

## 2.6 DISCONNECTION OF IMPERVIOUS COVER

Disconnection of downspouts and impervious surfaces is encouraged to maximize the function of the sustainable development practices. Disconnection is a low-cost, effective non-structural control which can reduce total runoff volume, increase the time of concentration and promote infiltration. The first step in disconnection is to identify the source of runoff and understand how it will be managed once disconnection occurs. Well-conceived use of disconnection methods can reduce project costs by reducing or eliminating the need for more expensive structural practices.

By disconnecting impervious areas and directing the flow to infiltration basins or designated buffer areas, a portion of additional runoff that would contribute to stormwater runoff is infiltrated close to the source instead. Further, runoff that would potentially carry pollutants from the site to surface water instead gets treated and helps recharge groundwater.

Disconnection methods should be incorporated at the planning and design level. However, the designer and reviewer should note that these methods must be used in concert with the design of other stormwater conveyance and treatment practices. The use of these disconnection methods does not relieve the designer or reviewer from following the standard engineering practices associated with safe conveyance of stormwater runoff and good drainage design.

### 2.6.1. DOWNSPOUT DISCONNECTION

Rooftops with exterior drains for the gutter (the normal configuration for most residential structures) are one of the easiest disconnection practices to implement. Downspouts should be directed to landscaped portions of the site rather than driveways or sidewalks unless the driveway is constructed of pervious paving materials (Figure 2-5). While uncommon, driveways can be crowned so that a portion of the runoff is directed to vegetated areas rather than the street.

In addition to directing downspouts to vegetated areas, roof runoff may also be directed to cisterns and other rain barrels, or even to depressed storage or other underground storage areas for later consumption. Design details for impervious cover disconnection are found in Chapters 4 and 5 to add in preparing a low impact development plan.



**Figure 2-5:** Downspouts directed to permeable pavement on driveway. (Photo courtesy of Montgomery County, Maryland)

### 2.6.2. DISCONNECTING URBAN AREAS

Downtowns and commercial strip centers often promote an urban, “walkable” feel by putting buildings close to the sidewalk, and the sidewalk close to the street or parking area. While this practice promotes a fun street activity ambiance, there are some benefits to be had by disconnecting these impervious surfaces.

Site design should allow for a space of approximately 2-3’ between the street and the sidewalk, and the sidewalk and the building. These spaces between the street, sidewalk and building should be vegetated areas designed to intercept a portion of stormwater, and may also be fitted as a biofiltration area, vegetated swale, or vegetated filter strip. Disconnection can also be used when designing parking lots. Instead of a parking lot being sited directly adjacent to a roadway, the insertion of a grassy area between the road and the edge of the parking area reduces the velocity of water moving across the site and provides an opportunity for additional sustainable drainage techniques to be included.

These disconnected, vegetated areas alone will not be enough to filter all of the stormwater from the site; however, when used in tandem with other site design practices in this chapter and sustainable drainage techniques outlined in Chapter 4, they become part of an overall strategy for managing stormwater effectively.