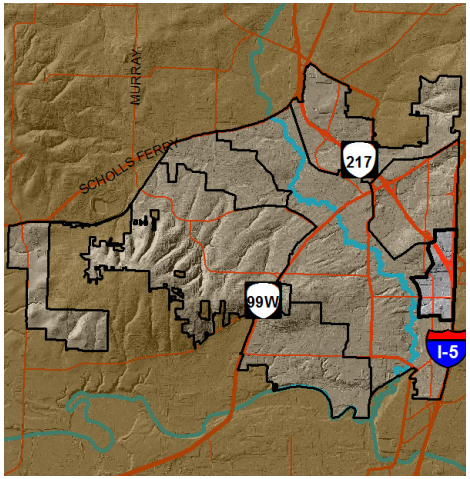
City of Tigard STORMWATER MASTER PLAN

# Ball Creek Study Area




## Existing Conditions

At 0.4 sq. mi., Ball Creek is the smallest area studied for the Stormwater Master Plan.

Ball Creek runs through a heavily industrial and commercial area west of the I-5 and Hwy 217 interchange. The Ball Creek system flows into Tigard from Portland and Lake Oswego. The creek flows for a total of 0.7 miles in Tigard.

A small portion of the study area overlaps the City's Tigard Triangle urban redevelopment area.

The creek has been greatly altered by piping and straightening. A large diameter culvert conveys Ball Creek underground nearly 1,200 feet under three different industrial properties immediately west of I-5 as well as under SW Bonita Road to SW 72nd Avenue.

All remaining open channel segments upstream of the Portland & Western Railroad tracks in the study area have been straightened to accommodate development.

Only very narrow riparian corridors remain. Incision, which is the formation of deep, steep banks resulting from downward erosion of the steam channel, is occurring along most of the creek.

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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.

Nearly all of Ball Creek is classified as a moderate overall erosion risk.

The large underground culvert that conveys Ball Creek under several commercial properties is perhaps the biggest risk in the study area. A collapse or significant blockage of the pipe could result in flooding upstream, property damage, and danger to people.

The culvert is vital to conveying the creek through the basin, yet Tigard does not own or control most of it, except a small portion in the street right-of-way (ROW). Its location under buildings and parking lots creates logistical challenges for repair, rehabilitation, or replacement. In addition, it passes under properties controlled by three separate owners.

Water quality is a concern. Ball Creek drains to Fanno Creek, which is water quality limited for bacteria, dissolved oxygen, phosphorus, and temperature under the Clean Water Act. Oregon Department of Environmental Quality recently added arsenic, iron, lead, tetrachloroethylene, and zinc to Fanno Creek's water quality limitations.

Industrial and commercial land uses have been found to discharge metals, hydrocarbons, nutrients, and chemicals, along with pollutants common to all urban runoff such as sediment.

A Metro property at the mouth and City and ROW are the only public lands along Ball Creek. Lack of usable space limits the City's ability to build above ground detention and water quality facilities to control flows and improve water quality in the area. Underground solutions or partnerships with private landowners may be possible.

Flooding is another concern. The intersection of SW 72nd Avenue and SW Bonita Road flooded during a December 2015 rain storm after the large culvert's trash grate was blocked by debris.

## Proposed Solutions

One strategy in Ball Creek is to maintain, repair, and rehabilitate existing storm sewers and culverts to maintain conveyance capacity in the system.

The northern part of the study area may benefit from the Tigard Triangle Stormwater Implementation Plan. The plan will support redevelopment, which will bring properties up to current water quality treatment standards.

A partnership with ODOT to treat and detain runoff from I-5 and Hwy 217 is possible. Tigard will support Clean Water Services' programs to restore vegetated corridors on private properties and will partner with CWS and Metro at Ball Creek's confluence with Fanno Creek.

There are no priority CIPs in Ball Creek.

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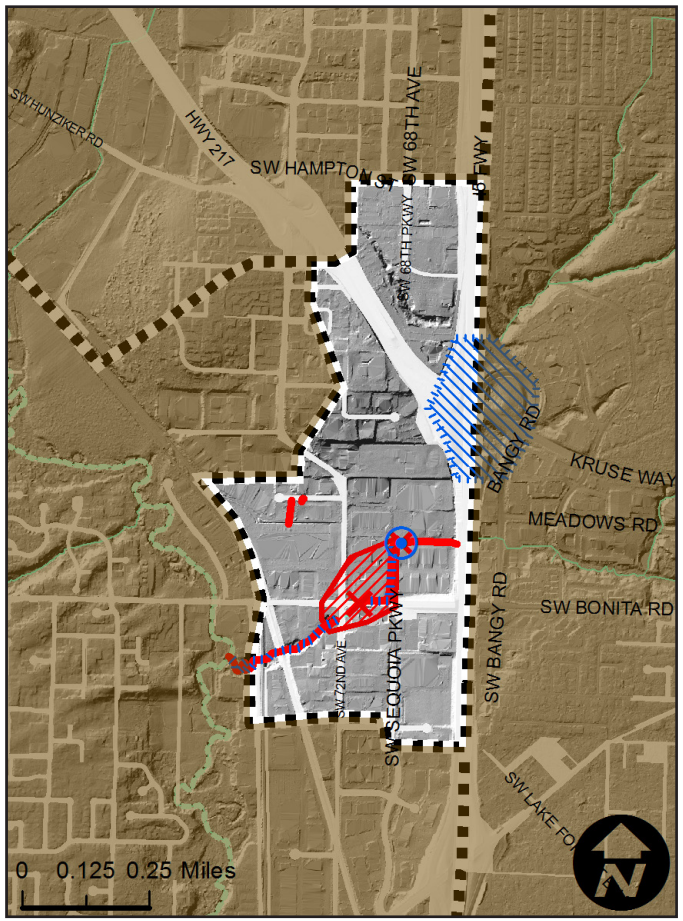


**Legend**

| Known Issues | Potential Projects | |
|---|---|---|
| Point | Point | CIP no. Capital Improvement Project |
| Line | Line | Study Area |
| Area | Area | |

Downstream of SW 74th Avenue, Ball Creek meets Fanno Creek in a mapped significant wetland at an open space owned by Metro. Most of Metro's open space along Ball Creek falls within the Fanno Creek study area boundary and is not further discussed in the Ball Creek study area fact sheet.

The Ball Creek study area was developed before most water quality regulations were in effect. Despite draining I-5, Hwy 217, and more than 200 acres of industrial and commercial impervious area, there is almost no water quality treatment in the study area.