Presentation to the

Wastewater Advisory Committee
&
Water Supply Citizens Advisory Committee

Fiscal Year 2016
Proposed

Current Expense Budget and Capital Improvement

April 14, 2015
Fiscal Year 2016 Year of Milestones

• Bond Resolution Changes become effective – Reserves Release
• Pension Fund achieves virtual Full Funding
• Other Post Employment Benefits (OPEB)
• New England Fertilizer Company (NEFCO)
Fiscal Year 2016 - Milestones

Bond Resolution changes become effective – Reserves Release

• Debt Service Reserves
• Community Obligation and Revenue Enhancement (CORE)
• Renewal and Replacement Reserve (RRR)
Fiscal Year 2016 - Milestones

Pension Fund achieves virtual Full Funding

• 95% Funded ratio 1/1/2015 anticipated
• Other Post Employment Benefits (OPEB)
  • Staff to recommend OPEB Trust
  • Shift to funding OPEB
New England Fertilizer Company (NEFCO)

• Contract Expires December 2015
• Negotiations are complete
• Over the five-year term, expenses are expected to decrease by $1.25M
“Sustainable and Predictable”
Mission - *Sustainable and Predictable*

**Assessment Increases**

- 2007: 5%
- 2008: 4%
- 2009: 5%
- 2010: 4%
- 2011: 3%
- 2012: 4%
- 2013: 3%
- 2014: 3%
- 2015: 3%
- 2016: 4%
Mission - *Sustainable and Predictable*

**Causes of volatility**

- Current Debt Profile
  - Repayment structure aligned with Debt Service Assistance
- Increasing Debt Service

“Debt Management Agency”
Outstanding Debt History

<table>
<thead>
<tr>
<th>Year</th>
<th>Outstanding Debt</th>
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<tbody>
<tr>
<td>1990</td>
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<tr>
<td>1992</td>
<td>$1,000,000,000</td>
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<td>1994</td>
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<td>1996</td>
<td>$3,000,000,000</td>
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<td>2000</td>
<td>$4,000,000,000</td>
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<td>2002</td>
<td>$5,000,000,000</td>
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<td>2004</td>
<td>$6,000,000,000</td>
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<tr>
<td>2006</td>
<td>$7,000,000,000</td>
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</table>
Debt % is growing

Debt Service as % of Total Budget
FY16 Proposed Current Expense Budget (CEB)

- Debt Service: 61.6%
- Direct Expense: 31.6%
- Indirect Expense: 6.7%
Ways to address the Debt Service challenge

• Defeasance
• Use of Bond Resolution Reserves Release
• Use of Reserves
  • Rate Stabilization Fund
  • Bond Redemption Fund
• Tactical Issuance – Repayment Structure
• Control Capital Spending
FY16 Proposed Current Expense Budget (CEB)

FY16 Current Expense Budget

- Debt Service 61.6%
- Direct Expense 31.6%
- Indirect Expense 6.7%
CEB Budget Structure

- Direct Expenses
- Indirect Expenses
- Debt Service Expenses
CEB Budget Structure

Direct Expenses

- Personnel: 56%
- Maintenance: 13%
- Energy & Utilities: 11%
- Chemicals: 4%
- Other: 16%
- Direct Expenses: 100%
Direct Expenses Comparison

Direct Expenses Comparison FY15 - FY16

$ in Millions

- Wages and Salaries
- Maintenance
- Energy and Utilities
- Other Services
- Fringe Benefits
- Chemicals
- Professional Services
- Other Materials
- Overtime
- Workers' Compensation
- Training and Meetings

FY15
FY16

$- $20 $40 $60 $80 $100 $120
FY16 Proposed Current Expense Budget (CEB)

Highlights – Direct Expenses

- Wages and Salaries $99.2M – Budgeted Positions: 1,170; 5 fewer than FY15;
- Maintenance $28.6M – in line with FY14 Actual Spending;
- Utilities - $24.9M – increases for electricity pricing;
- Other Services - $23.4M – mainly for NEFCo contract and Leases; and
- Fringe Benefits of $19.0M – mainly for Health Insurance.
CEB Budget Structure – Indirect Expenses

Indirect Expenses

- Watershed/PILOT: 59%
- Retirement Fund: 28%
- Insurance: 4%
- Other: 9%

Total Indirect Expenses: 100%
Indirect Expenses Comparison FY15 - FY16

$ in Millions

<table>
<thead>
<tr>
<th>Category</th>
<th>FY15</th>
<th>FY16</th>
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<tbody>
<tr>
<td>Watershed/PILOT</td>
<td></td>
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<tr>
<td>Retirement Fund</td>
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<td>OPEB/Additional Pension Deposit</td>
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<tr>
<td>HEEC</td>
<td></td>
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<td>Insurance</td>
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<td></td>
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<td>Mitigation</td>
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<tr>
<td>Addition to Reserves</td>
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</table>

Legend:
- FY15
- FY16
Highlights – Indirect Expenses

- Watershed Program for operating, PILOT and debt $28.1M;
- Pension Fund required contribution $8.2M;
- Additional Payment to Pension (OPEB) $5.1M;
- HEEC contract $1.9M; and
- Addition to Operating Reserve Fund $962K.
CEB Budget Structure

Debt Service Expenses

- Senior & Subordinate Debt: 76%
- State Revolving Fund: 18%
- Other: 6%
Debt Service Expenses Comparison FY15 - FY16

$ in Millions

- Senior Debt
- Subordinate Debt
- SRF
- Current Revenue For Capital
- Local Water Pipeline
- Capital Lease
- Core Fund Deposit

FY15
FY16
FY16 Proposed Current Expense Budget (CEB)

**Highlights – Debt Service Expenses**

- Variable Rate Debt Assumption 3.25%;
- Required CORE Fund Deposit $6.7M;
- Bond Redemption $3.5M; and
- No Debt Service Assistance.
Revenue

• Non Rate Revenue
• Investment Income
• Rate Revenue Requirement (Assessments)
Assumptions

- Direct Expenses Inflation
- Indirect Expenses Inflation
- Capital Spending Levels
- Variable and Fixed Debt Interest Rates
- Investment Income Interest Rates
- Level of Pension/OPEB Funding
- Use of Reserves
Effects on Assessments

Assessment Increase Forecast Comparison

<table>
<thead>
<tr>
<th>Year</th>
<th>FY15</th>
<th>FY16</th>
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<tbody>
<tr>
<td>FY 16</td>
<td>4.3%</td>
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<tr>
<td>FY 17</td>
<td>5.1%</td>
<td>3.9%</td>
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<tr>
<td>FY 18</td>
<td>4.9%</td>
<td>4.1%</td>
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<td>FY 19</td>
<td>4.6%</td>
<td>4.4%</td>
</tr>
<tr>
<td>FY 20</td>
<td>6.5%</td>
<td>6.5%</td>
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</table>

FY15  FY16
Challenges / Opportunities

- Short-Term Market Rates
  - Variable Rate Debt
  - Investments
- Regulatory Changes
- System Expansion
- Utility Pricing
FY16 Current Expense Budget Next Steps

• Transmit Proposed Budget to Advisory Board for 60 day review
• Reconvene Long-Term Rates Management Committee
• Public Hearings
• Staff will present Draft Final Budget in June
Massachusetts Water Resources Authority

FY16 Proposed
Capital Improvement Budget

March 2015
MWRA continues to focus on Asset Protection and Long Term Redundancy initiatives;

MWRA continues to reduce debt levels, paying more principal than the projected borrowings; and

FY16 Proposed CIP meets all Cap requirements.
Historic and Projected Capital Improvement Spending

CIP Historical and Projected Spending

Actual
FY05-14
Average
$162M/year

Projected
FY15-18
Average
$155M/year

$ Millions
### FY14-18 Base-Line Cap as Compared with FY16 Proposed Spending

<table>
<thead>
<tr>
<th>FY14-18 Base-Line Cap</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>Total FY14-18</th>
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<tbody>
<tr>
<td>Projected Expenditures</td>
<td>$142.5</td>
<td>$147.6</td>
<td>$149.3</td>
<td>$141.8</td>
<td>$136.8</td>
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<td>Contingency</td>
<td>7.6</td>
<td>9.5</td>
<td>10.1</td>
<td>9.8</td>
<td>9.3</td>
<td>46.1</td>
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<tr>
<td>Inflation on Unawarded Construction</td>
<td>0.8</td>
<td>4.2</td>
<td>8.4</td>
<td>11.1</td>
<td>13.5</td>
<td>37.9</td>
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<tr>
<td>Less: Chicopee Valley Aqueduct Projects</td>
<td>(5.0)</td>
<td>(2.2)</td>
<td>(1.4)</td>
<td>(1.3)</td>
<td>(0.4)</td>
<td>(10.3)</td>
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<tr>
<td>FY14-18 Base-Line Cap</td>
<td>$145.8</td>
<td>$159.1</td>
<td>$166.4</td>
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<td>$159.1</td>
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<table>
<thead>
<tr>
<th>FY16 Proposed vs FY14-18 Base-Line Cap</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>Total FY14-18</th>
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</thead>
<tbody>
<tr>
<td>Projected Expenditures</td>
<td>($40.3)</td>
<td>($39.4)</td>
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<td>$35.8</td>
<td>$50.0</td>
<td>$3.8</td>
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<td>Contingency</td>
<td>(7.6)</td>
<td>(4.2)</td>
<td>(1.9)</td>
<td>1.1</td>
<td>2.3</td>
<td>(10.2)</td>
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<tr>
<td>Inflation on Unawarded Construction</td>
<td>(0.8)</td>
<td>(4.2)</td>
<td>(7.0)</td>
<td>(5.6)</td>
<td>(4.2)</td>
<td>(21.8)</td>
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<tr>
<td>Less: I/I Program</td>
<td>0.0</td>
<td>(11.2)</td>
<td>(16.9)</td>
<td>(18.9)</td>
<td>(18.1)</td>
<td>(65.1)</td>
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<td>Less: Water Loan Program</td>
<td>0.0</td>
<td>1.6</td>
<td>2.2</td>
<td>2.5</td>
<td>(0.1)</td>
<td>6.1</td>
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<tr>
<td>Less: Chicopee Valley Aqueduct Projects</td>
<td>0.6</td>
<td>0.7</td>
<td>1.4</td>
<td>1.3</td>
<td>0.2</td>
<td>3.0</td>
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<tr>
<td>FY14-18 Cap ($ Change)</td>
<td>($49.2)</td>
<td>($56.7)</td>
<td>($24.5)</td>
<td>$16.1</td>
<td>$30.1</td>
<td>($84.2)</td>
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<tr>
<td>FY14-18 Cap (% Change)</td>
<td>-33.8%</td>
<td>-35.7%</td>
<td>-14.7%</td>
<td>10.0%</td>
<td>18.9%</td>
<td>-10.6%</td>
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FY16 Proposed CIP Expenditures by Major Programs

- Wastewater (excluding CSO): $73.0, 53%
- CSO: $13.7, 10%
- Waterworks: $41.6, 30%
- Business Operations & Support: $8.8, 6%
FY16 Big Spenders

<table>
<thead>
<tr>
<th>FY16 Planned Spending</th>
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<tbody>
<tr>
<td>DI Treatment Plant Asset Protection</td>
<td>$ 45.2</td>
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<tr>
<td>Long-Term Redundancy</td>
<td>18.3</td>
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<td>Facility Asset Protection</td>
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<td>I/I Local Financial Assistance</td>
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<td>Cambridge Sewer Separation</td>
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<td>Weston Aqueduct Supply Mains</td>
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<td>NIH Redundancy and Storage</td>
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<td>Clinton Wastewater Treatment Plant</td>
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<td>Applications Improvement Program</td>
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<td>Central Monitoring System</td>
<td>2.3</td>
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Top 10 Spending in FY15 $ 128.2
FY16 Spending $ 147.1

The top ten projects account for 87.1% of FY16 planned spending.
FY14-18 Proposed CIP Expenditures by Major Programs

- Wastewater (excluding CSO) $373.4 51%
- CSO $58.6 8%
- Waterworks $248.3 34%
- Business Operations & Support $41.5 6%
On-Going Capital Projects
### Deer Island Asset Protection

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Total Budget</td>
<td>$720.9M</td>
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<tr>
<td>Spending Through FY14</td>
<td>$176.3M</td>
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<tr>
<td>Remaining Spending:</td>
<td>$544.6M</td>
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<tr>
<td>FY14-18 Spending:</td>
<td>$182.0M</td>
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<tr>
<td>FY16 Spending:</td>
<td>$45.2M</td>
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Deer Island: Scum Skimmer Replacement

NTP: October 2013
SC: October 2016

Total Contract: $20.2M
FY14-18 Spending: $20.2M
FY16 Spending: $6.0M
Deer Island: North Main Pump Station Motors/VFDs

NTP: December 2011
SC: March 2016

Total Contract: $24.3M
FY14-18 Spending: $17.8M
FY16 Spending: $4.2M
North Main Pump Station & Winthrop Terminal Facility Valve Replacements

NTP: June 2014
SC: June 2017

Total Contract: $17.0M
FY14-18 Spending: $17.0M
FY16 Spending: $5.7M
Deer Island Electrical Upgrades - Construction 4

NTP: May 2013
SC : May 2016

Total Contract: $10.9M
FY14-18 Spending: $10.9M
FY16 Spending: $4.5M
Spot Pond Covered Storage Facility and Pump Station

NTP: November 2011
SC: May 2015

Total Contract: $51.4M
FY14-18 Spending: $33.8M
FY16 Spending: $1.5M
Cambridge Sewer Separation

Total Contract: $92.1M
FY14-18 Spending: $41.7M
FY16 Spending: $11.9M

Contract 9
NTP: July 1998
SC: December 2015

Contract 8B - Concord Avenue
Clinton Treatment Plant Phosphorous Removal

Design & Construction

NTP: November 2013
SC: August 2018

Total Contract: $8.3M
FY14-18 Spending: $8.3M
FY16 Spending: $0.7M
Upcoming Capital Projects
Chelsea Headworks Rehabilitation

Design
NTP: July 2010
SC: June 2020
Total Contract: $7.9M
FY14-18 Spending: $5.2M
FY16 Spending: $0.1M

Construction
NTP: December 2015
SC: June 2019
Total Contract: $54.8M
FY14-18 Spending: $35.7M
FY16 Spending: $5.1M
Wachusett Aqueduct Pump Station

NTP: April 2015
SC: November 2018

Total Contract: $60.5M
FY14-18 Spending: $49.5M
FY16 Spending: $16.5M
Southern Extra High Redundancy – Section 111

Design
NTP: February 2014
SC: August 2021

Total Contract: $7.7M
FY14-18 Spending: $4.7M
FY16 Spending: $1.2M

Construction
NTP: August 2016
SC: June 2020

Total Contract: $29.8M
FY14-18 Spending: $12.3M
FY16 Spending: $0.0M
NTP: October 2014
SC: March 2017

Total Contract: $11.2M
Fy14-18 Spending: $11.2M
FY16 Spending: $4.5M
Alewife Brook Pump Station Rehabilitation

NTP: March 2015
SC : July 2017

Total Contract: $10.4M
Fy14-18 Spending: $10.4M
FY16 Spending: $ 2.4M
NTP: August 2015
SC: December 2017

Total Contract: $20.2M
FY14-18 Spending: $17.5M
FY16 Spending: $4.4M
Deer Island Combined Heat and Power

Design
NTP: January 2016
SC: July 2022
Total Contract: $6.0M
FY14-18 Spending: $3.0M
FY16 Spending: $0.1M

Construction
NTP: July 2018
SC: July 2022
Total Contract: $83.0M
FY14-18 Spending: $0.0M
FY16 Spending: $0.0M
Total CIP increased $157.0 million over FY15 Final CIP.

4 Projects account for over $106 million, or 68% of the increase.

<table>
<thead>
<tr>
<th>Project</th>
<th>FY16 Proposed Increase</th>
<th>Effect on increase on FY14-18 Cap</th>
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<tbody>
<tr>
<td>Deer Island Treatment Plant Asset Protection</td>
<td>$ 63.0</td>
<td>$ 1.0</td>
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<tr>
<td>Central Monitoring System</td>
<td>18.6</td>
<td>1.7</td>
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<tr>
<td>Long-Term Redundancy</td>
<td>18.3</td>
<td>(0.1)</td>
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<tr>
<td>Northern High Service - Revere and Malden Pipe</td>
<td>6.2</td>
<td>(1.6)</td>
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<tr>
<td></td>
<td>$ 106.1</td>
<td>$ 1.0</td>
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### FY16 Projected Contract Awards ($ in millions)

<table>
<thead>
<tr>
<th>Project</th>
<th>Subphase</th>
<th>NTP</th>
<th>FY16 Proposed Budget</th>
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<tbody>
<tr>
<td>Facility Asset Protection</td>
<td>Chelsea Creek Upgrade Construction</td>
<td>Dec-15</td>
<td>54.8</td>
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<tr>
<td>NIH Redundancy &amp; Storage</td>
<td>Sec 89/29 Redundancy Construction Phase 1B</td>
<td>Aug-15</td>
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<tr>
<td>DI Treatment Plant Asset Protection</td>
<td>HVAC Equipment Replacement - Construction</td>
<td>Mar-16</td>
<td>17.1</td>
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<td>Clinton Wastewater Treatment Plant</td>
<td>Phosphorus Reduction Construction</td>
<td>Feb-16</td>
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<td>DI Treatment Plant Asset Protection</td>
<td>Sodium Bisulf &amp; Hypochlorite Tank Rehabilitation</td>
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<td>Combined Heat &amp; Power Design</td>
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<td>Carroll Water Treatment Plant</td>
<td>Existing Facilities Modifications - CP7</td>
<td>Jul-15</td>
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<td>Ancillary Modifications - Final Design 4</td>
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<td>Applications Improvements Program</td>
<td>Enterprise Content Management</td>
<td>Sep-15</td>
<td>4.0</td>
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<tr>
<td>Central Monitoring System</td>
<td>Quabbin Power Communications &amp; Security</td>
<td>Oct-15</td>
<td>2.8</td>
</tr>
</tbody>
</table>

**Top 10 Awards for FY16**

$128.4

**45 Contract Awards Planned for FY16**

$166.5

The top ten awards account for over 77% of FY16 planned awards.
Future Risks/Uncertainties

- Co-Digestion Deer Island Receiving Facilities
- Fish Hatchery Pipeline/Hydro
- Sudbury Aqueduct – tunnel vs. surface pipeline;
- Residual Processing/Asset Management; and
- New regulatory mandates.