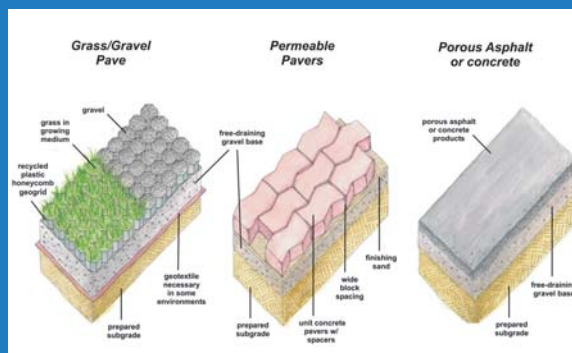
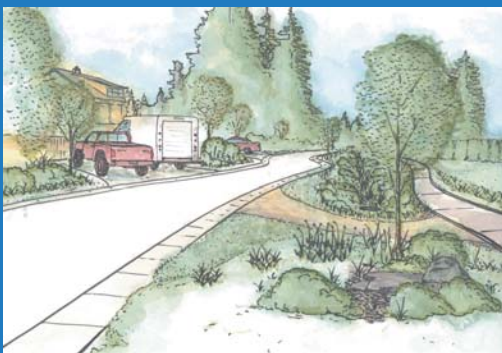


AN ECONOMIC RATIONALE FOR

INTEGRATED STORMWATER MANAGEMENT

4.1 LID Practices

A Resource for Urban and Rural Land Development in BC



Project research and content provided by the Small Towns Initiative, Landscape Architecture Program, UBC.

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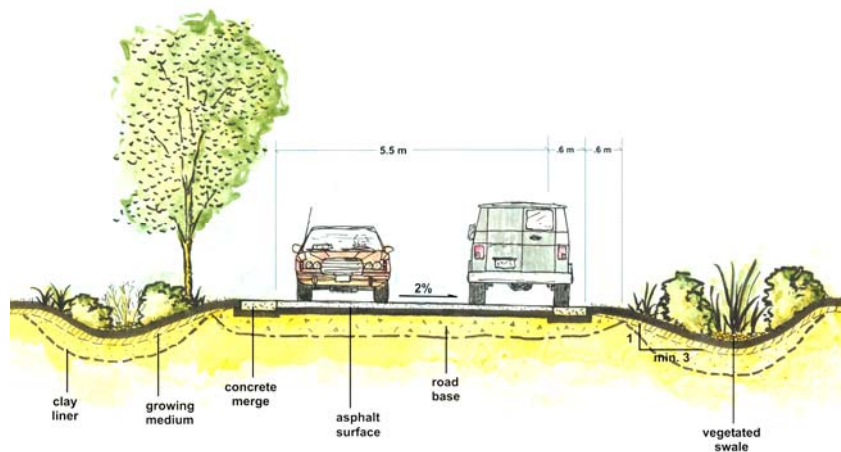


4.1 Low Impact Development (LID) Practices

Runoff from impervious surfaces is the primary cause of drainage-related problems, such as stream degradation and flooding risk. Limiting impervious coverage can reduce runoff volume and partially mitigate these problems.

There are a number of site design practices that can reduce impervious coverage for a wide range of land uses, including:

- **Reducing Road Widths** – Paved roadways are often larger than they need to be. Reducing road width not only reduces impervious area, but also reduces motor vehicle speeds, improves pedestrian and bicycle safety, reduces infrastructure costs and allows more of the paved surface to be shaded by overarching tree canopy.



Courtesy Aqua-Tex Scientific Consulting Ltd.

- **Reducing Building Footprints** – Building footprints can be reduced (thus reducing rooftop area) without compromising floor area by relaxing building height limitations. Taller, more slender building forms provide greater flexibility to develop building layouts that preserve naturally vegetated areas and provide space for infiltration facilities.
- **Reducing Parking Standards** - Reducing parking standards reduces the amount of space devoted to parking (driveways, parking lots and parkades). In compact and/or high density communities where dwelling units are within walking distance to transit and services, parking standards may be reduced to 1.3 or even as low as 1 space per dwelling unit. There are other factors that could reduce the need for parking, including a high proportion of low income housing units, the implementation of transportation demand management strategies, and high parking costs. Reducing parking standards not only reduces impervious area, but also reduces parking-related development cost, and facilitates the provision of affordable housing.



Implementing low impact site design practices that reduce impervious coverage is not enough to protect downstream watercourses and prevent drainage-related problems. Even low levels of impervious coverage can cause significant stormwater-related impacts. For example, the volume of runoff from low-density single family land uses far exceeds the target condition for Water Balance management (i.e. the 10% runoff volume target).

[Source controls](#) are needed to further reduce runoff from impervious surfaces on development parcels (rooftops, driveways, parking lots) and roads (paved roadway and sidewalks).

Consistency with Other Low Impact Development Objectives

Site design practices that achieve stormwater objectives (reducing impervious area, forest clearing and soil compaction) are highly compatible with other low impact development objectives, including:

- Compact communities and cluster development that encourage walking, cycling and transit use
- Smaller streets that are more pedestrian and cyclist-oriented
- Continuous riparian corridors and open space systems (greenways)
- Preservation of environmentally significant areas
- Tree retention
- Community parks and recreation areas
- Construction practices that minimize soil and vegetation disturbance
- Lower expenditures on infrastructure

Source Stormwater Planning: A Guidebook for BC