

Project Rank: 2

ID: CIP 305

Name: Derry Dell West Stream Protection

Study Area: Bull Mountain

Location: Between SW Gaarde Street and SW 115th Avenue

Problem Summary

The western headwaters of Derry Dell Creek near SW Gaarde Street are within a partially confined valley in the Terrace Trails Greenway. Like other creeks on Bull Mountain, steep slopes and increased runoff from development are causing the stream to erode in many places.

Steep banks are developing in the greenway, a process called incision. There are also several knickpoints, sharp changes in stream channel slope.

Channel erosion and destabilization of the banks is threatening private property, and stream migration is exposing a sanitary sewer pipe. The nearby trail could also be undermined.

Downstream of the culvert under SW Rose Vista Drive, erosion is undercutting a retaining wall, and the culvert under SW 118th Court is nearly filled with silt.

Project Description

The project will protect approximately 2,500 feet of stream channel and adjacent infrastructure, including the sanitary sewer main.

Scour protection will be added to 12 outfalls where urban runoff is discharged to the stream.

The project will add structural grade controls in three places. The structures will slow the passage of water through the channel and help floodwaters spread out into the floodplain during storms. These actions will help prevent further channel erosion and migration of the knickpoints.

Where the creek banks are already quite steep and unstable below SW 118th Court, the project will add rock buttresses to stabilize them.

The project will complement Clean Water Services' investment in riparian enhancements along Derry Dell over the last ten years. It also incorporates the City's current Derry Dell at 118th project in the Sanitary Sewer CIP, which is in process.

The benefits of this project include:

- Improve water quality
- Protect the sewer main
- Protect the public trail from erosion



Cost Estimate

Design & Permitting

Design (@ 20% of Construction)	\$280,000
Permitting, Basic + Enhanced	\$65,000
Project Administration (@ 12% Construction)	\$170,000
Total Design & Permitting	\$515,000

Construction

Tool Kit	Qty	Unit	Unit Price	Amount
Outfall Scour Protection	12	EA	\$5,100	\$62,000
Rock Buttress	2,640	SF	\$20	\$396,000
Structural Grade Control	588	FT	\$270	\$159,000
Subtotal				\$617,000

Construction Administration

Mobilization (@ 10% of Construction)	\$1405,000
Erosion & Sediment Control (@ 2% of Construction)	\$28,000
Temporary Water Management, Large	\$50,000
Construction Contingency (@ 40% of Construction)	\$560,000
Subtotal	\$778,000

Total Construction \$1,399,000

Other Implementation

Easement or Property Acquisition	\$30,000
Environmental Mitigation	\$85,000

Total Other Implementation \$115,000

Total Project Cost (Rounded) \$2,050,000

Funding Source

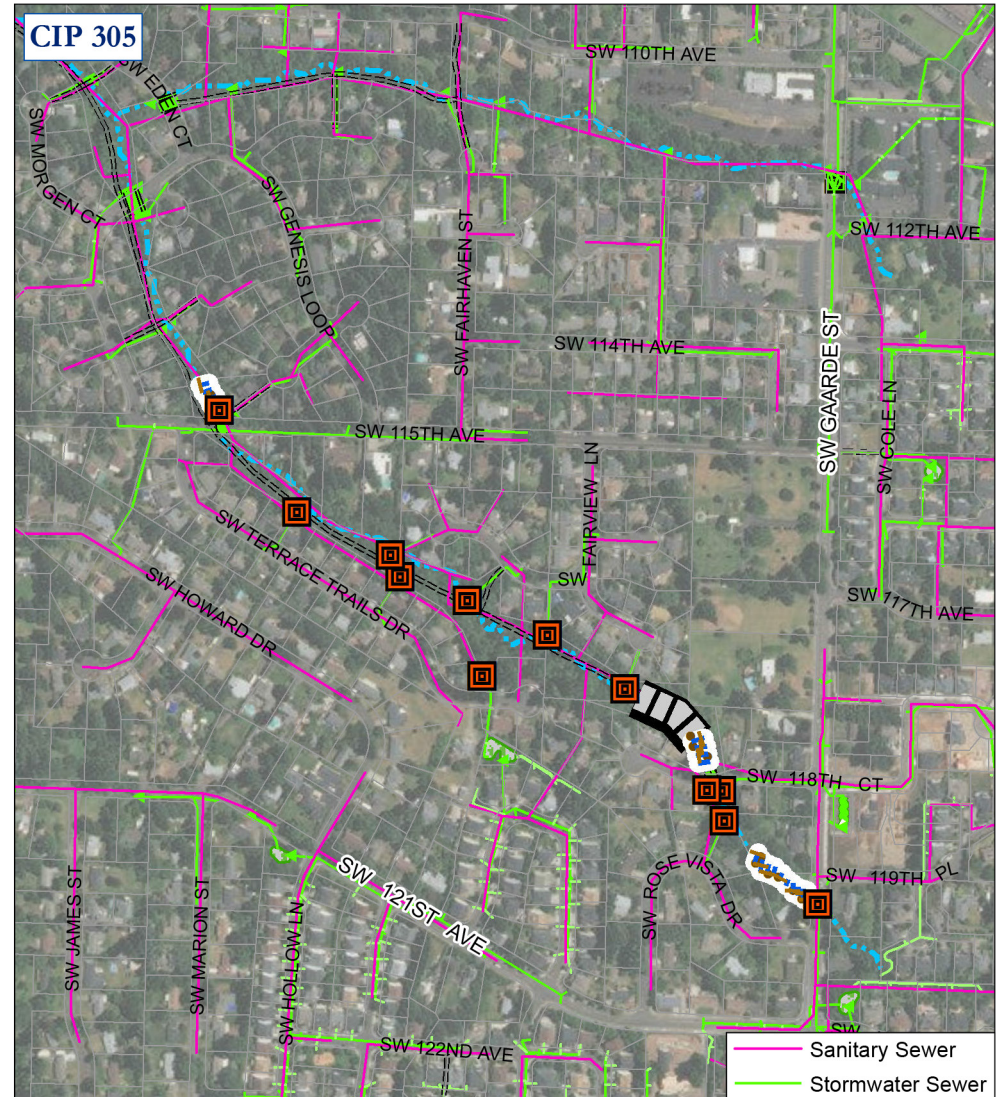
50% Stormwater Fund
50% Sanitary Sewer Fund

A portion of this project is already in progress.

Annual Operation & Maintenance

Operation and maintenance costs will be budgeted within the following programs:

- Proposed culvert assessment and maintenance program
- Proposed greenway O&M program



- 8, Outfall Scour Protection
- 11, Rock Buttress
- 15, Structural Grade Control

