

Sewer Inspection and Rehabilitation

Focus Area: Operational Excellence
Strategic Objective: Service Quality
Owner: Frank McDonald

Summary of proposed action or investment

By 2020, increase the annual level of rehabilitation of sewer pipes spending by \$15.5 million to \$21 million. (The \$21M includes baseline spending of \$5.5 million, described below.) This, combined with the Sewer Cleaning proposal, will allow SPU to significantly reduce the risk of exceeding the regulatory maximum of four sanitary sewer overflows per 100 miles of sewer pipe.

Description of the problem this action solves or addresses

The baseline Capital Improvement Program (CIP) budget provides \$4.5 million in 2013 and \$4.74 million in 2014 (and onward) for rehabilitating sewer pipes. This funding level is insufficient to rehabilitate even our greatest risk sewer pipes through 2020.

More detailed description of the proposed action or investment

First, \$60.5 million will fund additional rehabilitation work on SPU's gravity flow sewer pipes, as follows:

- We will conduct a multi-factor risk analysis of each pipe and rehabilitate all pipes with a risk value of 70 or above, by 2020. This proposal allows more than 218 additional miles of pipe to be rehabilitated, for a total of more than 335 miles of rehabilitated pipe over the six-year period. Evaluation, risk assessment, and rehabilitation will continue past 2020; it is an ongoing body of work.
- Funds 9 new FTE added, beginning in 2016 and continuing past 2020. This includes:
 - ✓ Five (5.0) positions to staff planning, scheduling and system support to identify the highest-risk pipes, then plan and schedule rehab work. One position replaces a temporary position and therefore requiring no additional funding.
 - ✓ Four (4.0) positions to staff two new 2-person crews to examine (via closed circuit television (CCTV)) the selected pipes.

Additionally, \$500,000 per year will be spent to rehabilitate sewer force mains. In 2014, SPU will conduct a pump station condition assessment which staff believe will reveal moderate and severe structural defects needing rehabilitation.

Benefits

This Action Plan provides several critical benefits:

- It lowers our risk of exceeding the regulatory maximum for sanitary sewer overflows of four backups per 100 miles of pipe; if this maximum is exceeded, we risk losing the flexibility the Environmental Protection Agency and the State Department of Ecology have given us to deal with water quality problems.

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- By reducing the number of sanitary sewer overflows, we provide an appropriate and expected level of service to our customers.
- By funding a reasonable level of rehabilitation, we maintain the integrity of our infrastructure and avoid the large, unplanned future costs that would result from deferring needed work.

Implementation plan and timeline

	2015	2016	2017	2018	2019	2020
Purchase and overhaul CCTV trucks	x					x
New CCTV staff perform inspections		x	x	x	x	x
New staff conduct planning, scheduling and system support		x	x	x	x	x
Contractors rehabilitate pipes		x	x	x	x	x

Budget and FTE Changes (in \$000s)

Fund: Drainage & Wastewater

The table below provides the cost detail for this Action Plan.

- **O&M labor costs** - assumes totally loaded staff cost of \$100K/year. (One of the nine (9) new positions is funded in the baseline, as mentioned above.)
- **O&M non-labor costs** – operating two CCTV trucks
- **CIP costs**
 - ✓ \$1.1 million for the purchase of two new CCTV trucks in 2015
 - ✓ \$250K to overhaul the two trucks in 2020
 - ✓ \$500K/year - sewer force main rehabilitation
 - ✓ An increasing amount for rehabilitation of gravity flow pipes:
 - \$6.0M in 2016
 - \$12.0M in 2017
 - \$13.5M in 2018 and 2019, and
 - \$15.5M in 2020.

	2015	2016	2017	2018	2019	2020	Total
O&M Labor		800	800	800	800	800	\$4,000
O&M Non-Labor		126	126	126	126	126	\$630
O&M Subtotal	0	926	926	926	926	926	\$4,630
CIP	1,100	6,500	12,500	14,000	14,000	16,250	\$64,350
Total O&M and CIP	\$1,100	\$7,426	\$13,426	\$14,926	\$14,926	\$17,176	\$68,980
FTE	0	9	9	9	9	9	

Plan for evaluating success or progress

SPU will use the following metrics to evaluate this effort.

1. Dollar expenditures on sewer pipe rehabilitation per year
2. Percent of highest-risk pipes inspected, assessed, and if needed, rehabilitated
3. Number of sewer backups per 100 miles of pipe