

# Thurston County Stormwater Solutions

## LID Fact Sheet: Hard & Impervious Surfaces

### Issue

Hard and impervious surfaces prevent water from infiltrating into the soil, as it naturally would on undeveloped land. The most common impervious surfaces in the built environment are roads, rooftops, sidewalks, and parking lots. As development increases, so does the amount of impervious surface, which leads to more water running off into lakes and streams and less available for recharging groundwater.

Studies have shown that when impervious surfaces exceed 10% of a basin (the entire area that drains into a stream) adverse environmental impacts can be measured in the stream — although impacts can occur at impervious surface thresholds as low as 2%. Stream basins with above 25% impervious area generally have degraded water quality. A low-impact development (LID) approach to site development emphasizes reducing hard and impervious surfaces so that stormwater runoff can infiltrate on site.

### Why are changes needed?

New Department of Ecology requirements for Thurston County's Drainage Design & Erosion Control Manual (DDECM) address the total amount of "hard" surfaces on a site; such surfaces include impervious, paved areas, as well as semi-pervious areas, including permeable pavements. Although permeable surfaces, such as pervious concrete, allow more water to infiltrate directly into the ground, they still cause changes to the land, so they are included as regulated hard surfaces.

Within the Thurston County Code (Title 20), some zones have impervious surface limits, while others limit only the extent a lot can be covered by buildings. This is inconsistent and excludes from consideration "hard" surfaces such as parking lots, driveways, or patios. Some rural zoning districts have coverage limits that range as high as 60%, or have no limits at all. In addition, many zones have impervious surface limits with thresholds that create arbitrary requirements. A study of Thurston County properties found that the average 5-acre parcel has around 5% impervious area, while typical 10-to-20-acre parcels use 3% impervious area. These percentages are in keeping with rural character.

### What changes are proposed to current regulations?

The recommended code changes set consistent hard surface limits for all zones that do not create inequitable thresholds based on area.

- Long-Term Agriculture = 15%
- Long-Term Forestry, Rural Residential, Rural Residential Resource (1/5), Urban Reserve = 10%
- Rural 1/10, 1/20 = 10% up to 5 acres; 5% for remaining acres
- LAMIRD 1/2, 1/1, 2/1, Residential 3-6/1 = 60%
- Residential 4-16/1 = 75%
- Neighborhood Convenience, Arterial Commercial, Highway Commercial, Planned Industrial, Light Industrial = 85%

- Rural Commercial Center = 75% (no change)
- Rural Resource Industrial = 60% (no change)

Specific limits would remain for sensitive areas, such as the Green Cove Basin.

**What if I have a smaller lot?**

A minimum square footage is allowed for smaller residential and resource lots. For most zones, lots less than 2.5 acres would be able to cover up to 10,000 square feet or up to 60% of the site, depending on which was less.

**What if I need to replace an existing structure and I am already at or over my hard surface limit?**

Preexisting hard surfaces or structures could be replaced within the existing footprint.

**Is there any credit given for using pervious surfaces?**

Yes. Pervious surfaces would be calculated at 75% of their total area when being counted toward the limit.

**Are there any other ways to increase a hard surface limit?**

Yes. For rural residential and resource zones, the hard surface limit could be increased by 50% if the site design allows for full dispersion of stormwater runoff, or if the development retains at least 20% of the existing trees and vegetation on the site. The hard surface limit can be increased by 100% if the development retains at least 65% of the existing trees and vegetation on the site.

You could also be granted an additional 1,000 square feet of hard surfaces above the limit for every 6,500 square feet of native trees and vegetation that are retained outside of any critical areas or buffers, or for every 3,250 square feet of retained native trees and vegetation that connect critical areas or buffers. You could also receive credit for an additional 1,000 square feet of hard surfaces above the limit for planting 3,250 square feet of native trees and vegetation within a degraded riparian or wetland buffer area.

**What if I am planning a use for my property that requires more covered area than the hard surface limit allows, even with credits?**

For lots greater than 2.5 acres, an additional 5% may be used for buildings related to agriculture or forestry practices. Otherwise, a hard surface area limit may be increased with a special use permit.

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