Appendices: Glossary

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The vocabulary of low impact development is evolving, and many terms are used interchangeably and to describe the same or similar things. This glossary is a compilation of commonly used terms and their sources. Several definitions for some terms are listed here to demonstrate various usages and sources, as there is no absolute authoritative definition for many of them. Please see the Additional Resources and Informational Web Sites pages for more definitions.

General Terms

Best Management Practices (BMPs) are techniques used to control stormwater runoff, sediment control, and soil stabilization, as well as management decisions to prevent or reduce nonpoint source pollution. The EPA defines a BMP as a "technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner."

Low impact development: a stormwater management and land development strategy applied at the parcel and subdivision scale that emphasizes conservation and use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely mimic predevelopment hydrologic functions. (Low Impact Development – Technical Guidance Manual for Puget Sound)

Low impact design: an approach for site development that protects and incorporates natural site features into erosion and sediment control and stormwater management plans. (Low Impact Design Manual for the Auckland Region 2000)

Low impact development aims to mimic natural hydrology and processes by using small-scale, decentralized practices that infiltrate, evaporate, and transpire rainwater. Specifically, LID aims to:
- Minimize impervious surfaces;
- Disconnect hydrologic elements (roofs, downspouts, parking areas);
- Maintain/increase flow paths and times; and
- Utilize decentralized treatment practices. (NAHB Research Center Toolbase Services)

Green development practices: stormwater management techniques that utilize the processes of retention, infiltration, and evapotranspiration to treat runoff and reduce the volume of stormwater. (Gresham Development Code)

Specific Terms

Bioretention: Vegetated depressions that collect runoff and facilitate its infiltration into the ground. (Department of Defense Guidebook)

Bioretention areas: Storm water directed to these shallow topographic depressions in the landscape is filtered, stored, and infiltrated into the ground using specialized vegetation and engineered soils. (NAHB Research Center Toolbase Services)

Cisterns and rain barrels: harvest and store rainwater from roofs which provides "soft" chemical-free water for garden or lawn irrigation, reduces water bills and conserves municipal water supplies. (Connect the Drops)

Dry wells: Gravel- or stone-filled pits that are located to catch water from roof downspouts or paved areas. (DOD Guidebook)

Eco-roof and roof gardens: Eco-roofs or roof gardens are vegetated rooftops that use the plant-soil complex to store, detain, and filter rainfall. They are used to reduce runoff volume and slow runoff rates. An eco-roof is a lightweight vegetated roof system made of a synthetic waterproof membrane, a drainage layer, a maximum 6-inch layer of soil, and a cover of plants. A roof garden is a heavyweight vegetated roof system consisting of a waterproof membrane, drainage layer, and a thick layer of soil (typically 12 inches or more), vegetation, and hardscaping to allow access to the garden (e.g., planters, stepping stones, benches). Building Official approval is required for installation of eco-roofs and roof gardens. (D & C Standards)

Filter strips: Bands of dense vegetation planted immediately downstream of a runoff source designed to filter runoff before entering a receiving structure or water body. (DOD Guidebook)

Flow-through planters: structural landscaped reservoirs placed on impervious surfaces used to collect, filter, and temporarily store stormwater runoff, allowing pollutants to settle and filter out as the water percolates through the planter soil until flowing through to an approved conveyance. (D & C Standards)

Grassed swales: Water moving through these systems is slowed, filtered, and percolated into the ground. These systems can act as low cost alternatives to curbs, gutters, and pipes. (NAHB Research Center Toolbase Services)

Grassed swales: Shallow channels lined with grass and used to convey and store runoff. (DOD Guidebook)

Green roofs: eco-roofs are covered with lightweight soils and plants. Used for decades in Europe, they mitigate the urban heat island effect, insulate the roof and extend its life and reduce energy costs. (Connect the Drops)

Green streets: replace conventional catch basins, pipes, curbs and detention facilities with vegetated swales, bioretention cells and/or pervious pavement. (Connect the Drops)

Infiltration planter: structural landscaped reservoirs used to collect, filter, and infiltrate stormwater runoff, allowing pollutants to settle and filter out as the water percolates through the planter soil and infiltrates into the ground. (D & C Standards)

Infiltration trenches: Trenches filled with with porous media such as bioretention material, sand or aggregate that collect runoff and exfiltrate it into the ground. (DOD Guidebook)

Inlet pollution removal devices: small stormwater treatment systems that are installed below grade at the edge of paved areas and trap or filter pollutants in runoff before it enters the storm drain. (DOD Guidebook)

Permeable pavement: Asphalt or concrete rendered porous by the aggregate structure. (DOD Guidebook)

Permeable pavements: surfaces that allow water to pass through voids in the paving material and/or between paving units while providing a stable, load-bearing surface. An important component to permeable pavements is the reservoir base course, which provides stability for load-bearing surfaces and underground storage for runoff. (Seattle Green Parking)

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Permeable pavers: Manufactured paving stones containing spaces where water can penetrate into the porous media placed underneath. (DOD Guidebook)

Pervious paving: Pervious pavement and pavers are water permeable ground covers which infiltrate precipitation, reduce stormwater runoff flow rate, volume, and temperature, and filter some pollutants. Pervious pavement resembles its solid pavement counterpart, but has more void spaces that allow water to pass through the pavement into a reservoir base of crushed aggregate, then infiltrate into the ground. Pervious pavers are typically made of pre-cast concrete, brick, stone, or cobbles. (D & C Standards)

Pervious, permeable or porous pavements: allow water to soak through the paved surface into the ground. Examples are porous concrete and asphalt, grasscrete, gravel with plastic grid systems and interlocking paving bricks. (Connect the Drops)

Porous pavement: permeable pavement surface with an underlying stone layer that temporarily stores water that percolates through the surface before infiltrating into the subsoil or being collected in underlying drain pipes and being discharged off-site. There are many types of porous pavements including plastic rings planted with grass, stone or concrete pavers with pore spaces backfilled with gravel or sand, porous asphalt mixes, and porous concrete mixes. Porous pavement should be designed to accept water from precipitation and potentially sheet flow from adjacent impervious surfaces, but not concentrated discharges of stormwater runoff. The pavement surface shall be inspected for proper infiltration performance and structural stability within 48 hours after each major storm event. (Green Development Practices, Gresham)

Rain barrels and cisterns: Containers of various sizes that store the runoff delivered through building downspouts. Rain barrels are generally smaller structures, located above ground. Cisterns are larger, are often buried underground, and may be connected to the building's plumbing or irrigation system. (DOD Guidebook)

Rain gardens: also known as swales or bioswales, are planted open depressions in the landscape designed to accept stormwater runoff from adjacent impervious surfaces. Rain gardens trap pollutants in stormwater by filtering it through topsoil as the water infiltrates into native soils or underlying drain pipes. Rain gardens reduce the volume of stormwater that is discharged off-site and into natural streams. Rain gardens should drain within 24 hours of a storm event. (Green Development Practices, Gresham)

Rain gardens: or bioretention cells are vegetated areas that collect runoff so it can slowly infiltrate into the ground. Some have special soil mixtures that maximize infiltration and pollutant removal but avoid extended ponding. (Connect the Drops)

Reduced pervious footprint: narrow streets, multi-level structures reduce the impervious area that causes stormwater runoff. (Connect the Drops)

Sand filters: structural landscaped reservoirs used to collect and filter stormwater runoff allowing pollutants to settle and filter out as the water percolates through the sand bed. The treated filtrate can then be discharged through an underdrain system or infiltrated directly into native soils, if appropriate. (D & C Standards)

Smart site design: conserves trees and habitat, minimizes disturbance and soil compaction, and integrates on-site stormwater management into the other considerations for site development. (Connect the Drops)

Soil amendments: Minerals and organic material added to soil to increase its capacity for absorbing moisture and sustaining vegetation. (DOD Guidebook)

Stormwater planters: designed to accept stormwater runoff from adjacent impervious surfaces. They remove pollutants by filtering runoff through layers of topsoil and then either infiltrating it into native soils (infiltration stormwater planter) or perforated underdrain pipes to be discharged off-site (filtration stormwater planter). Water should drain through the planter within 24 hours after a storm event. (Green Development Practices, Gresham)

Street swales: gently sloping depressions planted with dense vegetation or grasses designed to receive, filter, and infiltrate the runoff as it conveys the stormwater along its length. Water quality improvement is achieved by the settling out of particulates in the water column and by the biological and chemical action of the water. Swales can include check dams to help slow and detain the flow. (D & C Standards)

Tree box filters: in-ground containers with high rate pollutant filtering and runoff storage used along curb and gutter systems to intercept, slow, and treat roadway runoff in urban areas. (D & C Standards)

Tree box filters: Curbside containers placed below grade, covered with a grate, filled with filter media and planted with a tree in the center. (DOD Guidebook)

Vegetated buffers: Natural or man-made vegetated areas adjacent to a water body, providing erosion control, filtering capability, and habitat. (DOD Guidebook)

Vegetated filter strips: or vegetated filters, are gently sloping areas used to filter, slow, and provide pre-treatment to stormwater flows. (D & C Standards)

Vegetated infiltration basins: shallow landscaped depressions used to collect and hold stormwater runoff, allowing pollutants to settle and filter out as the water infiltrates into the ground. (D & C Standards)

Vegetated roofs: Impermeable roof membranes overlaid with a lightweight planting mix with a high infiltration rate and vegetated with plants tolerant of heat, drought, and periodic inundation. (DOD Guidebook)

Vegetated swales: broad, shallow channels that reduce stormwater volume and velocity and filter pollutants from the water. (Connect the Drops)

More about Swales: excerpts from an APWA webinar

Swale: Flat bottom depression

Ditch: Deep-cut steep side slopes

Conveyance Swale: Purpose to move water (temp vs permanent)

Bioswale: Engineered vegetated swale, cleans water

Bioretention Swale: Vegetated, infiltrates and cleans water

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Natural Drainage Swales: Engineered system with amended subsurface soil layer

Raingarden: Organic shaped depression with amended soils and plants to soak up and retain water. Typically has overflow.

Stormwater planter: More structural to complement building; functions as retention to reduce stormwater discharge; planted

Furrow: Small conveyance swale

Dispersal or Infiltration Trench: Underground washed rock or gravel to spread out flows

Structural Water Quality BMPs

Infiltrating BMPs: Basins, Trenches, Swales, Pavement

Filtering BMPss: Basins, Trenches, Swales, Sand filters, Proprietary Systems

Retention BMPs: Ponds, Wetlands