

**CITY COUNCIL AGENDA ITEM**  
CITY OF SHORELINE, WASHINGTON

<b>AGENDA TITLE:</b>	Update on Green Street (Complete Street) Demonstration Project
<b>DEPARTMENT:</b>	Public Works
<b>PRESENTED BY:</b>	Kirk McKinley, Transportation Planning and Aurora/Interurban Program Manager Jon Jordan, Capital Projects Manager

**PROBLEM/ISSUE STATEMENT:**

City Council Goal 10 states: "Provide safe, efficient and effective infrastructure to support our land use, transportation and surface water plans". One of the Major Objectives of Goal 10 is to "Implement a Green Street Demonstration Project". At your December 1, 2008 workshop, staff will provide an update on the program. The update includes a recommended street for the demonstration project, a schedule, and process to complete the first demonstration street. The Green Street Demonstration Project is included in the adopted 2009-2014 Capital Improvement Plan. The CIP includes \$200,000 for construction, design and planning in 2009.

**BACKGROUND/CONTEXT:**

The intent of the Green Street Demonstration Project is to develop a first street in Shoreline that has minimal impact on the existing environment including water quality, carbon emissions, and at the same time improves the livability and community. The toolkit for improvements in the right-of-way includes bioswales/raingardens, walkways, plantings, pervious surfaces, and combined traffic calming with water quality features. There is also the potential to work with neighbors to help them improve private property impacts through reduction of impervious surfaces, collection of rainwater, solid waste and composting techniques. Safety is an element to be addressed in the projects including lighting (staff is exploring low-impact lighting technologies), pedestrian separation, and speed reduction. Baseline information on water quality, percolation rates, traffic speeds and volumes will be gathered prior to project construction so that we can measure the results of the project over time.

Staff has been working through the summer and fall of this year to identify, evaluate, review and select an appropriate street for the first green street demonstration project. We met on November 13 with the residents along 17<sup>th</sup> Ave NE, between NE 145<sup>th</sup> and 150<sup>th</sup> Streets. Approximately half of the residents along the street attended the two-hour meeting, and are supportive of the project. The meeting also included attendees from the and the Briarcrest Neighborhood Association. The neighbors are eager to participate and understand that it will be a heavily inclusive design process, which we intend to begin in January.

Staff felt it extremely important to select a street for the first project that is relatively simple and straightforward. 17<sup>th</sup> Ave NE has a 60-foot right-of-way, no curbs, minimal private property encroachment (although there are a few fences and large trees that we will work around), is relatively flat, does not have significant drainage challenges, and limited utility conflicts. There is currently one traffic circle on the street. The street acts as a cut-through from NE 145<sup>th</sup> Street to the Fircrest and State Lab entrance, and the neighbors have also identified some cut-through traffic from drivers avoiding the 15<sup>th</sup> Ave NE and NE 145<sup>th</sup> Street signalized intersection. There appears to be more pedestrian traffic than on a typical five-block residential street.

The proposed schedule will be to hire an engineering firm in early 2009, work with the residents through the spring of 2009 to design the improvements, and to advertise and construct late summer into the fall. We will seek to contract with an engineering firm that is experienced in natural drainage projects, and which has a strong landscape architecture staff.

Attached are materials that we shared with the residents on November 13. They include a flyer that is an overview of green streets, and an aerial map of 17<sup>th</sup> Ave NE with some photos along the street. Also, attached is a list of discussion items that we reviewed with the residents.

At the December 1 Council meeting, we will review this information and respond to questions from the Council.

## **ATTACHMENTS**

Attachment A:	Green Street Demonstration Program Flyer
Attachment B:	17 <sup>th</sup> Ave NE Aerial Photo
Attachment B:	November 13 Meeting Materials

CM 280



# Shoreline's Green Street Program

## DEMONSTRATION PROJECT

"Green" building and landscaping are not just for new construction. Relatively minor changes and improvements to existing development can have a major positive impact on the environment. That's where Shoreline's new Green Street Program demonstration projects come in.

The City is looking to partner with neighbors along selected streets to lessen the environmental impact of urban development. Shoreline will fund improvements on public and possibly even private property that adjacent residents commit to maintain. These demonstration projects would combine creating natural drainage swales with traffic calming designs, walkways, landscaping and other elements into a street "make-over" that will lessen adverse environmental impacts, provide educational elements, reduce maintenance costs and improve the quality of life.

Since the success of the demonstration projects and overall program hinges on neighborhood commitment, Green Streets will be selected based on the consensus of neighbors willing to participate in the design process and maintenance responsibilities.

## NATURAL STORM DRAINAGE

Since providing natural storm drainage is a powerful way to improve the environment, it will be a key element included in the demonstration projects.

Many of the Puget Sound's water quality issues are caused by untreated roadway storm water runoff (as well as herbicides and pesticides). If unimpeded, the unsavory chemicals and oils that coat streets flow into waterways and ultimately into the Puget Sound.

Negative impacts of runoff can be mitigated by naturally treating/cleansing the storm water at the source. That means capturing the water before it enters into the storm pipe system and filtering it through a natural storm water system.

These "bio-swales" can come in different forms but typically involve diverting street and private property runoff into a swale or ditch system that includes plants, soils, weirs (or dikes) and other techniques to slow the water flow to improve ground absorption. This results in smaller volumes and cleaner water draining to Puget Sound.

Natural drainage areas can be retrofitted within the roadway, behind the curb off of the roadway or as some combination of the two. To ensure natural drainage systems work properly, neighbors need to take a role in maintaining them. This not only benefits the environment, but also homeowners since it reduces the chance of flooding and supports the aesthetics of the neighborhood.



## TRAFFIC CALMING

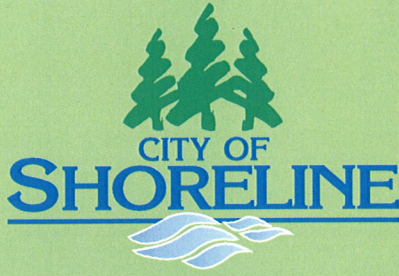
Traffic calming is another key element of the Green Street Program. The basic goals of an effective traffic calming system are to slow traffic down and ensure safety while still providing access.

Traffic calming measures can include traffic circles; curb bulbouts that narrow the roadway; chicanes to cause traffic to "weave" through a zone; speed humps; and medians.

Some traffic calming techniques (such as bulb outs or chicanes) can serve double duty as natural drainage or bio swales. Not all traffic calming techniques are effective or applicable to all situations, so traffic engineering staff will assist in selecting appropriate devices.







#### FOR MORE INFORMATION

contact Project Managers

Kirk McKinley (206) 801-2481

kmckinley@ci.shoreline.wa.us or

Jon Jordan (206) 801-2473

jjordan@ci.shoreline.wa.us.



### PEDESTRIAN WALKWAYS

Another important component of the Green Street project is to improve pedestrian safety. The program's goal is to include a walkway or sidewalk that meets Americans with Disability Act (ADA) standards on at least one side of the street. ADA standards require hard surface, predictability, maximum grades and ramps where needed.

Pedestrian improvements may also include crosswalks, raised crossings (which also serve to slow or calm traffic) and street crossings narrowed by curb bulbs. The City may also consider pervious pavements or pavers as long as they meet ADA requirements because they allow water to infiltrate into the soils.

### PARKING AND DRIVEWAYS

Since many streets include parking, a key element of the design process will be balancing natural storm water features, traffic calming elements and walkways with the on and off-street parking needs. Driveways also may dictate the location and extent of other features of the Green Streets.

It is possible to accommodate both parking and a Green Street design, although typically a Green Street project will reduce on-street parking. Curb bulbs with natural storm water features can section off on-street parking areas, creating parking "bays" or "pockets." The City will work closely with all neighbors to identify and prioritize parking locations.

### LANDSCAPING

There are two components to the landscaping along a Green Street: the public domain, and the private domain. The public landscaping includes the plants in and along the natural storm water systems. For the most part, these will consist of "native" plants that are especially suited to provide maximum water quality benefits by absorbing metals, oils or other toxins. The planting plan within the natural storm water system will be guided by an expert to maximize the water cleansing benefit.

Street trees are another part of the public landscaping. The selection of street tree types and placement will consider factors such as shading in the summer, transparency in the winter, root systems and proximity to buildings.

The Green Street program will offer the opportunity for residents to plant City supplied trees on their private property if an ecological benefit is demonstrated (shading/cooling, water absorption, etc.). The City will require a "contract" where the property owner commits to maintain the health of the City supplied trees.

### MAINTENANCE

One of the keys to success of this program relies upon adjacent residents who are physically able to commit to adopting their frontage and providing landscape maintenance. This would include weeding, watering (if necessary), picking up litter and other efforts to keep the landscaping healthy and the appearance of the street clean. Neighbors would notify the City when plant materials die or when soils need upgrading. The City will periodically check the status and condition, and will replace "dirty" soils as necessary.

The City will work closely with the neighbors in developing the plan and is open to exploring ways to accommodate other elements neighbors might want to improve such as the safety and livability of their streets including lights, signs or fences. Depending on the project budget, the City and residents will decide on a case-by-case basis on how these additional elements are paid for whether it is by the residents, by the City or by both.

The program may also provide resources to assist neighbors in lessening the negative footprint on their own property through grant programs, educational materials or funding. These types of private side improvements could include reducing impervious surfaces by installing pavers, "grasscrete," pervious asphalt or pervious concrete driveways, constructing "greenscapes" such as green roofs, rain gardens or bio-swales. The City will also help with establishing natural yardcare practices for the neighbors who are interested.

### COMPACT WITH NEIGHBORS

Since Green Streets will be selected based on interest and consensus of the neighborhood and the City is investing its resources to develop the Green Streets, the City will ask neighbors to sign a commitment to help protect this investment through maintenance.



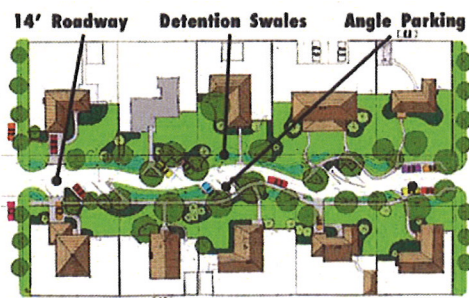
# Green Streets 17th Avenue NE Meeting





# Green Street Examples

## SEA Street Seattle Public Utilities Natural Drainage Systems (NDS) Project



### IMPROVE DRAINAGE:

Reduce impervious surfaces by narrowing the road; create more spaces for plants and soil to absorb rain water; control flooding and move stormwater away from the roadway.



### IMPROVE LANDSCAPING:

Use natural materials - plants and soils - to slow, filter, and infiltrate stormwater runoff... all within the space of the public right-of-way.



## Green Street Projects City of Portland



### IMPROVE WATER QUALITY:

Utilize a combination of soils and plants to filter rain water and allow it to seep into the ground as it washes off the roadway and parking spaces.



### IMPROVE MOBILITY:

Calm traffic by narrowing and curving the roadway; provide adequate parking for residents and guests; ensure safe access for emergency vehicles, bicycles, and pedestrians.

## NOVEMBER 13 MEETING MATERIALS

**Maintenance** (based on the Seattle Public Utilities manual for Natural Drainage Systems "Practically Easy Landscape Maintenance")

### "To Do" List for Residents:

- Water, weed, mulch, mow as necessary.
- Remove leaves and debris blocking storm drains and pipes.
- Pick up litter.
- Keep sidewalks clear of plants, debris, snow, etc.
- Please note that residents throughout Shoreline are responsible for maintaining the right-of-way planting or landscape strips in front of their homes and, we understand that not everyone has the physical abilities to do maintenance.

### City of Shoreline will:

- Monitor and maintain the drainage system "structures".
- Provide emergency services and repairs.
- Prune street trees.
- Replace soils when necessary.
- Be available to provide help and information.

Resources for Residents (Seattle Public Utilities website):

[http://www.seattle.gov/util/About\\_SPU/Drainage\\_&\\_Sewer\\_System/Natural\\_Drainage\\_Systems/Natural\\_Drainage\\_Overview/index.asp](http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Natural_Drainage_Overview/index.asp)

**Parking** – Options vary and may include: parking on one side of the street or alternating sides of the street, angle parking in small groups.

**Mail Boxes & Delivery** – Depending on the design and access to mailboxes, residents may elect or the post office may require that mail boxes be concentrated in secure cluster units.

**Construction** – Normal working hours are between 7 a.m. and 6 p.m. Monday through Friday. Driveway access during construction will be maintained whenever possible except during activities such as digging or paving across driveways. The City will coordinate with residents to address special circumstances.

### Unknowns:

- Utility locations/depths
- Soil types and infiltration rates
- Roof and yard drains
- Basements
- Detailed inventory of right-of-way (existing plantings/parking/fences etc.)

This page intentionally left blank.