

WTDs Long Term System Planning

Estimating Project Costs Once a Need is Identified

Presented to MWPAAC's
Engineering & Planning and Rates & Finance Subcommittees
February 4, 2016

Today's Presentation

- * Background
- * Project Planning and Delivery Timeline
- * Challenges of Long-range Planning
- * Problem Definition Phase
- * Classes of Estimates
- * Implementation of a Capital Project
- * Schedule – Next Steps

Conceptual Planning and Cost Estimating Improvements Summary

- * CSO Performance Audit 2014
- * Proviso 17941, Nov 2014
- * Establishment of a Cost Estimating Technical Work Group (TWG)
 - Contract with Value Management Strategies (VMS) 10/31/15 – Conceptual Planning and Cost Estimating Improvements to support the TWG
- * Initial briefing to Council (RWQC) 12/2/15
- * Progress to-date
 - Task 1 complete: Analysis and Issues Identification
 - Task 2 underway: Develop specific solutions, recommendations and strategies & Workshops

Conceptual Planning and Project Control Cost Estimating Services

Overall scope includes review and improvement of estimating practices used prior to baseline

- Problem identification through 35% maturity of project definition

Initial focus has been on WTD's Long Term System Planning

- Conceptual planning cost estimating practices prior to transferring projects to Capital Planning and Delivery.

- Essentially 0% maturity of project definition deliverables

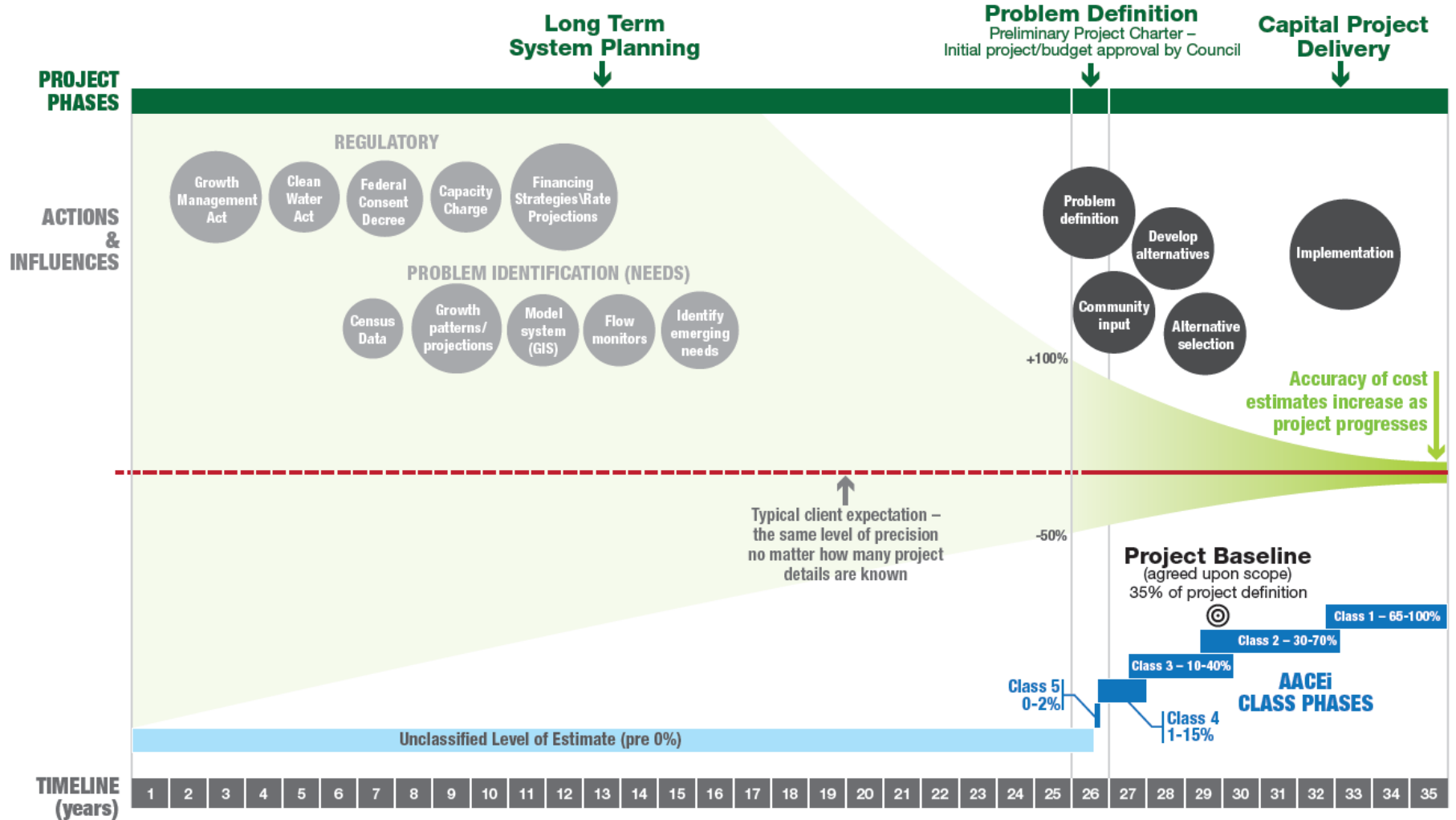
WTD's Project Planning and Delivery process for capital projects is a three-step 35 year process

Long Term System Planning
(25 years)

Problem Definition
(1 year)

Capital Project Delivery
(9 years)

WTD's Project Planning and Delivery Timeline



Long-Range System Planning

Internal Challenges:

- * Planning process identifies projects 25-45 years in advance of in-service need
- * Scope and costs are based upon how the future problem would be solved under today's known means and methods
- * Unable to accurately account future costs of doing business, requirements, regulations, technology, complexity, etc.
- * Initial scope and cost estimate published in year 0 and updated for escalation every 5 years – still without design details
- * While the need for the project generally remains, the optimal system solution will likely evolve. Said another way, While the purpose and outcome remain the same, the scope may change.

Long-Range System Planning

External Challenges:

- * Public sector project identification and budget process requires publication of very preliminary and incomplete information
- * Projects must seek authorization prior to start. Project authorization sought from Council at 0% to 2% maturity of project definition deliverables/design
- * Expectation of a level of precision no matter how many project details are known

Problem Definition

- * Year long effort that advances a project from comprehensive planning to capital project planning and delivery
 - Verification and definition of objective
- * Planning staff along with other senior staff evaluate objective and identify potential alternatives. Project life cycle costs for each.
- * Culminates in a Preliminary Project Charter that is used to authorize the project. Information includes:
 - Project requirements, background and context
 - In-service need date, regulatory deadlines, etc.
 - Cost projection
 - Generally 0% to 2% level of project definition

Estimate Classifications

AACEi – the Authority for Total Cost Management

- * Publishes industry standard recommended estimating practices
- * Cost Estimate Classification System correlates level of known information with expected accuracy range

Cost Estimate Classification System (*RP 18R-97*) ties level of project definition, estimate purpose, estimating methodology to an expected accuracy range. There are 5 classifications, least detail to most.

- * Class 5 Estimate – 0% to 2% maturity of project definition deliverables
- * Prepared with very little information, contain inherent inaccuracies, -50% to +100% accuracy
- * Prepared for strategic business planning purposes
 - market studies
 - project screening
 - long range capital planning
 - assessment of initial viability
 - evaluation of alternate schemes
 - evaluation of resources needed and budgeting
- * Alternate Estimate Names / Synonyms:
 - ratio
 - ballpark
 - seat of pants
 - ROM
 - rule-of-thumb
 - guesstimate

Implementation – Capital Planning and Delivery

- * Plans the project
- * Develops alternatives and costs
- * Develops preferred alternative and baseline estimate
- * Oversees design
- * Oversees implementation

2016 TWG and VMS Calendar

Improvements to the Wastewater Treatment's Division's

JANUARY						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
		Basis of Estimate/Trend				
24	25	26		28	29	30
				TWG		

FEBRUARY						
S	M	T	W	T	F	S
31	1	2	3	4	5	6
			MWPAAC			
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
	BOE - Staff Education					
28	29					

MARCH						
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			?			
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13	14	15	16	17	18	19
	Contingency			TWG		
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27	28	29	30	31		

APRIL						
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	Risk Management					
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MAY						
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	WBS/Coding & Est Format			TWG		
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE						
S	M	T	W	T	F	S
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12	13	14	15	16	17	18
	Historical Data Analysis					
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JULY						
S	M	T	W	T	F	S
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	Estimate Reconciliation			TWG		
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AUGUST						
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				TWG		
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OCTOBER						
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30	31					

NOVEMBER						
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		TWG				
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		TWG				
20	21	22	23	24	25	26
27	28	29	30			

DECEMBER						
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		TWG	RWQC			
11	12	13	14	15	16	17
18	19	20	21	22	23	24
	TWG					
25	26	27	28	29	30	31

TWG	Technical Work Group Meetings
VMS	VMS/WTD Workshops
MWPAAC	Metropolitan Water Pollution Abatement Advisory Committee (Presentations TBD)
RWQC	Regional Water Quality Committee Meetings (Presentations TBD)
Final	Final RWQC/Council Presentation

Questions?

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