Chapter 1: Introduction

This handbook was developed to promote and encourage Low Impact Development Approaches (LIDAs) to protect precious natural resources. It is a practical tool for those who make or influence development decisions and will be updated as codes and policies change and new techniques and best practices emerge. The handbook was updated in June 2016

The handbook is a collaborative product of the Tualatin Basin Natural Resources Coordinating Committee, which includes the land use jurisdictions within urban Washington County, and Clean Water Services, Tualatin Hills Park and Recreation District and Metro. Clean Water Services (the District) is a water resources management utility in urban areas of the Tualatin River Watershed that builds, maintains and enhances the public drainage system in partnership with Washington County and its member Cities. The District, County and Cities manage stormwater runoff to meet public needs and comply with strict water quality regulations set for the Tualatin River basin by the Oregon Department of Environmental Quality (DEQ).

The District's Design and Construction Standards (the Standards) define the requirements for development to treat and detain stormwater runoff. Stormwater is the runoff from impervious surfaces such as streets, roofs and parking lots that flows to storm drains, ditches and culverts, and then to the nearest river, stream or wetland. When it rains, stormwater runoff may pick up oil, sediment, bacteria, grease and chemicals that can pollute local waterways and the Tualatin River.

LIDAs offer more options to comply with stormwater management requirements, and complement the water quality facilities and vegetated corridors that have been established as part of the Standards. The five objectives of LIDA are to:

1. Conserve Existing Resources
2. Minimize Disturbance
3. Minimize Soil Compaction
4. Minimize Imperviousness
5. Direct Runoff from Impervious Areas onto Pervious Areas

This handbook is a supplement to the Standards and is to be used in conjunction with them and other applicable regulations.

The Handbook is for use by all public agencies within the Tualatin Basin as a reference document. There may be other standards and requirements that are jurisdiction-specific and the users are encouraged to check with the local jurisdiction for additional information.

LIDA swale

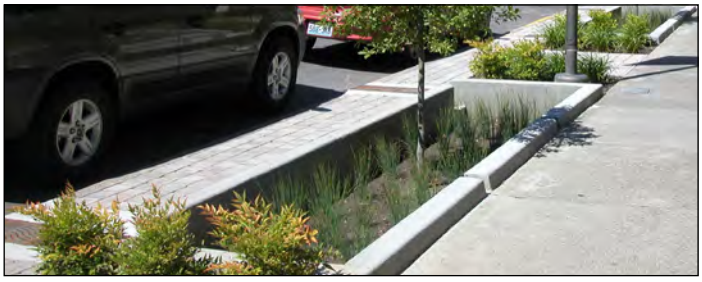
Green Roof

Porous Pavement

Vegetated Swale

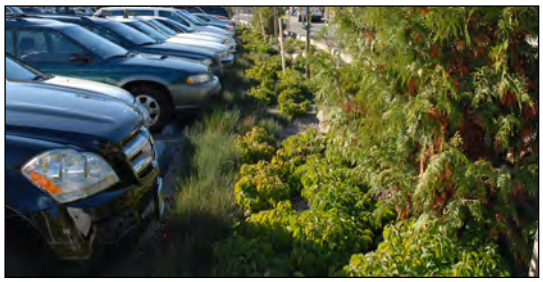
Extended Dry Basin

Constructed Water Quality Wetland



Infiltration Planter

Flow-Through Planter



Vegetated Filter Strip

1.1 Why Use Low Impact Development Approaches (LIDAs)?

Typically, LIDA facilities are vegetated landscape elements such as planters, vegetated filter strips, and swales that filter and/or infiltrate stormwater. Other types of LIDAs are porous pavements and green roofs that reduce impervious area and runoff volume. LIDAs are integrated with the site landscaping to provide stormwater management, visual amenities and habitat benefits. Low impact site design may preserve trees and vegetation, and conserve water and reuse water. Site design approaches may include lot size averaging, density transfers, clustering or placement of buildings and parking areas to avoid impacts to habitat, vegetation and drainage courses.

In addition to aesthetic and habitat benefits, LIDAs may:

- Meet Clean Water Services' stormwater quality requirements for new development sites and redevelopment
- Reduce area needed for water quality facilities by integrating LIDAs into landscaping, buildings and pavements which may result in more buildable land
- Reduce and slow stormwater runoff for better water quality and less erosion
- Cut project costs by eliminating piping and other engineered structures
- Reduce the piping and excavation needed to manage stormwater runoff because it is conveyed and treated above ground
- Use the same areas for stormwater management and landscaping (e.g. a flow-through planter may count toward required site landscaping)
- Qualify for credits for green building, site design, etc.
- Qualify for development credits such as allowable building height increases, reduced set-backs or reduced lot sizes
- Preserve trees and significant vegetation by incorporating them into LIDA facilities or avoiding them in the site design
- Provide summer shade

None of the LIDA facilities included in this Handbook are considered to be Underground Injection Control (UIC) system. As such, no UIC regulatory requirements are noted. Check with the District or DEQ staff for additional information about UICs.

1.2 How this Handbook Relates to Other Tualatin Basin Regulations

The handbook is intended to encourage the use of LIDAs by providing guidance on their planning, design and maintenance. The District allows and encourages LIDA facilities to meet stormwater quality requirements for development. The District implements stormwater requirements in unincorporated portions of its service area and within the Cities of Banks, Durham, King City, and North Plains. In Beaverton, Cornelius, Forest Grove, Hillsboro, Sherwood, Tigard and Tualatin, the Cities' staff implement and enforce the requirements.

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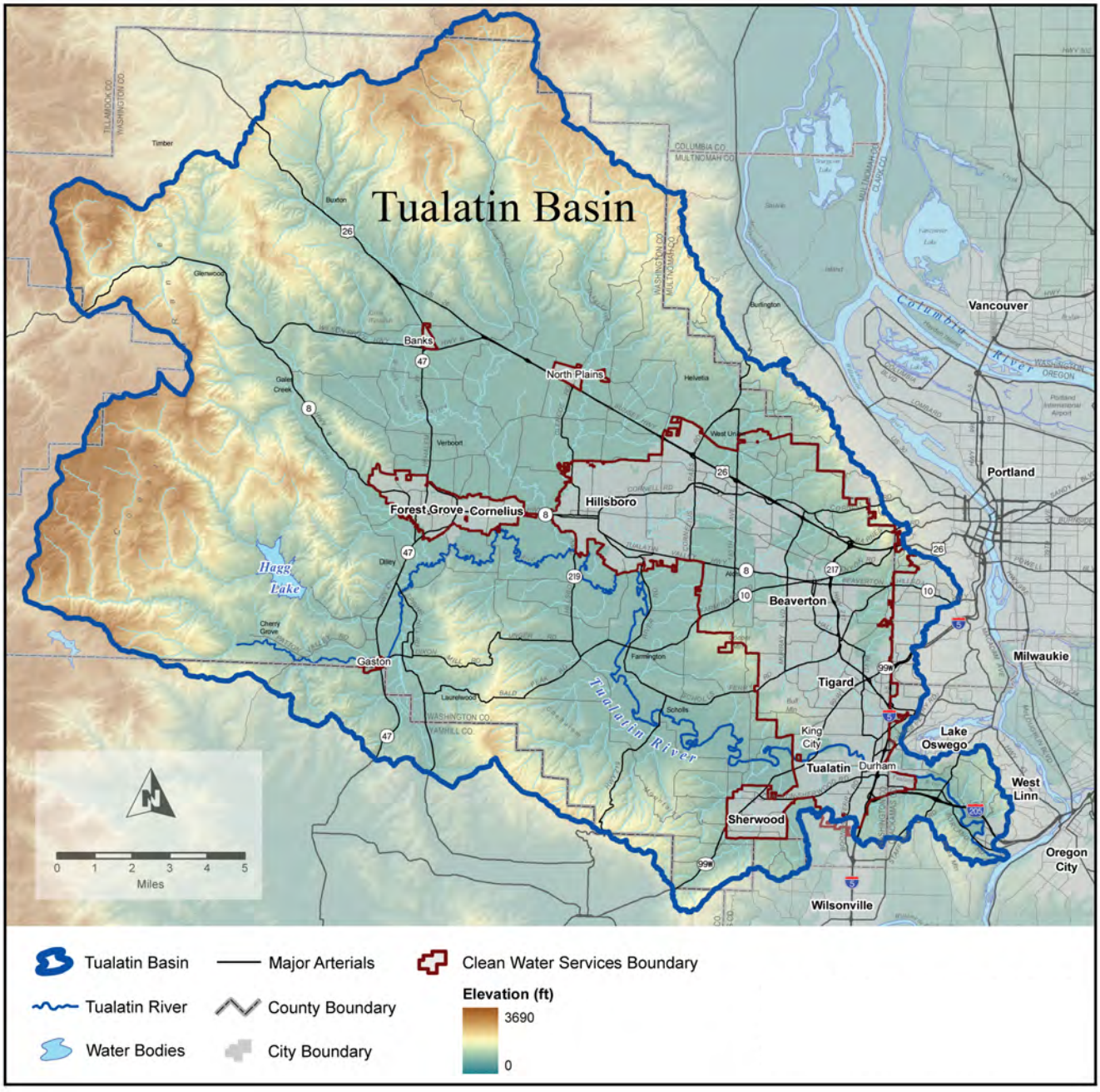
Map of Clean Water Services District Boundaries



This handbook is a reference for all jurisdictions within the Tualatin Basin. Users are encouraged to consult with the local jurisdiction for additional requirements and standards This handbook is a supplement and is to be used in conjunction with the Standards and other applicable regulations. LIDAs do not replace Water Quality Sensitive Areas or Vegetated Corridors.

The requirements included in the Design and Construction Standards protect water quality, floodplains and habitat functions from the impacts of development. Water Quality Sensitive Areas, including streams and wetlands, must be protected by Vegetated Corridors. Always check the County and City planning and development standards for additional site design requirements.

LIDAs are encouraged, but in some cases might not be allowed by the local jurisdiction due to technical constraints, code restrictions or other issues. For example, a LIDA based on infiltration might not be allowed on unstable slopes, areas of high groundwater table, or soils with poor infiltration. Property owners, developers, designers and contractors must check with local permitting authorities to confirm allowed LIDAs for their projects.

LIDAs are intended to reduce and mitigate the environmental impacts of conventional development by mimicking natural hydrology instead of replacing it with imperviousness. LIDAs may meet water quality regulations and stormwater flow management goals, and may also qualify for development credits from local jurisdictions by protecting vegetation and habitat located outside of the required Vegetated Corridors.