MWPAAC E&P Committee Briefing

WTD CAPITAL PROJECT COST ESTIMATING & PROJECT CONTROL PROCESS IMPROVEMENT EFFORT

Henry Chen (Seattle Public Utilities) and Andrew Lee (City of Bellevue)

August 4, 2016

MWPAAC E&P BRIEFING

- Process Improvement Approach
- Workshops
- Proof of Concepts & Pilots
- Next Steps

WORKPLAN AND TASK PROGRESS

- Analysis and Issues Identification (Oct-Dec 2015)
- Trend Analysis Fundamentals (January)
- Basis of Estimate (January & February)
- Contingency (March)
- Risk Management (April)
- Work Breakdown Structure, Coding and Estimate Format (May)
- Estimate Format / Estimate Deliverables Checklist / Estimate Reconciliation & Validation (July)

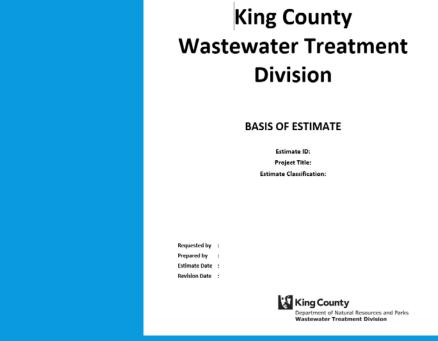
Historical Data (TBD)

TWG to make **Final Recommendations** to the Council and Executive **December 7, 2016**

BASIS OF ESTIMATE

- Basis of Estimate Concept Overview
- Development of Template and Guidance
- Initial Staff Training Completed (February)

- CSI Program Pilot
- CSO Program Pilot



Basis of Estimate Draft Template Available for use by staff

TREND ANALYSIS

Trend Analysis Concept Overview

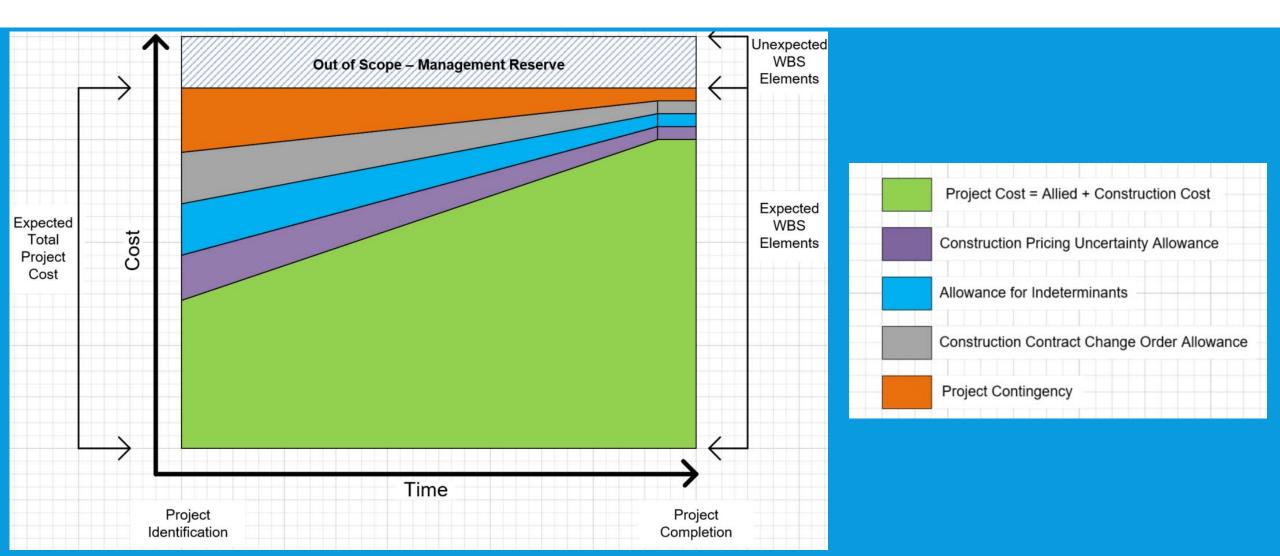
PROJECT CHANGE MANAGEMENT AND INSERT PROJECT TITLE

- Framework
- Change Management
- Process Guidance
- Templates
- Development of Tool and
- Magnolia Proof of Conce

Pilot Project Kickoff (Jun)

N 								PROJECT TREND ALERT PROJECT SER NUMBER <u>PTA # PTA # PTA DATE</u> <u>DATE</u> <u>Internet Pta Date</u> <u>DATE</u> <u>Internet Pta Date</u> <u>DATE</u> <u>Internet Pta Date</u> <u>Intea Date</u> <u>Intea Date</u>									
TREND ANALYSIS								X CHANG		IFICATION: TO PREVENT FUNC BUT WILL ADD VAL				INTIATOR (SIGNDATE) DH			
Initiator	Date Initiated	WBS Code	Project Phase	Impact Type	Change Category	Construction Cost Variance	COST Allied Cost Impact markup	Total Cost Variance sum	Design Variance	SCI Forecasted Design Duration sum	EDULE Construction Variance	Forecasted Const. Duration Sum	Status	Date of Status Resolution	Descriptive De	Comments	
						Total Submit Total Pendin Total Approv Total Rejecte	g ed										

PROJECT COST BUILD-UP



CONTINGENCY

WTD Co	Project Cont.		
Construction Pricing Uncertainty Factor	Construction Definition Uncertainty Factor	Construction Change Order Contingency	Project Contingency

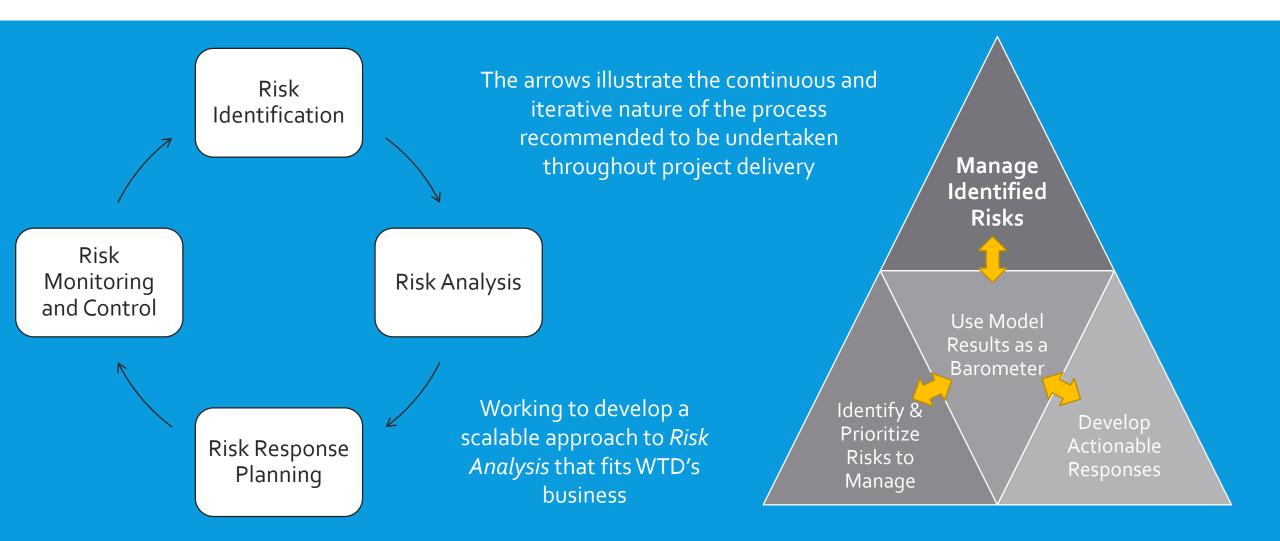
WTD C	onstruction Allo	Project Cont.	Project Reserves	
Estimate Uncertainty Allowance	Design Uncertainty Allowance (AFIs)	Construction Change Order Allowance	Quantified Project Contingency (Using Confidence Intervals)	Management Reserve

CONTINGENCY

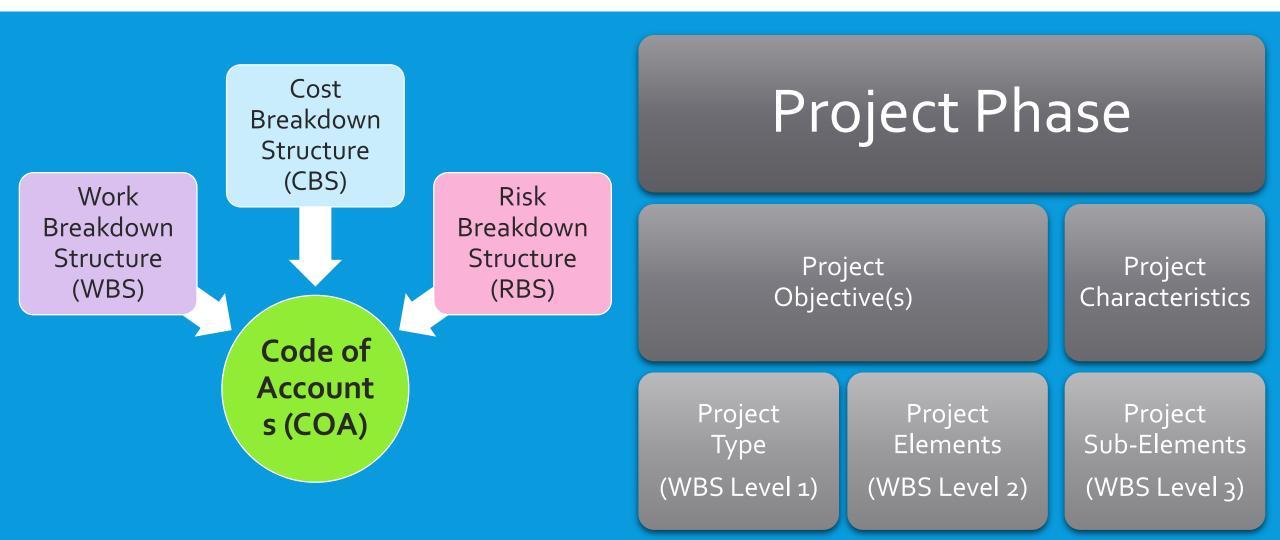
WTD Co	WTD Construction Contingency										
Construction Pricing Uncertainty Factor	Construction Definition Uncertainty Factor	Construction Change Order Contingency	Project Contingency								
Up to 5%	25%	10%	30%								
Up to 3%	20%	10%	25%								
Up to 2%	15%	10%	15%								
Up to 1%	10%	10%	10%								
0%	0%	10%	5%								

WTD E	stimating & Const Allowances	Project Contingency	Project Reserves								
Construction Pricing Uncertainty Allowance	Allowance for Indeterminates (AFIs)	Construction Contract Change Order Allowance	Quantified Project Contingency	Management Reserve							
Up to 5%	25%	10%	30% (P-90)	Calculated							
Up to 3%	20%	10%	25% (P-80)	Calculated							
Up to 2%	15%	10%	15% (P-70)	Calculated							
Up to 1%	10%	10%	10% (P-60)	Calculated							
0%	0%	10%	5% (P-50)	Calculated							

RISK MANAGEMENT



WBS & CODING



PROOF-OF-CONCEPT AND PILOT PROJECTS

WTD Pilot Projects (to-date)

Lake Hills and NW Lake Sammamish Interceptor Upgrade

North Mercer Island & Enatai Interceptors Upgrade

Coal Creek Siphon & Trunk Parallel

CSO Control & Improvements – Magnolia

West Point Treatment Plant OGADS Replacement (Oxygen Generation and Dissolution System)

Georgetown Wet Weather Treatment Station

40+ CSO – Combined Sewer Overflow new project estimates

40+ CSI – Conveyance System Improvements new project estimates

WORKPLAN NEXT STEPS

- Analysis and Issues Identification (Oct-Dec 2015)
- Trend Analysis Fundamentals (January)
- Basis of Estimate (January & February)
- Contingency (March)
- Risk Management (April)
- Work Breakdown Structure, Coding and Estimate Format (May)
- Estimate Format / Estimate Deliverables Checklist / Estimate Reconciliation & Validation (July)

Historical Data (TBD)

TWG to make Final Recommendations to the Council and Executive December 7, 2016

QUESTIONS