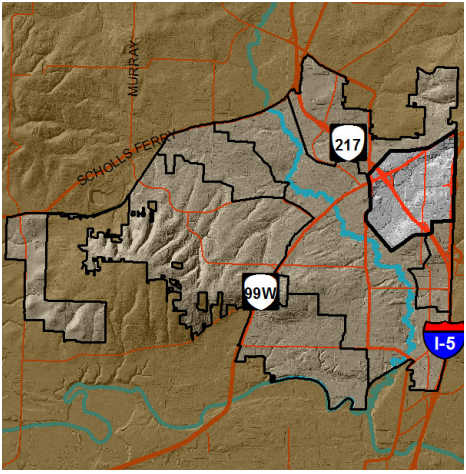




Red Rock Creek Study Area



Existing Conditions

Red Rock Creek is at the eastern edge of Tigard where commercial/industrial buildings, box stores, office complexes, and three major transportation corridors dominate the landscape. The Tigard Triangle, bound by I-5, Hwy 99, and Hwy 217, is mostly located in the basin. The creek flows southwest into Tigard from a densely developed part of Portland. The study area within Tigard is 1.1 sq. mi.

With a significant amount of impervious

surface in the basin directing runoff to the creek unmanaged, stream flow in Red Rock Creek rises quickly during storms. In heavy rain, the creek has been known to rise eight feet in 15 minutes. The effects of these fast high flows are exacerbated by constriction and alteration of the floodplain throughout its length.

In the upper reaches, the creek flows through very steep terrain while lower reaches are quite flat. Eroded soils

from the steep sections are transported downstream and settle out in the flat portions - blocking culverts and filling natural wetlands.

A sanitary sewer line runs the length of Red Rock Creek. The erosive forces of urban stormwater runoff have carved the creek channel lower than the sewer line. When sections of the streambank fall into the creek due to erosion, they can

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Issues and Risks

The Stormwater Master Plan assessed the risk of erosion in Tigard's streams. The assessment analyzed the likelihood of erosion based on stream geology and the consequence of erosion based on the stream's proximity to important features such as roads, sewer lines, and buildings.

The assessment classified about 50% of Red Rock Creek as medium overall erosion risk. A few spots are classified as moderately severe. The entire upper reach downstream to SW Dartmouth Street is in this range. Essentially the only risk of critical damage from erosion in Red Rock Creek is where the sewer line is located just feet from the channel.

Water quality is also a concern in Red Rock Creek as a tributary to Fanno Creek. Fanno Creek is home to native fish and

is water quality limited under the Clean Water Act for phosphorus, bacteria, dissolved oxygen, and temperature.

Urban stormwater runoff is known to carry metals, nutrients, and bacteria to streams. Red Rock Creek lacks shade where riparian canopy cover has been reduced or removed. Shade from canopy cover effectively cools streams. Warm water can stress or kill cold-water fish such as native salmon and steelhead.

Redevelopment is a City priority in Tigard Triangle, where many lots are small. Stormwater facilities can compete for space with other needs, and requirements to treat and detain runoff on redevelopment sites may be perceived as a deterrent to redevelopment in the Tigard Triangle.

Proposed Strategies and Solutions

A primary strategy is to support re-development in the Tigard Triangle, which will bring existing developed properties up to current standards for runoff treatment and control. Use of small Low Impact Development Approaches to reduce competition for space is a key element. See the Tigard Triangle Stormwater Implementation Plan program for more details.

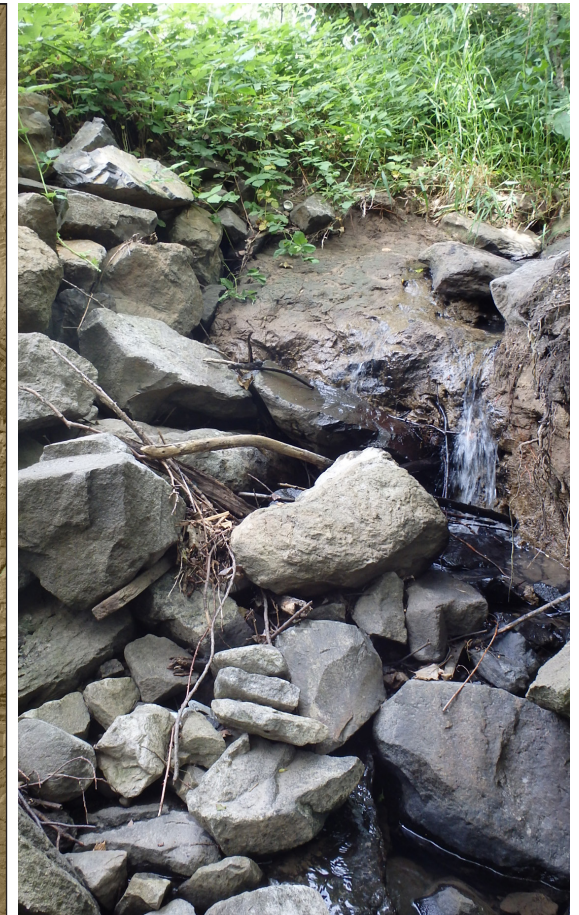
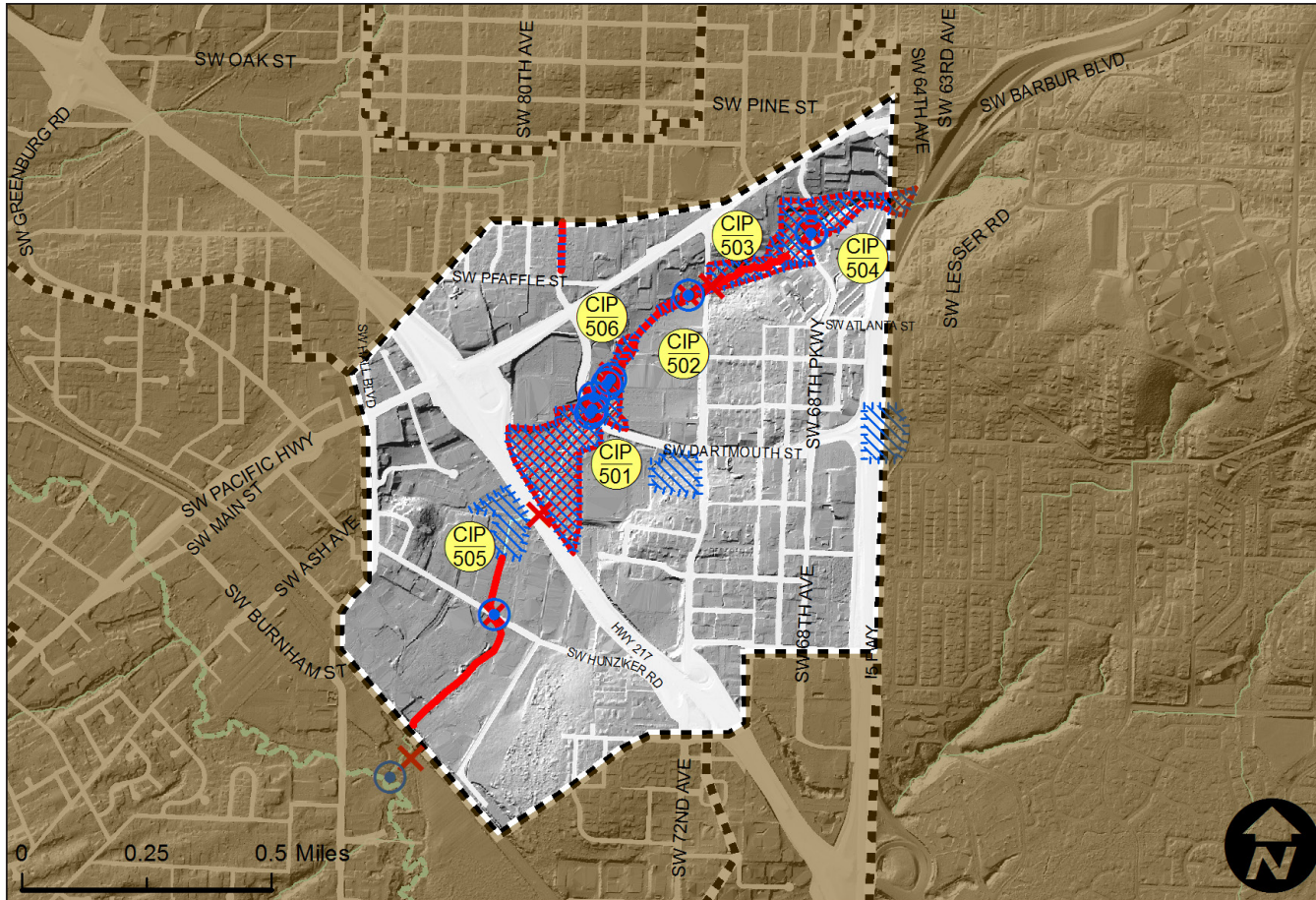
Red Rock Creek will also benefit from the Storm Sewer Assessment and Extension program to extend storm sewer to areas without it.

Proposed CIPs in Red Rock Creek expand detention capacity in existing natural areas and help prevent erosion that threatens the sanitary sewer pipe by improving the floodplain greenway.

Proposed CIPs









SW Dartmouth Regional Wetland Detention Pond	
Rank: 5	CIP 501
Red Rock Channel Stabilization & Sewer Protection	
Rank: 12	CIP 506
Knez Wetland & Riparian Enhancement	
Rank: 15	CIP 505
Red Rock Floodplain Reconnection	
Rank: 16	CIP 503
Red Rock Creek Grade Control & Culvert Improvement	
Rank: 16	CIP 504
Red Rock Creek Daylighting & Riparian Restoration	
Rank: 18	CIP 502
Total Cost: \$13.9 million	

Red Rock Creek Study Area



Legend

Known Issues Potential Projects

-  Point
-  Point
-  Line
-  Line
-  Area
-  Area
-  Capital Improvement Project
-  Study Area

expose the sewer line. In the last decade, the sewer line has broken six times.

The City has identified the Tigard Triangle as a center for economic development and transit-oriented redevelopment. Metro's Southwest Corridor Plan links fish-passage and natural area improvements to the proposed MAX light rail line from downtown Portland, through the Tigard Triangle, and to Bridgeport Village.

Oregon Department of Transportation has tentative plans to widen both Hwy 217 and I-5 in the area.

These improvements will include rehabilitation and expansion of existing stormwater facilities in the Red Rock Creek study area.

