

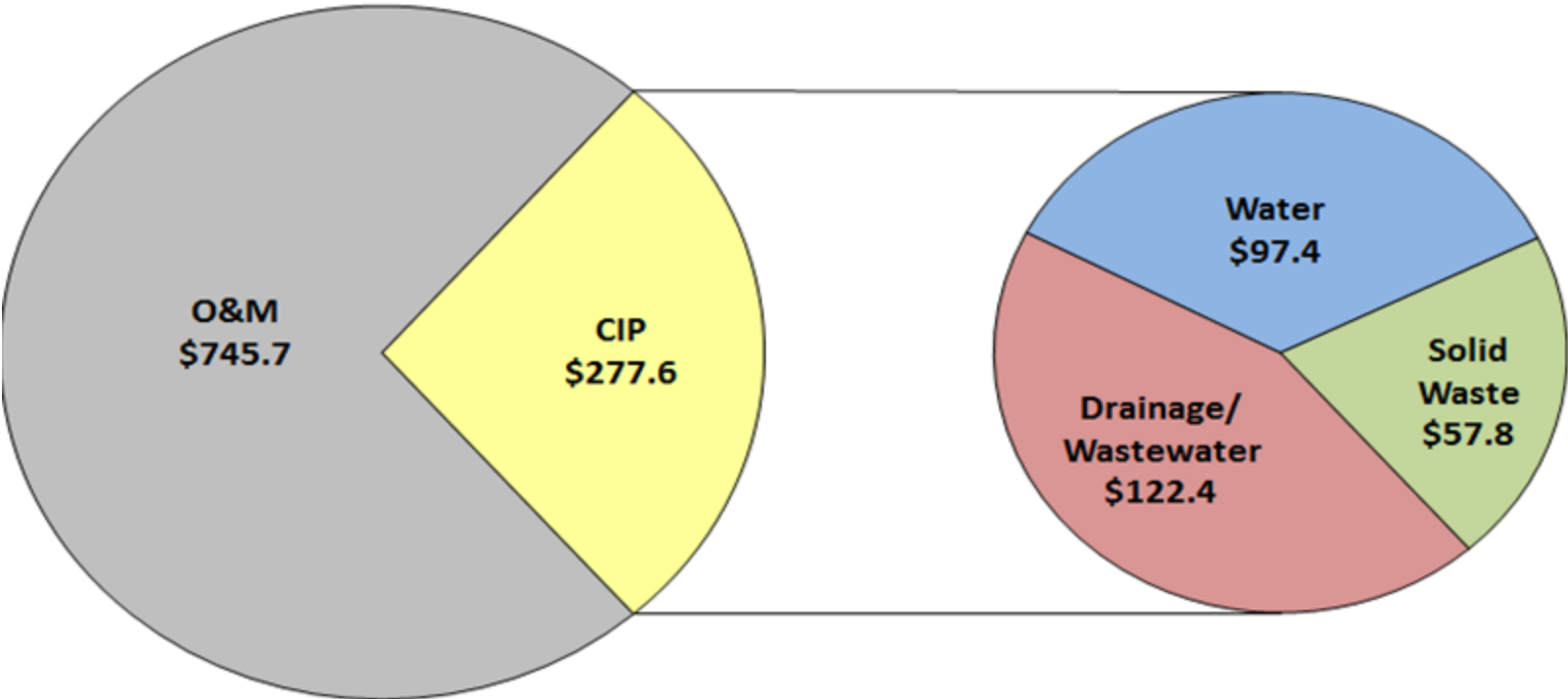
# Seattle Public Utilities Capital Projects Briefing

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

*July 22, 2016*

Seattle  
 Public  
Utilities

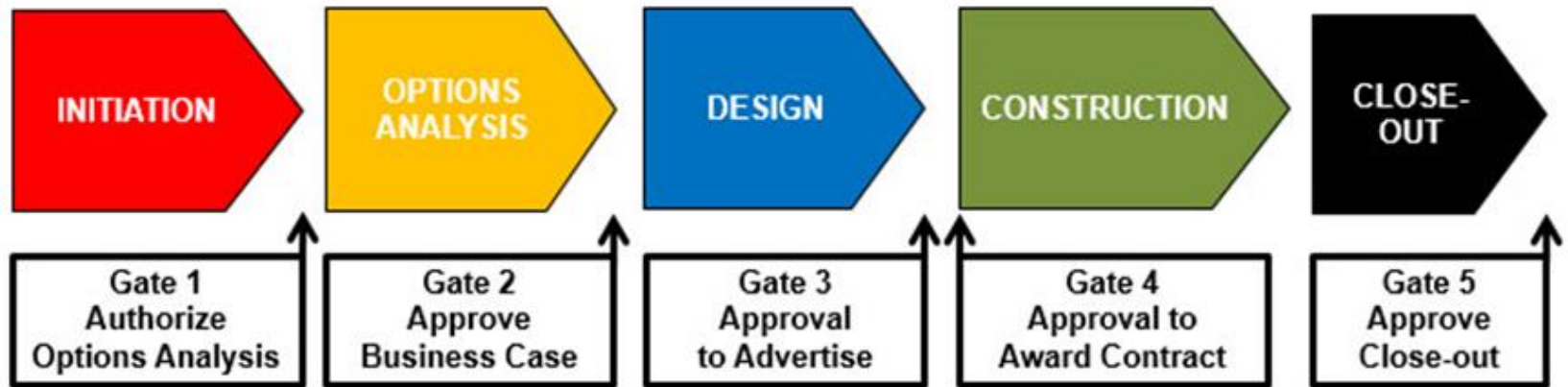
# 2016 Seattle Public Utilities Spending (\$ in millions)



# How to prioritize projects?

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

# Capital Project Life Cycle Overview

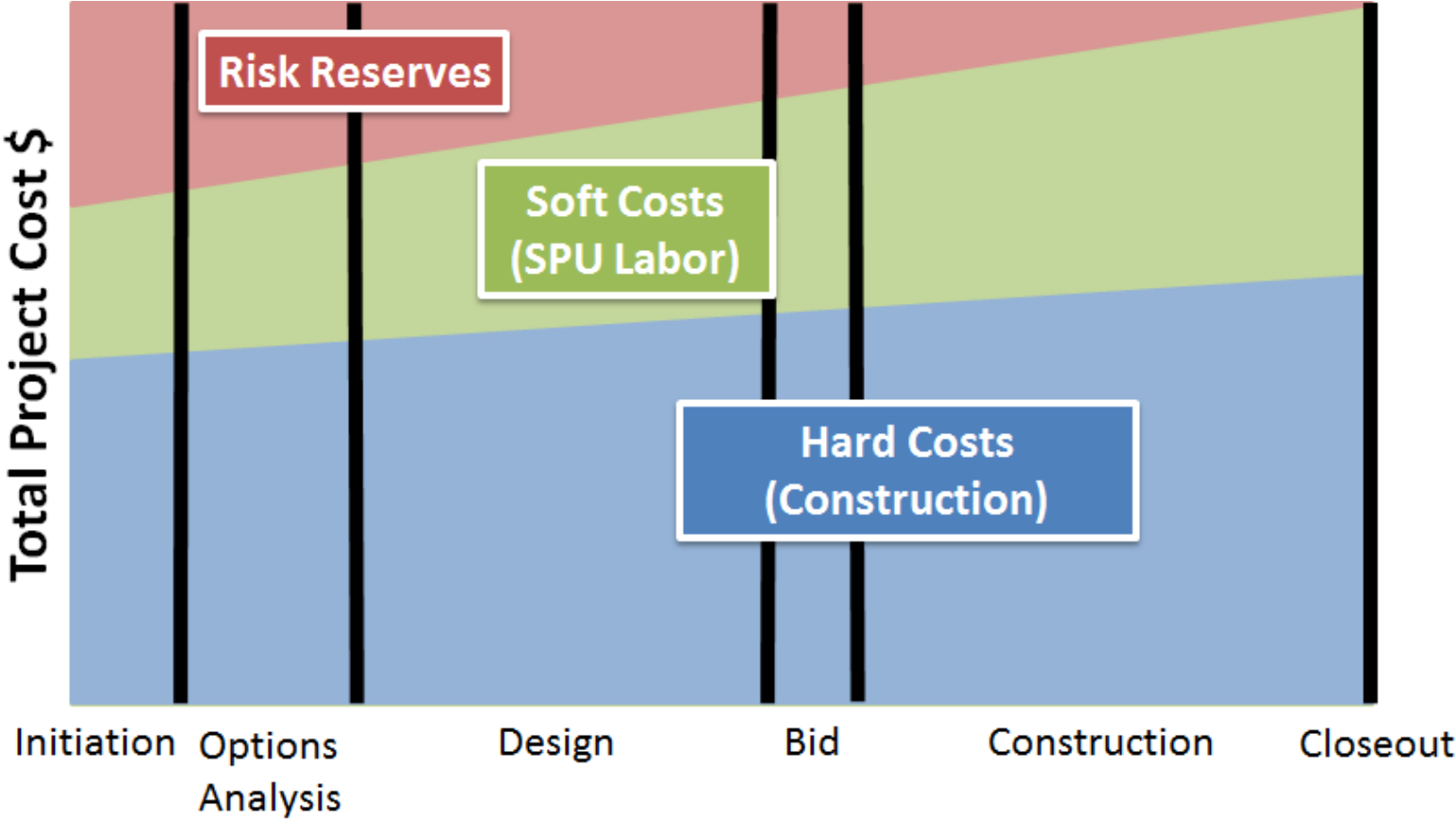


*Average project duration is approximately 48 to 60 months*

# Largest Infrastructure Projects by Line of Business

Project Name	Project Phase
Drainage & Waste Water	
Ship Canal Water Quality Project	Options Analysis
South Park Pump Station	Design
Henderson North CSO Reduction	Construction
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	Options Analysis

# Project Cost Uncertainty



Cost Estimate Updates by Project Phase, Uncertainty Decreases

# Risk Register

## Henderson North CSO

Henderson North CSO C304102			April-16	
Risk Rank	Description	Cost Severity (Priority)	Contingency Reserves	Response Plan
1	Construction causes damage to neighbors/nearby facilities. Settlement or other; Cost increase to resolve.	Low	\$196,875	Require preconstruction video & vibration monitoring; keep reserves in budget if repairs needed to neighbors.
2	Cost increase caused by negotiations with Parks (RUP,PTOJ,restoration, constraints, etc.).	Very Low	\$150,000	Include budget in reserves for restoration requests/constraints from parks.
3	Cost increase caused by unanticipated utility conflicts.	Very Low	\$99,375	issue change order for unforeseen conditions, assume 3wks at \$6k/d
4	New scope for Section 106 compliance	Very Low	\$99,000	team believed archaeological work had been completed; learned that it was not completed
5	SCADA control center commissioning is delayed up to 4 weeks due to conflict with higher priority operations.	Very Low	\$86,250	Use additional resources (consultant) to complete this work quickly. Build float into schedule.

**\$631,500**

<b>Total Active Risks</b>	<b>Total Active Contingency</b>
24	\$1,040,125

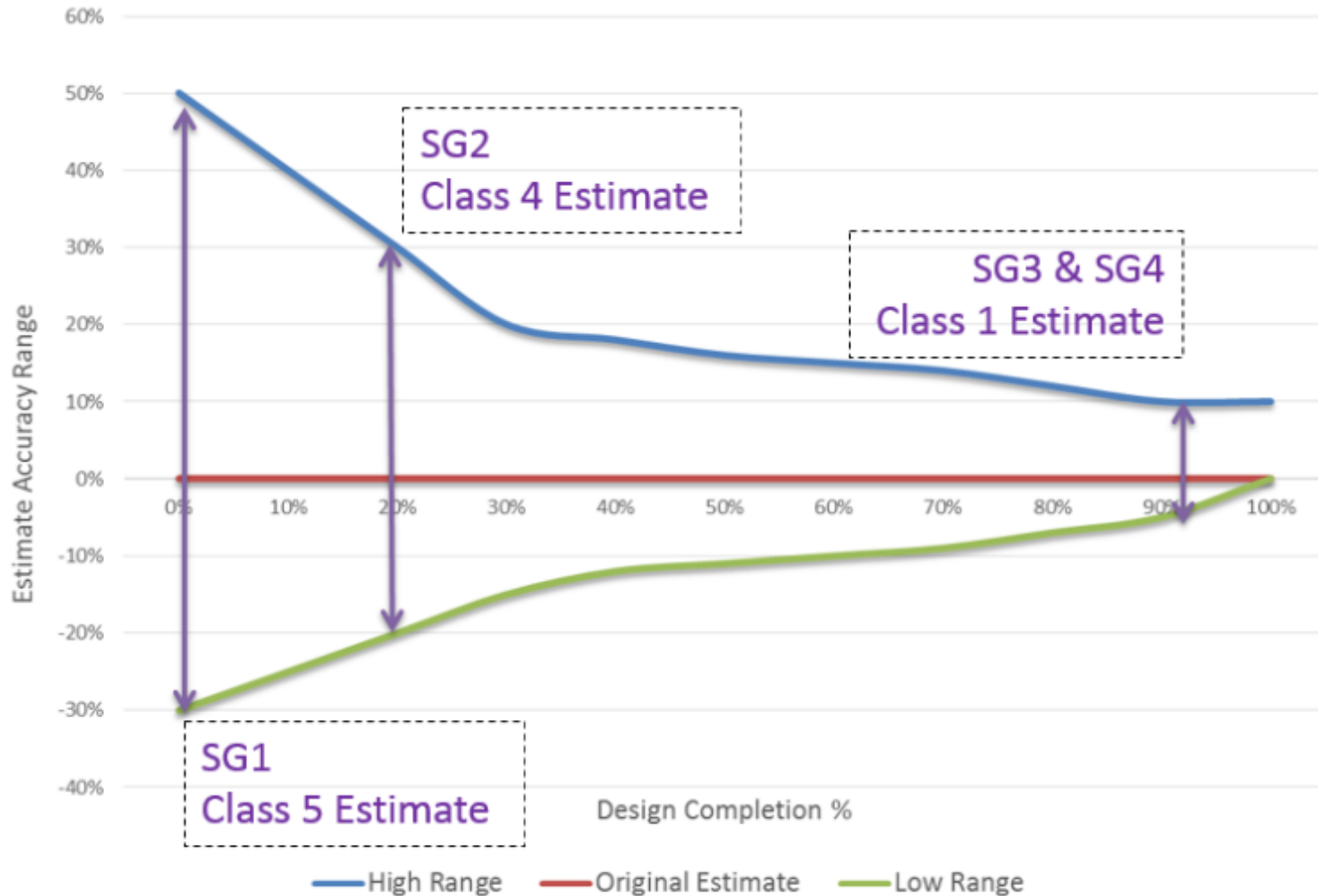
# Cost Estimates Classification

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 Rplmnt	\$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%
<b>Grandtotal All Project</b>	<b>\$299,814,598</b>	<b>\$327,089,709</b>	<b>\$27,275,111</b>	<b>8.3%</b>

# 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%
<b>Total</b>	<b>114</b>	<b>100%</b>	<b>\$1,103,680,189</b>	<b>100%</b>

# Project Monitoring and Control

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

# Questions?



Jefferson Park (Beacon Reservoir)



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