

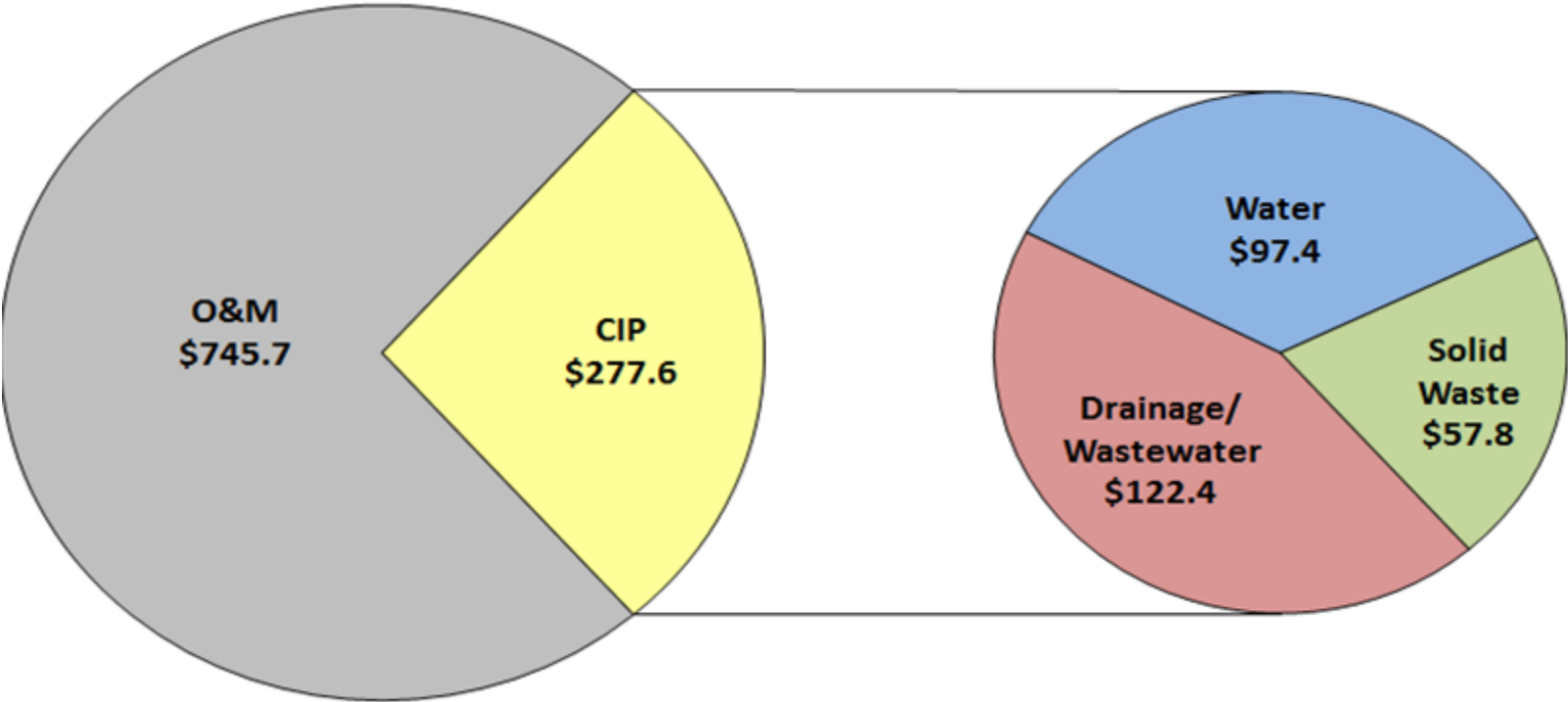
Seattle Public Utilities Capital Projects Briefing

**Civil Rights, Utilities, Economic
Development & Arts Committee**

May 24, 2016

Seattle
 Public
Utilities

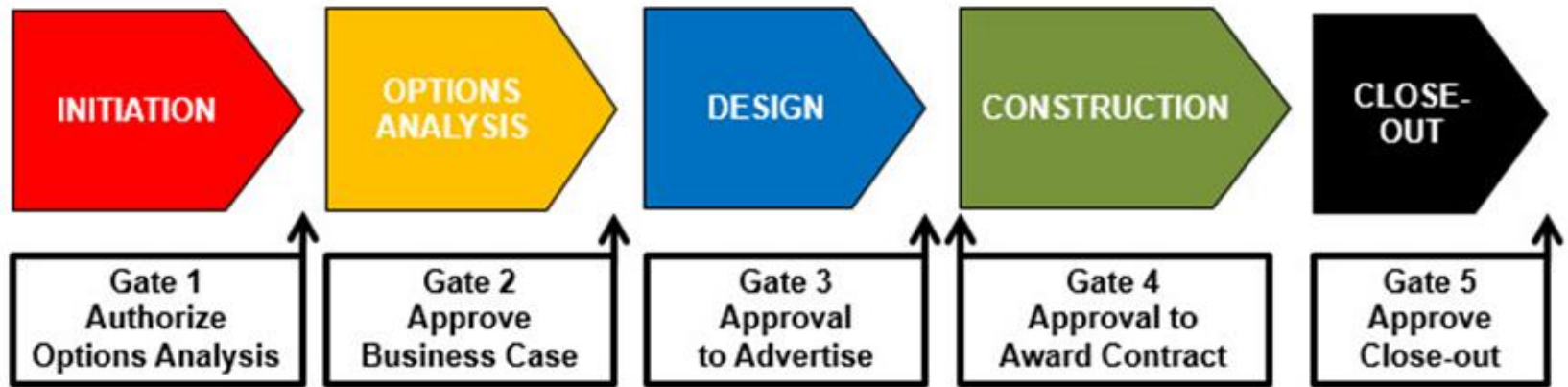
2016 Seattle Public Utilities Spending (\$ in millions)



How to prioritize projects?

- **Strategic Business Plan**
- **Rate Setting and Budget Process**
- **Ongoing Management of Capital Needs**

Capital Project Life Cycle Overview

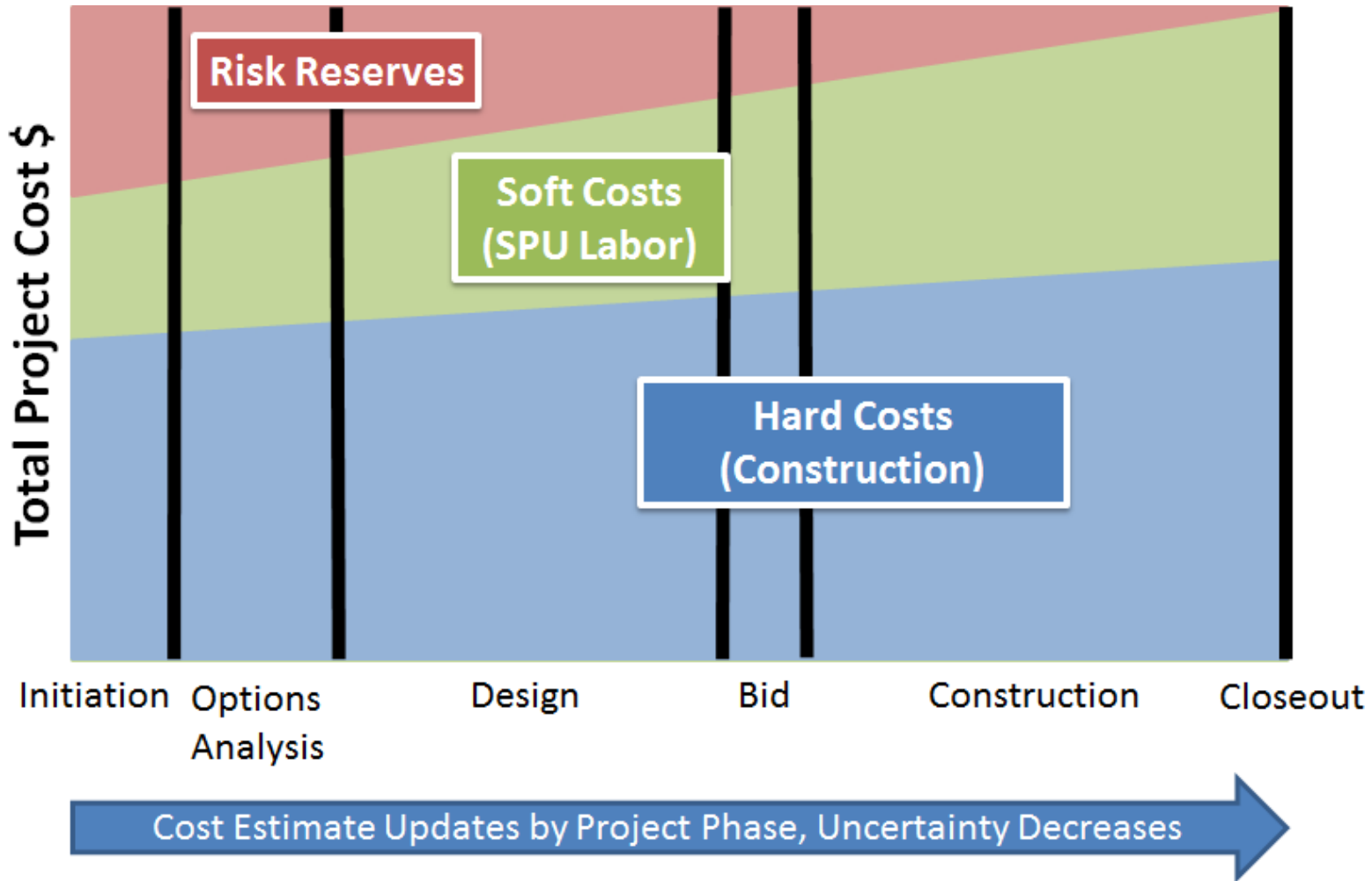


Average project duration is approximately 48 to 60 months

Largest Infrastructure Projects by LOB

Project Name	Project Phase
Drainage & Waste Water	
Ship Canal Water Quality Project	Design
South Park Pump Station	Design
Henderson North CSO Reduction	Construction
Windermere CSO Reduction	Close Out
Genesee CSO Reduction	Close Out
Solid Waste	
STS2 – Solid Waste Facilities	Design
North Transfer Station Rebuild	Construction
Water	
Morse Lake Pump Plant	Construction
Alaskan Way Viaduct/Seawall	Construction
Beacon Reservoir Seismic	Close Out

Project Cost Uncertainty



Risk Management Process

1. Risk Planning
2. Risk Identification
3. Risk Analysis
4. Risk Response
5. Risk Control



Risk Register

Capital Hill Water Quality Project

Risk Rank	Description	Probability Rating	Cost Severity (Priority)	Contingency Reserves	Response Plan
1	Design change to underground power causes an increase in both design and construction costs	Very High - 30-40%	Very High	\$120,000	Add scope and associated cost to construct underground utilities
2	SCL requires Yale Avenue mid block utility pole replacement be non-standard and more expensive	Moderate - 10-20%	Low	\$10,500	Work with SCL to get clarity on requirements and provide additional funds via CR for unknowns
3	Utility conflicts are encountered during construction resulting in change orders and delays	Very High - 30-40%	Very Low	\$8,000	Add budget for impacts - note Yale has lots of fiber
4	Set roadway profiles at intersections need to be changed	Very High - 30-40%	Very Low	\$6,000	Work with SDOT to get clarity on requirements
5	SDOT requires additional roadway paving or related improvements	Low - 5-10%	Very Low	\$3,000	Pay for extra paving
				\$147,500	

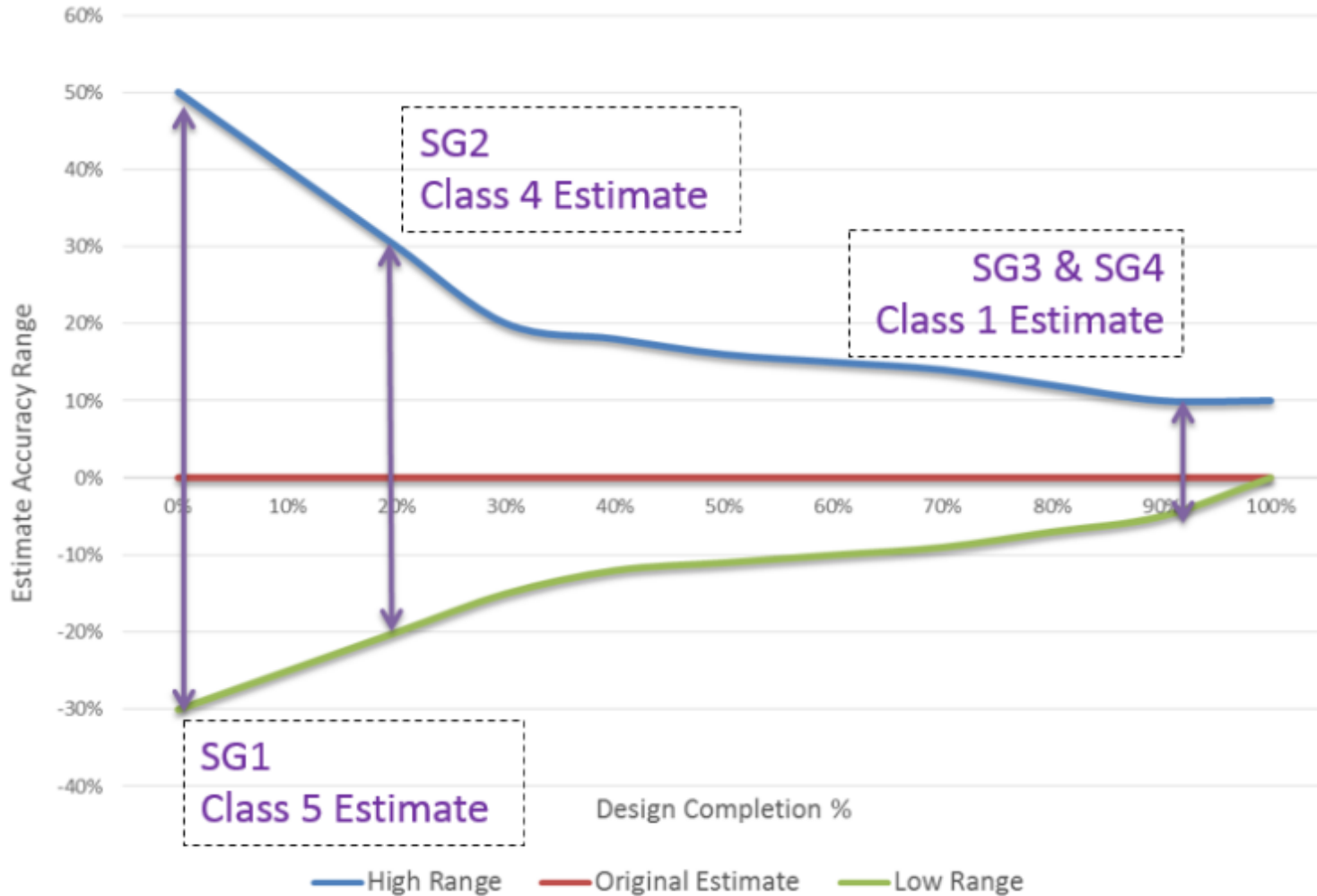
Total Active Risks	Total Active Contingency
24	\$152,125

Cost Estimates Classification

Project Phase	AACE* Estimate Class	Typical Cost Uncertainty Range
Initiation	Class 5	-30% to +50%
Options Analysis	Class 4	-20% to +30%
Design at 30%	Class 3	-15% to +20%
Design at 60%	Class 2	-10% to +15%
Design at 90%	Class 1	-5% to +10%
Construction	Class 1	-5% to +10%
Close-Out	N/A	0%

**American Association for Cost Engineering (AACE)*

Cost Estimate Variability



Project Cost Performance

Project Name	Actual Cost at Completion	Baseline Estimate	Variance Amount*	Variance %*
Windermere CSO Storage	\$49,382,577	\$50,399,778	\$1,017,201	2.0%
N 107th St & Midvale Drainage	\$7,643,427	\$9,829,175	\$2,185,748	22.2%
Sediment Remediation Slip 4	\$7,753,951	\$8,670,503	\$916,552	10.6%
South Transfer Station Rebuild	\$77,020,201	\$79,319,000	\$2,298,799	2.9%
Reservoir Covering Beacon	\$41,916,317	\$39,647,000	(\$2,269,317)	(6%)
Reservoir Covering West Seattle	\$33,496,627	\$37,681,000	\$4,184,373	11.1%
Reservoir Covering Myrtle	\$12,272,701	\$11,326,000	(\$946,701)	(8%)
Reservoir covering Maple Leaf	\$38,773,127	\$59,715,000	\$20,941,873	35.1%
Dallas S Emgr Soil Removal-DRN	\$2,179,334	\$2,673,224	\$493,890	18.5%
Meadowbrook Pond Sediment Mgmt	\$4,013,250	\$2,186,131	(\$1,827,119)	(84%)
Broadview Inf. Reduction Pilot	\$1,446,400	\$1,275,000	(\$171,400)	(13%)
Ballard Rdside Rngrdn Non-ARRA	\$2,072,640	\$1,700,000	(\$372,640)	(22%)
Windermere NPDES013 Retrofit	\$1,072,087	\$1,578,994	\$506,907	32.1%
Myrtle Tanks Recoating	\$1,994,294	\$1,877,108	(\$117,186)	(6%)
Richmond Hlnds Tanks Recoating	\$2,431,310	\$1,567,000	(\$864,310)	(55%)
Aurora Ave North of N 165 St	\$3,073,834	\$2,509,278	(\$564,556)	(22%)
Arbor Hts Fire Flow Impr Ph 1	\$1,572,119	\$2,276,741	\$704,622	30.9%
Spokane Street Viaduct-WF	\$3,505,435	\$4,511,000	\$1,005,565	22.3%
Main Warehouse Roof Ventilatio	\$2,072,752	\$1,958,931	(\$113,821)	(6%)
NPDES095 CSO Retrofit	\$980,768	\$997,182	\$16,414	1.6%
Henderson CSO RetrofitProjects	\$200,937	\$96,530	(\$104,407)	(108%)
3rd Ave NW Drainage System Imp	\$86,232	\$90,000	\$3,768	4.2%
Kent Highlands Flare Imprmnt	\$845,604	\$604,833	(\$240,771)	(40%)
Aurora Ave Improvements Ph 3 A	\$374,784	\$430,000	\$55,216	13%
1st Ave N Kalamein Pipe Rplomt	\$968,965	\$767,986	(\$198,979)	(26%)
3rd Ave West PRVs	\$884,501	\$990,000	\$105,499	10.7%
Crown Hill Fire Flow Imprmnts	\$17,603	\$17,122	(\$481)	(3%)
2013 Water System Plan	\$387,161	\$830,579	\$443,418	53.4%
NW 85th 15th NW to Mary NW	\$136,353	\$120,000	(\$16,353)	(14%)
Materials Supply InventoryRegi	\$912,751	\$969,015	\$56,264	5.8%
18 & E Jefferson SCADA Pressure	\$72,250	\$158,533	\$86,283	54.4%
12 & Bertona SCADA Pressure	\$129,754	\$158,533	\$28,779	18.2%
55 & 33Ave SCADA Pressure	\$126,553	\$158,533	\$31,980	20.2%
Grandtotal All Project	\$299,814,598	\$327,089,709	\$27,275,111	8.3%

Total Project Portfolio by Size

Project Size	Project Count	Percentage of Total Projects	Total Costs in Portfolio	Percentage of Total Portfolio
<\$1M	29	25%	\$15,976,600	1%
\$1M to \$10M	62	54%	\$235,945,376	21%
>\$10M	23	20%	\$851,758,213	77%
Total	114	100%	\$1,103,680,189	100%

Capital Projects Oversight

Project Monitoring and Control

- SPU Watch-list Project Briefing
- Project Status & Performance Reporting Monthly
- Change Control Process
- Quarterly Reports

Questions?



Jefferson Park (Beacon Reservoir)



Seward Park (Henderson North CSO)
Henderson North CSO
April 15, 2016