

Porous Pavement for Cleaner Rivers

By Greg Hostetler

In cities, the hard pavement of sidewalks, driveways and roads does not allow rain water to naturally soak into the ground. Instead, the water rushes into storm drains and eventually to our rivers, where it contributes to pollution and causes stream banks to erode.

In recent years, engineers have sought to answer the question: How can we create surfaces that can hold the weight of people and vehicles while also allowing water to infiltrate naturally into the soil rather than running off into our rivers?

Here are some successfully tested options:

- **Soft porous surfacing:**
Organic materials like bark and wood chips or recycled materials like granulated rubber tires. Used for paths, playgrounds, and low-traffic parking areas.
- **Porous turf:**
Grass that is grown in a thick layer of sand or structural soil (soil designed to bear the load of vehicles). Used for pedestrian and parking areas.
- **Plastic geocells:**
A 1-2 inch thick open plastic lattice filled with aggregate (large pieces of gravel) or turf.
- **Open-joined paving block:**
Concrete or clay blocks designed with open spaces that can be filled with aggregate or soil. Offers good traction and can hold up to snowplows and freeze/thaw cycles. Commonly used for roads and parking lots.
- **Open-celled paving grids:**
Concrete or brick slabs with large spaces within each piece. Gaps are commonly filled with aggregate or vegetation. Larger gaps allow more permeability, but the smaller area for traction makes this option more suitable for parking areas than roads.
- **Porous aggregate:**
Gravel with small particles removed. Ranks high in permeability and affordability. Can be left loose like in gravel driveways or fixed in place with binders. Used for parking and pedestrian areas.
- **Porous concrete:**
Concrete with the small particles removed. Highly

permeable, with good durability and traction. Used for roads since the 1970s in Florida and on the west coast, but concerns over its freeze/thaw stability have prevented use in cold climates.

- **Porous asphalt:**

Asphalt with the small particles removed. Highly permeable and suitable for roads and airport runways. Installations in Pennsylvania and New York show that it is stable to freezing and thawing.

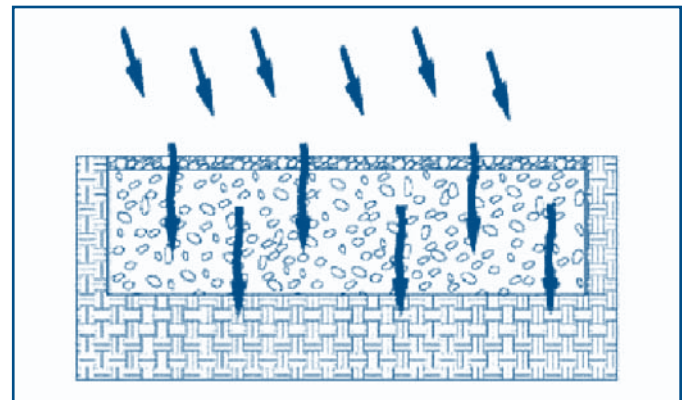
Installation issues and care

Even if we replaced current pavement with a porous alternative, the soil underneath would still be compacted so that it could bear a load. To address this, a thick layer of aggregate is used underneath porous pavements to allow water to infiltrate to the soil below. Where there are street trees, structural soil (aggregate mixed with a small amount of soil) can be used to allow for tree growth. Porous pavement can sometimes clog with sediment, debris or moss, reducing permeability over the years. In that case, vacuuming and pressure washing can restore permeability.

Overall, demonstrations have shown that, with proper care, porous pavement can be an important tool for helping to lessen pollution and protect our urban rivers

Further reading:

Porous Pavements by Bruce Ferguson
Using Porous Asphalt and CU-Structural Soil found at <http://www.hort.cornell.edu/uhi/outreach/>



With porous asphalt and structural soil, water can permeate the pavement and the soil below. Urban Horticulture Institute, Cornell University.

FLOW Calendar of Events, Meetings, and Volunteer Opportunities: Fall 2008

All times and dates are subject to change. Please confirm time, date, and location by calling our office at 614-267-3386 or on our website at www.olentangywatershed.org

AUGUST

Water Trail Committee Meeting

August 26, 4:30 PM, at the Beechwold Panera at 4519 N. High St., Columbus

We will be creating a work plan for improvements to water trail portage and access sites. New volunteers are especially welcome.

Orientation for Science Committee Volunteers

September 4, 6 PM, at 3528 N. High St, Suite F, Columbus

Can you commit to 5-10 volunteer hours in September? The FLOW Science Committee needs help to compile research data on Olentangy tributaries. Volunteers will use existing sources of data to help create a 'Master Table' of all the tributaries in our watershed. We will use this information to prioritize the next 3-5 years' monitoring, restoration and preservation activities. Join us at this orientation to learn how you can help. Some background in science is useful, but not necessary.

Outreach Committee Meeting

September 9, 8 AM, at the Beechwold Panera, 4519 N. High St., Columbus

We'll be creating a calendar and planning for educational events, volunteer activities and recreational opportunities for the coming year. New volunteers are welcome.

FLOW Picnic and Visioning Session

September 9, 5:30 - 8:30 PM, at Highbanks Metropark

Join FLOW's board and staff at for an evening of food and conversation. We'll start off with a picnic at Highbanks' Mansion Shelter House followed by structured brainstorming and discussion to help create a vision for the Olentangy and for FLOW as an organization over the next few years. Bring your own picnic food. Beverages and dessert will be provided. Please call 614-267-3386 to let us know you're coming!

SEPTEMBER

Painting the Olentangy

October 19, 1-4 PM, call for meeting location

Beginners and experienced students alike are welcome to participate in this workshop led by watercolorist George Acock. Fall foliage along the Olentangy River will serve as our inspiration and subject matter. We will also learn about the history and current status of the river in the OSU/Harrison West area. The event is free, and you may bring your own supplies or purchase a supply kit at the workshop. Participation is limited. Call 614-267-3386 to reserve a space.

OCT

Winter Watershed Hike

December 6, 1-3 PM, at Camp Lazarus in Delaware County

A Preservation Parks Naturalist will lead us on a winter exploration of our watershed. Please call 614-267-3386 to let us know how many to expect.

DEC



Above: *My Line is Busy.* Photo by George Anderson.

Understand

FLOW

Published By

FLOW Board of Directors
 Laura Shinn, President
 Rich Wissler, Vice President
 David White, Treasurer
 Amy Dutt, Secretary
 Erin Miller
 Joe Tribble
 Ted Miller
 Terry Foster
 Laura Fay

Newsletter Editors

Heather Dean, Watershed Coordinator

Newsletter Layout

Ellie Nowels, Centipede Graphics

Contact FLOW

3528 N. High St., Suite F
 Columbus, OH 43214
 (614) 267-3386
 Flow2004@sbcglobal.net
 www.olentangywatershed.org

Friends of the Lower Olentangy Watershed is a non-profit organization dedicated to keeping the Olentangy River clean and safe for all to enjoy through public education, volunteer activities, and coordination with local decision makers. FLOW is registered with the IRS as a tax-exempt, nonprofit charitable organization under Section 501(c)3 of the Internal Revenue Code. Donations are tax-deductible.

Give to FLOW through regular payroll deductions under Earth Share of Ohio's workplace giving campaign available at numerous private companies, state and municipal government agencies, and Combined Federal Campaigns.

If your employer does not participate in Earth Share, you can give to FLOW through alternate workplace giving campaigns – just ask your employer for a donor-option pledge form! Your employer may even provide a match – which doubles your contribution amount!

For more information about workplace giving, contact the FLOW office.

Friends of the Lower Olentangy Watershed:

A member of **Earth Share OF OHIO**



YES! I want to support FLOW for cleaner water!

Choose a membership:

- Individual \$25
- Family \$40
- Supporting \$50**
- River Steward \$100
- Business Basic \$175
- Bronze \$200
- Silver \$300
- Gold \$500
- Sustaining \$1,000

Please check here if you would like more information about volunteering with FLOW.

Return this form to:

FLOW
 3528 N. High St., Suite F
 Columbus, OH 43214

Or give securely online at:
www.olentangywatershed.org

Fill in the following:

- New Member
- Renewal
- Gift
- Name(s):
- Organization/Business:
- Address:
- City:
- State:
- Zip:
- Phone:
- Email:

By providing your email, you will save resources and stay up-to-date on news and events.

FLOW

Explore. Discover. Understand.

3528 N. High St., Suite F
 Columbus, OH 43214