Implementation of the Wastewater Treatment Division’s Conceptual Planning and Cost Estimating Process Improvements

PRESENTED TO THE

METROPOLITAN WATER POLLUTION ABATEMENT ADVISORY COMMITTEE

JANUARY 25, 2017
Substantial Participation Effort

- Technical Working Group, including MWPAAC representatives
- VMS Consultant Team
- WTD Project Planning and Delivery
- WTD Finance Section
- WTD Capital Systems Team
- Multiple briefings to RWQC and MWPAAC

More than 100 participants
Primary Focus Areas

- Cost Estimating
- Trend Analysis
- Contingency
- Risk Management
- Project Formulation
Cost Estimating

- **Basis-of-estimate communicating assumptions, exclusions and allowances**
- **Standardized tools, templates and guidance**

*Storage during large storm events*
Cost Estimating Improvements

- 50+ Pilot project trials
- Basis-of-estimate and one-page estimate summary documents required of all WTD capital project teams
- Improved cost models that adequately reflect project complexity
Trend Analysis

- Integrate all of our existing tracking and reporting processes to better capture and communicate changes over a project’s lifecycle

- 10+ Pilot project trials
### Integrating Trend Data

#### Current Forecast for Dec 2018 Forward

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<tr>
<th>Category</th>
<th>Actuals thru Nov 2018</th>
<th>2018 Remaining</th>
<th>Total 2018</th>
<th>Actuals thru Dec 2018</th>
<th>Difference</th>
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Contingency

- Use AACEI best practices to differentiate between:
  - Project Contingency
  - Allowances for Indeterminates (AFI)
  - Construction Change Order Allowance
  - Management Reserve (for out of scope)

Updates to existing WTD matrices and PRISM cost models were completed
Risk Management

- Risk management scalability for different types of projects
- Standardize risk management tools and techniques
- Continue pilot project trials
- New pilots added in 2017

Scalable Cost, Trend and Risk Practices
Risk Adjusted Cost Model

New scalable approach with project complexity factors programmed into WTD’s cost model
“Understanding that problems and potential needs do not have enough information to be described as formal projects, implement a Project Formulation Program.”

Purpose is to better evaluate project requests
NEED + PLAN + ADJUST + DEFINE = PROJECT

- Condition Assessments
- Strategic Objectives
- Conceptual Level of Investigation
- End User Requirements

Budget Constraints
Forecasted Cash Flow
WTD Implementation Phase Begins

Implementation and training on process improvements

Enhancements to WTD’s PRISM program, project and contract management system

Training on new PRISM functionality
• Risk adjusted cost model
• Budget and forecasting modules
• Reporting and performance metrics

Enhancements to WTD’s Tabula conveyance system cost estimating tool
Continuous Process Improvement

**AACEI**
- Alignment with industry Total Cost Management best practices
- Estimating
- Risk
- Trend
- Contingency

**Pilot Projects**
- To inform process improvements and incorporate lessons learned
- **Trend** Analysis
- Scalable **Risk Management**
- **Project Formulation**

**Streamlining**
- Coordination with WTD’s Capital Streamlining
- Lean process improvements

**CPMWG**
- King County’s Capital Project Management Work Group
- Sharing scalable conceptual cost estimating approaches, guidelines, tools and templates
Questions?

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