An Overview of Baltimore City’s Modified Consent Decree

June 7, 2016

Joint Public Information Session
Hosted by Maryland Department of the Environment
Agenda

- Challenges and Solutions
- Maintaining Affordable Water and Sewer Rates
- Phased Approach to Consent Decree Implementation
- Overview of Phase I
- Overview of Phase II
- Additional Consent Decree Requirements
- Consent Decree Costs
- Keep Informed
Challenges Encountered During Implementation of 2002 Consent Decree

- Meeting (unfunded) Federal and State requirements for multiple water, stormwater, and wastewater utilities in addition to the Consent Decree
- Competing with other local jurisdictions for contracting resources
- Managing aging infrastructure and the need to balance capital expenditures across all utilities
- Frequent, expensive emergency repairs
- Shifting away from reactive response and increasing preventive maintenance capabilities
- Affordability of continued rate increases which have tripled since 2002 on a population 24 percent of which is currently at or below the federal poverty line
- Other financial demands of operating a large City infrastructure
Challenge: Contractor Management

• Challenge
  – Baltimore experiences project delays and contractor capacity limitations due to spending of over $3.5 billion by mid-Atlantic utilities on sewer rehabilitation projects within the next decade.

• Solutions
  – Update City procurement processes and procedures;
  – Provide scheduling assistance;
  – Assess liquidated damages;
  – De-scope and reassign contract work; and
  – Terminate contracts based on unsatisfactory performance.
Challenge: Meeting Federal and State Requirements for Stormwater and Drinking Water During the Term of the Modified Consent Decree

- Compliance with MS4 permit: The City will spend $103.2 million by 2019.
  - MS4 costs for 2019 – 2030 cannot be estimated at this time due to the nature of five-year MS4 permit cycle.
- The City will spend $2.3 billion on drinking water projects over the next 13 years.
  - New drinking water filtration plant
  - Converting all finished water reservoirs to tanks
  - Water main replacement
Challenge: Continued Utility Rate Increases Between 2002 and 2015

- Baltimore has more than tripled its water and sewer rates since the entry of the 2002 Consent Decree.
- The most recent rate increase, adopted in July 2013, raised water and sewer rates by 42 percent over the last three years.
- The double-digit rate increases of the last three years are not sustainable.

### Historical Wastewater Utility Rate Increases
April 2002 through July 2015

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>% Increase</th>
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<tbody>
<tr>
<td>April 2002</td>
<td>10.0</td>
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<tr>
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<td>11.0</td>
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<tr>
<td>July 2015</td>
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Challenge: Affordable Water and Sewer Rates

- 24 percent of Baltimore’s population lives at or below the federal poverty level, as compared to a national average of 15 percent, and a state average of 10 percent (2014).
- Over 13 percent of Baltimore’s population has an annual household income less than $10,000, nearly twice as much as the national average.
- Baltimore faces a declining population and stagnant income growth.
  - Between 2000 and 2015, the City’s population declined by 4.5 percent and its households declined by 6 percent.
- The loss of population places a higher financial burden on Baltimore’s remaining citizens.
Challenge: Restoring Balance Between Wastewater and Drinking Water Spending

• From 2002 to 2015 Baltimore DPW dedicated an average of 68 percent of its Capital Improvement Program (“CIP”) appropriation to wastewater projects and 32 percent to drinking water projects.

• Baltimore needs to increase spending on water projects over the next 18 years to better address aging infrastructure.

• Planned spending between 2016 and 2034 includes approximately $2.53 billion in the Water Fund, $1.43 billion in the Wastewater Fund, and $545 million in the Stormwater Fund.
Two-Phase Approach Provides Better Results

Phase I
- Structural Corrective Actions
- Back River WWTP Headworks & Storage Facilities
- I/I Reduction through Comprehensive Sewer Rehabilitation

Post-construction flow monitoring
- Complete post-construction flow monitoring (PCFM) (18 months)
- Complete evaluation of PCFM (6 months)

Phase II
- Refine Conveyance & Storage Recommendations based on observed I/I

The two-phase approach maximizes environmental benefits while maintaining affordable water and sewer rates for the majority of Baltimore residents.

Completion of Phase I will reduce SSO volume by 83 percent.
Modified Consent Decree
Over $900 Million for Phase I Projects

- 11 Projects already completed
- Projects in Design and Construction Phase
  - BRWWTP Headworks Modification & Flow Equalization
  - 11 Sewer Rehabilitation Projects in design and advertisement phase
  - 12 projects in construction and award phase
- Status
  - Structural Projects and Hydraulic Projects on track to be completed by January 1, 2019 and January 1, 2021 per Appendix B – Phase I Project Summary
# Modified Consent Decree

## Phase I - Structural Rehabilitation Projects

**PHASE I:** Rehabilitate identified structural issues in the collection system and remove I/I. These projects will significantly reduce both the frequency and volume of SSO events.

### Sewers:
- Pipe replacement/upsizing
- New pipe construction
- Point repairs
- CIPP lining
- Sewer cleaning

### Manholes:
- Manhole rehabilitation
- Manhole replacement
- New manhole construction

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*Baltimore City Department of Public Works*
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Phase I - Back River WWTP Headworks Project

- Hydraulic restriction at BRWWTP
- 10 mile sewage backup
- Causes SSOs and contributes to some basement backups
- When restriction removed, will have single biggest impact on SSO reduction
- Cost will be **over $350 million**
- Completion date: 1/1/2021
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Phase I - Back River WWTP Headworks Project

10 MW Emergency Generators
Influent Pumping Station
Equalization Pumping Station
(2) 16.5 MG Storage Tank

Coarse Screen Facility
Fine Screen Facility
Grit Removal Facility
3 MG Storage

Baltimore City Department of Public Works
PHASE II: Hydraulic rehabilitation and improvement projects based on the results of post-construction flow monitoring.

Projects in the planning phase

• Proposed rehabilitation in 5 sewersheds.
• Proposed conveyance upgrades in 6 sewersheds.
• Projects must be prioritized to address any remaining public side deficiencies that contribute to basement backups.
• Estimated cost of $548.4 million.
Build upon success of Asset Management programs

• Since 2014, inspections, cleanings, and proactive fixes have improved sewer operations.

• **Working harder and smarter**
  – Targeted work in areas known to accumulate debris, grease, and root infiltration
  – Targeted work on lateral house connections
  – Root cause analysis on all SSOs
  – Walking sewers in hard-to-reach areas

• **Engaging the public**: we all need to be aware of what we’re putting down the drain, especially in food service
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Sanitary Discharges of Unknown Origin

- SDUO
  - SDUO Tracking
    - Location
    - Timelines
    - Corrective actions
    - Discharge rates
    - Ammonia measurements

- Underground Leak of City System
- SSO
- Private Property
- Direct Connection
- Indirect Discharge
- Unknown / Variable Source

Baltimore City Department of Public Works
Modified Consent Decree Costs

- **$867.4 million spent** on the consent decree as of February 2016.
- Projected cost for the remainder of Phase I consent decree work:
  - From fiscal year 2017, the projected capital cost for the remainder of Phase I projects is $630.1 million.
- Projected cost for Phase II consent decree work:
  - The **projected capital cost** related to Phase II projects is $548.4 million.
- There is an additional **$85.1 million** projected cost for Program Management, Asset Management, and Flow Monitoring.
Keep Informed

• DPW keeps the public informed via social media, the City’s website, Community Liaisons, press releases, events and more.
• Every year, DPW will hold a public forum to report on progress of the consent decree.
• Project notices are also posted at: www.publicworks.baltimorecity.gov