

2018-2023 SBP Action Plan Update

Action Plan Title: Pump Station, Force Main & CSO Outfall Capital Programs (#8)

1. Short summary of the project/program

Part 1: Summary of Project (Original Scope).

The action plan increased funding for the pump station, force main, and CSO outfall capital programs 2018-2023.

Pump Station and Force Main Program: This program includes all capital spending to rehabilitate and replace assets at SPU's 68 sewer pump stations and their associated force mains. Force mains are pipes that convey flow under pressure from the discharge side of a pump to the gravity system downstream.

Outfall Program: This program includes all capital spending to rehabilitate and replace SPU's 85 CSO outfalls, which are the relief pipes where stormwater and sewage discharge to receiving waters during heavy rain.

Part 2. Targeted Commitments & Actuals (2018-19).

Pump Station and Force Main Program

Targeted commitments were identified for 2018-2023:

Essential improvements to 15 conventional pump stations (Ahead of Schedule)

- SPU will complete essential improvements at more than 15 stations by 2023
 - PS Ventilation Improvements: 25 pump stations, Completed 2019
 - Electrical Improvements: Disconnect installs at 23 pump stations, Completed 2019
 - PS 2 and 35 generator Replacements: Completed 2019
 - PS 9 Side Gate and Hatch Replacements: Completed 2019
 - PS 1 Pump and Valve Replacements: Completed 2019
 - PS 19 Drive and Pump Replacements: Completed 2019
 - PS 49 Pump Replacements: Completed 2019
 - PS 59 Pump Replacements: Completed 2019
 - PS 84 Pump and Valve Replacements: Completed 2019
 - PS 2,72,73: Full facility upgrade, PS 2 and 73 Completed 2019, PS 72 2020
 - PS 17, 20, 118 Improvements: Full facility upgrade, PS 17 and 118 in design, PS 20 in construction
 - PS 62,63,71,76 Improvements: Full facility upgrade, In design

Replacement of 5 airlift type pump stations that are old and high maintenance (On schedule for 2 stations by 2023)

- SPU will complete 2 airlift type pump station replacements by 2023 with available funding
 - Airlift PS 38 Conversion: Airlift PS replacement, In design
 - Airlift PS 56 Conversion: Airlift PS replacement, In design
- Cost per station is significantly above projections due to project complexity and public works construction bidding environment

Replacement of 4 force mains that are already more than 80 years old (On Schedule)

- SPU will complete 4 force main replacements by 2023
 - PS 43 Force Main Replacement: Completed 2019
 - PS 71: Replacement part of station rehabilitation project, In design
 - PS 38: Replacement part of station rehabilitation project, In design
 - PS 38: Replacement part of station rehabilitation project, In design

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- 2 force mains will be replaced as part of the CSO Program
 - PS 13 and PS 22
- 3 force mains will be replaced as part of the SDOT Partnering Program
 - PS 62, 63, and 65: Part of SDOT RapidRide Roosevelt Project

Outfall Program

The action plan increase in funding was to complete 4 condition assessments and 4 outfall repairs/replacements by 2023. SPU completed the assessment of 18 CSO outfalls in 2019, replaced 4 outfalls as part of other CIP projects and is on track to clean or repair 4 outfalls by 2023.

- **Part 3. Financial Plan & Actuals for 2018-2019.**

		2018	2018 Actuals	2019	2019 Actuals	2020	2021	2022	2023
	O&M (Non-Labor) Budget								
Capital Budget PS and FM	Capital Budget	11,885,754	3,005,047 ⁽¹⁾	13,025,589	14,172,371	5,920,942	7,861,613	4,121,747	4,000,000
	Baseline Budget	9,452,754		7,036,347		3,440,151	6,491,613	3,101,747	3,000,000
	Action Plan Budget	2,433,000		5,989,242		2,480,791	1,370,000	1,020,000	1,000,000
Capital Budget Outfalls	Capital Budget	647,000	1,080,848	1,100,000	1,917,922	338,095 ⁽²⁾	1,509,149	1,500,000	1,500,000
	Baseline Budget	647,000		1,098,470			509,149	509,149	500,000
	Action Plan Budget			1,530		1,003,442 ⁽²⁾	1,000,000	1,000,000	1,000,000

(1) PS 43 Emergency Force Main Project (\$7.2 Mil) was delayed to 2019

(2) 2020 Outfall Action Plan Budget moved into the 2021,2022,2023 Budget to accommodate Outfall Action Plan development in 2020

2. Have there been any significant changes in scope or assumptions since this action plan was approved in 2017? If so, please describe.

Pump Station and Force Main Program

Scopes and assumptions are relatively consistent since the plan was approved. SPU has underspent relative to plan for several reasons; significant project risk events in large projects did not occur and project reserves allocated were not spent, project delays due to permitting/regulatory issues, staff resourcing limitations, and consultant contracting limitations. SPU is working to improve spending versus plan by changing practices around allocation/management of project reserves, improved project planning and resourcing integration, further developing internal staff project competencies, supporting more crew led pump station rehabilitation, and improving the availability/flexibility of consulting contracting resources.

Outfall Program

There have not been significant changes in scope since the action plan was approved. However, findings from the assessment conducted in 2019 have found that the number of outfalls that require cleaning or repairs is higher than anticipated.

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3. Do we anticipate this investment continuing in the next strategic plan? Will funding and targets be above or below 2018-2023 levels? Why?

Pump Station and Force Main Program

Pump station investment is expected to continue in next strategic business plan. The current funding levels reflected in the 2018-2023 SBP have allowed SPU to make significant improvements to the pump station and force main assets. This funding level will allow for all non-airlift pump stations to be rehabilitated (replacing assets in kind) by 2040-2050. However, this funding level is not enough to replace airlifts at a preferred replacement rate. In addition, some larger more complex force main replacements will need additional funding in the later years (2023-2026). Therefore, we anticipate proposing increased funding for this work in the 2021-2026 Strategic Business Plan.

In addition to the 6-year CIP discussed in the SBP, SPU has performed long term investment projections for this asset class which shows we are making sustainable levels of investment to prevent a bow wave of deferred maintenance activities in the future.

Outfall Program

This investment is expected to continue into the 2021-26 Strategic Business Plan. In order to replace or repair 2 outfalls a year, funding levels for this program need to be increased to address deficient outfalls. We anticipate proposing adjustments in the 2021-2026 Strategic Business Plan.