ 1,868,905 | \$ - | \$ 3,737,811 |
| Chelsea Hdwk-Caruso PS Utility | \$ - | \$ - | \$ 32,000 | \$ - | \$ - | \$ - | \$ 32,000 |
| Chelsea Creek Upgr Construction | \$ - | \$ - | \$ 15,188,805 | \$ 15,188,805 | \$ 31,643,342 | \$ - | \$ 62,020,952 |
| Totals | \$ 4,691,564 | \$ 768,248 | \$ 16,848,368 | \$ 16,816,368 | \$ 35,155,846 | \$ - | \$ 74,280,394 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| | | The contract for upgrade construction work is out for bid, spring 2016. Spending will continue into the next cap period. | | | | | |

Table 7

| Columbus Park & Ward Street | | | | | | | |
|---|-------------|-------------------------------------|-------------|-------------|------------------------------------|----------------------|-----------------------|
| Preliminary design report proposes replacements/upgrades to the screens, grit and screening collection and conveyance systems, odor control, HVAC, mechanical, plumbing, instrumentation, PCB removal, electrical systems, and antenna towers. | | | | | | | |
| Final design and construction contracts for the Columbus Park (in South Boston; 40 mgd) and Ward Street Headworks (upstream of Columbus Park and also located in Boston; 90 mgd) are to follow work on the Chelsea Creek Headworks and will reflect lessons from first project. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| Columbus Park Headworks Construction | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Columbus Park&Ward St. HVAC Upgrades | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Ward St & Colu Park HWKS Des/CA/REI | \$ - | \$ - | \$ - | \$ - | \$ 3,745,071 | \$ 6,582,246 | \$ 10,327,317 |
| Ward St & Columbus Park HWKS Const | \$ - | \$ - | \$ - | \$ - | \$ 14,963,472 | \$ 86,039,958 | \$ 101,003,430 |
| Totals | \$ - | \$ - | \$ - | \$ - | \$ 18,708,543 | \$ 92,622,204 | \$ 111,330,747 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| | | | | | Construction to start August 2022. | | |

Table 8

| Cottage Farm | | | | | | | |
|--|---------------------|---|------------------|-------------------|--|---------------------|----------------------|
| The Cottage Farm CSO facility was constructed in 1971, and is located next to Magazine Beach on the Cambridge side of the Charles River. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| CF PCB Abatement Design/CA | \$ - | \$ - | \$ - | \$ 131,292 | \$ 408,468 | \$ - | \$ 539,760 |
| CF Rehab Design/CA/REI | \$ - | \$ - | \$ - | \$ - | \$ 1,032,786 | \$ 367,214 | \$ 1,400,000 |
| Cottage Farm Construction 1 (PCB) | \$ - | \$ - | \$ - | \$ - | \$ 2,159,040 | \$ - | \$ 2,159,040 |
| Cottage Farm Fuel System Upgrade | \$ 497,558 | \$ - | \$ - | \$ - | \$ - | \$ - | \$ 497,558 |
| Cottage Farm Rehab Const | \$ - | \$ - | \$ - | \$ - | \$ 6,347,578 | \$ 1,209,062 | \$ 7,556,640 |
| P/P & C/F Washdown Sys Pipe - Design | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| PP/CF Engine Pumps Gearbox | \$ 6,150,773 | \$ 444,358 | \$ - | \$ - | \$ - | \$ - | \$ 6,595,131 |
| Prison PT/CF GB Pump/ESDC | \$ 261,671 | \$ 69,291 | \$ 31,027 | \$ - | \$ - | \$ - | \$ 361,989 |
| Totals | \$ 6,910,002 | \$ 513,649 | \$ 31,027 | \$ 131,292 | \$ 9,947,872 | \$ 1,576,276 | \$ 19,110,118 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| | | The engine, pumps, and gearbox project reached substantial completion in fall 2015. | | | Construction of rehabilitation and facility improvements to start July 2021. | | |

Table 9

| Prison Point | | | | | | | |
|--|---------------------|---|-------------------|-------------------|--|------------------|----------------------|
| The Prison Point CSO facility was constructed in 1978 and has a maximum capacity of 323 mgd. It is located off Route 28 and Land Boulevard in Cambridge near the museum of Science. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| P/P & C/F Washdown Sys Pipe - Design | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| PP Dry Weather Flow&Strip Pump Improv | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| PP/CF Engine Pumps Gearbox | \$ 6,150,773 | \$ 444,358 | \$ - | \$ - | \$ - | \$ - | \$ 6,595,131 |
| Prison Point Des/CA/RI | \$ - | \$ - | \$ 173,333 | \$ 208,000 | \$ 741,368 | \$ - | \$ 1,122,701 |
| Prison Point HVAC Upgrades - Design | \$ 441,387 | \$ - | \$ - | \$ - | \$ - | \$ - | \$ 441,387 |
| Prison Point Piping Rehab | \$ - | \$ 156,720 | \$ 195,900 | \$ - | \$ - | \$ - | \$ 352,620 |
| Prison Point Rehab - Const | \$ - | \$ - | \$ - | \$ - | \$ 5,613,504 | \$ - | \$ 5,613,504 |
| Prison PT/CF GB Pump/ESDC | \$ 261,671 | \$ 69,291 | \$ 31,027 | \$ - | \$ - | \$ - | \$ 361,989 |
| Totals | \$ 6,853,831 | \$ 670,369 | \$ 400,260 | \$ 208,000 | \$ 6,354,872 | \$ - | \$ 14,487,332 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| Affected by \$21 million project completed in 2001 which upgraded chlorine disinfection systems, added dechlorination systems, process control and safety improvements at five CSO facilities. \$50,000 facility optimization project completed in 2008 reduced treated CSO discharges into the Upper Inner Harbor. | | The engine, pumps, and gearbox project is substantially complete as of Fall 2015. | | | Prison Point rehabilitation work involves improvement/installations of systems for flood control and energy efficiencies. Security and fire alarm to be included | | |

Table 10

| Alewife Brook Pump Station | | | | | | | |
|---|---------------------|------------------------------|---------------------|---------------------|--|------------------|----------------------|
| The Alewife Brook Pump Station was built in 1951 in Somerville. Alewife receives wastewater from portions of Arlington, Belmont, Cambridge, Medford, and Somerville; all flow is conveyed to Deer Island for treatment. The project will improve pumping capacity and will incorporate preventative measures for climate change. The rehabilitation will include replacing the three original wet weather pumps, motors, and piping, replacing the influent screens and grinders, updating the HVAC system, upgrading the electrical system, remediating PCB-containing paints, and modifying the building interior to meet current building codes, energy efficiency improvements, flood protection measures, and security improvements. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| Alewife Brook PS Final Des/CA/REI | \$ 915,501 | \$ 182,757 | \$ 238,488 | \$ 238,488 | \$ 238,487 | \$ - | \$ 1,813,721 |
| Alewife Brook Pump Stn Rehab - Const. | \$ - | \$ 2,059,945 | \$ 5,250,189 | \$ 5,249,866 | \$ - | \$ - | \$ 12,560,000 |
| Alewife Brook Pump Stn Rehab - Des/CA | \$ 223,194 | \$ - | \$ - | \$ - | \$ - | \$ - | \$ 223,194 |
| Alewife Brook Pump Stn Screens-Const | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Totals | \$ 1,138,695 | \$ 2,242,702 | \$ 5,488,677 | \$ 5,488,354 | \$ 238,487 | \$ - | \$ 14,596,915 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| Alewife Brook PS Final Des/CA/REI 50.5% complete. | | | | | No projected spending on the project after FY20. | | |

Wastewater Treatment

- Deer Island Treatment Plant Asset Protection
- Clinton Wastewater Treatment Plant
- Laboratory Instrumentation ([see Equipment Purchase project under Business and Operations Support](#))

Deer Island Wastewater Treatment Plant

- The Deer Island project is the largest capital project in the next two years
- Spending in FY17-18 is budgeted at \$69.5 million or nearly 20% of all capital spending
- Dozens of contracts are moving forward or are planned:
 - Winthrop Terminal VFD Replacement construction (\$4.2 million)
 - Thermal Power Plant Fuel System Modifications/Resident Engineering (in-house)
 - Digester Sludge Pump Replacement Phase 2 (\$2.6 million)
 - Barge Berth and Facility Replacement (\$2.3 million)
 - As-Needed Design contracts (\$1.5 – 1.6 million)
 - Gravity Thickener Rehabilitation (\$5.8 million)
 - Combined Head and Power Design (\$6.0 million)
 - Odor Control Rehabilitation Design/REI (\$4.3 million)
 - Switchgear Replacement Design (\$1.6 million)
 - Sodium Bisulfite and Hypochlorite Tanks Rehabilitation (\$6.6 million)
- Total project costs increased by \$43.6 million in the proposed FY17 budget (as compared to the final FY16 budget), from \$720.4 million to \$763.9 million

Table 11

| Electrical Equipment Upgrade | | | | | | | |
|--|----------------------|---|---------------------|------|---|----------------------|----------------------|
| This phased program, to replace bus ducts and substation components, has been ongoing since 2001, with future spending estimates included into the mid 2020's. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| Electrical Equipment Upgrade-Const 2 | \$ 1,913,183 | | | | | | \$ 1,913,183 |
| Electrical Equipment Upgrade 3 - REI | \$ 1,111,984 | | | | | | \$ 1,111,984 |
| Electrical Equipment Upgrade-Const. 3 | \$ 15,173,750 | | | | | | \$ 15,173,750 |
| Electr Equip Upgr 4 REI | \$ 310,790 | \$ 284,327 | \$ 444,254 | | | | \$ 1,039,371 |
| Electrical Equipment Upgrade-Const 4 | \$ 6,148,522 | \$ 3,752,802 | \$ 1,071,986 | | | | \$ 10,973,310 |
| Electrical Equipment Upgrade Phase 5 | \$ - | | | | \$ 12,980,830 | \$ 10,181,045 | \$ 23,161,875 |
| Totals | \$ 24,658,229 | \$ 4,037,129 | \$ 1,516,240 | | \$ 12,980,830 | \$ 10,181,045 | \$ 53,373,473 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| Many substations and individual components distribute power to all of the facilities on Deer Island. The components include transformers, load break switches, bus ducts, cables, conduit, motor control centers, and protective relaying systems. Four upgrade contracts have been approved over the last 15 years. | | Electrical Equipment Upgrade Phase 4 (a 3-year contract), is ongoing and nearing completion. Related Utilities contracts also address transformer replacements, switchgear replacements, power system improvements, and VFD replacements. | | | Phase 5 construction is budgeted to begin December 2018 and continue through June 2026. The scope will reflect lessons learned from the previous contracts. | | |

Table 12

| Combined Heat & Power | | | | | | | |
|---|-------------|--|-------------------|---------------------|--|-------------------|----------------------|
| The project is to optimize the use of methane gas produced from the existing sludge processing system. A new combined heat and power facility would combine gas-fired turbines, and would increase electrical production and self-generation. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| Combined Heat & Power Design | \$ - | | \$ 830,769 | \$ 1,938,461 | \$ 3,115,385 | \$ 115,385 | \$ 6,000,000 |
| Combined Heat & Power Constr | \$ - | | | | \$ 83,000,000 | | \$ 83,000,000 |
| Totals | \$ - | | \$ 830,769 | \$ 1,938,461 | \$ 86,115,385 | \$ 115,385 | \$ 89,000,000 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| | | Design work is scheduled to begin Spring 2016; scope is being reviewed and can be expected to be extended. | | | Construction is scheduled to begin June 2018. One of the largest contracts in the Deer Island budget, it is budgeted over a four-year period to June 2022. Schedule may be extended to reflect revised time frame for feasibility study and preliminary and final design work. | | |

Table 13

| HVAC Equipment Replacement | | | | | | | |
|--|-------------------|--|---------------------|---------------------|--|------------------|----------------------|
| The project will involve replacement of two obsolete HVAC control systems with one manufacturer's system, reducing replacement parts and improving automation. Includes replacement of fume hoods in the laboratory. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| HVAC Equipment Replacement - Const. | \$ - | | \$ 3,214,286 | \$ 7,142,857 | \$ 14,642,857 | | \$ 25,000,000 |
| HVAC Equipment Replacement - Des/ESDC | \$ 528,501 | \$ 466,397 | \$ 125,841 | \$ 346,177 | \$ 489,381 | | \$ 1,956,297 |
| Totals | \$ 528,501 | \$ 466,397 | \$ 3,340,127 | \$ 7,489,034 | \$ 15,132,238 | | \$ 26,956,297 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| Design contract was awarded in the spring 2014. | | Schedule for construction contract of \$25 million now being revised for a January 2017 NTP. Cost estimates are expected to increase by \$4.5 million to \$29.5 million. | | | Contract contract substantial completion is currently scheduled for October 2019; maybe extended by 1 year. Construction costs continue to be updated and increased. | | |

Table 14

| Fire Alarm System Replacement | | | | | | | |
|---|-------------|--|-------------------|-------------------|---|------------------|----------------------|
| The project includes the replacement of the existing fire alarm system at Deer Island; including the front end, graphical panels, and all field devices. It may also include the replacement of the existing fiber optic data highway, based on an assessment to be conducted by the design consultant. It is one of the largest fire alarm systems in New England. | | | | | | | |
| Contracts | Before FY16 | FY16 | FY17 | FY18 | FY19-FY23 | FY24-Beyond FY26 | Totals |
| Fire Alarm System Replacement-Design | \$ - | \$ 173,231 | \$ 311,816 | \$ 511,031 | \$ 1,082,693 | | \$ 2,078,771 |
| Fire Systm Repl REI | \$ - | | | | \$ 1,800,000 | | \$ 1,800,000 |
| Fire Alarm System Replacement - Const | \$ - | | | | \$ 16,000,000 | | \$ 16,000,000 |
| Totals | \$ - | \$ 173,231 | \$ 311,816 | \$ 511,031 | \$ 18,882,693 | | \$ 19,878,771 |
| Previous Spending Summary | | Current Cap Spending Summary | | | Future Spending Summary | | |
| | | The Board awarded a design contract in October 2015 which includes preliminary design, final design, and engineering services during construction. | | | The construction contract is budgeted to run from February 2018 to August 2021; the system is estimated for replacement every 20 years. | | |

Table 15

| Largest Deer Island Projects over \$2 million \$ millions | | |
|--|------------------|------------------|
| Program/Project/Subphase | FY14 - FY18 | FY19-FY23 |
| Scum Skimmer Replacement | \$ 20.29 | \$ - |
| North Main Pump Station VFD Replacement - Construction | \$ 17.92 | \$ - |
| North Main Pump Station & Winthrop Terminal Facility Butterfly Valve Replacement | \$ 17.21 | \$ - |
| Electrical Equipment Upgrade - Construction Phase 4 | \$ 10.97 | \$ - |
| HVAC Equipment Replacement Construction | \$ 10.36 | \$ 14.64 |
| Winthrop Terminal Facility VFD Replacement - Construction | \$ 8.26 | \$ 6.43 |
| Gravity Thickener Rehabilitation | \$ 7.29 | \$ 6.82 |
| As-Needed Des 7-1, 7-2, 7-3, 8-1, 8-2, 8-3 | \$ 6.90 | \$ 1.32 |
| Clarifiers Rehabilitation Construction Phase 2 | \$ 4.67 | \$ 30.33 |
| Power System Improvements - Construction | \$ 4.55 | \$ - |
| Centrifuge Backdrive Replacement | \$ 3.64 | \$ - |
| Cryo Chillers Replacement | \$ 3.24 | \$ - |
| Combined Heat & Power Design | \$ 2.77 | \$ 3.12 |
| DSL Pump Repl Phase 2 | \$ 2.59 | \$ - |
| Co-Digestion Temporary Facility | \$ 2.30 | \$ - |
| North Main Pump Station/Winthrop Terminal Facility ESDC/REI | \$ 2.27 | \$ 0.03 |
| Secondary Reactor VFDs | \$ 2.24 | \$ - |
| Co-Digestion Design/Build | \$ 1.94 | \$ 3.06 |
| Future Misc. VFD Replacements - Construction | \$ 1.07 | \$ 4.27 |
| Digester & Storage Tank Rehab Des/ESDC | \$ 0.28 | \$ 2.35 |
| Combined Heat & Power Construction | \$ - | \$ 83.00 |
| Equipment Replacement Projection | \$ - | \$ 25.00 |
| Odor Control Rehab Construction | \$ - | \$ 22.51 |
| Future SSPS VFD Replacements - Construction | \$ - | \$ 19.20 |
| Digester & Storage Tank Rehab - Construction | \$ - | \$ 17.05 |
| Deer Island Switchgear Replacement - Construction | \$ - | \$ 16.00 |
| Fire Alarm System Replacement - Construction | \$ - | \$ 16.00 |
| Electrical Equipment Upgrade Phase 5 | \$ - | \$ 12.98 |
| Deer Island Centrifuge Replacements-Construct | \$ - | \$ 12.94 |
| Sodium Bisulfite & Hypochlorite Tanks Rehabilitation | \$ - | \$ 10.59 |
| Deer Island As-needed Technical Design | \$ - | \$ 10.45 |
| PICS Distributed Process Units Replacement | \$ - | \$ 8.00 |
| Future Sodium Hypochlorite Tank Rehabilitation | \$ - | \$ 6.67 |
| Cathodic Protection Construction | \$ - | \$ 6.18 |
| North Main Pump Station MCC Phase 2 Construction | \$ - | \$ 6.09 |
| Deer Island CTG Rebuilds | \$ - | \$ 6.00 |
| Deer Island PICS Replacement - Construction | \$ - | \$ 5.40 |
| Cryogenics Plant-Equip Replace-Const. | \$ - | \$ 5.30 |
| Deer Island Switchgear Replacement - Design | \$ - | \$ 4.41 |
| Eastern Seawall Construction - 1 | \$ - | \$ 3.77 |
| Deer Island Centrifuge Replacements - Design | \$ - | \$ 3.54 |
| North Main Pump Station Harmonic Filter Replacement | \$ - | \$ 3.00 |
| South System Pump Station Lube System Replacement | \$ - | \$ 2.90 |
| Chemical Pipe Replacement - Construction | \$ - | \$ 2.09 |
| Subtotal | \$ 145.03 | \$ 404.82 |
| All Other Active Projects | \$ 5.32 | \$ 4.54 |
| Total MWRA Spending | \$ 150.36 | \$ 409.36 |

Deer Island Treatment Plant versus Clinton Treatment Plant Spending FY14-18

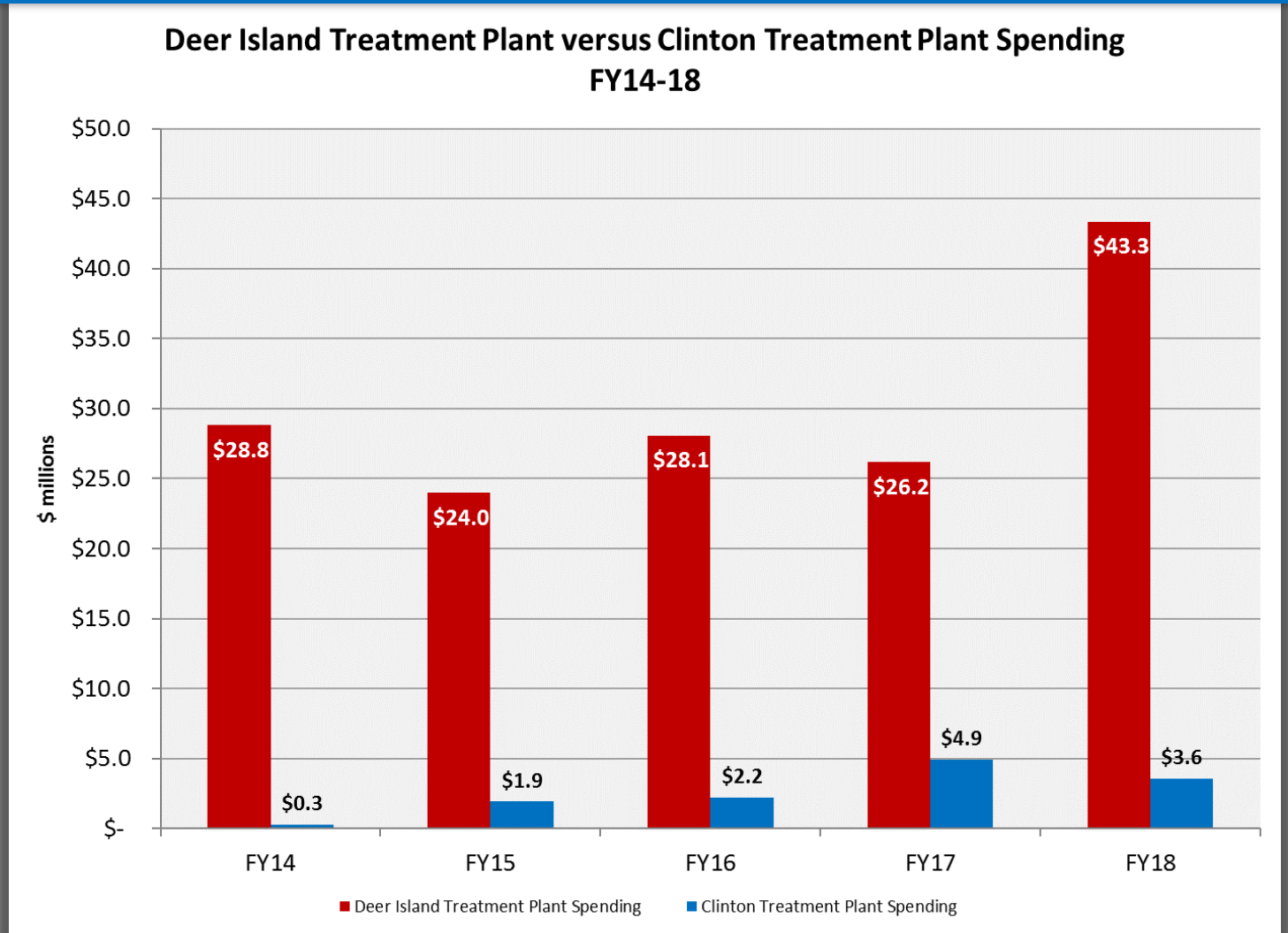


Figure 5

Clinton Wastewater Treatment Plant

- Total project costs declined slightly, by \$0.56 million from \$20.5 million to \$19.96 million
- Spending during FY17-18 is budgeted at \$8.5 million
- Largest contract is for phosphorus removal construction, at a proposed budgeted amount of \$7.76 million. (February 2016 award amount: \$7.27 million) The project is expected to be required by Clinton’s new NPDES permit, still in draft form. EPA reissued the draft permit (originally issued in 2010) in September 2013
- Digester cleaning and rehabilitation contract is scheduled for substantial completion April 2017 (\$ 3.61 million)
- Facilities rehabilitation (\$4.32 million). Scheduled for a September 2018 notice to proceed and includes:
 - Rehabilitation or replacement of grit removal facilities
 - Two belt filter presses
 - Closure of Cell #1 of landfill
- Roofing rehabilitation (\$0.54 million)

Table 16

| Clinton Wastewater Treatment Plant | | | |
|---|-----------------|----------------|------------------|
| (\$ millions) | | | |
| Projects | FY 09-13 | FY14-18 | Beyond 18 |
| Clinton Soda Ash Replacement | \$ 0.15 | | |
| Clinton Plant-Wide Concrete Repair | \$ 0.06 | | |
| Clinton Digester Cleaning and Rehab | \$ 0.09 | \$3.52 | |
| Clinton Aeration Efficiency Improvement | \$ 1.88 | (\$0.01) | |
| Clinton WWTP Influent Gates | | | |
| Clinton WWTP Auzillary Pumps | | | |
| Phosphorus Removal - Design | | \$1.09 | \$0.21 |
| Phosphorus Removal - Construction | | \$7.76 | |
| Clinton Roof Rehab | | \$0.40 | |
| Clinton Facilities Rehab | | | \$3.96 |
| TOTAL | \$ 2.18 | \$12.76 | \$4.17 |

Residuals

Residuals Asset Protection

- Total future spending is proposed at \$103 million
- The proposed CIP assumed the award of a construction contract for the upgrade of the residuals facility at Fore River of \$10.0 million (July 2016)
- Design costs are assumed at \$2.0 million but with a notice to proceed one year later, July 2017
- Condition assessment/technology and regulatory review have been conducted
- Total budget was \$0.83 million
 - Results may point to need for additional feasibility studies on possible process change
- Spending during FY17-18 is budgeted at \$4.46 million
- Total budgeted costs are unchanged from the final FY16 CIP, at \$103.8 million

Combined Sewer Overflow Control Program

- Substantial completion on the multi-year CSO Control Program was reached by the court-ordered date of December 2015. All of the 35 projects are complete
- The Authority has been constructing the projects in the Long-Term Control Plan for 20 years, since 1996, according to the December Court Report
- The CSO Control Program has included the management of 125 contracts, including 82 construction contracts, 33 engineering contracts and 10 planning and technical support contracts, as well as 6 community financial assistance agreements. To date, MWRA has spent \$891 million on the CSO control efforts, or 98% of the \$906.6 million budget, on the 35 CSO projects
- Region-wide CSO discharge volume in a typical rainfall year has been reduced from 3.3 billion gallons to 0.4 billion gallons, an 88% reduction, with at least 93% of the remaining CSO volume treated at MWRA's four remaining CSO facilities
- Total program costs are now budgeted at \$906.6 million, an increase of \$8.15 million as compared to the final FY16 CIP. Increases totaling \$10.2 million for the Cambridge Sewer Separation project are partially offset by lower accruals of \$2.05 million for the Reserved Channel Sewer Separation project in South Boston
- Much lower levels of spending will continue through FY 2021, when MWRA is to complete a sewer system performance assessment verifying attainment of the goals for long-term CSO control levels
- Cash flows and spending schedules are tied to dates established in the Court Order
- MWRA has five years following construction of the last CSO project in 2015 to complete, by December 2020, post-construction monitoring and a performance assessment to verify the approved long-term levels of CSO are achieved
- As part of the agreement, DEP agreed to continue to reissue, and EPA agreed to approve, the Charles River and Alewife Brook/Upper Mystic River CSO variances through 2020 without additional CSO controls beyond the approved plan
- The Authority reports that the remaining \$15.6 million in scheduled CSO spending is for:
 - Surface restoration work by Cambridge on the CAM004 Sewer Separation Project (\$9.6 million through June 2017)
 - Close-out of BWSC Reserved Channel contracts (\$164,000 through 2016)
 - Removal of additional stormwater inflow by BWSC in Dorchester (\$3.6 million, schedule under review) and
 - CSO performance assessment (\$2.0 million in 2018-2020)

Table 17

| CSO Spending \$ millions | | | |
|--|-----------------|----------------|---------------|
| Project | FY09-13 | FY14-18 | Beyond FY18 |
| North Dorchester Bay | \$82.58 | (\$0.02) | |
| East Boston Branch Sewer Relief | \$74.94 | (\$0.01) | |
| MWR003 Gate & Siphon | \$0.65 | \$3.91 | |
| Dorchester Bay Sewer Separation (Fox Point) | \$0.39 | \$0.47 | |
| Dorchester Bay Sewer Separation (Commercial Point) | \$6.26 | \$1.65 | \$1.38 |
| Stony Brook Sewer Separation | (\$0.86) | \$0.05 | |
| Union Park Detention Treatment | (\$0.27) | \$0.00 | |
| Cambridge Sewer Separation | \$32.03 | \$52.28 | |
| Cambridge Floatables | \$0.16 | \$0.40 | |
| Fort Point Channel Sewer Separation | \$3.72 | (\$0.90) | |
| Morrissey Boulevard Drain | \$17.67 | (\$0.16) | |
| Reserved Channel Sewer Separation | \$57.32 | \$10.52 | |
| Brookline Sewer Separation | \$24.73 | (\$1.28) | |
| Bulfinch Triangle Sewer Separation | \$9.36 | (\$0.80) | |
| Charles River CSO | \$2.53 | \$0.00 | |
| CSO Support | \$4.28 | (\$0.71) | \$1.60 |
| TOTAL | \$315.49 | \$65.40 | \$2.97 |

Other Wastewater Projects

Infiltration/ Inflow Local Financial Assistance Program

- Includes one major project/program: the Infiltration/Inflow Local Financial Assistance Program
- Total budget: \$242.6 million⁴
- Through FY15 grants/loans net of repayments: \$149.8 million
- Net remaining balance: \$92.8 million
- FY14-18 net budget: \$77.2 million
- Net budget for FY17-18: \$36.2 million
- Program inception: August 1992
 - Phase 1 and 2: 25% grants/75% loans
 - Phases 3 through Phase 8: 45% grants/55% loans
 - Total each phase: \$40 million
 - Repayment period: five years
 - Phases 9 and 10: 75% grants/25% interest free loans

⁴ Net of repayments

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- Total each phase: \$80 million
- Repayment period: ten years
- Through February 2016:
 - \$304.9 million distributed in grants and interest-free loans
 - Funded 501 local sewer rehabilitation projects in 43 wastewater communities
- For all ten phases, total funding came to \$460.76 million
 - Of this amount, \$304.90 has been distributed and funds remaining total \$155.85 million
- Loan Repayments to date are \$144.4 million, with a remaining balance of \$73.8 million

Waterworks Capital Spending

Waterworks Capital Spending by Program FY09 – 23

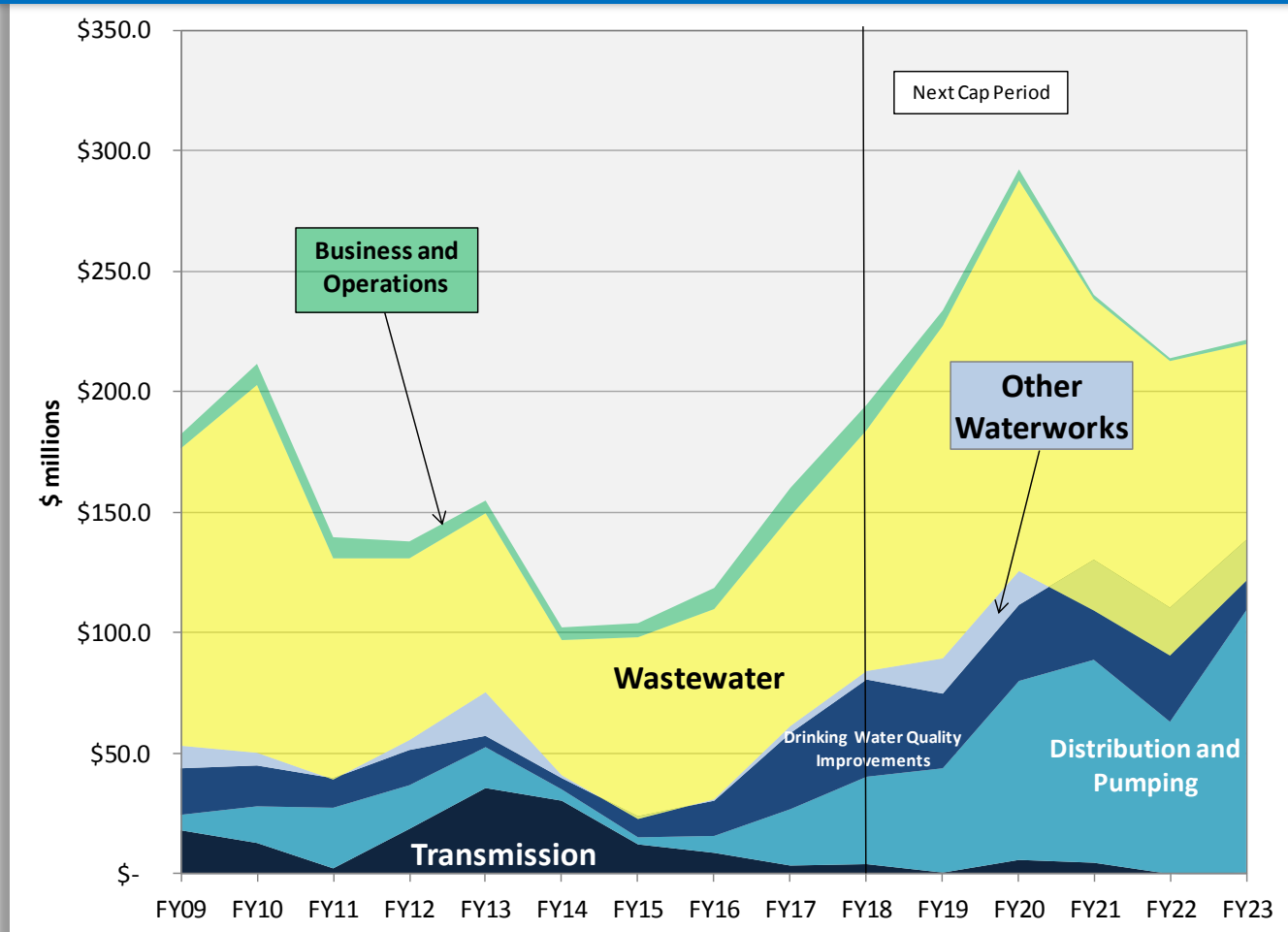


Figure 6

- There are four main categories of Waterworks spending
 1. Drinking Water Quality Improvements
 2. Transmission
 3. Distribution and Pumping
 4. Other projects
- Active waterworks projects in the proposed CIP: \$3.8 billion
 - Increase from FY16 CIP: \$881 million
 - Includes placeholder for Metropolitan Redundancy Plan
 - Spending through FY15 is \$1,938.4 million
 - Balance going forward is \$1,852.2 million
- Proposed FY14-18 spending: \$239.4 million
- Proposed FY17-18 spending: \$145.1 million
- Ten projects make up nearly all Waterworks spending for FY17-18
- Four of these are in the Authority's ten largest projects for FY17-18:

1. Long-Term Redundancy (\$47.8 million)
2. Northern Intermediate High Redundancy and Storage (\$33.9 million)
3. Southern Extra High Redundancy and Storage (\$26.3 million)
4. Carroll Water Treatment Plant (\$6.8 million)

Table 18

| Largest 10 Waterworks Projects | | | | |
|--|-------------------------------------|---|---------------------|---|
| FY17-18 | | | | |
| \$ millions | | | | |
| Utility | Program | Project | FY17-18 Spending | % of Total Waterworks FY17-18 Spending |
| Waterworks | Transmission | Long-Term Redundancy | \$47.80 | 32.9% |
| Waterworks | Distribution And Pumping | Northern Intermediate High Redundancy & Storage | \$33.90 | 23.4% |
| Waterworks | Distribution And Pumping | Southern Extra High Redundancy & Storage | \$26.30 | 18.1% |
| Waterworks | Drinking Water Quality Improvements | Carroll Water Treatment Plant | \$6.80 | 4.7% |
| Waterworks | Other Waterworks | Central Monitoring System | \$4.90 | 3.4% |
| Waterworks | Transmission | Watershed Land | \$4.30 | 3.0% |
| Waterworks | Transmission | Winsor Station Pipeline | \$3.90 | 2.7% |
| Waterworks | Distribution And Pumping | Weston Aqueduct Supply Mains | \$3.00 | 2.1% |
| Waterworks | Distribution And Pumping | Northern High Service - Revere & Malden Pipeline Improvements | \$2.80 | 1.9% |
| Waterworks | Transmission | Sudbury/Weston Aqueduct Repairs | \$2.60 | 1.8% |
| Top 10 Waterworks Spending in FY17-18 | | | \$136.3 | 93.9% |
| FY17-18 Waterworks Spending | | | \$145.1 | 100.0% |

Drinking Water Quality Improvements

- Budgeted FY14-18 spending: \$58.5 million
- Proposed FY17-18 spending: \$7.5 million
- These projects focus on the treatment and storage of the MWRA’s water supplies including:
 - John J. Carroll Treatment Plant (CWTP) and related contracts
 - FY14-18 spending: \$15.0 million
 - FY17-18 spending: \$6.8 million
 - Spot Pond Storage Facility and Pump Station
 - FY14-18 spending: \$36.0 million
 - FY17-18 spending: \$739.1 thousand
 - 99% of funds expected to be spent by FY16 year-end

- Brutsch Water Treatment Facility
 - FY14-18 spending: \$7.3 million
 - All spending expected to be completed by FY16
- FY16 spending: less than \$500 thousand
- Spot Pond Storage Facility and Pump Station is nearing completion
- Both Blue Hills Covered Storage Reservoir (\$40.6 million) and Norumbega Covered Storage (\$106.7 million) are complete

Transmission

- The water transmission system consists of more than 100 miles of tunnels and aqueducts that transport water daily by gravity from the supply reservoirs to points of distribution within the service area.
- Budgeted FY14-18 spending: \$74.0 million
- 80% of this cap period spending scheduled in FY17-18
- Proposed FY17-18 spending: \$59.5 million
- Largest projects during FY17-18 include:
 - Long-Term Redundancy: \$47.8 million
 - Watershed Land: \$4.3 million
 - Winsor Station Pipeline: \$3.9 million
 - Sudbury/Weston Aqueduct Repairs: \$2.6 million

Policy Point

Metropolitan Tunnel Redundancy

“Critical but Costly”

For years the MWRA has had several projects in its capital program aiming toward providing redundancy for the metropolitan region of the MWRA waterworks system intended for future years. Among the various approaches included in the capital budget included a series of projects using surface piping. As plans for these surface piping projects were further evaluated, the Authority became concerned about the impacts upon the communities through which they would be built. Though not the only community impacted, one example referenced was the City of Waltham, which would require significant surface piping work over a protracted period of time in its business-heavy Moody Street area. Though more costly, the MWRA began to evaluate tunnel options with fewer impacts to communities.

Over the last few years, a variety of tunnel options have been reviewed for the cost, the impacts to communities, and level of redundancy achieved. MWRA staff reduced the options from thirty or so to a smaller number, ranging from about \$800 thousand to \$1.4 billion. In its proposed FY17 CIP the MWRA has included a \$1.4 billion placeholder for this project. It's important to note that major spending for this project is still several years away during the 2020s; however, the MWRA recognized the importance of building early awareness of the potential size, scope, magnitude and importance of this project. The original plan was to present and discuss these options to the MWRA Board of Directors during FY16, and including the final option selected in the final FY17 CIP. Some Board members raised concerns that this schedule was too aggressive to make a final decision about project this complex, and the MWRA has decided to slow the process down somewhat.

The MWRA no longer expects to have a final option chosen for the final FY17 CIP, but plans to include the placeholder until a final decision is made, which the Advisory Board supports. As part of the review moving forward, the MWRA plans to hold an off-site meeting dedicated solely to discussing this project in depth. Once a decision has been reached, there will be additional outreach to major stakeholders including the Baker Administration and cities and towns to keep them well-informed. Advisory Board staff will coordinate closely with Authority staff to further this outreach and build greater public awareness.

The Advisory Board recommends keeping the \$1.4 billion associated with Metropolitan Tunnel Redundancy in the CIP as a placeholder for the future project. The Advisory Board reserves its right to make future recommendations on the cost, scope, and makeup of any project(s) associated with this expense.

The Advisory Board recommends that the Authority consider using the Program Management Division model used for the Boston Harbor Project when implementing the Metropolitan Tunnel Redundancy Project(s).

Distribution and Pumping

- Includes projects that focus on the metropolitan system, which is divided into seven pressure zones and includes:
 - 284 miles of distribution pipeline east of Shaft 5
 - 11 storage tanks
 - 11 pump stations
 - 9 tunnel shafts
 - approximately 4,700 valves
- FY14-18 spending: \$1.0 billion
- FY17-18 spending: \$72.1 million
- Largest projects in FY17-18:
 - Northern Intermediate High Redundancy and Storage: \$33.9 million
 - Southern Extra High Redundancy and Storage: \$26.3 million
 - Weston Aqueduct Supply Mains: \$3.0 million
 - Northern High Service - Revere and Malden Pipeline Improvements: \$2.8 million

Other Waterworks Projects

- FY14-18 net spending: +\$6.9 million
- FY17-18 net spending: +\$6.0 million
- FY17-18 spending includes:
 - Central Monitoring System: \$4.9 million
 - Local Water Pipeline Assistance Program: -\$1.4 million
 - Distributions: +\$42.2 million
 - Loan repayments: -\$43.6 million
 - Waterworks Facility Asset Protection: \$2.0 million

Policy Point

Water Loan Program – Phase 3

“The Next Generation: Same? Tweak? Change?”

The MWRA has had two phases of what we'll refer collectively as the "Water Loan Program." See [Table 19](#) for more detail on each phase. Before Phase 2 the Operations Committee similarly evaluated the Phase 1 program, and made some modifications. Rather than being allocated entirely on a proportion of unlined pipe miles, each community was to receive a base amount of \$1 million for fully supplied water communities, and \$500 thousand for partially supplied water communities. Additionally, the Committee expanded what the funds could be used for, creating a second tier of projects that included metering and booster stations among other local water system improvements.

Table 19

| Water Loan Program Summary | | | | |
|----------------------------|---------------------------------------|-----------------|--|---|
| Phase | Name | Total Amount | Allocation | Notes |
| Phase I | Local Pipeline Assistance Program | \$256.8 million | Miles of unlined pipe | Initial program increased to accommodate additional communities |
| Phase II | Local Water Supply Assistance Program | \$210 million | - All communities receive base amount - Allocated by miles of unlined pipe - Some funds eligible for non-lining projects | |

The Committee wanted to emphasize that the focus of the program was still on unlined pipe. To this end, Phase 2 uses a simple formula to calculate what portion of a community's allocation could be used for Tier 2 projects based on the percentage of lined pipe they have in their local system (see example in [Table 20](#)). A community is always eligible to use all of its funding for Tier 1 projects.

Table 20

| Phase 2 Tier Allocation Example | | | |
|---------------------------------|-------------------|--------------------|-----------------------|
| Community | % of Unlined Pipe | Phase 2 Allocation | Tier 2 Eligible Funds |
| Favaloroville | 25% | \$10 million | \$2.5 million |
| West Romerobridge | 60% | \$10 million | \$6 million |

Because the phases have historically overlapped and Phase 2 distributions end in FY20, it is time to look ahead to Phase 3. As with the previous phase, the Advisory Board will convene its Operations Committee in FY18 to review the performance of the program and discuss any potential changes.

In response to some feedback from member communities, among the topics for discussion are:

1. Size of program - are communities satisfied with the current size of the program?

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2. Tier 2 items - are communities satisfied with the Tier 2 items? Should more types of spending be included moving forward?
3. Changing to a grant/loan program - several members have indicated they'd have interest in a grant/loan program for their water utilities. Is there still interest?
4. Allocation of funds - particularly if there is serious interest/discussion about changing to a grant/loan program, how funds are allocated to communities would also need to be discussed.

The Advisory Board expects to coordinate closely with MWRA staff on discussing Phase 3 of the Water Loan Program in FY18.

Business and Operations Spending

- FY17 Business and Operations spending: \$11.9 million
 - Three projects in this category of spending are among the top ten projects for the last two years of the FY14-18 spending cap:
 - Application Improvement Program: \$6.7 million
 - Equipment Purchase: \$3.7 million
 - Alternative Energy Initiatives: \$3.5 million

Table 21

| Largest Business & Ops Projects FY17-18 \$ millions | |
|--|-------------------------|
| Project | FY17-18 Spending |
| Application Improvement Program | \$6.7 |
| Equipment Purchase | 3.7 |
| Alternative Energy Initiatives | 3.5 |
| Capital Maintenance Planning & Development | 2.6 |
| IT Infrastructure Program | 1.4 |
| Total | \$17.8 |

- FY14-18 Business and Operations spending: \$41.8 million
 - Increase from final FY16 CIP: \$869 thousand
- MIS-related FY14-18 spending: \$20.1 million
 - Business Systems Plan: \$76 thousand
 - A 6-phase plan to replace aging systems and network architecture, improve disaster recovery, enhance data integration, consolidate server resources, and implement best practices
 - Application Improvement Program: \$8.4 million
 - To improve efficiencies of business processes associated with managing operations and support divisions
 - Information Security Program: \$2.3 million
 - To increase resiliency and sustainability of data security practices
 - Information Technology Management: \$850 thousand
 - To improve oversight process for procurement of IT solutions throughout the Authority
 - IT Infrastructure Program: \$8.5 million
 - To implement consolidated and optimized versions of equipment and databases
- Alternative Energy Initiatives FY14-18 spending: \$3.8 million including
 - Deer Island Wind Phase II Construction: \$2.5 million

- Fish Hatchery Pipeline Hydro: \$0.63 million
- Capital Maintenance Planning and Development FY14-18 spending: \$6.3 million
 - Includes spending on six contracts for as-needed design services
- Capital Equipment purchases in FY14-18: \$10.8 million
 - Security Equipment & Installation: \$3.8 million
 - Vehicle Purchases (FY14-18 specific): \$6.4 million
 - Major Lab Instrumentation (FY14-18 specific): \$0.6 million
- Technical Assistance Contract FY14-18 spending: \$0.75 million
 - Supports such services as land appraisal, surveying and hazardous materials assessment

Capital Spending Cap

Background for Setting a Five-Year Cap on Capital Spending, a Recap of the Cap

- The Authority first adopted a capital spending cap in 2001, setting a ten-year cap each year as part of the approval of the final CIP and annual caps for the first three years of the budget period. In each succeeding year, a new ten-year cap was calculated by removing the completed year, adding any unspent funds from the just completed year and adding a new tenth year in the amount of \$100 million⁵.
- In June 2003, the Board of Directors adopted a revised capital spending cap policy with a calculation that reflected projected expenditures for a five-year period, plus contingency allowances and inflation adjustments⁶, less Chicopee Valley Aqueduct projects.
- A second provision of the cap allows annual spending within the five-year period to vary within plus or minus 20% of the initial amounts calculated for each of the five years, as long as the five-year total is not exceeded. In the event that an annual cap limit is exceeded, the Authority may request approval by the Board of Directors to exceed the limit for an individual fiscal year.

The First Five-Year Cap: FY04-08

- Approved in June 2003 as part of the approval of the final FY04 CIP
- Baseline FY04-08 capital spending cap: \$1.1345 billion. ([See Appendix E.](#))
 - Based on projected capital spending of \$1.0233 billion
- Actual spending: \$888.5 million
- Spending according to the cap equation: \$880.1 million
 - Underspending from the “baseline” cap: \$254.4 million (22.4%)
- The Authority did not exceed the overall five-year cap or the allowance of 20% over the individual base year caps.

The Second Five-Year Cap: FY09-13

- Approved in June 2008 as part of the approval process for the final FY09 CIP ([See Appendix E.](#))
- Baseline FY09-13 capital spending cap: \$1.1438 billion
 - Based on projected capital spending of: \$1.0814 billion
- Actual spending: \$825.1 million
 - Lower than the first cap period
 - Spending according to the cap equation: \$821.0 million
 - Underspending from the “baseline” cap: \$322.8 million (28.2%)

The Third Five-Year Cap: FY14-18

- During the review of the proposed FY13 CIP, the Advisory Board, noting the lower than budgeted spending of the first two periods and observing the progress toward completing the court-ordered CSO Control Program, challenged the Authority to limit the FY14-18 cap to no more than \$800 million

⁵ Adjusted for inflation.

⁶ On unawarded construction contracts.

- The Authority reshaped its proposed capital program and reconsidered the scheduling for a number of projects, and recommended a new five-year cap below the \$800 million challenge

Table 22

| FY14-18 Baseline Cap Calculation Versus Updated Spending Projections (\$ millions) | | | | | | |
|--|----------------|----------------|----------------|----------------|----------------|------------------|
| | 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 Baseline Cap | \$145.8 | \$159.1 | \$166.4 | \$161.3 | \$159.1 | \$791.7 |
| Projected Expenditures | \$102.2 | \$103.6 | \$118.3 | \$160.1 | \$194.6 | \$678.7 |
| Contingency | 0.0 | 0.0 | 5.6 | 9.5 | 12.0 | 27.0 |
| Inflation on Unawarded Construction | 0.0 | 0.0 | 2.1 | 5.3 | 11.1 | 15.5 |
| Less: I/I Program | 0.0 | (17.5) | (19.4) | (19.0) | (17.3) | (73.1) |
| Less: Water Loan Program | 0.0 | 1.4 | 1.4 | 2.0 | (0.6) | 4.3 |
| Less: Chicopee Valley Aqueduct Projects | (5.6) | (1.2) | (0.5) | (0.1) | 0.0 | (7.4) |
| FY17 Proposed Subtotal | \$96.6 | \$86.3 | \$107.5 | \$157.9 | \$199.7 | \$648.0 |
| Change (\$) | (49.2) | (72.7) | (58.9) | (3.4) | 40.6 | (143.7) |
| Change (%) | -33.7% | -45.7% | -35.4% | -2.1% | 25.5% | -18.2% |

- The FY14-18 baseline cap was approved in June 2013 as part of the approval process for the final FY14 CIP
- Baseline FY14-18 capital spending cap: \$791.7 million
 - Based on projected capital spending of: \$718.0 million
- Updated FY14-18 spending: \$678.7 million⁷
 - This is \$146.4 million less than the \$825.1 million in actual spending for the previous cap period.
- As compared to the baseline cap spending used in establishing the original FY14-18 cap, spending for the 5-year period is nearly \$40 million lower than the \$718.0 million set in June 2013. The first three years of the period are lower than the baseline by \$115 million, while \$76 million has been shifted to the last 2 years of the cap period, FY17-18. (See [Figure 7](#) and [Table 22](#))

⁷ Projected for FY14, proposed for FY15-18.

FY14-18 Capital Spending Cap Actual/Projected versus Baseline Cap

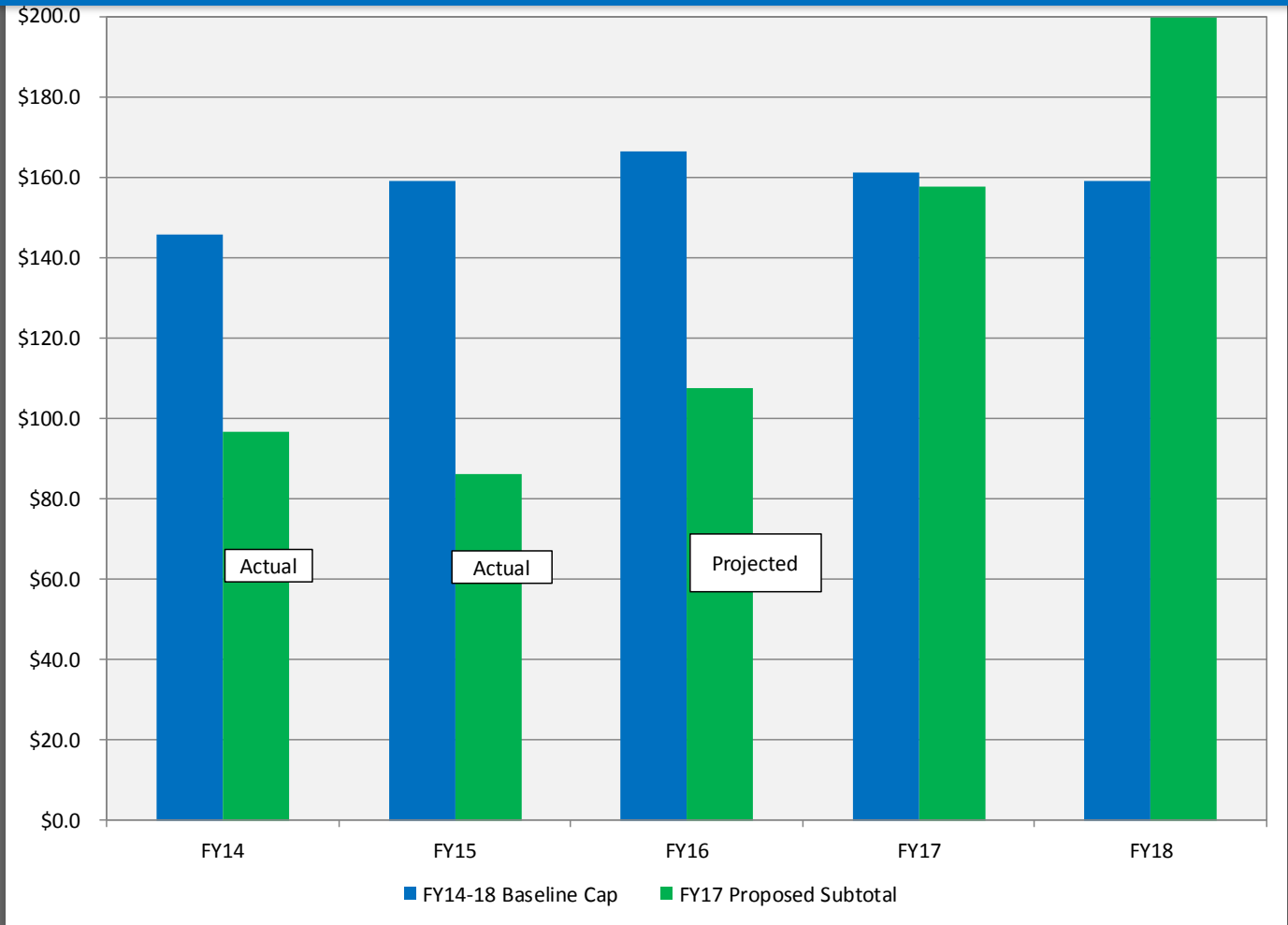


Figure 7

“Several major construction contracts have been awarded in FY16 or are upcoming in the first quarter of FY17. These include Alewife Brook Pump Station (\$12.56 million); Winthrop Terminal VFDs (Deer Island) (\$14.7 million); Wachusett Aqueduct Pump Station (\$47.0 million); Chelsea Creek Headworks (\$62.02 million); Deer Island HVAC Control System (\$25.0 million); and Deer Island Gravity Thickener rehab (\$14.3 million).”

Future Risk Factors

- The Authority continues to note future risk factors for the capital program. This year, the Authority noted that the largest decision the MWRA will have to make is pertaining to the Long-Term Redundancy project, specifically the Sudbury Aqueduct alternatives plans. The tunnel versus surface pipeline decision will have a significant impact on the capital program for the next 15-17 years. [See page 33 for discussion of Long-Term Redundancy.](#)
- The Authority notes that due to the nature of the capital improvement program, there will be changes to projects over time due to schedule shifts, revisions to project scopes, cost increases or decreases, environmental mandates, etc.

Policy Point

Cross-Harbor Electric Cable

“We Pay for Projects Once”

In recent years, the Authority identified the Cross Harbor Cable relocation as a potential risk factor. EverSource/ Harbor Electric Energy Corporation (HEEC) has expressed interest in passing the costs of adjustments to the cable, in order to meet compliance for harbor dredging, onto the Authority. In June 2014, The Advisory Board voted on a resolution emphasizing that ratepayers had no responsibility for any costs associated with replacing, relocating, and/or protecting the cable. The resolution can be viewed at:

http://mwraadvisoryboard.com/wp-content/uploads/2015/05/BARTLETT_CBL_RES.pdf.

Since last year’s Comments and Recommendations document, HEEC has filed a petition with the Department of Public Utilities (DPU) for approval of initial rates, charges, rules and regulations. The MWRA Advisory Board testified at a Public Hearing before DPU on December 21, 2015.

Advisory Board maintains its perspective that the Authority and the ratepayers have already paid for the installation of the cable once for a total of \$104 million – under no circumstances should the cable be paid for a second time, especially when the primary reason for relocation has nothing to do with MWRA’s core mission; ratepayers should not be funding such an expense.

The Advisory Board reaffirms its recommendation that no ratepayer funds should be used for relocating the HEEC cable.

Proposed FY17 Current Expense Budget

Proposed FY17 CEB Highlights

| MWRA Current Expense Budget | | | | |
|-------------------------------------|----------------|------------------|---------------|---------------|
| (\$ millions) | | | | |
| | FY16 Budget | FY17 Proposed | \$ Change | % Change |
| <u>Expenses</u> | | | | |
| Direct Expenses | 222.8 | 228.6 | 5.8 | 2.6% |
| Indirect Expenses | 47.0 | 44.16 | -2.8 | -6.0% |
| Capital Financing | 432.7 | 451.4 | 18.7 | 4.3% |
| Subtotal Expenses | \$702.5 | \$724.2 | \$21.7 | 3.1% |
| <u>Offsets</u> | | | | |
| Bond Redemption | 0.0 | 0.0 | 0.0 | - |
| Debt Service Assistance | 0.0 | 0.0 | 0.0 | - |
| Subtotal Offsets | \$0.0 | \$0.0 | \$0.0 | - |
| Net Expenses | \$702.5 | \$724.2 | \$21.7 | 3.1% |
| <u>Revenues</u> | | | | |
| Other User Charges | 7.9 | 8.0 | 0.1 | 1.4% |
| Other Revenue | 12.8 | 7.7 | -5.0 | -39.5% |
| Rate Stabilization | 0.0 | 0.0 | 0.0 | - |
| Investment Income | 9.4 | 9.7 | 0.3 | 3.7% |
| Subtotal Non-Rate Revenue | \$30.0 | \$25.5 | -\$4.6 | -15.3% |
| Rate Revenue | \$672.4 | \$698.7 | \$26.3 | 3.91% |
| Total Revenue and Income | \$702.5 | \$724.2 | \$21.7 | 3.1% |
| \$6.73 million ≈ 1% of rate revenue | | | | |

Table 23

- MWRA's total budget increases 3.1%, but wholesale rate revenue increases \$3.91%

Proposed FY17 CEB by Major Category

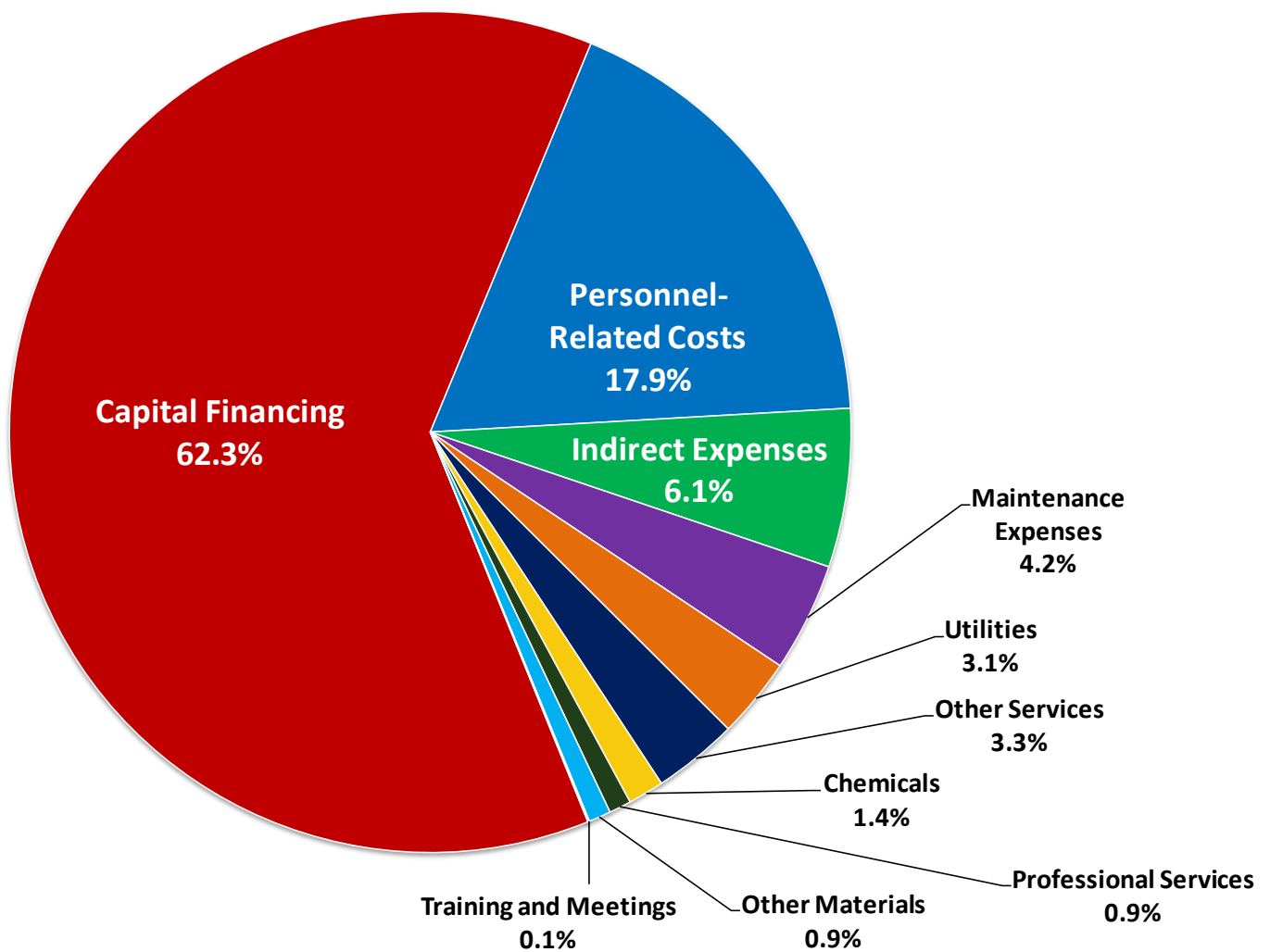


Figure 8

Direct Expenses

- Direct expenses: \$228.6 million
 - 32% of proposed CEB
- Personnel-related costs: \$129.3 million
 - Nearly 57% of all direct expenses and include:
 - Wages and salaries
 - Overtime
 - Fringe benefits
 - Workers' compensation
- Maintenance: \$30.3 million
 - Just over 13% of direct expenses
 - Second largest category
 - Larger maintenance projects are part of the capital budget.
- Utilities: \$22.4 million
 - Nearly 10% of all direct expenses

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- Electricity: \$16.7 million (almost 75% of utilities)
- Decreases 3.2% from FY16
- Other services: \$23.7 million
 - 10.4% of direct expenses
 - Sludge pelletization at the Fore River plant decreased by 5.2%
 - Lease costs increased due to the assumption of a new lease for additional satellite space in Chelsea.
 - Since being proposed, the Authority has decided to purchase rather than lease this space in Chelsea.
- Chemicals expense: Nearly \$10 million
 - 4.4% of direct expenses
- Remaining direct expenses: \$12.9 million
 - 5.6% of direct expenses and includes:
 - Professional services
 - Other materials
 - Training and meetings

Indirect Expenses

- Total: \$44.2 million
 - Makes up 6.1% of total expenses
- Largest components are:
 - Watershed-related expenses (nearly \$30 million)
 - Pension fund deposit (\$4.6 million)
 - Having reached full funding, this year's pension deposit decreases \$3.5 million from FY16
 - Optional pension fund deposit/Other Post-Employment Benefits (\$4.9 million)
 - Having fully funded the pension, the current approach is to make an OPEB deposit equal to 50% of the Actuarial Calculated Contribution (ACC).⁸

Capital Financing Expense

- Total: \$451.4 million
 - Makes up 62% of all expenses
- Debt service: \$426 million
 - Makes up 94.3% of capital financing
 - Includes principal and interest payments on:
 - State Revolving Fund (SRF) borrowings
 - Senior debt
 - Subordinate debt
- Remaining capital financing expenses: \$25.4 million
 - Supports:
 - Water pipeline commercial paper program (\$4.15 million)
 - Current revenue for the capital program (\$18 million)
 - Capital lease payments for the debt portion of the Chelsea facility (\$3.2 million)

⁸ Note: the official terminology in the OPEB actuarial is Annual Required Contribution (ARC). Last year, the Advisory Board flagged this as a misnomer, since there is no "requirement" to fund OPEB at this time, and instead uses ACC as its term for discussing OPEB contributions.

“Delta Report” Total MWRA Spending Increases \$21.7 Million

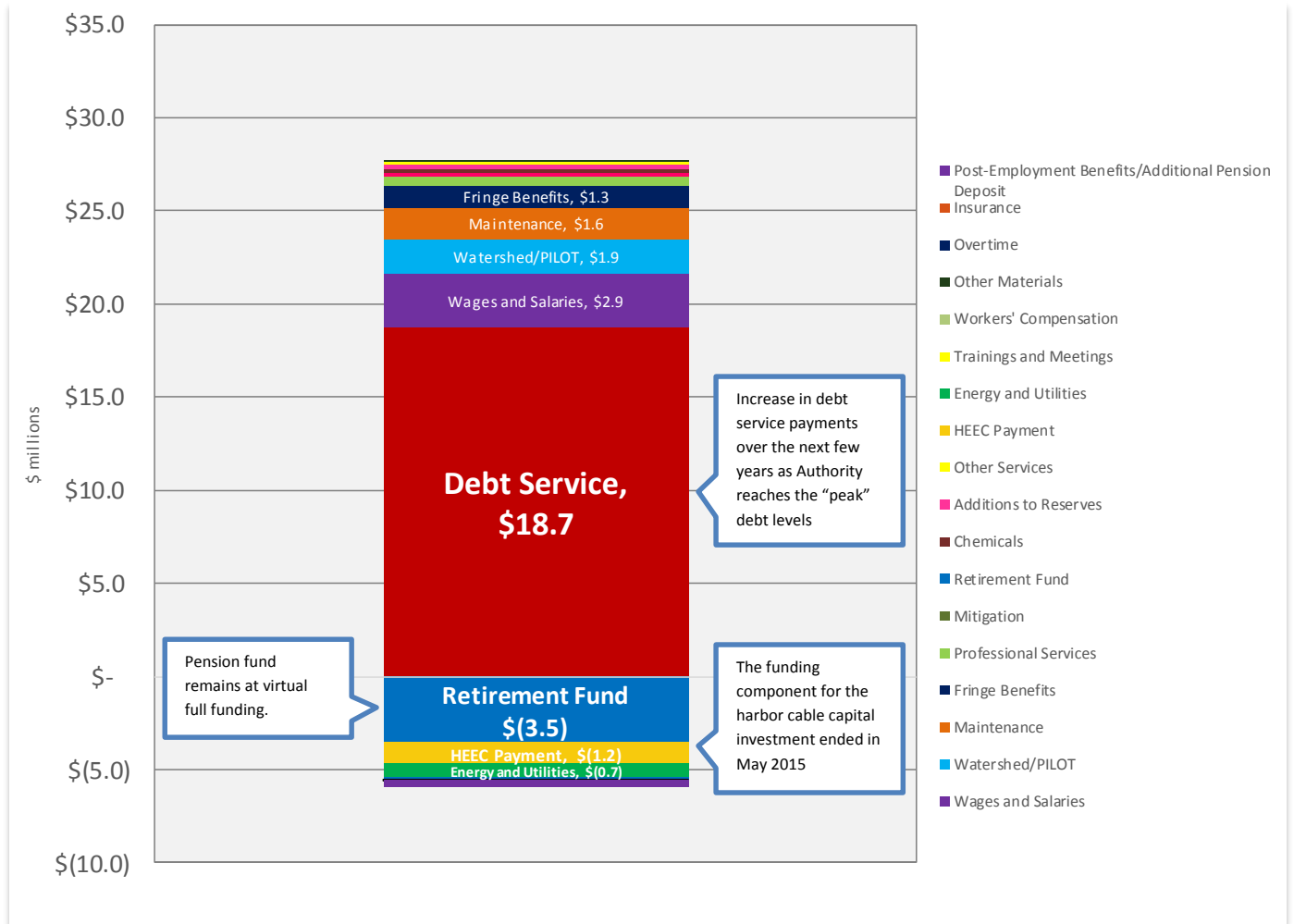


Figure 9

- Debt Service: +\$18.7 million
 - Largest increase
- Wages and Salaries increase: +\$2.9 million
 - Second largest increase
- Decreases partially offsetting total “delta” include:
 - Retirement Fund (-\$3.5 million)
 - HEEC Payment (-\$1.2 million)
 - Energy and Utilities (-\$0.7)

Revenues

- Rate revenue requirement: \$698.7 million
 - Increase from FY16: \$26.3 million (3.9%)
 - Makes up over 96% of total revenue
 - Raised through wholesale water and sewer rates
- Non-rate revenue: \$25.5 million
 - Decrease from FY17: -\$4.6 million
 - Makes up 3.5% of total revenue

- Sources include:
 - Investment income
 - Other revenue
 - Other user charges
- FY11 increase of 1.49% (\$8.4 million) was the lowest in the previous 15 years, since 1996 when the Authority received \$31.5 million in state debt service assistance.
- Rates are currently projected to increase by over \$25 million for the next five years. (See [Figure 10.](#))
- The rate increases, lower than previous projections, reflect a multi-year rates management strategy to keep rates at sustainable levels during these continued challenging times.

Annual Rate Revenue Requirement Increases in Dollars

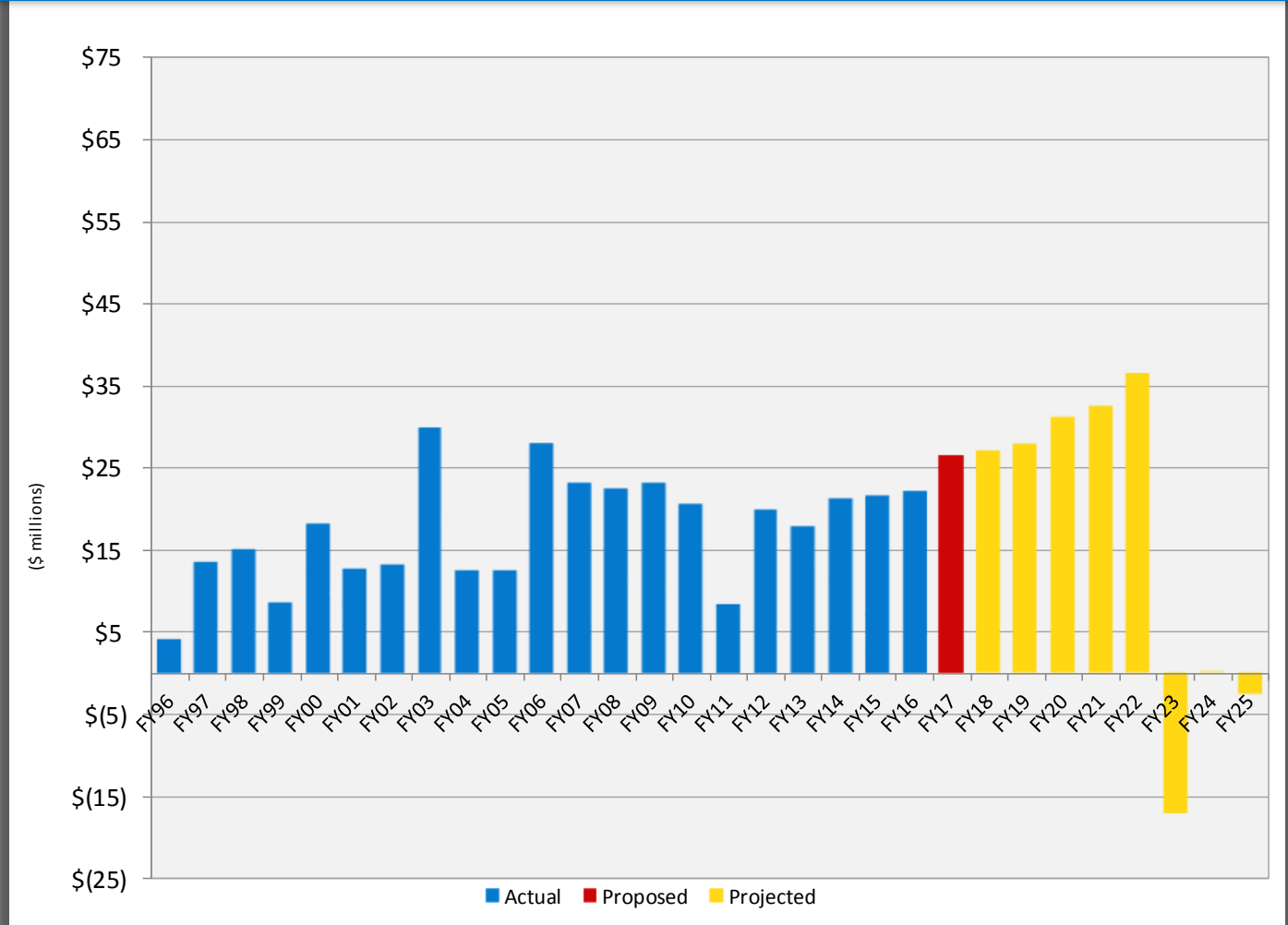


Figure 10

- These rates reflect the significant benefits of reduced debt service payments (as compared to earlier projections) resulting from:
 - January 2007 restructuring transaction
 - Spring 2008 defeasance transaction
 - February 2009 refunding
 - Restructuring of targeted amounts of debt service that had been due in FY11, 12, and 13
 - The use of reserves that were released in FY15 due to changes in the bond covenants
- Defeasance: the prepayment of a portion of a future year’s debt service using current-year surplus funds.

- This tool has been used consistently and strategically
- Proposed FY10 CEB was the first proposed budget to assume benefits of a planned defeasance transaction.
- This assumption allows proposal of lower rate revenue increases than earlier projected.
- Total defeased debt between 2006 and projected FY16 defeasance: \$493.2 million. (See [Figure 17](#))
- The Authority has also continued to work to tighten direct expenses in the proposed FY17 CEB, continuing to absorb more risk in the budget assumptions and reflect updated historical spending patterns.

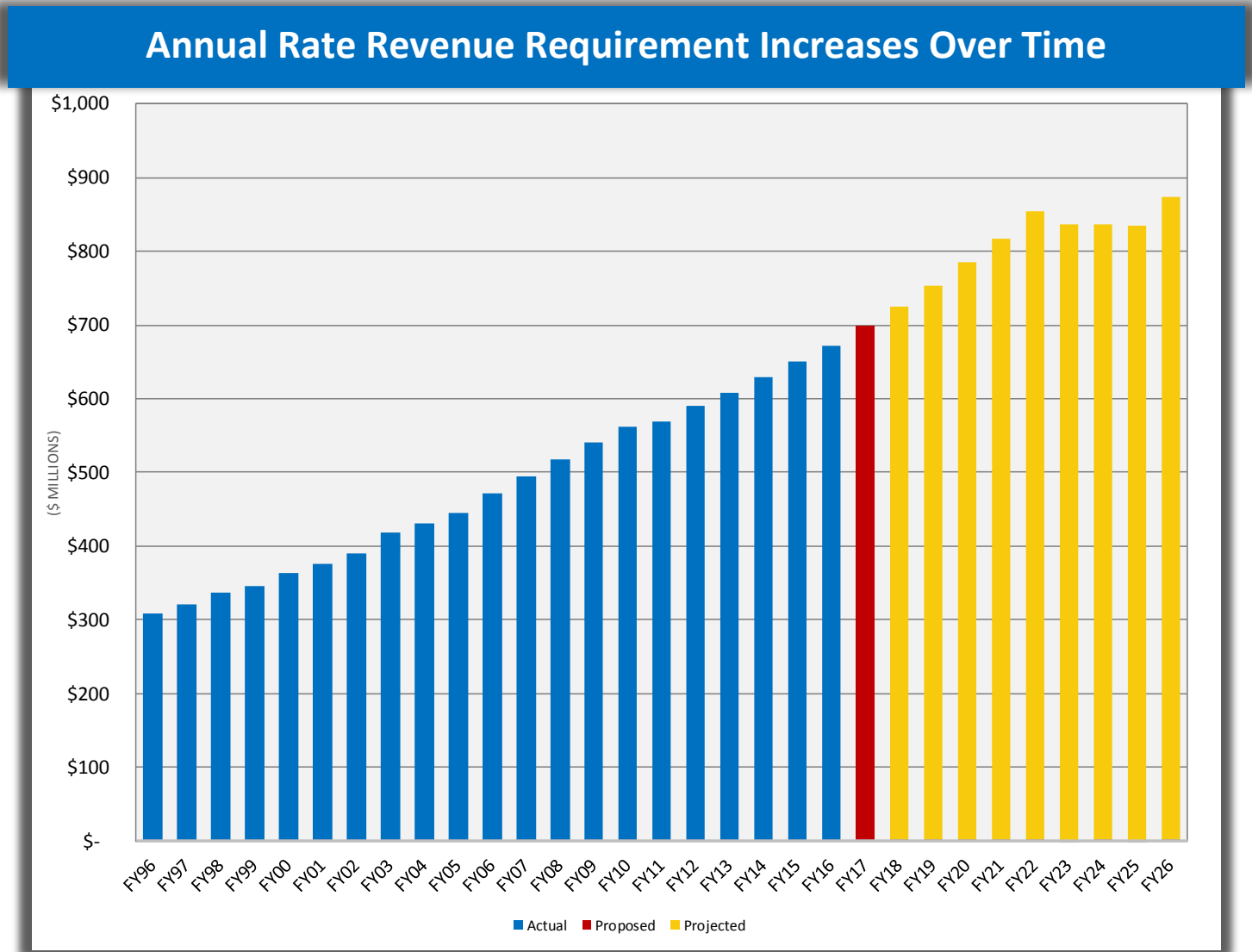


Figure 11

FY17 Current Expense Budget Recommendation

The Advisory Board has recommended or identified about \$1.8 million in net line item reductions. Consistent with its practice in recent years, Advisory Board staff worked with Authority staff to incorporate updated assumptions into the budget review. Authority staff identified just over \$1.9 million of anticipated net line item and revenue reductions as part of this process. (See [Appendix C.](#))

Therefore, the Advisory Board recommends reducing the FY17 Rate Revenue Requirement by \$3,771,675 resulting in a combined wholesale assessment increase of 3.34%.

Major Categories of Spending

Detailed discussion of the major categories of spending follows in order of highest to lowest level of spending:

Table 24

| Proposed FY17 CEB Major Categories of Spending | |
|---|----------------|
| \$ millions | |
| Capital Financing | \$451.4 |
| Personnel-Related Costs | 129.3 |
| Indirect Expenses | 44.2 |
| Maintenance Expenses | 30.3 |
| Other Services | 23.7 |
| Utilities | 22.4 |
| Chemicals | 10.0 |
| Professional Services | 6.3 |
| Other Materials | 6.2 |
| Training and Meetings | 0.4 |
| TOTAL EXPENSES | \$724.2 |
| | |
| REVENUE | \$724.2 |

Capital Financing

\$ millions

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|--|-----------------|-----------------|-----------------|--------------|
| Total Senior Debt Service | \$283.02 | \$269.33 | -\$13.70 | -4.8% |
| <i>Outstanding</i> | 274.72 | 258.70 | -16.02 | -5.8% |
| <i>New FY16/FY17</i> | 8.31 | 11.70 | 3.39 | 40.9% |
| <i>Potential Defeasance/Restructuring</i> | 0.00 | -1.07 | -1.07 | - |
| Fixed rate debt service, existing and new borrowings | | | | |
| Total Subordinate Debt Service | 49.22 | 70.00 | 20.78 | 42.2% |
| <i>Outstanding</i> | 49.22 | 70.00 | 20.78 | 42.2% |
| <i>New FY16/FY17</i> | 0.00 | 0.00 | 0.00 | - |
| <i>Potential Defeasance/Restructuring</i> | 0.00 | 0.00 | 0.00 | - |
| Variable rate debt service: 3.25% interest rate assumption | | | | |
| Total SRF Debt Service | 81.88 | 86.72 | 4.84 | 5.9% |
| <i>Outstanding</i> | 77.18 | 82.49 | 5.32 | 6.9% |
| <i>New FY16/FY17</i> | 4.70 | 4.22 | -0.48 | -10.1% |
| Low-interest loans from the Commonwealth. 2.0% interest rate (Water); 2.5% (Sewer) | | | | |
| TOTAL DEBT SERVICE | 414.12 | 426.04 | 11.92 | 2.9% |
| Water Pipeline Commercial Paper | 4.15 | 4.15 | 0.00 | 0.0% |
| Debt service supporting \$25 million/year for the Local Water Pipeline Improvement and Local Water System Assistance Loan Programs | | | | |
| Current Revenue/Capital | 11.20 | 18.00 | 6.80 | 60.7% |
| Amount of current revenue used to fund ongoing capital projects and to meet coverage requirements | | | | |
| CORE Fund Deposit | - | - | - | - |
| The CORE Fund is no longer required, per revisions to the bond resolution | | | | |
| Capital Lease | 3.22 | 3.22 | 0.00 | 0.0% |
| Chelsea facility lease payment | | | | |
| TOTAL OTHER CAPITAL EXPENSES | 18.57 | 25.37 | 6.80 | 36.6% |
| Bond Redemption | 0.00 | 0.00 | 0.00 | - |
| Bond Redemption funds used to reduce capital financing expense | | | | |
| Debt Service Assistance (offset) | 0.00 | 0.00 | 0.00 | - |
| The state wide program providing assistance with wastewater (and some water system) debt service is not assumed in the Commonwealth's FY17 budget. | | | | |
| TOTAL CAPITAL FINANCING EXPENSES | \$432.69 | \$451.41 | \$18.72 | 4.3% |

Table 25

Other Highlights

- Outstanding principal: \$5.358 billion⁹
 - Lower than one year ago
- Planned FY17 borrowings:
 - MWRA: \$125 million
 - SRF: \$50.0 million and \$16 million, total of \$66 million
- Proposed FY17 CEB also includes full year debt service for new borrowings during FY16

⁹ Through December 31, 2015

"Delta Report"

Capital Financing Increases \$18.7 Million

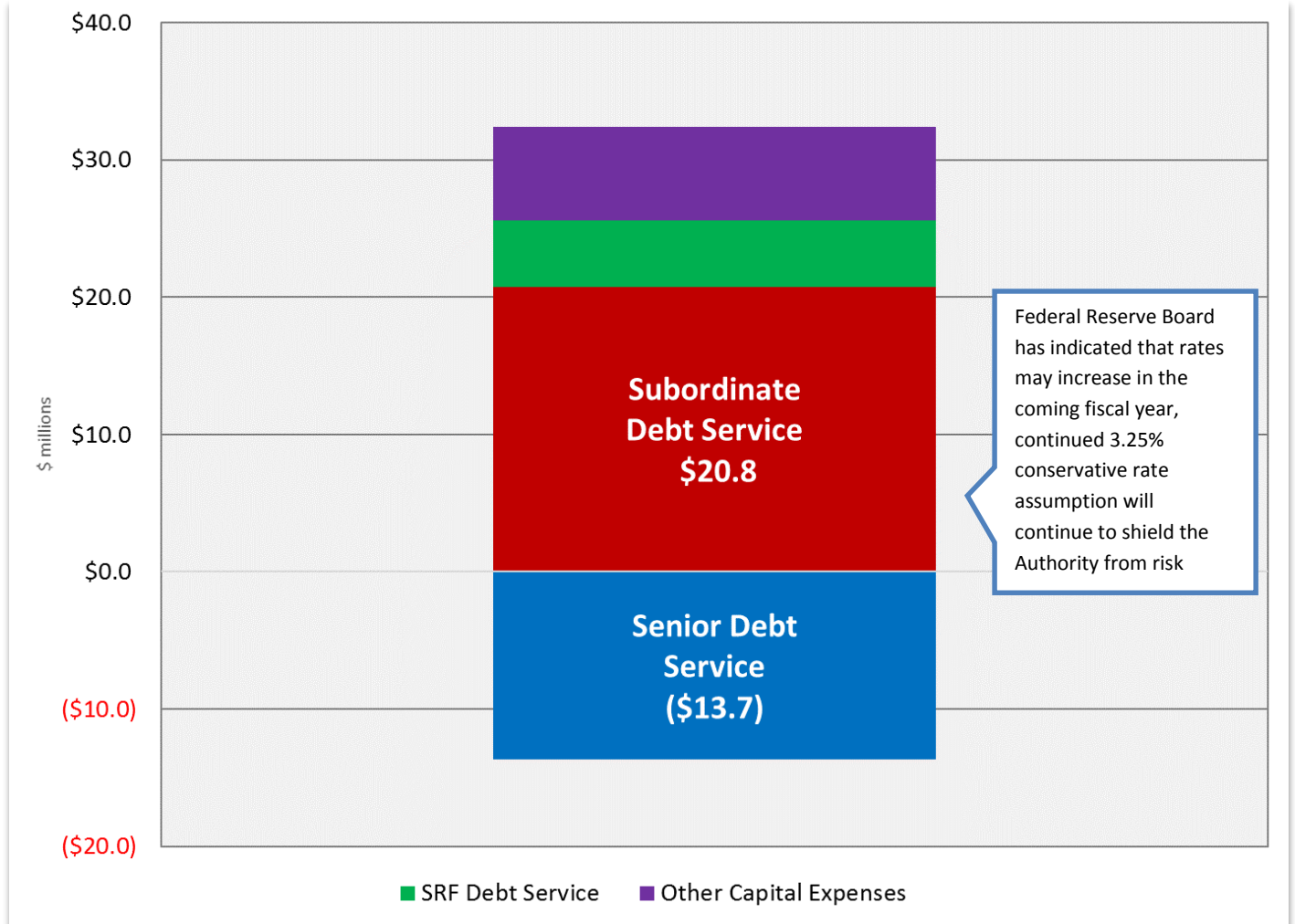


Figure 12

- The Authority relies heavily on debt financing to fund its capital program
- The Authority has spent \$7.95 billion on its capital improvement program¹⁰
- For FY17, capital financing expense as a percent of all expenses is 62.3% (See [Figure 13](#))

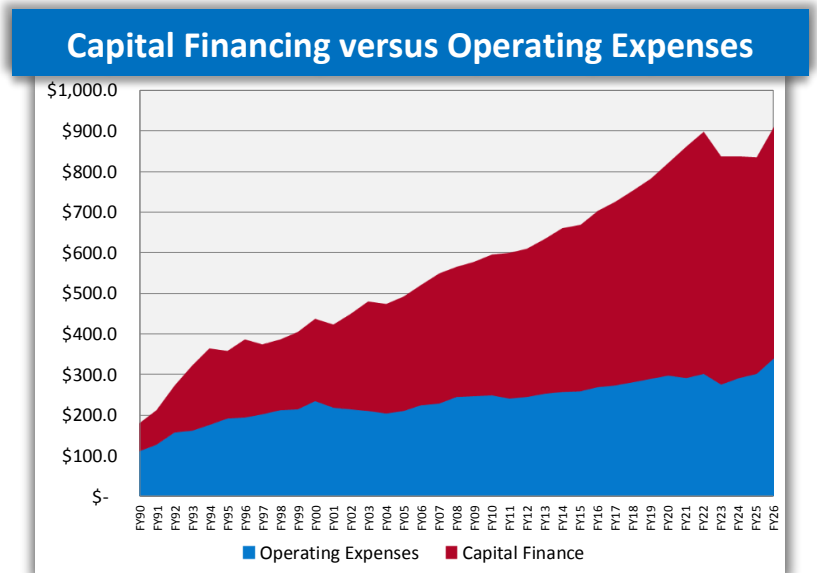


Figure 13

¹⁰ Through FY15

MWRA Debt Financing and Principal

- Outstanding principal borrowed totals \$5.209 billion¹¹ and includes four categories:
 - State Revolving Fund (SRF)
 - Pure Variable (subordinate debt)
 - Swap Notional (subordinate debt)
 - Senior Debt
- Commercial paper (CP) outstanding: \$149 million
 - Including CP, total outstanding principal = \$5.358 billion
- Outstanding principal is declining and is \$46 million less than the prior year

Debt Service on Senior Debt

- FY17 debt service on senior debt is \$269.3 million including:
 - \$6.5 million for full first-year costs of planned spring 2016 borrowing of \$100 million
 - \$5.2 million for partial year debt service on new borrowing of \$125 million next spring 2017
 - \$1.071 million in estimated reduced debt service in FY17 from projected 2016 defeasance transaction

Debt Service on Subordinate MWRA Debt

- FY17 debt service on subordinate debt: \$70.0 million
- Variable rate debt interest rate assumption: 3.25%
 - Same as the last five fiscal years
 - Based on a 20-plus year average
 - Federal Reserve Board has indicated that rates may increase in the coming fiscal year, so this conservative rate assumption will continue to shield the Authority from risk
- One factor rating agencies consider when updating the Authority’s bond rating is how much variable rate debt exposure the Authority has
- Outstanding variable rate debt: \$905.5 million
 - Makes up 17.4% of all outstanding debt
 - Percentage has been declining over the last several years: just four years earlier it was 21% of all outstanding debt
- Total variable rate debt exposure expected to decrease to 16.5% by the end of FY16, and to 15.3% by the end of FY18

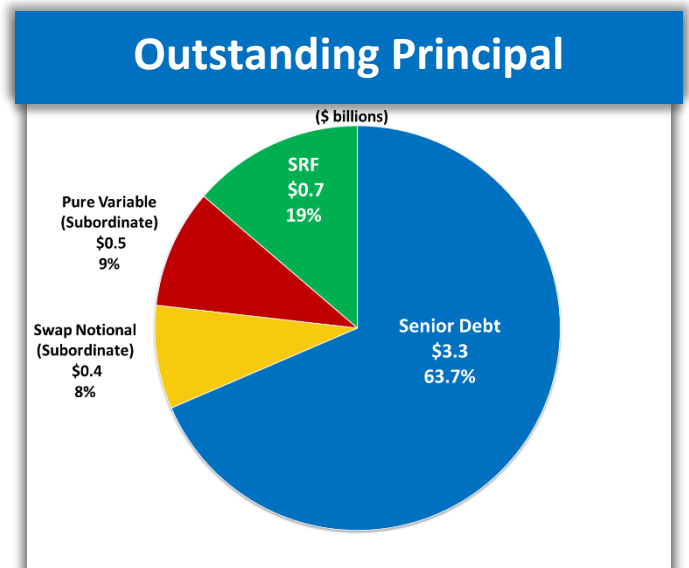


Figure 14

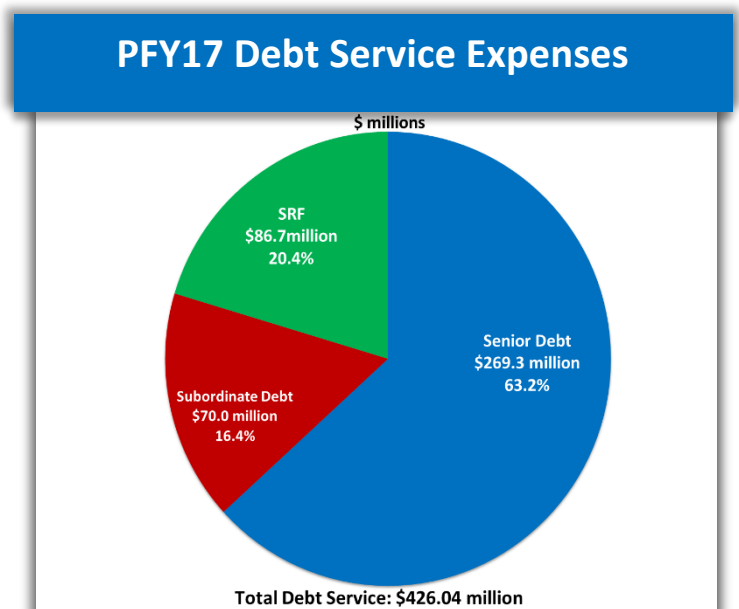


Figure 15

¹¹ As of December 31, 2015

SRF Borrowings

- FY17 debt service on SRF borrowings: \$86.7 million
 - \$4.22 million of this is for Pool 20 new borrowings
 - These amounts may be updated in the final FY17 CEB
- Outstanding SRF debt: \$987.66 million
 - 18.96% of total outstanding debt¹²

Bond Defeasance and Refunding

- Proposed FY17 CEB assumes a defeasance transaction with a principal amount of \$21.3 million
 - The funds represent lower than funded spending during FY16, particularly for variable rate debt
 - Total estimated benefit in future years: \$26.6 million
 - Benefits are in FY17 through FY20
- Updated June 2016 defeasance transaction is \$29.7 million
- Total benefit is estimated at \$31.3 million

Impact of the FY06 – Proposed FY17 Defeasances

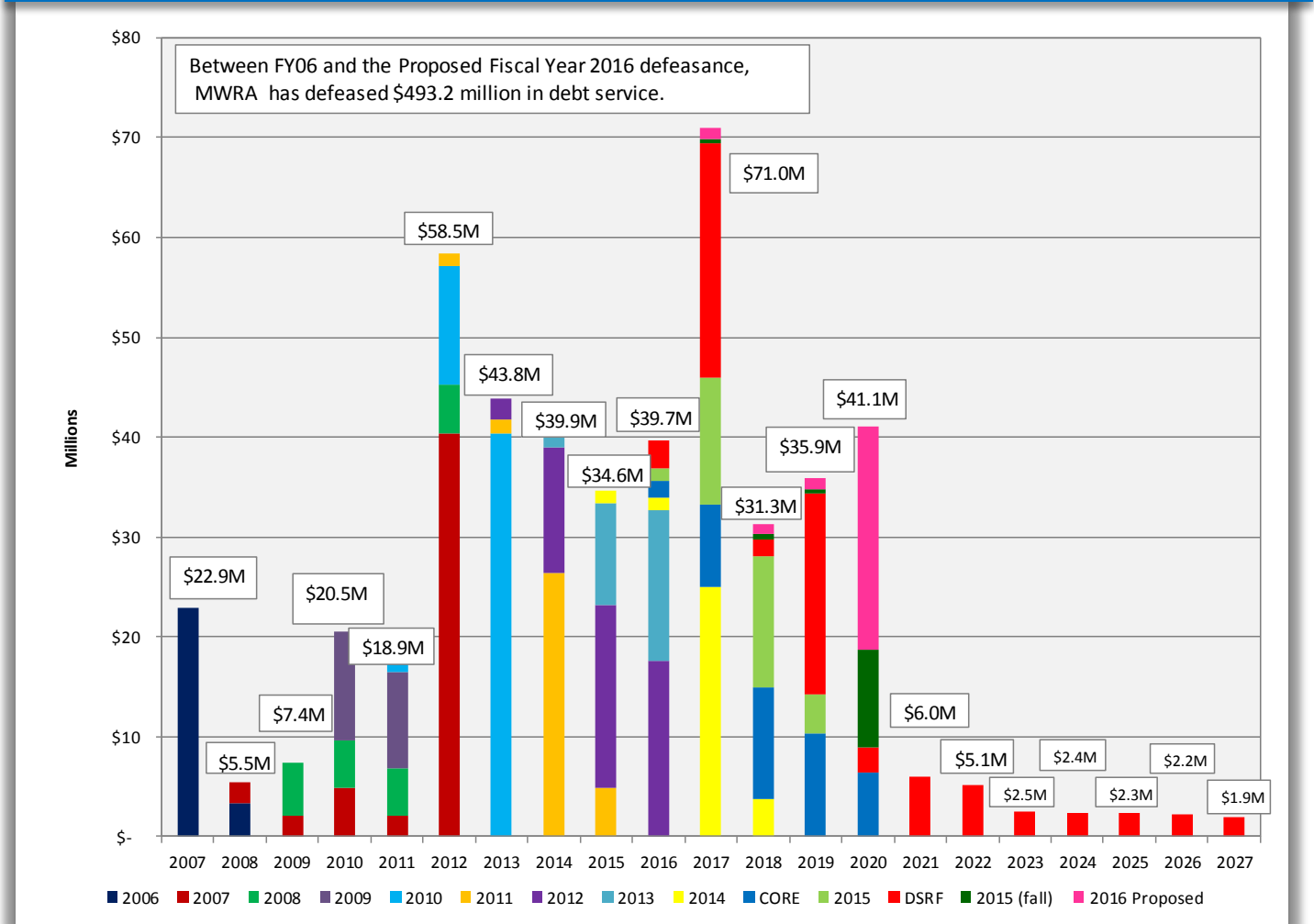


Figure 16

¹² As of December 31, 2015

MWRA Advisory Board

- Since 2006, through the planned spring 2016 defeasance, MWRA will have defeased \$493 million for targeted debt service reductions over multiple years. (See [Figure 16](#))
- The Authority continues to look for opportunities for refunding and refinancing to reduce projected debt service
- The Board has authorized the continuation of the defeasance account to receive surplus funds raised for capital financing expenses to manage future rates. The account ensures that these funds are used in a manner consistent with the purpose for which they were budgeted and raised from the ratepayers.¹³

The Advisory Board supports the continued use of the defeasance account strategy, which clearly identifies a use of variable rate debt service savings that is consistent with the original intended use of the funds that were raised.

The Advisory Board expects the Authority to reduce capital financing by an additional \$565,374 to reflect the spring 2016 defeasance transaction as well as the favorable benefits of the 2016 new borrowing.

The Advisory Board expects the Authority to increase the line item for State Revolving Fund (SRF) debt service by \$252,996 to reflect the updated amounts anticipated for FY17.

Other Components of Capital Financing Expense

- Water Pipeline Commercial Paper: \$4.15 million
 - Interest payments on commercial paper borrowings for:
 - Local Pipeline Assistance Program (LPAP)
 - Local Water System Assistance Program (LWSAP)
 - Assumptions include:
 - 3.25% interest rate (same as past five years)
 - \$149.0 million average balance of commercial paper outstanding
- Capital Lease Payment: \$3.2 million
- Relating to capital costs of Chelsea administration and maintenance facilities; flat annual cost
- The amount has remained the same since 2002
- Annual lease costs, insurance and taxes are included in the “Other Services” section
- Current revenue for the capital program: \$18.0 million
- The FY16 budget was \$11.2 million; the FY15 budget was \$10.2 million

Debt Service Offsets

- Bond redemption funds are treated as an offset to capital financing expense
 - No drawdowns are budgeted for FY17
 - Current balance: \$26.1 million
- Debt Service Assistance funds from the Commonwealth have been a critical tool in managing sewer (and some water) revenue increases for MWRA communities
 - Proposed FY17 budget assumes \$0 funding
 - More recently, the Administration has confirmed the funding of \$1.1 million for the statewide capital debt service assistance program in the FY16 budget
 - The Authority’s share of these funds is \$873,804 and was received earlier this year

¹³ Figure 16 includes the **projected** FY16 defeasance transaction approved at the May 2016 MWRA Board of Directors meeting.

In keeping with the Advisory Board's previous position to, when DSA funds are received, the Advisory Board expects the Authority to "Pay it Forward" to reflect the receipt by reducing the rate revenue requirement for FY17 by \$873,804.

- The Advisory Board's goal is to keep the line item funded in the state budget. Staff will continue to work to support inclusion in the FY17 state budget

Longer Term Outlook for Principal and Interest Payments

- Debt Service payments increase rapidly in the coming years and are currently projected to peak in about FY2023
- Current projections indicate that debt service payments will not return to today's levels until about 2031
- FY17 debt service: \$430 million
 - FY17 principal: \$176 million
 - FY17 new borrowing: \$40.6 million
 - Interest \$254 million
- FY23 debt service: \$518.9 million
 - FY23 principal: \$346 million
 - FY19 interest: \$262 million

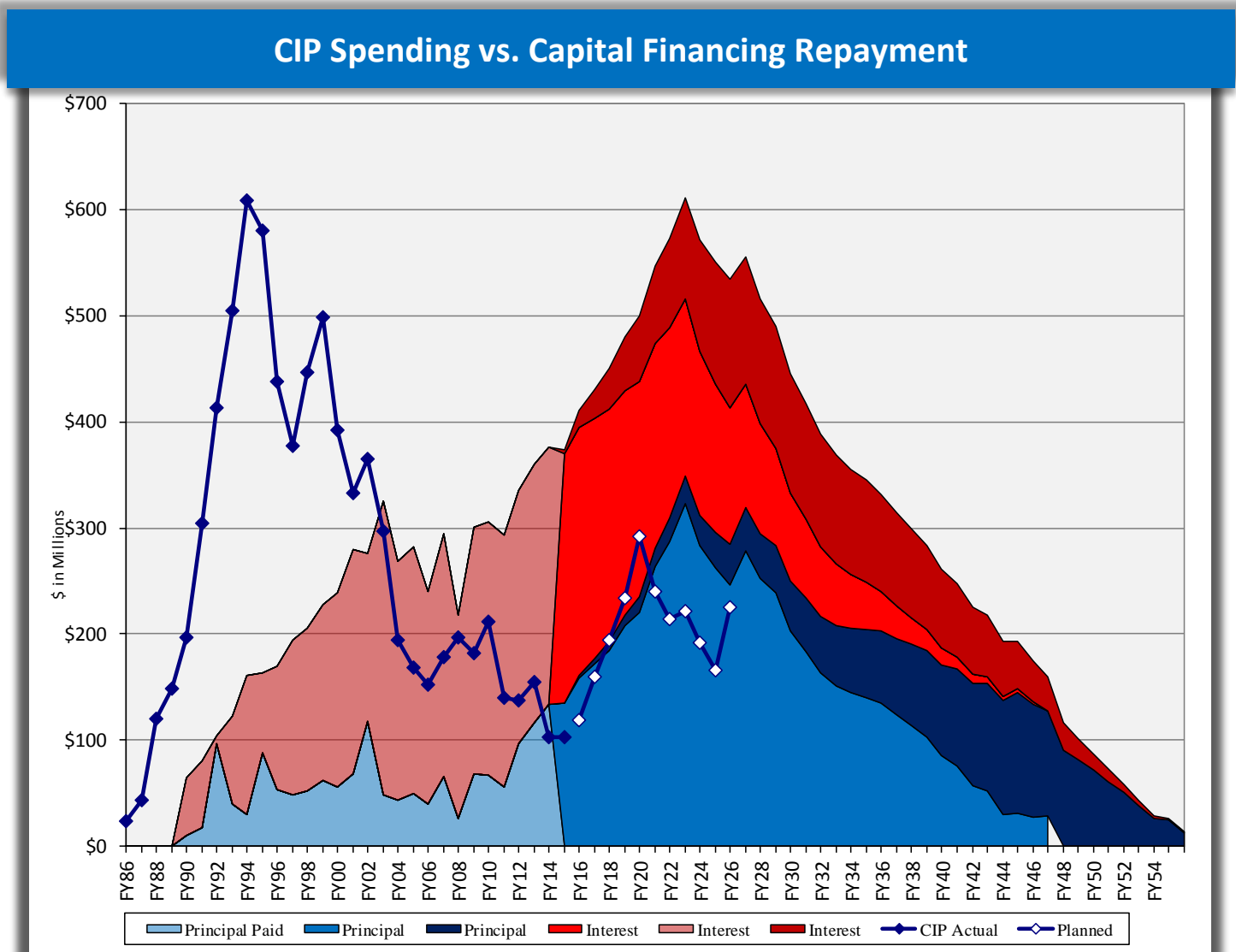


Figure 17

Personnel Expenses

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|--|----------------------|----------------------|--------------------|--------------|
| <i>Regular Pay</i> | \$97,534,090 | \$100,438,727 | \$2,904,637 | 3.0% |
| Regular wages and salaries for full- and part-time employees. | | | | |
| <i>Other Pay</i> | 1,829,078 | 1,790,303 | -38,775 | -2.1% |
| Includes shift differential, holiday pay, temporary employees, interns/co-ops, and stand by pay. | | | | |
| Wages and Salaries Subtotal | 99,363,168 | 102,229,030 | 2,865,862 | 2.9% |
| Fringe Benefits | 19,326,756 | 20,592,603 | 1,265,847 | 6.5% |
| Includes health insurance, dental insurance, Medicare, and all other fringe benefits. | | | | |
| Overtime | 4,219,293 | 4,192,690 | -26,603 | -0.6% |
| For planned maintenance, emergency, and coverage. | | | | |
| Workers' Compensation | 2,343,000 | 2,274,192 | -68,808 | -2.9% |
| Includes compensation payments, medical payments, and other related costs. | | | | |
| TOTAL PERSONNEL EXPENSES | \$125,252,217 | \$129,288,515 | \$4,036,298 | 3.2% |

Table 26

Other Highlights

- Wages and salaries expense include an estimate of FY17 COLA increases.
- Average funded staffing level: 1,155
 - FY16 budgeted level: 1,160
- Fringe benefits expense increased mainly due to the reported increase from the GIC; calculations are based on current enrollment.
- Workers' compensation expense is based on a three-year average of actual spending.

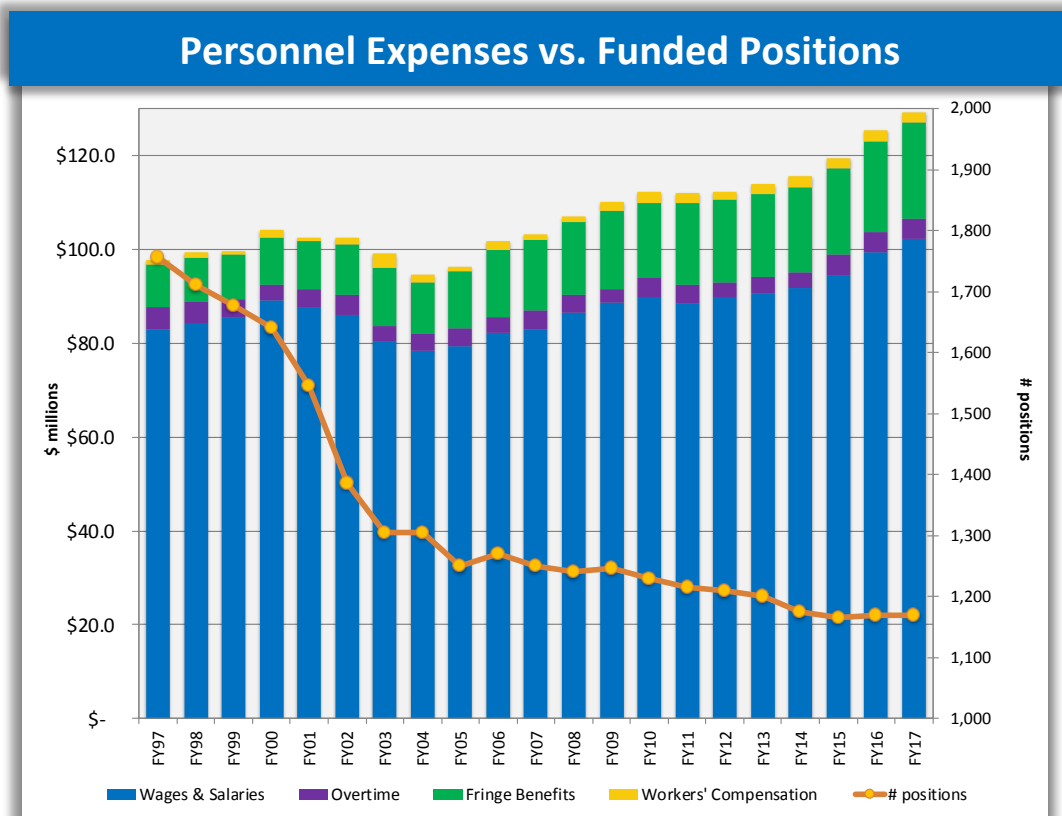


Figure 18

"Delta Report"

Personnel Expenses Increase \$4 Million

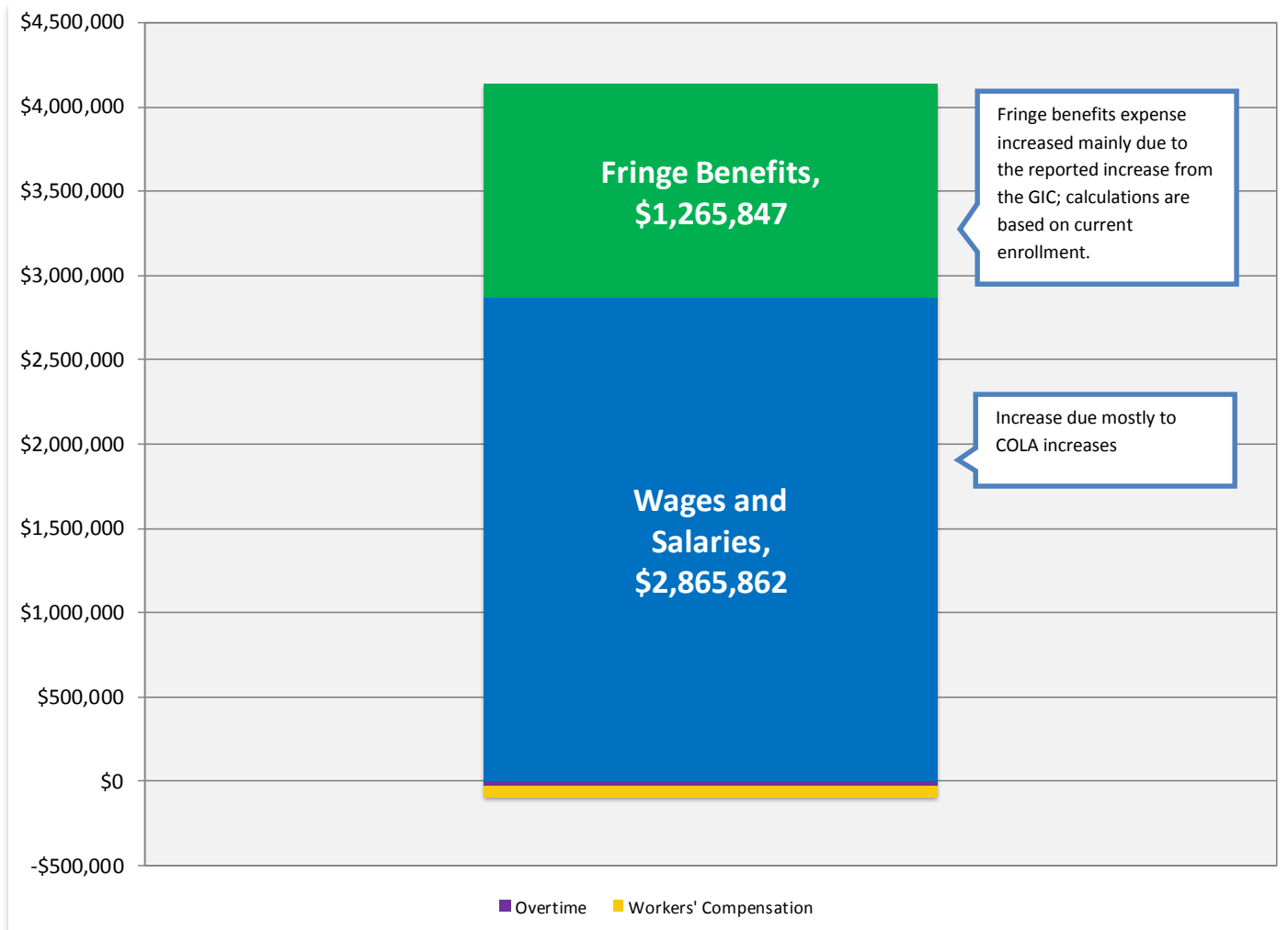


Figure 19

- Staffing levels have decreased by over one-third since 1997
 - Proposed FY17 = 1,155 FTEs; 5 positions lower than FY16
 - Total Reduction: 620 positions
 - March 2016 staffing level: 1,135.4 FTEs
- New hires tend to begin at lower pay-rates than the incumbents, helping to contain costs
- New hires pay a higher percent of health insurance premiums, reducing fringe benefits costs

Due to the lag time inherent in backfilling vacancies, the Advisory Board recommends that the Authority adjust its attrition/vacancy rate assumptions upward by \$1,000,000 (includes associated fringe benefits).

- To put this recommendation in perspective: through April 2016, the Authority was underspent in personnel expenses by about \$2.6 million.
- To support the Lead Loan Program, in FY16 the Authority hired temporary employees to provide additional lab services resources for member communities; these positions will continue at least partly through FY17.

The Advisory Board supports the Authority's addition of this temporary community support staff and expects the final FY17 CEB to reflect the addition of this staff.

Fringe Benefits

- Fringe benefits make up 15.9% of total Personnel-related expenses.

Based on new data released this spring from the GIC, MWRA projects a decrease of \$350,285 from the proposed FY17 CEB. The Advisory Board expects this reduction to be included in the final FY17 CEB.

Workers' Compensation

- Based on a three-year average of costs (FY14-16 = \$2,320,000)
- Average spending has been \$2.2 million since FY 2010, but varies from year to year.
- Factors include number and severity of cases, increases in medical expenses over the years and settlements reached.
- MWRA staff administer the program including processing and monitoring injured employees' claims, coordinating claims investigations, working with injured employees to return them to work, and attending hearings at the Department of Industrial Accidents

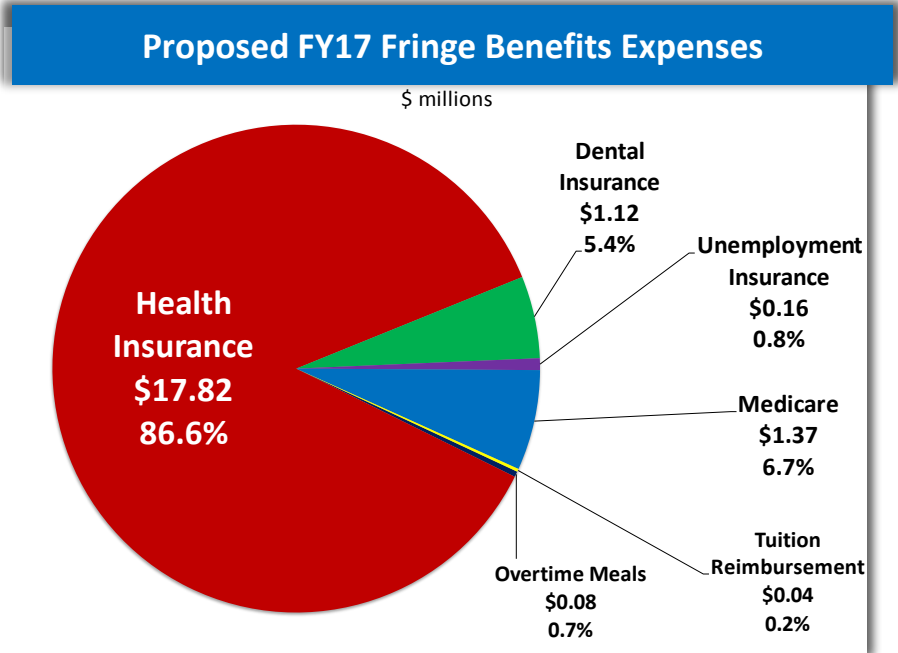


Figure 20

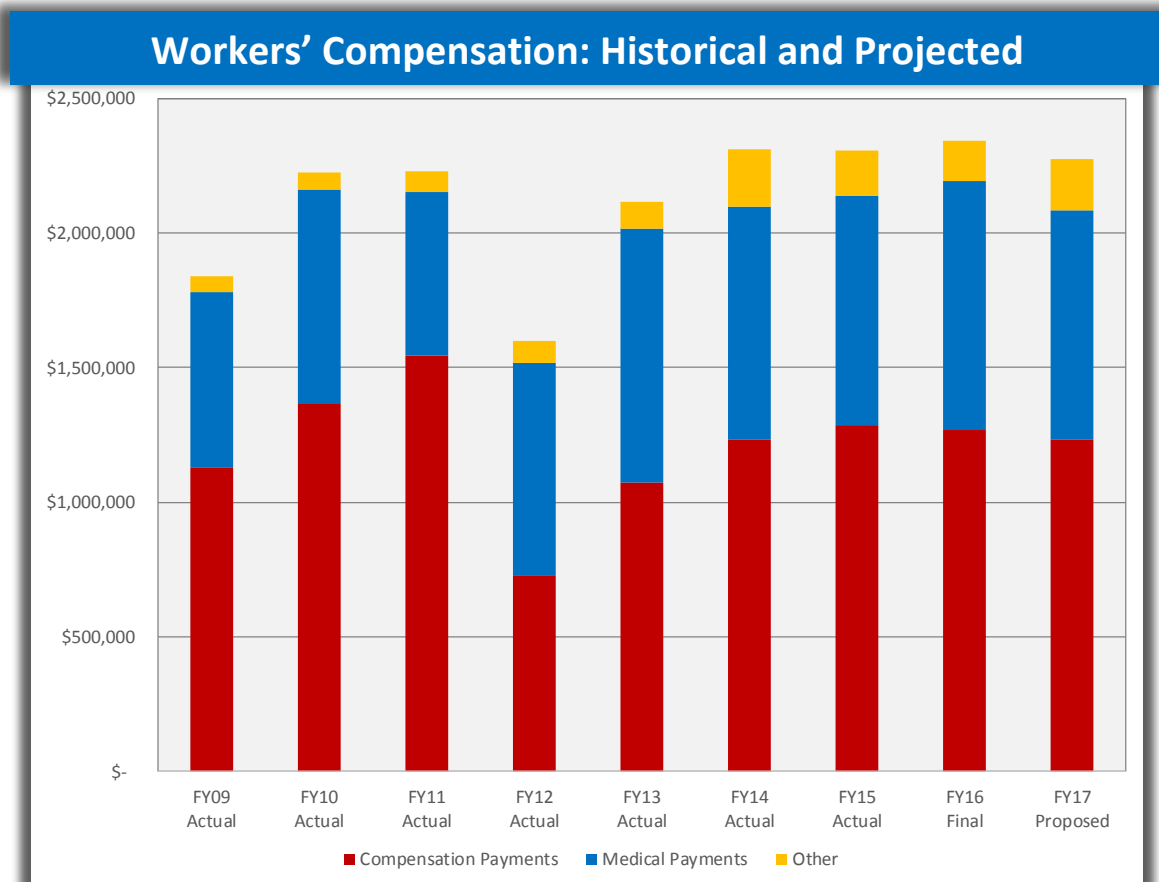


Figure 21

MWRA Advisory Board

- MWRA is self-insured
- Authority uses services of a third party administrator for claims management, utilization review, payment processing for lost time compensation and payment of medical bills
- Annual budget includes actual expenses for weekly compensation payments to injured employees for lost time, payments for medical care, and other expenses (DIA hearing fees, medical examinations costs and investigation services)
- The budget also includes reserves for each workers' compensation claim (both compensation for lost time and medical expenses) which represent the estimated future liability for each claim
- MWRA maintains ongoing safety and training programs to promote and maintain a safe work environment, including confined space entry, trench safety, ladder staging, evacuation training and electrical safety, plus safe lifting training
- Light duty assignments are also utilized
- The Authority reports regularly on injury and illness rates as well as highlights of the workers' compensation program (including light duty returns), in the quarterly Orange Notebooks

MWRA has indicated that due to recent trends, they will be increasing Workers' Compensation by \$70,000. The Advisory Board expects this increase to be included in the final FY17 CEB.

Overtime

- Decreased by 0.6%
 - Largest driver: planned maintenance (increase of \$573 thousand) for:
 - Despite wage increases of approximately \$93 thousand, some reductions based on trends
 - Reflects reduction of overtime use to support North Main Pump Station and Winthrop Terminal Facility butterfly valve replacement project
 - Assumes 24 eight-hour, overnight shutdowns in FY17
 - FY16 budgeted shutdowns: 50
 - Project runs schedule extends through FY17

Indirect Expenses

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|---|---------------------|---------------------|---------------------|--------------|
| Pension | \$8,159,521 | \$4,632,624 | -\$3,526,897 | -43.2% |
| Scheduled updated contribution to retirement fund. Required annual contribution = \$5.9 million. Updated mortality tables impact = \$2.2 million. | | | | |
| Post-Employment Benefits/Additional Pension Deposit | 5,224,848 | 4,876,050 | -348,798 | -6.7% |
| All other benefits for retirees (e.g. health insurance). Line item relabeled to reflect expectation of transfer into the pension fund consistent with long-term strategy. | | | | |
| Insurance | 2,160,797 | 2,123,292 | -37,505 | -1.7% |
| Insurance and payments/claims. | | | | |
| Mitigation Payments | 1,400,000 | 1,558,000 | 158,000 | 11.3% |
| Mitigation payments to Quincy and Winthrop. | | | | |
| HEEC Payments | 1,946,157 | 773,858 | -1,172,299 | -60.2% |
| Cross harbor cable to Deer Island (includes both debt service and O&M components). | | | | |
| Watershed Reimbursements | 28,096,233 | 29,996,320 | 1,900,087 | 6.8% |
| Supports the operations and related costs of the state's Department of Conservation and Recreation, Office of Watershed Management. | | | | |
| Additions to Reserves | -34,927 | 195,744 | 230,671 | 660.4% |
| 1/6th of all planned Operating Expenses. | | | | |
| TOTAL INDIRECT EXPENSES | \$46,952,629 | \$44,155,888 | -\$2,796,741 | -6.0% |

Table 27

Other Highlights

- Pension is 98.6% funded¹⁴
- “Virtual Full Funding” is an industry term that recognizes how difficult it is to get to exact 100% funding of the pension liability; it is considered to be between 95% and 105% funded
- FY17 Pension annual required contribution (A of \$4.6 million is based on:
 - A valuation report as of January 2015
 - A FY24 schedule for reaching full funding
- Other Post-Employment Benefits (OPEB) are treated together with pension obligations and FY17 will be the second payment in the active OPEB funding strategy.
- The OPEB/Additional Pension Deposit line item (\$4.9 million) is expected to be deposited in the OPEB Trust Fund in FY17
- Insurance expense based on anticipated market conditions
- HEEC payments for O&M and debt service charges declined \$1.2 million (60.2%). The funding component for the cable capital investment ended in May 2015; O&M charges continue
- Costs of the Division of Watershed Management are treated as a reimbursement to the state and include PILOT payments and debt service on watershed land purchases, as well as direct operating expenses

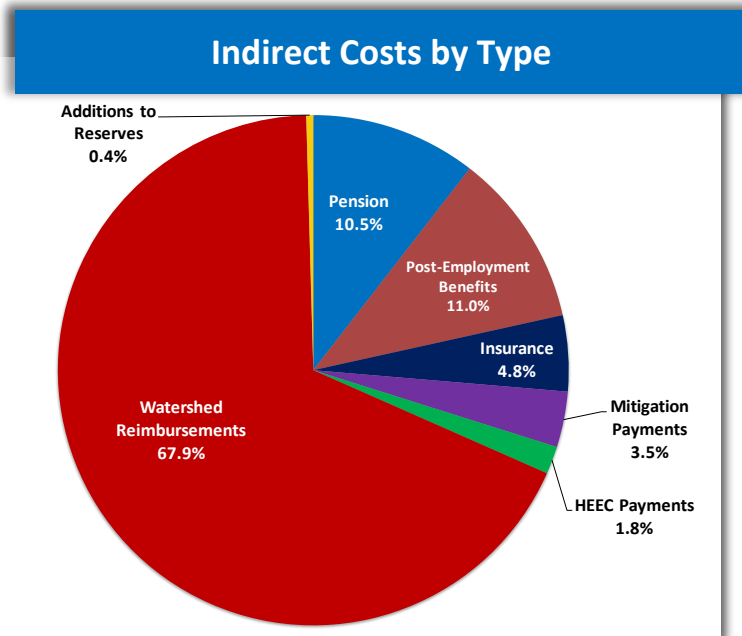


Figure 22

¹⁴ According to actuarial valuation report as of January 2015

"Delta Report"

Indirect Expenses Increase \$241 Thousand

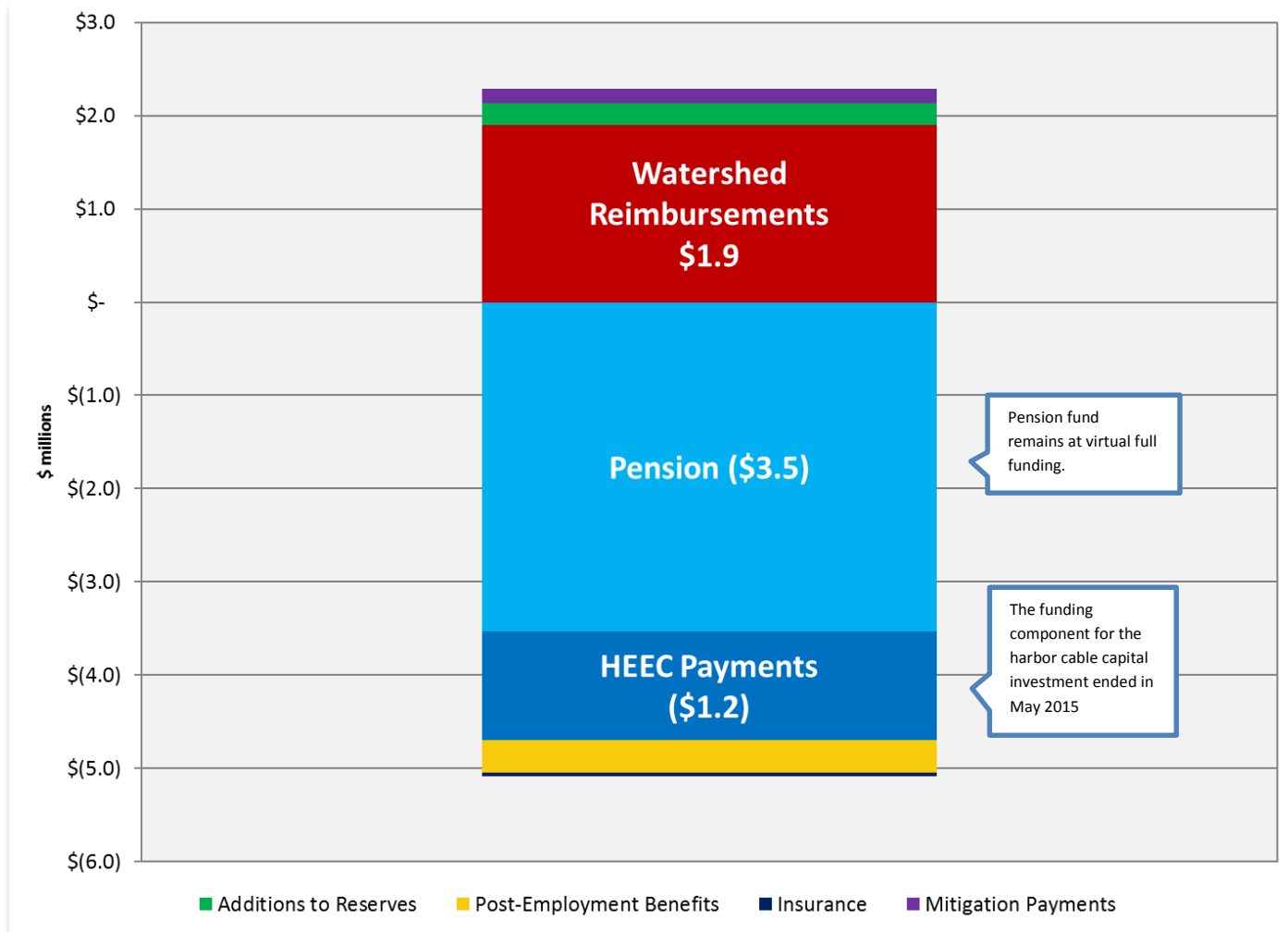


Figure 23

Other Post-Employment Benefits (OPEB) and Pension

- Retirement fund is still on track to be fully funded by 2024
- FY16 pension/OPEB expense: \$13.38 million
 - \$8.16 million = annual required contribution
 - \$5.22 million = optional OPEB contribution
- Proposed FY17 pension/OPEB expense: \$9.5 million
 - \$3.13 million = annual required contribution (ARC) (based on January 2015 actuarial report)
 - \$1.5 million = additional pending deposit, optional, to pension fund
 - \$4.9 million = optional OPEB funding
- Governmental Accounting Standards Board (GASB) Statement No. 45 governs the accounting and financial reporting of OPEB
 - Governmental entities are not currently required to fund OPEB
 - All entities comply with GASB 45 by accounting and reporting on its OPEB liability
- The Authority has met all current provisions of GASB 45

Policy Point

Other Post-Employment Benefits

“Optional Means Optional”

The Advisory Board has supported the Authority's long-term strategy to address its pension and OPEB liabilities. First, aggressively pursue full funding of the pension, and only then begin funding OPEB. Last year, after achieving full funding of the pension, the Advisory Board and MWRA came to consensus on a funding level of 50% of the Actuarial Calculated Contribution (ACC). This level could be used because unlike the pension, OPEB currently has no required funding schedule attached to it. Though good fiscal sense to fund a liability that will someday be deadline-mandated, any contributions to OPEB are technically optional. The Advisory Board also pushed for additional conditions related to OPEB. First, not making any payments to the OPEB Trust until the final day of the fiscal year, in case the funds were needed for some other purpose. Second, to ensure that OPEB funds were not subject to the terms of the Operating Reserve; in essence, since the payment was optional, "just in case" reserves shouldn't be raised for this expense. The MWRA agreed to both conditions.

This year, as part of the discussion on Pay-Go, Advisory Board staff learned that for the purposes of calculating coverage, OPEB was considered an "Operating Expense." ([See page 95 for definitions and discussions of Pay-Go and coverage calculations](#)). Similar to exempting OPEB from the Operating Reserve, reclassifying OPEB as an "Other Expense" positively benefits the MWRA.

That said, this reclassification is not up to the MWRA alone. Because the definitions of these categories are tied to the bond covenants, such a change must be validated by a third-party expert. Moreover, because it relates to the bond covenants, the bondholders would need to be notified in the spirit of full disclosure.

Our argument is similar to the argument to exempt OPEB from the Operating Reserve. Simply put, it is an optional expense. There is no requirement to fund it at this time. There is no deadline to achieve full funding. If an emergency occurred (e.g. the 2007 market dislocation), and the MWRA needed more funds than it had budgeted, it could use these funds instead of seeking a mid-year rate increase or making this optional payment. For all of these reasons, it seems clear to the Advisory Board that OPEB should be reclassified.

Moreover, if OPEB was reclassified in this way, it would have the additional benefit of enhancing the MWRA's coverage ratio. [Please see the Pay-Go discussion \(page 95\) for a better understanding of how coverage works and what the benefits are of increased coverage.](#)

Therefore, the Advisory Board recommends that the MWRA takes all steps necessary to seek a formal reclassification of Other Post-Employment Benefits for the purposes of calculating the Debt Service Coverage Ratio.

Insurance

- Claims expense, proposed at \$0.4 million, is based on a five-year average
- Premiums expense, proposed at \$1.74 million, is based on anticipated market conditions
- Insurance program is out for bid with award anticipated spring 2016
 - Has been on an annual renewal schedule, though multi-year bids are currently being reviewed

Additions to Reserves

- The Operating Reserve level requirement: 1/6th of all designated expenses
 - Proposed FY17: \$195 thousand
 - Final FY16: -\$35 thousand

The Advisory Board expects the Authority to adjust the final FY17 CEB "additions to reserves" line item to match the changes in the final FY17 CEB.

Watershed Reimbursement

- Other costs relating to watershed management have been added in recent years to both the Authority’s CEB and CIP budgets. These include funding for new acquisition of watershed lands, dam repairs and PCB removal, as well as dam inspections and invasive species surveys and control.
- Watershed related debt service reflects an even, multi-year payment schedule and remains at \$5.6 million per year
- The capital budget in [Table 28](#) is newly proposed and discussed below.

Table 28

| Watershed Reimbursement | | | | |
|--|---------------------|------------------------|--------------------|-------------|
| Categories | FY16 Budget | FY17 Proposed Draft | Δ (\$s) | Δ (%) |
| Operating Expenses | \$15,007,400 | \$15,930,000 | \$922,600 | 6.1% |
| Debt Service | 5,608,833 | 5,608,833 | \$0 | 0.0% |
| Payment in Lieu of Taxes (PILOT) | 8,300,000 | 8,372,000 | 72,000 | 0.9% |
| SUBTOTAL (Expenses) | \$28,916,233 | \$29,910,833 | \$994,600 | 3.4% |
| Revenue | 1,005,000 | 1,000,000 | -5,000 | -0.5% |
| TOTAL (Revenue Deducted) | \$27,911,233 | \$28,910,833 | \$999,600 | 3.6% |
| Proposed Watershed Capital Budget | | | | |
| A capital budget has been proposed for the watershed beginning formally in FY17. This budget would be separate from the Watershed Division's operating budget. | | | | |
| Capital Projects | 185,000 | 1,085,000 | 900,000 | 486.5% |
| TOTAL | \$28,096,233 | \$29,995,833 | \$1,899,600 | 6.8% |

- Watershed revenues function as an offset to the total Watershed Reimbursement.

Table 29

| Watershed Revenues | | | | |
|--------------------------|--------------------|------------------------|-----------------|---------------|
| Categories | FY16 Budget | FY17 Proposed Draft | Δ (\$s) | Δ (%) |
| Interment Fees | \$0 | \$0 | \$0 | - |
| Fish & Boating/Deer Hunt | 240,000 | 240,000 | \$0 | 0.0% |
| Rents | 0 | 0 | \$0 | - |
| Forestry Sales | 125,000 | 120,000 | -5,000 | -4.0% |
| Miscellaneous | 50,000 | 50,000 | \$0 | 0.0% |
| Prior Year Refunds | 0 | 0 | \$0 | - |
| Hydropower/Tr Lines | 590,000 | 590,000 | \$0 | 0.0% |
| TOTAL | \$1,005,000 | \$1,000,000 | -\$5,000 | -0.50% |

Policy Point

Watershed Capital Budget

“Walk Before You Run”

Much has improved since the creation of the Trust as a method to adequately fund and actively manage the Watershed Division's budget. The Watershed Division is now sufficiently staffed and equipped with the resources needed to protect the MWRA's water supply. Over the years, the Trust has occasionally questioned the use of some of these operating funds - most specifically, funds used for large projects like facilities and structures. Clearly, these projects need to be completed, but the question was whether or not these would be more appropriately classified as capital projects. This was not a major consideration for years due to the Watershed Division's piecemeal approach toward completing these projects.

The issue became elevated this year, when looking ahead to some projects with significant spending. With dollar values ranging from hundreds of thousands to millions, these clearly warranted a new approach. Toward this end, the Watershed Division brought forward a proposal to create a dedicated capital budget in its proposed FY17 budget.

Recently, the Advisory Board received a "draft final" FY17 budget from the Watershed Division, which refined the numbers from its proposed FY17 budget. ***It should be noted, the "draft final" budget comes directly from the Watershed Division and does not express any changes the MWRA may have proposed;*** however, it does underscore some concerns both the MWRA and the Advisory Board have raised to the Watershed Division.¹⁵

First, the proposed FY17 Watershed Division operating costs increased by 6.1% (see [Table 28](#)). As seen in [Figure 24](#), the Watershed Division's budget actually ***increases*** in the draft final budget. Considering the Division proposed a capital budget to segregate out projects that until now have been capitalized, the Advisory Board expected the operating budget increase to be far lower than this level.

Second, the draft final budget continues to list many projects that could arguably be included in the new capital budget. A Watershed capital budget is new territory for the Division, the MWRA, and the Advisory Board; therefore, it is critical to clearly define how projects should be classified to make sure they are listed in the correct budget.

Third, the source of funding for Watershed capital projects also new territory. Does the MWRA fund and manage it through its capital program? How does the relationship between MWRA and Division staff work on these projects? Are there any complications that need to be addressed since MWRA is investing its funds in capital assets that it does not own?

Related to this topic, the Advisory Board recognizes that there are some projects, such as the Quabbin Buildings project that may make more sense for the MWRA to control and manage. The Advisory Board agrees and believes that such

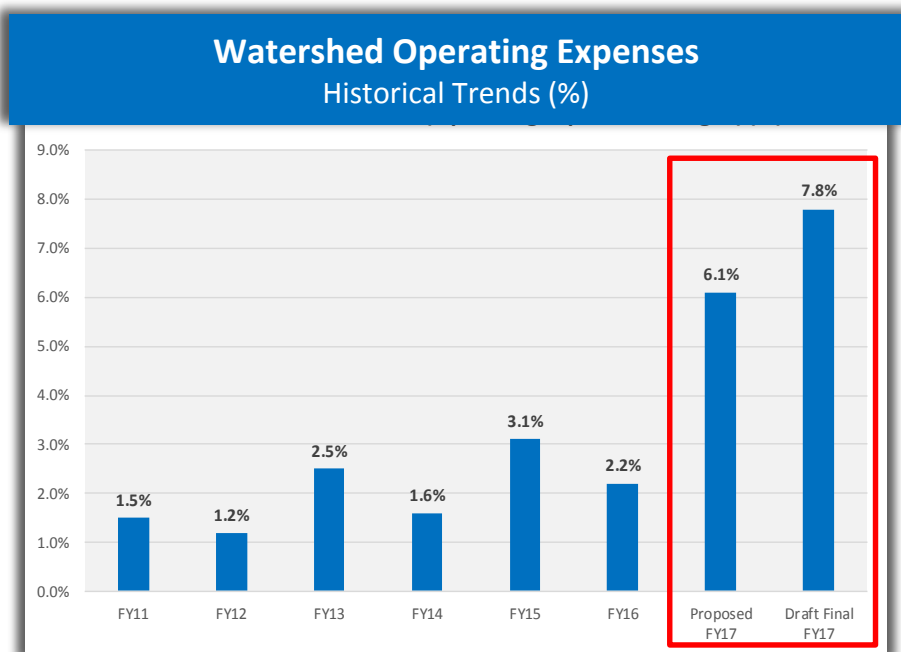


Figure 24

¹⁵ At the time of this writing, the Watershed Division has already recommended \$1.2 million in miscellaneous reductions in response to the MWRA and Advisory Board's discussions of the "draft final" budget.

projects could be conducted similarly to way the Authority funds and manages capital projects related to the non-earthed dams that it maintains. Despite not owning the asset, the Memorandum of Understanding (MOU) with the Commonwealth grants the MWRA the responsibility and authority for conducting these projects.

In any event, the Advisory Board very much supports the concept of creating a Watershed capital budget. However, before endorsing the creating of a capital budget, the Advisory Board would like to have its concerns adequately addressed.

The Advisory Board supports the creation of a capital budget for the Watershed Division subject to the following conditions:

- The Watershed Division must implement a formal capitalization policy to clearly identify whether projects should be funded through the Watershed Operating Budget or the new capital budget.
- The MWRA and Watershed Division should work together to develop criteria on the agency's working relationship on managing capital projects using a tiered approach where some projects are managed by MWRA and some by the Watershed Division. The MOU should be revisited and modified in any way needed to implement this approach.
- Any projects that meet this capitalization threshold should be removed from the DCR operating budget.
- MWRA must receive a detailed and realistic five-year capital spending plan.
- DCR must implement a five-year capital spending cap for the Watershed Division similar to the MWRA's spending cap. If DCR's capital spending is funded through MWRA's CIP, these projects will count toward the MWRA's capital spending cap.

The Advisory Board recommends that MWRA works staff-to-staff to identify options for gaining a coverage benefit for Watershed Division capital spending.

Maintenance Expenses

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|---|---------------------|---------------------|--------------------|-------------|
| Buildings and Grounds Expense Materials and services for maintaining buildings and grounds. | \$4,592,063 | \$4,708,704 | \$116,641 | 2.5% |
| Automotive Expense Materials and services for maintaining vehicles. | 667,500 | 668,008 | 508 | 0.1% |
| Plant and Machinery Expense Materials and services for maintaining plant and machinery expenses. (E.g. drive chains, facility painting and coating) | 11,903,452 | 11,524,787 | -378,665 | -3.2% |
| Pipeline Expense Materials and services for maintaining pipeline. | 1,648,102 | 1,648,114 | 12 | 0.0% |
| Specialized Equipment Expense Materials and services for specialized equipment. (E.g. grit screens, lab equipment repairs, sewer bucketing equipment) | 3,383,052 | 3,865,193 | 482,141 | 14.3% |
| Computer Expense Includes materials services, software licenses and upgrades. | 3,090,632 | 4,163,800 | 1,073,168 | 34.7% |
| Electrical Expense Materials and services for maintaining electrical systems. | 2,539,400 | 2,515,057 | -24,343 | -1.0% |
| All Other Maintenance Expense Includes HVAC materials and services and purchase cards. | 874,571 | 1,226,895 | 352,324 | 40.3% |
| TOTAL MAINTENANCE EXPENSE | \$28,698,772 | \$30,320,558 | \$1,621,786 | 5.7% |

Table 30

Other Highlights

- Projected FY16 spending: \$32 million
 - Largely due to Nut Island fire costs
- FY17 spending is the highest since 2010
 - Largest driver: computer expense
- Maintenance expense is 13.3% of all direct expe
- Deer Island maintenance: \$13.2 million
 - Field Operations maintenance: \$10.7 million including:
 - CWTP
 - Headworks
 - CSO facilities
 - Water and wastewater pump stations
- Other Operations Division maintenance expense
 - Clinton WWTP: \$0.47 million
 - Laboratory Services: \$0.33 million
- All other maintenance expense: \$4.75 million
 - Makes up 16.6% of all maintenance spen and includes:
 - MIS: \$4.06 million
 - Fleet maintenance: \$0.7 million
- Residuals Maintenance is now funded in the CIP
- Maintenance needs are also funded through the technical assistance group of engineering contracts and through the capital program

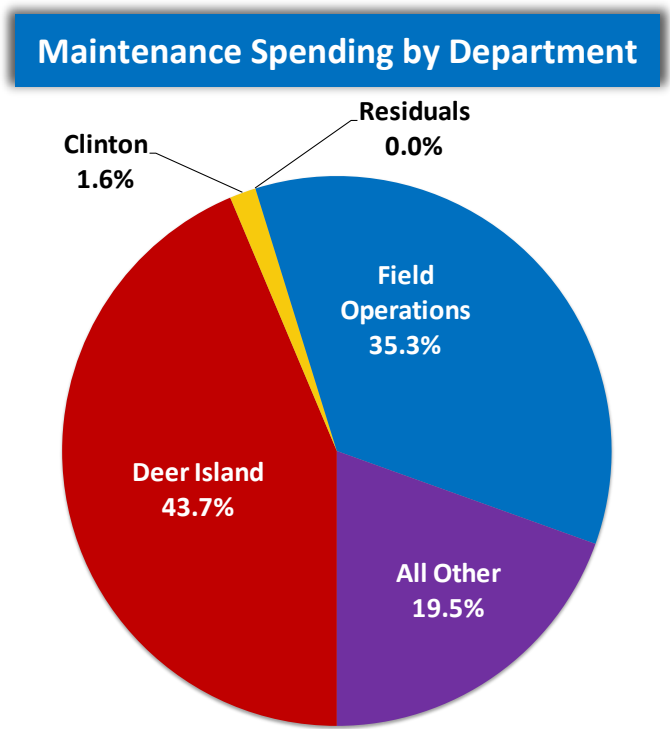


Figure 25

“Delta Report”

Maintenance Spending Increases \$1.6 Million

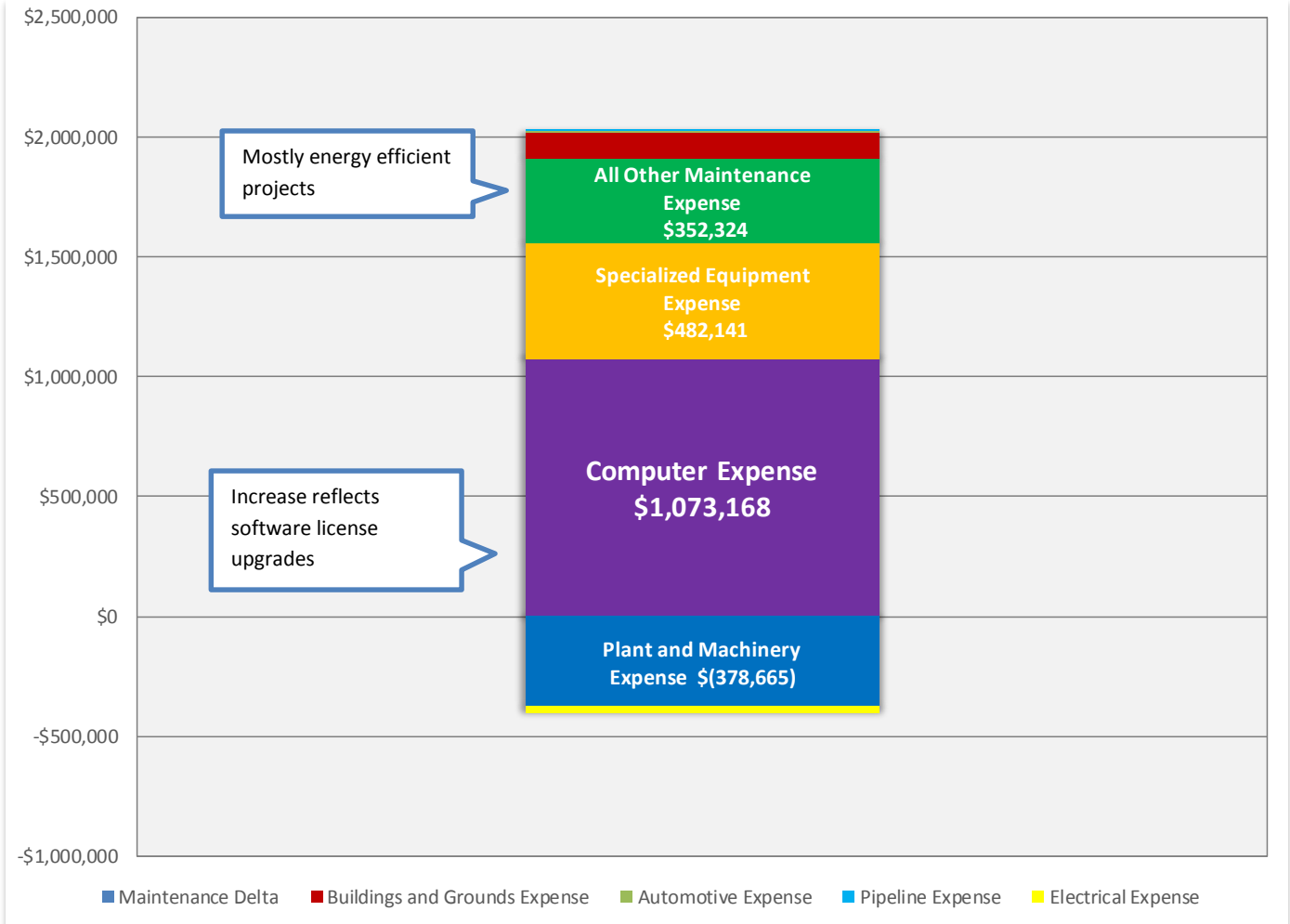


Figure 27

Deer Island Maintenance Totals \$13.24 |

- Materials: \$6.09 million
 - 46% of the department’s budget
- Services: \$7.15 million
 - 54% of the department’s budget
- Deer Island maintenance spending remains ess the same
- Plant and machinery services and materials: \$8
 - Makes up 63% of all Deer Island mainte expense
- Electrical system maintenance: \$1.97 million
- Buildings and grounds work: \$1.58 million
- Some of the largest projects or contracts includ
 - Boiler maintenance: \$1.00 million comb
 - Boiler maintenance
 - Hydro maintenance
 - Steam turbine generator (STG) maintenance

Deer Island Maintenance

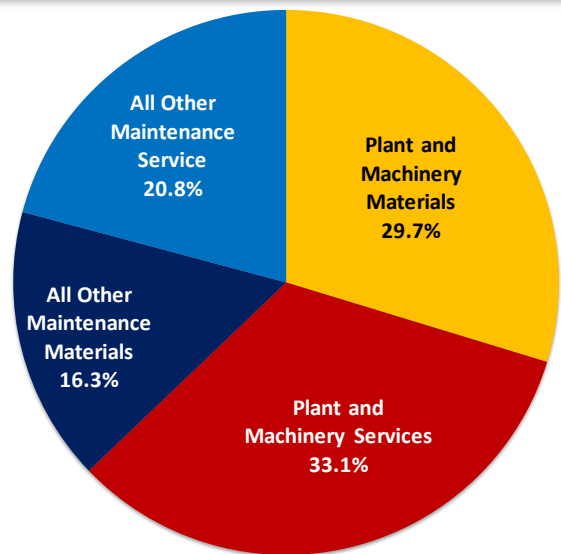


Figure 26

- Cryogenic Maintenance Services: \$0.50 million
- Janitorial Services: \$0.45 million
- Combustion Turbine Generator (CTG) maintenance: \$0.34 million
- Pipe Cleaning: \$0.30 million
- Facility Painting and Coatings: \$0.5 million
- Reactor Mixer Gearbox Rebuilds: \$0.20 million
- Refurbish Slide Gates: \$0.20 million
- Exterior Door Replacements: \$0.30 million

Field Operations Department (FOD) Maintenance Totals \$10.7 Million

- FOD maintenance spending increases by \$0.91 million (+9.3%) from FY16, comprised of:
 - Major projects decrease: -\$150 thousand (-8%)
 - Services contracts increase: +\$0.38 million (+11.5%)
 - Energy initiatives increase: +\$0.27 million (+8%)
 - Day-to-day needs increase: +\$0.27 million (+10%)
- Budget includes:
 - Day-to-day needs: \$4.8 million
 - Service contracts: \$3.6 million
 - Major projects: \$1.7 million
 - Energy initiatives: \$0.6 million
 - Includes HVAC and lighting efficiency upgrades

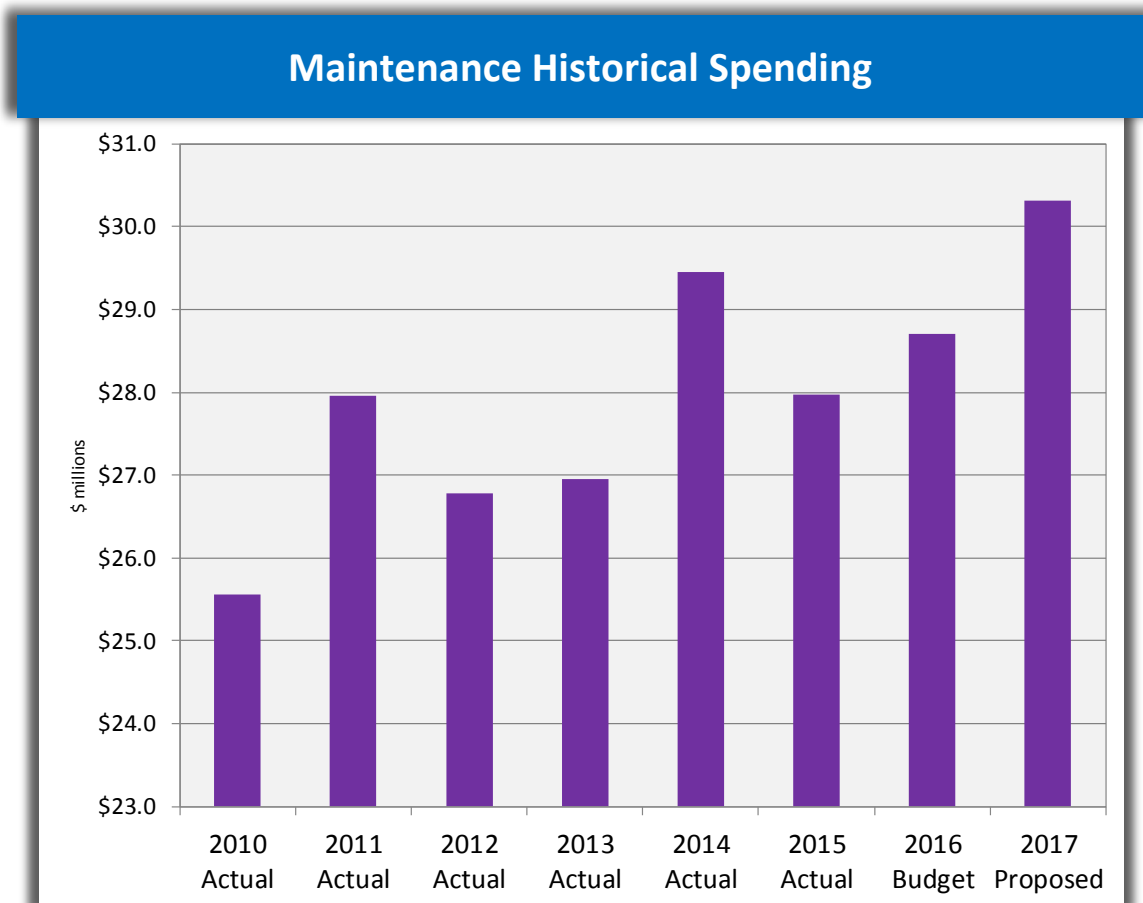


Figure 28

- FOD maintenance projects over \$100 thousand are:
 - Manhole rehabilitation contract: \$360 thousand
 - Invasives control at Stillwater Basin: \$250 thousand
 - Replacement of flow control valve at Weston Aqueduct: \$150 thousand
 - Annual tank cleaning: \$100 thousand
 - O&M maintenance at Union Park facility: \$400 thousand
 - Water operations and maintenance paving: \$400 thousand

Clinton Wastewater Treatment Plant (CWWTP) Maintenance Totals \$464 Thousand

- Increase from FY16: +\$7 thousand (+1.5%)
 - Driven by \$16.5 thousand increase for plant and machinery materials and services
- Includes \$250 thousand for painting to address issues with the aerated grit tank
- Included is \$70 thousand for major projects based on the most current rolling priority list
- Remainder of the budget is for routine materials and services
- Maintenance represents 24% of the FY17 proposed budget for CWWTP

The Advisory Board expects the MWRA to increase its “maintenance” category of expense by \$760,075 in the final FY17 CEB for various projects including actuators for various facilities as well as relining of the sodium hypochlorite tanks at the Brutsch and Carroll Water Treatment Plants.

Maintenance Expense Changes by Type from FY16 to FY17

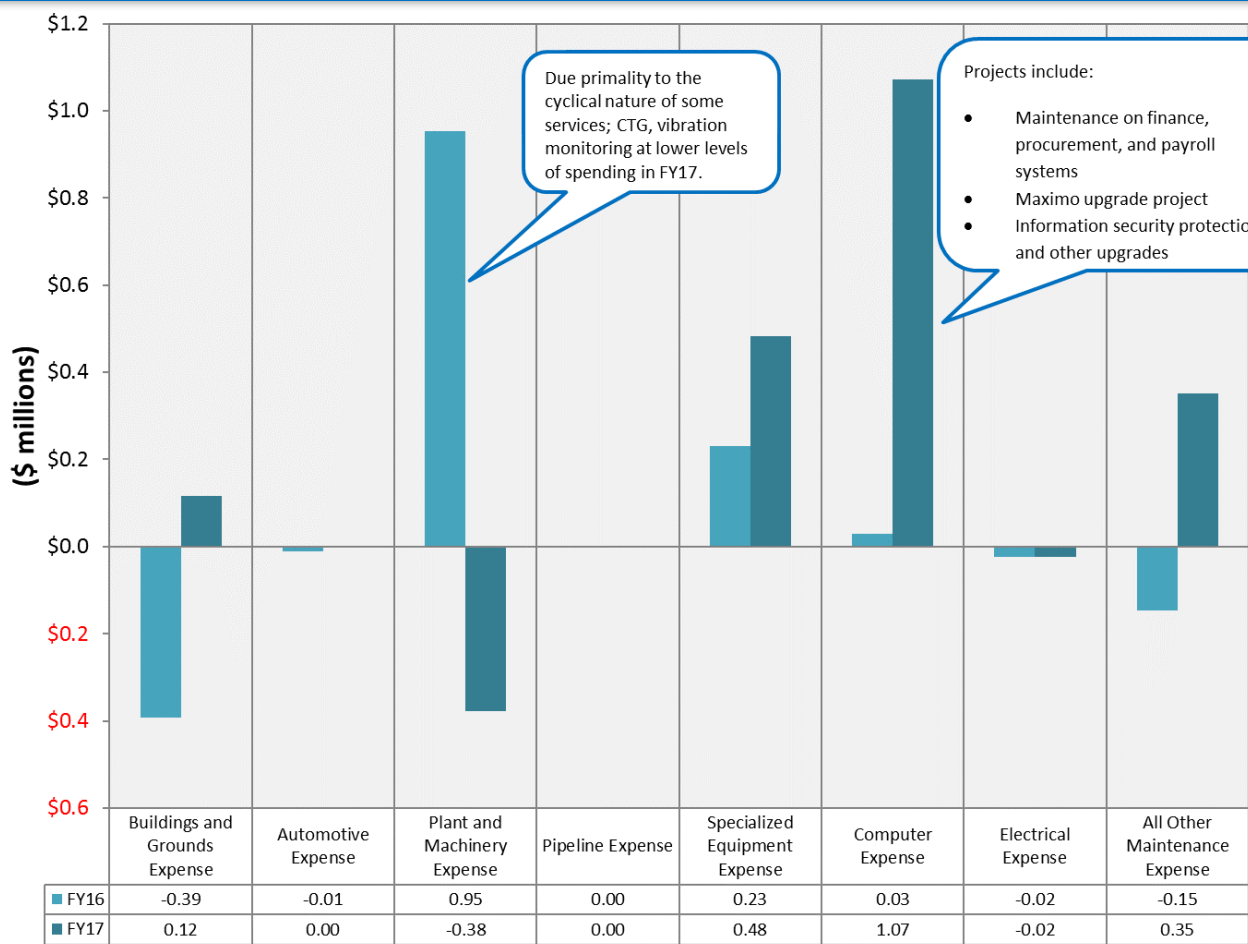


Figure 29

Other Services

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|--|---------------------|---------------------|------------------|-------------|
| Pelletization NEFCo contract to process and dispose of sludge pellets | \$14,084,349 | \$13,352,772 | -\$731,577 | -5.2% |
| Lease Charlestown (\$1.49 million + taxes and operating expenses), Chelsea (\$1.88 million), Marlborough Records Center (\$68.6 thousand). | 3,630,474 | 4,094,703 | 464,229 | 12.8% |
| Telephone Voice and data lines; Operations Division | 1,703,777 | 2,134,866 | 431,089 | 25.3% |
| Grit and Screenings Removal Removal of grit and screened materials from various facilities. | 1,220,369 | 1,220,312 | -57 | 0.0% |
| All Others Printing, membership dues/subscriptions, advertising; health/safety, police details; Advisory Board operations; various other services. | 2,890,933 | 2,848,371 | -42,562 | -1.5% |
| TOTAL OTHER SERVICES EXPENSES | \$23,529,902 | \$23,651,024 | \$121,122 | 0.5% |

Table 31

Other Highlights

- Sludge pelletization and grit and screenings removal total \$14.57 million or nearly 62% of all Other expenses
- New England Fertilizer Company (NEFCo) pelletization operations costs are based on processing an average of 101.3 tons per day (based on a 3 year average annual costs updated by an inflation factor)
- The pelletizing contract which ran from FY 2010 through December 2015 has been extended and renegotiated for a five year period which began in January 2016
- Grit and screenings (and scum) are removed from Island, the remote headworks, certain pump stations and CSO facilities. Budget estimates assume 60,000 tons of material to be removed
- Lease costs include costs for the Chelsea property, Charlestown lease and the Marlborough Records Center and Warehouse (including revised rent schedules, operating expenses and property taxes). Budget includes \$445,000 for a planned satellite lay down area for materials storage

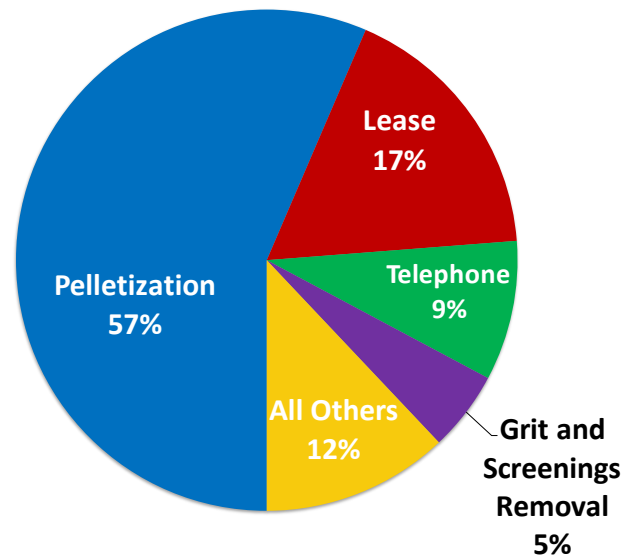


Figure 30

“DELTA REPORT”

Other Services Increase \$121 Thousand

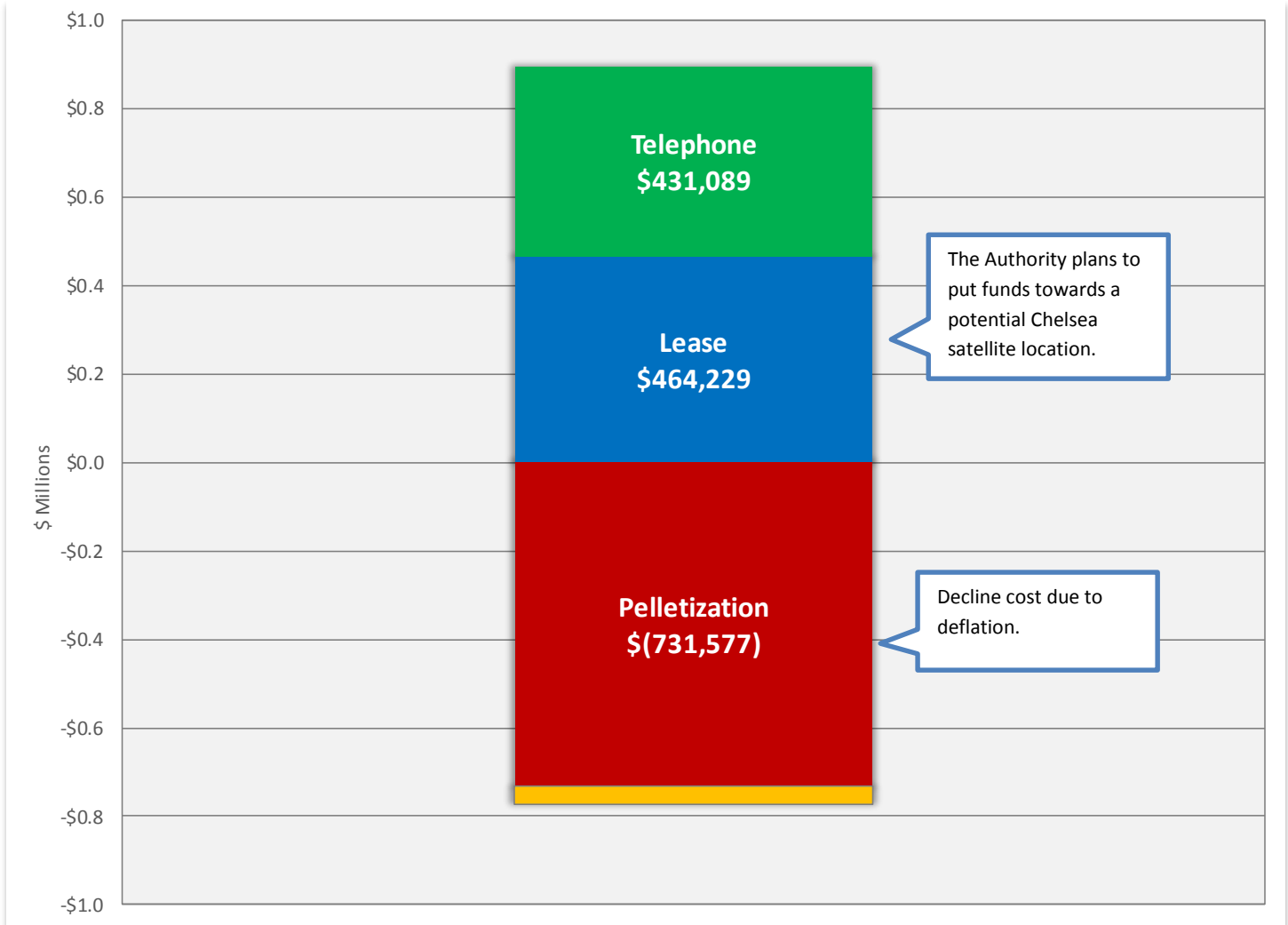


Figure 31

Sludge Palletization

- FY17 proposed budget: \$13.35 million
- Decrease from FY16: \$0.73 million (-5.2%)
- The budget average is based on a two-year average of 101.34 tons and reflects continuing improvements to digester operations at Deer Island plus estimates for the impacts of the pilot co-digestion project (which is assumed to be ramped up during the year starting in January 2017)

The Advisory Board is recommending a reduction of \$56,000 to reflect a later start-up of the co-digestion pilot program until the last quarter of the fiscal year.

- The inflation factor reflects assumptions for materials and labor, electricity and natural gas and has declined for this proposed budget
- In March 2015, the Board of Directors, anticipating the December 31, 2015 end of the current NEFCo contract period, approved an amendment extending the contract term for five years, from January 1, 2016 through December 31, 2020. The Authority noted that the negotiated extension will result in a savings of an estimated \$1.25 million over the five-year period, and will provide time for new pellet plant dryer technology to be proven, allow for

MWRA Advisory Board

the possible development of more firms to provide competition for a long-term bid and clarify any uncertainty regarding potential changes in MWRA's sludge quantities.

Based on updated information, the Advisory Board expects the Authority will decrease "sludge pelletization" line item by \$232,769.

Grit and Screenings

- Estimates of tonnages of grit and screenings have increased in the last several years to reflect mechanical improvements at some of the headworks and scum collector repair work. With more scum to be kept on site, budgeted tonnages are being reduced but also includes 49 additional tons of floatable materials to be removed from North Main Pump Station shafts. A new purchase of a vacuum truck is expected to result in more efficient removal of scum
- Total tonnages come to 6,626 or an increase of 49 tons from the FY16 budget; a new 2-year contract started June 2015

Lease Costs

- Lease costs reflect increases in taxes and insurance charges for the Chelsea lease, and updated rent charges plus taxes and operating expenses for the Charlestown lease
- Rent, operating expenses and tax-related costs are also included for the Records Center and Warehouse located in Marlborough
- New for FY17 are costs of an additional storage space to supplement the Chelsea facilities yard, estimated at \$445,000

Since the Proposed FY17 CEB, the Authority has indicated that it now plans to purchase, rather than lease additional storage space in Chelsea. The Advisory Board expects the Authority's "lease" line item to decrease by \$445,000.

Other Services

- Telephone expense increases 25% to \$2.1 million due primarily to security network upgrades started in FY15; budgeted in the MIS Department
- Printing expense declines 6.3% to \$153 thousand
- Police detail expense increases 3% to nearly \$463 thousand
- Other services also include memberships, dues and subscriptions; permit fees; and health and safety-related services

Consistent with the Advisory Board's support for the MWRA's community support initiatives related to public concern about lead in the drinking water, the Advisory Board recommends adding \$200,000 in "other services" for the purposes of funding additional temporary and/or contract employees to assist communities to update their inventory of local lead services.

Utilities

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|---|---------------------|---------------------|-------------------|--------------|
| Electricity Most facilities are powered by Electricity including DITP and CWTP | \$16,902,492 | \$16,740,036 | -\$162,456 | -1.0% |
| Diesel Fuel Heating, CTGs at DITP, and other backup generators | 3,346,215 | 2,803,888 | -542,327 | -16.2% |
| Water A "pass-through" cost to account for Water; self-supplied | 2,217,385 | 2,098,043 | -119,342 | -5.4% |
| Natural Gas Primarily used for heating various MWRA facilities | 485,581 | 589,906 | 104,325 | 21.5% |
| All Other Utilities Oxygen, #2 Fuel Heating Oil, Propane, and all Other Utilities | 213,150 | 186,154 | -26,996 | -12.7% |
| TOTAL UTILITIES EXPENSES | \$23,164,823 | \$22,418,027 | -\$746,796 | -3.2% |

Table 32

Other Highlights

- Most utilities costs decline for FY17, with the exception of natural gas
- Electricity expense decreases by \$162 thousand due to reductions in purchased electricity relating to conservation projects (despite a slight 1% increase in assumed pricing)
- Increased wind and solar energy generation, hydropower generation, use of steam generators at Deer Island, and improved energy efficiency continue to reduce the amount of purchased electricity over the last several years
- Electricity prices in New England are driven by natural gas pricing rather than oil prices
- The increase of \$104 thousand for natural gas due to increases for both price and quantities purchased
- Natural gas use at the Fore River pelletizing plant is part of the NEFCo monthly charge, under the Other Services budget category. The Authority has included \$2.5 million for natural gas and another \$1.47 million for electricity for utilities under the NEFCo contract. Inflation indices relating to contract pricing have been declining for the past year

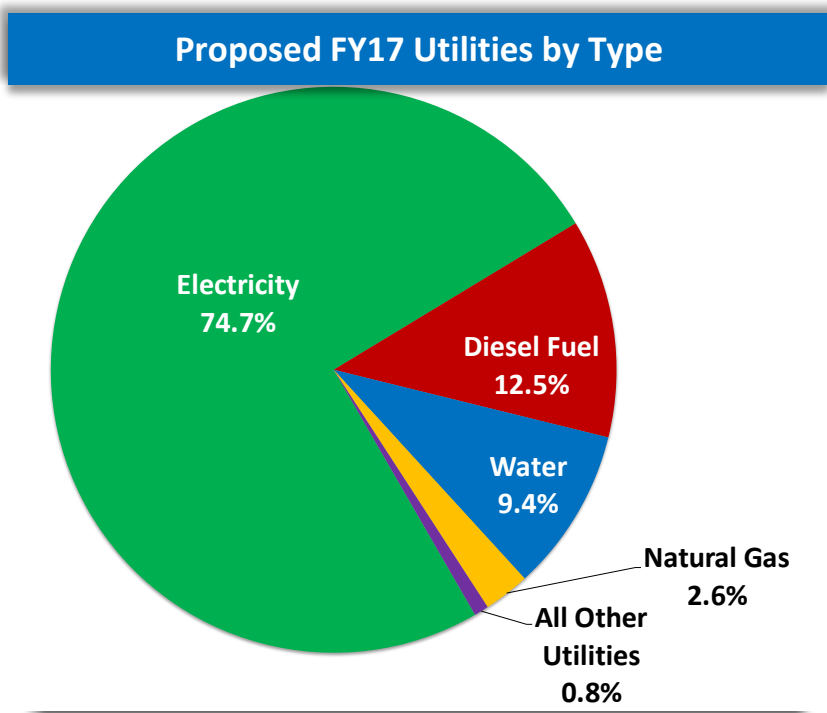


Figure 32

"DELTA REPORT"

Utilities Spending Decrease \$747 Thousand

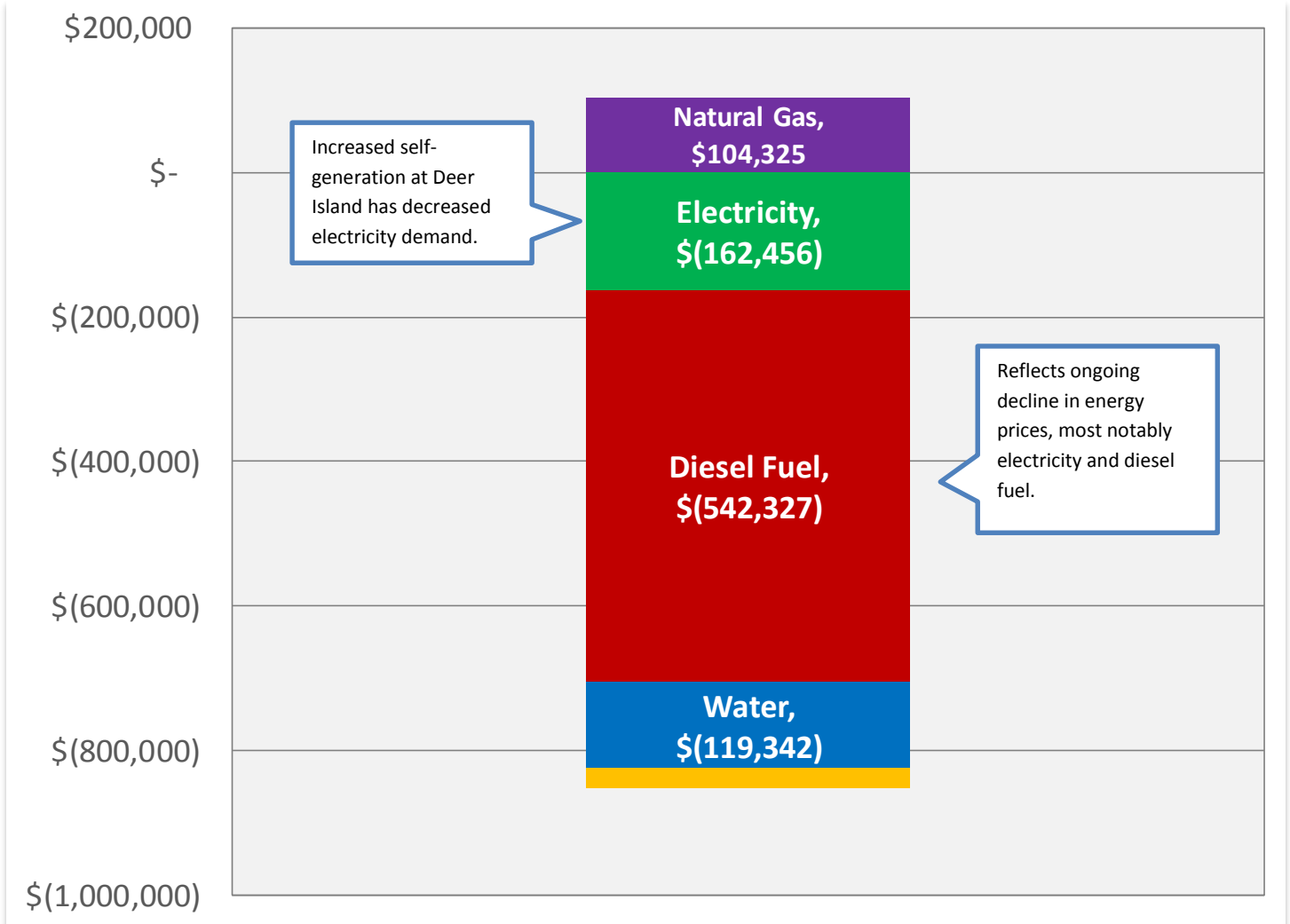


Figure 34

Electricity

- FY17 Deer Island electricity: \$9.38 million
 - Decrease from FY16: \$60.6 thousand
 - Driver: price increases are offset by lower purchases
 - Deer Island electricity spending is over half of all MWRA electricity purchases
- FY17 Deer Island electricity usage; 145 million kWh
 - Reduction from FY16: -1.8 million kWh
- Total self-generation of electricity at Deer Island increases by 3.0% in FY17; represents 30.4% of all electricity demand on the island
- Total purchased electricity at Deer Island: 100.8 million kWh
 - Lowest in at least five years; 2.9% reduction from FY16 budgeted amount

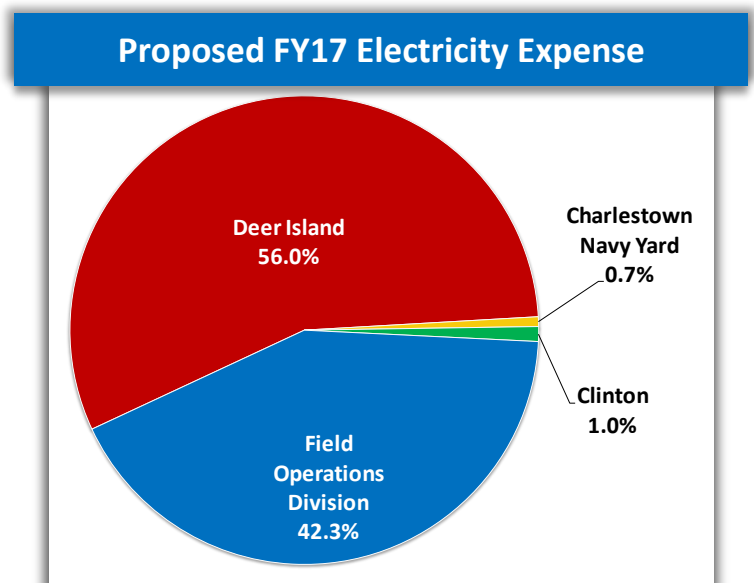


Figure 33

MWRA Advisory Board

- Energy conservation and efficiency projects continue to bring purchased electricity amounts down
- The Authority continues to pursue a number of demand-side changes and initiatives
- Field Operations Department (FOD) facilities electricity expense decreases: \$121 thousand (-1.7%)
 - Purchased amount is essentially flat from FY16 to FY17; decrease is due primarily to lower prices

Diesel Fuel

- FY17 diesel fuel budget: \$2.8 million
 - Decrease of \$5.4 thousand
 - Deer Island: \$1.35 million
 - All other Wastewater Facilities: \$1.325 million
 - Water facilities: \$0.128 million
- Deer Island usage remains level while pricing decreases
 - Declines while pricing decreases
 - Decrease in gallons purchased: 3.2%, reflecting assumed number of days of emergency CTG use from 5 to 3 days
 - FY16 price assumption: \$2.75/gallon
 - FY17 price assumption: \$2.25/gallon
- Field Operations Department usage increases while pricing decreases
 - Purchase costs decrease -11.4% or -\$187.3 thousand from FY16
 - FY16 price assumption: \$3.00/gallon
 - FY17 price assumption: \$2.50/gallon

Natural Gas

- FY17 natural gas expense: \$589.9 thousand
 - Increase from FY16: \$104 thousand, although still lower than the \$600.5 thousand budgeted in FY15
- Natural gas is used at a number of facilities in the Field Operations Department

Being made aware of pricing and usage trends, the Advisory Board expects the Authority to decrease its FY17 CEB "utilities" expenses by an estimated \$870,670.

Chemicals

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|--|--------------------|--------------------|------------------|-------------|
| Soda Ash Used primarily at the CWTP; some at Clinton WWTP | \$3,898,621 | \$3,567,741 | -\$330,880 | -8.5% |
| Sodium Hypochlorite Used for treatment at DITP (\$1.0 million) and CWTP (\$0.9 million) | 2,008,925 | 2,387,660 | 378,735 | 18.9% |
| Ferric/Ferrous Chloride For struvite control at DITP. Price is stable from FY15 | 903,893 | 812,407 | -91,486 | -10.1% |
| Liquid Oxygen Ozone generation at CWTP | 445,208 | 442,781 | -2,427 | -0.5% |
| Sodium Bisulfite For dechlorination of treated wastewater and water | 325,632 | 578,299 | 252,667 | 77.6% |
| Hydrofluosilic Acid Fluoride control at CWTP | 392,939 | 380,363 | -12,576 | -3.2% |
| Polymer Sludge thickening at DITP and Clinton | 307,258 | 354,812 | 47,554 | 15.5% |
| Activated Carbon For odor control at DITP | 302,960 | 302,960 | 0 | 0.0% |
| Carbon Dioxide To increase pH and alkalinity level of water supply at CWTP | 293,092 | 280,936 | -12,156 | -4.1% |
| All Other Chemicals For algae control; corrosion control in Framingham Relief Sewer and DITP | 912,319 | 877,789 | -34,530 | -3.8% |
| TOTAL CHEMICALS EXPENSES | \$9,790,847 | \$9,985,748 | \$194,901 | 2.0% |

Table 33

Other Highlights

- Chemicals budget totals just under \$10.0 million or 4.4% of all direct expenses
- Water operations chemicals: \$5.7 million
 - Decrease: \$0.43 million (-7%)
 - Assumes second year of impact new fluoride regulations at CI
- DITP chemicals: \$3.7 million
 - Increase of \$622 thousand
 - Assumes 6 months of new NP permit for FY17
- Clinton wastewater treatment plant chemicals: \$0.36 million
 - Increase of \$5 thousand (1.6%)
 - Assumes new NPDES permit for year
 - Chemical expense has double since FY 2010, particularly for ash
- Other wastewater facilities chemicals: \$0.25 million

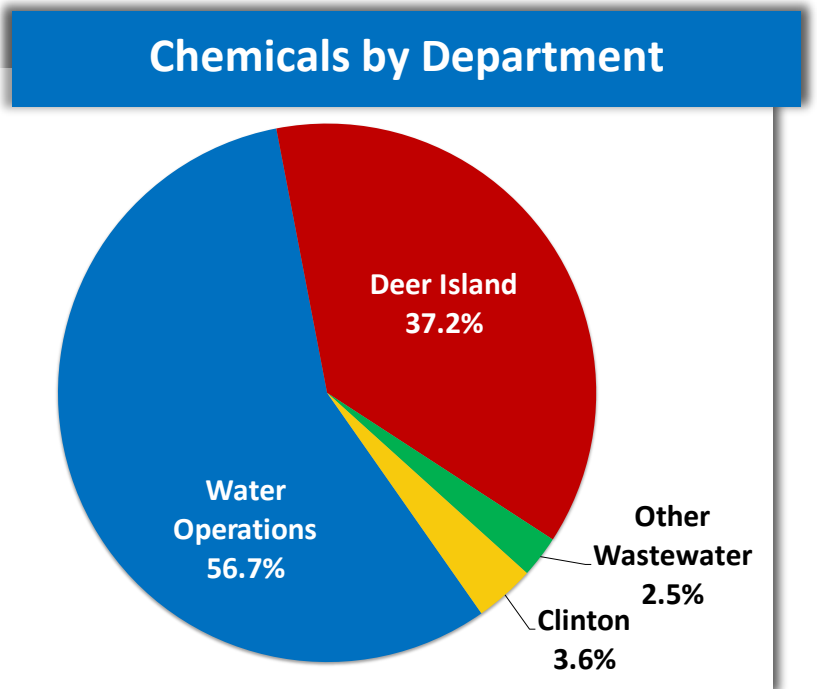


Figure 35

“Delta Report”

Chemicals Spending Increases \$195 Thousand

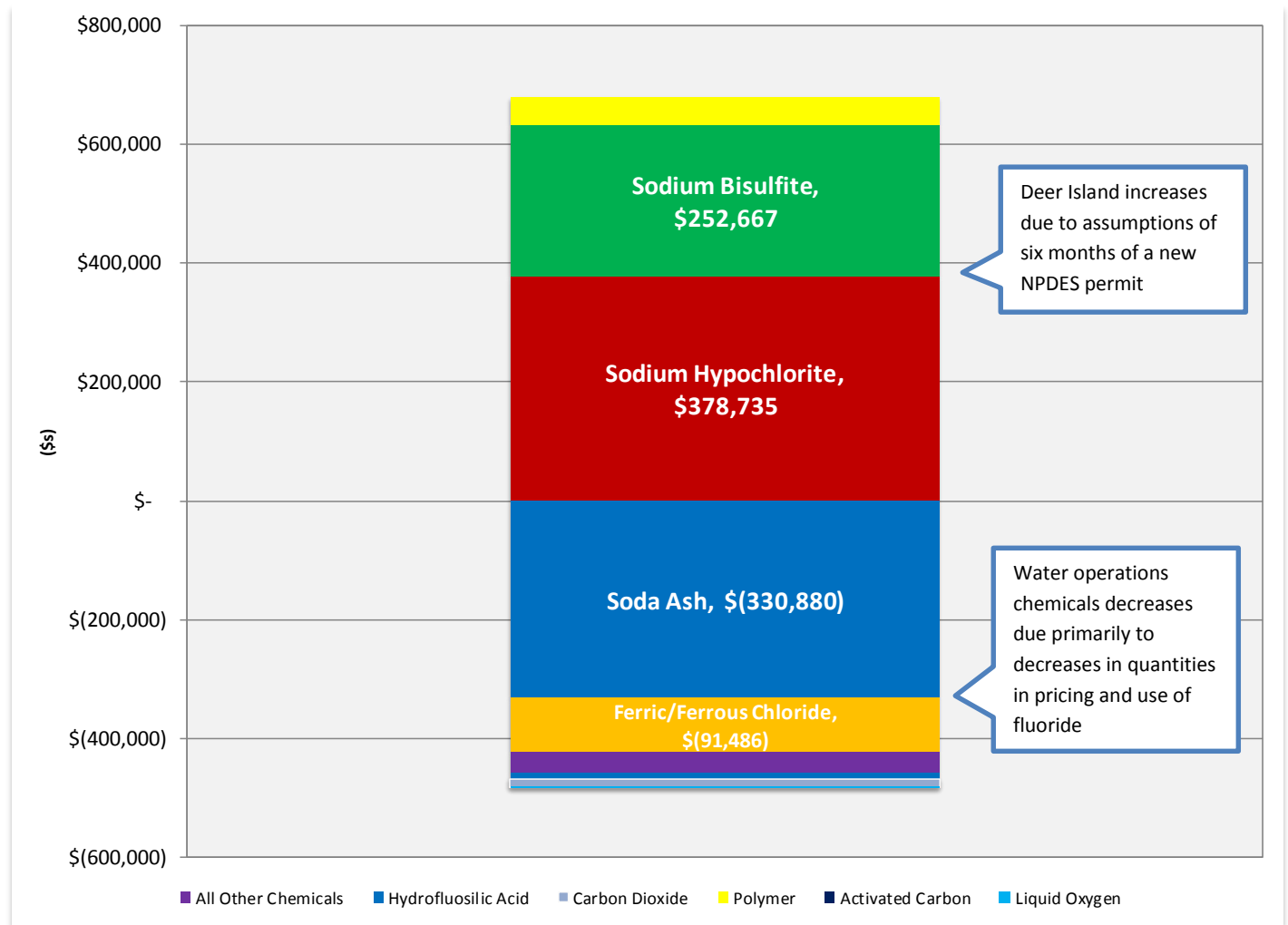


Figure 36

Regulatory Changes Impacts

- Assumes new DITP NPDES permit will be in effect starting January 2017
 - Results in increased sodium hypochlorite and sodium bisulfite budgets of \$580 thousand
- Assumes new Clinton NPDES permit will be in effect for full year
- Costs of using increased amounts of ferric chloride to control phosphorus levels are budgeted at \$39 thousand, twice the costs incurred 4 years earlier
- Chemicals expense represents 18% of the Clinton budget
- Assumes new fluoride regulations will be in effect during FY17
 - Fluoride expense declines to \$380 thousand, half the \$763 thousand of 5 years earlier

Chemicals Changes by Location

- Deer Island increases due to assumption of six months of a new NPDES permit
- Water operations chemicals spending decreases due primarily to decreases in quantities in pricing and use of fluoride
- Nearly 60% (or \$5.95 million) of all chemicals spending is for soda ash and sodium hypochlorite

The Advisory Board expects that the chemicals budget will be revised to reflect updated pricing and usage assumptions, including the reduction in fluoride dosing consistent with updated federal regulations. The MWRA estimates this to be a reduction of \$332,645.

Chemical Changes by Location from FY16 to FY17

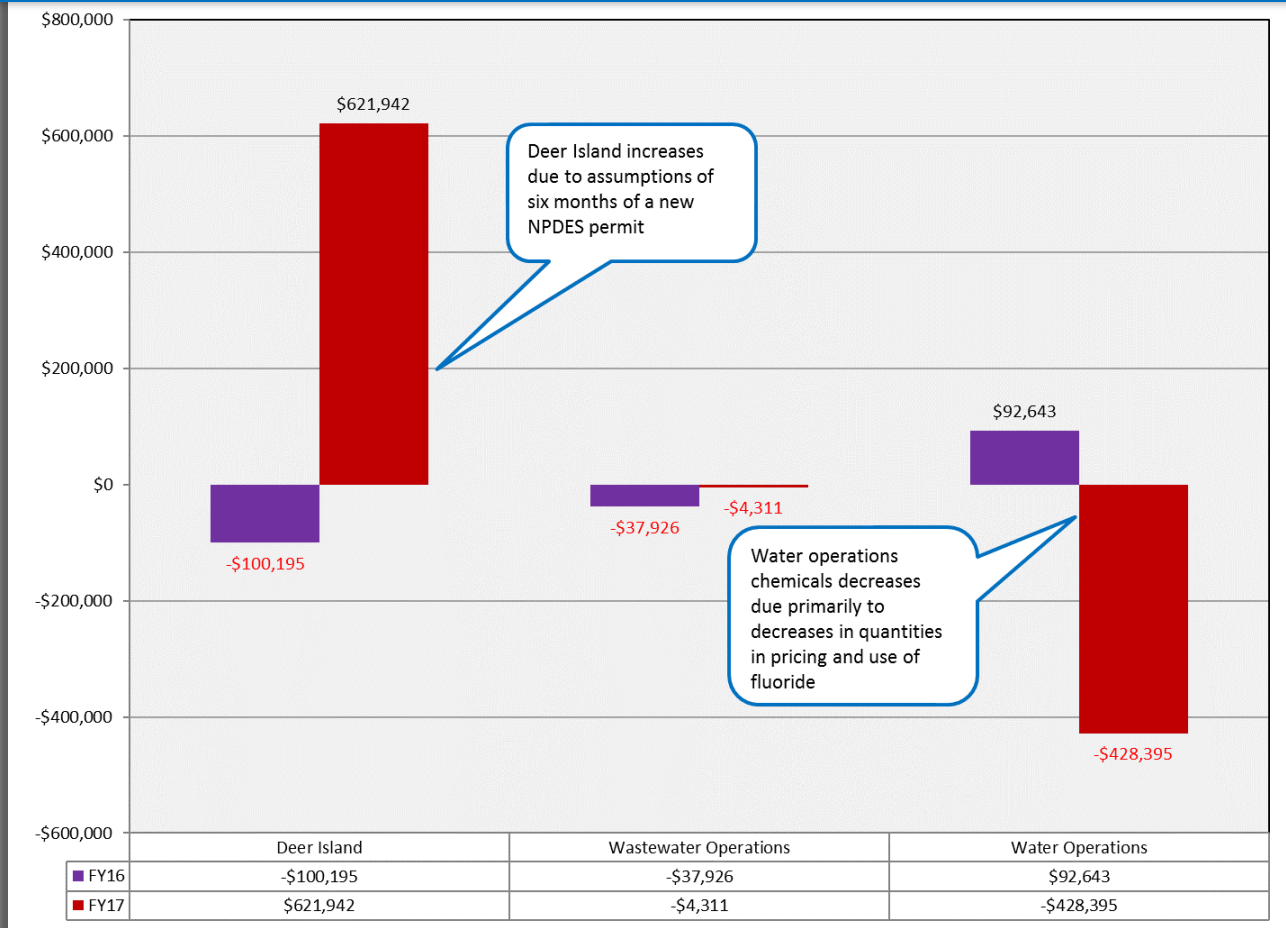


Figure 37

Professional Services

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|--|--------------------|--------------------|------------------|-------------|
| Lab and Testing Analysis Primarily harbor and outfall monitoring; some specialized outside lab services | \$1,658,720 | \$1,582,940 | -\$75,780 | -4.6% |
| Security Security and guard contracts | 1,840,300 | 1,839,997 | -303 | -0.02% |
| Engineering Specialized outside services such as dam inspection and dam safety services; as needed engineering support | 415,225 | 696,620 | 281,395 | 67.8% |
| All Other Professional Services Legal Services, Audit Services, Local Limits Study, communications, energy audits | 1,905,366 | 2,196,596 | 291,230 | 15.3% |
| TOTAL PROFESSIONAL SERVICES EXPENSES | \$5,819,611 | \$6,316,153 | \$496,542 | 8.5% |

Table 34

Other Highlights

- Security services costs reflect contract costs for the Chelsea, Deer Island, Carroll Water Treatment Plant facilities, and the Charlestown offices
- Reflecting the slow progress on issuing the next NPDES permit, the FY17 budget for engineering services includes partial year funding of \$50,000 a Local Limits study
- All other professional services include:
 - Trustee, financial advisor and related services for the Treasury Department
 - Insurance consultant services
 - Audit services
 - Legal services
 - Energy consulting services
 - Technical and professional development services for the Human Resources Department plus services relating to the employee assistance program and third party claims administration services for the workers' compensation program
 - MIS services relating to the upgrade of the MAXIMO system
 - Communications services, including funding for WAC and WSCAC
 - Other engineering services includes funding for a comprehensive survey in all the reservoirs for invasive plants

Professional Services by Type

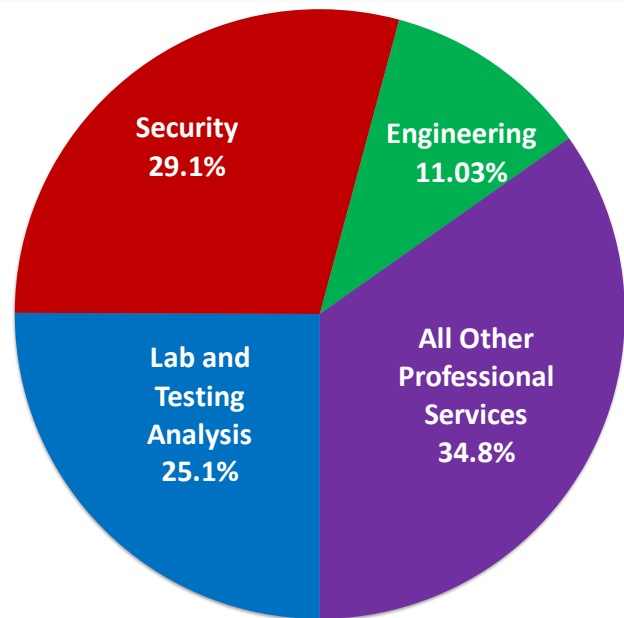


Figure 38

“Delta Report” Professional Services Expense Increases \$497 Thousand

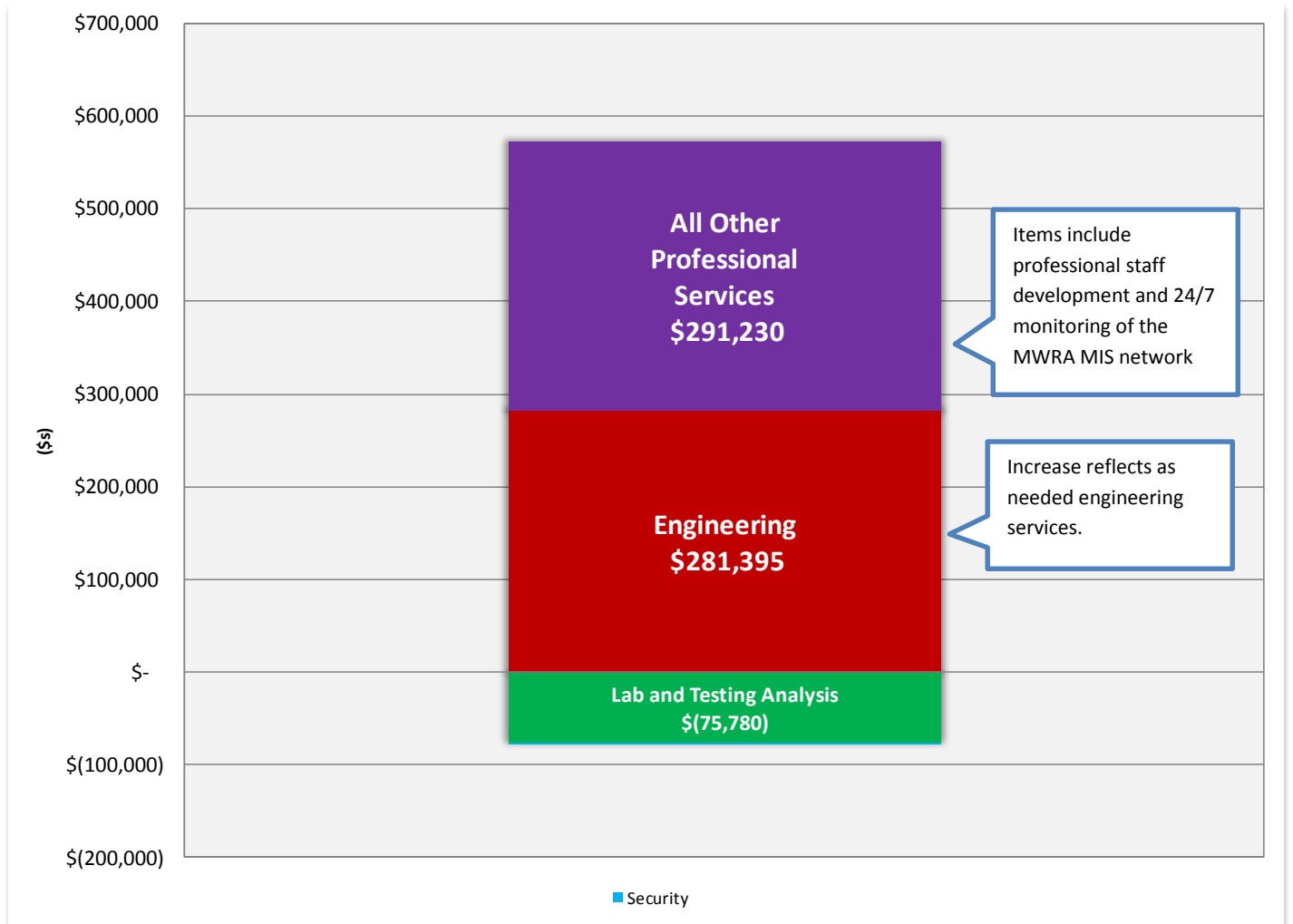


Figure 39

Laboratory, Testing, and Analysis Services

- FY17 harbor and outfall monitoring support: \$1.41 million for water column and water quality modeling and monitoring in the harbor and Massachusetts Bay; the proposed budget is based on a three year average
- Largest area of expense within laboratory testing category
- Monitoring costs linked to existing National Pollutant Discharge Elimination System (NPDES) permit
- Current permit expired in August 2005
- New permit not yet drafted or released for review
- FY17 expense is lower than in earlier years
 - Changes to scope of monitoring
 - Transfer of some analyses to in-house staff
 - Savings due to regulatory approval to discontinue measuring floatables
- Remaining laboratory testing services: \$173 thousand
 - For outside, specialized laboratory testing services

Other Engineering Services Expenses

- As-needed engineering services including \$100 thousand for tank inspections and painting and coatings design at Deer Island
- Leak detection survey
- Dam safety services, \$160,500 for inspections at multiple dam sites

Security Services

- Budgeted at \$1.84 million, the same level as budgeted in FY16
- Includes funding for security and related services for the Deer Island Treatment Plant, Carroll Water Treatment Plant and the Charlestown Navy Yard offices for the second year of the contract
- The security contract for the Chelsea facility was rebid and reflects the new 3-year contract

All Other Professional Services

- \$424 thousand for trustee bank services, financial advisory services, bond and disclosure counsels, insurance consultant services and related other services for the Treasury and Risk Management Departments; \$156 thousand for audit services
- \$400 thousand for professional assistance with network infrastructure, applications and design for the MIS Department
- \$294 thousand for legal services for outside legal counsel and arbitrators' and workers' compensation claims administration services and related services
- \$171.4 thousand in support of the WAC and WSCAC advisory committees
- \$279 thousand for technical and professional development training managed through the Human Resources Department
- \$75 thousand for contribution for modeling work coordinated through the Mystic River Watershed Association, pending further discussions
- \$70 thousand for survey of new invasive aquatic plants plus \$65 thousand for monitoring mechanical harvesting of aquatic invasive plants in the Wachusett Reservoir
- \$55 thousand for energy audits and advisory services

The Advisory Board expects the MWRA to increase the "professional services" category of expense by \$265,783 for additional initiatives including the "water active directory" SCADA project.

Professional Services Changes by Type from FY16 to FY17

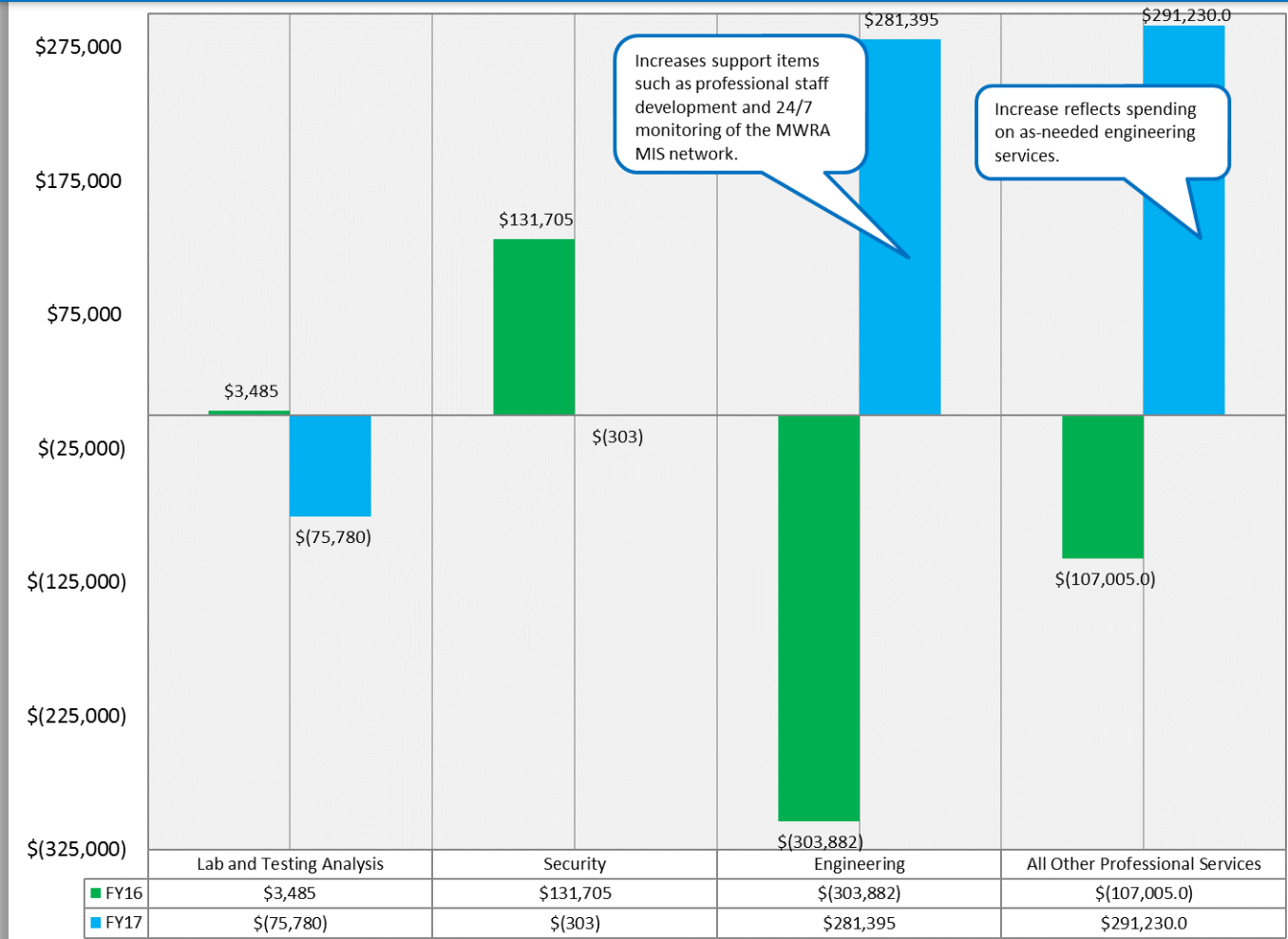


Figure 40

Other Materials

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|---|--------------------|--------------------|----------------|-------------|
| Vehicle Purchase/Replacements Purchases of vehicles and equipment under \$100,000. | 1,700,000 | 1,900,000 | 200,000 | 11.8% |
| Vehicle Expense Bulk gasoline, diesel purchases, mileage reimbursement, and some toll fees. | \$996,437 | \$931,834 | -\$64,603 | -6.5% |
| Lab and Testing Supplies Supports Central Lab and TRAC. | 840,687 | 879,808 | 39,121 | 4.7% |
| Equipment/Furniture Miscellaneous equipment and furniture. | 709,483 | 409,575 | -299,908 | -42.3% |
| Computer Hardware & Software PCs, printers, plotters, and scanners. | 447,282 | 544,961 | 97,679 | 21.8% |
| Office Supplies Office supplies including paper. | 227,355 | 235,198 | 7,843 | 3.4% |
| All Others Includes postage, work clothes, and health and safety materials. | 1,243,344 | 1,270,764 | 27,420 | 2.2% |
| TOTAL OTHER MATERIALS EXPENSES | \$6,164,588 | \$6,172,140 | \$7,552 | 0.1% |

Table 35

Other Highlights

- The Authority has multi-year replacement plans for purchase of vehicles and computer hardware
- Funding for vehicle replacement supports purchase of 54-62 vehicles or 11-12% of the active fleet
- The computer hardware budget increases by nearly \$100,000 reflecting replacement of numerous printers, scanners and computers, many of which are more than ten years old, according to a multi-year replacement plan
- Vehicle expense, lab and testing supplies, and work clothes budgets are based on updated historical spending

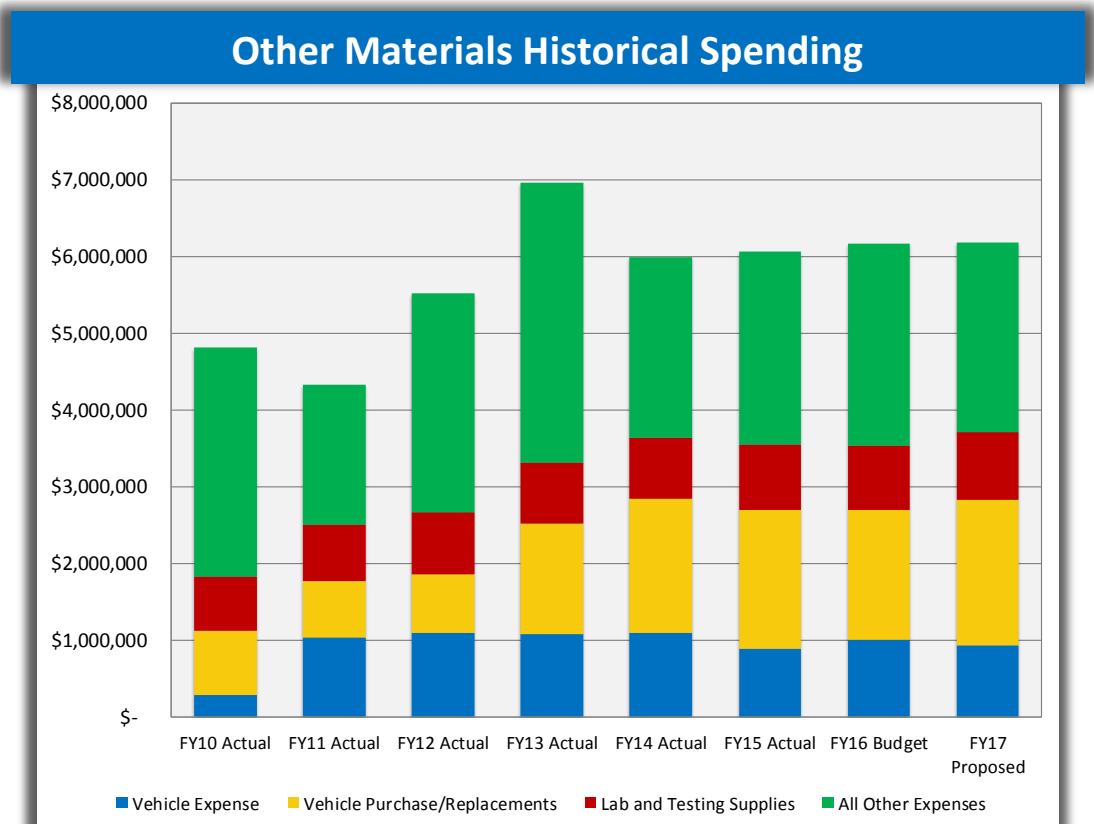


Figure 41

“Delta Report” Other Materials Spending Increases \$7.5 Thousand

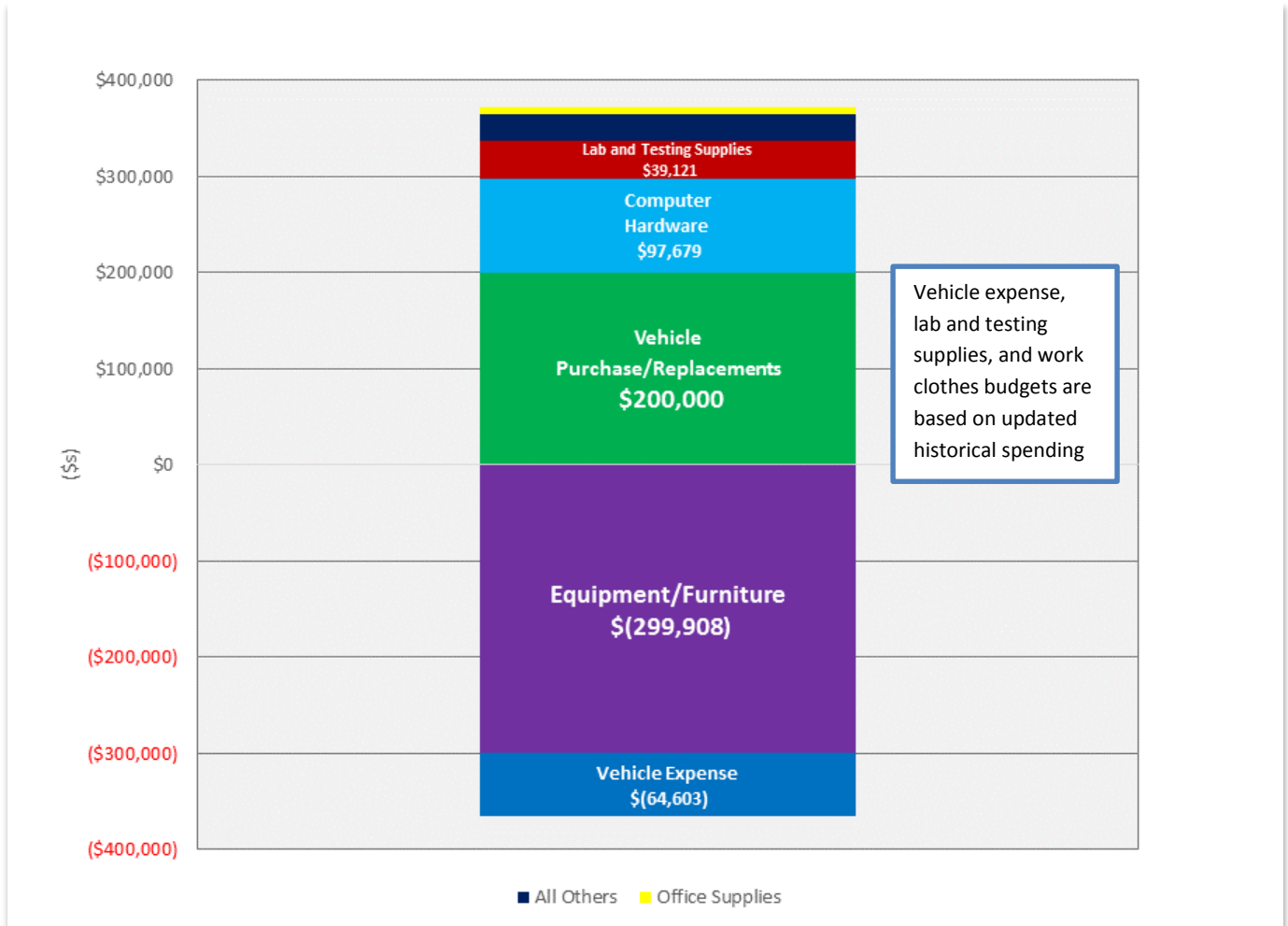


Figure 42

Computer Hardware Purchases

- Findings of the five-year Information Technology (IT) strategic plan (completed in 2012) include the need to:
 - Adopt more effective and standardized IT management and processes
 - Develop methods to share data quickly across multiple applications
 - Develop streamlined work flows
 - Reduce reliance on paper records and improve access to information
- Because technology evolves so rapidly, the Authority will have to continuously adapt its plans to accommodate changes and updates to its programs and software

Vehicle Purchases

- Vehicle fleet size is reviewed regularly, and has been reduced in recent years by about 10%
- Nearly 60% of the fleet is five years or older
- The multi-year replacement schedule also helps to control materials and maintenance services costs in the Fleet Service Department
- The Authority continues to reduce fuel consumption by reducing idle times and increasing the number of vehicles powered by other than gasoline and diesel. The Authority procures bulk fuel from state contracts

MWRA Vehicles by Fuel Type

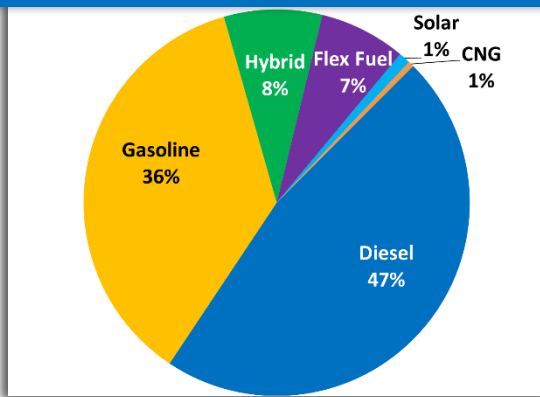


Figure 44

- The Authority has instituted an Automated

Vehicle Locator (AVL) program, which has also resulted in reduced fuel consumption

- About 17% of the fleet is powered by fuels other than gasoline and diesel (See [Figure 44](#))
- The Authority has also reduced the number of domiciled vehicles and increased the use of pooled vehicles, increasing the useful life of the vehicles
- Vehicles at the end of their useful lives for the agency are sold as surplus, resulting in increased income

MWRA Vehicles by Age

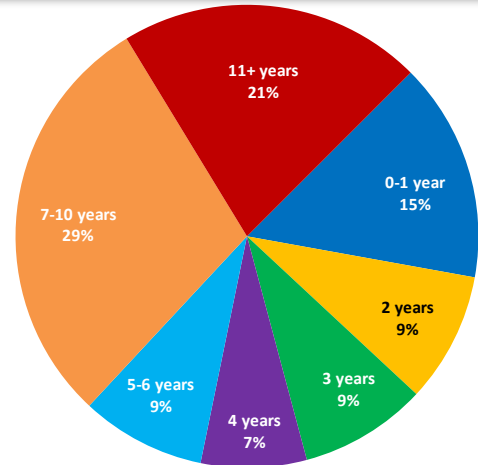


Figure 43

The Advisory Board expects the Authority to increase the “other materials” category of expense by \$47,490, primarily due to a decision to purchase rather than lease certain MIS equipment.

Training and Meetings

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|---|------------------|------------------|-----------------|-------------|
| Training and Meetings | \$413,714 | \$435,480 | \$21,766 | 5.3% |
| TOTAL TRAINING AND MEETINGS EXPENSES | \$413,714 | \$435,480 | \$21,766 | 5.3% |

Table 36

Other Highlights

- Costs cover a variety of meetings, seminars, conferences and training sessions. Most spending supports maintaining professional licenses and certifications, as well as training in the use of specialized equipment, out-of-state site visits (such as water treatment plants that use UV disinfection) and site audits, and health and safety compliance, as well as cyber security training.
- The continued increase in Training and Meeting expenditures over the past few fiscal years is part of an organization-wide strategy to prepare the next wave of MWRA management who will be needed to step in as the impact of retirements is realized. Funding also supports training in emerging technology such as electrical thermography.
- The Authority also budgets \$185,000 for professional development and technical training under professional services in the Human Resources Department.

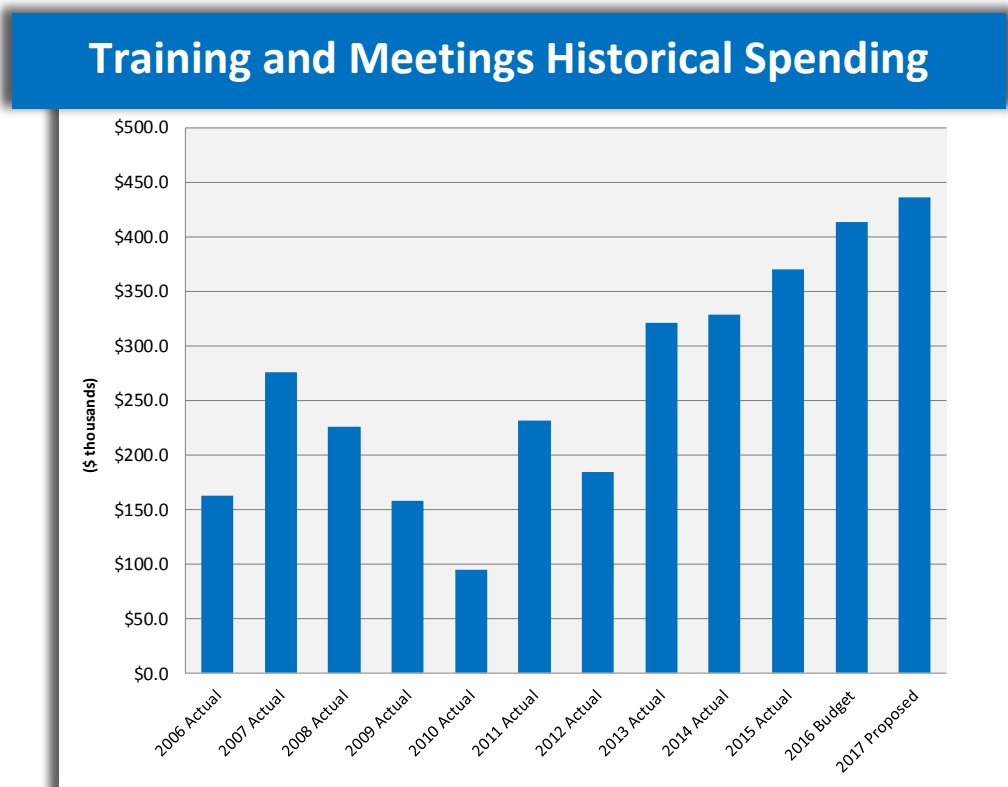


Figure 45

Revenue

| Line Item/Description | Final FY16 | Proposed FY17 | Δ (\$s) | Δ (%) |
|---|----------------------|----------------------|---------------------|-------------|
| Rate Revenue | \$672,440,000 | \$698,700,004 | \$26,260,004 | 3.9% |
| Revenue generated directly from member communities through annual assessments. | | | | |
| Other User Charges | 8,683,898 | 8,795,736 | 111,838 | 1.3% |
| From 20 customers including CVA communities; emergency water supply connections, and entrance fees. | | | | |
| Other Revenue | 12,000,066 | 6,956,430 | -5,043,636 | -42.0% |
| Includes energy-related revenues, permit fees, miscellaneous revenue | | | | |
| Rate Stabilization | 0 | 0 | 0 | - |
| From rate stabilization fund. | | | | |
| Investment Income | 9,352,590 | 9,700,853 | 348,263 | 3.7% |
| Interest on both short- and long-term investments. | | | | |
| TOTAL REVENUES | \$702,476,554 | \$724,153,023 | \$21,676,469 | 3.1% |

Table 37

Other Highlights

- Proposed FY17 rate revenue increase: +\$26.3 million (3.9%)
- Non-rate revenue decrease: -\$4.6 million
- Chemical cost reimbursements from the Commonwealth of \$0.867 million, long a source of revenue, have been eliminated since FY10.
- Other user charges increase for CVA communities for third year in a row due in part to increased costs of installation of UV treatment.
- Other revenue from forestry product sales, fishing, and hunting licenses is credited to the Office of Watershed Management budget. (See Indirect Expenses, Watershed Revenues, [Figure 29](#).)

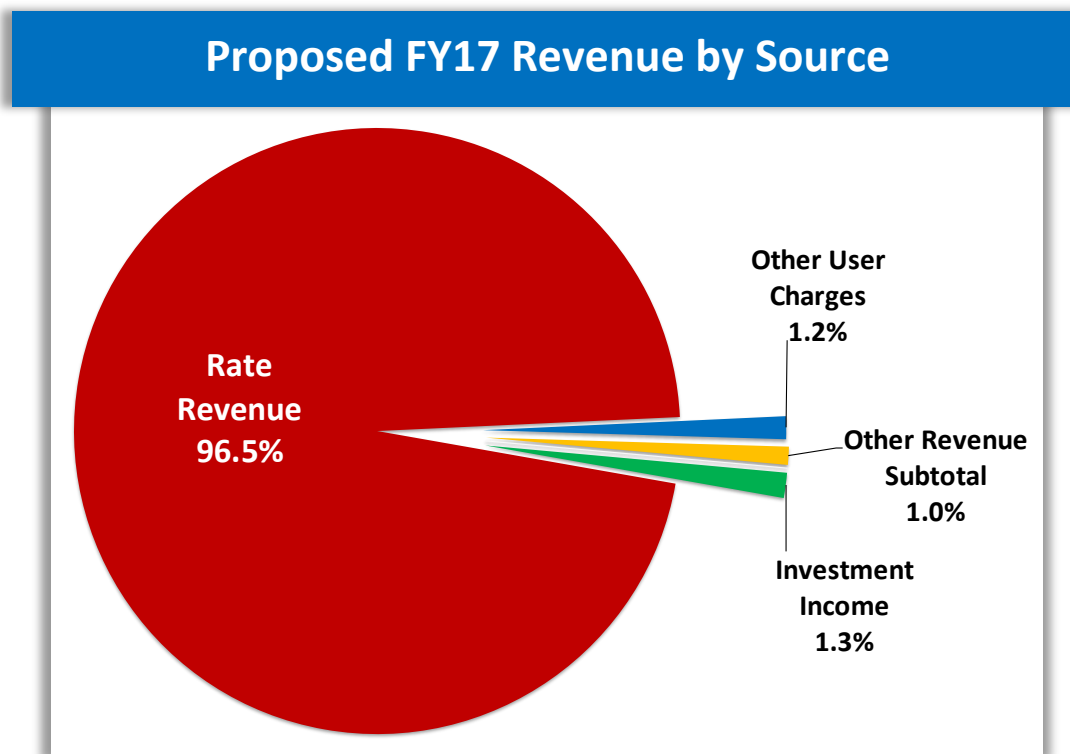


Figure 46

“Delta Report”

Revenue Increases \$21.7 Million

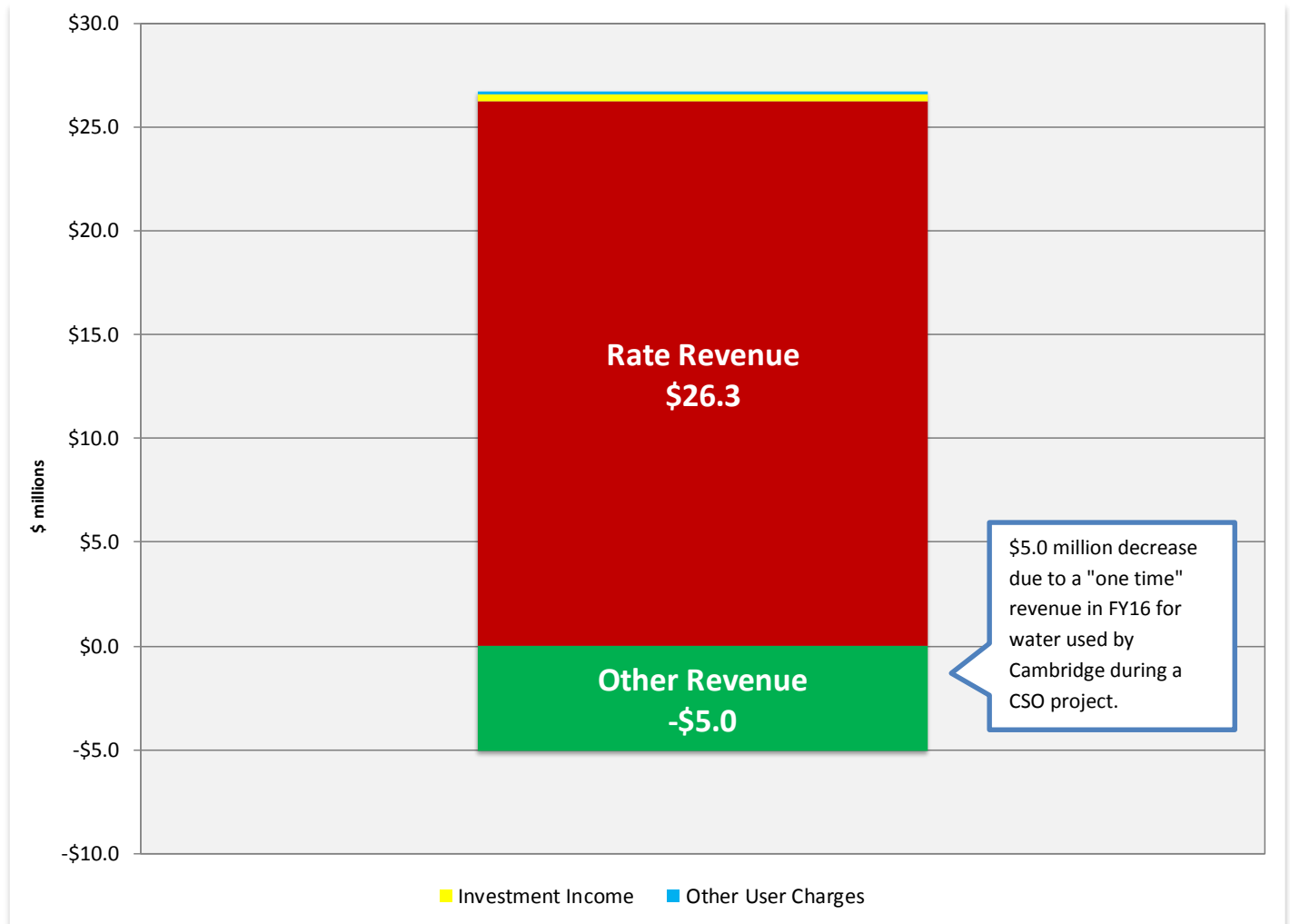


Figure 47

Non-Rate Revenue

- FY17 proposed non-rate revenue: \$25.45 million
 - Reductions from FY16: -\$4.6 million
 - Majority of decrease is other revenue: -\$5.0 million
- Other Revenue decrease: -\$5.0 million
 - Decrease in miscellaneous revenue: -\$5.6 million in revenue from water provided to Cambridge during CSO capital project in FY15 brought the number to irregularly high level in FY16. Returned to normal levels in FY17
 - Energy-related Revenue: \$3.6 million (see [Table 39](#))

The Advisory Board has also been informed that there will be a reduction in “other revenue” due to revised assumptions related to RPS credits being received in FY17. The Authority estimates this reduction to be \$437,259.

| Other User Charges | | |
|-------------------------------------|--------------------|---|
| User | Charge | Notes |
| Fernald School | \$0 | Individual users of sewer system |
| Commonwealth Zoological (State Zoo) | \$43,685 | |
| Department of Youth Services | \$35,597 | |
| DCR Pools/Parks | \$29,123 | |
| Regis College | \$71,307 | |
| NE Center for Children | \$15,690 | |
| Lancaster | \$334,139 | |
| Worcester | \$154,194 | |
| Clinton | \$500,000 | |
| Chicopee | \$3,427,456 | |
| Wilbraham | \$781,886 | CVA Communities |
| South Hadley | \$708,380 | |
| WTP Residuals | \$341,298 | From nine water treatment plants |
| Entrance Fees | \$753,220 | Stoughton, Wilmington & Dedham-Westwood |
| Deer Island water use | \$1,599,766 | Transfer payment of sewer cost to water revenue |
| TOTAL | \$8,795,740 | |

Table 38

| Other Revenue | | | |
|-----------------------------------|----------------------|---------------------|--|
| Category | Budget FY16 | Proposed FY17 | Description |
| Hydropower Revenue | \$221,000 | \$216,876 | Energy-related revenue |
| Wind Turbines Revenue | \$347,000 | \$396,594 | |
| Solar Power Revenue | \$83,000 | \$88,303 | |
| Renewable Portfolio Credits | \$1,933,053 | \$1,593,975 | |
| Load Reduction & Forward Capacity | \$545,389 | \$1,263,259 | |
| Utility Rebates for Equipment | \$75,000 | \$200,000 | |
| Permit Fees | \$2,060,000 | \$2,060,000 | TRAC permit and monitoring fees. |
| Penalties | \$100,000 | \$100,000 | Issued through the TRAC program. |
| Payments from Commonwealth | \$0 | \$0 | For chemical costs via statute. |
| Miscellaneous Revenue | \$6,635,624 | \$1,037,423 | Includes revenue from Fore River Railroad, antenna licenses, and other miscellaneous revenues. |
| TOTAL | \$ 12,000,066 | \$ 6,956,430 | |

Table 39

- The Advisory Board has been supportive of the various initiatives the MWRA has developed to assist communities with regard to the current public concern about lead in publicly supplied drinking water including:
 - The Lead Loan Program offering interest-free loans for locally developed programs for full removal of lead service lines.
 - Additional lab services support for testing for the presence of lead in local drinking water.
 - Additional support for testing for the presence of lead in public schools.

- MassDEP has additionally committed to an initiative to conduct testing for lead in public school systems across the Commonwealth.
 - Toward this end, MassDEP has committed to reimbursing the MWRA for part of the costs associated with any public school testing funded by MWRA.

Grateful for the Commonwealth’s commitment to this important initiative, the Advisory Board recommends adding \$100,000 in “non-rate revenue” for the anticipated reimbursement for some of these costs.

Investment Income

- FY15 through FY17 are the only years that investment income has been below \$10 million since before FY90 when the Authority first issued its own debt. The continued historically low levels are due to:

- Assumed short-term interest rates of 0.20%
- Lower average balances in both short-term and long-term investments
- Lower average fund balances in the construction fund

- The proposed budget for investment income is less than 25% of the \$40.3 million earned in FY07

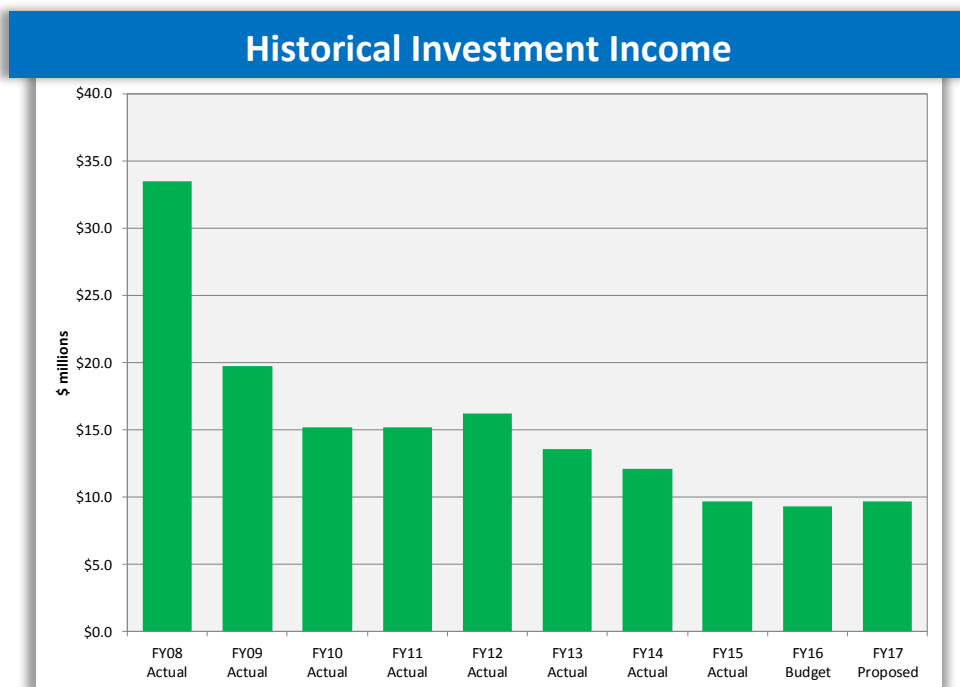


Figure 48

The MWRA has informed the Advisory Board that there will be some adjustments in the final FY17 CEB due to some investments being called and requiring reinvestment. The Advisory Board has recognized MWRA’s placeholder of \$200,000 for these adjustments, while understanding that they may be further refined for the final FY17 CEB.

Debt Service Assistance

- Debt Service Assistance (DSA), when available, is treated as an offset to debt service
- No DSA was assumed in the proposed FY17 CEB
- In prior years, the Authority generally received about 70% of the statewide DSA program when approved
- In FY16 DSA was funded at a statewide level of \$1.1 million
 - The MWRA received \$873,804 for its share of DSA in the spring of FY16

In keeping with the policy advocated by the Advisory Board to “Pay It Forward” to the next budget year, the Advisory recommends that \$873,804 be used to directly reduce rate revenue requirement for FY17.

Policy Point

Utility-Level “Smoothing”

“Smooth Sailing Ahead”

Before the development of the proposed FY17 CEB, Advisory Board staff engaged Authority staff about an approach to helping to “smooth” rates at the utility level. The Authority has embraced the Advisory Board’s “Four No More” challenge from a combined assessment approach – almost projected increases in the near future are below the 4% level. However, if you look at the increases at the utility level, they varied widely (see [Figure 49](#)).

This lack of smoothing at the utility level was inconsistent with the overall goal to help ensure sustainable and predictable rate increases for the member communities. Moreover, the water utility rates volatility was proving to be a deterrent to prospective customers from joining the MWRA water system. The Advisory Board intended to make utility smoothing a central recommendation in this year’s Comments and Recommendations; however, the Authority “beat us to the punch” as it were. Embedded in the proposed FY17 CEB for the first time is an approach that smooths out future rate increases at the utility as well as the combined level (see [Figure 50](#)).

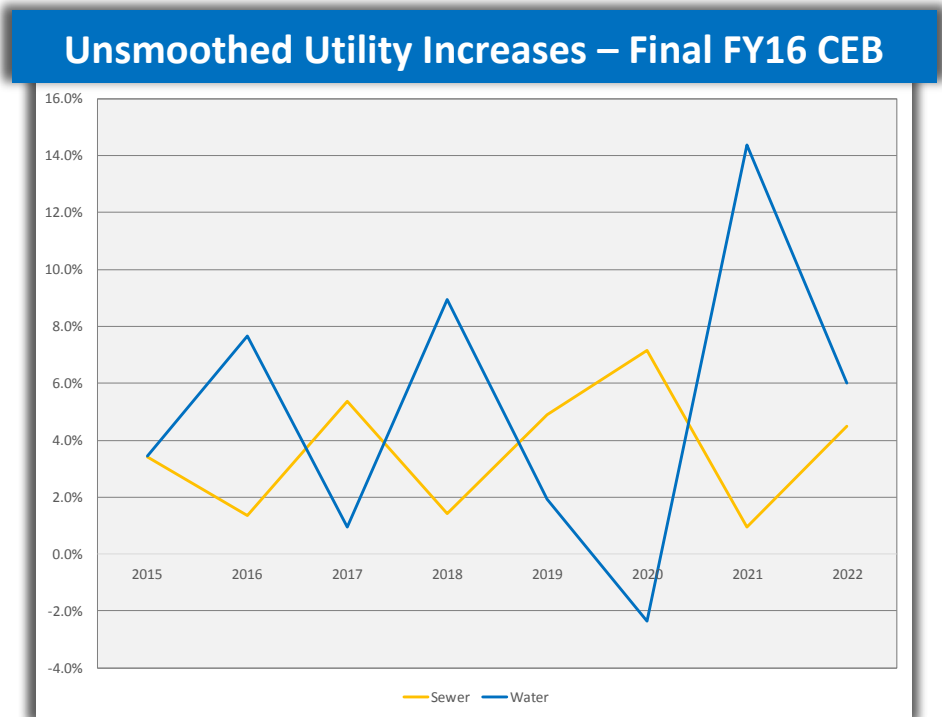


Figure 49

Moreover, the water utility rates volatility was proving to be a deterrent to prospective customers from joining the MWRA water system. The Advisory Board intended to make utility smoothing a central recommendation in this year’s Comments and Recommendations; however, the Authority “beat us to the punch” as it were. Embedded in the proposed FY17 CEB for the first time is an approach that smooths out future rate increases at the utility as well as the combined level (see [Figure 50](#)).

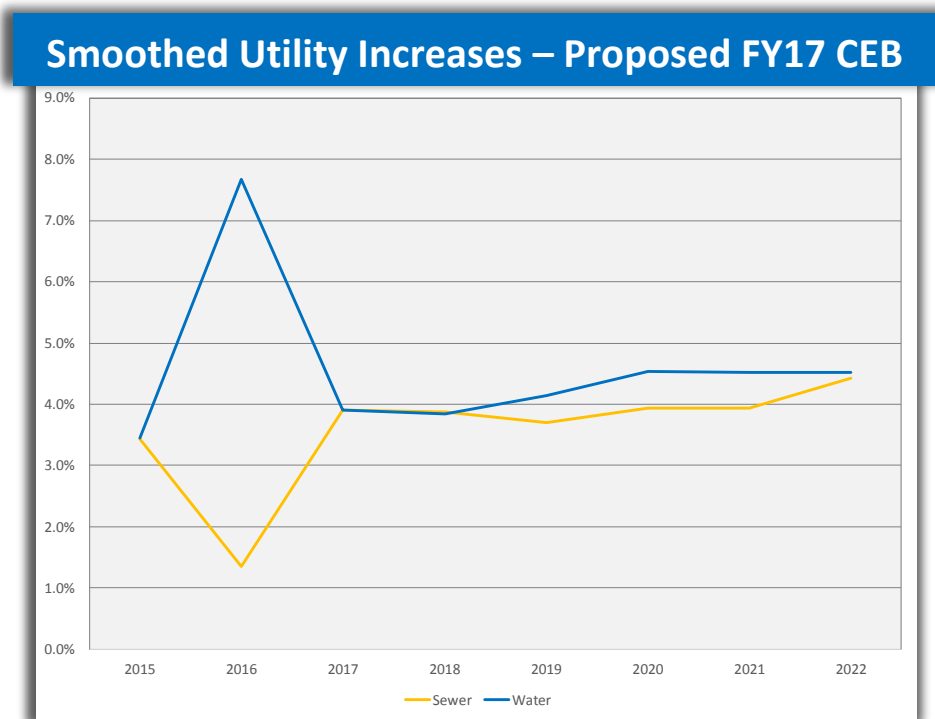


Figure 50

Before releasing the proposed FY17 CEB, the Authority staff briefed Advisory Board staff on this plan and sought feedback at that time. “Under the hood” the MWRA has altered the amount/timing of debt being paid from each utility to achieve the desired smoothing effect. It’s important to note that this does not result in higher or different costs. Over the 11-year period being addressed, each utility pays the same amount as originally planned and projected, it merely adjusts the amounts being paid in each year.

Another important warning for the future is that infamous “mountain of

MWRA Advisory Board

debt” that peaks in FY22 is similarly presented on a combined utility level. Though overall debt service begins to go down after FY22, at the utility level it’s a different story. The wastewater debt service will go down, but the water debt service will continue to increase as the MWRA continues to pay off the major water infrastructure investments it has made.

The Advisory Board thanks the Authority staff for its proactive approach toward achieving utility-level rate smoothing, and looks forward working with them to achieve continued utility-level smoothing moving forward.

Policy Section

Current Revenue for the Capital Program

“Pay-Go and Coverage and Rates, Oh My!”

In Brief

The Authority accepted the Advisory Board's "Four No More" challenge and has kept combined assessments in the mid-3% range in recent years. When the challenge was set, the Authority faced many pressures and a steep challenge to meet this target. Since that time, the Authority has benefited from many positive events and environmental factors and is now in a different position. As such, the Advisory Board believes it is time to reconvene the Long-Term Rates Management Committee to determine if the mid-3% range is still the correct level to be targeting. Driving this discussion was a sizable increase in the "current revenue for the capital program" (Pay-Go) line item in the proposed FY17 CEB. Below, we go in greater detail about what this line item is, the financial impacts of reducing this line item, and potential alternatives for the Long-Term Rates Management Committee to consider.

In Depth

Defining Some Terms:

Current Revenue for the Capital Program: formal name for a line item in the MWRA's budget used to pay for certain capital projects instead of funding them through bond proceeds and debt service. Sometimes referred to as "cash for capital" or "pay as you go."

Debt Service Coverage Ratio (aka Debt Coverage Ratio): the ratio of the ratio of cash available for debt servicing to interest, principal and lease payments.

Operations Expenses: all non-debt expenses required for MWRA to operate for the year. This total includes some non-direct expense items as well, such as pension contribution.

Debt Service Expenses: debt service expenses and lease obligations the MWRA must pay for the year.

Other Expenses: all expenses that are not deemed essential for MWRA operations, and which could be used to "cover" Operations Expenses and Debt Service Expenses should the need arise. Includes "Current Revenue for the Capital Program" and the Watershed Division reimbursement.

Keeping It Simple:

In the interest of making the discussion below more streamlined and readable, the following terms will be used:

Pay-Go: shorthand for the "Current Revenue for the Capital Program" line item.

Coverage: shorthand for "Debt Service Coverage Ratio."

Calculating Coverage

For the Authority's purposes, there are three components for calculating coverage:

1. Operations
2. Debt Service
3. Other

To create a more familiar analogy, Table 40 defines these categories, provides examples from MWRA's budget, and compares these expenses to a personal budget at home. The "operations" category is similar to the bills that must be paid and the food that must be purchased at home. The "debt service" category is similar to a mortgage payment. The "other" category is similar to non-essential spending (e.g. entertainment, dining out, etc.) at home. To be clear: the Authority's "Other" category is only classified as non-essential in terms of coverage. These funds are being raised for specific expenses, but could, in cases of emergency, be redirected to pay debt service.

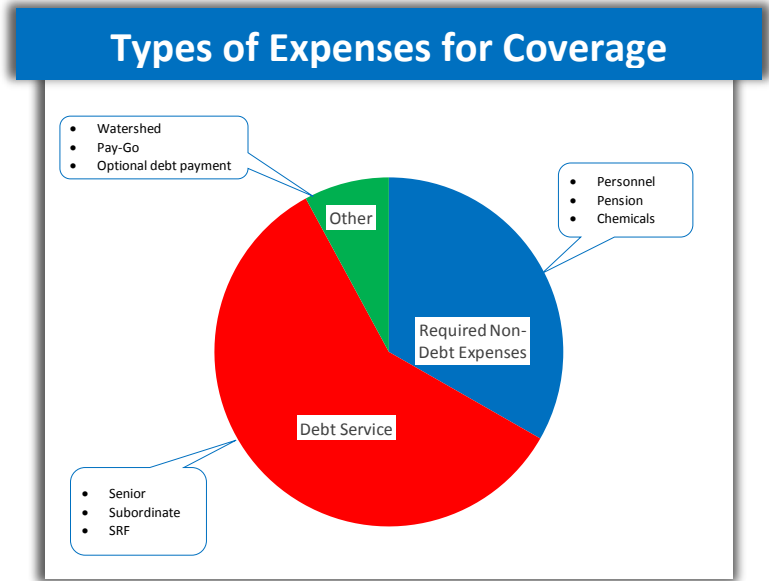


Figure 51

Table 40

| Household Analogy Table | | | |
|-------------------------|--|---|--------------------------------------|
| Category | Basic Definition | MWRA Examples | Household Analogy Examples |
| Operations Expenses | Expenses required to operate. | Payroll, Chemicals, Utilities, Pension | Groceries, Utilities, Transportation |
| Debt Service Expenses | Debt Service + Lease Commitments | Senior Debt, Subordinate Debt, SRF, Lease | Mortgage |
| Other Expenses | Expenses that could be redirected to meet other obligations if needed. | Watershed Reimbursement, Pay-Go, Optional Debt Payments | Dining out, entertainment |

This flowchart will help to explain how these three pieces fit together to meet coverage:

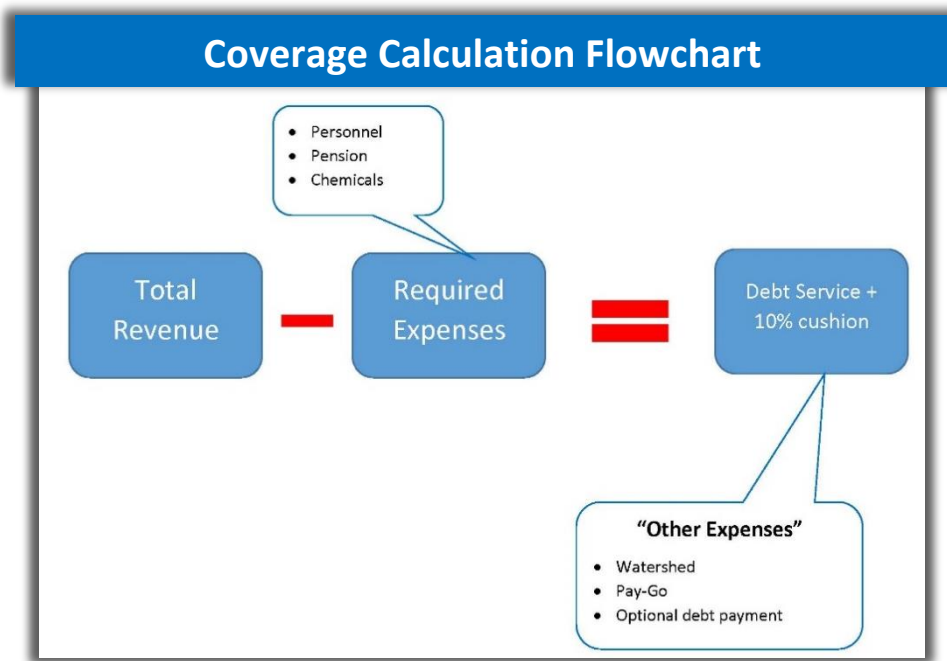


Figure 52

Though a bit more complex "under the hood," in essence, you take the MWRA's Total Revenue for the year and subtract the required expenses; the amount remaining must be enough to pay the debt service **plus** a 10% "cushion." In other words, the coverage ratio is 110% of debt service¹⁶. This required coverage is determined by the bond resolutions. The consequences of not meeting coverage are high – in the best case scenario, they result in a downgrade of the Authority's rating; in the worst case scenario, the Authority goes into default.¹⁷

The natural question arises – where does this "cushion" come from? The answer is from the "other" category of expense. Because the Watershed Reimbursement is determined by the Water Supply Protection Trust, in the past Pay-Go was often used as a balancing tool to help the Authority meet its coverage requirement. In recent years, however, coverage has not been as difficult to achieve, discussed below, which is why it has become a focus this year.

One thing to note is that Other Post-Employment Benefits are currently considered a "required expense" when calculating coverage. [Please see the OPEB discussion \(page 63\) for our discussion and recommendation to reclassify OPEB into the "other category" to help further enhance MWRA's coverage.](#)

Hopefully this has provided a general understanding of what coverage is, how it is calculated, and what the MWRA's requirements are.

Pay-Go

Up to this point, discussion of Pay-Go has focused on its role in meeting coverage; however, that is not its only purpose, since it also pays for some capital spending rather than borrowing to fund it. The Authority has mentioned a few reasons this is advantageous. First, it helps to fund some capital spending for projects with shorter expected lifespans (e.g. technology infrastructure and equipment). It doesn't make sense to borrow long-term on an asset that is expected to be replaced in the short-term. Second, there are some expenses involving private property that may not be eligible for tax-

¹⁶ This discussion centers exclusively around subordinate debt, which has the more difficult coverage to achieve. There are different coverage tests and requirements for senior debt service.

¹⁷ Note: there are actually three different coverage tests that the Authority must meet under different conditions. Again, the focus of this discussion is the subordinate debt year-end coverage calculation.

exempt funding. Two examples they have mentioned are any safety improvements made to PanAm’s railroad to help prevent any train car derailments over the Wachusett Reservoir and the portions of the Lead Loan Program funding lead service removals on private property. Third, it reduces the amount being borrowed in a given year, saving the cost of interest on the dollars being paid for in cash. The first two arguments seem sensible, but when asking for a list of projects funded by Pay-Go in these categories in recent years, the Advisory Board learned there is no such tracking.

The Advisory Board flagged this line item initially because of a sizeable increase. As seen in [Figure 53](#), Pay-Go has averaged about \$9 million in the past five years, while the proposed FY17 CEB included \$18 million and increases considerably through FY26. Though it increased significantly, Advisory Board staff was wary of the potential coverage implications of cutting this line item. Advisory Board staff met several times with MWRA staff to understand not only the nuances of coverage, but also the reasons for the continued increase of this line item.

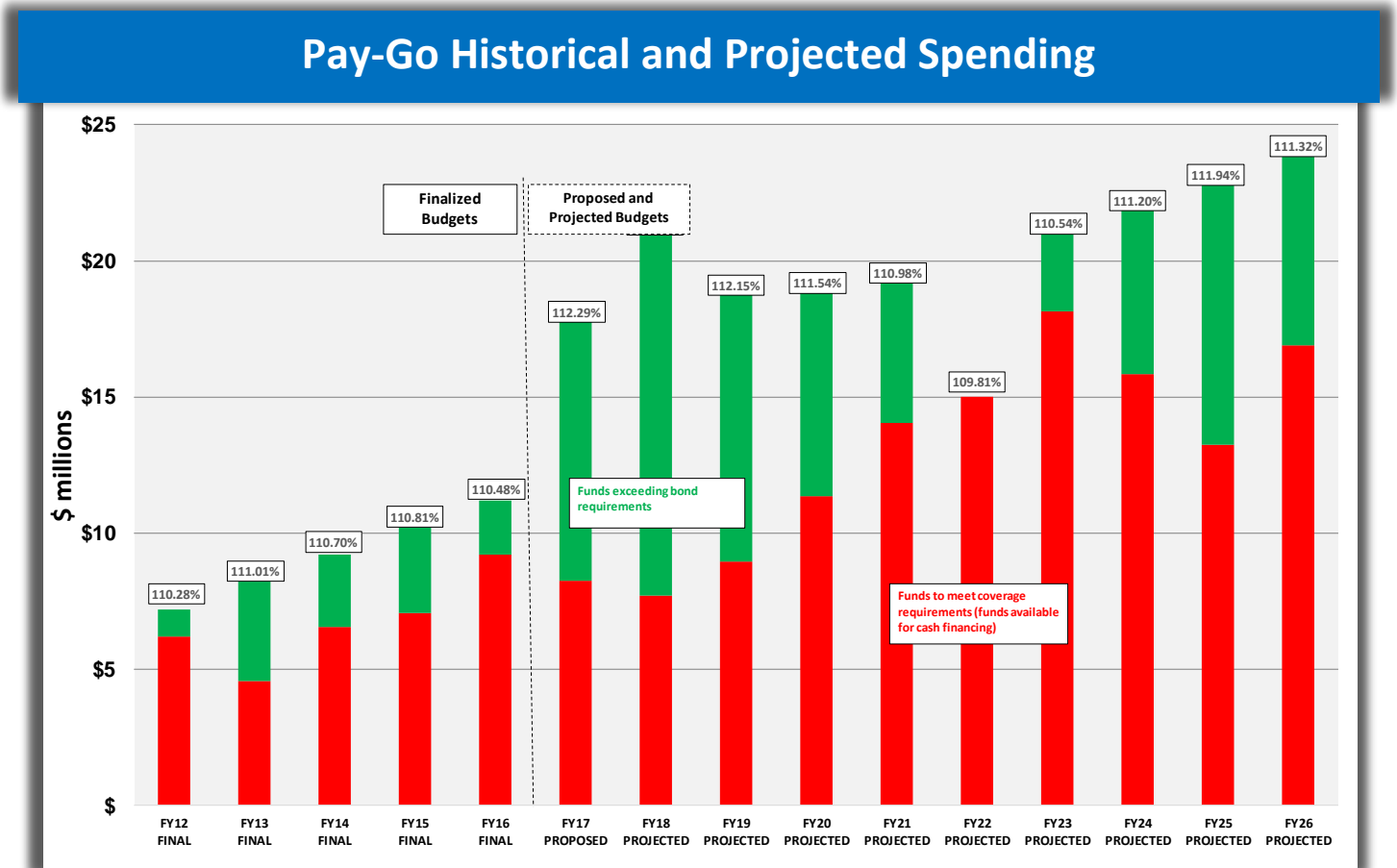


Figure 53

MWRA is not increasing Pay-Go as a balancing tool to meet coverage; in fact, MWRA aims to increase coverage over time, and cites this as an additional benefit for increased Pay-Go. One of the arguments alluded to is that the rating agencies look favorably upon both higher coverage and increased cash financing, both points the Advisory Board acknowledges; however, at this time the Advisory Board does not believe that increased cash financing will lead to the MWRA’s desired outcome: a rating upgrade. How could the rating agencies possibly upgrade any entity that uses over 60% of its budget to pay off old debt?

Indeed, now that the pension is fully funded and a strategy is in place to address OPEB, arguably, the Authority should focus first on the greatest of its liabilities – outstanding debt. The Authority has made great strides and works hard to address its “mountain” of debt, and constantly discusses ways to manage the journey to the “peak” of the mountain in FY22. However, if the choice is between using additional cash for capital projects now versus making optional debt

payments to continue pulling down the top of the “mountain,” the Advisory Board would elect the latter. Moreover, since optional payments fall into the “other” category of expenses, the Authority maintains the higher level of coverage it aimed for, while addressing its greatest liability.

“Four No More?”

Though an optional payment is preferable to increasing Pay-Go, the Advisory Board notes that the increased levels of spending moving forward provide an opportunity to discuss Pay-Go, optional payments, and rate increases in a larger context.

We commend the Authority for embracing the Advisory Board's multi-year "Four No More" challenge. When we made this recommendation, bringing rate increases below 4% took significant effort. At that time, the Advisory Board also noted that 3.9% was a starting point, not the end point, and that reducing rates continues to be a primary focus for the Advisory Board and should be for the Authority as well.

Since then, the world has changed. MWRA's total outstanding debt finally peaked and started going down. MWRA used the long-awaited released debt reserves to reduce rates. Capital spending is significantly lower than previous years, and the MWRA has essentially completed the CSO Program. The pension reached full funding far more quickly than anticipated, and the Authority has begun addressing its OPEB liability. Interest rates remain at historic lows, and no one could have predicted the sharp decrease in oil and oil-related prices. The MWRA has benefited from a "perfect storm" of occurrences. One could argue that the Authority is now entering a new phase. The Advisory Board believes that with this new phase comes the opportunity to evaluate the “Four No More” goal to see if it is still challenging, or if a new challenge is in order.

The Advisory Board's challenge over the years has been to balance the MWRA's needs - both short- and long-term - with the immediate affordability impact to our communities. Hovering over these concerns were three massive liabilities at the time:

1. Pension (full funding required by 2024)
2. Debt Service (climbing toward 60% of the MWRA's spending)
3. Other Post-Employment Benefits (beginning to address the liability)

Annual pension payments were a heavy burden for years, the Authority's debt service expenses continued to increase, and addressing OPEB was on hold until the pension was fully funded. With the limited ability to address these three liabilities, significant rate relief was challenging.

Since that challenging period, the pension is now fully funded, meaning this line item is dramatically lower each year. The Board of Directors and Advisory Board have agreed on a non-binding approach to address OPEB by funding 50% of the Actuarial Calculated Contribution (ACC). Debt continues to be addressed by the defeasance account strategy and any refunding opportunities as they arise. All three of the major liabilities are being handled in a strategic way. This provides an opportunity to revisit the Authority's short- and long-term goals.

Please note that the Advisory Board has not recommended any significant reduction to the MWRA's CEB in FY17. Though the recommendation is to reduce the amount dedicated to Pay-Go, it has been redirected to pay debt, and preserves the coverage benefits the additional Pay-Go would have provided.

The Advisory Board believes the best use of the increased amounts for Pay-Go in the MWRA's planning projections is a strategic policy decision and one that should be made actively by the Long-Term Rates Management Committee. Options include increased Pay-Go levels, optional principal payments, rate relief, or some combination of these.

In Conclusion

Because FY17's level of Pay-Go was significantly higher than previous years, Advisory Board staff examined the historical levels and uses of Pay-Go. In doing so, we learned that there is no specific tracking for which projects Pay-Go funds.

Therefore, the Advisory Board recommends that the MWRA begins identifying, tracking, and reporting on specific projects that are funded through Pay-Go including their expected useful life. Included should be an estimate of the savings in avoided borrowing costs.

The Advisory Board also thoroughly evaluated the proposed levels of Pay-Go, both in FY17 and projected into future years, particularly as it relates to the Authority's coverage needs. The Advisory Board acknowledges that while improved coverage and greater cash financing instead of borrowing is looked upon favorably by the rating agencies; however, we point out that with 62% of its FY17 budget dedicated to paying debt – a percentage which climbs to 67% before declining – receiving an upgrade due to increased Pay-Go is unlikely. The recommendation for FY17 does not change total MWRA spending or reduce the MWRA's coverage; however, it does redirect a portion of the Pay-Go into an optional debt payment to aggressively address the Authority's greatest and most urgent liability.

The Advisory Board recommends that the MWRA redirects \$12.5 million from the "current revenue for the capital program" line item to make an optional principal payment or payments targeted for maximum benefits in the MWRA's most challenging upcoming years.

Moreover, and most importantly, the Advisory Board has flagged future levels of Pay-Go projected by the MWRA as a major policy issue for discussion and decision.

Toward this end, the Advisory Board recommends that the Long-Term Rates Management Committee reconvene to discuss future levels of rate increases with a focus on Pay-Go spending and coverage levels.

System Expansion – Connection Costs

“More Community Friendly”

In Brief

The Advisory Board continually focuses on expanding the MWRA's waterworks system by reducing the barriers for communities interested in joining. The Advisory Board remains firm on its position that all new members should pay a capital investment recovery cost (entrance fee); however, it has made several recommendations to make paying the entrance fee easier for member communities by offering extended interest-free repayment schedules among other recommendations. This year, the Advisory Board recommends a way to reduce connection costs - the capital infrastructure needed to connect to the MWRA's system. This would make it easier for interested communities to join the water system by reducing financial barriers.

In Depth

At the local level, joining the MWRA can be a highly charged issue. The costs to join the MWRA often overshadow a community's actual water needs or desire for a reliable water source.

The Advisory Board maintains that the entrance fee is critical for the fairness of the existing member communities. These communities have already contributed millions of dollars over the years to build and maintain the capital infrastructure, so new users must pay their fair share when joining. Apart from crossing this "line in the sand," the Advisory Board continues to look for opportunities to mitigate the financial burden on cities and towns looking to join the MWRA.

In fact, the Advisory Board has already taken several actions specifically toward making the entrance fee less of a barrier to join. We recommended a change to the entrance fee payment policy to allow it to be paid over 25 years interest-free; we recommended allowing a 3-year grace period before payments began; we worked to pass the Water Infrastructure Bill, which included matching state funds (subject to appropriation) for entrance fees.

Hearing concerns that MWRA's future rate increases were also an obstacle for many communities, we championed the "Four No More" mantra to help maintain sustainable and predictable combined assessment increases while lowering them overall. After learning that communities were concerned about the volatility of water assessment increases, we engaged with Authority staff to explore “smoothing” rates at the utility level. In fact, the proposed FY17 CEB includes, for the first time, an approach to achieve this smoothing.

One financial barrier that we have not yet addressed is the cost to connect to the MWRA; specifically, the cost to build the infrastructure needed to hook into the MWRA's water system. Depending on the proximity of the nearest MWRA pipeline and the type of terrain the capital cost to build a connection could be fairly high. Under the current policy, this cost is entirely the responsibility of the community joining the MWRA. Some grant funding exists for these costs - Ashland secured a MassWorks grant for its connection - but it is not plentiful and uncertain at best.

One potential member community asked if their anticipated funds from the Local Water System Assistance Program (Water Loan Program) could be used to finance the connection interest-free. MWRA determined this could be a valid use of the community's allotted funds. This idea forms the basis of our recommended approach to reducing the financial burden of connection costs.

Rather than using its Water Loan Program allocation to fund connection costs, the MWRA could finance the costs similarly (interest-free) but separately. This offers relief to the joining community on up-front costs, while still preserving its Water Loan Program allocation to help address any unlined pipes in its local system.

Additionally, the length of repayment term could be tied to the length of time selected to pay the entrance fee, giving the community some additional flexibility.

[Table 41](#) provides an imaginary example of how this would work:

Table 41

| Entrance Fee/Connection Repayment Example | | | | | | |
|--|--------------|-----------------|----------------|----------------------------|------------------------------------|------------------------------|
| Community | Entrance Fee | Connection Cost | Payment Length | Entrance Fee Annual Charge | Connection Financing Annual Charge | Total Non-Rate Annual Charge |
| Favaloroville | \$ 5 million | \$2 million | 10 years | \$500 thousand | \$200 thousand | \$700 thousand |
| West Romerobridge | \$5 million | \$2 million | 25 years | \$200 thousand | \$80 thousand | \$280 thousand |

In this example, both the imaginary City of Favaloroville and the Town of West Romerobridge have the same entrance fee and connection costs. The City of Favaloroville has selected a 10-year payment schedule while the Town of West Romerobridge has opted for a 25-year payment schedule. The annual charges for entrance fee and connection cost payment are calculated in the table.

So in addition to its annual water assessment, the City of Favaloroville would receive an additional charge for \$700 thousand. After ten years, Favaloroville would receive only its annual assessment at the prevailing rate. West Romerobridge would receive its annual assessment with an additional charge of \$280 thousand. After 25 years, the town would receive only its annual assessment at the prevailing rate.

In Conclusion

The Advisory Board’s ultimate aim is to sell more water to new users. By spreading MWRA’s costs across a larger user base, existing member communities receive some financial relief on their assessments. Also important is maintaining fairness to the existing communities by ensuring new users pay their fair share of the capital investment made to date by charging an entrance fee. Understanding that up-front costs are often a barrier for communities interested in joining, the Advisory Board supports the current policy that allows multi-year repayment of these costs. Now the Advisory Board wishes to help reduce the capital infrastructure connection costs for communities joining the MWRA.

Therefore, the Advisory Board recommends that MWRA offers any community joining the MWRA waterworks system the option to finance connection costs that it incurs interest-free, separate from its allocated Local Water Supply Assistance Program funds. Further, the Advisory Board recommends that the term of repayment for this financing be tied to the timeframe selected for paying the entrance fee.

Wastewater Primacy

“Progress Towards the Finish Line”

In its *Proposed FY13 Integrated Comments*, the Advisory Board recommended that the Authority actively engage and participate in a process with the necessary stakeholders to allow the Commonwealth of Massachusetts to obtain delegated authority over National Pollutant Discharge Eliminations Systems programs ("primacy"). The Authority not only agreed with the Advisory Board's recommendation, but it was also an active participant in the process to explore the Commonwealth's assumption of wastewater primacy concurrent with the Advisory Board's budget review process. Directed by the Legislature, MassDEP convened a 21-member NPDES Delegation Advisory Committee (NDAC) with members from the regulated community, environmental advocates, budget and fiscal experts, municipalities and the legal field.¹⁸ On July 2, 2013, they issued a report to the Legislature outlining both the benefits and the challenges of MassDEP assuming NPDES primacy. Further movement toward primacy had unfortunately stalled thereafter, until recently.

One of the main concerns from the communities' perspectives has not only been the immensely increased scope of the new MS4 permits, but also the dramatically increased costs and the aggressive schedule attached to them as well. MassDEP has argued that wastewater primacy would allow the Commonwealth to achieve compliance with the scope of EPA regulation, but at a pace tailored to the specific needs of Massachusetts communities. This seems to be consistent with the question that the Advisory Board had raised in its earlier recommendation: would agencies and communities prefer to interact with MassDEP, which has a better understanding of and sensitivity to local needs, challenges, and issues when balancing against environmental benefits - or EPA, which tends to employ a "one size fits all" approach to environmental regulation nationwide?

As mentioned in *Proposed FY16 Integrated Comments*, it was likely that the anticipated final MS4 General Permits and the changing of gubernatorial administrations would open the door for potential movement on primacy. The door is now wide open. The final MS4 General Permits were issued in April of 2016 and the Baker administration has taken the opportunity to revisit the case for primacy by submitting [*An Act to Enable the Commonwealth's Administration of the Massachusetts Pollutant Discharge Elimination System*](#). If enacted, the legislation would set up a program for primacy which would then need approval from the EPA. The program would be funded a budget commitment of \$4.7 million annually for staff, programming and up-to-date monitoring and analysis of water quality data.

The Advisory Board is supportive of the Baker Administration's efforts to make gains on wastewater primacy. While the proposed program has a distance to go before being enacted and then approved by MassDEP, primacy has made significant strides since in the last year.

The Advisory Board expects to work closely with the MWRA to help MassDEP assume NPDES delegation.

¹⁸ Chapter 139 of the Acts of 2012, §209

List of Appendices

| | |
|--|------|
| Appendix A | |
| List of Recommendations | A-1 |
| Appendix B | |
| List of Comments | A-3 |
| Appendix C | |
| Impact of Advisory Board Recommendations and Estimated Adjustments..... | A-5 |
| Appendix D | |
| Proposed FY17 Current Expense Budget Summary | A-6 |
| Appendix E | |
| Prior Cap Calculations and Historical Spending | A-7 |
| Appendix F | |
| Proposed FY17 Capital Improvement Program by Project | A-9 |
| Appendix G | |
| Incremental Changes to CIP | A-12 |
| Appendix H | |
| New Projects Added to Proposed FY16 CIP | A-16 |

List of Recommendations

1. The Advisory Board recommends keeping the \$1.4 billion associated with Metropolitan Tunnel Redundancy in the CIP as a placeholder for the future project. The Advisory Board reserves its right to make future recommendations on the cost, scope, and makeup of any project(s) associated with this expense. ([Page 34](#))
2. The Advisory Board recommends that the Authority consider using the Program Management Division model used for the Boston Harbor Project when implementing the Metropolitan Tunnel Redundancy Project(s). ([Page 34](#))
3. The Advisory Board reaffirms its recommendation that no ratepayer funds should be used relocating the HEEC cable. ([Page 42](#))
4. The Advisory Board recommends reducing the FY17 Rate Revenue Requirement by \$3,771,675 resulting in a combined wholesale assessment increase of 3.34%. ([Page 50](#))
5. In keeping with the Advisory Board's previous position to, when DSA funds are received, the Advisory Board expects the Authority to "Pay it Forward" to reflect the receipt by reducing the rate revenue requirement for FY17 by \$873,804. ([Page 56](#), [Page 91](#))
6. The Advisory Board recommends that the Authority adjusts its attrition/vacancy rate assumptions upward by \$1,000,000 (includes associated fringe benefits). ([Page 58](#))
7. The Advisory Board recommends that the MWRA takes all steps necessary to seek a formal reclassification of Other Post-Employment Benefits for the purposes of calculating the Debt Service Coverage Ratio. ([Page 63](#))
8. The Advisory Board supports the creation of a capital budget for the Watershed Division subject to the following conditions:
 - The Watershed Division must implement a formal capitalization policy to clearly identify whether projects should be funded through the Watershed Operating Budget or the new capital budget.
 - The MWRA and Watershed Division should work together to develop criteria on the agency's working relationship on managing capital projects using a tiered approach where some projects are managed by MWRA and some by the Watershed Division. The MOU should be revisited and modified in any way needed to implement this approach.
 - Any projects that meet this capitalization threshold should be removed from the DCR operating budget.
 - MWRA must receive a detailed five-year capital spending plan.
 - DCR must implement a five-year capital spending cap for the Watershed Division similar to the MWRA's spending cap. If DCR's capital spending is funded through MWRA's CIP, these projects will count toward the MWRA's capital spending cap. ([Page 66](#))
9. The Advisory Board recommends that MWRA works staff-to-staff to identify options for gaining a coverage benefit for Watershed Division capital spending. ([Page 66](#))

Appendix A

10. The Advisory Board is recommending a reduction of \$56,000 to reflect a later start-up of the co-digestion pilot program until the last quarter of the fiscal year. ([Page 72](#))
11. Consistent with the Advisory Board’s support for the MWRA’s community support initiatives related to public concern about lead in the drinking water, the Advisory Board recommends adding \$200,000 in “other services” for the purposes of funding additional temporary and/or contract employees to assist communities to update their inventory of local lead services. ([Page 73](#))
12. Grateful for the Commonwealth’s commitment to this important initiative, the Advisory Board recommends adding \$100,000 in “non-rate revenue” for the anticipated reimbursement for some of these costs. ([Page 91](#))
13. The Advisory Board recommends that the MWRA begins identifying, tracking, and reporting on specific projects that are funded through Pay-Go including their expected useful life. Included should be an estimate of the savings in avoided borrowing costs. ([Page 100](#))
14. The Advisory Board recommends that the MWRA redirects \$12.5 million from the “current revenue for the capital program” line item to make an optional principal payment or payments targeted for maximum benefits in the MWRA’s most challenging upcoming years. ([Page 100](#))
15. The Advisory Board recommends that the Long-Term Rates Management Committee reconvene to discuss future levels of rate increases with a focus on Pay-Go spending and coverage levels. ([Page 100](#))
16. The Advisory Board recommends that MWRA offers any community joining the MWRA waterworks system the option to finance connection costs that it incurs interest-free, separate from its allocated Local Water Supply Assistance Program funds. Further, the Advisory Board recommends that the term of repayment for this financing be tied to the timeframe selected for paying the entrance fee. ([Page 102](#))

List of Comments

1. The Advisory Board expects to coordinate closely with MWRA staff on discussing Phase 3 of the Water Loan Program in FY18. ([Page 36](#))
2. The Advisory Board supports the continued use of the defeasance account strategy, which clearly identifies a use of variable rate debt service savings that is consistent with the original intended use of the funds that were raised. ([Page 55](#))
3. The Advisory Board expects the Authority to reduce capital financing by an additional \$565,374 to reflect the spring 2016 defeasance transaction as well as the favorable benefits of the 2016 new borrowing. ([Page 55](#))
4. The Advisory Board expects the Authority to increase the line item for State Revolving Fund (SRF) debt service by \$252,996 to reflect the updated amounts anticipated for FY17. ([Page 55](#))
5. The Advisory Board supports the Authority's addition of this temporary community support staff and expects the final FY17 CEB to reflect the addition of this staff. ([Page 58](#))
6. Based on new data released this spring from the GIC, MWRA projects a decrease of \$350,285 from the proposed FY17 CEB. The Advisory Board expects this reduction to be included in the final FY17 CEB. ([Page 59](#))
7. MWRA has indicated that due to recent trends, they will be increasing Workers' Compensation by \$70,000. The Advisory Board expects this increase to be included in the final FY17 CEB. ([Page 60](#))
8. The Advisory Board expects the Authority to adjust the final FY17 CEB "additions to reserves" line item to match the changes in the final FY17 CEB. ([Page 64](#))
9. The Advisory Board expects the MWRA to increase its "maintenance" category of expense by \$760,075 in the final FY17 CEB for various projects including actuators for various facilities as well as relining of the sodium hypochlorite tanks at the Brutsch and Carroll Water Treatment Plants. ([Page 70](#))
10. Based on updated information, the Advisory Board expects the Authority will decrease "sludge pelletization" line item by \$232,769. ([Page 73](#))
11. Since the Proposed FY17 CEB, the Authority has indicated that it now plans to purchase, rather than lease additional storage space in Chelsea. The Advisory Board expects the Authority's "lease" line item to decrease by \$445,000. ([Page 73](#))
12. Being made aware of pricing and usage trends, the Advisory Board expects the Authority to decrease its FY17 CEB "utilities" expenses by an estimated \$870,670. ([Page 76](#))
13. The Advisory Board expects that the chemicals budget will be revised to reflect updated pricing and usage assumptions, including the reduction in fluoride dosing consistent with updated federal regulations. The MWRA estimates this to be a reduction of \$332,645. ([Page 79](#))
14. The Advisory Board expects the MWRA to increase the "professional services" category of expense by \$265,783 for additional initiatives including the "water active directory" SCADA project. ([Page 82](#))
15. The Advisory Board expects the Authority to increase the "other materials" category of expense by \$47,490, primarily due to a decision to purchase rather than lease certain MIS equipment. ([Page 86](#))

Appendix B

16. The Advisory Board has also been informed that there will be a reduction in “other revenue” due to revised assumptions related to RPS credits being received in FY17. The Authority estimates this reduction to be \$437,259. ([Page 89](#))
17. The MWRA has informed the Advisory Board that there will be some adjustments in the final FY17 CEB due to some investments being called and requiring reinvestment. The Advisory Board has recognized MWRA’s placeholder of \$200,000 for these adjustments, while understanding that they may be further refined for the final FY17 CEB. ([Page 91](#))
18. The Advisory Board thanks the Authority staff for its proactive approach toward achieving utility-level rate smoothing, and looks forward working with them to achieve continued utility-level smoothing moving forward. ([Page 93](#))
19. The Advisory Board expects to work closely with the MWRA to help MassDEP assume primacy. ([Page 103](#))

| IMPACTS ON RATE REVENUE REQUIREMENT | Amount |
|---|----------------|
| Final FY2016 RRR | \$ 672,440,000 |
| Projected FY2017 RRR | \$ 698,700,004 |
| MWRA Proposed FY17 RRR Increase | 3.91% |
| AB Recommended Reductions (See Below) | \$ (3,771,675) |
| FY2017 RRR, less changes | \$ 694,928,329 |
| Advisory Board Recommended FY17 RRR Increase | 3.34% |

| IMPACTS ON EXPENDITURES | Amount | Description |
|---|-----------------------|---|
| MWRA ADVISORY BOARD RECOMMENDATIONS FOR FY17 CEB | | |
| Staffing (vacancy rate assumptions) | \$ (1,000,000) | Includes both Wages and Salaries and Fringe Benefits. AB recommends increasing assumed vacancy rate (FY16 April YTD variance of \$2.6 million). |
| FY16 Receipt of DSA "Pay It Forward" | \$ (873,804) | FY16 Debt Service Assistance received. Applied directly to FY17 assessments. |
| Commonwealth Reimbursement | \$ (100,000) | Partial reimbursement for lead testing in schools |
| Co-Digestion Pilot (reflect later start date) | \$ (56,000) | AB recommends removing all co-digestion spending. |
| Other Services (Community Contractors) | \$ 200,000 | Additional resources to help communities inventory lead services. |
| Subtotal AB Recommendations | \$ (1,829,804) | |
| ANTICIPATED ADJUSTMENTS TO PROPOSED FY17 CEB | | |
| Direct & Indirect Cost Changes | | |
| Other Services | \$ (848,169) | Reduction in sludge pelletization and removal of potential lease for satellite Chelsea space. |
| Energy and Utilities | \$ (870,670) | Dramatically lower prices since first budgeted. Trend projected to continue moving forward. |
| Fringe Benefits | \$ (350,285) | Adjusted for GIC-updated costs. |
| Chemicals | \$ (332,645) | Chemical prices much lower than proposed. |
| Additions to Reserves | \$ (174,354) | Reserves adjustments including Operating Reserve. |
| Wages and Salaries | \$ 40,541 | Added 2 temporary employees for Lead Lab Services |
| Other Materials | \$ 47,490 | |
| Workers' Compensation | \$ 70,000 | Based on recent history |
| Professional Services | \$ 265,783 | Water active directory consulting services |
| Maintenance | \$ 760,075 | Various facilities actuators. Brutsch and Carroll WTP hypo tanks relining. |
| Watershed Capital Budget | | Note: Final establishment of a watershed capital budget is still pending. |
| Subtotal of Changes to Operating Costs | \$ (1,392,234) | |
| Capital Financing & Reserve Cost Changes | | |
| Senior Debt | \$ (565,374) | Includes \$275 million for defeasance and favorable impact on new borrowing. |
| State Revolving Fund (additional borrowing) | \$ 252,996 | |
| Subtotal of Debt & Reserve Costs | \$ (312,378) | |
| Revenue & Income | | |
| Other Revenue | \$ (437,259) | |
| Investment Income | \$ 200,000 | Placeholder from MWRA staff. Could change before final FY17 CEB. |
| Subtotal of Rate & Revenue | \$ (237,259) | |
| NET CHANGES TO Proposed FY17 CEB | \$ (3,771,675) | The Advisory Board recommends a reduction of Rate Revenue Requirement totaling \$3,771,675, bringing the combined Rate Revenue increase to 3.34% |

Appendix D

| Total MWRA | | FY16 Approved | FY17 Proposed | Change FY17 Proposed vs FY16 Approved Budget | |
|-------------------------------|--------------------------------------|--------------------|----------------------|--|--------------|
| | | | | \$ | % |
| EXPENSES | Wages and Salaries | \$99,363,168 | \$102,229,030 | \$2,865,861 | 2.9% |
| | Overtime | 4,219,293 | 4,192,690 | (26,603) | -0.6% |
| | Fringe Benefits | 19,326,756 | 20,592,603 | 1,265,847 | 6.5% |
| | Workers' Compensation | 2,343,000 | 2,274,192 | (68,808) | -2.9% |
| | Chemicals | 9,790,847 | 9,985,748 | 194,900 | 2.0% |
| | Energy and Utilities | 23,164,823 | 22,418,027 | (746,796) | -3.2% |
| | Maintenance | 28,698,772 | 30,320,567 | 1,621,795 | 5.7% |
| | Training and Meetings | 413,714 | 435,480 | 21,766 | 5.3% |
| | Professional Services | 5,819,611 | 6,316,153 | 496,542 | 8.5% |
| | Other Materials | 6,164,588 | 6,172,140 | 7,552 | 0.1% |
| | Other Services | 23,529,902 | 23,651,024 | 121,122 | 0.5% |
| | TOTAL DIRECT EXPENSES | 222,834,474 | 228,587,654 | 5,753,174 | 2.6% |
| | Insurance | 2,160,797 | 2,123,292 | (37,505) | -1.7% |
| | Watershed/PILOT | 28,096,233 | 29,996,320 | 1,900,087 | 6.8% |
| | HEEC Payment | 1,946,157 | 773,858 | (1,172,299) | -60.2% |
| | Mitigation | 1,400,000 | 1,558,000 | 158,000 | 11.3% |
| | Addition to Reserves | (34,927) | 195,744 | 230,671 | -660.4% |
| | Retirement Fund | 8,159,521 | 4,632,624 | (3,526,897) | -43.2% |
| | OPEB/Additional Pension Contribution | 5,224,848 | 4,876,050 | (348,798) | -6.7% |
| | TOTAL INDIRECT EXPENSES | 46,952,629 | 44,155,887 | (2,796,741) | -6.0% |
| Debt Service (before offsets) | 432,689,450 | 451,409,481 | 18,720,031 | 4.3% | |
| Bond Redemption | | | | | |
| Debt Service Assistance | | | | | |
| TOTAL DEBT SERVICE | 432,689,450 | 451,409,481 | 18,720,031 | 4.3% | |
| TOTAL EXPENSES | \$702,476,553 | 724,153,022 | \$21,676,464 | 3.1% | |
| REVENUE AND INCOME | Rate Revenue | 672,440,000 | 698,700,004 | 26,260,004 | 3.9% |
| | Other User Charges | 8,683,898 | 8,795,736 | 111,838 | 1.3% |
| | Other Revenue | 12,000,066 | 6,956,430 | (5,043,636) | -42.0% |
| | Rate Stabilization | | | | |
| | Investment Income | 9,352,590 | 9,700,853 | 348,263 | 3.7% |
| | TOTAL REVENUE AND INCOME | 702,476,554 | \$724,153,023 | \$21,676,469 | 3.1% |

Appendix E

Cap Calculation versus Actual FY04-08 Spending

| Baseline Cap FY04-08 | | | | | | | |
|-----------------------------|---|----------------|----------------|----------------|----------------|------------------|------------------|
| (\$ millions) | | | | | | | |
| Final FY04 CIP | | FY04 | FY05 | FY06 | FY07 | FY08 | Total FY04-08 |
| | Projected Expenditures | \$237.0 | \$190.2 | \$195.2 | \$217.3 | \$183.6 | \$1,023.3 |
| | Contingency | 19.4 | 14.1 | 15.5 | 19.8 | 18.1 | 86.9 |
| | Inflation on Unawarded Construction | 0.0 | 0.8 | 5.8 | 13.0 | 16.1 | 35.7 |
| | Less: Chicopee Valley Aqueduct Projects | (5.4) | (1.5) | (1.4) | (0.1) | (3.0) | (11.4) |
| FY04-08 | \$250.9 | \$203.5 | \$215.2 | \$250.1 | \$214.8 | \$1,134.5 | |

| FY04-08 Actual Spending | | | | | | | |
|--------------------------------|---|----------------|----------------|----------------|----------------|----------------|------------------|
| FY08 Closeout Data | | FY04 Actual | FY05 Actual | FY06 Actual | FY07 Actual | FY08 Actual | Total FY04-08 |
| | Projected Expenditures | \$194.0 | \$167.7 | \$152.3 | \$177.7 | \$196.8 | \$888.5 |
| | Contingency | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Inflation on Unawarded Construction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Less: Chicopee Valley Aqueduct Projects | (0.4) | (0.5) | (2.4) | (3.3) | (1.8) | (8.4) |
| FY04-08 | \$193.6 | \$167.2 | \$149.9 | \$174.4 | \$195.0 | \$880.1 | |

| Baseline Cap FY04-08 to Actual Spending | | | | | | | |
|--|---|-----------------|-----------------|-----------------|-----------------|------------------|------------------|
| Change | | FY04 | FY05 | FY06 | FY07 | FY08 | Total FY04-08 |
| | Projected Expenditures | (\$43.0) | (\$22.5) | (\$42.9) | (\$39.6) | \$13.2 | (\$134.8) |
| | Contingency | (19.4) | (14.1) | (15.5) | (19.8) | (18.1) | (86.9) |
| | Inflation on Unawarded Construction | 0.0 | (0.8) | (5.8) | (13.0) | (16.1) | (35.7) |
| | Less: Chicopee Valley Aqueduct Projects | 5.0 | 1.0 | (1.0) | (3.2) | 1.2 | 3.0 |
| FY04-08 CAP Δ (\$) | (\$57.4) | (\$36.4) | (\$65.2) | (\$75.6) | (\$19.8) | (\$254.4) | |
| FY04-08 CAP Δ (%) | -22.9% | -17.9% | -30.3% | -30.2% | -9.2% | -22.4% | |

Appendix E

Cap Calculation versus Proposed FY14 Updated Projections

| Final FY09 CIP | Baseline Cap FY09-13 | | | | | | |
|---|-----------------------------|----------------|----------------|----------------|----------------|------------------|--|
| | (\$ millions) | | | | | | |
| | FY09 | FY10 | FY11 | FY12 | FY13 | Total FY09-13 | |
| Projected Expenditures | \$230.0 | \$251.7 | \$224.3 | \$196.7 | \$178.7 | \$1,081.4 | |
| Contingency | 15.6 | 13.8 | 12.0 | 12.1 | 11.4 | 64.8 | |
| Inflation on Unawarded Construction | 0.0 | 0.5 | 2.8 | 7.8 | 11.3 | 22.4 | |
| Less: Chicopee Valley Aqueduct Projects | (1.2) | (1.9) | (9.1) | (9.5) | (2.9) | (24.8) | |
| FY09-13 CAP | \$244.4 | \$264.1 | \$230.0 | \$207.0 | \$198.4 | \$1,143.8 | |

| Proposed FY14 CIP | FY09-13 Actual Spending | | | | | | |
|---|--------------------------------|----------------|----------------|----------------|----------------|------------------|--|
| | FY09 | FY10 | FY11 | FY12 | FY13 | Total FY09-13 | |
| Projected Expenditures | \$182.2 | \$211.4 | \$139.3 | \$137.6 | \$161.9 | \$832.4 | |
| Contingency | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$0.0 | |
| Inflation on Unawarded Construction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$0.0 | |
| Less: Chicopee Valley Aqueduct Projects | (0.6) | (0.5) | (0.9) | (0.1) | 0.0 | (\$2.1) | |
| Projected FY14-18 | \$181.6 | \$210.9 | \$138.4 | \$137.5 | \$161.9 | \$835.2 | |

| Change | Baseline Cap FY09-13 to Actual Spending | | | | | | |
|---|--|-----------------|-----------------|-----------------|-----------------|------------------|--|
| | FY09 | FY10 | FY11 | FY12 | FY13 | Total FY09-13 | |
| Projected Expenditures | (\$47.8) | (\$40.2) | (\$85.0) | (\$59.1) | (\$16.8) | (\$248.9) | |
| Contingency | (15.6) | (13.8) | (12.0) | (4.9) | (1.7) | (48.0) | |
| Inflation on Unawarded Construction | 0.0 | (0.5) | (2.8) | (7.8) | (11.3) | (22.4) | |
| Less: Chicopee Valley Aqueduct Projects | 0.6 | 1.4 | 8.3 | 9.4 | 1.2 | 20.9 | |
| FY09-13 CAP Δ (\$) | (\$62.8) | (\$53.2) | (\$91.6) | (\$69.5) | (\$31.7) | (\$308.6) | |
| FY09-13 CAP Δ (%) | -25.7% | -20.1% | -39.8% | -33.6% | -16.0% | -27.0% | |

| Program/Project/Subphase | Contract No. | Substan. Compl. | Total Contract Amount | Payments through FY15 | Remaining Balance | FY14 | FY15 | FY16 | FY17 | FY18 | FY14 - FY18 |
|--|--------------|-------------------|-----------------------|-----------------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total MWRA | | | 6,987,524,240 | 3,893,908,967 | 3,093,620,273 | 102,163,199 | 103,615,862 | 118,253,886 | 160,102,230 | 194,569,611 | 678,704,788 |
| Wastewater | | | 3,062,317,439 | 1,867,077,488 | 1,195,239,951 | 55,689,573 | 75,387,271 | 79,350,544 | 87,271,974 | 99,840,057 | 397,559,420 |
| Interception & Pumping | | | 926,776,993 | 535,991,370 | 390,785,624 | 6,873,770 | 8,577,536 | 10,708,806 | 29,343,603 | 31,248,779 | 86,752,495 |
| 102 Quincy Pump Facilities | | completed project | 25,907,202 | 25,907,202 | - | | | | | | |
| 104 Braintree-Weymouth Relief Facilities | | | 232,454,622 | 227,704,621 | 4,750,001 | (288) | 977 | | | 207,500 | 208,189 |
| 105 New Neponset Valley Relief Sewer | | completed project | 30,300,303 | 30,300,303 | - | | | | | | |
| 106 Welleley Extension Replacement Sewer | | completed project | 64,358,543 | 64,358,543 | - | | | | | | |
| 107 Framingham Extension Relief Sewer | | completed project | 47,855,986 | 47,855,986 | - | | | | | | |
| 127 Cummingsville Replacement Sewer | | completed project | 8,998,768 | 8,998,768 | - | | | | | | |
| 130 Siphon Structure Rehabilitation | | | 6,669,019 | 939,770 | 5,729,249 | | | | | | |
| 131 Upper Neponset Valley Sewer System | | completed project | 54,174,078 | 54,174,078 | - | | | | | | |
| 132 Corrosion & Odor Control | | | 23,366,829 | 3,001,406 | 20,365,423 | | | 288,783 | 300,747 | 319,322 | 908,852 |
| 136 West Roxbury Tunnel | | | 11,313,573 | 10,313,573 | 1,000,000 | | | | | | |
| 137 Wastewater Central Monitoring | | | 27,482,036 | 19,782,036 | 7,700,000 | (165) | | | | 375,000 | 374,836 |
| 139 South System Relief Project | | | 4,939,244 | 3,430,244 | 1,500,000 | | | | | | |
| 141 Wastewater Process Optimization | | | 10,389,301 | 1,463,147 | 8,926,154 | 11,475 | 246,493 | 38,638 | | | 296,605 |
| 142 Wastewater Meter System - Equipment Replace. | | | 27,737,912 | 5,137,912 | 22,600,000 | | | | 600,000 | 600,000 | 1,200,000 |
| 143 Regional I/I Management Planning | | completed project | 168,987 | 168,987 | - | | | | | | |
| 145 Facility Asset Protection | | | 344,910,590 | 32,445,794 | 312,464,797 | 6,862,748 | 8,330,066 | 10,381,386 | 28,442,856 | 29,746,957 | 83,754,013 |
| 146 D.I. Cross Harbor Tunnel | | | 5,000,000 | - | 5,000,000 | | | | | | |
| 147 Randolph Trunk Sewer Relief | | | 750,000 | - | 750,000 | | | | | | |
| Treatment | | | 818,428,214 | 239,554,101 | 578,874,113 | 29,083,013 | 25,749,318 | 30,271,765 | 31,106,890 | 46,901,239 | 163,111,224 |
| 182 DI Primary and Secondary Treatment | | completed project | (957,878) | (957,878) | - | | | | | | |
| 200 DI Plant Optimization | | completed project | 33,278,599 | 33,278,599 | - | (148,080) | | | | | (148,080) |
| 206 DI Treatment PI Asset Protection | | | 763,924,744 | 200,289,874 | 563,634,873 | 28,807,846 | 23,981,449 | 28,065,111 | 26,167,336 | 43,336,400 | 150,358,143 |
| 210 Clinton Wastewater Treatment Plant | | | 19,955,076 | 4,715,835 | 15,239,242 | 275,166 | 1,914,948 | 2,206,654 | 4,939,553 | 3,564,839 | 12,901,161 |
| 211 Laboratory Services | | completed project | 2,227,674 | 2,227,674 | - | | | | | | |
| Residuals | | | 167,642,622 | 64,642,622 | 103,000,000 | 106,807 | - | - | 2,868,000 | 1,595,500 | 4,570,307 |
| 261 Residuals | | completed project | 63,810,848 | 63,810,848 | - | | | | | | |
| 271 Residuals Asset Protection | | | 103,831,775 | 831,775 | 103,000,000 | 106,807 | - | - | 2,868,000 | 1,595,500 | 4,570,307 |
| CSO | | | 908,603,747 | 876,839,209 | 29,764,538 | 15,578,637 | 23,554,257 | 18,982,564 | 5,001,687 | 2,806,528 | 65,923,673 |
| CSO MWRA Managed | | | 433,759,856 | 433,198,973 | 560,883 | 697,858 | 2,622,649 | 554,883 | 6,000 | | 3,881,390 |
| 339 North Dorchester Bay | | completed project | 221,597,299 | 221,597,299 | - | (18,663) | (4,632) | | | | (23,295) |
| 347 East Boston Branch Sewer Relief | | completed project | 85,637,164 | 85,637,164 | - | (8,831) | | | | | (8,831) |
| 348 BOS019 Storage Conduit | | completed project | 14,287,581 | 14,287,581 | - | | | | | | |
| 349 Chelsea Trunk Sewer | | completed project | 29,779,319 | 29,779,319 | - | | | | | | |
| 350 Union Park Detention Treatment Facility | | completed project | 49,583,406 | 49,583,406 | - | | | | | | |
| 353 Upgrade Existing CSO Facilities | | completed project | 22,385,200 | 22,385,200 | - | | | | | | |
| 354 Hydraulic Relief Projects | | completed project | 2,294,549 | 2,294,549 | - | | | | | | |
| 355 MWFR003 Gate & Siphon | | completed project | 4,562,261 | 4,001,378 | 560,883 | 725,352 | 2,627,281 | 554,883 | 6,000 | | 3,913,516 |

| Program/Project/Subphase | Contract No. | Substan. Compl. | Total Contract Amount | Payments through FY15 | Remaining Balance | FY14 | FY15 | FY16 | FY17 | FY18 | FY14 - FY18 |
|--|-------------------|-----------------|-----------------------|-----------------------|----------------------|--------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| 357 Charles River CSO Controls | completed project | | 3,633,077 | 3,633,077 | - | | | | | | |
| CSO Community Managed | | | 422,595,771 | 395,442,852 | 27,152,919 | 16,056,674 | 20,922,742 | 18,405,472 | 4,989,687 | 2,381,528 | 62,756,403 |
| 340 Dorchester Bay Sewer Separation (Fox Point) | completed project | | 54,625,590 | 54,625,590 | - | 473,295 | - | (126,584) | - | - | 473,295 |
| 341 Dorchester Bay Sewer Sep. (Commercial Point) | completed project | | 64,173,625 | 60,542,452 | 3,631,173 | (824,582) | 219,884 | - | - | 2,381,528 | 1,650,246 |
| 342 Neponset River Sewer Separation | completed project | | 2,549,086 | 2,549,086 | - | 104,692 | - | - | - | - | 104,692 |
| 343 Constitution Reach Sewer Separation | completed project | | 3,731,315 | 3,731,315 | - | (37,573) | - | - | - | - | (37,573) |
| 344 Stony Brook Sewer Separation | completed project | | 44,246,462 | 44,246,462 | - | 48,079 | - | - | - | - | 48,079 |
| 346 Cambridge Sewer Separation | completed project | | 102,764,877 | 79,404,780 | 23,360,096 | 13,009,599 | 15,910,978 | 18,370,410 | 4,989,687 | - | 52,280,673 |
| 351 BWSC Floatables Controls | completed project | | 945,936 | 945,936 | - | 12,956 | 1 | - | - | - | 12,957 |
| 352 Cambridge Floatables Controls | completed project | | 1,126,708 | 1,126,708 | - | - | 39,783 | - | - | - | 39,783 |
| 356 Fort Point Channel Sewer Separation | completed project | | 11,917,090 | 11,917,090 | - | (89,619) | - | - | - | - | (89,619) |
| 358 Morrissey Boulevard Drain | completed project | | 32,186,262 | 32,186,262 | (2,472) | (158,525) | - | (2,473) | - | - | (160,998) |
| 359 Reserved Channel Sewer Separation | completed project | | 70,559,596 | 70,395,476 | 164,119 | 4,321,405 | 6,034,170 | 164,119 | - | - | 10,519,694 |
| 360 Brookline Sewer Separation | completed project | | 24,715,291 | 24,715,291 | - | - | (1,282,073) | - | - | - | (1,282,073) |
| 361 Bulfinch Triangle Sewer Separation | completed project | | 9,054,405 | 9,054,405 | - | (803,052) | - | - | - | - | (803,052) |
| CSO Planning & Support | | | 50,248,120 | 48,197,384 | 2,050,737 | (1,175,895) | 8,866 | 22,209 | 6,000 | 425,000 | (713,820) |
| 324 CSO Support | | | 50,248,120 | 48,197,384 | 2,050,737 | (1,175,895) | 8,866 | 22,209 | 6,000 | 425,000 | (713,820) |
| Other Wastewater | | | 242,865,861 | 150,050,187 | 92,815,674 | 4,047,346 | 17,507,160 | 19,387,409 | 18,951,795 | 17,288,011 | 77,181,721 |
| 128 (1) Local Financial Assistance | completed project | | 242,584,985 | 149,769,311 | 92,815,674 | 4,047,346 | 17,507,160 | 19,387,409 | 18,951,795 | 17,288,011 | 77,181,721 |
| 138 Sewerage System Mapping Upgrades | completed project | | 280,876 | 280,876 | - | - | - | - | - | - | - |
| Waterworks | | | 3,790,556,487 | 1,938,313,443 | 1,852,033,045 | 40,966,173 | 22,704,866 | 30,606,561 | 60,958,382 | 84,138,413 | 239,374,395 |
| Drinking Water Quality Improvements | | | 665,945,031 | 637,824,475 | 28,120,556 | 30,232,484 | 12,384,439 | 8,375,782 | 3,584,622 | 3,916,277 | 58,493,604 |
| 542 Carroll Water Treatment Plant | | | 438,074,295 | 416,046,024 | 22,028,271 | 4,276,192 | 561,306 | 3,419,454 | 3,040,532 | 3,721,277 | 15,018,761 |
| 543 Quabbin Water Treatment Plant | | | 20,023,993 | 19,575,769 | 448,224 | 5,590,294 | 1,217,234 | 448,221 | - | - | 7,255,749 |
| 544 Non-umbrae Covered Storage | completed project | | 106,674,146 | 106,674,146 | - | - | - | - | - | - | - |
| 545 Blue Hills Covered Storage | | | 40,557,301 | 40,082,837 | 474,464 | 120,000 | - | 77,600 | - | - | 197,600 |
| 550 Spot Pond Storage Facility | | | 60,615,295 | 55,445,699 | 5,169,596 | 20,245,999 | 10,605,899 | 4,430,507 | 544,090 | 195,000 | 36,021,494 |
| Transmission | | | 2,285,713,191 | 762,009,974 | 1,523,703,217 | 4,462,855 | 2,509,963 | 7,520,517 | 23,204,900 | 36,250,117 | 73,947,951 |
| 597 Winsor Station Pipeline | | | 30,019,846 | 1,954,234 | 28,065,611 | 339,367 | 219,277 | 476,502 | 1,886,139 | 2,019,473 | 4,940,758 |
| 601 Sluice Gate Rehabilitation | completed project | | 9,158,411 | 9,158,411 | - | - | - | - | - | - | - |
| 604 MetroWest Tunnel | | | 707,421,427 | 696,805,015 | 10,616,413 | 1,378,026 | 28,481 | 250,485 | 204,822 | 120,000 | 1,981,814 |
| 615 Chicopee Valley Aqueduct Redundancy | completed project | | 8,666,292 | 8,666,292 | - | - | - | - | - | - | - |
| 616 Quabbin Transmission System | | | 15,456,914 | 7,456,913 | 8,000,000 | 254,449 | - | - | 500,000 | 18,750 | 773,199 |
| 617 Sudbury/Weston Aqueduct Repairs | | | 6,846,487 | 659,948 | 6,186,538 | - | - | 199,027 | 2,140,712 | 501,519 | 2,841,258 |
| 620 Wachuset Reservoir Spillway Improvements | completed project | | 9,287,460 | 9,287,460 | - | - | - | - | - | - | - |
| 621 Watershed Land | | | 24,000,000 | 18,248,400 | 5,751,600 | 540,000 | 366,000 | 1,500,000 | 2,000,000 | 2,251,600 | 6,657,600 |
| 623 Dam Projects | | | 4,538,205 | 3,092,761 | 1,445,444 | 9,674 | (2,095) | 494,873 | 71 | 43,142 | 545,664 |
| 625 Long Term Redundancy | | | 1,470,318,149 | 6,680,538 | 1,463,637,610 | 1,941,340 | 1,897,300 | 4,599,630 | 16,473,156 | 31,295,633 | 56,207,058 |
| Distribution And Pumping | | | 768,485,280 | 386,452,802 | 382,032,478 | 4,816,607 | 8,932,618 | 14,136,668 | 31,512,863 | 40,596,936 | 99,995,692 |

| Program/Project/Subphase | Contract No. | Substan. Compl. | Total Contract Amount | Payments through FY15 | Remaining Balance | FY14 | FY15 | FY16 | FY17 | FY18 | FY14 - FY18 |
|--|--------------|-----------------|-----------------------|-----------------------|---------------------|------------------|--------------------|------------------|-------------------|-------------------|-------------------|
| 618 Northern High NW Transmission Section 70 | | | 1,000,000 | - | 1,000,000 | - | - | - | - | 474,000 | 474,000 |
| 677 Valve Replacement | | | 22,749,419 | 12,016,378 | 10,733,041 | - | - | 731,466 | 975,287 | 975,287 | 2,682,040 |
| 678 Boston Low Service - Pipe & Valve Rehab. completed project | | | 23,690,864 | 23,690,864 | - | - | - | - | - | - | - |
| 683 Heath Hill Road Pipe Replacement completed project | | | 19,358,036 | 19,358,036 | - | - | - | - | - | - | - |
| 689 James L. Gillis Pump Station completed project | | | 33,419,007 | 33,419,007 | - | - | - | - | - | - | - |
| 692 Northern High Service - Section 27 Improvements | | | 1,097,441 | 123,646 | 973,795 | - | - | 4,014 | 12,952 | 166,413 | 183,379 |
| 693 NHS - Reverse & Walden Pipeline Improvements | | | 55,359,978 | 26,832,740 | 28,527,239 | - | - | 100,000 | 570,998 | 2,239,500 | 2,910,498 |
| 702 New Connecting Mains-Shaft 7 to W/AS/3 | | | 34,765,084 | 11,315,807 | 23,449,277 | - | 355,000 | - | 360,000 | 844,000 | 1,559,000 |
| 704 Rehab of Other Pump Stations | | | 55,057,852 | 30,057,852 | 25,000,000 | - | - | - | - | - | - |
| 706 NHS-Connecting Mains from Section 91 | | | 2,360,194 | 2,360,194 | - | - | - | - | - | - | - |
| 708 Northern Extra High Service - New Pipelines | | | 7,888,883 | 3,632,119 | 4,256,714 | - | - | 36,400 | 22,714 | 2,000 | 61,114 |
| 712 Catholic Protection of Distribution Mains | | | 1,655,601 | 140,913 | 1,514,688 | - | - | 150,000 | 67,750 | 200,000 | 417,750 |
| 713 Spot Pond Supply Mains Rehab | | | 67,377,554 | 61,696,403 | 5,681,151 | 186,728 | 527,675 | 1,975,437 | 389,510 | 202,257 | 3,281,607 |
| 714 Southern Extra High - Sections 41 & 42 completed project | | | 3,657,243 | 3,657,243 | - | - | - | - | - | - | - |
| 719 Chestnut Hill Connecting Mains | | | 24,174,658 | 17,486,675 | 6,687,983 | - | - | - | 725,000 | - | 725,000 |
| 720 Warren Cottage Line Rehab | | | 1,204,822 | 1,204,822 | - | - | - | - | - | - | - |
| 721 Southern Spine Distribution Mains | | | 74,983,108 | 36,681,373 | 38,301,735 | (10,275) | - | 952 | 1,269 | 376,270 | 368,216 |
| 722 NH Redundancy & Storage | | | 89,448,252 | 11,149,175 | 78,299,078 | 2,170,668 | 3,004,142 | 2,577,419 | 16,912,000 | 16,997,200 | 41,661,429 |
| 723 Northern Low Service Rehab - Section 8 | | | 23,441,424 | 2,320,986 | 21,120,437 | - | - | 10,500 | 14,000 | 24,088 | 48,588 |
| 725 Hydraulic Model Update | | | 598,358 | 598,358 | - | - | - | - | - | - | - |
| 727 SEH Redundancy & Storage | | | 97,353,883 | 7,620,602 | 89,733,281 | 73,972 | 789,661 | 884,296 | 10,065,883 | 16,225,102 | 28,038,913 |
| 730 Weston Aqueduct Supply Mains | | | 109,605,168 | 72,746,641 | 36,858,527 | 2,447,207 | 4,256,140 | 7,666,185 | 1,395,500 | 1,623,819 | 17,388,851 |
| 731 Lynnfield Pipeline | | | 5,625,832 | 5,625,832 | - | (51,693) | - | - | - | - | (51,693) |
| 732 Walnut St. & Fisher Hill Pipeline Rehab | | | 2,171,140 | 2,171,140 | - | - | - | - | - | - | - |
| 735 Section 80 Rehabilitation | | | 9,895,531 | - | 9,895,531 | - | - | - | - | 247,000 | 247,000 |
| Other Waterworks | | | 70,412,986 | 152,066,192 | (81,653,206) | 1,454,227 | (1,121,154) | 573,595 | 2,655,997 | 3,375,083 | 6,937,748 |
| 753 Central Monitoring System | | | 39,106,328 | 16,030,643 | 23,075,684 | - | 226,915 | 1,262,894 | 3,408,737 | 1,498,053 | 6,396,599 |
| 763 Distribution Systems Facilities Mapping | | | 2,298,919 | 1,036,368 | 1,262,551 | - | - | 187,500 | 345,319 | 532,819 | 532,819 |
| 764 Local Water Infrastructure Rehab | | | 7,487,762 | 7,487,762 | - | - | - | - | - | - | - |
| 765 Local Water Pipeline Assistance Program | | | - | 126,865,175 | (126,865,175) | 1,454,227 | (1,448,293) | (1,416,092) | (1,995,846) | 591,711 | (2,814,293) |
| 766 Waterworks Facility Asset Protection | | | 21,519,976 | 646,243 | 20,873,733 | - | 100,225 | 726,793 | 1,055,606 | 940,000 | 2,822,624 |
| Business & Operations Support | | | 134,650,313 | 88,475,056 | 46,177,278 | 5,507,453 | 5,523,724 | 8,296,780 | 11,871,874 | 10,591,141 | 41,790,972 |
| 881 Equipment Purchase | | | 28,534,878 | 16,708,657 | 11,826,221 | 1,240,967 | 3,360,361 | 2,555,521 | 2,852,200 | 813,500 | 10,822,549 |
| 925 Technical Assistance | | | 1,125,000 | - | 1,125,000 | - | - | - | 375,000 | 375,000 | 750,000 |
| 930 MWRA Facility - Chelsea | | | 9,813,633 | 9,813,633 | - | - | - | - | - | - | - |
| 931 Business Systems Plan | | | 24,527,709 | 24,527,709 | - | - | - | - | - | - | - |
| 932 Environmental Remediation | | | 1,478,602 | 1,478,602 | - | (200) | 64,453 | 12,026 | - | - | 76,479 |
| 933 Capital Maintenance Planning & Development | | | 16,446,993 | 11,539,126 | 4,907,867 | 933,604 | 481,281 | 2,355,866 | 1,392,000 | 1,160,000 | 6,322,752 |
| 934 MWRA Facilities Management | | | 2,150,535 | 370,533 | 1,780,002 | - | - | - | - | - | (200) |
| 935 Alternative Energy Initiatives | | | 25,898,007 | 17,387,564 | 8,450,443 | 190,760 | - | 52,000 | 1,147,000 | 2,365,988 | 3,755,748 |
| 940 Application Improvement Program | | | 10,175,904 | 484,231 | 9,691,673 | 293,010 | 118,097 | 1,349,223 | 3,061,780 | 3,597,019 | 8,419,128 |
| 942 Information Security Program (ISP) | | | 3,365,411 | 819,825 | 2,545,586 | 284,635 | - | 607,748 | 748,649 | 648,649 | 2,289,681 |
| 944 Information Technology Management Program | | | 922,640 | - | 922,640 | - | - | - | 396,480 | 453,550 | 850,030 |
| 946 IT Infrastructure Program | | | 10,271,000 | 5,343,155 | 4,927,845 | 2,500,225 | 1,551,959 | 1,376,421 | 1,898,765 | 1,177,435 | 8,504,805 |

Overview of the FY17 Proposed and Changes from the FY16 Final CIP

| Program and Project | Final FY16 | | | | FY17 Proposed | | | | Change from Final FY16 | | | |
|---|---------------------|----------------|------------------|----------------|---------------------|----------------|------------------|------------------|------------------------|-----------------|-----------------|------------------|
| | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 |
| Total MWRA | 6,012,395 | 711,532 | 1,223,762 | 388,976 | 6,987,519 | 678,703 | 1,200,390 | 1,420,302 | 975,124 | (32,829) | (23,372) | 1,031,326 |
| Wastewater | 2,974,567 | 419,344 | 634,899 | 184,324 | 3,062,316 | 397,538 | 648,643 | 280,132 | 87,749 | (21,806) | 13,744 | 95,808 |
| Interception & Pumping | 890,031 | 98,024 | 224,870 | 46,598 | 926,776 | 86,752 | 176,616 | 142,867 | 36,745 | (11,272) | (48,254) | 96,269 |
| 102 Quincy Pump Facilities | 25,907 | - | - | - | 25,907 | - | - | - | - | - | - | - |
| 104 Braintree-Weymouth Relief Facilities | 232,455 | 310 | 4,441 | - | 232,455 | 208 | 4,543 | - | - | (102) | 102 | - |
| 105 New Neponset Valley Relief Sewer | 30,300 | - | - | - | 30,300 | - | - | - | - | - | - | - |
| 106 Wellesley Extension Replacement Sewer | 64,359 | - | - | - | 64,359 | - | - | - | - | - | - | - |
| 107 Framingham Extension Relief Sewer | 47,856 | - | - | - | 47,856 | - | - | - | - | - | - | - |
| 127 Cummingsville Replacement Sewer | 8,999 | - | - | - | 8,999 | - | - | - | - | - | - | - |
| 130 Siphon Structure Rehabilitation | 6,635 | - | 5,695 | - | 6,669 | - | 5,729 | - | 34 | - | 34 | - |
| 131 Upper Neponset Valley Sewer | 54,174 | - | - | - | 54,174 | - | - | - | - | - | - | - |
| 132 Corrosion & Odor Control | 19,782 | 543 | 16,238 | - | 23,367 | 909 | 19,457 | - | 3,585 | 366 | 3,219 | - |
| 136 West Roxbury Tunnel | 11,314 | - | 1,000 | - | 11,314 | - | 1,000 | - | - | - | - | - |
| 137 Wastewater Central Monitoring | 27,482 | 760 | 2,910 | 4,030 | 27,482 | 375 | 2,910 | 4,415 | - | (385) | - | 385 |
| 139 South System Relief Project | 4,939 | - | 1,500 | - | 4,939 | - | 1,500 | - | - | - | - | - |
| 141 Wastewater Process Optimization | 10,383 | 1,391 | 5,817 | 1,970 | 10,389 | 297 | 5,168 | 3,719 | 6 | (1,094) | (649) | 1,749 |
| 142 Wastewater Meter System-Equipment | 27,738 | 6,436 | 1,564 | 14,600 | 27,738 | 1,200 | 6,800 | 14,600 | - | (5,236) | 5,236 | - |
| 143 Regional I/I Management Planning | 169 | - | - | - | 169 | - | - | - | - | - | - | - |
| 145 Facility Asset Protection | 311,791 | 88,585 | 179,955 | 25,999 | 344,911 | 83,764 | 123,759 | 120,134 | 33,120 | (4,821) | (56,196) | 94,135 |
| 146 D.I. Cross Harbor Tunnel Inspection | 5,000 | - | 5,000 | - | 5,000 | - | 5,000 | - | - | - | - | - |
| 147 Randolph Trunk Sewer Relief | 750 | - | 750 | - | 750 | - | 750 | - | - | - | - | - |
| Treatment | 775,573 | 183,994 | 352,083 | 54,773 | 818,429 | 163,111 | 413,527 | 57,067 | 42,856 | (20,883) | 61,444 | 2,294 |
| 182 DI Primary and Secondary | (958) | - | - | - | (958) | - | - | - | - | - | - | - |
| 200 DI Plant Optimization | 33,427 | - | - | - | 33,279 | (148) | - | - | (148) | - | - | - |
| 206 DI Treatment Plant Asset Protection | 720,365 | 170,511 | 347,938 | 54,416 | 763,925 | 150,358 | 409,356 | 56,710 | 43,560 | (20,153) | 61,418 | 2,294 |
| 210 Clinton Wastewater Treat Plant | 20,511 | 13,483 | 4,145 | 358 | 19,955 | 12,901 | 4,171 | 358 | (556) | (582) | 26 | - |
| 211 Laboratory Services | 2,228 | - | - | - | 2,228 | - | - | - | - | - | - | - |
| Residuals | 167,643 | 4,570 | 8,470 | 90,067 | 167,643 | 4,570 | 8,470 | 90,067 | - | - | - | - |
| 261 Residuals | 63,811 | - | - | - | 63,811 | - | - | - | - | - | - | - |
| 271 Residuals Asset Protection | 103,832 | 4,570 | 8,470 | 90,067 | 103,832 | 4,570 | 8,470 | 90,067 | - | - | - | - |

Overview of the FY17 Proposed and Changes from the FY16 Final CIP

| Program and Project | Final FY16 | | | | FY17 Proposed | | | | Change from Final FY16 | | | |
|--|---------------------|----------------|----------------|----------------|---------------------|----------------|----------------|------------------|------------------------|-----------------|-----------------|----------------|
| | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 |
| CSO | 898,455 | 57,747 | 3,001 | - | 906,603 | 65,923 | 2,973 | - | 8,148 | 8,176 | (28) | - |
| 340 Dorchester Bay Sewer Separation (Fox Point) | 54,626 | 473 | - | - | 54,626 | 473 | - | - | - | - | - | - |
| 341 Dorchester Bay Sewer Separation (Commercial Point) | 64,174 | 1,287 | 1,740 | - | 64,174 | 1,650 | 1,376 | - | - | 363 | (364) | - |
| 342 Neponset River Sewer Separation | 2,549 | 105 | - | - | 2,549 | 105 | - | - | - | - | - | - |
| 343 Constitution Beach Sewer Separation | 3,731 | (38) | - | - | 3,731 | (38) | - | - | - | - | - | - |
| 344 Stony Brook Sewer Separation | 44,246 | 48 | - | - | 44,246 | 48 | - | - | - | - | - | - |
| 346 Cambridge Sewer Separation | 92,563 | 42,079 | - | - | 102,765 | 52,281 | - | - | 10,202 | 10,202 | - | - |
| 351 BWSC Floatables Controls | 946 | 13 | - | - | 946 | 13 | - | - | - | - | - | - |
| 352 Cambridge Floatables Control | 1,127 | 40 | - | - | 1,127 | 40 | - | - | - | - | - | - |
| 356 Fort Point Channel Sewer Separation | 11,917 | (90) | - | - | 11,917 | (90) | - | - | - | - | - | - |
| 358 Morrissey Boulevard Drain | 32,186 | (161) | - | - | 32,186 | (161) | - | - | - | - | - | - |
| 359 Reserved Channel Sewer Separation | 72,613 | 12,573 | - | - | 70,560 | 10,520 | - | - | (2,053) | (2,053) | - | - |
| 360 Brookline Sewer Separation | 24,716 | (1,282) | - | - | 24,715 | (1,282) | - | - | (1) | - | - | - |
| 361 Bulfinch Triangle Sewer Separation | 9,054 | (803) | - | - | 9,054 | (803) | - | - | - | - | - | - |
| 339 North Dorchester Bay | 221,597 | (23) | - | - | 221,597 | (23) | - | - | - | - | - | - |
| 347 East Boston Branch Sewer Relief | 85,637 | (9) | - | - | 85,637 | (9) | - | - | - | - | - | - |
| 348 BOS019 Storage Conduit | 14,288 | - | - | - | 14,288 | - | - | - | - | - | - | - |
| 349 Chelsea Trunk Sewer | 29,779 | - | - | - | 29,779 | - | - | - | - | - | - | - |
| 350 Union Park Detention Treatment Facility | 49,583 | - | - | - | 49,583 | - | - | - | - | - | - | - |
| 353 Upgrade Existing CSO Facilities | 22,385 | - | - | - | 22,385 | - | - | - | - | - | - | - |
| 354 Hydraulic Relief Projects | 2,295 | - | - | - | 2,295 | - | - | - | - | - | - | - |
| 355 MWR003 Gate & Siphon | 4,562 | 3,914 | - | - | 4,562 | 3,914 | - | - | - | - | - | - |
| 357 Charles River CSO Controls | 3,633 | - | - | - | 3,633 | - | - | - | - | - | - | - |
| 324 CSO Support | 50,248 | (378) | 1,262 | - | 50,248 | (714) | 1,598 | - | - | (336) | 336 | - |
| Other Wastewater | 242,866 | 75,009 | 46,475 | (7,114) | 242,866 | 77,182 | 47,057 | (9,869) | - | 2,173 | 582 | (2,755) |
| 128 /I/ Local Financial Assistance | 242,585 | 75,009 | 46,475 | (7,114) | 242,585 | 77,182 | 47,057 | (9,869) | - | 2,173 | 582 | (2,755) |
| 138 Sewerage System Mapping Upgrade | 281 | - | - | - | 281 | - | - | - | - | - | - | - |
| Total Waterworks | 2,909,436 | 251,266 | 578,835 | 204,653 | 3,790,554 | 239,374 | 536,329 | 1,140,171 | 881,118 | (11,892) | (42,506) | 935,518 |
| Drinking Water Quality | 666,292 | 58,903 | 12,161 | 20 | 665,944 | 58,494 | 11,607 | 637 | (348) | (409) | (554) | 617 |
| 542 Carroll Water Treatment Plant | 438,192 | 15,166 | 11,797 | 20 | 438,074 | 15,019 | 11,210 | 637 | (118) | (147) | (587) | 617 |
| 543 Quabbin Water Treatment Plant | 19,719 | 6,951 | - | - | 20,024 | 7,256 | - | - | 305 | 305 | - | - |
| 544 Norumbega Covered Storage | 106,674 | - | - | - | 106,674 | - | - | - | - | - | - | - |
| 545 Blue Hills Covered Storage | 40,555 | 228 | 364 | - | 40,557 | 198 | 397 | - | 2 | (30) | 33 | - |
| 550 Spot Pond Storage Facility | 61,152 | 36,558 | - | - | 60,615 | 36,021 | - | - | (537) | (537) | - | - |

Overview of the FY17 Proposed and Changes from the FY16 Final CIP

| Program and Project | Final FY16 | | | | FY17 Proposed | | | | Change from Final FY16 | | | |
|--|---------------------|----------------|----------------|----------------|---------------------|---------------|----------------|------------------|------------------------|----------------|------------------|-----------------|
| | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 |
| Transmission | 1,224,185 | 78,812 | 275,900 | 114,434 | 2,285,713 | 73,948 | 373,125 | 1,083,600 | 1,061,528 | (4,864) | 97,225 | 969,166 |
| 597 Winsor Station Pipeline | 27,883 | 9,661 | 16,827 | - | 30,020 | 4,941 | 23,683 | - | 2,137 | (4,720) | 6,856 | - |
| 601 Sluice Gate Rehabilitation | 9,158 | - | - | - | 9,158 | - | - | - | - | - | - | - |
| 604 MetroWest Tunnel | 708,664 | 3,260 | 9,888 | 118 | 707,421 | 1,982 | 9,923 | 118 | (1,243) | (1,278) | 35 | - |
| 615 Chicopee Valley Aqueduct Redundancy | 8,666 | - | - | - | 8,666 | - | - | - | - | - | - | - |
| 616 Quabbin Transmission System | 15,457 | 773 | 7,481 | - | 15,457 | 773 | 7,481 | - | - | - | - | - |
| 617 Sudbury/Weston Aqueduct Repairs | 7,149 | 3,146 | 3,343 | - | 6,846 | 2,841 | 3,345 | - | (303) | (305) | 2 | - |
| 620 Wachusett Reservoir Spillway Improvement | 9,287 | - | - | - | 9,287 | - | - | - | - | - | - | - |
| 621 Watershed Land | 24,000 | 6,658 | - | - | 24,000 | 6,658 | - | - | - | - | - | - |
| 622 Cosgrove/Wachusett Redundancy | - | - | - | - | - | - | - | - | - | - | - | - |
| 623 Dam Projects | 4,538 | 978 | 475 | - | 4,538 | 546 | 907 | - | - | (432) | 432 | - |
| 625 Long Term Redundancy | 409,381 | 54,336 | 237,886 | 114,317 | 1,470,318 | 56,207 | 327,786 | 1,083,483 | 1,060,937 | 1,871 | 89,900 | 969,166 |
| Distribution & Pumping | 949,123 | 105,791 | 324,977 | 145,651 | 768,484 | 99,994 | 180,165 | 115,622 | (180,639) | (5,797) | (144,812) | (30,029) |
| 618 Northern High NW Tran Sections 70 & 71 | 1,000 | 474 | 526 | - | 1,000 | 474 | 526 | - | - | - | - | - |
| 677 Valve Replacement | 22,702 | 2,717 | 3,619 | 4,351 | 22,749 | 2,682 | 3,654 | 4,397 | 47 | (35) | 35 | 46 |
| 678 Boston Low Service-Pipe & Valve Rehabilitation | 23,691 | - | - | - | 23,691 | - | - | - | - | - | - | - |
| 683 Heath Hill Road Pipe Replacement | 19,358 | - | - | - | 19,358 | - | - | - | - | - | - | - |
| 689 James L. Gillis Pump Station Rehabilitation | 33,419 | - | - | - | 33,419 | - | - | - | - | - | - | - |
| 692 NHS - Section 27 Improvements | 1,092 | 178 | 790 | - | 1,097 | 183 | 790 | - | 5 | 5 | - | - |
| 693 NHS - Reverse & Malden Pipeline Improvement | 55,161 | 11,020 | 16,607 | 702 | 55,360 | 2,910 | 25,617 | - | 199 | (8,110) | 9,010 | (702) |
| 702 New Connect Mains-Shaft 7 to WASH 3 | 34,296 | 403 | 17,111 | 5,821 | 34,765 | 1,559 | 22,148 | 97 | 469 | 1,156 | 5,037 | (5,724) |
| 704 Rehabilitation of Other Pump Stations | 55,058 | - | 18,750 | 6,250 | 55,058 | - | 18,750 | 6,250 | - | - | - | - |
| 706 NHS-Connecting Mains from Section 91 | 2,360 | - | - | - | 2,360 | - | - | - | - | - | - | - |
| 708 Northern Extra High Service New Pipelines | 7,863 | 61 | 3,495 | 675 | 7,889 | 61 | 3,495 | 701 | 26 | - | - | 26 |
| 712 Catholic Protection Of Distribution Mains | 1,668 | 509 | 763 | 254 | 1,656 | 418 | 1,097 | - | (12) | (91) | 334 | (254) |
| 713 Spot Pond Supply Mains Rehabilitation | 66,807 | 2,713 | 3,112 | - | 67,378 | 3,282 | 3,114 | - | 571 | 569 | 2 | - |
| 714 Southern Extra High Sections 41 & 42 | 3,657 | - | - | - | 3,657 | - | - | - | - | - | - | - |
| 719 Chestnut Hill Connecting Mains | 32,035 | 316 | 10,156 | 4,076 | 24,175 | 725 | 102 | 5,861 | (7,860) | 409 | (10,054) | 1,785 |
| 720 Warren Cottage Line Rehabilitation | 1,205 | - | - | - | 1,205 | - | - | - | - | - | - | - |
| 721 South Spine Distribution Mains | 74,773 | 369 | 4,037 | 33,676 | 74,983 | 368 | 3,963 | 33,960 | 210 | (1) | (74) | 284 |
| 722 NIH Redundancy & Storage | 90,187 | 43,327 | 40,885 | - | 89,448 | 41,661 | 41,812 | - | (739) | (1,666) | 927 | - |
| 723 Northern Low Service Rehabilitation Section 8 | 23,334 | 553 | 20,459 | - | 23,441 | 49 | 20,031 | 1,041 | 107 | (504) | (428) | 1,041 |
| 724 Northern High Service - Pipeline Rehabilitation | - | - | - | - | - | - | - | - | - | - | - | - |
| 725 Hydraulic Model Update | 598 | - | - | - | 598 | - | - | - | - | - | - | - |
| 727 Southern Extra High Redundancy & Storage | 99,544 | 23,224 | 15,274 | 54,289 | 97,354 | 28,039 | 7,939 | 54,619 | (2,190) | 4,815 | (7,335) | 330 |
| 730 Weston Aqueduct Supply Mains | 281,137 | 19,422 | 160,114 | 35,557 | 109,605 | 17,389 | 18,060 | 8,113 | (171,532) | (2,033) | (142,054) | (27,444) |
| 731 Lynnfield Pipeline | 5,626 | (52) | - | - | 5,626 | (52) | - | - | - | - | - | - |
| 732 Walnut St. & Fisher Hill Pipeline Rehabilitation | 2,717 | - | - | - | 2,717 | - | - | - | - | - | - | - |
| 733 NHS Pipeline Rehabilitation 13-18 & 48 | - | - | - | - | - | - | - | - | - | - | - | - |
| 734 Southern Extra High Pipelines-Sections 30, 39,40, & 44 | - | - | - | - | - | - | - | - | - | - | - | - |

Overview of the FY17 Proposed and Changes from the FY16 Final CIP

| Program and Project | Final FY16 | | | | FY17 Proposed | | | | Change from Final FY16 | | | |
|--|---------------------|---------------|-----------------|-----------------|---------------------|---------------|-----------------|-----------------|------------------------|--------------|--------------|----------------|
| | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 | Total Budget Amount | FY14-18 | FY19-23 | Beyond 23 |
| 735 Section 80 Rehabilitation | 9,836 | 558 | 9,278 | - | 9,896 | 247 | 9,066 | 583 | 60 | (311) | (212) | 583 |
| Other | 69,836 | 7,760 | (34,203) | (55,454) | 70,413 | 6,938 | (28,568) | (59,690) | 577 | (822) | 5,635 | (4,236) |
| 753 Central Monitoring System | 39,006 | 6,297 | 6,220 | 10,686 | 39,106 | 6,397 | 6,220 | 10,686 | 100 | 100 | - | - |
| 763 Distribution Systems Facilities Mapping | 2,299 | 914 | 348 | - | 2,299 | 533 | 730 | - | - | (381) | 382 | - |
| 764 Local Water Infrastructure Rehabilitation Assistance | 7,488 | - | - | - | 7,488 | - | - | - | - | - | - | - |
| 765 Local Water Pipeline Improvement Loan Program | - | (4,508) | (53,490) | (68,861) | - | (2,814) | (50,948) | (73,097) | - | 1,694 | 2,542 | (4,236) |
| 766 Waterworks Facility Asset Protection | 21,043 | 5,058 | 12,719 | 2,721 | 21,520 | 2,823 | 15,430 | 2,721 | 477 | (2,235) | 2,711 | - |
| Business & Operations Support | 128,393 | 40,922 | 10,029 | - | 134,650 | 41,791 | 15,419 | - | 6,257 | 869 | 5,390 | - |
| 881 Equipment Purchase | 23,168 | 10,063 | 997 | - | 28,535 | 10,823 | 5,605 | - | 5,367 | 760 | 4,608 | - |
| 925 Technical Assistance | 1,125 | 1,125 | - | - | 1,125 | 750 | 375 | - | - | (375) | 375 | - |
| 930 MWRA Facility - Chelsea | 9,814 | - | - | - | 9,814 | - | - | - | - | - | - | - |
| 931 Business Systems Plan | 24,552 | 101 | - | - | 24,528 | 76 | - | - | (24) | (25) | - | - |
| 932 Environmental Remediation | 1,479 | - | - | - | 1,479 | - | - | - | - | - | - | - |
| 933 Capital Maintenance Planning | 16,721 | 6,597 | - | - | 16,447 | 6,323 | - | - | (274) | (274) | - | - |
| 934 MWRA Facilities Management | 2,151 | - | 1,780 | - | 2,151 | - | 1,780 | - | - | - | - | - |
| 935 Alternative Energy Initiatives | 25,630 | 3,576 | 4,857 | - | 25,838 | 3,756 | 4,885 | - | 208 | 180 | 28 | - |
| 940 Applicat Improv Program | 10,176 | 8,437 | 1,666 | - | 10,176 | 8,419 | 1,684 | - | - | (18) | 18 | - |
| 942 Info Security Program ISP | 2,385 | 1,595 | 255 | - | 3,365 | 2,290 | 541 | - | 980 | 695 | 286 | - |
| 944 Info Tech Mgmt Program | 923 | 863 | 59 | - | 923 | 850 | 73 | - | - | (13) | 14 | - |
| 946 IT Infrastructure Program | 10,271 | 8,566 | 414 | - | 10,271 | 8,505 | 475 | - | - | (61) | 61 | - |

New Projects Added to the FY17 CIP

| Program | Project | Subphase | Total Contract Amount | FY17 | FY18 | FY14-18 | Total Expenditures |
|---------------------------|--------------------------------|---|-----------------------|--------------|------------|--------------|--------------------|
| Interception & Pumping | Facility Asset Protection | DeLauri Pump Station Screens and Security | \$ 1,029,700 | \$ 772,000 | \$ 257,700 | \$ 1,029,700 | \$ 1,029,700 |
| Distribution and Pumping | Chestnut Hill Connecting Mains | Chestnut Hill Gatehouse Repairs | 725,000 | 725,000 | - | 725,000 | 725,000 |
| SUMMARY: | | | | | | | |
| Total Wastewater Projects | | | \$ 1,029,700 | \$ 772,000 | \$ 257,700 | \$ 1,029,700 | \$ 1,029,700 |
| Total Waterworks Projects | | | 725,000 | 725,000 | - | 725,000 | 725,000 |
| Total Projects | | | \$ 1,754,700 | \$ 1,497,000 | \$ 257,700 | \$ 1,754,700 | \$ 1,754,700 |

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Quabbin and Ware Watershed – J. R. Greene
Wachusett Watershed – Barbara Wyatt
Environmental Protection –
Andrew Chalker Fisk
Connecticut River Basin –
Richard N. Palmer
Boston Harbor – Vacant (2)

MAPC Appointee:

Edward G. Bates

Advisory Board Designees to the MWRA Board of Directors:

John Carroll – Norwood
Andrew Pappastergion - Brookline
Joseph Foti - Chelsea

*Member of the Executive Committee

** Chairman of the Executive Committee



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

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ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

Chair: H. Vitale
Vice-Chair: A. Pappastergion
Committee Members:
A. Blackmon
J. Carroll
K. Cotter
J. Foti
B. Peña
J. Walsh

to be held on

Wednesday, June 8, 2016

Location: 100 First Avenue, 2nd Floor
Charlestown Navy Yard
Boston, MA 02129

Time: Immediately following Budget Hearings

AGENDA

A. Approvals

1. Memorandum of Agreement between the Commonwealth of Massachusetts and the Massachusetts Water Resources Authority
2. Bond Defeasance of Future Debt Service

B. Contract Awards

1. Disclosure Counsel: Greenberg Traurig, LLP, Contract F241
2. MWRA FY17 Insurance Program Renewal

MASSACHUSETTS WATER RESOURCES AUTHORITY**Meeting of the
Administration, Finance and Audit Committee****May 11, 2016**

A meeting of the Administration, Finance and Audit Committee was held on May 11, 2016 at the Authority headquarters in Charlestown. Chairman Vitale presided. Present from the Board were Messrs. Carroll, Foti, Peña, and Walsh; Mr. Pappastergion joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Steve Estes-Smargiassi, Tom Durkin, Louise Miller, Kathy Soni, Karen Gay-Valente, Steve Perry, Matt Horan, and Bonnie Hale. The meeting was called to order at 10:20 a.m.

Information**FY16 Third Quarter Orange Notebook**

Staff gave a presentation highlighting certain indicators and there was general discussion and question and answer.

Delegated Authority Report – April 2016

The report was received without comment.

(Mr. Pappastergion joined the meeting.)

FY16 Financial Update and Summary as of April 2016

Committee members had questions on worker's compensation, noting that the numbers never seem to change. Staff responded that as old cases come off, new cases come on, noted that the Authority's aging work force, particularly laborers, is increasingly having hip/shoulder/knee replacements, and that there is close monitoring of the workers' compensation cases. Staff indicated that they would prepare an analysis breaking down the number of cases coming off and new cases coming on, as well as the average age, salary, and years of service of the MWRA workforce.

2007 Series B Escrow Arbitrage Rebate Payment

Staff summarized this information item, and there was general discussion.

Approvals

***Bond Defeasance of Future Debt Service**

Staff summarized the history of MWRA's bond defeasances and the current projected savings from this defeasance. Mr. Vitale stated that this is a great strategy and an outstanding business model. The Committee recommended approval of the defeasance (ref. agenda item B.1).

***Memorandum of Agreement with the Town of Stoneham in Connection with the Northern Intermediate High Pipeline Project**

Staff summarized the lengthy and contentious process to try to move this project forward and gave a presentation describing the project, the laydown area, and the terms of the proposed MOA. There was detailed discussion and question and answer. The Committee recommended approval of the MOA (ref. agenda item B.2).

Contract Awards


***Arbitrage Rebate Calculation Services: Contract F240, PFM Asset Management LLC**

The Committee recommended approval of the contract award (ref. agenda item C.1).

The meeting adjourned at 11:10 a.m.


* Approved as recommended at May 11, 2016 Board of Directors meeting.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Memorandum of Agreement between the Commonwealth of Massachusetts and the Massachusetts Water Resources Authority

COMMITTEE: Administration, Finance & Audit

VOTE
 INFORMATION

Matthew R. Horan, Treasurer 
Preparer/Title


Thomas J. Durkin
Director, Finance

This staff summary is one of two presented at this meeting to discuss proposed changes to the utilization of the anticipated \$37 million FY16 surplus. These proposed changes are a result of a recent opportunity that will allow MWRA to utilize \$32.0 million of the projected surplus to defease the entire approximately \$33.7 million watershed land debt service obligation to the Commonwealth. This prepayment results in annual budget reductions of \$5.6 million per year through FY22 and savings of approximately \$1.7 million. Staff propose using the remaining \$5 million to execute a defeasance which will result in interest savings of \$772,800. Both of these transactions will provide budget benefits between FY17 and FY22 and will result in approximately \$2.4 million in savings.

RECOMMENDATION:

That the Board authorize the Executive Director, on behalf of the Authority, to execute and enter into a Memorandum of Agreement with the Commonwealth of Massachusetts, substantially in the form attached to this staff summary to defease MWRA's obligation to reimburse the Commonwealth for the debt service associated with its bonds utilized to purchase land within the Quabbin, Wachusett and Ware River watersheds.

DISCUSSION:

Currently, MWRA finances watershed land acquisitions for protection purposed directly but prior to 2008, purchases within the Quabbin, Wachusett and Ware River watersheds were financed by the Commonwealth. The purchases were funded by bond issuances and MWRA is required to reimburse the Commonwealth for the associated debt service. The debt service on those bonds was restructured in 2006 to provide level annual payments of \$5,608,833, with the final payment due in FY22. After MWRA makes the FY16 payment there will be six remaining totaling \$33,652,998.

Recently, the Executive Office for Administration and Finance presented the MWRA an opportunity to prepay the remaining watershed debt service in June 2016. Under the terms of the

proposed Memorandum of Agreement (MOA), MWRA would pay \$32.0 million to the Commonwealth to completely defease the approximately \$33.7 million in remaining debt service payments. The prepayment of the watershed debt service obligation would result in annual budgetary reductions of approximately \$5.6 million between FY17 and FY22. These reductions will be reflected in the Watershed/PILOT line item of the Indirect Expenses portion of the CEB. In addition to the annual budget reductions, MWRA will realize \$1,652,998 in savings by prepaying this obligation.

At the May 2016 meeting, the Board approved utilizing \$30 million of the projected \$37 million FY16 surplus to defease outstanding bonds. Staff are now proposing to redirect those funds to defease MWRA's watershed debt service obligation. The prepayment under this MOA will result in approximately \$1.7 million in savings which is approximately \$275,948 higher than the projected \$1.4 million in savings from the defeasance approved at the May 2016 Board meeting.

In addition to the savings from the prepayment of the watershed debt, staff are proposing to utilize the remaining \$5.0 million from the projected FY16 surplus to complete a defeasance of outstanding bonds. The bond defeasance, discussed in a separate staff summary, will reduce the debt service requirement between FY17 and FY22. The new bond defeasance is projected to result in approximately \$772,800 in interest savings.

The combined savings from the watershed debt service and new bond defeasance results in savings of approximately \$2.4 million, which is approximately \$1 million greater than the savings on the original defeasance.

BUDGET/FISCAL IMPACT:

This MOA will result in annual reductions of approximately \$5.6 million to the Watershed/PILOT Indirect Expenses. In addition to the annual budgetary reduction MWRA will realize approximately \$1.7 million in savings as a result of the prepayment.

ATTACHMENT:

Draft Memorandum of Agreement

MEMORANDUM OF AGREEMENT
BY AND BETWEEN THE
COMMONWEALTH OF MASSACHUSETTS AND THE
MASSACHUSETTS WATER RESOURCES AUTHORITY

This Agreement made this ___ day of June 2016 by and between the Commonwealth of Massachusetts by and through both the Executive Office for Administration and Finance ("A&F") and the Department of the State Treasurer ("State Treasurer") (together referred to hereinafter as the "Commonwealth") each having their principal offices in Boston, Massachusetts and the Massachusetts Water Resources Authority ("MWRA"), having its principal offices at 100 First Avenue, Charlestown Navy Yard, Boston, Massachusetts (hereinafter referred to jointly as the "Parties").

WHEREAS, the MWRA is obligated under the provisions of section 12 of G.L. c. 92A½ to pay the debt service costs upon certain past bond issuances of the Commonwealth, the proceeds of which were used to acquire various parcels of land within designated watershed protection areas of the Commonwealth for the purpose of precluding most development activities upon those parcels which could have adverse impacts upon the Massachusetts source waters which are used by MWRA for drinking water purposes; and

WHEREAS, MWRA requested that the Commonwealth consider leveling out the debt service payments due to the Commonwealth inasmuch as a level repayment schedule would be of assistance to MWRA in formulating its annual assessment of charges and rates to its member communities and would benefit MWRA member cities and towns in predicting and budgeting those assessments as part of their own local budgeting processes; and

WHEREAS, on or about April 1, 2006 the State Treasurer advised the MWRA by letter (the "Letter Agreement") that the Commonwealth was agreeable to a level schedule of annual payments of said debt service and established the amount of the annual debt service payment at \$5,608,833 million, inclusive of fiscal years 2007 through 2022; and

WHEREAS, the State Treasurer further advised MWRA in its April 1, 2006 letter that the arrangement, amounts and scheduling of level debt service payments ("Payment Schedule") had been reviewed and approved by A&F; and

WHEREAS, MWRA has followed that Payment Schedule through and including fiscal year 2016 leaving six additional fiscal year periods (2017–2022) with payments due to the Commonwealth on June 30 of each said fiscal year; and

WHEREAS, the Commonwealth is agreeable to and has offered to provide a discount to MWRA of \$1,652,998 from the total six remaining debt service payments totaling \$33,652,998 remaining due under the Payment Schedule if MWRA will agree to pay the sum of \$32,000,000 million to the Commonwealth by June 30, 2016 ("Final Payment"); and

WHEREAS, MWRA and the Commonwealth intend the Final Payment to represent payment in full and final satisfaction of MWRA's debt service obligations under the terms and conditions of the Letter Agreement and under any and all other obligations, statutory or otherwise, with respect to the payment of the debt service as shown in the schedules attached to the Letter Agreement; and

WHEREAS, MWRA and the Commonwealth desire to memorialize their agreement in this MOA and further desire to be forever bound to one another by the provisions hereof.

NOW THEREFORE, MWRA and the Commonwealth agree as follows:

1. Acceleration of Payment Schedule. In consideration of the discount offered to MWRA by the Commonwealth in the amount of \$1,652,998, MWRA hereby agrees to make the following payments to the Commonwealth not later than June 30, 2016 on the express condition that said payments will constitute full and final payment of all amounts due under the Payment Schedule, under the Letter Agreement or under any other statutory or regulatory authority of the Commonwealth. A true copy of the Letter Agreement, with schedules, is attached hereto as Exhibit "A."

| <u>Due Date</u> | <u>Amount Due</u> | <u>Fiscal Year Period</u> |
|-----------------|-------------------|---------------------------|
| 6/30/2016 | \$32,000,000 | 2017 - 2022 |

2. Release By the Commonwealth. In consideration of the willingness of MWRA to accelerate the remaining payments due under the Letter Agreement, the Commonwealth hereby agrees that its receipt of the accelerated schedule of payments referred to in paragraph "1" hereof will be received by the Commonwealth as the MWRA's Final Payment under the Letter Agreement and will be considered to have been received as full and final performance and satisfaction of the Payment Schedule both as set out in the Letter Agreement and under any and all statutory requirements or prior promises or undertakings by MWRA. The Commonwealth further agrees that upon the receipt of said payments, the Commonwealth will and does hereby discharge, remise and release MWRA from any and all further payments for debt service scheduled in the Letter Agreement.

3. Entire Agreement. This Agreement, including any attachments hereto and each and every executory undertaking herein to be fulfilled hereafter, constitutes a single, integrated written contract expressing the entire agreement of the Parties on the matters addressed herein. No covenants, agreements, representations or warranties of any kind whatsoever have been made by any of the Parties, except as specifically set forth in this Agreement or in the documents executed in connection therewith.

4. Governing Law. This Agreement shall be construed in accordance with and shall be governed by the laws of the Commonwealth of Massachusetts.

5. Counterparts. This Agreement may be signed in two or more counterparts. Any single counterpart or a set of counterparts signed, in either case, by all the Parties hereto shall constitute a full and original Agreement for all purposes.

6. No Third-Party Rights Intended. This Agreement is entered into solely for the benefit of the Parties hereto and shall not be deemed to confer upon any third-party any benefit, remedy, claim, cause of action or other right.

7. Performance of Executory Provisions; Cooperation. Following the execution of this Agreement by the Parties, each of them will take such further actions and execute such further and additional documents as are expressly contemplated herein and as may be reasonably necessary or appropriate to carry out, effectuate and perfect the terms of this Agreement and will, as indicated herein, continue to provide a reasonable degree of cooperation to one another as may be necessary or convenient to accomplishing the provisions and intent of this Agreement.

8. Invalidity; Severability. With the exception of the provisions of paragraphs 1 and 2 of this Agreement, if any part, term or provision of this Agreement is held by a court to be invalid, illegal, unenforceable or otherwise in conflict with law, such part, term or provision shall be inoperative and void insofar as it is in conflict with law, but the validity of the remaining parts, terms or provisions shall not be affected and the rights and obligations of the parties shall be construed and enforced as if this Agreement did not contain the particular part, term or provision held to be invalid.

9. Successors and Assigns. This Agreement shall be binding upon and shall inure to the benefit of each of the Parties hereto and their respective successors and assigns. Unless any particular assignment is consented to in writing by the non-assigning Party and unless the assigning Party is released and excused in writing from any obligation hereunder, an assignment shall not release the assigning party from any obligation assumed under this Agreement.

10. Modification/Amendments. This Agreement may be modified only by a written agreement signed by both of the Parties, except that a Party shall be obligated to promptly notify the other Party by first class mail, hand delivery, or e-mail of a change of address of the person to whom notices, reports, demand letters, and other documents shall or may be sent.

11. Agreement Binding; Authority. This Agreement shall be binding upon each of the Parties hereto and shall respectively bind all of the agencies, offices, directors, officers, employees, representatives, agents, successors and assigns of each of the Parties hereto. Each Party hereto represents to the other that the representative signing this Agreement on its behalf has been duly authorized to sign on that Party's behalf and that such signature is sufficient to legally bind that Party.

IN WITNESS WHEREOF, the Parties hereto, intending to be legally bound by the provisions hereof, have set their hands and seals this ____ day of June, 2016

Commonwealth of Massachusetts
Through the Executive Office for
Administration and Finance

Massachusetts Water Resources Authority

By: _____

By: _____

Duly Authorized

Frederick A. Laskey, Executive Director
Duly Authorized

Commonwealth of Massachusetts
Through the Department of the
State Treasurer

By: _____

Duly Authorized



STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 8, 2016
SUBJECT: Bond Defeasance of Future Debt Service



COMMITTEE: Administration, Finance & Audit

VOTE
 INFORMATION

Matthew R. Horan, Treasurer 
Sean R. Cordy, Sr. Financial Analyst 
Preparer/Title


Thomas J. Durkin
Director of Finance

This staff summary is one of two presented at this meeting to discuss proposed changes to the utilization of the anticipated \$37 million FY16 surplus. These proposed changes are a result of a recent opportunity that will allow MWRA to utilize \$32.0 million of the projected surplus to defease the approximately \$33.7 million watershed land debt service obligation to the Commonwealth. At the May 2016 meeting, a defeasance of \$30 million of outstanding bonds was approved. Staff are now seeking to amend that authorization to allow for a defeasance of \$5.4 million comprised of \$5.0 million from the FY16 surplus and \$0.44 million from the remaining FY15 surplus to prepay debt coming due in FY17 through FY22 (\$5.08 million in principal and \$0.37 million in interest).

RECOMMENDATION:

To amend the FY16 defeasance authorization from an aggregate principal amount of approximately \$26,350,000 to \$5,080,000 of outstanding MWRA senior bonds in order to reduce the debt service requirement by approximately \$6,220,300 in the FY17 through FY22 timeframe.

DISCUSSION:

At the May 11, 2016 meeting, the Board approved a defeasance of outstanding MWRA bonds utilizing \$30 million from the projected \$37 million FY16 surplus. Since the May 2016 meeting, MWRA was presented with the opportunity to prepay the watershed land debt service of approximately \$5.6 million due each year between FY17 and FY22. MWRA would pay the Commonwealth \$32.0 million to defease the \$33.7 million in remaining debt service obligation saving approximately \$1.7 million which is approximately \$275,948 higher than the projected \$1.4 million in savings from the defeasance approved at the May 2016 Board meeting. The prepayment of the watershed debt obligation is discussed in more detail in another staff summary presented at this meeting.

After the payment of \$32.0 million to the Commonwealth, staff anticipate that the approximately \$5.0 million remaining in the FY16 surplus could be utilized for a defeasance of MWRA bonds. In addition to the \$5.0 million from the projected FY17 surplus there is \$437,711 in FY15 surplus funds remaining (beyond the \$26.5 million used for defeasance), which were allocated to the defeasance account to be utilized as part of the FY16 defeasance. Staff are requesting approval to use \$5.4 million, comprised of \$437,711 from FY15 and \$5.0 million from FY16, to execute a defeasance to lower the rate revenue requirement between FY17 and FY22.

Staff reviewed all available defeasance candidates, and have identified the maturities of the series listed in the following table as the most advantageous defeasance candidates. The proposed defeasance reduces debt service by a total of \$6.2 million between FY17 and FY22.

| Series | Maturity Date | Principal | Defeasance Cost * | Budgetary Savings | | | | | |
|--------|---------------|---------------------|---------------------|-------------------|-------------------|-------------------|---------------------|---------------------|-------------------|
| | | | | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| 2009B | 8/1/2020 | \$ 2,450,000 | \$ 2,817,500 | \$ 122,500 | \$ 122,500 | \$ 122,500 | \$ 2,572,500 | | |
| 2011C | 8/1/2022 | \$ 720,000 | \$ 720,000 | \$ 28,800 | \$ 28,800 | \$ 28,800 | \$ 28,800 | \$ 28,800 | \$ 748,800 |
| 2012A | 8/1/2021 | \$ 1,910,000 | \$ 1,910,000 | \$ 95,500 | \$ 95,500 | \$ 95,500 | \$ 95,500 | \$ 2,005,500 | |
| | Total | \$ 5,080,000 | \$ 5,447,500 | \$ 246,800 | \$ 246,800 | \$ 246,800 | \$ 2,696,800 | \$ 2,034,300 | \$ 748,800 |

*Escrow cost is only anticipated funds from surplus and does not include current year deposits. Assumes no interest earned on escrow.

The total debt service reduction attributable to the defeasance is approximately \$772,800 higher than the defeasance cost because the 2011 Series C and 2012 Series A bonds are currently callable on August 1, 2016 and the 2009 Series B bonds on August 1, 2019. The payment of these bonds on the call date will yield interest savings, as a result of paying off the bonds prior to maturity without interest accruing.


Staff anticipate using funds from the FY15 and projected FY16 surpluses to purchase governmental securities in an amount sufficient to make all future interest and principal payments on the bonds to be defeased, offset by the interest earned on the Treasury securities. Staff anticipate executing this defeasance during July 2016.

If the FY16 surplus, after the payment to the Commonwealth, is less than the amount necessary to complete the defeasance, staff are requesting authorization to use Bond Redemption as supplemental funding for the escrow. If the FY16 surplus is greater than the \$5.0 million needed for the proposed defeasance, staff will present options to the Board for its utilization after the close of the fiscal year.

BUDGET/FISCAL IMPACT:

The defeasance of these bonds will decrease the FY17 through FY22 debt service requirement by \$6.2 million. The cost associated with bond counsel and financial advisory services will be paid out of the Treasury Department’s professional services budget.


STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Disclosure Counsel Services
Greenberg Traurig, LLP
Contract F241

COMMITTEE: Administration, Finance & Audit

VOTE
 INFORMATION


Michele S. Gillen
Director, Administration


Thomas J. Durkin
Director, Finance

Matthew R. Horan, Treasurer 
Preparer/Title

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract F241 to Greenberg Traurig, LLP for Disclosure Counsel Services and to authorize the Executive Director, on behalf of the Authority, to execute contract F241 in an amount not to exceed \$652,000 and for a term of four years from the Notice to Proceed.

DISCUSSION:

MWRA requires the services of Disclosure Counsel for all of its bond issuances to ensure compliance with applicable rules and regulations from the Securities and Exchange Commission, as well as other state and federal requirements. In addition to the transactional work, they also assist with ongoing disclosure including material event notices and MWRA's annual continuing disclosure filings. When MWRA issues its own debt, Disclosure Counsel drafts a Preliminary Official Statement (POS). The POS contains a detailed overview of the MWRA, including its operational and financial status, any pending regulatory or legal issues as well as information on the General Bond Resolution and other security for the bondholders. Once the sale has been completed, Disclosure Counsel drafts the final Official Statement, which includes all the relevant information on the bonds as a result of the sale, including principal amortization, interest rates, call dates and other similar information.

In addition to the offering documents for MWRA's bond issuances, Disclosure Counsel develops the Information Statement required when the Massachusetts Clean Water Trust issues new debt and reviews the information related to MWRA in other entities' Preliminary Official Statements, including the Boston Water and Sewer Commission and Boston Redevelopment Authority. An information statement is similar to an Official Statement, but has several sections which are

modified to reflect the nature of the borrowing. Disclosure Counsel reviews the closing documents for all bond transactions to ensure compliance with disclosure requirements and issues a legal opinion indicating that the MWRA's disclosure is in compliance with applicable rules and regulations. MWRA's disclosure counsel also provides assistance with the ongoing management of MWRA's debt portfolio on an as needed basis.

PROCUREMENT PROCESS:

The procurement process to select Disclosure Counsel utilized a one step Request for Qualification Statements and Proposals (RFQ/P), which was issued on April 6, 2016. In addition to MWRA's standard procurement advertising requirements, copies of the advertisement were sent directly to six firms. As in the past, firms serving as either MWRA's Bond Counsel or as Trustee's counsel were prohibited from proposing.

Four firms, Greenberg Traurig (Greenberg), Hinckley & Allen LLP (Hinckley), Locke Lord, LLP (Locke), and Mintz, Levin, Cohn, Ferris, Glovsky, and Popeo, P.C. (Mintz Levin), submitted proposals on April 29, 2016.

As part of the procurement process, proposers are required to provide MWRA with Disclosure Statements assuring that firm's engagement would not result in a form of Conflict of Interest or other activity prohibited by Rules 1.7-1.10, inclusive, under Rule 3:07 of the Massachusetts Supreme Judicial Court Rules (SJC Rules). Those statements are reviewed by a separate Disclosure Panel, comprised of staff from Procurement and the Law Division, which report any areas of non-compliance or concern to the Selection Committee. After review of the Disclosure Statements and clarifications received from Greenberg, Locke, and Mintz the panel determined that those firms did not have conflict of interest or other prohibited activity under the SJC Rules. The Disclosure Panel determined that since Hinckley serves as bond counsel to the Massachusetts Clean Water Trust there could be differing interests and a potential conflict of interest, whether real or implied, and as a result the Disclosure Panel concluded that Hinckley was not eligible to serve as disclosure counsel and reported this to the Selection Committee.

The Selection Committee evaluated and ranked the proposals based on the criteria contained in the RFQ/P (Cost, Qualifications and Key Personnel, Experience and Past Performance, Capacity/Organization, Management and Technical Approach, and MBE/WBE Participation). The proposals for Disclosure Counsel Services were ranked as follows:

| Rank | Firm | Cost | Total Points | Total Ranking Points |
|-------------|-------------------|--------------|---------------------|-----------------------------|
| 1 | Greenberg Traurig | \$ 652,000 | 446 | 5 |
| 2 | Mintz Levin | \$ 685,345 | 384 | 11 |
| 3 | Locke Lord | \$ 1,093,190 | 349 | 14 |

All three proposals reviewed by the Selection Committee demonstrated significant relevant experience and are well respected in the municipal bond market. Greenberg's proposal offered the lowest overall cost to MWRA, which reflected a business decision by the firm to discount its services, including agreeing to provide some services without charge. Greenberg also did not include any escalation in prices, or hourly rates, over the term of the contract. Greenberg has

served as MWRA's Disclosure Counsel for the last eight years and has done an excellent job. Both Locke and Mintz Levin proposed very qualified staff to provide Disclosure Counsel Services, but at higher overall cost than those proposed by Greenberg. Staff believe that Greenberg is qualified and possesses the necessary experience to provide these services and therefore recommend award of the contract to Greenberg.

BUDGET/FISCAL IMPACT:

Most costs associated with Disclosure Counsel Services are included as part of the cost of issuance and are funded from the proceeds of bond transactions. A small portion of the work is funded through the CEB. The FY17 CEB has sufficient funds to pay for the work included in this contract.

MBE/WBE PARTICIPATION:

No minimum MBE/WBE participation requirements were established due to the lack of subcontracting opportunities.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 8, 2016
SUBJECT: MWRA FY17 Insurance Program Renewal



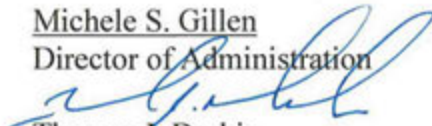
COMMITTEE: Administration, Finance & Audit

 INFORMATION
 X VOTE

Paul F. Whelan, Risk Manager
Preparer/Title



Michele S. Gillen
Director of Administration



Carolyn Francisco Murphy
Director of Procurement

Thomas J. Durkin
Director of Finance

MWRA's Insurance Program is renewed on an annual basis at the beginning of each fiscal year. Annual renewals are required due to the insurance industry's reluctance to provide firm pricing for more than a one-year period. Last year, however, staff was able to secure a two-year Property Insurance policy which provided a fixed rate for years FY16 and FY17. All other policies expire on June 30, 2016 and require renewal. This year's recommended program renewal totals \$1,567,273 which is \$21,590 or 1.4% less than the expiring FY16 program.

RECOMMENDATION:

To approve awards to the lowest eligible and responsive proposers for insurance policies, bonds and related broker services for MWRA's FY17 Insurance Program, and to authorize the Executive Director, on behalf of the Authority, to execute contracts for broker services, for the terms, premiums and fees described below, and incorporated by reference for the record, resulting in a total program amount not to exceed \$1,567,273 for FY17:

- (1) Workers' Compensation Excess Policy with New York Marine Insurance Co., submitted by broker Willis of Massachusetts, Inc. (Willis Towers Watson), for the period beginning July 1, 2016, through June 30, 2017, with a \$25 million limit and a \$500,000 self-insured retention, for a premium of \$165,741;
- (2) Property Policy (including Boiler & Machinery coverage) with FM Global Insurance Co., for the second year of the two-year policy, from July 1, 2016, through June 30, 2017, with various limits of coverage and a \$2.5 million self-insured retention, resulting in a FY17 premium of \$730,622;

- (3) General Liability Policies (including Automobile Liability, Marine Liability, Wharfingers, Limited Pollution and Employment Practice Liability) with Lexington Insurance Company submitted by broker Richards Robinson Sheppard Insurance, LLC (Richards Robinson Sheppard), for the period beginning July 1, 2016 through June 30, 2017, with a \$25 million limit and a \$2.5 million self-insured retention, for a premium of \$291,200;
- (4) Excess Liability Policies with insurance companies to be determined and submitted by broker Richards Robinson Sheppard, for the period beginning July 1, 2016, through June 30, 2017, providing a combined total of \$75 million of excess liability coverage for a total combined premium not to exceed \$255,000;
- (5) Public Official's Liability Policy with ACE USA Insurance Co., submitted by broker Arthur J. Gallagher Risk Management Services Inc. (Arthur J. Gallagher & Co.), for the period beginning July 1, 2016, through June 30, 2017 with a \$5 million limit and a \$1 million self-insured retention, for a premium of \$46,460, including broker commission;
- (6) Fiduciary Liability Policy with Hudson Insurance Co., submitted by broker Alliant Insurance Services Inc. (Alliant Insurance Services), for the period beginning July 1, 2016, through June 30, 2017, with a \$5 million limit and a \$1 million retention, for a premium of \$9,246 and a broker fee of \$1,100 reflected in item (9) below;
- (7) Public Official's/Crime Bond with Great American Insurance Co., submitted by broker Richards Robinson Sheppard, for the period beginning July 1, 2016, through June 30, 2017, with a \$1 million limit and a \$25,000 deductible for a premium of \$5,154;
- (8) Treasurer's Bond with a \$1 million limit with an insurance company to be determined in an amount not to exceed \$2,500, with a one-year term beginning January 2017; and
- (9) Broker contracts with Richards Robinson Sheppard Insurance, LLC for an amount of \$40,000, Willis of Massachusetts, Inc. for an amount of \$20,250, Alliant Insurance Services, Inc. for \$1,100 and Arthur J. Gallagher Risk Management Services Inc. for a commission included within the policy premium, from notice of award through June 30, 2017.

BACKGROUND:

MWRA's insurance program consists of various types of coverage including: Excess Workers' Compensation, Property (including Boiler and Machinery coverage), General Liability, Excess Liability, Public Official's Liability, Fiduciary Liability, Public Official's/Crime Bond and Treasurer's Bond. The Excess Workers' Compensation policy is required by state statute and is a prerequisite for MWRA to operate as a self-insured entity for Workers' Compensation benefits. Insurance coverage required by MWRA's Enabling Act includes Public Official's/Crime Bond and Treasurer's Bond which serve to protect the Authority against losses due to fraudulent or dishonest

acts, failure to perform duties faithfully or improper accounting of monies or property by employees. Other policies are maintained in order to protect MWRA assets and limit MWRA's financial exposure to loss. In addition, policies are maintained to comply with covenants contained within MWRA's General Revenue Bond Resolution. All policies under the current program (except the Property policy and Treasurer's Bond) expire on June 30, 2016, and require renewal.

DISCUSSION:

MWRA's insurance program has been renewed on an annual basis for more than ten years due to the reluctance on the part of insurance companies to issue policies for more than a one-year term. Last year, however, staff was able to secure a two-year property policy for years FY16 and FY17 with the application of a fixed rate charge. For FY17, staff again conducted a full competitive process for all lines of coverage, except property, in an effort to obtain the most competitive pricing and coverage available. Staff anticipated a flat to modest increase in rates and premiums on all lines of coverage as insurance companies have continued to benefit from a favorable stock market performance and the absence of major catastrophic losses. When combined with variables specific to MWRA, such as the increased replacement value of insured property due to inflation and increased estimated payrolls, staff anticipated a 2% increase in the overall insurance program cost.

This year staff again made an effort to attract multi-year policies but none were received. Premiums for other policies either remained the same as the expiring policy or decreased, with the exception of the Workers Compensation Excess policy which came in at 4% increase, consisting of a 2% rate increase applied to a 3% increase in payroll exposure.

Overall, the insurance program recommended is \$21,590 (or 1.4%) less than the expiring FY16 program. This decrease is primarily due to very competitive pricing received for the General and Excess Liability policies and associated broker fees.

PROCUREMENT PROCESS:

In February, staff began the procurement process by advertising for Letters of Interest from insurance brokers and direct writers¹. In addition, staff sent direct solicitations to 19 brokers that were known to staff as having an interest or had participated in previous MWRA insurance procurements. In response to the solicitation, six brokers indicated their interest in participating and provided their list of preferred insurance markets. Staff reviewed all requests and assigned more than 25 insurance companies to the brokers. Technical specifications and rating data were prepared and sent to five firms. During the procurement process, staff received and responded to multiple questions and requests for additional information and issued one information item providing answers to questions, further information, and rating data. On Wednesday, May 4th, four proposals were received.

Proposals received varied with respect to the lines of coverage. As shown on the attached chart, multiple proposals were received for some lines of coverage and others were limited. MWRA

¹ A direct writer is an insurance company that deals directly with customers and does not require a broker as an intermediary.

reserved its right to select different lines of coverage from different broker proposals. All proposals were reviewed by MWRA's Insurance Consultant, Kevin F. Donoghue and Associates (KFDA), for adherence to insurance technical specifications and then rated by cost and coverage. The approvals requested herein represent those recommended by MWRA's Insurance Consultant for each line of coverage sought. The attached chart provides a summary of all lines of coverage with the limits, deductibles, and premiums comparing the expiring FY16 premiums with the proposed FY17 premiums. Below is a brief summary of each line of coverage.

Workers' Compensation Excess – One proposer, Willis Towers Watson, submitted two options for this line of coverage with New York Marine Insurance Co. (the incumbent carrier). A quote for a policy with a \$500,000 self-retention level and a \$25 million limit, for an annual premium of \$165,741 was provided. This quote is \$6,580 (or 4%) more than last year's cost for this same coverage. This increase in premium is the result of a 2% rate increase applied to MWRA's



estimated payroll for FY17. As requested, New York Marine Insurance Co. also provided a quote for a similar policy with a \$750,000 self-insured retention. This premium was \$139,881, or \$25,860 less than the premium with a \$500,000 self-insured retention. Staff have reviewed historical workers compensation claims data and have concluded that the potential premium savings does not justify assuming the risk of an additional \$250,000 for each claim or occurrence, as just one catastrophic claim would eliminate more than ten years of accumulated premium savings. In addition, the maximum self-retention level currently allowed by the Division of Insurance is \$500,000. Staff recommend the purchase of the policy from New York Marine Insurance Co. with a \$500,000 per occurrence self-insured retention and \$25 million limit through broker Willis Towers Watson for a premium amount of \$165,741, and an associated broker fee of \$20,250. The graph above shows MWRA's historical premium cost for this line of coverage over the past ten years.

Property Insurance (including Boiler & Machinery) – Last year, one multi-year proposal was received for this line of coverage from direct writer FM Global Insurance Company (FM Global), the incumbent provider. The approved policy was for two years from 7/1/15 to 6/30/17 with a fixed rate charge applicable to each year. We are now entering the policy's second year. The FY17 premium is \$730,622 and is based upon the established fixed rate applied to MWRA's Total Insured Value (TIV) for FY17. In addition, MWRA is again eligible for a FY17 Membership Credit of \$79,398² which is included in this premium. Because FM Global is a direct writer, there are no broker fees associated with this policy.

² The membership credit represents 10% of last year's premium and is available to the MWRA based on its favorable tenure with FM Global and the company's annual financial condition. Membership credits are determined on an annual basis.

General Liability – Two responses were received for General Liability offering the specified \$25 million in coverage. Of these two, the lowest cost proposal received was from broker Richards Robinson Sheppard with Lexington Insurance Company (incumbent), for a premium of \$291,200 with an associated broker fee of \$40,000, which also includes fees associated with placement of the Excess Liability coverage. The second proposal was from Arthur J. Gallagher & Co. with insurers Allied, Civic Risk and Allied World, for a premium of \$313,389 and an associated broker fee of \$35,000. MWRA's Insurance Consultant, KFDA, reviewed the terms, conditions and coverage afforded by the proposed policies and while some terms and conditions varied between the two policies, the lower cost Lexington Insurance Company policy was recommended. This premium represents a \$33,800 (or 10%) decrease from the expiring policy and a ten percent reduction in broker fees. Staff recommend the acceptance of the proposal from Richards Robinson Sheppard with a policy provided by Lexington Insurance Company for a premium of \$291,200 and an associated broker fee to Richard Robinson Sheppard of \$40,000, which includes fees associated with placement of the Excess Liability policies outlined below.

Excess General Liability – The recommended broker for General Liability coverage, Richards Robinson Sheppard, was directed to solicit quotes from insurance companies for the additional excess layers of liability coverage³. The companies and final premium costs for the additional \$75 million of excess liability coverage were still being developed and negotiated and were not available in time for this Board meeting. In order to keep all insurance related items together in one staff summary, staff are recommending a not to exceed amount of \$255,000 for this item. This amount represents a 4.5% decrease in premium from the expiring FY16 policies, however, staff believe this decrease is attainable based on the reduction in price for the underlying general liability policy. Staff will report back to the Board on the status of this item as part of the FY17 Final Current Expense Budget staff summary and presentation on June 29, 2016.

Public Official's Liability – Two proposals were received for this line of coverage with the specified \$5 million limit and \$1 million retention. One from the incumbent, ACE USA, submitted through Arthur J. Gallagher & Co., for a premium of \$46,460 and another from RSUI Insurance, submitted by Alliant Insurance Services, for a premium of \$89,892. Both of these proposals included a self-retention of \$1 million. RSUI Insurance also provided an additional quote with a higher \$2 million self-retention for a premium of \$69,219, which is still more expensive than the ACE USA proposal. Staff recommend the placement of this coverage with ACE USA for a premium of \$46,460, which includes broker commission, through Arthur J. Gallagher & Co.

Fiduciary Liability – Two proposals were received for this line of coverage with the specified \$5 million limit and \$1 million self-retention. One from Hudson Insurance Co., submitted through Alliant Insurance Services, for a premium of \$10,346 (including fee of \$1,100) and another from incumbent, AXIS Insurance Company, submitted through Arthur J. Gallagher & Co., for a premium of \$10,912 (including a broker commission of \$1,636). Both proposers included additional pricing options for policies with either a higher limit of coverage or a lower self-retention level. These

³ Excess liability policies cannot be purchased until the underlying policy is first established.

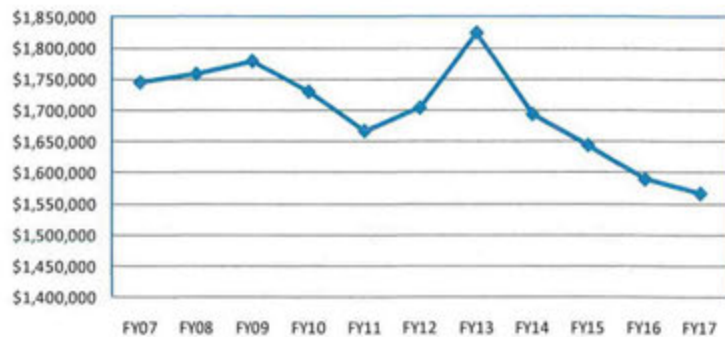
options were reviewed by MWRA's Insurance Consultant, KFDA, and it was their recommendation to stay with the existing \$5 million limit of coverage and \$1 million self-retentions as originally specified. Accordingly, staff recommend approval of the Hudson Insurance policy offered through Alliant Insurance Services with a \$5 million limit and \$1 million self-retention, for a premium of \$10,346, which includes an associated \$1,100 broker fee. This represents a decrease of \$557 from the expiring FY16 policy.

Public Official's/Crime Bond – Two proposals were received for this line of coverage. The first, from incumbent broker Richards Robinson Sheppard with Great American Insurance Company, with a premium cost of \$5,154. The second proposal received was from Hanover Insurance Co. through Alliant Insurance Services with a premium of \$5,441 (including commission). Both policies were reviewed by MWRA's Insurance Consultant and the policy form and coverage provided by the Great American policy was recommended. Staff recommend purchase of this policy from Great American Insurance Company through broker Richards Robinson Sheppard for an amount of \$5,154. This represents a flat renewal from the expiring FY16 policy.

Treasurer's Bond – The Treasurer's Bond is required by the MWRA Enabling Act and is written in the name of the person holding the position of Treasurer. Due to personnel changes in this position, the renewal of this bond is off-cycle from the rest of the insurance program and does not expire until January 2017. To keep all insurance program approvals consolidated in one staff summary, staff included a not-to-exceed amount of \$2,500 for the renewal of this bond upon its expiration. The broker fee associated with placement or renewal of this bond is included in the broker scope of services.

In conclusion, staff recommend the renewal of MWRA's insurance program for FY17, with the various coverages, limits and self-insured retention levels from various brokers and insurance companies as outlined above and as included on the attached chart. If approved, the FY17 total insurance cost will be \$1,567,273 representing a \$21,589 (or 1.4%) decrease in costs from the expiring FY16 program. The chart at right provides MWRA's Insurance Program historical costs for the past ten fiscal years.

MWRA
Insurance Program
Historical Premium Costs



BUDGET/FISCAL IMPACT:

The Draft Final FY17 CEB includes \$2.0 million for the total cost of maintaining MWRA's insurance program; consisting of \$1.6 million for the payment of premiums and fees and \$.4 million for payment of estimated claims and damages in FY17. The budget contains sufficient funds for the

renewal of the insurance program outlined above.

MBE/WBE PARTICIPATION:

There were no minimum MBE and WBE participation requirements established for this procurement, as the nature of the services being provided does not allow for subcontracting.

MWRA FY17 INSURANCE PROPOSALS

| EXPIRING FY16 | | | | PROPOSED FY17 | | | |
|---|--|--|------------------------|--|----------------------------|--|---|
| Item # | Coverage | Deductible/ Limit | Actual FY16 Premium | Current (FY16) Insurance Co. (Broker) | Recommended FY17 Bids | FY17 Insurance Co. (Broker) | Notes |
| 1 | Excess Workers Comp. | \$500K / \$25M \$750K/\$25M | 159,161 | N.Y. Marine (Willis of MA) | 165,741 139,881 | N.Y. Marine (Willis Towers Watson) N.Y. Marine (Willis Towers Watson) | Net premium increase of 4% comprised of 2% rate increase applied to 3% increase in exposure (FY17 payroll estimate.) The \$500K deductible is maximum allowed by Division of Insurance. |
| 2 | Property Insurance (including Boiler & Machinery) | \$2.5M / \$300M | 713,577 | FM Global (No Broker) | 730,622 | FM Global (No Broker) | FY17 premium is based on a fixed rate applied to a 2% increase in Total Insured Value. FY17 premium is net of \$79,398 Membership Credit available to MWRA for FY17. FY17 is the second year of a two year policy. |
| Note: This is a two year policy (FY16 & FY17) approved by the Board in FY16. | | | | | | | |
| 3 | General Liability (Incl., Auto, Marine, Wharfingers, Limited Pollution and Employment Practice Liability) | \$2.5M/\$25M \$2.5M/\$25M | 325,000 | Lexington Insurance Co. (Richards Robinson Sheppard) | 291,200 313,389 | Lexington Insurance Co. (Richards Robinson Sheppard) Allied/Civic Risk/Allied World (Arthur J. Gallagher & Co.) | Premium decrease of 10%. Lexington Ins. premium includes 4% surplus lines fees. |
| 4 | Excess Liability | \$25M/\$100M | 266,975 | Ironshore, Great American, ACE (Richards Robinson Sheppard) | 255,000 | Ironshore, Great American, AWAC (Richards Robinson Sheppard) | Premium shown is not-to-exceed amount. This coverage must follow the selection of the General Liability coverage. Amount shown is 4.5% decrease from last year. |
| 5 | Public Official's Liability | \$1M / \$5M \$1M / \$5M \$2M / \$5M | 47,187 | ACE USA (W. Gallagher) | 46,460 89,892 69,219 | ACE USA (Arthur J. Gallagher & Co.) RSUI (Alliant Insurance Services) RSUI (Alliant Insurance Services) | Premium decrease of \$727 from last year. ACE premium includes \$6,969 broker commission. RSUI premiums includes \$7,200 broker fee. |
| 6 | Fiduciary Liability | \$1M / \$5M \$1M / \$5M \$1M / \$10M | 10,902 | AXIS (W. Gallagher) | 10,346 10,912 14,516 | Hudson (Alliant Underwriting Svcs) AXIS (Arthur J. Gallagher & Co.) Hudson (Alliant Insurance Services) | Premium decrease of \$557 from last year. Hudson quote shown includes \$1,100 broker fee. AXIS quote includes broker commission of \$1,636. Unsolicited pricing for lower retention levels (not shown) were also received and considered. |
| 7 | Public Official's/Crime Bond | \$25K / \$1M | 5,154 | Great American (Richards Robinson Sheppard) | 5,154 5,441 | Great American (Richards Robinson Sheppard) Hanover (Alliant Insurance Services) | Premium is flat from prior year. Bids shown include Broker Commission/Fees. |
| 8 | Treasurer's Bond | \$0/\$1M | 1,656 | Travelers Casualty & Surety (Richards Robinson Sheppard) | 2,500 | To Be Determined (Richards Robinson Sheppard) | Renews in January 2017. Amount shown is not-to-exceed amount. |
| 9 | Broker Fees -Various | | 59,250 | Various - See Note 2 | 60,250 | Various - See Note 3 | Increase of \$1,000 from FY16 |
| Total Program Cost | | | \$ 1,588,862 | | \$ 1,567,273 | | Total Program Decrease of \$21,589 or 1.4%. |

Note 1: Proposed for approval shown in bold.

Note 2: Broker Fees are \$44,000 for Richards Robinson Sheppard and \$15,250 for Willis of MA. All other broker fees are included in policy premiums shown.

Note 3: Broker Fees are \$40,000 for Richards Robinson Sheppard and \$20,250 for Willis Towers Watson. Alliant Broker Fee of \$1,100 for Fiduciary policy and Arthur J. Gallagher's commission for Public Official Policy are included in premiums shown.



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
Fax: (617) 788-4899
TTY: (617) 788-4971

WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

Chair: P. Flanagan
Vice-Chair: J. Walsh
Committee Members:
A. Blackmon
J. Carroll
J. Foti
A. Pappastergion
B. Peña
H. Vitale

to be held on

Wednesday, June 8, 2016

Location: 100 First Avenue, 2nd Floor
Charlestown Navy Yard
Boston, MA 02129

Time: Immediately following AF&A Comm.

AGENDA

A. Approvals

1. Wastewater Advisory Committee Contract
2. Approval of One New Member of the Wastewater Advisory Committee

B. Contract Awards

1. Technical Assistance Consulting Services, Deer Island Treatment Plant: Brown and Caldwell, Contract 7501; Stantec Consulting Services, Inc., Contract 7502; and AECOM Technical Services, Inc., Contract 7503

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Wastewater Policy and Oversight Committee

May 11, 2016

A meeting of the Wastewater Policy and Oversight Committee was held on May 11, 2016 at the Authority headquarters in Charlestown. Vice-Chairman Walsh presided. Present from the Board were Messrs. Carroll, Foti, Pappastergion, Peña, and Vitale. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Dave Kubiak, John Vetere, Nava Navanandan, Cori Barrett, Marty McGowen, and Bonnie Hale. The meeting was called to order at 11:10 a.m.

Information

Progress of Cambridge-Implemented CSO Projects and Projected Financial Assistance through September 2016

Staff summarized this information item, and there was general discussion and question and answer.

Contract Awards

*Clinton Wastewater Treatment Plant - Commercial Gas Service/Main Agreement with National Grid: Contract 7528

Staff described the project to convert the facility's heating system from oil to gas and the terms of the agreement. The Committee recommended approval of the contract award/agreement with National Grid (ref. agenda item B.1).

Contract Amendments/Change Orders

*Nut Island Emergency Demolition and Duct Cleaning: Daniel O'Connell's Sons, Contract OP-320, Change Order 2

Staff discussed the change order. The Committee recommended approval of Change Order 2 (ref. agenda item C.1).

The meeting adjourned at 11:25 a.m.

* Approved as recommended at May 11, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 8, 2016
SUBJECT: Wastewater Advisory Committee Contract



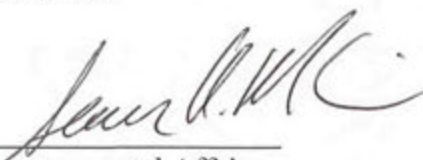
COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE

Wendy Leo, Senior Program Manager
Preparer/Title



Sean Navin
Director, Intergovernmental Affairs



RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached hereto, with the Wastewater Advisory Committee for a term of one year, from July 1, 2016 to June 30, 2017, for a total contract cost of \$69,017.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Wastewater Advisory Committee (WAC) and the Water Supply Citizens Advisory Committee (WSCAC). A separate staff summary presented at this meeting recommends authorization for the Executive Director to execute a similar contract with WSCAC for FY17.

The Wastewater Advisory Committee (WAC) was created in 1990 to offer independent recommendations on wastewater programs and policies; it is a successor to the Facilities Planning Citizen Advisory Committee established during the planning of the new Deer Island Treatment Plant. WAC's members include citizen advocates, representatives from the Metropolitan Area Planning Council, watershed associations, the engineering and business communities, environmental law, and science and education fields.

WAC's monthly meetings are geared towards engendering discussion and facilitating timely recommendations to MWRA's Board of Directors and staff on wastewater policies, projects, and program initiatives directly related to MWRA, and public concerns. Current topics of interest to WAC include operations and maintenance, NPDES delegation, climate change adaptation, receiving water monitoring, residuals management, and wastewater/water policy and funding initiatives in Massachusetts.

Pursuant to the terms of the attached contract, WAC's members are approved by MWRA's Board of Directors. WAC elects its chairman and employs an Executive Director (selected by WAC's membership with the concurrence and approval of MWRA's Public Affairs Department). WAC's current chairman is Taber Keally and WAC's current Executive Director is Andreae Downs. A separate staff summary is being presented at this meeting requesting approval of a new member.

WAC's proposed FY17 contract cost is 2.5% higher than in FY16, due to slight escalations in salary rate and health insurance reimbursement. The wages line item in the proposed FY17 contract is \$58,629; WAC's budget assumes the Executive Director is a part-time position, and will work an average of approximately four days per week. WAC's reimbursable expenses include: a) 80% reimbursement for a portion of the Executive Director's health insurance costs up to an annual maximum of \$8,763; and b) stationery, payroll services expenses, bank expenses, miscellaneous expenses, mass transit fares, and highway tolls and parking expenses for meeting attendance for WAC's Executive Director and members, up to \$1,625, the same as for FY16. Office space and support services for WAC are provided by MWRA in the Charlestown Navy Yard. The proposed total FY17 WAC funding is \$69,017.

A separate staff summary is being presented at this meeting recommending authorization for the Executive Director to execute a similar contract with the Water Supply Citizens Advisory Committee for FY17.

BUDGET/FISCAL IMPACT:

Sufficient funds for the WAC contract are included in the Proposed FY17 Current Expense Budget.

ATTACHMENT:

Copy of Agreement between Massachusetts Water Resources Authority and Wastewater Advisory Committee

AGREEMENT

BETWEEN

MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

WASTEWATER ADVISORY COMMITTEE

This Agreement ("Agreement") is by and between the Massachusetts Water Resources Authority ("Authority"), a body politic and corporate and a public instrumentality of the commonwealth, created by Chapter 372 of the Acts of 1984, with offices at Building 39, Charlestown Navy Yard, Charlestown, Massachusetts 02129 and the Wastewater Advisory Committee ("WAC") a body created by the Authority's Board of Directors ("Board") (collectively "parties").

WHEREAS, the WAC was created to offer independent advice to the Board and to the professional staff of the Authority, regarding wastewater programs and policies directly related to the Authority; and

WHEREAS, the WAC will (i) review and comment to the Authority on wastewater reports and related proposed documents, and (ii) offer independent commentary and advice on current and proposed wastewater program and policy directions to further Authority objectives; and

WHEREAS, the WAC membership is designed to reflect the knowledge and interest of major affected constituencies, including engineering, construction, business/industry, planning, academic research, and environmental advocacy; and

WHEREAS, the Authority desires the WAC to advise the Authority in wastewater planning, and

WHEREAS, the WAC desires to have a role advising the Authority on such matters;

NOW, THEREFORE, for the consideration of mutual promises contained herein, the Authority and WAC agree as follows:

ARTICLE 1. EFFECTIVE DATE

This Agreement shall be effective from July 1, 2016 through June 30, 2017, inclusive.

ARTICLE 2. COMPENSATION, BUDGET, PAYMENT, AND EXPENSES

2.1 The Authority shall make funds available as follows:

(a) Executive Director Salary.

In order to minimize the WAC's expenses and for the WAC's convenience, the Authority shall make direct payments to the WAC for the WAC Executive Director salary. Such payments shall not exceed \$58,629 from July 1, 2016 through June 30, 2017, inclusive. The hourly salary rate (inclusive of payroll taxes) shall be \$40.51 with annual total hours of 1,447 (average 30 hours per week for 49 weeks).

(b) Reimbursable expenses.

The Authority shall reimburse the WAC for 80% of the health insurance for the WAC Executive Director (not to exceed \$8,763), and for stationery, payroll services expenses, bank expenses, and for mileage costs, public transportation costs, highway tolls and parking expenses for meeting attendance by WAC's Executive Director and membership, and for other miscellaneous expenses of the WAC staff approved by the Authority on a case-by-case basis. Such expenses will be reimbursed when submitted to the Public Affairs Unit. Mileage costs will be reimbursed at the prevailing Authority rate per mile.

The percentage rate for reimbursement of health insurance costs shall be changed to that of MWRA staff if the Group Insurance Commission changes the rate.

The total annual expense reimbursement to WAC, excluding health insurance reimbursements, shall not exceed \$1,625.00.

(c) Non-reimbursable expenses.

The following expenses are not reimbursable: meals, entertainment, room and board expenses, fines, fees, or costs assessed as a result of improper or illegal actions on the part of the member, such as parking tickets or speeding fines.

ARTICLE 3. RESPONSIBILITIES OF THE AUTHORITY AND WAC.

(a) The WAC shall employ an Executive Director who is prohibited from being a member of the WAC while serving his or her term as a paid employee. The MWRA Public Affairs Office must concur with and approve the selection of the WAC Executive Director by the WAC. The duties of the Executive Director shall be in accordance with the job description prepared by the WAC, and on file with the Authority.

(b) The WAC shall submit weekly statements to the Authority requesting payment for expenses listed in Article 2. Such requests shall be supplemented or accompanied by time sheets, travel and expense vouchers, and by such other supporting data as may be required by the Authority.

- (c) The WAC shall maintain accounts, records, documents, and other evidence directly pertinent to performance of work under this Agreement. The parties and their duly authorized representatives shall have access to such records, documents, and other evidence for the purpose of inspection, audit, and copying.
- (d) The Authority or its duly authorized agent shall have the right at any and all reasonable times, to examine and audit WAC's records, documents and other evidence.
- (e) This Agreement is subject to the laws dealing with the expenditures of public funds, including Chapter 12A of the Massachusetts General Laws.
- (f) The parties shall agree to any reasonable modifications or changes in this contract that may be required by the Commonwealth of Massachusetts or any of its agencies.
- (g) The WAC acknowledges that the Authority is a state agency for purposes of Chapter 268A of the General Laws (the Massachusetts Conflict of Interest Law) and understands that for the purposes of that law, WAC staff and members are special state employees.
- (h) The WAC shall be responsible for compliance with all applicable provisions and requirements of the Massachusetts Open Meeting Law.

ARTICLE 4. RESPONSIBILITIES OF THE WAC STAFF.

4.1 The WAC staff shall be responsible for the following tasks:

- (a) aiding the WAC in its tasks under Article 6, educating the public, and acting as liaison with the Authority and its staff;
- (b) maintaining financial records, minutes of the WAC meetings, and other WAC records;
- (c) providing to the Authority copies of the notices for and minutes of all meetings of WAC and of all WAC correspondence relative to Authority projects and proposals as soon as such materials are available; and
- (d) administering and maintaining compliance by all its members and staff with the provisions of the Massachusetts Conflict of Interest Law including, without limitation, those mandatory provisions relating to: (i) annual distribution to members and staff of the State Ethics Commission's (SEC) Summary of Law and maintenance and archiving of acknowledgements of receipt of the Summary of Law from all members and staff, and (ii) compliance by members and staff with the SEC's bi-annual educational training exercises.

ARTICLE 5. MEMBERSHIP, MEETINGS, TERMS.

5.1 The WAC membership, meetings and terms shall be as follows:

- (a) The WAC will have a maximum of twenty (20) members ("Members") approved by the Board. (Alternates or designees are prohibited).
- (b) The WAC shall meet once per month and maintain records of its meetings.
- (c) To the extent reasonable, Members will meet as a committee of the whole, without resort to subcommittees.
- (d) Members will elect their chairman.
- (e) Members' terms will be three (3) years; members may succeed themselves.
- (f) Members unable to maintain reasonable participation in the committee's work will be expected to resign. The Authority's Public Affairs Unit, in consultation with the WAC chairman, will nominate a replacement for Board approval.

ARTICLE 6. WAC TASKS.

The WAC shall undertake the following tasks:

6.1 Wastewater Policies and Programs Review.

Advise the Authority staff and Board. Participate in review and evaluation of wastewater management plans (e.g., local limits, I/I, CSO), reports and new ideas for programs. Provide comments, information, advice, recommendations and guidance as to the direction, intent and execution of wastewater planning and policy directly related to MWRA.

6.2 Outreach and Education.

Strive to increase citizen participation and education by providing assistance in outreach to various groups regarding the Authority's wastewater programs and state wastewater resource policies. Review programs and explain plans and policies to organizations and citizens.

6.3 Working Group Representation.

When possible, provide a representative on Authority working groups, comprising MWRA staff and consultants, related to wastewater programs and policy, including the Advisory Board and its subcommittees and the Water Supply Citizens Advisory Committee.

6.4 Recommendations on Long Term Public Involvement.

Provide to the Authority staff and Board, proposals for continued effective and efficient long term public involvement in wastewater programs.

6.5 Recommendations and Discussion Documents.

The WAC staff shall be responsible for providing to the Authority's staff, Board, and others, recommendation and discussion documents on wastewater programs and policy. Documents may be in the form of minutes of WAC meetings, memoranda, letters, reports, presentations and discussions as appropriate.

ARTICLE 7. MISCELLANEOUS REQUIREMENTS.

7.1 Nondiscrimination and Equal Employment Opportunity

The WAC agrees to comply with the Authority's policy regarding non-discrimination and affirmative action.

ARTICLE 8. GENERAL PROVISIONS.

8.1 Termination of Contract.

(a) This Agreement may be terminated in writing, at any time, in whole or in part, by the Authority for its convenience or in the event of substantial failure by the WAC to fulfill its obligations, or for violation of any of the covenants and stipulations of this Agreement.

(b) If termination is effected by the Authority an equitable adjustment shall be made providing for payment to the WAC for services rendered and expenses incurred prior to the termination.

(c) No termination hereunder may be effected unless the terminating party gives the other party:

- (1) not less than forty-five days' written notice delivered by certified mail, return receipt requested, of intent to terminate; and
- (2) an opportunity for consultation with the other party prior to termination, or
- (3) by mutual agreement of the parties.

8.2 Assignability.

The WAC shall not assign or transfer this Agreement or delegate its responsibility for the performance of services under this contract.

8.3 Integration Clause.

This Agreement integrates and supersedes all prior negotiations, representations, or agreements.

8.4 Amendment.

This Agreement may be amended only by a writing executed by each of the parties.

8.5 Severability of Provisions.

If any provision of this Agreement shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement shall not be deemed affected thereby.

8.6 Massachusetts Law to Govern.

All parties to this Agreement agree that this Agreement shall be governed by and enforced in accordance with the laws of the Commonwealth of Massachusetts.

8.7 Duplicate Originals.

This Agreement may be signed in more than one identical counterpart, each of which shall be deemed to be an original hereof.

8.8 Notices.

Communications shall be deemed to have been made when mailed postage prepaid or delivered among:

Executive Director
Wastewater Advisory Committee
c/o MWRA
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129

Executive Director
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

Director of Public Affairs
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

IN WITNESS WHEREOF, this Agreement is executed as of this ___th day of
June, 2016.

FOR; WASTEWATER ADVISORY COMMITTEE

By: _____
Taber Keally, Chairman

FOR: MASSACHUSETTS WATER RESOURCES AUTHORITY

By: _____
Frederick A. Laskey, Executive Director


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Approval of One New Member of the Wastewater Advisory Committee

COMMITTEE: Wastewater Policy & Oversight

INFORMATION

VOTE

Wendy Leo, Senior Program Manager
Preparer/Title 

Sean Navin
Director, Intergovernmental Affairs 

RECOMMENDATION:

To approve the addition of one new member, Ms. Adriana Cillo of the Boston Water and Sewer Commission, to the Wastewater Advisory Committee.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Water Supply Citizens Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC).

The Wastewater Advisory Committee (WAC) was created in 1990 to offer independent recommendations on wastewater programs and policies; it is a successor to the Facilities Planning Citizen Advisory Committee, which was established during the planning of the new Deer Island Treatment Plant. WAC's members include citizen advocates, representatives from the Metropolitan Area Planning Council, watershed associations, the engineering and business communities, environmental law, and the science and education fields.

WAC elects its chairman and employs an Executive Director (selected by WAC's membership with the concurrence and approval of MWRA's Public Affairs Department). WAC's current chairman is Taber Keally and WAC's current Executive Director is Andreae Downs.

The WAC Contract provides that WAC shall have a maximum of twenty members approved by MWRA's Board of Directors; the Contract prohibits alternates or designees.

The current twelve members on WAC are: Mary Adelstein, citizen advocate; Craig Allen, Commonwealth Research Group, Inc.; Wayne Chouinard, Town of Arlington DPW; Zhanna Davidovitz, Massachusetts Institute of Technology; Ms. Karen Golmer, New England Water Innovation Network; Stephen Greene, Howland-Greene Consultants; Taber Keally (WAC Chairman), Neponset River Watershed Association; Karen Lachmayr, Harvard University; Beth

Miller, independent engineer; James Pappas, retired engineer; Martin Pillsbury, Metropolitan Area Planning Council; Dan Winograd, Woodard & Curran.

In accordance with the current Agreement, WAC nominated the following individual for membership by consensus at its last meeting:

Adriana Cillo

Adriana Cillo has been nominated to WAC membership to replace Elie Saroufim, who has resigned from BWSC. Ms. Cillo is Educational Programs Coordinator for the BWSC, and works in the same division as did Mr. Saroufim. She has nearly twenty years of experience in community outreach and management in political, non-profit and governmental organizations. Her ability to communicate and collaborate across cultures and organizations will be beneficial to WAC.

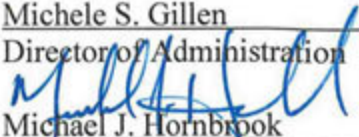
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Technical Assistance Consulting Services – Deer Island Treatment Plant
Brown and Caldwell - Contract 7501
Stantec Consulting Services, Inc. - Contract 7502
AECOM Technical Services, Inc. – Contract 7503

COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

David Duest, Director, Deer Island WWTP
Richard J. Adams, Manager, Engineering Services
Preparer/Title

Michele S. Gillen
Director of Administration

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select Brown and Caldwell, Stantec Consulting Services, Inc. and AECOM Technical Services, Inc. to provide as-needed technical assistance consulting services for the Deer Island Treatment Plant and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7501 with Brown and Caldwell, Contract 7502 with Stantec Consulting Services, Inc. and Contract 7503 with AECOM Technical Services, Inc., each in an amount not-to-exceed \$1,600,000 each and for a contract term of three years from the Notice to Proceed.

DISCUSSION:

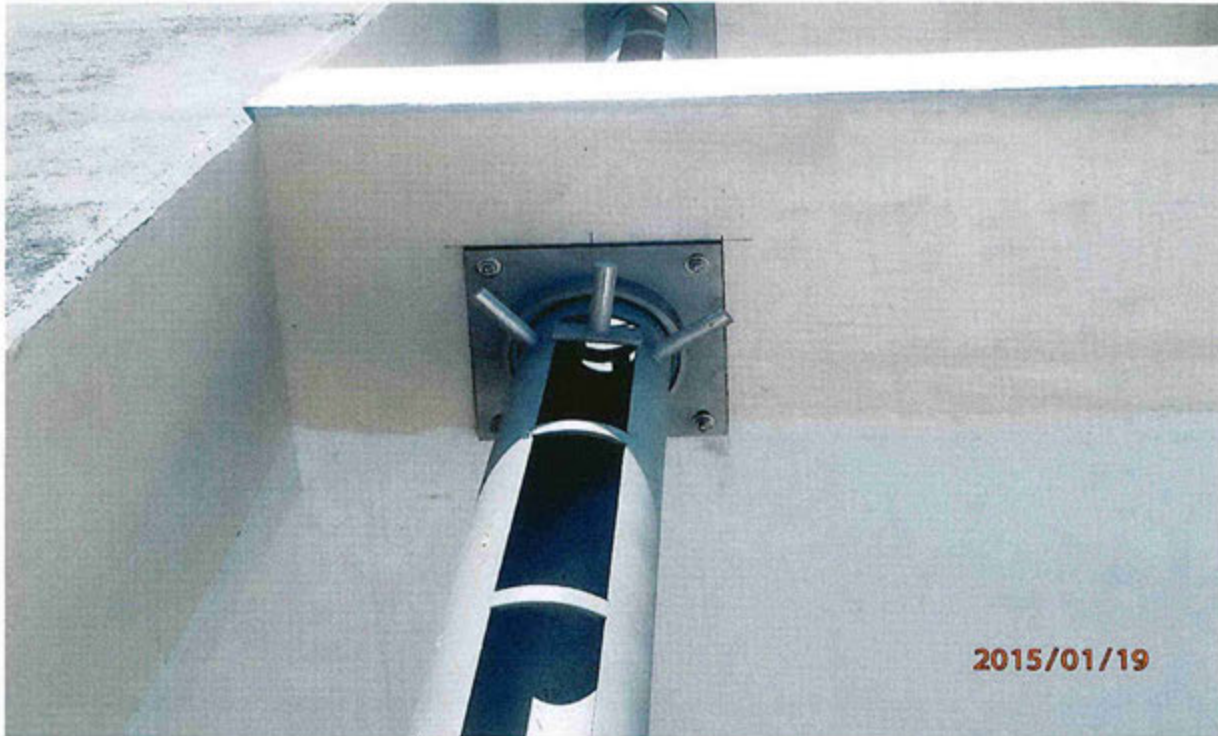
During the past 16 years, MWRA has awarded several as-needed technical assistance contracts to supplement in-house staff on high priority or unanticipated projects for the Deer Island and Clinton Treatment Plants and to provide expertise on short-term assignments requiring specialized engineering disciplines that are not cost effective for MWRA to maintain on an in-house basis. Under previous technical assistance contracts at the plant, MWRA has issued task orders for a wide variety of design and inspection services, including:

- Thermal/Power Plant Fuel oil system upgrades;
- Internal and external chemical tank inspections;
- Electrical system upgrades;
- Upgrades at the Clinton Wastewater Treatment Plant;
- Roof replacement for multiple buildings; and

- Corrosion evaluation on various process equipment, concrete tanks and pipeline systems.

Shown below are pre-construction and post-construction photographs of a typical project which was designed under a technical assistance contract.

Clinton Wastewater Treatment Plant Clarifier Upgrades (Post-Construction)



Clinton Wastewater Treatment Plant Clarifier Upgrades (Pre-Construction)



Deer Island Wastewater Treatment Plant New Reactor VFD Room

In response to previous concerns raised by the Board, a working group consisting of MWRA staff from the Procurement and Engineering and Construction Departments examined MWRA's use of technical assistance contracts. The following three changes in how these contracts are utilized compared to previous practice have been implemented: 1) staff manage the contracts with the goal of obtaining competitive pricing (based on level of effort, staffing, and technical approach) from the consultants on up to one-half of all proposed task orders; 2) whenever possible, staff limit task orders to smaller, short-term assignments that are considered high priority or are unanticipated, or when specific expertise on short-term assignments is required; and 3) staff now require sign-off from the Deputy Chief Operating Officer for task orders up to and including \$50,000; and from the Chief Operating Officer on any task order greater than \$50,000 and up to and including \$100,000. In the unlikely event that a Task Order greater than \$100,000 is needed, the Chief Operating Officer will confer with the Executive Director prior to approval.

Procurement Process

Staff utilized a one-step/two-envelope Request for Qualifications/Proposal, seeking three consultants to be selected on a most-qualified, low-bid basis with price envelopes submitted separately from the technical proposals. Technical proposals were reviewed first to identify the firms most qualified to provide the required services based upon specific criteria. Thereafter, the envelopes containing a sample cost exercise from the most qualified firms were opened. The three most qualified proposers submitting the lowest cost exercise is recommended for award. Five statements of Qualifications/Proposals, along with separate sealed cost envelopes, were submitted on April 27, 2016.

The Selection Committee evaluated and compared each firm's technical proposal using the following criteria:

1. Capacity/Qualifications/Key Personnel (42 points)
2. Past Performance on MWRA Projects (25 points)
3. Similar Experience/Past Performance on Similar Non-MWRA Projects (20 points)
4. Technical Approach/Organization and Management Approach (10 points)
5. Minority and Women-Owned Business Enterprise Participation (3 points)

The Selection Committee developed qualification scores for these firms as follows:

| <u>Consulting Firm</u> | <u>Qualifications Points</u> |
|-----------------------------------|------------------------------|
| AECOM Technical Services, Inc | 417 |
| CDM Smith | 391 |
| Arcadis U.S., Inc. | 346 |
| Stantec Consulting Services, Inc. | 312 |
| Brown and Caldwell | 297 |

The Selection Committee determined that all five firms met the threshold and technical requirements of the contract and proposed project teams that consisted of well-qualified and experienced key personnel. The Selection Committee was in agreement that all five firms have sufficient capacity and experience to successfully undertake this assignment. As a result, all five firms were found to be qualified.

The evaluation of the "cost" criterion in the procurement process for technical assistance contracts is different from the usual process for professional services procurements. In most Authority professional services procurements, the scope of work is clearly known and defined, and a consultant can estimate the level of effort and cost required to execute the desired services. By contrast, with these technical assistance contracts, the amount of labor hours required is unknown until the need for as-yet-undefined services arises. Task order work varies depending on the size of the task and the specific engineering disciplines required to complete the work.

Since the exact scope and hence the estimated total number of labor hours is unknown, MWRA staff developed a sample cost exercise designed to compare the costs of the most qualified firms. MWRA provided an approximate total number of hours that would be expended on a \$1,600,000 contract, based on the average annual distribution of hours from prior technical assistance contracts, and required the proposers to provide labor rates and multipliers incorporating indirect costs and a profit percentage. The sample cost exercises of the five qualified firms are presented below:

| Consulting Firm | Sample Cost Exercise Estimates |
|-----------------------------------|---------------------------------------|
| Brown and Caldwell | \$1,474,444.00 |
| Stantec Consulting Services, Inc. | \$1,517,329.00 |
| AECOM Technical Services, Inc. | \$1,586,502.96 |
| Arcadis U.S., Inc. | \$1,587,117.50 |
| CDM Smith | \$1,755,259.00 |

These sample cost exercise estimates are used for comparison purposes only in order to identify the three firms with the lowest costs. The intent is to award each contract for an amount not to exceed \$1,600,000. MWRA will incur costs under these contracts only for work requested via task order which has been satisfactorily performed.

Each of the three firms with the lowest sample cost exercise estimates provided services on the recently-concluded technical assistance consulting contracts at the Deer Island Treatment Plant (Note that Stantec Consulting Services, Inc.'s experience performing technical assistance consulting services with the MWRA was under Fay, Spofford & Thorndike, which it recently acquired). The Selection Committee reported that the performance of each of the three firms, with the lowest sample cost exercise estimates, has been rated good to very good based upon internal reference checks of each firm under previous and present technical assistance and other Authority-wide contracts.

Based on the qualifications of the firms and the sample cost exercises submitted, the Selection Committee recommends that the Board approve the award of three separate contracts to the three most qualified, lowest cost proposers; Contract 7501 to Brown and Caldwell, Contract 7502 to Stantec Consulting Services, Inc., and Contract 7503 to AECOM Technical Services, Inc., each in an amount not-to-exceed \$1,600,000, and for a contract term of three years from the Notice to Proceed.

BUDGET/FISCAL IMPACT:

The FY16 CIP includes a budget of \$1,600,000 for each contract.

MBE/WBE PARTICIPATION:

Due to the specialized nature of this work, there were no minimum MBE or WBE participation requirements established for this contract. However, Stantec Consulting Services, Inc. included a Minority Business Enterprise as part of its proposal team; and AECOM Technical Services Inc. included both a Minority Business Enterprise and a Women Business Enterprise subconsultant.



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
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TTY: (617) 788-4971

WATER POLICY AND OVERSIGHT COMMITTEE MEETING

Chair: A. Blackmon
Vice-Chair: B. Peña
Committee Members:
J. Carroll
J. Foti
A. Pappastergion
H. Vitale
J. Walsh
J. Wolowicz

to be held on

Wednesday, June 8, 2016

Location: 100 First Avenue, 2nd Floor
Charlestown Navy Yard
Boston, MA 02129

Time: Immediately following Wastewater Comm.

AGENDA

A. Information

1. 2015 Annual Water Quality Report (Consumer Confidence Report)

B. Approvals

1. Water Supply Citizens Advisory Committee Contract
2. First Amendment of Memorandum of Agreement between MWRA and Massachusetts Division of Fisheries and Wildlife and the Massachusetts Department of Fish and Game for McLaughlin Fish Hatchery Pipeline and Hydropower Project

C. Contract Awards

1. Dam Safety Compliance and Consulting Services: GZA GeoEnvironmental, Inc., Contract W-301

D. Contract Amendments/Change Orders

1. Construction of Water Mains-Sections 36, W11C and 9A: RJV Construction Corp., Contract 7448, Change Order 5

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Water Policy and Oversight Committee

May 11, 2016

A meeting of the Water Policy and Oversight Committee was held on May 11, 2016 at the Authority headquarters in Charlestown. Vice-Chairman Peña presided. Present from the Board were Messrs. Carroll, Foti, Pappastergion, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Steve Estes-Smargiassi, Carl Leone, Charlie Calapa, Mike Hornbrook, Nava Navandan, Pat Smith, Paul Rullo, Dave Coppes, and Bonnie Hale. The meeting was called to order at 11:25 a.m.

Approvals

*Approval of a Program to Study Lead levels in MWRA Water Communities

Staff explained the intent and the mechanics of the proposed program. The Committee recommended approval of a program to study lead levels in MWRA water communities (ref. agenda item A.1).

*Approval of Program Guidelines for the MWRA Lead Service Line Replacement Loan Program

Staff summarized the program guidelines and there was general discussion. The Committee recommended approval of the program guidelines for the MWRA Lead Service Line Replacement Loan Program (ref. agenda item A.2).

*Approval of Revisions to the Program Guidelines for the MWRA Local Water System Assistance Program to be Consistent with the Lead Service Line Replacement Loan Program Guidelines

Mr. Vitale thanked MWRA staff for all their good work on the lead issue, and Mr. Laskey thanked in particular Joe Favaloro, Steve Estes-Smargiassi and John Sullivan. The Committee recommended approval of revisions to the above program guidelines (ref. agenda item A.3).

* Approved as recommended at May 11, 2016 Board of Directors meeting.

Contract Awards

***Flow Testing Services for MWRA's Revenue Water Meters: Complete Control Services, Inc., Bid WRA-4181**

The Committee recommended approval of the contract award (ref. agenda item B.1).

***Beacon Street Line Water Pipeline Repair: R. Zoppo Corp., Contract 7458**

Staff gave a presentation on the project, and there was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item B.2).

***Southern Extra High Pipeline Section 111 (Boston): P. Gioioso and Sons, Inc., Contract 6454**

Staff gave a presentation and explained the need for this project to provide redundancy. The Committee recommended approval of the contract award (ref. agenda item B.3).

Contract Amendments/Change Orders

***Dam Safety Compliance and Consulting Services: GZA GeoEnvironmental, Inc., Contract OP-228, Amendment 2**

The Committee recommended approval of Amendment 2 (ref. agenda item C.1).


***Section 4 Webster Avenue Pipe and Utility Bridge Replacement: NEL Corporation, Contract 7335, Change Order 5**

Staff summarized the corrective plan for this pipe replacement, and the Committee recommended approval of Change Order 5 (ref. agenda item C.2).

The meeting adjourned at 12:10 p.m.

* Approved as recommended at May 11, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: *2015 Annual Water Quality Report* (Consumer Confidence Report)

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

Joshua Das, Project Manager, Public Health
Ria Convery, Special Assistant to the Executive Director
Stephen Estes-Smargiassi, Director, Planning
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only. The *2015 Annual Water Quality Report* will be mailed to every household in MWRA's service area between June 1 and June 27, 2016 to meet EPA's Consumer Confidence Report Rule deadline of July 1, 2016. This staff summary highlights the report's key findings and features. Copies will be available at the Board meeting.

DISCUSSION:

EPA's Consumer Confidence Report (CCR) program has been an important national initiative that has promoted better information and education for consumers about their publicly supplied drinking water. The CCR has been an integral part of MWRA's drinking water communication program since 1999.

MWRA staff have again produced three separate versions of the CCR: one for each of the fully-supplied communities in metropolitan Boston and MetroWest, one for each of the partially-supplied communities in metropolitan Boston and MetroWest, and one for the three Chicopee Valley Aqueduct communities. A Spanish translation and a large-print version are also produced. All communities in metropolitan Boston and MetroWest that use MWRA's CCR again took the opportunity to provide a community-specific letter to report additional local information.¹

As in prior years, the 2015 CCR emphasizes MWRA's excellent source water, state of the art treatment, investments in the water system, and all of the test results from the reservoir to the tap. This year, with the situation in Flint dominating the news, the main theme of the CCR was answering questions on lead in tap water. Two additional pages have been added this year concentrating on lead. For the first time, a full page is dedicated to lead service lines - how to

¹ The partially-served communities of Peabody, Stoughton, and Wellesley each send their own CCR geared toward local source water quality, with additional information on MWRA water provided in their reports by MWRA staff.

find out if you have one and how to get it replaced. The pages also emphasize how to get your water tested for lead, and other steps that customers can take to make sure there is no lead in their tap water.

The report is printed on paper which is recycled and certified by the Forest Stewardship Council and Sustainable Forestry Initiative, with appropriate logos included on the cover.

Consistent with past efforts, MWRA will conduct an outreach effort to increase awareness of the CCR, including e-mailing copies to local officials, health care professionals, and other interested parties, and sending press releases to more than 50 weekly publications and all regional newspapers and utilizing social media such as Twitter. Information and pictures of the CCR, with links to MWRA's website, will be provided to community web pages and local public health and environmental organizations.


Mailing of the CCR will begin on June 1, 2016 and the reports should be arriving in customers' mailboxes through the last week of June. Certification of the CCR to DEP is due by July 1, 2016. MWRA provides certification materials to DEP on behalf of each community.

Starting in 2013, EPA gave utilities the option to provide the CCR on-line, so long as each customer is notified by either postcard or e-mail of the availability of the report on-line. MWRA staff evaluated this option and determined that the cost savings would be approximately 2 or 3 cents per customer. After consultation with the Advisory Board's Executive Committee, it was decided that the cost savings was not substantial enough to justify sending a postcard instead of a report and thus, having MWRA lose the one opportunity to communicate directly with its customers about the quality of their drinking water. MWRA did decide to use the flexibility offered by the eCCR guidance and included web links to additional information within the report on unregulated contaminants. Also, one partial community included a web-link to a longer community letter.

BUDGET/FISCAL IMPACT:

The 2015 CCR was designed and written by in-house MWRA staff. The total cost for printing and mailhouse services (\$95,000) and postage (\$140,000) is \$235,000. The FY16 Current Expense Budget includes \$202,500 for the 2015 CCR. There are sufficient funds in the Operations Division's FY16 CEB to absorb the additional spending.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Water Supply Citizens Advisory Committee Contract

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

Stephen Estes-Smargiassi, Director, Planning
Preparer/Title

Sean Navin, Director
Intergovernmental Affairs 

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached hereto, with the Water Supply Citizens Advisory Committee for a one-year period beginning July 1, 2016, with a total contract cost of \$102,365.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Water Supply Citizens Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC). A separate staff summary presented at this meeting recommends authorization for the Executive Director to execute a similar contract with WAC for FY17.

WSCAC originated in 1978 when its predecessor committee, the Northfield Citizens Advisory Committee, was formed at the direction of the Secretary of the Executive Office of Environmental Affairs. WSCAC has received direct funding from MWRA since MWRA's formation in 1984.

The proposed FY17 WSCAC budget is 2.24% greater than the FY15 budget. Hourly salaries and health insurance increased slightly. Other areas of the budget were level funded or decreased. Health insurance is budgeted at 80 percent reimbursement for the Executive Director only, not to exceed \$8,763.

Current topics of interest to WSCAC include water system expansion issues, changing drinking water regulations, the impacts of the state's Sustainable Water Management Initiative, the Water System Master Plan, and periodic reviews of watershed management and protection issues. The committee currently has 14 members, 11 of whom are considered active. WSCAC continues to work to identify additional members in categories which are not well represented on the committee.

WSCAC's office is located at Quabbin Reservoir in a Department of Conservation and Recreation (DCR) building, and most meetings are held at MWRA's Southborough facility. WSCAC's Executive Director is Lexi Dewey (selected by WSCAC's Executive Committee), and the current chairman is Whitney Beals, elected from among the members.

BUDGET/FISCAL IMPACT:

Sufficient funds for the WSCAC contract are included in the proposed FY17 Current Expense Budget.

ATTACHMENT:

Copy of Agreement between Massachusetts Water Resources Authority and Water Supply Citizens Advisory Committee

AGREEMENT

BETWEEN

MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

WATER SUPPLY CITIZENS ADVISORY COMMITTEE

This Agreement ("Agreement") is by and between the Massachusetts Water Resources Authority ("Authority"), a body politic and corporate and a public instrumentality of the commonwealth created by Chapter 372 of the Acts of 1984 with offices at Building 39 First Avenue, Charlestown Navy Yard, Charlestown, Massachusetts 02129 and the Water Supply Citizens Advisory Committee ("WSCAC") an organization initially created under the Massachusetts Environmental Policy Act ("MEPA") to ensure public representation and participation in Authority water supply activities, with offices currently at 485 Ware Road, Belchertown, MA 01007 (collectively "Parties").

WHEREAS, the Authority is required to meet the water needs of its communities;

WHEREAS, the Authority desires WSCAC to continue to advise in water supply planning and programming; and

WHEREAS, WSCAC desires to have a continued role advising the Authority;

NOW, THEREFORE, for the consideration of mutual promises contained herein, the Authority and WSCAC agree as follows:

Article 1. Effective Date.

This Agreement shall be effective from July 1, 2016 through June 30, 2017, inclusive.

Article 2. Compensation, Budget, Payment, and Expenses.

2.1 The Authority shall make funds available as follows:

(a) Salaries and Duties.

Director. An Executive Director shall be chosen by WSCAC members at a salary not to exceed \$67,494 for the year commencing on July 1, 2016 through June 30, 2017, inclusive. The hourly salary rate (inclusive of payroll taxes) shall be \$40.51 with annual total hours of 1,666 (average 34 hours per week for 49 weeks). The duties of the Executive Director shall be in accordance with the job description prepared by the Executive Committee of WSCAC and on file with the Authority.

Administrative Assistant. A part-time Administrative Assistant shall be chosen by the WSCAC Executive Director in consultation with the Executive Committee of WSCAC at a salary not to exceed \$14,024 for the year commencing on July 1, 2016 through June 30, 2017, inclusive. The hourly salary rate shall be \$20.87 (inclusive of payroll taxes) with annual total hours of 672 (average 14 hours per week for 48 weeks). The duties of the Administrative Assistant shall be in accordance with the job description prepared by the Executive Committee of WSCAC and on file with the Authority.

(b) Annual Expenses.

The Authority shall reimburse WSCAC for the following items: 80% of the health insurance for the Executive Director (not to exceed \$8,763), travel for WSCAC staff and members, office supplies (such as letterhead, envelopes, pencils, paper clips), postage, office telephone and internet access, and general administrative and office expenses. The percentage rate for reimbursement of health insurance costs shall be changed to match that of MWRA staff if the Group Insurance Commission changes the rate.

(c) Miscellaneous Expenses.

The Authority shall also reimburse WSCAC for the following expenses when submitted with a written reimbursement request supported by a receipt or voucher:

(1) mileage costs incurred by WSCAC staff and members from attendance at WSCAC meetings, pertinent conferences and seminars, or while performing other functions directly related to its scope of services. Mileage costs will be reimbursed at the prevailing Authority rate per mile;

(2) postage, phone calls, meeting expenses, public transportation costs, highway tolls and parking expenses incurred by WSCAC staff and members while performing WSCAC duties;

(3) the purchase or rental by WSCAC staff of books, films, cassettes, tapes, etc., if specifically approved by the Authority in advance, except that single copies of individual publications, books, and other written documents may be purchased for the WSCAC library use without prior approval, provided that the cost per item does not exceed \$200. All materials purchased under this section shall be considered property of the Authority.

(4) other miscellaneous expenses of the WSCAC staff approved by the Authority on a case-by-case basis. When possible, approval of the Authority should be received in advance of incurring such expenditures.

The Authority may advance up to \$750 to WSCAC, such advance to be applied to the payment of Miscellaneous Expenses as defined herein and as approved and budgeted under the terms of this Agreement. Payments made from an advance shall be accounted for in the same manner as all other Miscellaneous Expense payments. Prior to the expiration of this Agreement, any outstanding balance on an advance shall be applied against amounts due WSCAC.

The annual total reimbursement to WSCAC for annual and miscellaneous expenses combined shall not exceed \$20,847 from July 1, 2016 through June 30, 2017, inclusive.

(d) Non-reimbursable expenses.

The following expenses are not reimbursable: meals, entertainment, room and board expenses, fines, fees, or costs assessed as a result of improper or illegal actions on the part of the member, such as parking tickets or speeding fines.

ARTICLE 3. RESPONSIBILITIES OF THE AUTHORITY AND WSCAC.

(a) WSCAC shall employ an Executive Director, who is prohibited from being a member of WSCAC while serving his or her term as a paid employee.

(b) WSCAC shall, whenever applicable, take all necessary steps to receive an exemption from the Massachusetts Sales and Use taxes for materials, printing, and equipment purchased by WSCAC on behalf of the Authority.

(c) WSCAC shall submit monthly or periodic statements to the Authority requesting payment for salary, and for annual and miscellaneous expenses listed in Article 2. Such requests shall be supplemented or accompanied by time sheets, travel and expense vouchers, and by such other supporting data as may be required by the Authority.

(d) WSCAC shall maintain accounts, records, documents, and other evidence directly pertinent to performance of work under this Agreement. The Parties and their duly authorized representatives shall have access to such records, documents, and other evidence for the purpose of inspection, audit, and copying.

(e) The Authority or its duly authorized agent shall have the right at any and all reasonable times, to examine and audit WSCAC's records, documents and other evidence.

(f) This Agreement is subject to the laws dealing with the expenditures of public funds, including Chapter 12A of the Massachusetts General Laws.

(g) The Parties agree to consent to any reasonable modifications or changes in this contract that may be required by the Commonwealth of Massachusetts or any of its agencies.

(h) WSCAC acknowledges that the Authority is a state agency for purpose of Chapter 268A of the General Laws (the Massachusetts Conflict of Interest Law) and understands that for the purposes of that law, WSCAC staff and members are special state employees.

(i) WSCAC shall be responsible for compliance with all applicable provisions and requirements of the Massachusetts Open Meeting Law.

ARTICLE 4. RESPONSIBILITIES OF THE WSCAC STAFF.

4.1 The WSCAC staff shall be responsible for the following tasks:

- (a) aiding WSCAC in its tasks under Article 6, managing the WSCAC office, educating the public, and acting as liaison with the Authority and its staff;
- (b) preparing monthly progress reports for submission to the WSCAC Executive Committee, the WSCAC members, and the Authority;
- (c) maintaining financial records, minutes of the WSCAC meetings, and other WSCAC records;
- (d) assuring that at least every other meeting be held in Eastern Massachusetts at a location to be jointly agreed upon by WSCAC and the Authority where Authority attendance is expected.
- (e) providing to the Authority copies of the notices for and minutes of all meetings of WSCAC and of all the WSCAC correspondence as soon as such materials are available.
- (f) administering and maintaining compliance by all its members and staff with the provisions of the Massachusetts Conflict of Interest Law including, without limitation, those mandatory provisions relating to: (i) annual distribution to members and staff of the State Ethics Commission's (SEC) Summary of Law and maintenance and archiving of acknowledgements of receipt of the Summary of Law from all members and staff, and (ii) compliance by members and staff with the SEC's bi-annual educational training exercises.

ARTICLE 5. MEMBERSHIP

5.1 Membership of WSCAC

- (a) Membership of WSCAC shall maintain parity between those individuals representing the interests of the communities listed in section 8(d) of the Authority's Enabling Act, c. 372 of the Acts of 1984, ("User Representatives") and those individuals representing the interests of the watershed communities ("Donor Representatives") and those individuals representing the interests of statewide or other appropriate interests as mutually agreed upon by WSCAC and the MWRA ("Other Representatives").
- (b) In order to maintain WSCAC membership status, members must be active participants, as defined in the WSCAC by-laws.

5.2 The appointment of WSCAC members shall be by joint designation by WSCAC and the MWRA and shall have a goal of achieving at least 10% minority representation on WSCAC.

ARTICLE 6. WSCAC TASKS.

WSCAC shall undertake the following tasks:

6.1 Water Supply Programs Review.

Advise the Authority staff and Board in the performance of their duties relating to water supply planning and policies. Participate in the design, review and evaluation of research, reports and new ideas for programs. Provide comments, information, advice, recommendations and guidance as to the direction, intent and execution of water planning and policy development.

6.2 Outreach and Education.

Assure informed public input by providing assistance in outreach to various groups regarding the Authority's water supply programs and policies, and state water resources legislation and policies. Review programs with and explain plans and policies to organizations and citizens, including the scheduling of workshops, meetings and conferences. Provide comments and assistance on legislation of importance to the Authority.

6.3 Working Group Representation.

When requested, provide a representative on Authority working groups, comprising MWRA staff and consultants, related to water supply planning and policy development, including the Advisory Board and its subcommittees and the Wastewater Advisory Committee.

6.4 Recommendations on Long Term Public Involvement.

Provide to the Authority staff and Board, proposals for continued effective and efficient long-term public involvement in water programs.

6.5 Recommendations and Discussion Documents.

The WSCAC staff shall be responsible for providing to the Authority's staff, Board, and others, recommendation and discussion documents on the subjects of the above tasks. Documents may be in the form of minutes of WSCAC meetings, memoranda, letters, reports, presentations and discussions as appropriate.

ARTICLE 7. MISCELLANEOUS REQUIREMENTS.

7.1 Nondiscrimination and Equal Employment Opportunity.

(a) WSCAC agrees to comply with all Federal and State laws pertaining to Civil Rights and Equal Opportunity, including executive orders and rules and regulations regarding employment, demotion, transfers, recruitment, layoffs or termination, rates of pay or other compensation and

training, including apprenticeships. With regard to WSCAC membership, WSCAC agrees to affirmatively solicit minority representation.

(b) WSCAC agrees to comply with the Authority's policy regarding non-discrimination and affirmative action.

ARTICLE 8. GENERAL PROVISIONS.

8.1 Termination of Contract.

(a) This Agreement may be terminated in writing, at any time, in whole or in part, by the Authority for its convenience or in the event of substantial failure by WSCAC to fulfill their obligations, or for violation of any of the covenants and stipulations of this Agreement.

(b) If termination is effected by the Authority an equitable adjustment shall be made providing for payment to WSCAC for services rendered and expenses incurred prior to the termination. In addition, termination settlement costs reasonably incurred by WSCAC relating to commitments, which had become firm prior to the termination, shall be paid.

(c) This agreement may be terminated at any time, in whole or in part, in writing by WSCAC in the event of substantial failure by the Authority to fulfill its obligations or for violation by the Authority to fulfill its obligations or for violation by the Authority of any of the covenants and stipulations of this agreement.

(d) No termination hereunder may be effected unless the terminating party gives the other party: (1) not less than forty-five days' written notice delivered by certified mail, return receipt requested of intent to terminate; and (2) an opportunity for consultation with the other party prior to termination, or (3) by mutual agreement of the parties.

8.2 Ownership of Property.

Upon termination of this Agreement for any reason, WSCAC shall turn over to the Authority all materials, equipment, including computer equipment currently on loan from the Authority and owned by the Authority, unused office supplies, books, pamphlets, publications and all other properties for which Authority or MDC reimbursements were made in whole or in part, directly or indirectly.

8.3 Assignability.

WSCAC shall not assign or transfer this Agreement or delegate its responsibility for the performance of services under this contract.

8.4 Integration Clause.

This Agreement may be amended only by a writing executed by each of the Parties.

8.5 Severability of Provisions.

If any provision of this Agreement shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement shall not be deemed affected thereby.

8.6 Massachusetts Law to Govern.

All parties to this Agreement agree that this Agreement shall be governed by and enforced in accordance with the laws of the Commonwealth of Massachusetts.

8.7 Duplicate Originals.

This Agreement may be signed in more than one identical counterpart, each of which shall be deemed to be an original hereof.

8.8 Notices.

Communications shall be deemed to have been made when mailed postage prepaid or delivered to among:

Chair and
Executive Director
Water Supply Citizens Advisory Committee
485 Ware Road
Belchertown, MA 01007

Director of Public Affairs
Massachusetts Water Resources Authority
Charlestown Navy Yard
Building 39, First Avenue
Boston, Massachusetts 02129

Executive Director
Massachusetts Water Resources Authority
Charlestown Navy Yard
Building 39, First Avenue
Boston, Massachusetts 02129

IN WITNESS WHEREOF, this Agreement is executed as of this day of , 2016.

FOR: WATER SUPPLY CITIZENS ADVISORY COMMITTEE

By: _____
Title: Chair, Water Supply Citizens
Advisory Committee


Dated:

FOR: MASSACHUSETTS WATER RESOURCES AUTHORITY

By: _____
Title: Executive Director

Dated:

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: First Amendment to Memorandum of Agreement between the Massachusetts Water Resources Authority and the Massachusetts Division of Fisheries and Wildlife and the Massachusetts Department of Fish and Game for the McLaughlin Fish Hatchery Pipeline and Hydropower Project


COMMITTEE: Water Policy & Oversight

 INFORMATION

 X VOTE


Steven A. Remsberg
General Counsel

Carolyn M. Fiore, Deputy Chief Operating Officer
Pamela Heidell, Policy & Planning Manager
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

In 2015, MWRA executed a Memorandum of Agreement (MOA) and a standard state contract template agreement with the Division of Fisheries and Wildlife and the Massachusetts Department of Fish and Game, which provides for the two agencies to contribute \$ 2.5 million to fund MWRA's costs of the design, permitting, and construction of solely the pipeline component of the Hatchery Pipeline and Hydroelectric Project. The \$2.5 million commitment of the fisheries agencies was based upon a pre-bid Engineer's estimate of construction costs. On February 10, 2016 MWRA awarded the Hatchery Pipeline and Hydroelectric Project to the lowest responsible and eligible bidder for a bid amount of \$3,657,667. The bid amount exceeded the Engineer's Estimate, and consequently, at the time of the bid award staff indicated they would pursue further financial assistance. An Amendment to the MOA and to the state contract form has been prepared to reflect an additional commitment of \$200,000 from the fisheries agencies.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute the First Amendment to the Memorandum of Agreement, substantially in the form attached hereto, between the Massachusetts Division of Fisheries and Wildlife, the Massachusetts Department of Fish and Game, and the Massachusetts Water Resources Authority relating to the construction and operation of the McLaughlin Fish Hatchery Pipeline and Hydropower Project at the William A. Brutsch Water Treatment Facility.

DISCUSSION:

Background

The McLaughlin Fish Hatchery is the largest of the Division of Fisheries and Wildlife's hatcheries and accounts for half of the brook, brown, rainbow, and tiger trout that are produced in its hatcheries annually. The hatchery is located less than a mile from MWRA's Brutsch Water Treatment Facility in Ware and borders the Swift River. At present, the hatchery uses a combination of water from on-site wells and water withdrawn directly from the Swift River, with river withdrawals being the dominant source. Currently, when MWRA demand is low and Quabbin Reservoir's elevation is high and the reservoir is stratified, warmer surface water spills over the dam. These warmer water spillway discharges in the summer can be detrimental to the McLaughlin Fish Hatchery.

To resolve the threat of warm water discharges from the Quabbin Reservoir to the Hatchery, the proposed Pipeline and Hydropower Project was approved by the Board on February 10, 2016 and is currently under construction. See Figure 1. The project consists of a water pipeline that will tap raw water off of MWRA's Chicopee Valley Aqueduct (CVA) just prior to the Brutsch Water Treatment Facility: the water is cooler water withdrawn from the depths of Quabbin Reservoir. When completed, six million gallons a day (mgd) of untreated water will be conveyed first to a hydropower turbine/generator on the grounds of the Brutsch Facility and after flowing through the turbine, or a parallel bypass line when the turbine is not operating, water would enter a pipeline terminating approximately 4,400 feet away at the hatchery's water supply distribution system.

The project has multiple environmental benefits besides operational advantages to the Hatchery. It is also an important green energy initiative, since not only will MWRA generate hydropower, the Hatchery's electrical demand associated with pumping water from the Swift River will be eliminated under typical conditions. Further, flows in the Swift River downstream of the Hatchery would ultimately be supplemented by 6 mgd, since after circulation through the hatchery's raceways and treatment, the water would be discharged to the Swift River. Reservoir operations will also be facilitated, since the consequences of warm water spills are significantly decreased.

The Memorandum of Agreement and First Amendment

On June 3, 2015, the MWRA Board of Directors authorized the execution of a Memorandum of Agreement (MOA) among MWRA and the Massachusetts Division of Fisheries and Wildlife (DFW) and the Massachusetts Department of Fish and Game (DFG). The MOA provides for the transfer of \$2.5 million to the MWRA from the fisheries agencies to fund MWRA's costs of the design, permitting, and construction of solely the pipeline component of the project. The funds were transferred in June 2015 and are now held in MWRA's name in an interest-bearing account. The MOA also addresses the respective responsibilities of the agencies, e.g., the MWRA is responsible for all activities necessary to install and bring the pipeline on-line, whereas DFG and DFW will assume ownership and be responsible for operation and maintenance of the pipeline after the pipeline leaves the Brutsch Facility property line.

In June 2015, when the MOU with DFW and DFG was executed, the project was between the 30% and 90% design stages. At the 30% design stage, the Engineer's Estimate of probable construction costs for both the pipeline and hydropower components was \$2.41 million, of which \$1.96 million was for the pipeline (including a 25% contingency). MWRA's contract for design and engineering services added to this pre-bid construction cost estimate resulted in a cost estimate of \$2.5 million for solely the pipeline component of the project. The funding stipulated in the original MOA was based on the Engineer's Estimate.

The project was bid last winter and six bids were received and opened on January 26, 2016. The bids ranged from the lowest responsive bid of Waterline Industries Corp. of \$3,657,677 to the highest bid of \$5,198,270. The contract was awarded to Waterline and a Notice of Proceed was issued in early March. As part of the Contractor's submittals, MWRA has received a detailed schedule of values (the stated contract price of each contract work item). Some work items are solely related to the pipeline, some work items are solely related to the hydropower component, and some cost components generally benefit both aspects of the project. Based on MWRA's review of the detailed schedule of values, it has been concluded that the pipeline component of the project has increased at least \$200,000 over MWRA's initial project cost estimate and is now estimated to cost at least \$2.7 million dollars.

The First Amendment to the MOA, as shown in Attachment 2, increases the amount of additional funding that DFG will now provide for the pipeline component of the project to address the current construction cost, and stipulates to the transfer of an additional \$200,000 to the MWRA which transfer must be accomplished prior to the end of FY2016. The First Amendment to the MOA could be further amended in the future in the event that a change order affects the cost of the pipeline.

Other Project Updates

Concurrent with pursuit of additional funding from DFW and DFG, MWRA pursued further financial assistance from the Massachusetts Clean Energy Center for the hydroelectric component of the project. The grant amount from MCEC has now been increased from \$288,810 to \$425,736 and complements the initial grant of \$288,810 from the Executive Office of Energy and Environmental Affairs (EOEEA) Leading-By-Example program. EOEEA and Chairman Beaton have played a key role in making funding from the various sources available and such assistance is much appreciated.

MWRA is also utilizing MWRA staff for resident engineering in lieu of using the consultant to reduce project costs, and is realizing some small savings by housing the resident engineer in the Brusch Treatment Facility rather than in a temporary construction trailer. Discussions are also ongoing with Waterline regarding other potential cost saving measures.

The Contractor is now mobilized on the job site, and MWRA construction staff have moved into their temporary office. Erosion and sedimentation controls have been installed and clearing and grubbing has begun. Shop drawing review is ongoing with some shop drawings approved and some equipment ordered. Work on a new valve vault and tap at the CVA where the new pipeline will begin is planned for the coming weeks, as is excavation for the hydroelectric building.



BUDGET/FISCAL IMPACT:

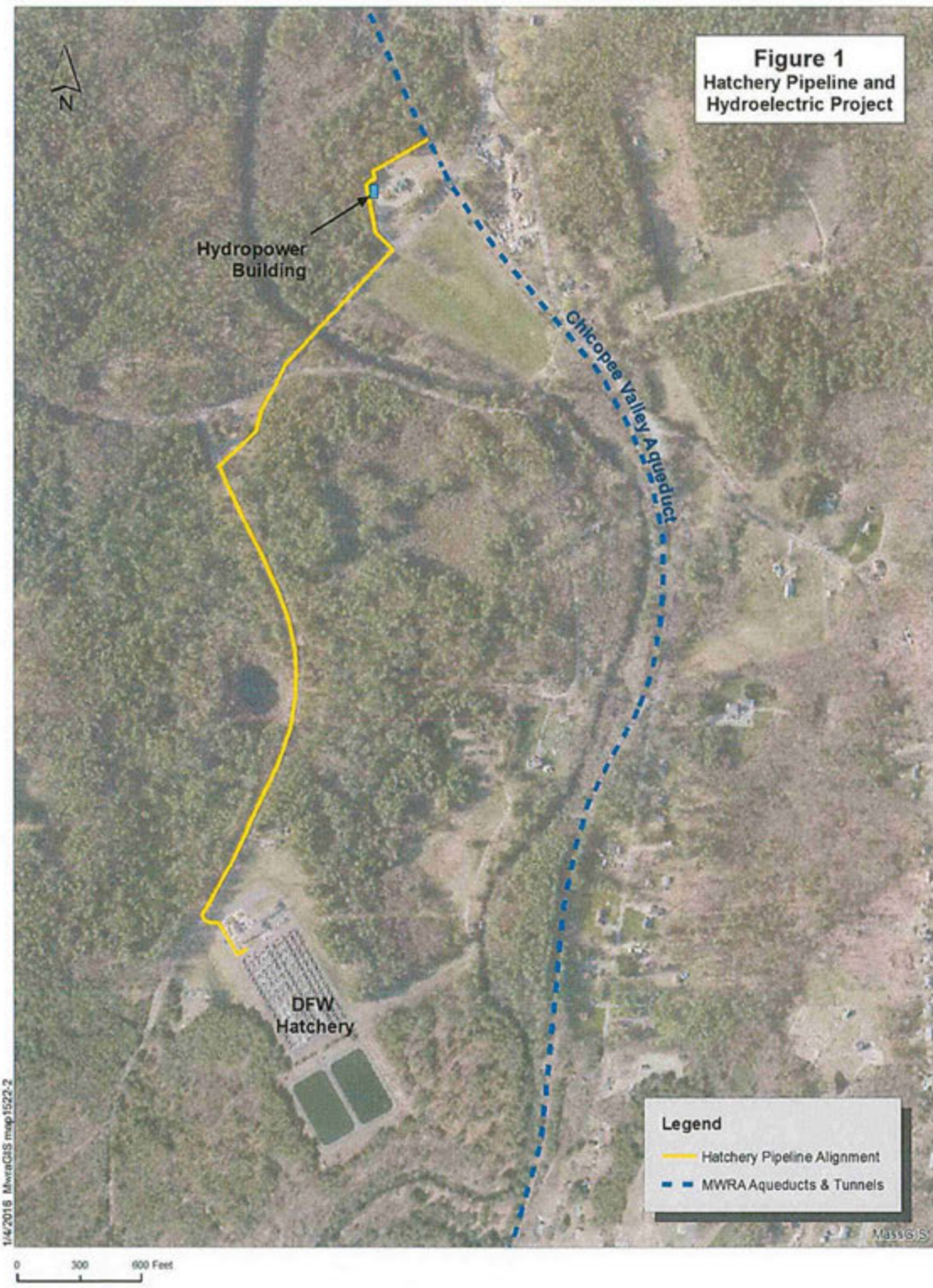
The Proposed FY17 CIP includes a budget of \$4,471,953 for the Fish Hatchery Pipeline and Hydropower Project. The First Amendment to the MOA provides for \$2.7 million of project costs to be paid for by the Division of Fisheries and Wildlife and the Department of Fish and Game. In addition, a total of \$714,546 has been obtained for the hydropower component of the project. Cost savings are also being investigated to reduce project costs.

ATTACHMENTS:

Attachment 1: Figure 1 – Project Map

Attachment 2: First Amendment to Memorandum of Agreement between MWRA, Massachusetts Division of Fisheries and Wildlife, and Massachusetts Department of Fish and Game

ATTACHMENT 1



Draft dated 5/25/16

FIRST AMENDMENT TO MEMORANDUM OF AGREEMENT

This first amendment ("Amendment"), effective June ____, 2016, modifies the Memorandum of Agreement ("Agreement") dated June 5, 2015 by and between the Massachusetts Division of Fisheries and Wildlife ("Division"), the Massachusetts Department of Fish and Game (the "Department") and the Massachusetts Water Resources Authority ("MWRA") (collectively the "Parties"). Capitalized terms used and not otherwise defined in this Amendment shall have the meanings ascribed to such terms in the Agreement. In the event of any conflict between this Amendment and the Agreement, this Amendment shall govern.

WHEREAS, pursuant to the Agreement, the Department and the Division are providing funding to MWRA for its design and construction of a pipeline that will convey water to DFW's McLaughlin Fish Hatchery (the "Pipeline"), which is a component of a larger project (the "Project") that includes MWRA's design and construction of a hydropower facility at its Brutsch facility, which is being funded solely by MWRA;

WHEREAS, as a result of the receipt of actual bids by MWRA for construction of the Project, even the lowest of which substantially exceeded MWRA's engineer's estimate, the Department's costs for the design and construction of the Pipeline that will convey water to the McLaughlin Fish Hatchery have increased by at least \$200,000 over MWRA's initial Project cost estimates; and

WHEREAS, because the Department's current funding share has increased by an additional \$200,000 to a total of \$2.7 million, the Parties desire to amend the Agreement to reflect this change.

NOW THEREFORE, the Parties hereby agree to amend the Agreement as follows:

1. Section 1 of the Agreement (Funding; Reversion of Excess Funds) is hereby amended by striking the first paragraph in its entirety and replacing it with the following:

"Prior to the end of FY 2015, the Department and the Division transferred \$2 million in capital funds and \$500,000 from the Inland Fisheries and Game Fund, respectively, to MWRA for a combined sum of \$2.5 million to fund MWRA's costs of the design, permitting and construction of the Pipeline portion of the Project based on MWRA's initial Project cost estimates. The Parties acknowledge that the initial \$2.5 million in funding provided by the Department and the Division in FY 2015, which amount was based upon MWRA's engineer's estimate, had included a 25% contingency amount for unexpected expenses. All Parties hereby acknowledge that no contingency now remains due to the fact that the lowest responsive bid received by MWRA exceeded MWRA's engineer's estimate by a margin in

excess of \$672,000. As a result, the current costs for the design and construction of the Pipeline that will convey water to the Division's McLaughlin Fish Hatchery have increased by at least \$200,000 over MWRA's initial Project cost estimate based on the actual schedule of values (i.e., its stated Contract price for each Contract work item) provided by the selected contractor to MWRA, and on an apportionment between MWRA and the Department of the costs attributable to the Hatchery pipeline component of the overall MWRA project on one hand, and the costs attributable to the MWRA hydroelectric facility on the other.

Consequently, prior to the end of FY 2016 the Department will transfer an additional \$200,000 in capital funds to MWRA to fund the above-described increased Project costs. The additional \$200,000 of funds to be transferred to MWRA by the Department shall be held by MWRA in the same bank account in MWRA's name at US Bank (Acct. No. 173974-000; MWRA Hatchery Project) in which the original \$2.5 million of funds were and remain deposited, said additional funds to be invested in the same interest-bearing money market account through the Massachusetts Municipal Depository Trust. These funds shall be expended by MWRA solely for the Pipeline portion of the Project in accordance with all of the terms and provisions of this Agreement. More specifically, MWRA will use the funds exclusively to pay for the costs of design, permitting, procurement, construction of and resident engineering for the Pipeline portion of the Project, including the completion of 4,700 linear feet of 20" water line (with a 16" section at the river crossing) and necessary connections between the CVA and the Hatchery. MWRA shall first expend the \$2.2 million in capital funds provided by the Department for the above Project purposes and, if and when such capital funds have been fully expended, then expend the \$500,000 appropriation of funds provided by the Division as needed to complete the Project. MWRA shall be solely responsible for the funding and construction of the hydroelectric facility, to be constructed along the Water Line and within the confines of MWRA's property."

2. Except as specifically amended herein, all other terms, conditions and provisions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, a duly authorized signatory of each of MWRA, the Department and the Division has duly executed this Amendment on the dates set forth below.

Massachusetts Water Resources Authority:

By: _____
Frederick A. Laskey, Executive Director

Dated: _____

Massachusetts Department of Fish and Game:

By: _____
George N. Peterson, Jr., Commissioner


Dated: _____

Massachusetts Division of Fisheries and Wildlife:

By: _____
Jack Buckley, Director

Dated: _____


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Dam Safety Compliance and Consulting Services
GZA GeoEnvironmental, Inc.
Contract W-301

COMMITTEE: Water Policy & Oversight

 INFORMATION
 X VOTE

David Coppes, P.E. Director of Waterworks
John Gregoire, Program Manager, Reservoir Operations
Preparer/Title

Michele Gillen
Director of Administration

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select GZA GeoEnvironmental, Inc. to provide dam safety compliance and consulting services and to authorize the Executive Director, on behalf of the Authority, to execute Contract W-301, in an amount not-to-exceed \$167,100, and for a contract term of 730-days from the Notice to Proceed.

BACKGROUND:

Under the 2004 Memorandum of Understanding (MOU) between MWRA and the Department of Conservation and Recreation (DCR), MWRA is responsible for funding and undertaking required regulatory inspections and analyses, and capital maintenance and improvements of dams (see map below) determined to be critical to the safe and reliable supply of water to the MWRA system. Prior to this, there was no formalized program for these dams which resulted in substantial maintenance deferment across the system.

Since 2004, MWRA has developed and refined a dam safety compliance program and performed the required regulatory studies and inspections through consulting contracts. Many Capital and major maintenance projects have been completed over this time resulting in the investment of over \$20 million in MWRA water system dams. These projects include major masonry and earthen dam repairs, tree clearing, environmental, armoring and spillway improvements which have added decades of life to these critical structures. (See Attachment 1)

DISCUSSION:

Massachusetts Dam Safety Regulations, 302 CMR 10:00 require these dams be inspected on a recurring frequency. The majority of these water supply dams are High Hazard Class¹ which requires a thorough biennial inspection by a Massachusetts licensed engineer with experience in dam safety. Initial MWRA dam safety compliance inspections and studies under this plan began in the 2005 – 2007 timeframe via Task Orders with various consultants. Recognizing the recurring regulatory need and future work, more formalized Dam Safety Compliance and Consulting contracts have been in place since 2008 (Weston and Sampson, Inc.), 2010 (GZA, Inc.), 2012 (Pare Corp.), and 2014 (with GZA, Inc.).

This contract continues with similar services. As shown below, it will address some remaining needs and findings from previous inspections, some new tasks arising from the 2014 dam safety inspections under the last contract, and perform the recurring regulatory dam safety inspections.

Previous recommendations:

- Conceptual-level design reports on dam improvements to address reported modeled Factors of Safety deficiencies at Chestnut Hill Reservoir Dam, Norumbega Reservoir Dam, Schencks Pond Dam, Wachusett North and South Dikes, and Weston Reservoir Dam.
- Analysis of need and conceptual-level design report for instrumentation required by the MA Dam Safety regulations at Chestnut Hill Reservoir Dam, Norumbega Reservoir Dam, Schencks Pond Dam, Wachusett North and South Dikes, Foss Reservoir Dam, Weston Reservoir Dam, and Fells Reservoir Dams 2,3 6 and 8.
- A remaining wave run-up analysis at Wachusett South Dike.
- Selected topographic survey and bathymetry around dams to support ongoing studies.

Recurring Recommendations:

- 2016 biennial Regulatory Dam Safety Phase I Inspections at High Hazard class dams:
 - Quabbin Reservoir's Winsor Dam, Goodnough Dike, and Spillway
 - Wachusett Reservoir's Dam, North Dike and South Dike
 - Sudbury Reservoir Dam
 - Foss Reservoir Dam
 - Weston Reservoir Dam
 - Chestnut Hill Reservoir Dam
 - Norumbega Reservoir Dam and Dikes 2, 3 4, and East Dike
 - Schencks Pond Dam
 - Fells Reservoir Dams 2, 3, 6, 7 and 8
- Allowance (\$25,000) for unforeseen, as-needed services requiring immediate attention that may arise during the analyses and inspections performed under this contract. This work to be completed on a task order basis with established MWRA-approved labor

¹ Dams located where failure will likely cause loss of life and serious damage to home(s), industrial or commercial facilities, important public utilities, main highway(s) or railroad(s).

rates.

Procurement Process

MWRA utilized a one-step, two-envelope Request for Qualifications Statements/Proposals (RFQ/P) process in which proposers submitted qualifications statements and sealed cost proposals. The cost proposals of the firms deemed qualified to perform the work were opened and the lowest cost proposal was selected as the first-ranked firm. The Selection Committee established the following criteria for the RFQ/P: Past Performance on MWRA projects, Similar Experience/Past Performance on Similar non-MWRA Projects, Capacity/Qualifications and Key Personnel, and Technical Approach/Organization and Management Approach. These qualifications criteria were evaluated on a pass/fail basis.

The RFQ/P was advertised on April 16, 2016 and proposals were received on May 23, 2016 from the following firms: GEI Inc., Pare Corporation, and GZA GeoEnvironmental, Inc.

The Selection Committee determined that these three firms met the qualifications requirements and recommended that the cost proposals of these three firms be opened. The results are presented below:

| <u>Firm</u> | <u>Cost</u> |
|----------------------------|------------------|
| <i>Engineer's Estimate</i> | \$162,500 |
| GZA, Inc. | \$167,100 |
| Pare Corp. | \$175,000 |
| GEI, Inc. | \$232,100 |

GZA GeoEnvironmental, Inc.'s cost is the lowest at \$167,100.00, 3% above the Engineer's Estimate. References were checked and found to be favorable. GZA GeoEnvironmental, Inc. has performed numerous dam safety inspections and analysis projects for the Massachusetts Office of Dam Safety and other New England states, and is ranked highly by them. GZA GeoEnvironmental, Inc. has also satisfactorily performed inspections and other dam safety work on the recent 2014 MWRA Dams Safety Compliance and Consulting Contract.

Staff have determined that GZA GeoEnvironmental, Inc. demonstrated a clear understanding of the contract needs and possesses the requisite skills and experience. Therefore, the Selection Committee recommends award of W-301 to GZA GeoEnvironmental, Inc.

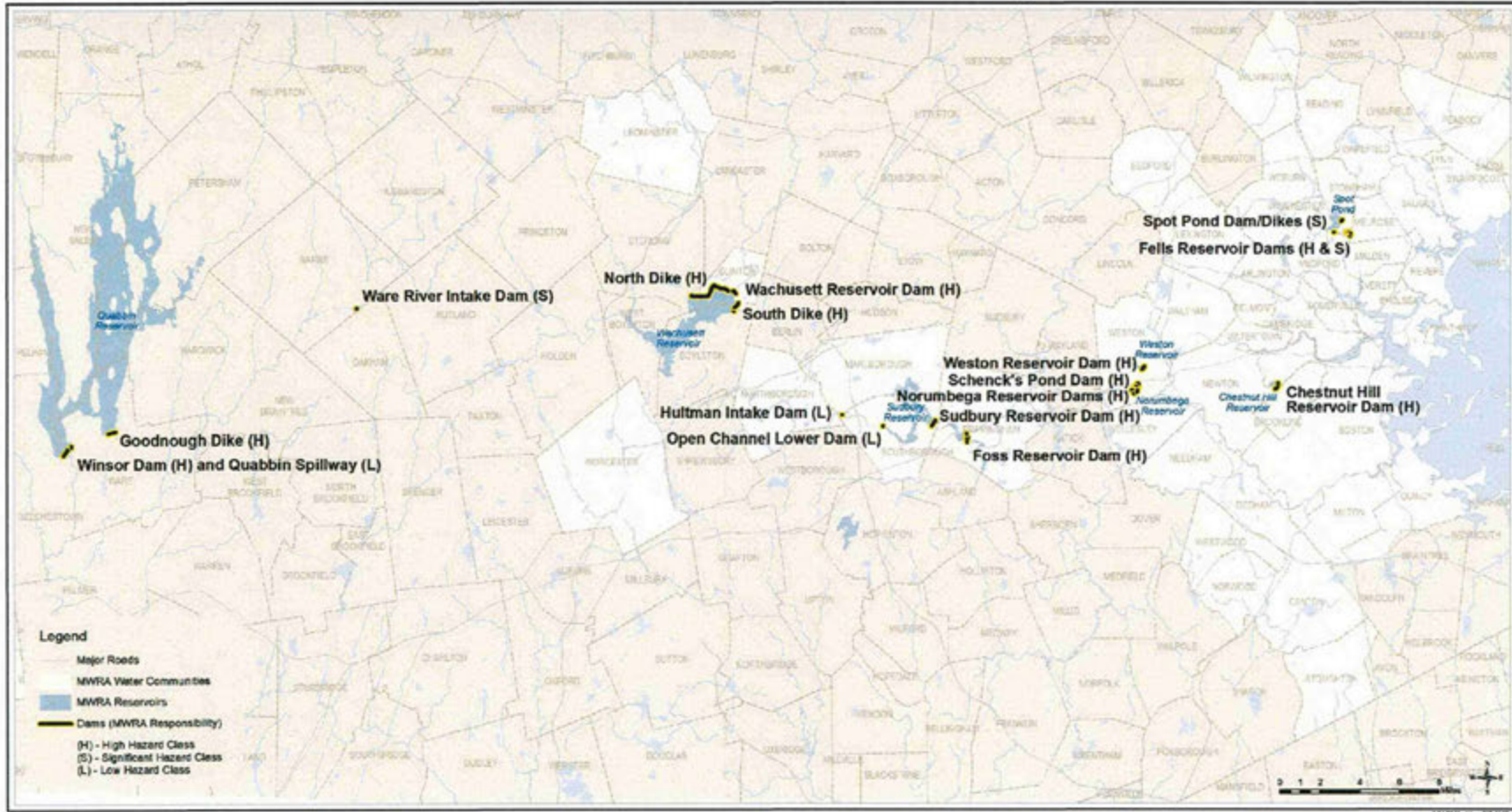
BUDGET/FISCAL IMPACT:

This contract spans two fiscal years. The FY17 CEB includes adequate funding for the first year of Contract W-301; funding will be included I future CEBs.

MBE/WBE PARTICIPATION:

There were no MBE/WBE minimum participation requirements established for this contract due to the lack of subcontracting opportunities and the lack of availability of MBE and WBE firms with expertise in dam safety compliance. GZA GeoEnvironmental, Inc. is not an MBE or WBE firm.

MWRA/DCR Dams Under MA Office of Dam Safety Jurisdiction



ATTACHMENT 1

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 8, 2016
SUBJECT: Construction of Water Mains – Sections 36, W11C & S9-A
RJV Construction Corp.
Contract 7448, Change Order 5



COMMITTEE: Wastewater Policy and Oversight

INFORMATION
 VOTE

John P. Vetere, Deputy Chief Operating Officer
Corinne M. Barrett, Director, Construction
Terrence Flynn, P.E., Construction Coordinator
Preparer/Title



Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

That the Executive Director, on behalf of the Authority, approve Change Order 5 to Contract 7448, Construction of Water Mains – Sections 36, W11C and S9-A, with RJV Construction Corp., for an amount not to exceed \$550,000, increasing the contract amount from \$11,392,785.31 to \$11,942,785.31, with no increase in contract term.

DISCUSSION:

Contract 7448, Construction of Water Mains includes replacement of 4,600 linear feet of Section 36 with 24-inch diameter ductile iron pipe, installation of 1,250 linear feet of new 36-inch diameter ductile iron pipe, designated as Section W11C, in Arlington, and replacement of a 48-inch valve in Medford (see Attachment A). Contract 7448 work is necessary to ensure reliability, and provide redundancy and flexibility to supply MWRA Northern Extra High communities during the rehabilitation of WASM 3.

The goals to be achieved by this contract include providing a stronger connection between Spring Street Pump Station and Brattle Court Pump Station; providing redundant suction for the Spring Street Pump Station from WASM 3; and replacing an inoperable 48-inch valve on Shaft 9-A pipeline in Medford.

This Change Order

Change Order 5 consists of the following item:

**Installation of a New 48-Inch Butterfly Control
and Buried Concrete Vault**

Not-to-Exceed \$550,000

This contract currently requires the Contractor to install a 48-inch butterfly valve on the Shaft 9A line located on Mystic Avenue in Medford. Based upon upgraded data and hydraulic modeling performed after this contract was awarded, it was determined that an additional control valve was required. This new 48-inch motorized butterfly valve, on Section 57 located nearby on Fourth Street, is needed to control the direction and pace of water flow in the MWRA system to improve delivery to a number of customer communities (see map attached). In addition, National Grid has installed a temporary 2-inch gas line in Fourth Street and will return prior to the coming winter months to rehabilitate an existing 16-inch gas main in this location. The new MWRA 48-inch water valve needs to be installed before the gas company returns to complete its work. Change Order 4, to purchase the valve, was previously issued due to the long lead time to manufacture the valve. Change Order 5 is for the installation costs of the valve, along with furnishing and installing a new 10-foot by 6-foot concrete vault, two 48-inch couplings and spool pieces, a 6-inch bypass and valve, SCADA equipment, new electrical and communication ductwork and cabinet, handling and disposal of contaminated soil and groundwater, and relocation of the City's existing 16-inch water main to accommodate the installation of the concrete vault.



Installation of a 48" Butterfly Valve

The approved PCO for this item has been identified by MWRA staff as an unforeseen condition. MWRA staff and the Contractor have agreed to an amount not-to-exceed \$550,000 for this additional work with no increase in contract term. The Contractor has not begun the work.

CONTRACT SUMMARY:

| | <u>Amount</u> | <u>Time</u> | <u>Dated</u> |
|-------------------------|---------------------|---------------|--------------|
| Original Contract: | \$11,235,500.00 | 910 Days | 11/04/14 |
| Change Orders: | | | |
| Change Order 1* | \$14,586.38 | 0 Days | 10/05/15 |
| Change Order 2* | \$36,681.79 | 0 Days | 11/24/15 |
| Change Order 3* | \$10,661.73 | 0 Days | 01/22/16 |
| Change Order 4* | \$95,355.41 | 0 Days | 03/14/16 |
| Change Order 5 | <u>\$550,000.00</u> | <u>0 Days</u> | Pending |
| Total of Change Orders: | \$707,285.31 | 0 Days | |
| Adjusted Contract: | \$11,942,785.31 | 910 Days | |

*Approved under delegated authority

If Change Order 5 is approved, the cumulative total value of all change orders to this contract will be \$707,285.31 or 6.3% of the original contract amount. Work on this contract is approximately 96% complete.

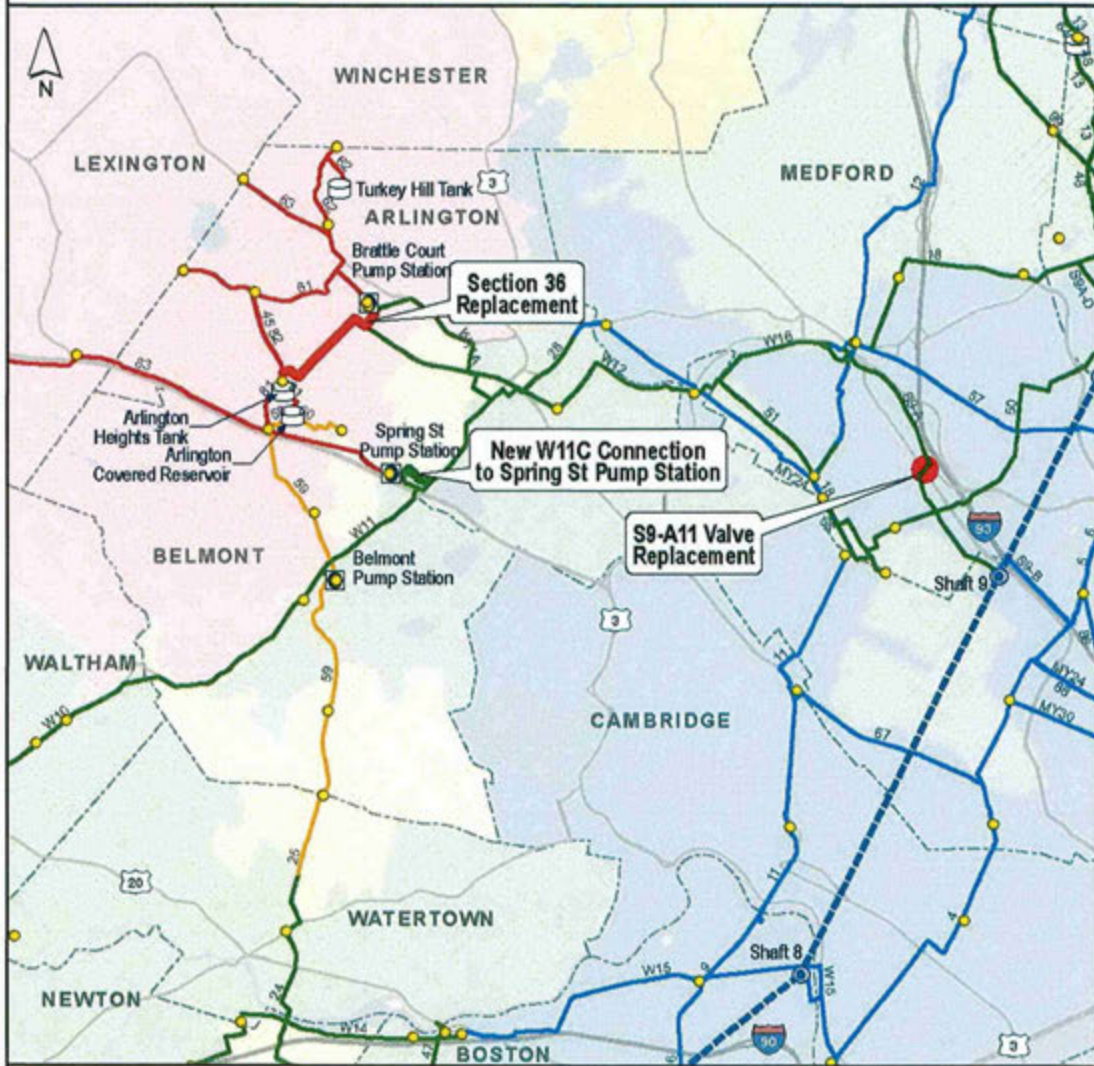
BUDGET/FISCAL IMPACT:

The approved FY16 Capital Improvement Program (CIP) includes a budget of \$11,250,500 for Contract 7448. Including this change order for an amount not to exceed \$550,000, the adjusted subphase total will be \$11,942,785.31 or \$692,285.31 over budget. This amount will be covered within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

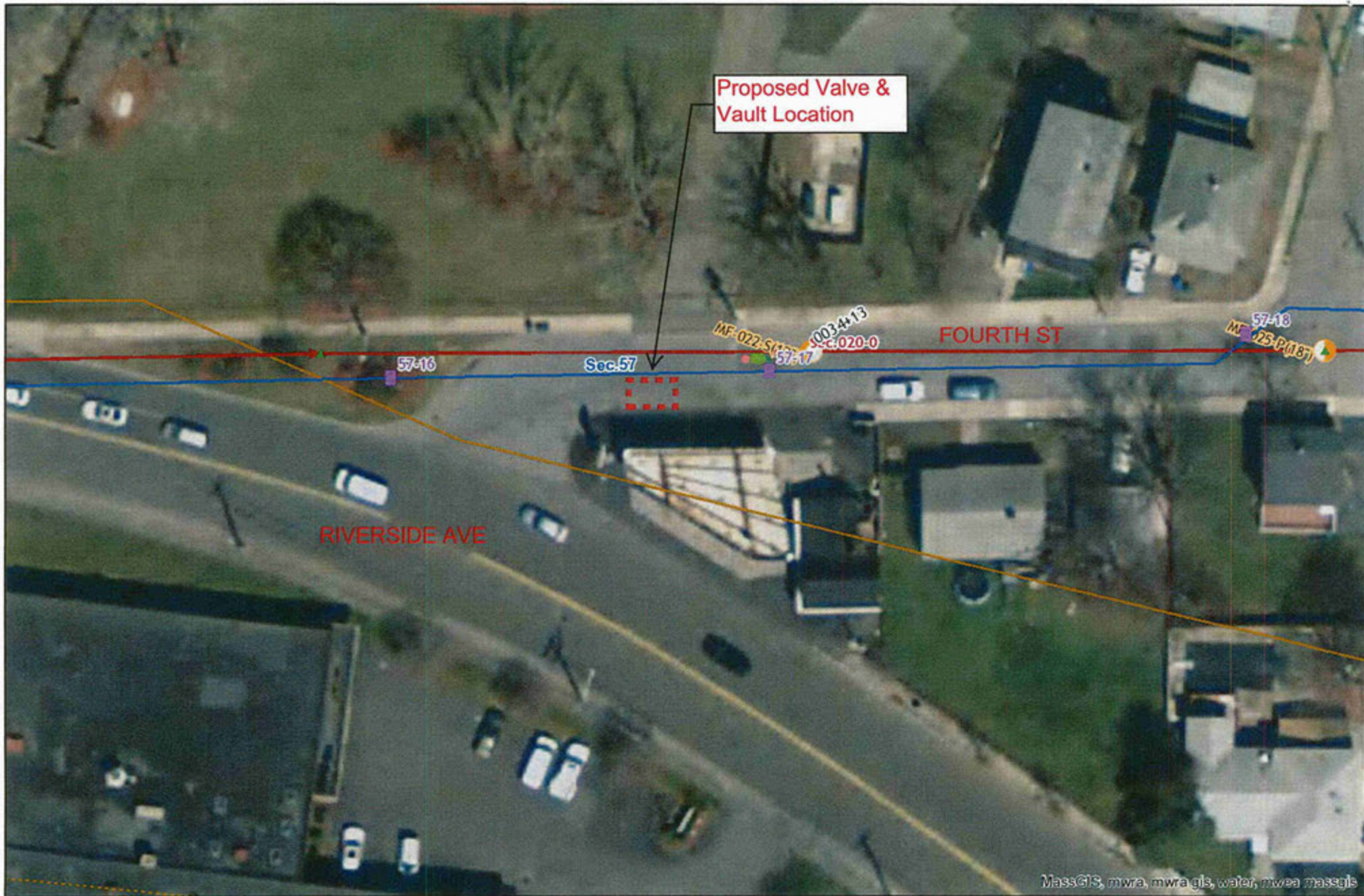
The MBE and WBE participation requirements for this contract were established at 3.4% and 3.8%, respectively. The Contractor will be notified that these requirements are still expected to be met.

Attachment A Contract 7448, Construction of Water Mains Sections 36, W11C and S9-A



| | | |
|---|--|--|
| <p>Pressure Zones</p> <ul style="list-style-type: none"> Low (170'-180') High (280') Intermediate High (320') Northern Intermediate High (330') Northern Extra High (443') Boosted Areas | <p>MWRA Water Distribution Pipes by Pressure</p> <ul style="list-style-type: none"> Northern and Southern ExtraHigh Northern Intermediate High Northern and Southern High Low | <ul style="list-style-type: none"> Water Meters Water Storage Pump Stations Transmission Shafts MWRA Water Transmission |
|---|--|--|

0 0.5 1 2 Miles



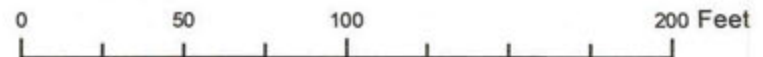
MassGIS, mwra, mwra gis, water, mwra massgis

Section 57 Control Valve Fourth Street

Date: 3/9/2016

Security Operational - For MWRA use ONLY

1 inch = 59 feet





MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
Fax: (617) 788-4899
TTY: (617) 788-4971

PERSONNEL & COMPENSATION COMMITTEE MEETING

Chair: J. Wolowicz
Vice-Chair: K. Cotter
Committee Members:
J. Carroll
P. Flanagan
J. Foti
A. Pappastergion
H. Vitale
J. Walsh

to be held on

Wednesday, June 8, 2016

Location: 100 First Avenue, 2nd Floor
Charlestown Navy Yard
Boston, MA 02129

Time: Immediately following Water Comm.

AGENDA

A. Approvals

1. PCR Amendments - June 2016
2. Appointment of Application and Systems Development Manager, MIS (materials to follow)
3. Appointment of Senior Program Manager, Field Operations and Permitting, TRAC

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Personnel and Compensation Committee

May 11, 2016

A meeting of the Personnel and Compensation Committee was held on May 11, 2016 at the Authority headquarters in Charlestown. Member Foti presided. Present from the Board were Messrs. Carroll, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Karen Gay-Valente, and Bonnie Hale. The meeting was called to order at 12:10 p.m.

Approvals

*PCR Amendments – May 2016

At the request of Committee Chair Wolowicz, who was unable to be present at the meeting, consideration of the May PCR amendments was postponed (ref. agenda item A.1).

**Appointment of Manager, Operations Administration

The Committee recommended approval of the appointment of Mr. Marcel Brady (ref. agenda item A.2).

**Appointment of Network Administrator III, MIS

The Committee recommended approval of the appointment of Mr. Feng Chen (ref. agenda item A.3).

Annual Meeting of the Personnel & Compensation Committee Independent of Management

Authority Accountability and Transparency Act Compliance

This item was referred to the full Board at the afternoon meeting (ref. agenda item B.1).

The meeting adjourned at 12:15 p.m.

* Postponed at May 11, 2016 Board of Directors meeting.

** Approved as recommended at May 11, 2016 Board of Directors meeting.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 8, 2016
SUBJECT: June PCR Amendments



COMMITTEE: Personnel and Compensation


Karen Gay-Valente, Director of Human Resources
Joan C. Carroll, Manager Compensation
Preparer/Title

 INFORMATION
 X VOTE

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the amendments to the Position Control Register (PCR) included in the attached chart.

DISCUSSION:

The Position Control Register lists all positions of the Authority, filled and vacant. It is updated as changes occur and it is published at the end of each month. Any changes to positions during the year are proposed as amendments to the PCR. All amendments to the PCR must be approved by the Personnel Committee of the Board of Directors. All amendments resulting in an upgrade of a position by more than one grade level, and/or an amendment which creates a position increasing annual cost by \$10,000 or more, must be approved by the Board of Directors after review by the Personnel Committee.

June PCR Amendments

There are five PCR amendments, four related to changes within the Operations Division and one related to the Administration Division.

The first two amendments are proposed to address staffing needs within the Supervisory Control and Data Acquisition (SCADA) Program. This program is responsible for managing the electronic monitoring and control system for MWRA's water and wastewater facilities. A vacancy in a Program Manager position in the SCADA Maintenance Technician group has created an opportunity to improve the efficiency of the SCADA group and add staff to address increasing needs. The structure of this unit will be changed from being co-managed by two existing Program Manager positions to being managed by a single Program Manager and two new Project Manager positions, resulting in a net increase of one position in this unit. The new Project Managers will directly supervise the field technicians. In addition, they will respond to technical issues and give direction regarding complex issues in the field as they arise.

The third amendment is a proposed change in title and increase in grade to a vacant position at the Southborough garage to ensure appropriate classification of this position based on the addition of new job responsibilities and consistency with similarly situated positions in other MWRA garages.

The fourth amendment is proposed to create a new position in Operations Administration. This position is needed to directly support the Chief Operating Officer with planning and implementing administrative coordination activities and special projects.

The last amendment is proposed to create a new position in the MIS Department in the Library. Over the next year, the current Records Management application will be replaced with a new system making it necessary to add an additional staff resource to assist with this implementation and manage the new system.

The amendments are:

1. Title and location change to a vacant position, Senior Staff Engineer, Electrical in the Engineering Department to Project Manager, SCADA Technicians in the SCADA Maintenance Department.
2. Title and location change to a vacant position, Senior Staff Engineer, Electrical in the Capital Engineering Department to Project Manager, SCADA Technicians in the SCADA Maintenance Department.
3. Title and grade change to a vacant position, Motor Equipment Repair Foreman to Unit Supervisor, Motor Equipment Repair in the Southboro Equipment Maintenance Department.
4. New position, Senior Manager, Coordination & Control in the Operations Administration Department.
5. New position, Library Specialist for MIS Department.

The first two amendments require approval by the Personnel and Compensation Committee. The last three amendments require Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments is a cost of between \$114,660 and \$200,535 depending on the individuals selected for the vacant positions upon the completion of the hiring processes. Staff will ensure that any cost increase associated with these PCR amendments will not result in spending over the approved FY16 Wages and Salaries budget.

ATTACHMENTS:

New/Old Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2016**

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - June 8, 2016

| Number | Current PCR # | V/F | Type | Current Title | UN | GR | Amended Title | UN | GR | Current/Budget Salary | Estimated New Salary | Estimated Annual \$ Impact | Reason For Amendment | |
|---|--|-----|------|-------------------------------|----|----|------------------------------------|----|----|-----------------------|----------------------|----------------------------|--|-----------|
| P20 | Operations Engineering 5525019 | V | T,L | Sr Staff Engineer, Electrical | 9 | 25 | Project Manager, SCADA Technicians | 9 | 25 | N/A | N/A - N/A | \$0 - \$0 | To align staffing resources with current needs | |
| P21 | Operations Capital Engineering 2971021 | V | T,L | Sr Staff Engineer, Electrical | 9 | 25 | Project Manager, SCADA Technicians | 9 | 25 | N/A | N/A - N/A | \$0 - \$0 | To align staffing resources with current needs | |
| PERSONNEL & COMP COMMITTEE TOTAL = | | | | | | | | | | | 2 | SUBTOTAL: | | \$0 - \$0 |

PCR AMENDMENTS REQUIRING BOARD APPROVAL - June 2016

| Number | Current PCR # | V/F | Type | Current Title | UN | GR | Amended Title | UN | GR | Current/Budget Salary | Estimated New Salary | Estimated Annual \$ Impact | Reason For Amendment |
|----------------------|--|-----|------|-------------------------|-----|-------------------------------|---|----|----|-----------------------|-----------------------|----------------------------|--|
| B12 | Operations Equipment Maintenance 3396009 | V | T,G | Motor Equipment Foreman | 2 | 17 | Unit Supervisor, Motor Equipment Repair | 2 | 19 | \$72,534 | \$57,056 - \$79,692 | -\$15,478 - \$7,158 | To align title and grade with increase in job responsibilities |
| B13 | Position To Be Added | N/A | N/A | N/A | N/A | N/A | Senior Manager, Coordination & Control | 6 | 13 | N/A | \$82,044 - \$121,913 | \$82,044 - \$121,913 | To address staffing needs in the Operations Division |
| B14 | Position To Be Added | N/A | N/A | N/A | N/A | N/A | Library Specialist | 6 | 8 | N/A | \$48,094 - \$71,464 | \$48,094 - \$71,464 | To address staffing needs in the MIS Department |
| BOARD TOTAL = | | | | | 3 | SUBTOTAL: | | | | | \$114,660 - \$200,535 | | |
| GRAND TOTAL = | | | | | 5 | TOTAL ESTIMATED COSTS: | | | | | \$114,660 - \$200,535 | | |

MWRA
POSITION DESCRIPTION



POSITION: Senior Staff Engineer, Electrical

PCR#:

DIVISION: Operations

DEPARTMENT: Engineering & Construction

BASIC PURPOSE:

Provides electrical engineering assistance in the review and design of Sewerage Division projects. Assists Operations to resolve emergency problems arising from equipment failure or malfunction.

SUPERVISION RECEIVED:

Works under the general supervision of the Program Manager of Technical Support/Wastewater Engineering and Construction.

SUPERVISION EXERCISED:

Exercises close supervision and direction to engineers and drafters on assigned projects.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assists in the in-house planning and design of various wastewater repair, improvement and replacement projects, and in the investigation and resolution of construction and operations problems.
- Provides electrical engineering support to the operating departments for the operations and maintenance programs of division facilities. Systems are typically 15 kV or 600 volt class.
- Participates in the design of in-house projects including development of project plans, specifications, cost estimates, schedules, proposals for bid and review of shop drawings.

- Establishes design criteria and applicable code requirements and performs analytical calculations for assigned work.
- Develops procedures to ensure safe and efficient operations, maintenance and testing practices.
- Provides technical review of consultant-prepared reports and design projects and contractor shop drawings.
- Participates in the preparation of standard specifications.
- Participates in field investigations in order to verify and obtain information on existing facilities, structures, systems and equipment.
- Prepares equipment and material quantity takeoffs for cost estimates.
- Develops and maintains records, drawings and maintenance listings as required.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of principles of and practices of electrical engineering as normally attained through a four (4) year college program in engineering or a related field; and
- (B) Demonstrated knowledge of electrical transmission and distribution equipment design as acquired through five (5) to seven (7) years of experience; or
- (C) Any equivalent education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of variable frequency drives and programmable logic controllers required.
- (B) Clear understanding of the National Electric Code and Life Safety Code.
- (C) Proficiency with personal computers and knowledge of word processing, spreadsheets

and engineering applications software required.

- (D) Understanding of and experience with CADD systems required.
- (E) Excellent interpersonal, oral and written communication skills are required.

SPECIAL REQUIREMENTS:

Engineer-in-Training certificate preferred.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated with the use of telephone, personal computer including word processing and other software, copy and machines.

PHYSICAL DEMANDS:

The physical demands described are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit and talk or hear. The employee is frequently required to use hands to finger, handle or operate objects, including office equipment, controls and reach with hands and arms. The employee is occasionally required to stand and walk.

The employee may occasionally be required to lift and/or move up to ten pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those employee encounters while performing the essential functions of this job. There are no specific environmental conditions noted.

The noise level in the work environment is usually loud in a field setting and moderately quiet in an office setting.

August 2013

MWRA
POSITION DESCRIPTION

NEW

POSITION: Project Manager, SCADA Technicians

PCR#:

DIVISION: Operations

DEPARTMENT: Field Operations/Operations Support

BASIC PURPOSE:

Provides supervision and technical support for the Authority's Supervisory Control and Data Acquisition (SCADA), telecom communications, instrumentation, wiring, radio communications and all hardware control and monitoring aspects of the SCADA system. Is required to be on-call for emergencies twenty-four (24) hours a day, seven (7) days a week.

SUPERVISION RECEIVED:

Works under the general supervision of the Program Manager, SCADA

SUPERVISION EXERCISED:

Exercises general supervision of SCADA Maintenance Technicians and C&C Technicians.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises SCADA technicians and supports development, implementation and maintenance of the Operations Division's SCADA and telemetry systems.
- Provides advanced level technical support for maintenance, enhancements and troubleshooting on SCADA and related systems
- Identifies areas of need for SCADA system repair or improvement
- Responsible for project management on SCADA projects involving internal staff or external resources
- Prepares technical specifications and budget estimates for SCADA and telemetry systems,

computer systems, local area networks and programmable logic controller equipment.

- Motivates, assists and trains SCADA technicians in the theory and repair of SCADA system components including telemetry equipment, computer systems, programmable logic controllers, instrumentation and associated components.
- Serves as liaison between MWRA and SCADA system consultants and vendors.
- Prepares written and computer generated reports.
- Oversees daily work schedules, preventative maintenance schedules and calibration procedures.
- Monitors and reports on staff productivity and utilization. Recommends and institutes improvements on same using Maximo reporting software.
- Responsible for daily coordination with Technicians & Scheduler Planner to maintain draft dispatch, final and modified dispatch reports
- Creates, Modifies and reviews job plans & safety plans for SCADA technician work orders
- Performs QA/QC review of SCADA Technicians' work
- Responsible for conducting field audits of SCADA technicians
- Responsible for planning, coordination, logistic, parts requisition and technical support in order to facilitate efficiency with SCADA technicians.
- Ensures that the microwave and other data radio equipment, antenna and transmission line systems are properly installed, tested and maintained.
- Maintains hardware & Software for Programmable Logic Controllers (PLC), Remote Terminal Units (RTU), control panels, and instrumentation
- Updates SCADA system documentation including CAD drawings and documents
- Coordinates with vehicle maintenance to ensure assigned vehicles are maintained
- Liaison between the water & wastewater OCC and SCADA technicians
- Coordination with SCADA engineering group

SECONDARY DUTIES:

Page 2 of 4

Project Manager, SCADA Technicians-New

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Four (4) year college program in an engineering discipline (electronic, electrical), control systems, telecommunications engineering or a related field; and/or
- (B) Five (5) to seven (7) years experience in the design, configuration and implementation of PLC control systems as well as the development of Graphic User Interfaces (GUI), and digital communication technology, Pump Station instrumentation and microprocessor control and digital/analog circuit design lines, of which two (2) to four (4) years should be in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of instrumentation configuration software, radio configuration software, ladder logic programming, and AutoCAD or equivalent CAD design program.
- (B) Working knowledge of EIA RS-232, RS-422, RS-485, V.35, X.25, Ethernet and other communications signaling standards and protocols.
- (C) Ability to test and troubleshoot to the component level using a microwave signal generators, spectrum analyzers, oscilloscopes, transmission line network analyzers, service monitors, power meters, frequency counters, BER test sets and logic analyzers.
- (D) Ability to perform installation, alignment and maintenance of microwave parabolic, omni directional and Yagi antennas on radio towers in excess of 100 feet above ground level.
- (E) Working knowledge of industry standards and best practices for instrument calibration procedures.
- (F) Familiar with cyber security concepts and practices.

SPECIAL REQUIREMENTS:

A valid Massachusetts Drivers License required.

Ability to obtain a FCC General Radiotelephone Operators License within six (6) months.

A valid Massachusetts Grade II Water Distribution or Treatment Licenses; or a Grade II

Wastewater Collection System Certification; or a Grade III Wastewater Treatment Plant certification; or the ability to obtain same within six (6) months.

Certification in Confined Space Entry or ability to pass MWRA Confined Space Training within six (6) months

TOOLS AND EQUIPMENT USED:

Electronic test equipment, computers, PLCs, hand tools, climbing and fall retrieval equipment, mobile radio, etc.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee occasionally is required to sit, stand and walk. The employee is frequently required to climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance, color vision, peripheral vision, depth perception, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

April 2016



MWRA

POSITION DESCRIPTION

POSITION: Senior Staff Engineer, Electrical

PCR#:

DIVISION: Operations

DEPARTMENT: Engineering Services/Deer Island

BASIC PURPOSE:

Provides electrical engineering assistances in the review, design, construction administration, and oversight for various Deer Island electrical capital and maintenance construction projects and services.

SUPERVISION RECEIVED:

Works under the general supervision of the Senior Program Manager, Electrical, Engineering Services Department for Deer Island.

SUPERVISION EXERCISED:

May direct and /or manage the work of construction and design firm employees and on occasion internal staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Provides field oversight of electrical capital and maintenance work performed by contractors to ensure compliance with contract documents.
- Provides technical review of consultant prepared reports and design projects and construction contractor submittals.
- Develops conceptual sketches, field measurements and reviews manufacturer product data. Compiles designs and drawings, provides first draft layouts and detail options for review by senior staff. Incorporates review comments into a final version with minimal technical guidance, supervision and direction.

- Maintains organized and detailed files on electric design and construction projects including, but not limited to, daily logs, correspondence, field measurements, manufacturer product data, payment requests, schedules and review comments.
- Recommends approval of variations made necessary by contingencies arising during construction and installation. Recommends approval of construction contractor payment requests.
- Maintains documentation of work performed by construction contractors, designers and in-house tradesmen, recommends approval variations made necessary by contingencies arising during construction and installation.
- Assist in the investigation and resolution of construction related and operational electrical issues.
- Prepares and reviews electrical engineering design calculations and technical specifications.
- Develops and maintains files and familiarity with all codes, code addenda, code cases, and industry standards applicable to the electrical field, and ensure that facility specifications comply.
- Provides oral and written reports detailing results of problem investigations and corrective recommendations including economic justification.
- Assists the plant operations staff with technical resolution and recommendations to electrical problems, which arise during normal plant operation.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of principles of and practices of electrical engineering as normally attained through a four (4) year college program in engineering or a related field; and
- (B) Demonstrated knowledge of electrical transmission and distribution equipment design as acquired through five (5) to seven (7) years of experience; or
- (C) Any equivalent education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of variable frequency drives and programmable logic controllers required.
- (B) Clear understanding of the National Electric Code and Life Safety Code.
- (C) Proficiency with personal computers and knowledge of word processing, Excel spreadsheets and engineering applications software required.
- (D) Understanding of and experience with CADD systems required.
- (E) Excellent interpersonal, oral and written communication skills are required.

SPECIAL REQUIREMENTS:

Successful completion of the Fundamentals of Engineering (FE) exam is preferred.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated with the use of telephone, personal computer including word processing and other software, and copy machines.

PHYSICAL DEMANDS:

The physical demands described are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit and talk or hear. The employee is frequently required to use hands to finger, handle or operate objects, including office equipment, controls and reach with hands and arms. The employee is occasionally required to stand and walk.

The employee may occasionally be required to lift and/or move up to ten pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.

The noise level in the work environment is usually loud in field settings and moderately quiet in other work facilities.

August 2013

MWRA
POSITION DESCRIPTION

OLD

POSITION: Motor Equipment Repair Foreman
PCR#:
DIVISION: Administration & Finance, Operations
DEPARTMENT: Fleet Services, Western Field Operations

BASIC PURPOSE:

Motor Equipment Repairman Foreman provides direct supervision of repair personnel at Fleet Services sites. Complete initial and final diagnosis of repairs needed.

SUPERVISION RECEIVED:

Works under the general supervision of the Equipment Repair Supervisor or Vehicles Services Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision of the Motor Equipment Repairmen/Garage Staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Conducts pre/post diagnostic reviews.
- Issues work assignments based on skills and requirements.
- Monitors preventive maintenance schedule.
- Schedules vehicles/equipment for corrective maintenance.
- Monitors and reviews workmanship of repair staff & outside vendors.
- Confirms and orders parts needed for repair of vehicles/equipment.

- Initiates work orders and ensures proper completion.
- Carries out repairs and maintenance as needed to maintain schedule.
- Maintains staff daily attendance log.
- Conducts training of less experienced staff.
- Recommends equipment and training courses to insure access/knowledge of new technologies.
- Enters manually or by computer, work order information and/or diagnostic information.
- Insures cleanliness of shop and adherence to hazardous materials handling and disposal as well as other safety-related functions.
- Monitors Authority radio communications system

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A high school education or the equivalent; and
- (B) Six (6) to eight (8) years experience in an automotive/equipment maintenance environment that includes the repair and maintenance of gasoline and diesel vehicles and heavy duty equipment; and
- (C) Minimum of two (2) years experience in a supervisory capacity; and
- (D) Experience with operation of repair equipment such as but not limited to strut machine, tire machine, wheel balancing machine, acetylene & oxygen torch; and
- (E) Experience with operation of forklifts, material handling equipment, tow and ramp trucks; and
- (F) Working experience with personal computer applications preferred; or
- (G) Any equivalent combination of education training and or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Considerable knowledge of methods, tools, materials and practices used in the repair of gasoline and diesel engines.
- (B) Considerable knowledge of computerized & electrical diagnostic tools such as, but not limited to, TECH 1 & 2, Master Tech & OTC Gas Analyzer.
- (C) Ability to give and follow written and oral instructions.
- (D) Basic reading, writing, mathematical, and scientific skills as normally attained through a high school education or the equivalent.

SPECIAL REQUIREMENTS:

Possess a valid Class B Commercial Drivers License.

Current ASE Certification (within past five years): Refrigerant Recycling & Recovery (ASE or equivalent), Brakes, Suspension/Steering, Electrical/Electronic Systems, Engine Performance, Diesel Engines, Heating & Air Conditioning, Engine Repair, Automatic Transmission/Transaxle (Master Auto or Truck Technician, L1 or L2 preferred)

TOOLS AND EQUIPMENT USED:

Mobile and portable radios: hand-held, motorized, pneumatic tool, copy and fax machines, hand-held and desktop computers and diagnostic tools, forklifts and other material handling equipment.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee regularly is required to stand, walk, talk, hear, sit, climb, balance, taste or smell, stoop, kneel, crouch or crawl.

The employee must regularly lift and/or move up to 10 pounds, frequently lift and/or move up to 25 pounds and occasionally lift and/or move more up to 50 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in outside weather conditions, exposed to wet/humid conditions, near moving mechanical parts, exposed to fumes, airborne particles, toxic or caustic chemicals. Frequently, the employee will experience extreme heat and the risk of electrical shock. Occasionally, the employee will experience extreme cold and vibration.

The noise level in the work environment is very loud in field settings, and moderately loud at other work locations.

August, 2001

MWRA
POSITION DESCRIPTION

NEW

POSITION: Unit Supervisor, Motor Equipment Repair

PCR#:

DIVISION: Operations

DEPARTMENT: Equipment Maintenance

BASIC PURPOSE:

Motor Equipment Repairman Foreman supervises maintenance of vehicle/equipment fleet for Western Operations. Provides direct supervision of repair personnel at multiple Fleet Services sites. Completes initial and final diagnosis of repairs needed.

SUPERVISION RECEIVED:

Works under the general supervision of the Supervisor of Equipment Maintenance

SUPERVISION EXERCISED:

Exercises close supervision of the Motor Equipment Repairmen/Garage and work coordination staff at multiple locations.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervise staff that perform maintenance and motor vehicle repair functions at multiple sites.
- Conducts pre/post diagnostic reviews utilizing scan tools and online PC based computerized troubleshoot and repair assistance.
- Determine daily assignments of assigned staff and distributes work at multiple work sites according to established deadlines and priorities.
- Supervises the Work Order Coordinator in monitoring preventive maintenance schedule and insuring that all work is being done on MAXIMO work orders and that all materials are accounted for.
- Schedules vehicles/equipment for corrective maintenance.
- Monitors and reviews workmanship of repair staff & outside vendors.
- Confirms and orders parts needed for repair of vehicles/equipment.
- Carries out repairs and maintenance as needed to maintain schedule.
- Maintains staff daily attendance log.

- Conducts training of less experienced staff.
- Recommends equipment and training courses to insure access/knowledge of new technologies.
- Enters, work order information and/or diagnostic information into CMMS (MAXIMO).
- Insures cleanliness of shop and adherence to hazardous materials handling and disposal as well as other safety-related functions.
- Monitors Authority radio communications system.
- Works with management staff to coordinate evaluation of vehicle conditions and replacement strategies.
- Develops cost estimates for repairs.
- Manages spare parts inventory and recommends stocking levels for warehouse staff.
- Supervises assigned crews including taking disciplinary actions (issuing verbal warnings and initiating written warnings) when necessary, conducting performance reviews and preparing regular reports as required on work completion and crew productivity.
- In the absence of the Grounds General Foreman, supervises snow removal operations.
- Follows MWRA established safety, operating and emergency response procedures and policies established by the MWRA.
- Assists Planners/Schedulers to develop preventative maintenance and corrective maintenance priorities, schedules and estimates of level of effort to ensure vehicle performance is maximized.
- Operates forklifts and other light equipment.
- With proper trainings sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts ect.
- Insures that all vehicles meet the RMV inspection criteria and that they receive the annual inspections.
- Applies for and maintains the over width vehicle permits for transporting heavy equipment.

SECONDARY DUTIES:

- Performs related duties as required.
- Assist employees with preparation of injury/illness reports, safety and maintenance work orders and keeps accurate records.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A high school education or the equivalent; and
- (B) Eight (8) to ten (10) years experience in an automotive/equipment maintenance environment that includes the repair and maintenance of gasoline and diesel vehicles and heavy duty equipment; and

- (C) Minimum of two (4) years experience in a supervisory capacity; and
- (D) Experience with operation of repair equipment such as but not limited to strut machine, tire machine, wheel balancing machine, acetylene & oxygen torch; and
- (E) Experience with operation of forklifts, material handling equipment, tow and ramp trucks; and
- (F) Working experience with personal computer applications preferred; or
- (G) Any equivalent combination of education training and or experience.
- (H) Successful completion of the MWRA sponsored supervisory development training preferred.

Necessary Knowledge, Skills and Abilities:

- (A) Considerable knowledge of methods, tools, materials and practices used in the repair of gasoline and diesel engines.
- (B) Considerable knowledge of computerized & electrical diagnostic tools such as, but not limited to, TECH 1 & 2, Master Tech & OTC Gas Analyzer.
- (C) Ability to give and follow written and oral instructions.
- (D) Basic reading, writing, mathematical, and scientific skills as normally attained through a high school education or the equivalent.
- (E) Ability to plan organize and assign duties in multiple locations.
- (F) Ability to use personal computer, data terminals and specialized MAXIMO/Lawson software to perform related duties.
- (G) Working knowledge of methods, procedures and work rules relating to equipment repair facilities.

SPECIAL REQUIREMENTS:

Possess a valid Class A Commercial Drivers License.

Current ASE Certification (within past five years): Refrigerant Recycling & Recovery (ASE or equivalent), Brakes, Suspension/Steering, Electrical/Electronic Systems, Engine Performance, Diesel Engines, Heating & Air Conditioning, Engine Repair, Automatic Transmission/Transaxle (Master Auto or Truck Technician, L1 or L2 preferred)

Department of Public Safety Hoisting License 1B, 2A and 4G or the ability to obtain within one year

TOOLS AND EQUIPMENT USED:

Mobile and portable radios: hand-held, motorized, pneumatic tool, copy and fax machines, hand-held and desktop computers and diagnostic tools, forklifts and other material handling equipment.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee regularly is required to stand, walk, talk, hear, sit, climb, balance, taste or smell, stoop, kneel, crouch or crawl.

The employee must regularly lift and/or move up to 10 pounds, frequently lift and/or move up to 25 pounds and occasionally lift and/or move more up to 50 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in outside weather conditions, exposed to wet/humid conditions, near moving mechanical parts, exposed to fumes, airborne particles, toxic or caustic chemicals. Frequently, the employee will experience extreme heat and the risk of electrical shock. Occasionally, the employee will experience extreme cold and vibration.

The noise level in the work environment is very loud in field settings, and moderately loud at other work locations.

April 2016

MWRA
POSITION DESCRIPTION

NEW

POSITION: Senior Manager, Coordination and Control

PCR#:

DIVISION: Operations

DEPARTMENT: Operations Administration

BASIC PURPOSE:

Develops and implements automated administrative systems and procedures related to master planning, operational and business strategies, organizational structure and contract management in support of the Chief Operating Officer. Manages Operations Division reporting requirements, contract management requirements and public presentations and materials.

SUPERVISION RECEIVED:

Works under the general supervision of the Chief Operating Officer

SUPERVISION EXERCISED:

Exercises close supervision of assigned administrative support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Develops and implements automated database systems for all Operations Division internal tracking requirements related to planning, contract management, operations and business strategies.
- Maintains and revises policies, procedures and electronic tracking for the administration and management of contracts.
- Oversees the Division's procurement of consultants, contractors and materials in conjunction with the Procurement Department.
- Coordinates all monthly Board of Directors agenda items, materials and presentations.

- Manages and facilitates the preparation of administrative, organizational and optimization analyses for the Division.
- Plans, directs and manages major administrative special projects directed by the Chief Operating Officer.
- Preparation and coordination of materials for public and regulatory meetings.
- Assists in responding to public requests for assistance and information.
- Oversees and monitors Operation's Division reporting requirements.
- Reviews contract provisions, consults with appropriate MWRA staff and ensures compliance in legal, financial and affirmative action areas.
- Facilitates implementation of Operation's Division training initiatives.
- Assists in implementation of improvements in the Capital Delivery Program.
- Coordinates and approves the Division's Yellow and Orange Notebooks.
- Represents the Chief Operating Officer on various matters as assigned.
- Coordinates with Law Division on all public information requests.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- A) A four- (4) year college program in public/business administration or a related field.; and
- B) Knowledge of administrative management, procurement policies and procedures, financial analysis and personnel administration as acquired through seven (7) to nine (9) years of related experience; or
- C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- A) Demonstrated effectiveness at facilitating major projects that involve coordinating with people across all levels of an organization.

- B) Understanding of conceptual issues related to development of computer systems.
- C) Excellent analytical, facilitation, oral and written communication skills.

SPECIAL REQUIREMENTS:

None.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employees is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reach with hands and arms. The employee frequently is required to stand and walk.

There are no requirements that weight be lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

May 2016

MWRA
POSITION DESCRIPTION



POSITION: Library Specialist
PCR#:
DIVISION: Administration
DEPARTMENT: Management Information Systems (MIS)

BASIC PURPOSE:

Support the operation of a comprehensive library and information resource center including computer access to research sources that will assist staff in accomplishing the MWRA mission.

SUPERVISION RECEIVED:

Works under the close supervision of the Library Supervisor.

SUPERVISION EXERCISED:

On specific projects may lead a team comprised project staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Executes in-depth technical research requested by staff through the utilization of on-line services.
- Recommends informational materials for MWRA library collection, including books, subscriptions, periodicals, and multi-media, then reviews collection to ensure that standards and specifications are up-to-date.
- Performs operation tasks including data imports and/or entry of news clips, scanning/photocopying of reference requests, re-shelving of returned materials, processing of interlibrary loan requests, cataloging new materials and other duties as assigned.
- Provides access to the library information sources including books, journals, multi-media assets, news clips, photographs, flood plain maps and historical items.

- Classifies new materials and consultant reports in accordance with library classifications schemes and notifies staff of new acquisitions by issuing Library updates and the Intranet site.
- Manages and maintains the integrity and standardization of existing information stored in library computer databases and web pages.
- Fields and responds to information requests from all levels of authority staff, the public, students and consultants via phone, e-mail and on-site visits.
- Provides on-site staff training for computer access to library collections.
- Contributes to the monthly report of library activities by summarizing pertinent research questions.
- Attends authority informational meetings as necessary.
- Adheres to all Record Management policies and supports records center needs as assigned.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Four (4) year college program (Information Services, Liberal Arts or Science preferred); and
- (B) Specific understanding of library science and information services as acquired through one (1) to three (3) years experience.
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Proficiencies in computer application including MS Office, MS Access, and on-line search tools are required. HTML and database skills preferred.
- (B) Capable of using Micro media equipment.
- (C) Excellent analytical, interpersonal, written and oral communications skills are required.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Operators License.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls, reach with hands and arms, and talk or hear. The employee frequently is required to stand, sit, climb or balance. The employee occasionally is required to walk, stoop, kneel, crouch or crawl, taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.


WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.


The noise level in the work environment is usually a moderately quiet office setting.

April 2016

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Appointment of Manager, Application & Systems Development
Management Information Systems, Administration Division

COMMITTEE: Personnel & Compensation


Karen Gay-Valente, Director, HR
Russell J. Murray, Jr., Director, MIS
Preparer/Title

INFORMATION
 VOTE


Michele S. Gillen
Director Administration

RECOMMENDATION:

To approve the appointment of Mr. Giri Narayanan to the position of Manager, Application & Systems Development (Non-Union, Grade 14), in the MIS Department, Administration Division at an annual salary of \$125,500, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The Manager, Application & System Development is responsible for managing the development, implementation and support of internally created or purchased application software, including 123 applications with 227 modules that support various business functions across the Authority including financial, operational and compliance systems such as Infor/Lawson, Maximo, PI, PIMS, and LIMS. The position reports directly to the Director, MIS and supervises nine positions.

SELECTION PROCESS:

The position was originally posted internally and externally. Two external candidates applied but did not meet the minimal qualifications for the position. Staff continued to search for qualified and interested applicants for an extended period of time but were unable to recruit a qualified candidate given the current highly competitive IT employment market. In February 2016, Mr. Narayanan was hired under the Commonwealth of Massachusetts' Blanket Contract as a temporary "contract to hire" employee to work on several significant MIS projects that were underway including the Maximo upgrade. At that time, Mr. Narayanan was interviewed by the Director of Administration, the Special Assistant for Affirmative Action and the Director of MIS. Since that time, Mr. Narayanan has proven himself to be a highly capable and qualified individual who has the knowledge, skills and education necessary for this position.

Mr. Narayanan possesses over twenty five years of experience in information technology. He has managed application development teams for companies such as UNYSIS, IBM, Computer Science Corporation and Information Builders. Furthermore, as an independent consultant, Mr. Narayanan has extensive experience with process control systems and knowledge of application development methodologies and programming languages which cover all of the applications currently managed by MIS. Mr. Narayanan also has significant knowledge and experience with data management integration.

Mr. Narayanan possesses a Bachelor of Science Degree in Mathematics from the University of Madras, Chennai, India, and a Masters of Science Degree in Electrical Engineering from Indian Institute of Science, Bangalore, India and a Masters Degree in Business Administration from Babson College as well as several IT certifications.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the Administration Division's FY16 current expense budget.

ATTACHMENTS:

Resume of Giri Narayanan
Position Description
MIS Organization Chart

GIRI R NARAYANAN

DRIVING CORPORATE SUCCESS THROUGH EXCEPTIONAL TECHNOLOGY MANAGEMENT

Application Systems Development Manager

Highly accomplished, results-focused senior technology management professional with consistent history of directing and overseeing application architecture/design/development/qa/deployment,integration and configuration teams. Bring strong technical leadership and management of complete software development life cycles (SDLCs) for all kinds of technology solutions such as Web / Mobile/Client-server/Cloud etc. Bring strong operations and infrastructure management experience & skills. Bring strong collaboration skills working with multiple cross functional teams such as product management, engineering, modelling teams etc., Excel at improving efficiency and quality by introducing best practices and standard procedures. Adept at facilitating business growth by assisting with RFP responses, product demonstrations, and presentations. Certified Scrum Master.

Core Competencies:

- | | | | |
|-----------------------------|-------------------------|--------------------------|--------------------------|
| ▶ Development Management | ▶ Budget & Cost Control | ▶ Solution Development | ▶ IT Operations |
| ▶ Agile/Scrum Methodologies | ▶ ITIL Processes | ▶ Quality Assurance | ▶ IT Infrastructure/SaaS |
| ▶ Release Management | ▶ Team Management | ▶ Data Center Operations | ▶ |

PROFESSIONAL EXPERIENCE

Sr. Delivery Manager –PCG/HSI

2015 July-Present

As the Delivery Manager, managed multiple (6 to 7) healthcare (Billing and claims) related projects/application delivery teams in parallel. Our clients included mostly state health department and agencies. The role entailed end to end technical delivery management of software solution implemented in .NET and specifically included planning, requirements gathering, budgeting, schedule monitoring, status reporting, solution review session, risk and issues management, change control, resource allocation, IT issues, release planning etc. Served as the primary escalation point for any Infrastructure/release/operations issues that the team faced

Enabling Technologies include: asp.net/C#/MSSQL, TFS, JIRA, MPP

Director (Application Development)

2014 October-2015 July

MISys, VT

Lead a small team of product development resources for a small manufacturing software company. The solution had three flavors desktop, Web(Cloud) based and mobile , catering to the needs of small to medium sized manufacturing companies for their MRP needs , inventory management, and other such related manufacturing operations.The Cloud(Azure) based web solution was to be built as SaaS solution to online customers.We also leveraged Azure PaaS feature for secure solution development and deployment .Among other features the cloud-based web solution had eCommerce capability by virtue of its ability to integrate with Stripe payment gateway online and provide customer ability to self-provision (add/remove products used and add or remove any number of users) and pay charges accordingly.

Role played : Technical management of the team entailing requirements gathering , resource task allocation, daily scrum, release planning, identify resource gaps, identify technology gaps, team member performance evaluations, budget, interacting with senior team and updating status ...etc. Member of senior management team. Some specific highlights of the role are as follows

- Responsible for Team Development and Business Relations with peers in other areas of IT.
- Responsible for Team Resource Planning & budget, considering workload in the application design, implementation, and support of the infrastructure

- Approve technical ideas and design developed by the team members either individually or collaboratively
- Manage all vendor (software / skilled manpower) relationships and look for ways to streamline vendor contacts and technology in the organization
- Set and enforce standards related to application development
- Manage software costs and licenses renewal in the organization
- Ensure adherence to Agile/SCRUM methodologies and affected other process improvements
- Manage Quality Assurance for Software Engineering team.

Enabling Technologies included: VB.NET, C#, SQLServer, Cloud-MSAzure (SaaS/PaaS), Angular, JS/Telerik/SVN/GIT/STASH/SourceTree/JIRA/Teamcity, MRP, CRM, WEB API, SolidWorks, eCommerce

Implementation Manager / Delivery Manager

OS Inc. MA

2012 Sept – Sept 2014

(OS Inc. delivers SaaS based flexible, enterprise-class policy management, billing, rating, product configuration and business intelligence/analytic solutions to the global P&C/General Insurance industry)

Member of Professional /client services department. Worked closely alongside AVP in delivering on a very large project (migration of existing Billing and PAS system to Oneshield's Dragon product for Auto and Home Insurance). Provide oversight /leadership per project needs. My main responsibilities included among other entailed the following

- To make sure all application (DEV/QA/STAGING.) environments are running smoothly without issues and with minimal performance issues
- DEVOPs interface between development and ITS
- Work closely with infrastructure/ operations /development release team in resolving issues for customers
- Application upgrade/Release Mgmt
- Performance monitoring. QA of well over 6000 defects (10,000 hours +)
- Recommend third-party utilities and environmental software
- Regularly review performance data for Middleware system capacity planning purposes.
- Provide the VP of PS with information/status of all projects.
- Ensure adherence to Agile/SCRUM (and Waterfall) methodologies and effected other process improvement
- Manage Quality Assurance for Software Engineering team.
- Project Planning and Budgeting

Previously was charged with leading \$1M complex technology project for a different client. Supervised up to 10 developers, multiple QA-testers, and managers, both onshore and offshore. Responsibilities included overseeing complete project schedules and phases, including resource scheduling, quality monitoring, and defect tracking. Work with Release team to coordinate the release of functional and tested code into client environments as per contract deliverables. Final escalation point for all code and configuration defects. Tracking budget and cost estimations. Periodic project risk assessments with senior management

- Resolved 100% of 600 identified defects within the 8-month project schedule and within \$850,000 budget.

Enabling Technologies: ExtJS Front end/J2ee MT hosted on WebSphere 7.00/JBOSS/Tomcat/JAXB/Oracle 11g /JIRA JIRA 6.0 /Eclipse/Selenium scripting/Rally (Agile tool)

Senior Technical Delivery Manager – Philips (contract)

NTTDATA, Framingham, MA

Jan 2012– July 2012

*(Royal Philips of the Netherlands is a diversified technology company, focused on improving people's lives through meaningful innovation in the areas of **Healthcare**, **Consumer Lifestyle**, and **Lighting**. The company is a leader in cardiac care, acute care and home healthcare, energy efficient lighting solutions, and new lighting applications, as well as male shaving and grooming and oral healthcare)*

Directed large stream of technical resources (Development/BA/PM/QA/Infrastructure) for multiple software development initiatives at one of the world's largest home healthcare companies. Supervised close to 20 onsite and 10 offshore technical specialists and developers. Oversaw complete life cycles, from project planning, business case design, and scoping for QA, risk management, development, documentation, and delivery. Worked closely with DBAs, middleware, and enterprise (including Mobile) application architecture teams on product designs and integrations. Administered project budgets up to \$500,000 each.

- Delivered all projects on time and within budget and rolled out fully-tested products to production.
- Facilitated revenue growth by converting pre-sales opportunity into contracted consulting agreement.
- Improved efficiency and quality by scheduling team meetings and management meetings to sort out issues.
- Led 30+ resources in multiple streams which included Development/QA/DB/Infrastructure teams distributed geographically (US-MA/US-CT/India-Chennai)
- Project cost estimation/Profitability analysis
- Monthly project review with senior client leadership

Enabling Technologies: JAVA/J2ee MT hosted on Weblogic /JAXB/Hibernate/Spring Framework/Oracle 11g / JIRA 6.0 /Eclipse/Selenium testing tool

Integration Architect/ Senior Technical Manager /

INFORMATION BUILDERS INC. (IBI), New York, NY

2008 – 2011

(IBI also formerly known as iWay is headquartered in NY. iWay provides solutions that work on any platform, interoperate with proprietary technologies as well as industry standards, support more than 300 databases and application adapters and lay the foundation for a real-time, integrated enterprise. iWay solutions help integrate, enrich, and transform data into relevant, timely, and usable information. Better manage data assets to cut costs, reduce risk, achieve compliance, and improve business performance.

)
A key member of Integration Solution Assessment Team that provided consulting services and project management for top-tier clients. Led technical solution development, software development and implementation, and data warehouse design initiatives. Supervised up to 12 geographically dispersed resources playing multiple roles (developers/architects/junior managers) with regards to client implementations. Actively involved in RFP response preparation, demonstrations, presentations, and customer meetings.

- Achieved development and project quality improvements by establishing best practices and standard procedures.
- Improved development efficiency at Entertainment Publication by reworking existing Agile/Scrum model, updating SOW, and suggesting technology choices. Led development of integration process flows for data transfer.
- Managed design and implementation of Patient Clinical Data Warehouse data dispatch solution for city government.
- Directed design of data transport solution for New York City MTA's healthcare system.
- Spearheaded design and delivery of several healthcare-related applications for NACHRI.
- Tracking budget/Project cost estimation/Profitability analysis
- Periodic Risk assessments

Clients included Veteran Affairs SLC UT, Lehigh Valley, PA, MTA, NY, Entertainment Publication MI NACHRI VA, FHLBB (

Software Methodology used: Agile/Scrum, TDD, Waterfall

Enabling Technologies WINDOWS XP, LINUX, ORACLE10g, MUMPS, iWay/iSM (version 6.1), BEA WEBLOGIC , SOA, WSDL, JAVA, XML, XSLT, HL7

Sr. Consultant/Senior Architectural Specialist

COMPUTER SCIENCE CORP., Waltham, MA

2004 – 2008

(Computer Sciences Corporation is an American multinational corporation that provides information technology services and professional services. Its headquarters is located in Falls Church, Virginia. CSC has 90,000 employees in over 70 countries)

Planned and led high-profile client engagements in areas such as data warehousing, health system design and implementation, disaster recovery, and web portal design. Built and supervised development and implementation teams in onshore/offshore model. Administered budgets up to \$1M. Created roadmaps, business plans, and SOWs, and assisted with RFPs.

- Improved quality and productivity by introducing custom Agile/Scrum SDLC methodology.
- Oversaw development of healthcare data warehouse web portal for large health consortium.
- Led migration of 16 credit card and banking applications from legacy system to BEA WebLogic for the client.

Enabling Technologies: XML/HL7/AJAX/WEB2.0/.NET, MS-SQLSERVER 2005, WINDOWS, Ascential Datastage, JAVA, Oracle 10g CITRIX, BEA Weblogic, Oracle, Apache Tomcat, MQ, AIX, JBOSS, HL7

YORK INTERNATIONAL, York, PA

2002 – 2004

(Now Johnson & Johnson)

Technical Lead / Manager

Directed migration of remote monitoring HVAC solution from design to deployment. Supervised team of 8, including offshore developers. Oversaw development, architecture, testing, bug fixing, and delivery. Provided account and project management.

- Reduced costs \$100,000 by identifying an alternative mobile solution for field service technicians.
- Improved efficiency by partnering with the product provider to push code changes from server to remote monitoring boxes.
- Worked with alternate embedded systems vendors to find cost-effective solutions for memory and disk space issues.

Enabling Technologies: JAVA (J2ME, SWING, AWT, and J9), MQ, Me, DB2, SIEBEL, OSGi, RADIUS, LINUX, and VPN.

PETROVANTAGE, Cambridge, MA

2000 – 2002

(Spin-off from AspenTech now rolled back into AspenTech in 2002)

Senior Software Engineer / Technical Lead

Led design, architecting, development, and deployment of B2B web-based product for Startup Company. Supervised staff of 6.

Enabling Technologies: Java/J2ee/WebSphere/SQLServer

IBM CORP., South Burlington, VT

1998 – 2000

Senior Consultant / Project Manager

Managed development of patented semiconductor analysis tool and upgrade of the strategic planning tool. Supervised staff of 3.

Enabling Technologies: AIX/C/C++/JAVA (SWING)/Shell scripting

CAREER NOTES: Previously held positions of **Senior Technical Resource** at J.B. SOFTWARE (1996-1998), **Senior Consultant** at UNISYS (1995-1996), and **Software Engineer** at INTERNATIONAL SOFTWARE (1991-1994).

EDUCATION

MBA, Babson College, F.W. Olin Graduate School of Business, Wellesley, MA

MS in Electrical Engineering, Indian Institute of Science, Bangalore, India

BS in Mathematics, University of Madras, Chennai, India

CERTIFICATIONS & TRAINING

PMI Project Management Professional (PMP) (in progress)

Certified Scrum Master

Sun Certified Enterprise Architect (J2ee)

ITIL Foundations v3 (in progress)

TECHNICAL SKILLS

MS Office, Project, Apache Tomcat, Siebel, HL7, Weblogic, Websphere, Ascential Datastage, Oracle 10g, Citrix, MQ,NET, ASP.NET,
C/C++/C#, SQL Server, SQL, Web 2.0,

LAMP,Java, J2ME, SWING, AWT, J9, J2EE, JavaScript, XML, XSL, UML, EJB, Visual Basic, AJAX, COM, Perl, Me, DB2, Siebel, OSGi,
RADIUS, VPN, IIS, Linux, Windows, AIX,HL7

**MWRA
POSITION DESCRIPTION**

POSITION: Application & System Development Manager

DIVISION: Administration

DEPARTMENT: Management Information Systems (MIS)

BASIC PURPOSE:

Plans, directs, and oversees the operations and fiscal health of the Application & System Development Section of the MIS department.

Responsible for all aspects of development and support for internally created or purchased application software, including: the development methodologies, technologies (language, databases, and support tools), development and testing environments, and management of the application development staff and project workload for the Authority.

Responsibilities also include planning and maintaining work systems, procedures, and policies that enable and encourage the optimum performance of the staff and other resources within the Application & System Development Section.

SUPERVISION RECEIVED:

Works under the general supervision of the MIS Director.

SUPERVISION EXERCISED:

Manages a group of IT Supervisors, professional, technical and administrative employees assigned to the Application & System Development Section.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

Provides oversight and direction to the employees in the Application & System Development Section, in accordance with the organization's policies and procedures. Identifies needed improvements to work practices and works with the Director of MIS and Labor Relations staff to bring about changes.

Manages the preparation and maintenance of reports necessary to carry out the functions of the section. Prepares periodic reports for management, as necessary or requested, to track strategic goal accomplishments.

Provides final recommendation on staffing levels. Works with Human Resources staff to recruit, interview, select, hire, and employ an appropriate number of employees.

Mentors and develops staff, including overseeing new employee on-boarding and providing career development planning and opportunities. Encourages employees to take responsibility for their jobs and goals. Delegates responsibility as appropriate and expects accountability and regular feedback.

Fosters a spirit of teamwork that allows for disagreement over ideas, conflict and conflict resolution, as well as the appreciation of diversity. Communicates organizational information through department meetings, one-on-one meetings, and appropriate email, and regular interpersonal communication.

Leads employees using a performance management and development process that provides an overall context and framework to encourage employee contribution and includes goal setting, feedback, and performance development planning. Leads employees to meet the organization's expectations for productivity, quality, and goal accomplishment.

Maintains employee work schedules including assignments, job rotation, training, vacations and approved leaves. Provides coverage for absenteeism, and overtime scheduling as needed.

Assist in maintaining harmonious labor management relations through proper applications of collective bargaining agreement provisions and established personnel policies.

Prepare for and hears Step-One grievances and pre-disciplinary hearings.

Participate in collective bargaining negotiations.

Plans, assigns and directs the activities of professional and technical personnel involved in the design, development and systems analysis functions required to create new computer applications programs or install and implement software purchased from outside vendors.

Reviews and analyzes existing applications programs and programs in development to ensure efficiency and effectiveness of those programs; reviews requests for program changes required to meet needs of Authority departments required by the addition of new Authority programs and changes in regulations.

Assigns and reviews the design layout for programs required for special projects.

Troubleshoots software failures for systems to determine root causes and to implement solutions.

Reviews performance of application programs to ensure efficiency, documentation, and to ensure that output meets the needs of user departments.

Provides technical information required in the preparation of annual budget figures for the Applications and System Development Section

Serves as backup to the Manager of IT Operation.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college degree program in a computer science, technical education or related field is required. Advance degree preferred; and
- (B) Seven (7) to nine (9) years experience in product development and support, of which three (3) years must be in a supervisory capacity; or
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent analytical and technical skills.
- (B) Excellent written and verbal communication skills. Exceptional interpersonal skills in areas such as teamwork, facilitation and negotiation.
- (C) Excellent planning and organizational skills.
- (D) Strong leadership skills.
- (E) Knowledge of all components of a technical architecture; understanding of network architecture, service oriented architecture and object-oriented analysis and design.
- (F) Skill with CSS, HTML, one or more JavaScript frameworks, and AJAX, Microsoft's DOT.Net Framework

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

ITIL Foundations Certification version 3 and at least two from the following list:

IIPRC - ITIL Practitioner - Release and Control
MCSE - Microsoft Certified Solution Expert
MCSD - Microsoft Certified Solution Developer
CISM - Certified Information Security Manager
CISSP - Certified Information Systems Security Professional
VCP5-DCV: VMware Certified Professional
PMP - Project Management Professional
CCP - Citrix Certified Professional
Or the ability to obtain within one year.

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk and stand.

The employee must occasionally lift and/or move up to 10 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

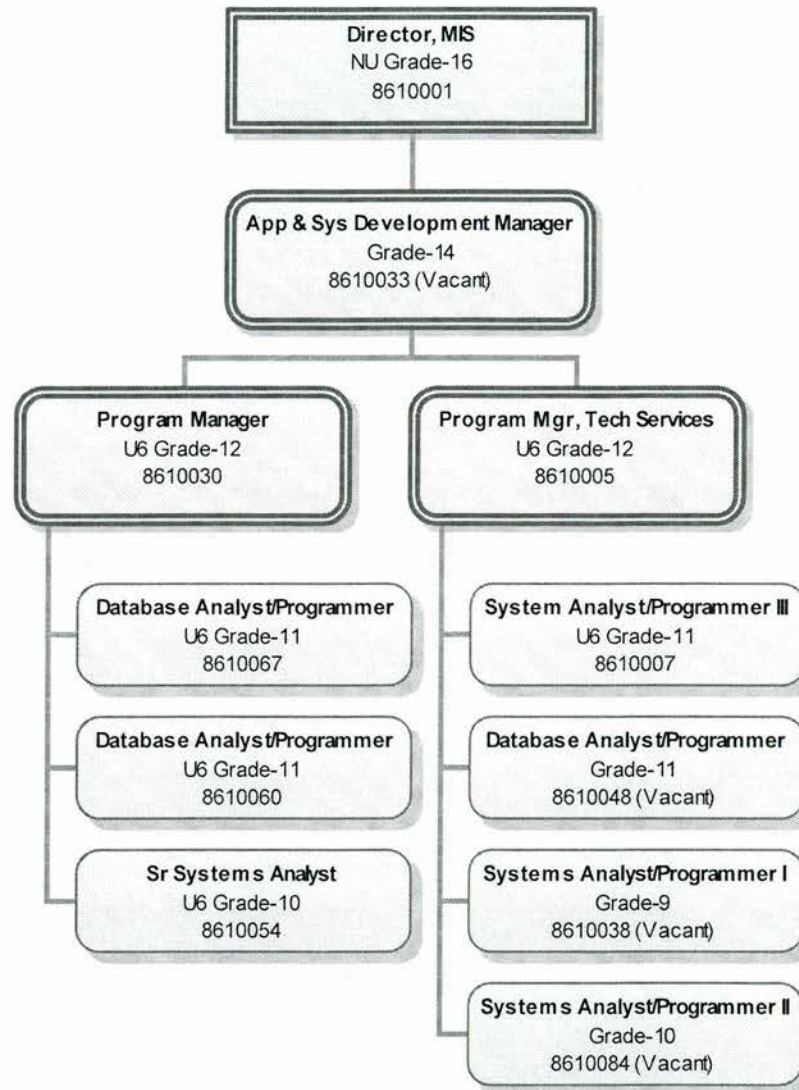
WORK ENVIRONMENT:

The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.


While performing the duties of this job, the employee works in an office environment. The noise level in the work environment is a moderately quiet office setting.

May 2015

MIS Department Position Hierarchy



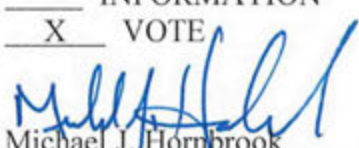
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 8, 2016
SUBJECT: Appointment of Senior Program Manager, Field Operations and Permitting, Toxic Reduction and Control

COMMITTEE: Personnel and Compensation

Carolyn M. Fiore, Deputy Chief Operating Officer
John A. Riccio, Director, TRAC
Preparer/Title

 INFORMATION
 X VOTE


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Peter Yarossi to the position of Senior Program Manager, Field Operations and Permitting, (Unit 9, Grade 30), Toxic Reduction and Control (TRAC) at the recommended salary of \$119,706.80, to be effective on a date to be determined by the Executive Director.

DISCUSSION:

The position of Senior Program Manager, Field Operations and Permitting is a new position created to manage and oversee two existing sections (Permitting and Monitoring) within TRAC and incorporate into TRAC a new section with the responsibilities for 8(m)¹ and Direct Connection permitting. The responsibilities of the Senior Program Manager, Field Operations & Permitting, include: managing all aspects of TRAC's field units, including the monitoring and inspection programs; ensuring consistency of field practices and procedures; overseeing the development and tracking of MWRA's permits, including those issued under the pretreatment program as well as those issued under the direct connection and 8(m) programs. In addition, the position will be responsible for standardizing 8M permit procedures and developing robust permit tracking mechanisms.

This position was posted internally and five candidates applied. The Deputy Chief Operating Officer of Policy, Programs and Planning, the Director of TRAC and the Manager, Operations Support, interviewed all five internal candidates. Upon completion of those interviews, Mr. Peter Yarossi was identified as the most qualified candidate to fill this position based on his

¹ Section 8(m) of MWRA's Enabling Legislation (Acts of 1984, Chap. 372) authorizes the Authority to issue permits for work within an easement or other land interest, held by the Authority, or within the vicinity of the Authority's water and sewer infrastructure. These permits are issued to ensure the continued protection of the infrastructure.

knowledge, skills and experience.

Mr. Yarossi has 30 years of experience at MWRA, including 19 years as Regional Manager, TRAC, overseeing all aspects of the MWRA's federally approved pretreatment program. Mr. Yarossi has supervised up to 20 professional staff and managers, most recently those specifically responsible for inspections and permitting of approximately 1200 permit holders. In this position he gained experience in launching new permit types, as well as developing and implementing tracking mechanisms to ensure timely issuance of permits. His experience includes overseeing inspection and sampling field activities to support permit development and possible enforcement actions. Prior to his Regional Manager position, Mr. Yarossi's positions included Program Manager for Enforcement, Compliance Coordinator, Industrial Waste Inspector and Sampling Associate. His breadth of experience in all aspects of MWRA's regulatory programs, including significant experience in and overseeing field activities, make him best qualified for the position of Senior Program Manager, Field Operations and Permitting.

Mr. Yarossi has performed all of his previous TRAC responsibilities at a high level. He has a strong understanding of MWRA's governing regulations, including the U.S. Environmental Protection Agency regulations governing the pretreatment program. He has demonstrated an excellent understanding of operating within a regulatory environment. Mr. Yarossi was integrally involved with prior staff reorganizations within TRAC, which will be helpful in transitioning the current Direct Connection and 8(m) permit staff into the TRAC Department.

Mr. Yarossi earned his Bachelor of Science Degree in General Science with emphasis on Chemistry and Physics from Villanova University, Villanova, PA.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the FY16 Current Expense Budget to fund this position.

ATTACHMENTS:

Resume of Peter Yarossi
Position Description
Organization Chart

PETER J. YAROSSI

EXPERIENCE: Massachusetts Water Resources Authority
Boston, MA

Regional Manager 3/97 - Present

Oversight of the MWRA's Industrial Pretreatment Program for nineteen municipalities in the MWRA sewer districts to ensure that regulatory and program goals for sampling, inspection, permitting and enforcement are met. Responsibilities include supervising fourteen people engaged in sampling, inspection, permitting, and enforcement of industrial users and septage haulers. Duties include reviewing and approving documents prepared by the staff, participating with legal and technical services staff on policy issues, negotiating with industries on permitting and enforcement issues, assisting in the preparation of the Industrial Waste Report, and preparation of performance reviews.

In 2003 MWRA Toxic Reduction and Control Section restructure and my responsibilities changed to supervising seventeen staff involved in permitting and inspection of industrial users, municipalities, septage haulers and auto repair facilities in the MWRA sewer districts.

Program Manager, Enforcement 12/95 - 3/97

Oversight of enforcement actions for violations of MWRA regulations through policy development, problem solving, case development, negotiating with industries under enforcement and supervising staff. Responsibilities included reviewing all documents prepared by the Enforcement staff, working with legal, compliance, and technical services staff on enforcement policy issues, assisting in the preparation of the Industrial Waste Report, supervising six people, and preparation of performance reviews.

In addition to my duties in this position, I have also been active in the MWRA/MASCO Mercury Products Workgroup as the co-chair of the Mercury Management group.

Compliance Coordinator 2/90 - 12/95

Responsible for developing enforcement cases against industries that have violated MWRA Rules and Regulations including organizing compliance information, negotiating with industry representatives, and drafting appropriate Enforcement action for industries in assigned Municipalities.

From July 1, 1991, to September 3, 1991, I was given the position of Acting Program Manager, Enforcement. During this time my responsibilities included supervising six people and assisting in the preparation of the 1991 Industrial Waste Report. In April 1993, May 1994, and June 1995, I was again given the position of Acting Program Manager, Enforcement and held this position for five months in 1993, four months in 1994, and six months in 1995.

Industrial Waste Inspector

4/88 - 2/90

Responsible for the inspection of industries located within eight cities and towns including compiling information on all industrial processes and discharges of pollutants to the sewer system, writing summary reports, and coordinating with permitting, legal, and enforcement staff. Further responsibilities include involvement with both civil and criminal enforcement actions for the MWRA and the Massachusetts Attorney General.

I was also involved in a program to reduce copper and petroleum hydrocarbons in the MWRA POTW influent to meet sludge disposal criteria. My responsibilities within this program were to: identify possible sources of copper, create monitoring programs to estimate the copper contribution from each source and to prepare a final report describing the work done and recommending reduction techniques.

Sampling Associate

1/87 - 4/88

Duties include wastewater monitoring of industries in the MWRA district. Further responsibilities include designing sampling protocol for enforcement actions and the implementation of these programs, writing specifications for the purchase of monitoring equipment, and overseeing the maintenance of the monitoring equipment.

SP, Inc.

Salem, Massachusetts

Field Service Technician

1/85 - 1/87

Duties included industrial waste stream sampling for the South Essex Sewer District and sampling of landfills, dredge sites and both fresh and brackish waterways. Laboratory responsibilities include analysis of the above samples including sediment, specific ion, atomic absorption, and coliform analysis and some work with a HP 5890 Gas Chromatograph. Duties also included maintenance of the sampling equipment, light electrical work and plumbing. Further involvement included working on the design and installation of industrial pH monitoring systems and the installation of pretreatment facilities in the Salem area.

EDUCATION:

Villanova University

Villanova, PA

1980 - 1984

Bachelor's Degree in General Science with emphasis on the study of chemistry and physics.

REFERENCES

Furnished upon request.

**MWRA
POSITION DESCRIPTION**

POSITION: Sr Program Manager, Field Operations & Permitting

DIVISION: Operations

DEPARTMENT: TRAC

BASIC PURPOSE:

Directs and manages the Toxic Reduction and Control (TRAC) Department's field operations sections which include the Inspection, Permitting, and Monitoring Programs. Oversees all inspection, permitting, and monitoring activities for the department and provides assistance to other sections within the Authority.

SUPERVISION RECEIVED:

Reports to the Director of TRAC.

SUPERVISION EXERCISED:

Supervises Regional Managers and 8M direct connection permitting staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Provides direction to Regional Managers of inspections, monitoring & permitting staff.
- Manages 8M & direct connection permitting program. Oversees staff responsible for developing, maintaining and processing permits including 8M permits, direct connection permits, and applicable environmental permits.
- Oversees coordination of 8M & direct connection permitting reviews with appropriate staff from other MWRA Departments such as Water Operations, Wastewater Operations, Engineering & Construction, Planning, Law, and the Executive Office.
- Oversees assignment of field resources by direct reports to support permit development & implementation.
- Establishes program and department policies by analyzing all pertinent issues and information regarding the impact of proposed policy and by determining the resources necessary to implement the policy. Reviews, recommends, and manages the implementation of policies and standard operating procedures within TRAC to maintain efficient, high quality programs that are in compliance with EPA and other regulatory requirements.

- Directs the use of computer systems to schedule and coordinate work, to ensure that staff time and functions are appropriately tracked and reported, and to carry out other job responsibilities.
- Oversees TRAC staff preparation and response to emergency spills/releases into sewer system and participation in development and implementation of emergency response policy.
- Ensures that staff coordinate with other TRAC groups and sections and with other MWRA departments, including the Department of Laboratory Services, and divisions as needed.
- Oversees staff participation in liaison, coordination, and educational activities within the MWRA and with other governmental agencies and the public.
- Identifies and directs coordination of training opportunities for staff in inspection and permitting procedures, waste treatment applications, and federal, state and local environmental regulations.
- Oversees the Regional Managers' review and evaluation of inspection and permitting documents generated by staff and ensures that they will support enforcement and defensible legal actions brought by MWRA or others.
- Performs administrative duties such as interviewing and recommending staff for hiring and promotion, reviewing and evaluating staff, scheduling work, developing budgets, managing vehicles, equipment, and supply acquisitions and maintenance, approving timesheets, helping to develop and implement training for staff members and maintaining discipline.

SECONDARY DUTIES:

- Acts as On-Call Manager for TRAC in rotation with other TRAC staff.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Four year undergraduate degree in the chemistry, biology, environmental sciences, a related engineering or science discipline, or other related field. Advanced degree preferred.
- (B) Knowledge and understanding of environmental regulatory issues, policies, and practices related to municipal and industrial wastewater treatment and discharge, as acquired through a minimum of 8 to 10 years of experience, of which at least 4 years should be in

a supervisory capacity. This should include an understanding of environmental permitting and enforcing environmental requirements.

- (C) Minimum of 2-4 years experience in the development and management of permitting programs.

Necessary Knowledge, Skills and Abilities:

- (A) Ability to present overview of complex federal regulations to the public and to Significant Industrial Users.
- (B) Ability to review engineering plans related to water and sewer infrastructure.
- (C) Knowledge of the usage of complex computer-based information systems as a tool for supporting pretreatment and permitting programs.
- (D) Demonstrated effectiveness working across organizational boundaries and with persons at all levels in an organization.
- (E) Strong written and oral communication skills.
- (F) Ability to manage staff, including to organize, direct, train, assign duties to, supervise, motivate, and evaluate staff.

SPECIAL REQUIREMENTS:

Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy or fax machine.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of the job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the essential functions the employee is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reach with hands and arms. The employee frequently is required to sit, and talk or hear. The employee is occasionally required to stand, and walk.

The employee must regularly lift and/or move up to 10 pounds, occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

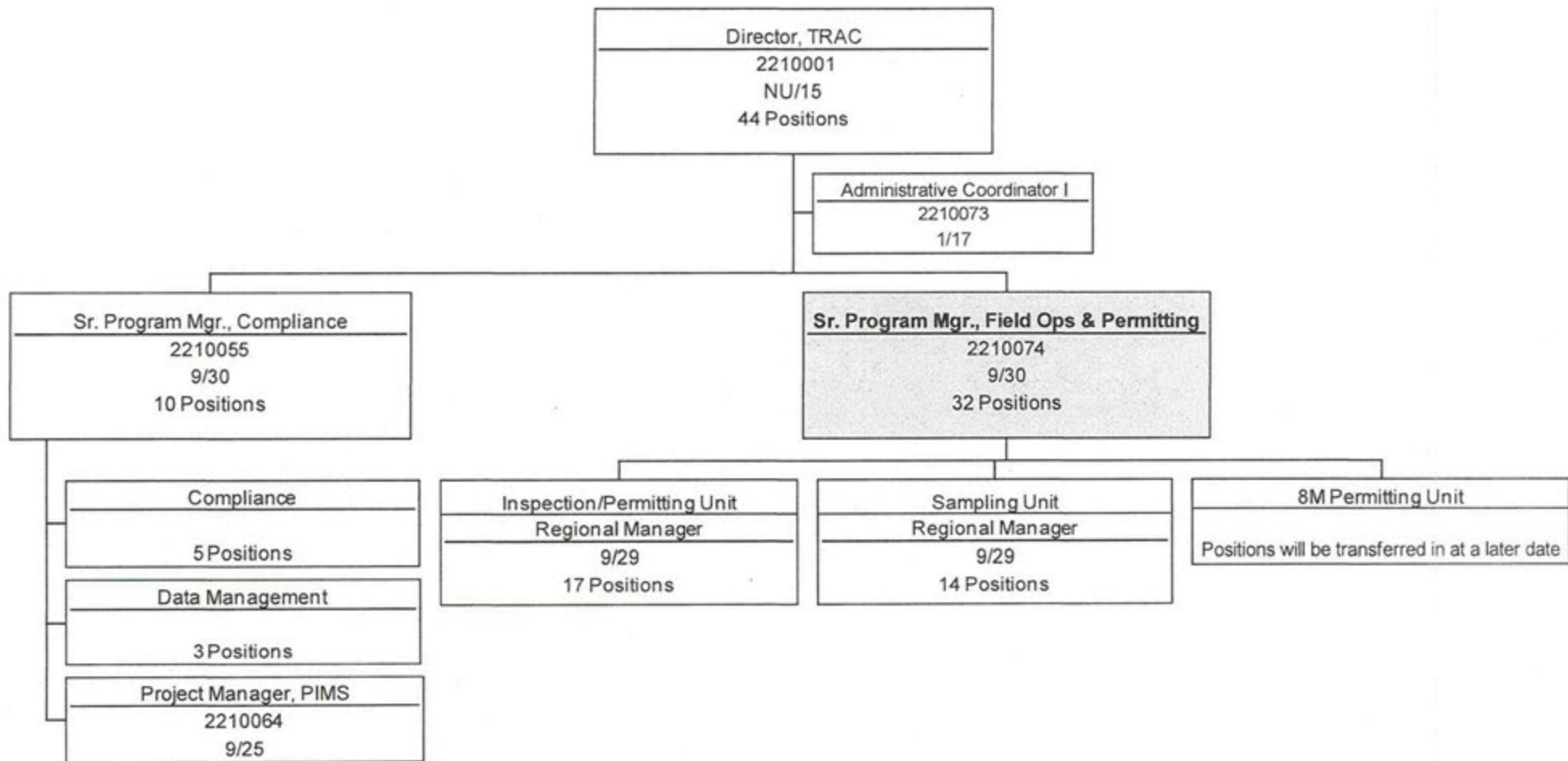
The noise level in the work environment is a moderately quiet in office setting.

April 2016

Programs, Policy & Planning

TRAC

June, 2016





MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
Fax: (617) 788-4899
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Chair: M. Beaton
Vice-Chair: J. Carroll
Secretary: J. Foti
Board Members:
A. Blackmon
K. Cotter
P. Flanagan
A. Pappastergion
B. Peña
H. Vitale
J. Walsh
J. Wolowicz

BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, June 8, 2016

Location: 100 First Avenue, 2nd Floor
Charlestown Navy Yard
Boston, MA 02129

Time: 1:00 p.m.

AGENDA

- I. **APPROVAL OF MINUTES**
- II. **REPORT OF THE CHAIR**
- III. **REPORT OF THE EXECUTIVE DIRECTOR**
- IV. **BOARD ACTIONS**
 - A. **Approvals**
 1. Memorandum of Agreement between the Commonwealth of Massachusetts and the Massachusetts Water Resources Authority (ref. AF&A A.1)
 2. Bond Defeasance of Future Debt Service (ref. AF&A A.2)
 3. Wastewater Advisory Committee Contract (ref. WW A.1)
 4. Approval of One New Member of the Wastewater Advisory Committee (ref. WW A.2)
 5. Water Supply Citizens Advisory Committee Contract (ref. W B.1)

6. First Amendment of Memorandum of Agreement between MWRA and Massachusetts Division of Fisheries and Wildlife and the Massachusetts Department of Fish and Game for McLaughlin Fish Hatchery Pipeline and Hydropower Project (ref. W B.2)
7. PCR Amendments - June 2016 (ref. P&C A.1)
8. Appointment of Application and Systems Development Manager, MIS (ref. P&C A.2) (materials to follow)
9. Appointment of Senior Program Manager, Field Operations and Permitting, TRAC (ref. P&C A.3)

B. Contract Awards

1. Disclosure Counsel: Greenberg Traurig, LLP, Contract F241 (ref. AF&A B.1)
2. MWRA FY17 Insurance Program Renewal (ref. AF&A B.2)
3. Technical Assistance Consulting Services, Deer Island Treatment Plant: Brown and Caldwell, Contract 7501; Stantec Consulting Services, Inc., Contract 7502; and AECOM Technical Services, Inc., Contract 7503 (ref. WW B.1)
4. Dam Safety Compliance and Consulting Services: GZA GeoEnvironmental, Inc., Contract W-301 (ref. W C.1)

C. Contract Amendments/Change Orders

1. Construction of Water Mains-Sections 36, W11C and 9A: RJV Construction Corp., Contract 7448, Change Order 5 (ref. W D.1)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

- A. Performance Review and Extension of Contract for Executive Director
- B. Extension of Contract for Chief Operating Officer

VII. EXECUTIVE SESSION

VIII. ADJOURNMENT

Meeting of the Board of Directors**May 11, 2016**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on May 11, 2016 at the Authority headquarters in Charlestown. Chairman Beaton presided. Present from the Board were Messrs. Carroll, Foti, Pappastergion, Peña, Vitale and Walsh. Ms. Wolowicz and Messrs. Blackmon, Cotter and Flanagan were absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, Michael Hornbrook, Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, Stephen Estes-Smargiassi, Director of Planning and Sustainability, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:05 p.m.

APPROVAL OF MINUTES

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meeting of April 13, 2016, as presented and filed with the records of the meeting.

REPORT OF THE CHAIR

Mr. Beaton summarized his remarks at a recent public hearing in Athol at which discussions continued relating to a plan to introduce endangered rattlesnakes on an island in the Quabbin reservoir. He stated that attempts were made to dispel some fears with facts, and further indicated that public dialogue would continue.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey reported that Board member Kevin Cotter was recovering after a stay in the hospital, the annual Consumer Confidence Report was going to the printer, and planning and coordination for an off-site meeting on the topic of Metropolitan Water Tunnel Redundancy would continue.

APPROVALS

Bond Defeasance of Future Debt Service

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of approximately \$26,350,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by approximately \$31,817,000 in the FY17 through FY22 timeframe.

Memorandum of Agreement with the Town of Stoneham in Connection with the Northern Intermediate High Pipeline Project

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to execute and enter into a Memorandum of Agreement with the Town of Stoneham, substantially in the form presented and filed with the records of the meeting, for the use of a 2.6-acre Town-owned parcel as a staging area for the Northern Intermediate High Pipeline Project and the Reading Extension Sewer Rehabilitation Project in the amount of \$500,000 for a term of four years with a month by month holdover at the end of the initial term at no additional cost,

payable at least 30 days prior to the commencement of construction; and further, to make a payment to the Town of Stoneham in the amount of \$429,450 at the mid-point of construction of MWRA Contract 7478 to be used by the Town for the sole purpose of performing final paving and restoration of the street and installation of sidewalks on portions of Oak Street affected by the project.

Approval of a Program to Study Lead levels in MWRA Water Communities

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to enter into an agreement with Massachusetts Department of Public Health to establish a program to determine, by examination of the local records or by inspection, if the residences of the children identified with elevated blood lead levels have a lead water service line to the home. The Massachusetts Department of Public Health shall provide MWRA with the results of these inspections to determine the correlation between lead services and children with elevated blood lead levels.

Approval of Program Guidelines for the MWRA Lead Service Line Replacement Loan Program

Upon a motion duly made and seconded, it was

Voted to approve the Program Guidelines for the MWRA Lead Service Line Replacement Loan Program substantially as presented and filed with the records of the meeting and consistent with the process currently used under the Local Water System Assistance Program.

Approval of Revisions to the Program Guidelines for the MWRA Local Water System Assistance Program to be Consistent with the Lead Service Line Replacement Loan Program Guidelines

Upon a motion duly made and seconded, it was

Voted to approve the Revised Program Guidelines for Water Projects under the MWRA Local Water System Assistance Program to be consistent with the Lead Service Line Replacement Loan Program Guidelines, as presented and filed with the records of the meeting.

PCR Amendments – May 2016

Consideration of this item was postponed.

Appointment of Manager, Operations Administration

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Marcel Brady to the position of Manager, Operations Administration (Unit 6 Confidential, Grade 13), at an annual salary of \$117,179.15, to be effective on the date designated by the Executive Director.

Appointment of Network Administrator III, MIS

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Feng Chen to the position of Network Administrator III in the MIS Department (Unit 6, Grade 12), at an annual salary of \$96,716.75 to be effective on the date designated by the Executive Director.

CONTRACT AWARDS

Arbitrage Rebate Calculation Services: Contract F240, PFM Asset Management LLC

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select PFM Asset Management LLC to provide Arbitrage Rebate Compliance services and to authorize the Executive Director, on behalf of the Authority, to execute and deliver Contract F240 with PFM Asset Management

LLC in an amount not to exceed \$104,750 for a term of three years from the Notice to Proceed.

Clinton Wastewater Treatment Plant - Commercial Gas Service/Main Agreement with National Grid: Contract 7528

Upon a motion duly made and seconded, it was

Voted to approve Contract 7528, Commercial Gas Service/Main Agreement with National Grid for the Clinton Wastewater Treatment Plant Phosphorus Reduction Facility, and to authorize the Executive Director, on behalf of the Authority, to execute said contract with National Grid in the amount of \$490,043.

Flow Testing Services for MWRA's Revenue Water Meters: Complete Control Services, Inc., Bid WRA-4181

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract WRA-4181 for flow testing services for MWRA's revenue water meters, to the lowest eligible and responsible bidder, Complete Control Services, Inc., and authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in an amount not to exceed \$274,935 for the period June 1, 2016 through May 31, 2019.

Beacon Street Line Water Pipeline Repair: R. Zoppo Corp., Contract 7458

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 7458, Beacon Street Line Water Pipeline Repair, to the lowest responsible and eligible bidder, R. Zoppo Corp., and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$1,566,178, for a term of 210 calendar days from the Notice to Proceed.

Southern Extra High Pipeline Section 111 (Boston): P Gioioso and Sons, Inc., Contract 6454

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 6454, Southern Extra High Pipeline Section 111 (Boston) to the lowest responsible and eligible bidder, P. Gioioso and Sons, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$11,770,000, for a term of 780 days from the Notice to Proceed.

CONTRACT AMENDMENTS/CHANGE ORDERS

Nut Island Emergency Demolition and Duct Cleaning: Daniel O'Connell's Sons, Contract OP-320, Change Order 2

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to increase the amount of Contract OP-320 with Daniel O'Connell's Sons, MWRA Nut Island Emergency Demolition and Duct Cleaning, in an amount not to exceed \$115,000.00, with no increase in contract term.

Dam Safety Compliance and Consulting Services: GZA GeoEnvironmental, Inc., Contract OP-228, Amendment 2

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Amendment 2 to increase the amount of Contract OP-228, Dam Safety Compliance and Consulting Services, with GZA GeoEnvironmental, Inc., in an amount not to exceed \$32,117, with no increase in the contract term.

Section 4 Webster Avenue Pipe and Utility Bridge Replacement: NEL Corporation, Contract 7335, Change Order 5

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to increase the amount of Contract 7335, Section 4 Webster Avenue Pipe and Utility Bridge Replacement, with NEL Corporation, in an amount not to exceed \$2,150,000, and to extend the term by 245 calendar days to December 31, 2016.

EXECUTIVE SESSION

It was moved to enter executive session to discuss litigation and real estate.

Upon a motion duly made and seconded, it was, upon a roll call vote in which the members were recorded as follows:

| <u>Yes</u> | <u>No</u> | <u>Abstain</u> |
|---------------|-----------|----------------|
| Carroll | | |
| Foti | | |
| Pappastergion | | |
| Peña | | |
| Vitale | | |
| Walsh | | |
| Beaton | | |

Voted to enter executive session for the purpose of discussing strategy with respect to litigation and to consider the purchase, exchange, lease or value of real property, in that such discussion in open session may have a detrimental effect on the litigating and negotiating positions of the Authority.

It was stated that the meeting would return to open session to conduct the mandatory Annual Meeting of the Personnel and Compensation Committee independent of management.

EXECUTIVE SESSION

The meeting returned to open session at 1:45 p.m.

ANNUAL MEETING OF THE PERSONNEL AND COMPENSATION COMMITTEE
INDEPENDENT OF MANAGEMENT

Authority Accountability and Transparency Act Compliance

All MWRA staff left the room, with the exception of recording secretary Bonnie Hale.

The meeting was called to order, in compliance with the provisions of the above-referenced Act.

Members of the Committee analyzed and assessed the data provided regarding executive compensation at comparable state agencies and authorities, as well as for-profit private sector employees, and national water and wastewater utilities. There was general discussion. It was observed that the level of MWRA compensation was in the middle to low range of similar positions at other entities.

The meeting adjourned at 1:55 p.m.