

DESIGN DETAILS: Choosing Appropriate Plant Material



SOURCE: KEVIN ROBERT PERRY - CITY OF PORTLAND

Figure 5-47: Differing texture and color of plant species combined with a high density of plant material can create very beautiful stormwater facilities.



SOURCE: TOM LIPTAN - CITY OF PORTLAND

Figure 5-48: Formal stormwater facilities that have a very manicured look can sometimes be indistinguishable from conventional landscapes.



SOURCE: NEVUE NGAN ASSOCIATES

Figure 5-49: More natural-looking stormwater facilities can often provide a striking contrast to the formal appearance of urban streets and parking lots.

Green street and parking lot projects should all be designed as community amenities. Hence, the decision on what plant material should be installed within a green street or parking lot project is an important one. There are essentially two primary considerations in choosing plants for a particular stormwater project: 1) general aesthetics; and 2) choosing plants that can survive in both “wet” and “dry” conditions. A more detailed discussion of each design issue is presented below.

General aesthetics

The overall look of a green street or parking lot project can vary considerably. Plantings can have a relatively formal and manicured appearance (Figure 5-48), or they can have a more “natural” look (Figure 5-49). Regardless, the choice of plant material should fit with the surrounding landscape context (i.e., residential, urban, etc.).

The overall diversity of plant material within a green street or parking lot project can also affect aesthetics. A highly diverse planting palette with differing textures, colors, and growing heights can be very desirable. This is especially true for larger stormwater facilities and those that incorporate side slopes in the design. For those stormwater facilities that are smaller and more linear, such as stormwater planters, a single-species planting may be more appropriate. Regardless of the chosen palette, it is important to design and install the plant material at an appropriate density. Too often, stormwater facilities are installed with too few plants, so few, in fact, that one can’t really call the project a “green street.” A well-designed stormwater facility should have no bare ground showing after a two-year plant establishment period.

Except for trees, choose lower-growing plant material that do not exceed three feet in height. Low-growing plants tend to be more aesthetically and functionally preferable for green street and parking lot applications. In

addition, low-growing plant varieties help to reduce ongoing maintenance by eliminating the need for plant trimming.

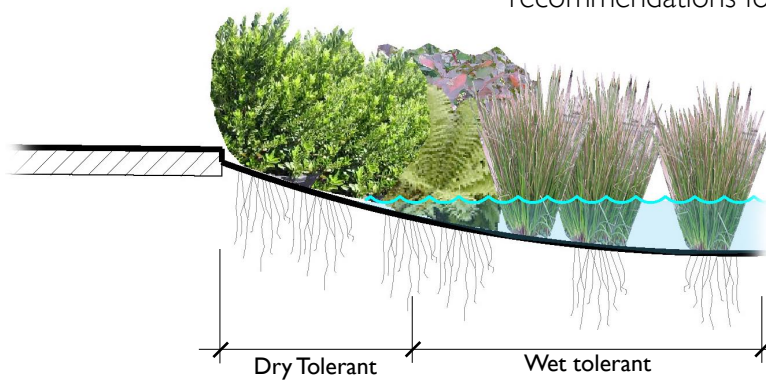
The last aesthetic consideration is how much of the plant material should be designed as evergreen versus deciduous. It is recommended that at least 70% of the plant palette, excluding trees, be evergreen. This helps to ensure that green street and parking lot projects have year-round plant structure. Having a predominantly evergreen green street also helps slow water runoff due to the persistence of leaves.

Choosing “wet” and “dry” plants

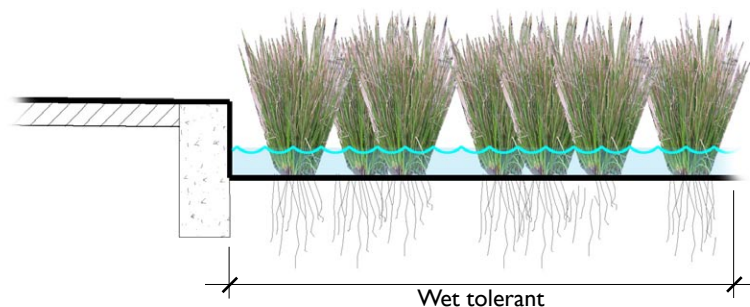
Green street and parking lot projects may have different planting zones based on the type of stormwater facility used. Stormwater facilities that are designed with a side slope condition (e.g., vegetated swales) have two planting zones: dry and wet. Shrubs, groundcovers,

and perennials that thrive in drier conditions should be placed on the upper portions of the side slopes while wet tolerant plants, such as sedges and rushes, are best suited for the low, flat bottom zone of the stormwater facility. Stormwater facilities that have only a flat-bottom condition with no side slope (e.g., stormwater planters) have only one planting zone that should only be planted with wet-tolerant plant material. Figure 5-50 illustrates the typical planting conditions based on stormwater facility type. It should be noted plants chosen for wet zone conditions should also have some level of drought tolerance in order to minimize, or potentially eliminate, the need for supplemental irrigation during dry periods.

Appendix A of this guidebook offers several local resources to help choose appropriate wet and drought tolerant plants. In addition, the C.3 Technical Guidance offers plant recommendations for stormwater facilities.



Typical Side Slope and Flat-Bottom Planting Condition



Typical Flat-Bottom Planting Condition

Figure 5-50: Different planting conditions exist depending on the amount of water retained and the specific geometry of stormwater facilities.