



Permeable Pavers to Curb Cuts to Swale



Pervious Alley Gutter



Narrower Streets with Greenways



Rain Barrel



Rain Garden



Reduce On-Street Parking



Pervious Pavers



Vegetated Yards vs. Lawns

Developer's Guide to LID Low-Impact DEVELOPMENT



SMALL SCALE

LID techniques can also be used on small commercial lots or single-family homes.

Rain barrels: Reduces runoff discharged to the storm water system and conserves water.

Downspout disconnect: Runoff infiltrates, reducing discharge to the storm drain system and removes pollutants.

Hollywood driveways: Reduces impervious surface and allows storm water to infiltrate.

Rain garden and/or soil amendments: Runoff infiltrates and reduces runoff.

Permeable pavers: Easily integrated into existing infrastructure.

Online LID Resources

The California Stormwater Quality Association's Stormwater Best Management Practice Handbook for New Development and Redevelopment
www.cabmphandbooks.com/documents/development/DevelopmentHandbook.pdf

The Contra Costa Clean Water Program Stormwater C.3. Guidebook
www.cccleanwater.org/Publications/Guidebook/Stormwater_C3_Guidebook_4th_Edition_9-10-08.pdf

The City of Santa Barbara Post-Construction Best Management Practice Manual

www.santabarbaraca.gov/Resident/Major_Planning_Efforts/Storm_Water_Management_Program

www.epa.gov/nps/lid

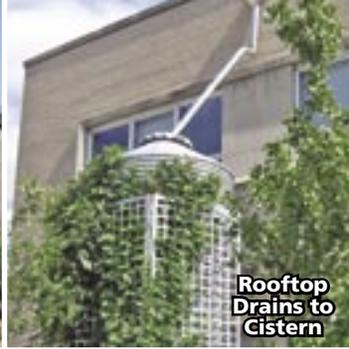
extension.ucdavis.edu/unit/center_for_water_and_land_use/

For more information, call the City of Santa Maria Utilities Department, 925-0951 ext. 7270.





Bioswales



Rooftop Drains to Cistern



Cistern Covered with Trellis and Plant



Curb Cut



Disconnected Downspouts



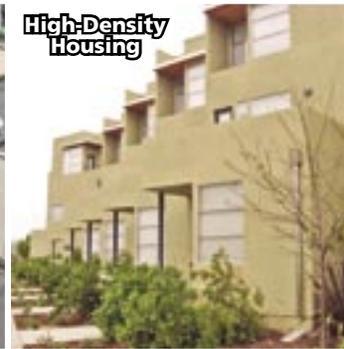
Drainage as Design Element



Drainage as Design Element



Green Roofs



High-Density Housing



Infiltration Planter



Narrow Road Sections



Parking Swale

What Is LID?

■ LID (Low-Impact Development) is an environmentally friendly approach to project design. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source, preserving the site's natural features.

Why LID?

- Because typical development changes the natural patterns of runoff, causing:
 - Damage to creek channels
 - Erosion and undercutting
 - Loss of habitat
 - Increased water pollution

Environmental Benefits of LID

- Recharges groundwater
- Improves water quality
- Provides channel protection
- Conserves water
- Provides habitat
- Improves air quality
- Reduces waste

Social Benefits of LID

- Visual aesthetics and noise reduction
- Reduced urban heat island effect
- Wind breaks and shade

Economic Benefits of LID

- Reduces land clearing and grading costs
- Reduces infrastructure costs (narrower streets, less complex storm sewer system)
- Increases marketability and property values
- Increases ability to meet building permit requirements
- Using captured rainwater reduces water costs

LID Concepts

- The designer, developer, and County reviewing agencies work together to identify solutions that integrate concepts such as:
 - Conserving and protecting natural areas, drainages, soils, and vegetation by minimizing overall disturbance and overall impervious area
 - Directing runoff from impervious surfaces to pervious areas
 - Slowing and reducing runoff using infiltration, biofilters and/or rainwater reuse

- Incorporating other LID design features such as roadway/sidewalk/driveway gradient, lot layout, parking and roadways, clustering units, onsite water reuse, vegetated roof, permeable paving, etc.

LARGE SCALE

■ Proper site design in combination with many landscaping and infiltration techniques distributed throughout a subdivision or commercial development cumulatively improve storm water runoff management.

Green streets: Reduces infrastructure and storm water runoff.

Pervious pavement and permeable pavers: Allows runoff to infiltrate into topsoil.

Curb cuts: Can be designed to direct runoff to swales or infiltration basins.

Infiltration swales: Removes pollutants and reduces storm water discharges to the storm drain system.

Infiltration planters: Decreases volume and peak flow rates.