2007 Department of Ecology
Low Impact Development Stormwater Grant Program

City of Bremerton - Bremerton Parks and Recreation Department

An old commercial blueberry farm turns into the city of Bremerton's newest LID project

White's Blueberry Farm in 1979.

Project description

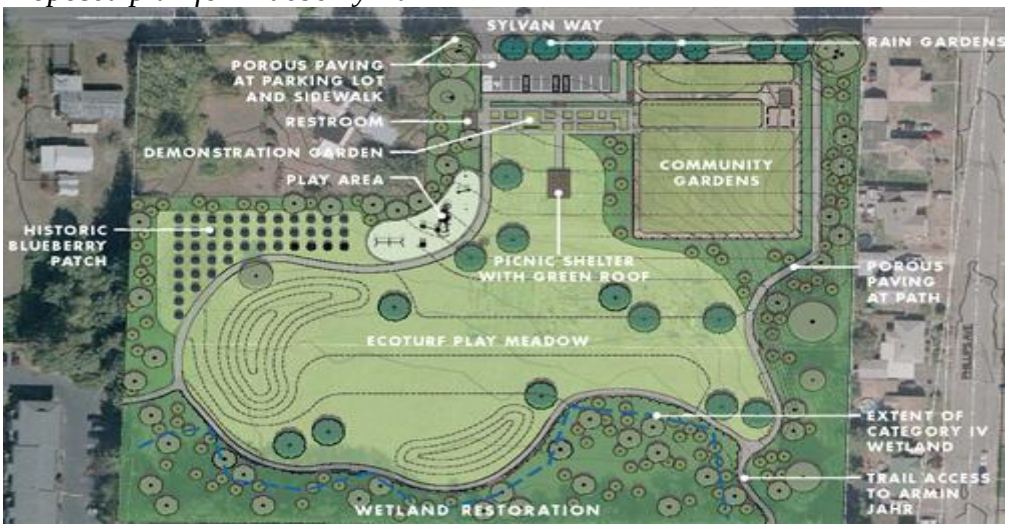
The city of Bremerton used low impact development (LID) practices in the development of Blueberry Park. Blueberry Park serves as a central gathering place for the community, and has an important role in conveying environmental values to both neighboring elementary school students and the surrounding neighborhood.

In 1979, the city of Bremerton purchased a seven-acre parcel (known as White's Blueberry Farm) along Sylvan Way for the purpose of developing a neighborhood park. The farm was a commercial enterprise with over 2,400 blueberry plants. A small number of the original blueberry plants remain and can be found in the northwest corner of today's Blueberry Park. The community uses a portion of the park for year-round/seasonal community garden spaces.

The project implemented the following LID techniques:

- 20,000 square feet of pervious pavement and a geotextile plastic for the sidewalk and trail.
- 0.25 acre of pervious pavement for the parking lot.
- Two rain gardens totaling 5,450 square feet to treat adjacent street runoff.
- A 20 x 30 foot "green roof" for the picnic shelter. The roof is partially or completely covered with vegetation and soil planted over a waterproof membrane.

Proposed plan for Blueberry Park



DEPARTMENT OF ECOLOGY
State of Washington

Lessons learned/challenges

The project was delayed by one year to expand the public process of informing the community and nearby Armin-Jahr Elementary School students about the LID principles and park changes. Due to strong public input from the P-Patch gardeners to not disrupt the summer harvest, the city delayed heavy construction until early October 2008, when harvest season ended.

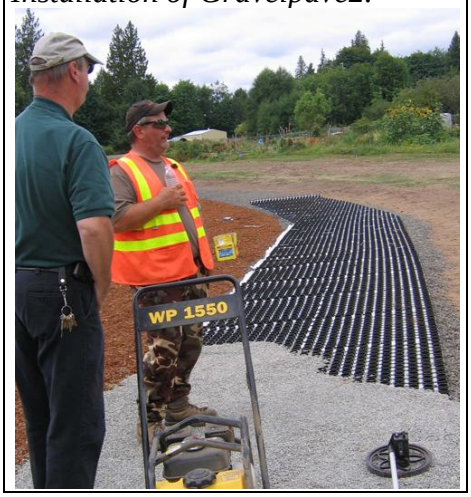
The project was originally designed to use pervious pavement for the sidewalk and trails. Through the critical areas study, workers identified a Category 4 wetland at the lowest point of the park. Pervious pavement would not work for the trails because that LID technology typically sits at grade level. This may cause standing water due to the wetland soil conditions. The city researched other technologies that raised the path, and Gravelpave2 seemed to provide the best solution. It is a recycled plastic grid system with geotextile fabric developed by Invisible Structures. When backfilled with aggregate, this path surface provides high load-bearing capacity while maintaining water infiltration.

Projected environmental benefits

The city of Bremerton plans to achieve the following water quality project outcomes:

1. Reduce stormwater runoff by 70 percent through the use of a pervious trail system, parking areas, and sidewalks as compared to impervious products.
2. Reduce stormwater runoff by 20-30 percent by using compost-amended soils and vegetation.
3. Reduce the amount of stormwater entering combined sewer overflows by 30 percent.
4. Reproduce open-space runoff characteristics with a "green roof" system for rainfall events up to 3.5 inches.
5. Educate 250 builders; four legislators; hundreds of industry professionals; more than 200 city staff; 40 local government officials; at least 1;400 parents; 700 fourth-grade students and teachers; and hundreds of community members about LID techniques.

Installation of Gravelpave2.



Armin-Jahr Elementary School volunteers planted vegetation.

Public education

The city conducted a very thorough public outreach process. The local community was engaged early on in the project to get community approval.

The city conducted the following educational activities:

- Installed two interpretative signs along a pedestrian pathway.
- Created a Web page, http://www.ci.bremerton.wa.us/articles.php?id=1363
- Held four community meetings.
- Conducted three tours.
- Worked with Armin-Jahr Elementary School to develop environmental curriculum centered on LID.

Cost information

The total project will be $400,000, which includes the $195,170 grant award. The city also received a grant from the Federal Land and Conservation Fund to fund the work of the non-LID items such as the play area and restroom.

ITEM	BUDGET	ECOLOGY GRANT AWARD
Project Management	$20,200	$20,200
Public Outreach & Education	$8,700	$8,700
Monitoring	$15,270	$15,270
Architectural & Engineering	$25,000	25,000
Permeable Pavement LID Implementation	$71,222	$71,222
Vegetative Bioretention LID Implementation	$54,778	$54,778
Non-LID items	$204,830	
TOTAL	**$400,000**	**$195,170**

Partners

Ecology does not endorse, but does acknowledge the partners who helped the city of Bremerton with this project:

- AmeriCorps Volunteers (assisted with planting)
- Armin-Jahr Elementary School (assisted with wetland planting, path connections)
- Bremerton Urban Garden Society (assisted with planning and management of demonstration garden)
- Cub Scout Pack 4549 (build birdhouses, assisted with planting)
- Kitsap Community Resources (assisted with path construction)
- Kitsap Homebuilders Association (provided LID educational materials)
- Leadership Kitsap (developed children garden program to bring food/garden curriculum to the classroom)
- Skill Center USA (assisted with restroom construction)
- Washington Department of Transportation (donated native plants for wetland restoration)
- Washington State University Master Gardeners (assisted with planning and management of demonstration and P-Patch gardens)
- Invisible Structures

For more information

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