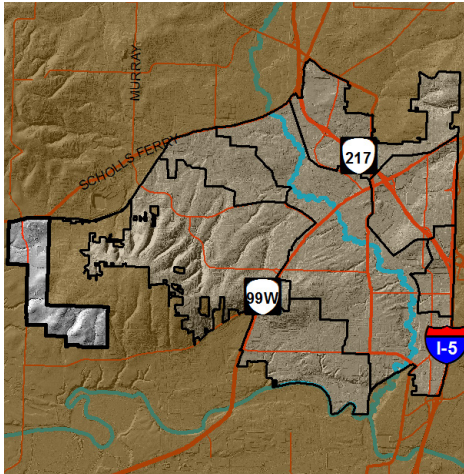




River Terrace Study Area



Existing Conditions

River Terrace is a 0.8 sq. mi. study area at the far western edge of Tigard.

River Terrace was annexed to the City recently and is currently undergoing rapid development to primarily residential land use from rural land use.

The study area is perched on the western slopes of Bull Mountain. Eight small stream systems flow west and south from River Terrace through unincorporated

Washington County to the Tualatin River.

As in the Bull Mountain study area, creeks in and below River Terrace fall quickly down the mountain in highly erodible channels composed of fine soils.

The City completed the River Terrace Community Plan in 2014 and the River Terrace Stormwater Master Plan in 2015 to guide development and stormwater management in the area over the next

30 years. The Stormwater Master Plan used hydraulic and hydrologic modeling to study the capacity of the storm sewer system to handle current flows and flows expected from future development.

Because of the recent intensive planning in River Terrace, the study area was not included in the city-wide Stormwater Master Plan's evaluation of erosion risk.

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Issues and Risks

Under current rural conditions, River Terrace tributaries to the Tualatin River would likely continue to degrade. Further degradation could include channel incision (the process of eroding the channel bottom, creating vertical or near vertical banks) and channel widening.

Managing stormwater impacts of River Terrace's rapid transformation from rural to urban and suburban is essential to preventing further damage to streams.

Creeks in River Terrace are tributaries to the Tualatin River. Water quality is a concern. The Tualatin River is water quality limited under the Clean Water Act for phosphorus, bacteria, dissolved oxygen, and temperature. These water quality concerns affect threatened fish, other wildlife habitat, and human health.

Proposed Strategies and Solutions

To protect tributary streams and the Tualatin River, new housing and mixed-use developments in River Terrace are required to meet stringent new standards for stormwater control. Standards in place in River Terrace exceed those in use in Tigard and throughout the rest of the Clean Water Services district.

Three areas have been designated for different types of stormwater strategies. The map at right shows the location of each strategy area.

Area A

Roughly half of River Terrace will use regional combined water quality and water quantity control facilities. Each large facility will serve a substantial area of new development. Facilities will be designed both to remove pollutants

and to slowly release stored runoff after storms. Facilities must serve as community amenities.

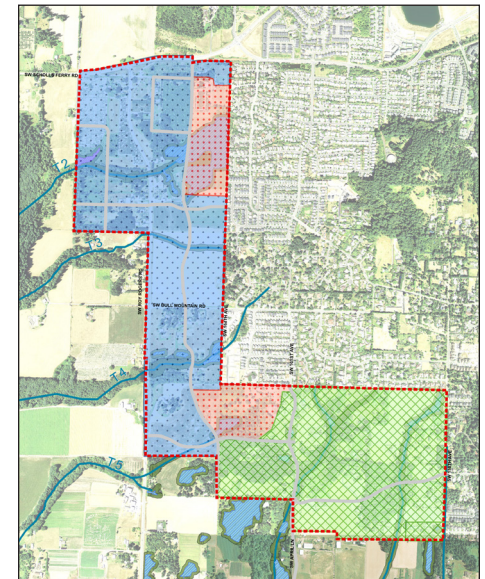
Area B

Area B consists of two relatively small non-contiguous areas where small-scale Low Impact Development Approaches (LIDA), such as rain gardens, will provide water quality treatment while regional detention ponds will slowly release stored runoff after storms. Like the combined regional facilities in Area A, regional detention facilities must serve as community amenities.

Area C

For Area C, in the southwest corner of the study area, the 2015 River Terrace Stormwater Master Plan recommended

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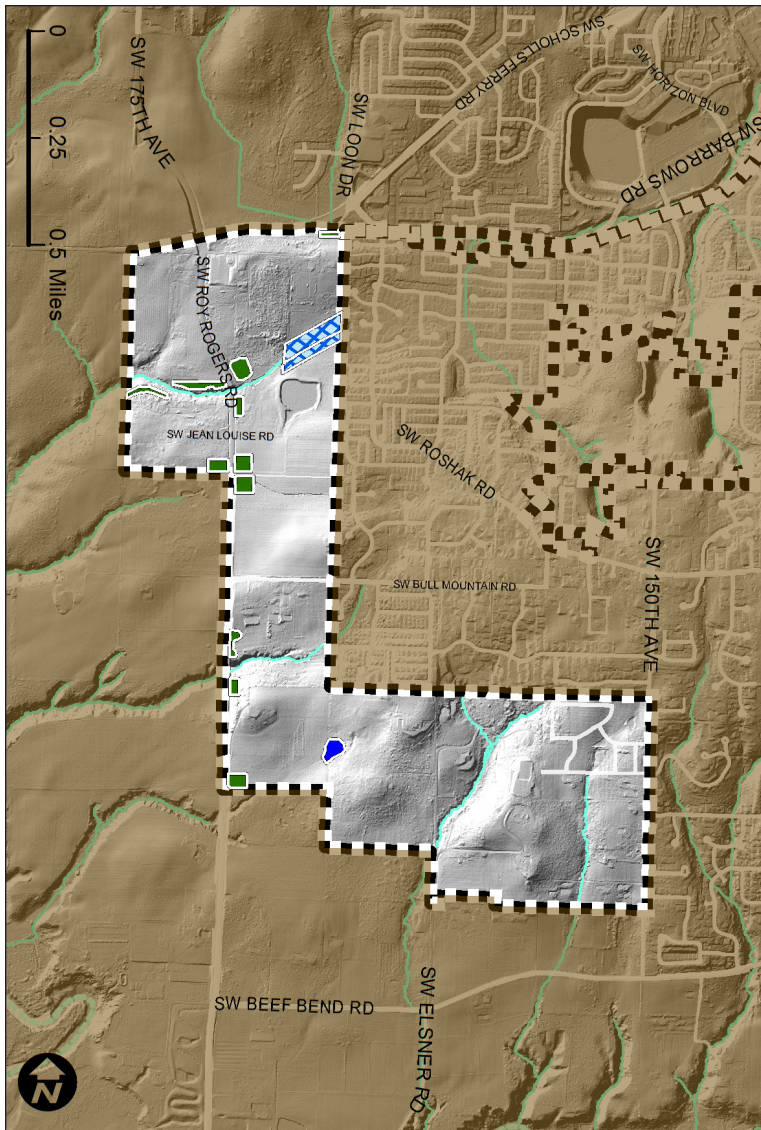


Legend

Recommended Strategy Area

- Strategy Area A
- Strategy Area B
- Strategy Area C

River Terrace Study Area



Existing Conditions, continued

The River Terrace Stormwater Master Plan found the following existing conditions:

- Culverts under Roy Rogers Road have capacity for current flows
- Culverts under Beef Bend Road are undersized for current flows
- Existing culverts under Roy Rogers and Beef Bend roads may block fish passage
- Steep drainages in soils with fine sediments below River Terrace are at a high risk for erosion
- Clayey soils overlay basalt bedrock on hilly terrain, limiting the use of infiltration to manage stormwater
- Most tributaries are in an advanced stage of channel degradation

Proposed Strategies and Solutions, continued

use of LIDA to remove pollutants and conveying high flows from storms around erodible and vulnerable tributaries to the Tualatin River. However, the cost to build the conveyances exceed the City's capacity to fund it. As a result, the City allows LIDA for treatment and regional water quantity facilities to detain runoff, similar to Area B.

The strategy for Area C may be re-evaluated if the urban growth boundary expands to the south of River Terrace.

Modeled Stormwater Facilities

The map at left shows locations of regional facilities modeled in Areas A and B. Actual regional facilities proposed by developers during the land use and engineering review process are not required to be located in the exact locations of the modeled facilities shown on the map. Stormwater facilities were not modeled for Area C.

Legend

2015 River Terrace Stormwater Master Plan
Regional Stormwater Facility

- Water Quality and Quantity
- Preserve Existing Storage
- Water Quantity Only

Study Area