

## Community LID Workgroup Issue Paper #3

**Topic:** Clearing, Grading & Healthy Soils

**Objectives:** Limit clearing, grading, and soil disturbance outside of the building footprint on newly developed residential and commercial sites, especially those sites with sensitive features. Reduce soil compaction and restore infiltration capacity on already cleared sites whenever practical.

**Background/Issues:** The state Department of Ecology's *LID Code Update and Integration Toolkit* recommends that municipal stormwater permit recipients review their clearing and grading standards to ensure that development practices minimize disturbance of native vegetation and soils. To this end, Ecology recommends that developers should protect areas to be used for infiltration, such as bioretention cells and permeable pavement, and retain native vegetation and soils during construction.

A key issue identified by the County LID Workgroup and explained below is that the Thurston County Code (TCC) requires construction and grading permits but not a clearing permit.

A second key issue is that there is no language in the development code related to protecting soil during construction. The issue of post-construction soil quality and depth is addressed as a Best Management Practice (BMP LID.02) in the Thurston County Drainage Design and Erosion Control Manual (DDECM), which is described broadly in TCC Section 15.05. In short, this BMP seeks to reestablish minimum soil quality and depth in an attempt to restore the beneficial functions lost during construction.

**Analysis:** This issue paper discusses clearing and grading separate from healthy soils before posing potential options that would address the issues collectively.

### CLEARING & GRADING

Thurston County's Grading code (TCC 14.37) adopts the International Building Code's Excavation and Grading chapter, with a few amendments. Thurston County requires a grading permit for work that involves 50 cubic yards or more of excavation or fill. There are exceptions for cemetery graves, wells, utility trenches, agricultural activities, maintenance in the right of way, and other small or exploratory projects. Proposed grading or removal of vegetation within a Critical Area also requires a permit.

The Thurston County Drainage Design and Erosion Control Manual (DDECM) states that review is required for projects that involve clearing of more than 7,000 square feet; this includes clearing associated with grading, conversion from forest to lawn, and conversion from forest to pasture. However, a permit is not required for projects that may involve clearing that is not associated with grading and is outside of a critical area. In the Lacey, Olympia, and Tumwater UGAs, clearing trees from an area greater than 5,000 square feet for development triggers a Forest Practices permit. Outside of these areas, the limit is harvest of 5,000 board feet.

Below are questions posed by the Ecology Toolkit and responses from County LID Workgroup based on its review of the TCC:

**Q:** *Do clearing and grading regulations include provisions for minimizing site disturbance and protecting native vegetation and soils?*

**A:** Not specifically – language to this effect is included in the Drainage Manual, but not in the Grading code.

**Q:** *Is there an existing ordinance that requires or encourages the preservation of natural vegetation?*

**A:** No – not outside of critical areas

**Q:** *Is wholesale clearing (mass grading) of sites prohibited or limited?*

**A:** Wholesale clearing of sites is reviewed when it is more than 7,000 square feet, or grading that involves 50 cubic yards or more of excavation or fill. Such clearing can be limited when it triggers other reviews, such as forest practices or critical areas.

**Q:** *Are developments required to set aside an undeveloped portion of the site?*

**A:** Not unless the development triggers open space requirements (though open space would not necessarily be undeveloped) or cluster requirements, or unless critical areas are identified on a site that must remain undisturbed. Subdivisions in the Lacey, Olympia, and Tumwater UGAs that trigger Forest Practices are required to preserve 5% of the site in a tree tract that includes existing or replanted trees.

**Q:** *Are there specific native vegetation retention standards based on land use and density?*

**A:** No

**Q:** *Is there any incentive to developers or landowners to conserve land (open space design, density bonuses, stormwater credits, or lower property tax rates)?*

**A:** Yes, Thurston County has a number of incentive programs, including the Open Space Taxation program and density bonuses for clustered development in a few zoning districts.

**Q:** *Does the native vegetation definition (or other code section) include minimum tree density, minimum retention requirements, protecting native vegetation areas, replanting requirements, soil amendment standards, management plan specifications, and maintenance requirements?*

**A:** The TCC does not have a consistent definition for native vegetation throughout the code; this is an area that can be enhanced.

Project staff evaluated whether Thurston County should create its own clearing ordinance and evaluated practices in other Puget Sound counties:

- Snohomish County, 30.63B, ([link](#)) requires a Land Disturbing Activity permit for clearing in critical areas and clearing greater than 7,000 square feet. The code sets standards for cuts and excavations, fills and embankments, drainage and terracing, standard setbacks, erosion control, tree and vegetation retention and replacement. The permit application requires a site plan,

engineered construction report, geotechnical and soils engineering reports, liquefaction report, as well as a haul route agreement. Permits expire 18 months after date of issuance - this can be extended an additional 18 months by the director. The County performs a site inspection to ensure that clearing limits are marked, and can inspect the site at various stages of work.

- King County, requires a clearing permit for any removal of trees or vegetation from a critical area or from properties subject to urban clearing standards, or for clearing over 7,000 square feet on RA zoned properties or removal of 5,000 board feet of merchantable timber.
- Kitsap County requires a site development activity permit for any land clearing or grading on slopes steeper than 30%, or within mandatory setback of a steep slope, wetland, stream, lake, Puget Sound, as established by other titles in the code.
- Pierce County, 18J.15 – Sets standards for site clearing.
- Island County, 11.02 – Clearing and Grading Requirements ([link](#)): Island County requires a grading permit for filling/excavation exceeding 500 cubic yards, clearing within 200 feet of a regulated shoreline area, or within critical areas, Class IV forest practice permits, clearing to bare earth if greater than 2 acres.

### HEALTHY SOILS

The Ecology Toolkit also singles out Healthy Soils as an issue that should be addressed more fully in local codes. For example, protecting soils during construction activities — especially against compaction — will preserve the soils’ ability to infiltrate and disperse stormwater. If soil is disturbed during construction, however, amending the dirt with nutrient-rich compost can help mitigate these effects by spurring the uptake of pollutants.

There is no specific language in the code related to protecting soil health *during* construction. The issue of *post-construction* soil quality and depth is addressed as a Best Management Practice (BMP LID.02) in the Drainage Design and Erosion Control Manual. In short, this BMP seeks to reestablish minimum soil quality and depth in an attempt to restore the beneficial functions lost during construction.

A 2009 design guide created by Thurston County sums up the BMP’s applicability: All projects required to comply with Minimum Requirement #5 (Onsite Stormwater Management) shall implement BMP LID.02 to restore soil quality and depth to all new lawn and landscape areas or areas to be restored to native vegetation. Size thresholds:

- Create 2,000 square feet or more of impervious surface; or,
- Have 7,000 square feet or more of land-disturbing activity.

Projects that propose to manage all site stormwater through BMP LID.11, Full Dispersion, are not required to implement BMP LID.02.

Below are questions raised in the Ecology Toolkit and responses from the County's LID Workgroup based on its review of existing county codes:

**Q:** *Is a soil management plan in place that identifies soil protection zones and describes quantities of compost amendment? Can code be revised to require amendment of disturbed soils?*

**A:** BMP LID.02 does require the submittal of a soil management plan. Such a plan requires protection of native vegetation and soil during construction. It also requires post-construction amendment of disturbed topsoil.

**Q:** *Are protection areas required to be fenced?*

**A:** Certain Critical Areas identified for protection, including wetlands, must be marked with temporary fencing and signage (TCC 24.25.140). The section also requires preservation of the site's infiltration capacity. There is not similar language for areas outside of critical areas that should be protected for stormwater purposes.

**Q:** *Could compost be provided to incentivize small projects, and could the code be revised to include types of equipment for clearing and grading that minimize compaction of soils?*

**A:** Thurston County does not provide compost nor does it require certain types of equipment so as to minimize compaction.

**Q:** *Can clearing, grading and soil disturbance outside the building footprint be limited or restricted?*

**A:** Neither the TCC nor the DDECM requires fingerprinting of a site. This technique would require that clearing of lots within developments (particularly low-density residential development) be limited to the area required to build infrastructure such as roads, utilities and stormwater facilities. Clearing of individual lots would be required to be conducted only as part of a building permit application for building on the lot. In rare cases, minimal grading and soil disturbance has been required for individual projects through the SEPA process.

**Recommendations:** Based its analysis of clearing, grading and healthy soils language in the TCC and DDECM, the County LID Workgroup is considering the following options:

**Option 1:** *Amend TCC 14.37 to require a permit for clearing more than 7,000 square feet to bring in line with the Drainage Design and Erosion Control Manual.*

This option would expand the current grading permit to apply to all "land-disturbing activities" to include clearing over 7,000 square feet. This would capture clearing events that are not associated with grading, and are not large enough to require a Forest Practices permit, and would align the code with the requirements of the Drainage Manual. This option would also add language related to minimizing site disturbance and protecting the infiltrative capacity of soils.

**Option 2:** *Develop a Clearing and Tree/vegetation preservation ordinance that applies to the Urban Growth Areas of Lacey, Olympia, and Tumwater.*

This option would add tree and/or native vegetation retention standards for the North County Urban Growth Areas, bringing these areas more in line with the tree protection requirements that exist within the cities.

**Option 3:** *Develop a Clearing and Tree/vegetation preservation ordinance that applies outside the UGAs to the rural areas of the county.*

This option would add tree and/or native vegetation retention standards for areas outside the Urban Growth Areas that would focus on preservation of overall tree canopy, rather than protection or replanting of a specific number of trees on a site.

**Community LID Workgroup Discussion:** The County LID Workgroup would like feedback regarding the options noted above before making a recommendation to policymakers.