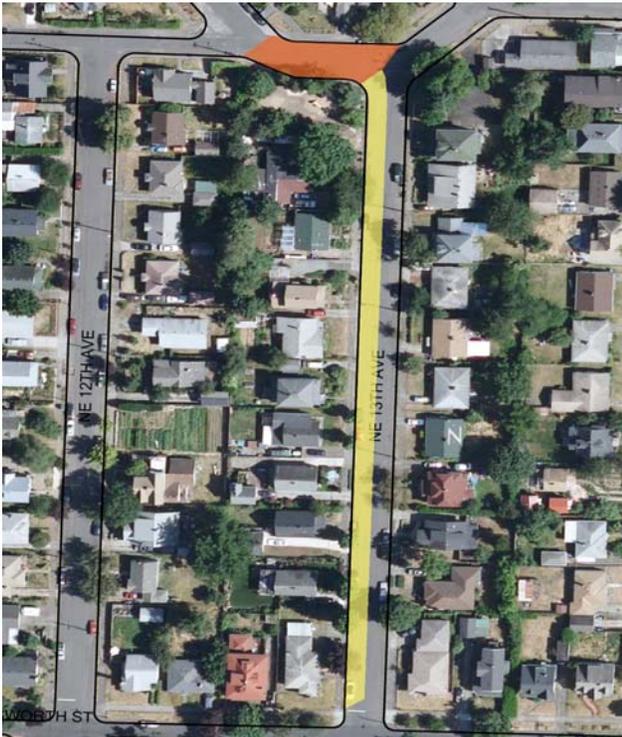


Holman Pocket Park and Green Street Bike Boulevard Project

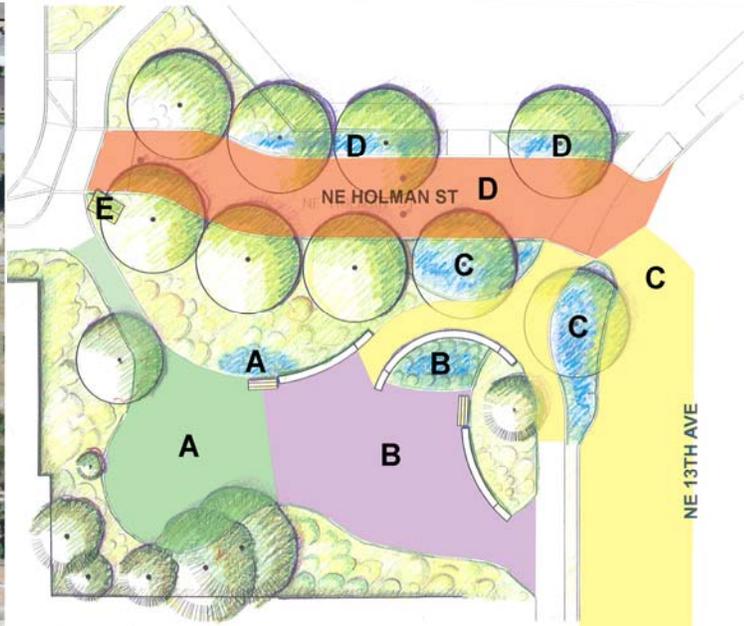
NE Holman St. at NE 13th Ave.

Project Summary	
Project Type	Neighborhood Bikeway with green streets and stormwater retrofit in adjacent public park
Technology	Infiltration planter, infiltration basin, landscape filter strip, green streets, ecoroof, street trees
Benefits	<ul style="list-style-type: none"> -The 6 facilities (excluding the ecoroof), totaling 1,113 ft², manage runoff from 16,100 ft² of concrete and asphalt. -Most of the flow captured infiltrates, treating for water quality before going to a sump. -The re-design decreased the impervious surface in the area. -Neighborhood destination, meeting space and public education
Notable Features	<ul style="list-style-type: none"> -Seat walls were added to allow for better community gathering opportunities. -The underlying soils have an infiltration rate of 18" per hour. -Multiple types of stormwater management facilities -Holman Street adjacent to the park was closed to car traffic, allowing for the narrowing of travel lanes, creating more pervious landscape area.
Cost	The cost of design and construction was \$368,813 with \$62,953 paid for by EPA funds.
Construction	The Bureau of Maintenance constructed the project from August-October 2011.
Ownership	The Parks Bureau owns and maintains the park. They will also maintain the expanded landscape area adjacent to the park. BES will maintain the green streets.

Collaboration: This project was made possible by a special collaboration between the U.S. Environmental Protection Agency, Portland Bureau of Environmental Services, Portland Parks & Recreation, Portland Bureau of Transportation, and Portland Water Bureau. The work in the ROW was designed and constructed by PBOT and BES. BES and Parks designed the park improvements.



Holman ROW stormwater facility catchment areas extend from NE Holman St. in the north to NE Ainsworth St. in the south. The yellow catchment area is managed by green street facilities in the ROW adjacent to the park, while the orange catchment area is managed by landscape facilities in the ROW to the north.



Plan shows both Holman Park and Holman ROW stormwater management facilities. There are 4 major catchment areas, shown in different colors. Each catchment is labeled A-D to correspond with the facility type into which it flows. The facility types are as follows: A) infiltration basin, B) infiltration planter, C) green streets, D) landscape filter strips, E) ecoroof. The ecoroof accepts rain that falls on it.

Project Inception: The project meets a number of complementary objectives. PBOT proposed traffic diversion at this block to enhance the Holman Bike Boulevard. The neighborhood had a longstanding interest in making park improvements. Moving the curb line 14 feet north created an opportunity to expand the landscape area and decrease the paved area. Environmental Services had an interest in decreasing unnecessary impervious surfaces and enhancing opportunities for stormwater management. The park improvements were funded through the EPA Innovative Wet Weather Program (IWWP) administered by the Bureau of Environmental Services.

Community Involvement: Woodlawn area neighbors participated in the design process expressing significant ownership in the project. The existing park conditions included an outdated play structure, two benches in disrepair and one picnic table for seating. The community's desire for the removal of the play structure and addition of more seating areas and a kiosk were incorporated into the design. The closure of Holman Street emerged as a suggestion from the community involvement process as an enhancement for both bike and pedestrian safety.

Catchment Area: The stormwater catchment areas draining to the park and street facilities total 16,100 ft².



The infiltration basin accepts runoff from the plaza inside Holman Park. It has a 3:1 slope on all sides and a ponding depth of 6". In an overflow situation, water spills into the landscape area north of the facility.



The infiltration planter also accepts runoff from the plaza inside Holman Park. It has a flat bottom and a ponding depth of 6". The site has extremely high infiltration rates. An emergency overflow pipe was installed, but has been left capped.



Two green streets in the ROW adjacent to the park accept runoff from the street. They are flat bottom infiltration facilities with a ponding depth of 6". Water enters the first facility (left), ponds to 6", then enters the second facility (right) by way of a trench grate. An emergency overflow beehive inlet in the second facility directs water to a sedimentation manhole and sump.



Two filter strips were constructed in the ROW north of the park. They are flat bottom infiltration facilities with a 3" ponding depth. Water enters from the street over the flush curb. The emergency overflow runs back into the street and to a catch basin east of the site where the water previously drained.

Landscaping: The largely native plant palette includes Kelsey dogwood, tufted hair grass, slough s edge, camas and lilyturf. Neighborhood volunteers helped plant the surrounding landscape outside the stormwater facilities as part of the overall site construction.

Budget:

Bureau of Maintenance-construction: \$239,300

Parks Horticulture Services-construction (irrigation, grading, stormwater plantings): \$38,659

Parks-project management and review: \$15,586

Parks-plant material: \$2,200

Water Bureau-drinking fountain design and installation: \$4,800

Bureau of Environmental Services-design and project management: \$66,505

Permit Fees: \$1,763

Lessons Learned:

Although bollards were placed in the bike route in the street to prevent vehicular through-traffic, cars continued to drive around the bollards, damaging the adjacent landscape. Temporary posts with reflectors were installed to address the problem until the landscape plants fill in enough to deter vehicles.

The landscape filter strips were filled with too much soil in anticipation of settling. The soil did not settle, and the ponding volume was greatly reduced. To regain volume, some soil was removed and a layer of river rock was added to the finished surface of the soil in certain areas.



NE corner of the park before construction



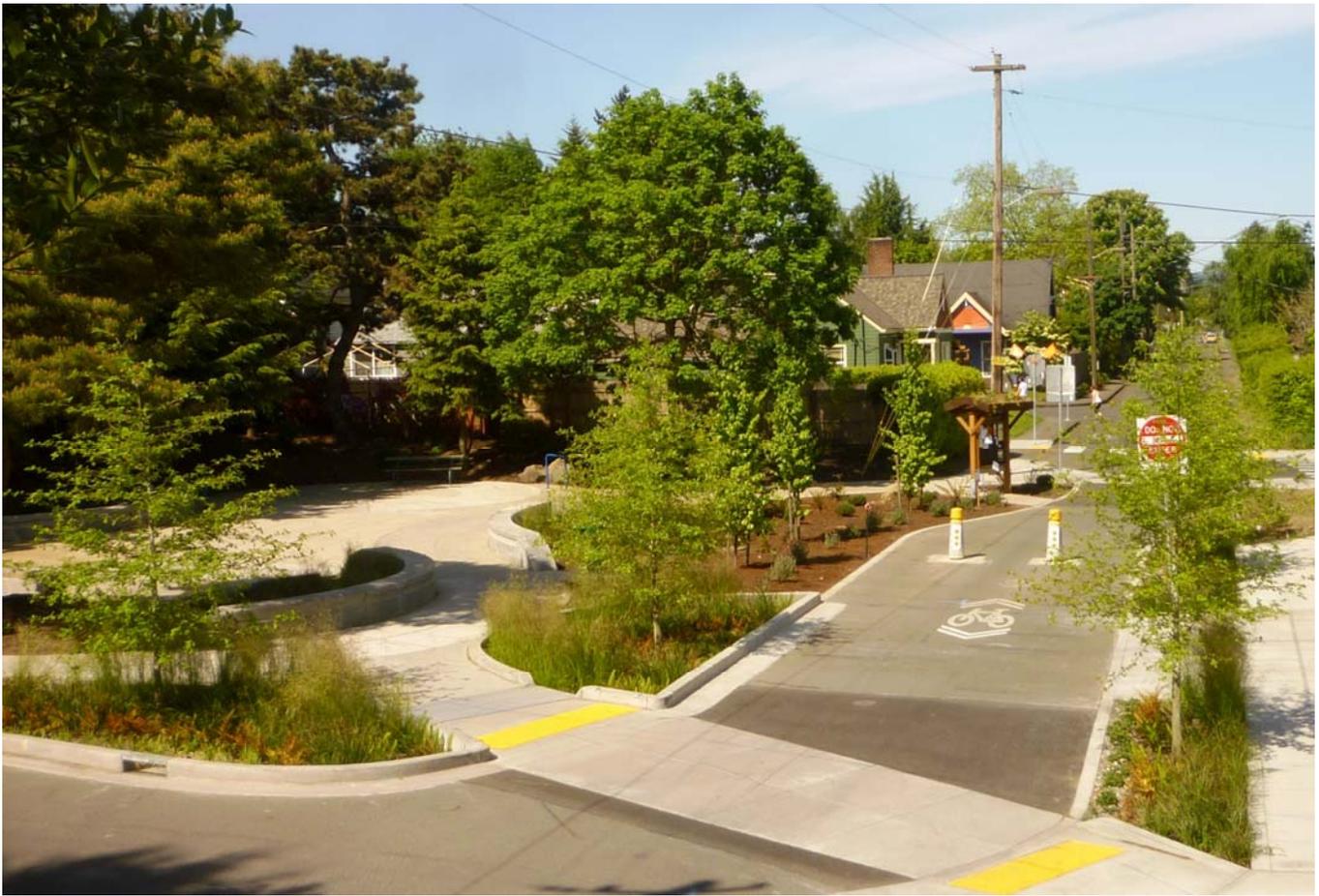
NE corner of the park after construction



Looking east before construction



Looking east after construction



Overview of park and ROW work looking west after construction



Curvilinear seating walls were added



A kiosk for neighborhood news was added. Community members added an ecoroof to the structure in May 2012.