UNDERSTANDING

Green Streets

PURPOSE

Green streets are designed to treat and infiltrate stormwater close to its source while creating more vibrant and livable communities.

Stormwater runoff from streets, roads, parking lots, roofs and other impervious surfaces is a significant source of water pollution to our rivers, streams and ponds, as well as a major contributor to combined sewer overflows. Green streets can provide cost effective infrastructure solutions to reduce and manage stormwater runoff and flooding through the use of green infrastructure facilities – small, decentralized, natural or engineered systems that utilize soils and vegetation as a primary treatment mechanism. This approach integrates the built and natural environment, introducing park-like elements that enhance the pedestrian experience.

GREEN STREETS PRINCIPLES

Green streets are designed utilizing three guiding principles:

Green Infrastructure – Use naturalized systems to treat and manage stormwater close to its source.

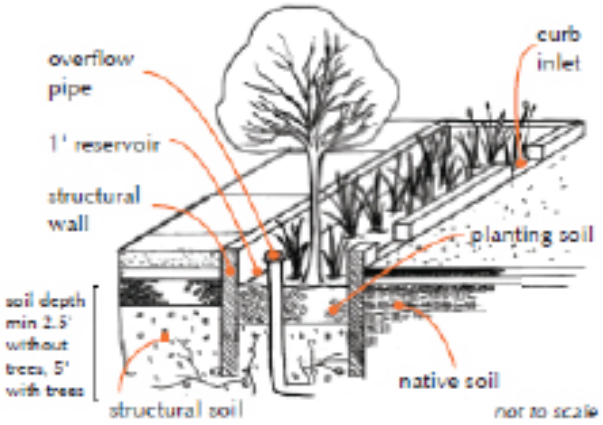
Green infrastructure (GI) uses naturalized systems to infiltrate, evapotranspire, and/or recycle stormwater runoff close to its source. Rain gardens, bioretention areas, tree box filters/trenches, green roofs, bioswales, permeable pavement, and street trees are some common GI practices. In addition to vegetation and engineered soils, GI uses permeable surfaces to intercept rain and snow melt close to the source, reducing the burden on traditional grey infrastructure systems. GI facilities seek to complement rather thanreplace existing grey infrastructure to achieve some of the additional benefits green streets have to offer a community.

Complete Streets – Create bicycle and pedestrian friendly streets.

Complete Streets are designed for all users regardless of age, ability, income, or mode of transportation, and prioritize the health, safety, and comfort of residents and visitors. Through the use of designated bike lanes, safe pedestrian crossings, traffic-calming elements, and accessible transit systems, Complete Streets create healthier, more pleasant streetscapes that offer opportunities to walk and bicycle safely every day.

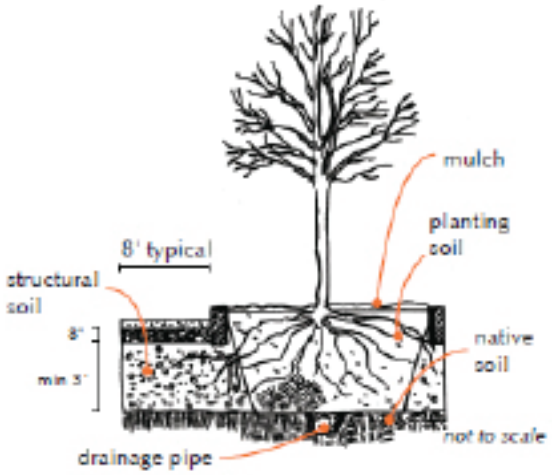
Placemaking – Generate a strong sense of place.

Placemaking is about strengthening the connection between people and the spaces they share. In this way, spaces are created that reflect the identity and history of residents, taking a number of forms from pocket parks to participatory art projects to human-scale built environments. Good public spaces can be both temporary and seasonal, as in a Saturday morning farmer's market on a local street closed to vehicular traffic, to permanent parks, plazas and boulevards. Placemaking can increase positive interactions between people, instill community pride, improve quality of, beautify a place, and support economic growth.



STORMWATER PLANTER

A stormwater planter is usually a rectangular, vegetated planter, sometimes planted with trees. Its four concrete sides double as a curb and structure for the planter and allow water to pool up to 1' before overflowing into another planter or the grey infrastructure system, storing and infiltrating water over time.



BREAKOUT

Break-outs are excavated areas filled with structural soil, often under sidewalks or roads. Used in combination with other green infrastructure tools such as tree trenches or stormwater planters, break-outs provide more room for tree roots to grow in tight spaces, increasing the longevity and survival rate of urban trees.

ADOPTING A GREEN STREETS POLICY

Adopting a municipal Green Streets Policy demonstrates a community's commitment to achieving the principles identified above in both private and public projects. The following are examples of Green Street Polices from cities around the country:

Northampton, Massachusetts – Green Streets Policy

Northampton has developed a Green Streets Policy statement which promotes the use of green streets facilities and green infrastructure in public and private development, including:

- **Road reconstruction, new road development and bicycle and pedestrian projects;**
- **Stormwater projects, and;**
- **New development and redevelopment projects**

through regulation, capital investment and management mechanisms as a cost effective and sustainable practice for stormwater management.

Prince George's County, Maryland – Complete and Green Streets Policy

The County requires road, sidewalk, trail, and transit related construction/reconstruction projects to include environmental site design where practicable.

District of Columbia – Green Streets Policy

The District of Columbia's stormwater rules and the Department of Transportation's Low Impact Development Action Plan inform the City's Green Streets Policy.

Cleveland, Ohio – Complete and Green Streets Ordinance

The purpose of the ordinance is to the creation of a network of Complete and Green Streets that will improve the economic, environmental, and social well-being of the city.

Tucson, Arizona – Green Streets Policy

Tucson's policy requires stormwater harvesting features to be integrated into all publicly funded roadway development and redevelopment projects.

Holyoke, Massachusetts – Green Streets Guidebook

The City's Guidebook is intended to introduce city planners and policy makers to Green Streets, advocate for Green Streets implementation in Holyoke, and serve as a preliminary set of design guidelines to transform Holyoke's streets into more ecologically, socially, and economically positive spaces. The Guidebook includes a Toolbox with design standards for Green streets strategies; nine design templates representative street characteristics in Holyoke that can be applied to future projects; a site-specific application of Green Street design principles in downtown Holyoke; an exploration of relative costs and benefits; and recommended next steps for the city to implement Green Streets.

Edina, Minnesota – Living Streets Policy

The policy enables the City to implement their Living Streets Plan for safe walking, bicycling and driving, reduced stormwater runoff, reduced energy consumption, and promoting health.

REFERENCES AND RESOURCES

CITY OF SEATTLE, RIGHT OF WAY IMPROVEMENTS MANUAL: GREEN STREETS
http://www.seattle.gov/transportation/rowmanual/manual/6_2.asp

CITY OF PORTLAND, GREEN STREETS CONSTRUCTION GUIDE
http://www.portlandoregon.gov/bes/45379?

CITY OF PHILADELPHIA'S GREEN CITY CLEAN WATERS,
GREEN STREETS DESIGN MANUAL
http://www.phillywatersheds.org/what_were_doing/gsdm

U.S. ENVIRONMENTAL PROTECTION AGENCY, EFFECTIVE GUIDE TO GREEN STREETS
http://water.epa.gov/aboutow/eparecovery/upload/2009_09_10_eparecovery_EPA_ARRA_Green_Streets_FINAL.pdf

FOR MORE INFORMATION, PLEASE CONTACT

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