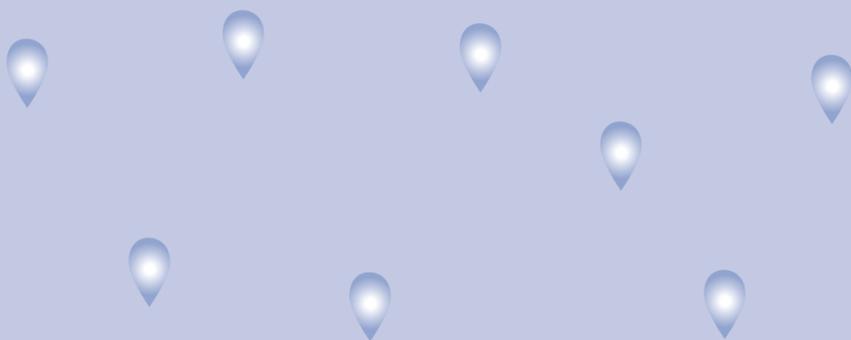


# Stormwater Cycling



ENVIRONMENTAL SERVICES  
CITY OF PORTLAND  
Working for clean rivers  
Dan Saltzman, Commissioner  
Dan Dean Marriot, Director



A pedal  
powered tour  
of some of the  
innovative ways  
Portlanders  
handle  
stormwater

## Sustainable Stormwater Management

Rainwater runs over pavement and other surfaces, picking up pollutants. Sustainable stormwater management mimics natural conditions by allowing rain to be filtered by vegetation and soak into the ground.

### Pollutants In Stormwater

**Particles** - From vehicle exhaust, unburned hydrocarbons, soot, dirt, leaves, etc

**Vehicle Wear and Tear** - Copper from brake pads, zinc, cadmium, rubber from tires, lead weights and metal bits

**Vehicle Spills, Leaks and Illegal Dumping** - Liquids with dissolved metal pollutants, motor oil, antifreeze and other petroleum products, solvents and dry materials that can release pollutants like phosphorus and nitrogen

**Animal Waste** - Fecal bacteria

**Garden Products** - Chemicals from fertilizers, herbicides and insecticides

### Resources

**Stormwater Cycling Online** - Print a map, and site information. [www.portlandonline.com/bes/stormwatertours](http://www.portlandonline.com/bes/stormwatertours)

**Bureau of Environmental Services** - 503-823-7740, Stormwater Management Manual for guidance on sustainable stormwater design. [www.portlandonline.com/bes/2008swmm](http://www.portlandonline.com/bes/2008swmm)

**Community Watershed Stewardship Grants** - 503-823-7917, Grants provide up to \$10,000 to citizens and organizations to encourage watershed protection and enhancement at the local level. [www.portlandonline.com/bes/stewardship](http://www.portlandonline.com/bes/stewardship)

**Bureau of Planning and Sustainability** - 503-823-7222, [www.sustainableportland.org](http://www.sustainableportland.org)

**Downspout Disconnection Program** - 503-823-5858 [www.portlandonline.com/downpoutdisconnect](http://www.portlandonline.com/downpoutdisconnect)

**City Code guide to rainwater harvesting** [www.portlandonline.com/bes/rainharvesting](http://www.portlandonline.com/bes/rainharvesting)

## Stormwater Cycling Tour

Route distance: ~12 miles

Time needed to bike the route: 1 1/2 - 2 hours

Eastbank Esplanade

**1. Willamette River** - All of the techniques you see on the tour help protect the river. Stop for a few minutes at interpretive signs along the bike path to read about important issues affecting river health.

**2. Parking lot swale** - X Parking lot between SE Madison and Salmon (east of the esplanade) - Parking lot drains to the swale.

**3. Combined Sewer Overflow (CSO) Outfall Pipes** - Along the bank - Sewage and stormwater from Portland's combined sewer system overflow to the Willamette River through these pipes during rainstorms. All the projects seen on this tour help reduce CSOs. Portland will complete construction to control most CSOs in 2011.

**4. Convention Center** - ▲ X NE 1st Ave. and Lloyd Blvd. - The rain garden on the southwest side of the building treats and infiltrates runoff from 5.5 acres of roof. Treated overflow from the garden flows to the Willamette River.

**5. Liberty Centre Parking Garage** - ▲ X NE Oregon between 6th and 7th - Stormwater planters along 6th and 7th collect and filter runoff from the top level of the garage.

**6. Metro Regional Headquarters Ecoroof** - ■ 600 NE Grand (accessible during business hours) - Uses an innovative conveyance system of gravel channels to collect overflow and direct it to the roof drain. Keep your bike in the parking garage off Irving and check in at the front desk.

**7. Buckman Heights Apartments** - X ■ 430 NE 16th - Courtyard rain garden infiltrates runoff from the building's downspouts.

**8. Buckman Terrace Apartments** - ■ X NE 16th and Sandy - See stormwater planters along NE 16th that are raised or level with the sidewalk. The sidewalk curves to protect mature trees. See an ecoroof above the front entryway, permeable pavers on the ground, and a swale along the building's west side.

**9. Sandy and 22nd Rain Garden** - X ■ One of five rain gardens along Sandy Blvd. to NE 42nd that collect and treat street runoff.

**10. Street Trees on Couch** - Trees absorb millions of gallons of stormwater every year. A large Carolina poplar with Heritage Tree status is on NE Couch St. between 39th and 41st.

**11. Mt. Tabor Middle School** - ▲ X ■ 5800 SE Ash St. - Disconnected downspouts direct stormwater into planters on the north and west edges of the building; the rain garden on the school's south side collects runoff from the roof and asphalt play area; parking lot swales manage surface runoff, and a curb extension on SE 57th captures street runoff. Visit during non-school hours only.

**12. Glencoe Elementary School** - X ■ 825 SE 51st St. - Runoff flows into the parking lot swale on the east side of the school; any overflow is directed to the rain garden across the street. Here, additional runoff from Morrison Street, 51st Ave, and the school driveway is captured and infiltrated. Visit during non-school hours only.

**13. SE Belmont and 55th** - X ■ This rain garden manages runoff from 8,000 square feet of pavement and also improves pedestrian safety.

**14. Sunnyside Environmental School** - ■ ▲ ■ 3421 SE Salmon St. - Look for naturescaping and a cob structure with an ecoroof on the school's south side.

**15. Hawthorne Hostel** - ■ ▲ X ■ 3031 SE Hawthorne Blvd. - Roof runoff is dispersed by artful fish, filtered by planters, and stored in cisterns. The water is used to flush toilets and cistern overflow is filtered by the living walls and bioswales. The ecoroof is over the porch.

**16. Butler Promotions** - X ■ 2123 SE Division St. - Stormwater from one downspout flows over an artistic fish sculpture, creating the illusion of salmon swimming up the falls. A planter manages all stormwater on site.

**17. Local 49** - X ■ SE 21st Ave. and Clinton - Roof runoff drains into a waterfall, flows through a planted courtyard and into a drywell.

**18. People's Food Co-op** - ■ X ■ 3029 SE 21st Ave. - Look for two ecoroofs, downspouts that drain to an underground cistern, and green street facilities along Tibbetts and SE 21st.

**19. New Seasons Market** - X ■ SE 20th Ave. and Clinton St. - Interconnected swales collect runoff from the roof, outdoor plaza and parking lot. One downspout showers over a sculpture and another is directed to a stormwater planter. Green streets along Division collect runoff from the road.

**20. St. Philip Neri** - X ■ SE 16th Ave. and Division - This rain garden captures runoff from the parking lot via curb cuts and conveyance pipes.

**21. 12th and Clay Green Street Project** - X ■ Landscaped curb extensions manage 74,000 gallons of stormwater annually while improving pedestrian and bike safety. This site marks the entrance to the Clay Green Street project, which provides a safer, greener route to the river.

**22. Multnomah County Building** - ■ 501 SE Hawthorne Blvd., 5th floor (accessible during business hours) - An 11,893 square foot ecoroof is covered with six inches of soil planted with grasses, wildflowers and sedum. Park your bike at the south entrance and check in at the front desk.

**23. PCC Annex** - ▲ X 1626 SE Water Ave. - These landscaped swales allow parking lot runoff to sheet-flow into them.

**24. OMSI** - ▲ X 1945 SE Water Ave. - Landscaped swales in both parking lots have curb cuts that allow stormwater to flow in.

**25. RiverEast** - ▲ X ■ 1515 SE Water Ave. - Planters and swales manage runoff from the roof, parking lot, public plaza, and adjacent streets. Construction waste from the building remodel was recycled for the sculptures.

### Project type

- ecoroof
- ▲ naturescaping
- X planters, swales, rain gardens
- Green Streets
- other technologies

