The Minnesota Landscape Arboretum recently completed a porous pavement demonstration site funded by the Minnehaha Creek Watershed District (MCWD) and the Metropolitan Council. The project goals include educating cities, developers, builders and the general public about how to increase the amount of water infiltration into the ground from driveways and parking lots and to demonstrate alternatives to conventional paving materials such as asphalt and concrete.

Watershed 1: 14.2% plants, 60% Eco-stones, 18.4% concrete, 7.4% pool
Watershed 2: 14.2% plants, 60% bituminous with grades, 18.4% concrete, 7.4% pool
Watershed 3: 32.3% plants, 41.9% bituminous, 18.4% concrete, 7.4% pool
Watershed 4: 14.2% plants, 60% bituminous, 18.4% concrete, 7.4% pool
Watershed 5: 0% plants, 74.2% bituminous, 18.4% concrete, 7.4% pool

After rain events, stormwater will run down the slopes, travel across the five lots collecting oil, gasoline and other pollutants and finally empty into the pools. The Arboretum staff will measure and record the volume difference in each pool and correlate it to a specific rain event.

The planted or grass areas in watersheds one through four are designed to hold up to 1.75 inches of water, with any excess directed to a holding pond where it is treated and released into wetlands. Sandy soils were utilized for the plants, and a coconut-fiber fabric was placed over the topsoil to eliminate weeds and protect the small seeds. The fabric netting will biodegrade after three years when the plants will be strong enough to thrive on their own.

The public is invited to a dedication of the Minnesota Landscape Arboretum Porous Pavement Demonstration Project on Thursday, October 2, at 3:00 p.m. A brief summary will be provided of the monitoring that has been conducted to date.
Spring 2003 Cynthia Krieg Memorial Stewardship Grant Recipients

The MCWD has approximately $45,000 remaining from the 2003 fund. Rather than carry these funds into 2004, they are being released in a special fall cycle. The public is invited to submit a pre-application by October 10 and a full application by October 31. Complete information and downloadable applications are available on the MCWD web site at www.minnehahacreek.org.

Following are three projects funded this past spring:

⇒ El Colegio Charter School, Minneapolis received a grant to convert 10,000 square feet of asphalt to pervious surface with two rain gardens, including a 2,500-square-foot wet prairie. The school was required to obtain an MCWD permit and provide a long-term maintenance agreement. The site, developed by Barr Engineering, will be open to the public. Amount funded: $8,000

⇒ Minnesota Center for Environmental Advocacy received a grant to install three rain gardens on 1.1 acres of property owned by the Lutheran Church of the Reformation in St. Louis Park. The gardens, which were developed with the assistance of Applied Ecological Services, Inc. will infiltrate water runoff from roofs, parking lots and walks. An MCWD permit and long-term maintenance agreement were required. Amount funded: $7,524

⇒ Kenwood Elementary in Minneapolis is expanding the existing fifth grade Mississippi River Project to the third grade. Amount funded: $6,885.

MCWD Adds Staff

John Erdelen has been named the MCWD’s Watershed Modeler/District Technician. This new position includes the operation and maintenance of the MCWD’s hydrologic, hydraulic and pollutant model (H & H) and overall management of the GIS and hydrologic monitoring program.

Erdelen graduated from the University of Minnesota College of Natural Resources with a bachelor’s degree in Hydrology. He recently served as a Hydrologist and IT Specialist with the Minnesota Department of Transportation and has experience in ArcView and CADD, including SP-SWMM, HydroCAD and Geopak Drainage and Web Design.

“John brings comprehensive and knowledge in pertinent areas to help us model the H & H study,” said Eric Evenson, MCWD District Administrator.

Jesse Carlson has been hired as the District’s new Compliance Officer to replace Renae Clark. Clark has assumed Permitting/District Technician post vacated by Mike Wyatt, who now serves as the District Planner. Carlson will monitor and enforce compliance under the MCWD’s permitting authority and the Wetlands Conservation Act.

He previously worked for the District as an Intern in the permitting department and recently received a bachelor’s degree from the University of Minnesota in Natural Resources Environmental Studies with an emphasis in hydrology.

MCWD is Charting its Future Course Through Revision of its Comprehensive Water Resources Management Plan and We Invite Your Input

Revisions to the Water Resource Management Plan dictates the major policy and strategic guidelines which will direct the MCWD for the next 10-year period. Recently, the Board of Managers reviewed and revised its major goals from the 1997 Plan. This becomes the basis for the 3rd Generation Plan. The new plan will focus on a subwatershed management approach to achieving larger watershed goals with a management plan created for each of the 12 subwatersheds that include: 10-year capital improvements program, proposed rules revisions, subwatershed target runoff rates and nutrient loads to surface waters, measurable subwatershed objectives, individual subwatershed management strategies, available updates assessment information (functional assessment of wetlands, hydraulics and hydrology, stream classification, etc.), educational audit information/communications strategic plan.

Along with a high degree of citizen input, we invite District cities to submit suggestions or capital improvement ideas as soon as possible based on our new focus. Cities will be required under law to update their local plans within two years of the Board adoption of the new plan. This means that cities who currently perform water resources permitting will be obligated to update ordinances and standards to continue administering MCWD regulatory requirements.
Lake Minnetonka Shoreline Resident Protects Property from Soil Erosion and Runoff

Kathy and Carl Newman’s shoreline property on Lake Minnetonka provides a good case study on how to use creative, bioengineering techniques to eliminate soil erosion and runoff. Prior to the rent improvements, their 360-foot shoreline was rife with erosion and buckthorn problems. “We were experiencing major erosion behind an existing retaining wall located along the shoreline,” said Kathy Newman. “We also knew we had well-established buckthorn growth that created too much shade for other plants to grow. The Newman’s considered riprap, but decided it was not what they wanted aesthetically.

Newman’s contracted with Applied Ecological Services (AES), which does shoreline bioengineering and restoration. In 2001, AES removed buckthorn and other invasive plants and installed a vegetated rock gabion, coir logs, wattles and live stakes along the entire shoreline. It set up a landscaping plan using all native plants, pulled permits from MCWD and DNR, maintained the project after completion and, when necessary, added grass seed, straw or native plant seeding along the shoreline until stabilized.

**TYPES OF WAVE BREAKS**

- Plywood
- Double-triple-layered snow fence or chicken wire fencing staked
- Earth anchors
- Coir Log (used by Newman’s)

Two years later, the shoreline is lovely and erosion has stopped. The site is also an inviting wildlife habitat, teeming with turtles, blue herons, Kingfisher and ducks. Most importantly there are less geese! “The natural buffer of native flowers at the shore has made it dangerous for geese to cross because they can’t see if there are predators on the other side so they stay away. But the plantings don’t grow too tall to obstruct our view of the lake,” said Kathy.

The Newman’s also installed a visually pleasing porous pavement driveway for water infiltration driving pollutants such as motor oil, grass clippings, dirt and sand into the ground not the lake.
Fulton Neighborhood Uses Many Ways to Prevent Water Runoff

With funding assistance from the MCWD’s Cynthia Krieg Memorial Stewardship Fund and the Neighborhood Revitalization Program (NRP), the Fulton Neighborhood in south Minneapolis has been hard at work preventing polluted runoff from entering storm drains. Eight homes in the neighborhood have installed rain gardens, rain barrels, gutter downspout redirection and infiltration systems.

Rain garden absorbs rooftop runoff from garage through underground piping

Rooftop runoff drains to underground piping that travels under porous pavers to infiltration system with traditional plants above ground

Downspout connection from garage takes rooftop water and pipes it underground directly into the rain garden shown below

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