

## **Exhibit A**

### **Green Streets Policy**

**Goal:** City of Portland will promote and incorporate the use of green street facilities in public and private development.

#### **City elected officials and staff will:**

1. Infrastructure Projects in the Right of Way:
  - a. Incorporate green street facilities into all City of Portland funded development, redevelopment or enhancement projects as required by the City's September 2004 (or updated) Stormwater Management Manual. Maintain these facilities according to the May 2006 (or updated) Green Streets Maintenance Policy.  
  
If a green street facility (infiltrating or flow through) is not incorporated into the Infrastructure Project, or only partial management is achieved, then an off site project or off site management fee will be required.
  - b. Any City of Portland funded development, redevelopment or enhancement project, that does not trigger the Stormwater Manual but requires a street opening permit or occurs in the right of way, shall pay into a "% for Green" Street fund. The amount shall be 1% of the construction costs for the project.  
Exceptions:
    - Emergency maintenance and repair projects
    - Repair and replacement of sidewalks and driveways
    - Pedestrian and trail replacement
    - Tree planting
    - Utility pole installation
    - Street Light poles
    - Traffic Signal poles
    - Traffic Control Signs
    - Fire Hydrants
    - Where this use of funds would violate contracted or legal restrictions.
2. Project Planning and Design:
  - a. Foster communication and coordination among City Bureaus to encourage consideration of watershed health and improved water quality through use of green street facilities as part of planning and design of Bureau projects.
  - b. Coordinate Bureau work programs and projects to implement Green Streets as an integrated aspect of City infrastructure.

- c. Plan for large-scale use of Green Streets as a means of better connecting neighborhoods, better use of the right of way, and enhancing neighborhood livability.
  - d. Strive to develop new and innovative means to cost-effectively construct new green street facilities.
  - e. Develop standards and incentives (such as financial and technical resources, or facilitated permit review) for Green Streets projects that can be permitted and implemented by the private sector. These standards and incentives should be designed to encourage incorporation of green street facilities into private development, redevelopment and enhancement projects.
3. Project and Program Funding:
- a. Seek opportunities to leverage the work and associated funding of projects in the same geographic areas across Bureaus to create Green Street opportunities.
  - b. Develop a predictable and sustainable means of funding implementation and maintenance of Green Street projects.
4. Outreach:
- a. Educate citizens, businesses, and the development community/industry about Green Streets and how they can serve as urban greenways to enhance, improve, and connect neighborhoods to encourage their support, demand and funding for these projects.
  - b. Establish standard maintenance techniques and monitoring protocols for green street facilities across bureaus, and across groups within bureaus.
5. Project Evaluation:
- a. Conduct ongoing monitoring of green street facilities to evaluate facility effectiveness as well as performance in meeting multiple City objectives for:
    - Gallons managed;
    - Projects distributed geographically by watershed and by neighborhood; and
    - Pedestrian and bicycle enhancements.

## **Findings**

### A “Green Street”:

- Handles stormwater on site through use of vegetated facilities;
- Provides water quality benefits and replenishes groundwater (if an infiltration facility);
- Creates attractive streetscapes that enhance neighborhood livability by enhancing the pedestrian environment and introducing park-like elements into neighborhoods;

- Serves as an urban greenway segment that connects neighborhoods, parks, recreation facilities, schools, mainstreets, and wildlife habitats; and
- Meets broader community goals by providing pedestrian and where appropriate bicycle access.

The City has been installing a variety of stormwater facilities and monitoring their performance for 10 years. Monitoring results support the following:

- Green Streets reduce and manage stormwater runoff through interception, evapotranspiration, throughfall, and attenuation.

One of the most closely monitored facilities – the Glencoe Rain Garden – has performed extremely well. Rainfall and facility overflow have been monitored for over two years, and has retained 94% of the runoff.

- Green Streets are effective tools for inflow control of stormwater to the Combined Sewer Overflow (CSO) System.

The Glencoe Rain Garden and the Siskiyou Curb Extension facilities will reduce peak flows that cause basement sewer backups and aid compliance with CSO regulations by reducing volumes sent to the CSO Tunnel system. Through simulation of basement sewer backup design storms, both facilities reduce peak flows from their respective drainage areas to the combined sewer by at least 80-85%. This reduction would be enough to protect the vast majority of homes from basement sewer backups. During the simulation of CSO design storms, both facilities retained at least 60% of the storm volume, which is believed to be a conservative estimate.

- Green Streets improve water quality by filtering stormwater, removing contaminants and cooling the stormwater before it encounters groundwater or surface water bodies, such as rivers, both of which ultimately benefit watershed health.

Facilities that filter stormwater through vegetation and soil have been shown to reduce total suspended solids (TSS) by 90%, organic pollutants / oils by 90%, and heavy metals by more than 90% (numbers taken from EPA fact sheet on bioretention; <http://www.epa.gov/owmitnet/mtb/biortn.pdf>).

- Green Streets can provide cost-effective infrastructure solutions to stormwater management. They can be more cost effective in some circumstances than traditional stormwater structures, when considering the cost:benefit of other issues (such as basement flooding and creek flooding during high precipitation times).

A basement flooding relief project currently in design is projected to cost 60% of what would have been the cost of a traditional pipe upsize and replacement project. This is because the solution, a mix of Green Streets and private

system disconnects, intercepts and infiltrates the water before it enters the public storm system thereby reducing the need to dig up and upsize the existing piped infrastructure.

- Green Streets can foster unique and attractive streetscapes that protect and enhance neighborhood livability and integrate, rather than separate, the built and natural environments.
- Green Streets can serve to enhance the pedestrian environment and introduce park-like elements into neighborhoods.
- When planned on a neighborhood scale, Green Streets can serve as urban greenways or pathways and provide a preferred means of connecting neighborhoods and parks/recreation areas in ways that are attractive to pedestrians and bikers.
- Green Streets encourage the planting of landscapes and vegetation. City landscapes and trees contribute environmental benefits such as reduced summer air temperatures, reductions in global warming through carbon sequestration, air pollution screening, and wildlife habitat corridors, in addition to stormwater reduction.