



City of Woodinville:



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Scope of Assistance:

Prior to the policy review meeting, the Woodinville staff, PSAT staff and AHBL agreed on a scope of services for the regulations to be reviewed. The following are the areas of emphasis that the City staff directed the consultant team to pursue:

- ◆ Review WMC Chapters:
 - 20.02 – Subdivisions
 - 21.12 – Density and Dimensions
 - 21.14 – Design Requirements
 - 21.16 – Tree Retention and Landscaping
 - 21.18 – Parking and Circulation
 - 21.34 – Residential Density Incentives
 - 21.36 – Transfer of Residential Density Credits
 - 21.38 – Property Specific Development Standards
- ◆ Prepare a memo outlining current status and potential code challenges
- ◆ Prepare a native vegetation and impervious surface package for discussion

This direction resulted in review of the following Woodinville codes and standards by the consultant team:

- ◆ 20.02 – Subdivisions
- ◆ 21.12 – Density and Dimensions (specifically the R-1 zone)
- ◆ 21.14 – Design Requirements
- ◆ 21.16 – Tree Retention and Landscaping
- ◆ 21.18 – Parking and Circulation
- ◆ 21.34 – Residential Density Incentives
- ◆ 21.36 – Transfer of Residential Density Credits
- ◆ 21.38 – Property Specific Development Standards

The policy review meeting with the City of Woodinville staff occurred on June 20, 2006. At the meeting, City staff directed the consultant team on the content of the desired technical assistance. This direction resulted in the preparation of several work products to be reviewed by the City at the regulatory amendments meeting on August 29, 2006. An outline of these work products is presented below in a topical manner with the full text of the updates attached separately.

Work Products:

1. 21.12 – Density and Dimensions

During the policy review meeting, the City staff directed the consultant team to update the existing density and dimension standards with impervious surface standards for low impact development projects. Draft revisions were added to the table in Section 21.12.030 WMC that reflected a compromise between “typical” LID impervious surface maximums and the existing Woodinville maximums required for each zone. Also included was a note to the added section that tied the impervious surface requirements to the proposed LID Chapter 21.37 WMC.



2. 21.16 – Tree Retention and Landscaping

City of Woodinville staff made a request during the policy review meeting for the consultant team to create tree credit standards that would allow development projects to emulate typical LID tree canopy coverage standards. For the regulatory amendments meeting, the consultant team drafted tables showing tree canopy coverage calculations, recommended revisions to Chapter 21.16 WMC, and a memo explaining our findings from the calculations and our recommended tree credit distribution.

3. 21.34 – Residential Density Incentives

During the policy review meeting the City expressed interest in the use of residential density incentives (RDIs) for LID projects. Amendments to the City code include the addition of LID projects to the list of public benefits available for RDIs to Chapter 21.34 LMC. The consultant team also integrated a reference to the proposed LID Chapter 21.37 within Chapter 21.34. These additions and their references establish a premise for LID projects to utilize the benefits granted to other publicly-valuable developments. The consultant team also included a statement allowing developments under R-1 through R-6 zoning designations to utilize RDIs, in addition to denser residential designations.

4. 21.36 – Transfer of Residential Density Credits

The consultant team added a statement to allow the transfer of density credits (TDC) for LID projects to Section 21.36.030 WMC in order to facilitate the TDC for low impact development projects. The consultant team also added references to the new draft of Chapter 21.37 in regards to the standards required for the application of density incentives to LID projects.

5. 21.37 – Low Impact Development Chapter

During the policy review meeting the City staff and consultant team discussed the possible addition of a Low Impact Development (LID) Chapter to the Woodinville Municipal Code. For the August 29th meeting, the consultant team prepared a LID Chapter in order to establish requirements for projects applying for LID status. The included standards contain minimum requirements for native vegetation preservation and replanting, impervious surface reduction, and native soil preservation/amendment. The chapter also requires compliance with specific portions of the 2005 LID Technical Guidance Manual for Puget Sound and current edition of the Department of Ecology's Stormwater Management Manual for Western Washington.

6. Roadway Sections and Details

The consultant team prepared road sections and details that applied a low impact development roadway section within the right-of-way for the City's "low density residential street" classification. Additional details for grass paving, pervious concrete sidewalks, and pervious concrete shoulders were provided. These road sections contained LID functions and features, in addition to basic dimensional reductions.

- a. 103C – Low Impact Design Residential Streets
- b. 103D – Low Impact Design Residential Streets
- c. 103E – Low Impact Design Bioretention Facilities
- d. 103F – Low Impact Design Pervious Paving

7. Supplemental Information

The City staff requested further information on three specific areas of low impact development: green roofs, pervious pavement, and recommended native tree species. The consultant team provided the following studies:

- ◆ "Ecoroof: Questions & Answers" (2000, City of Portland Environmental Services)



Portland's Ecoroof Program Questions and Answers package is designed for interested parties in either the building field or the general public. While this document does not contain detailed sample information it does provide a general overview of green roof information.

- ◆ "Stormwater Monitoring Two Ecoroofs in Portland, Oregon, USA" (2003, Hutchinson, Abrams, et. al.)
The second packet of information is an evaluation of two green roofs in Portland, Oregon. The study confirmed that ecoroofs can be an effective tool in efficient urban stormwater management.
- ◆ "Vegetated Roof Cover" (2000, Environmental Protection Agency)
The third packet is a brief summary from the EPA addressing a vegetated roof in Philadelphia, Pennsylvania. This document gives a brief summary of the green roof as well as some general conclusions.
- ◆ Additional information provided for the City included pervious pavement research from the Low Impact Development Technical Guidance Manual for Puget Sound (Appendix 7). This document consists of a summary of recent research on porous asphalt, permeable pavers, pervious concrete, and maintenance. Some key information included in these studies are initial and late stage infiltration rates, success of maintenance techniques at restoring infiltration capacities, and the generally lower infiltration rates of permeable pavers than poured products.
- ◆ The consultant team provided an example tree species table taken from Title 18H Pierce County Code. The table shows a list of tree species that are suited to Pacific Northwest climate conditions.

Findings:

The primary contact for City of Woodinville was Sarah Ruether, Transportation and Environmental Planner. During the initial conversations between city staff and the consultant team, city staff expressed interest in encouraging the use of LD techniques within the Woodinville Municipal Code (WMC) and within their general development practices. The existing WMC includes regulations that both indirectly and directly allow for LID implementation. Basic standards that the consultant team encouraged for all jurisdictions, such as maximum impervious surface limits and tree conservation, were already established. As a result, the consultant team proposed amendments to existing standards to make them "more LID friendly" rather than introducing the concepts anew.