

August 2007

OUT OF SIGHT, OUT OF MIND

The Problem of Stormwater Pollution

Water and our natural resources have defined Iowa since its earliest days, as noted in the state's 1857 Constitution. But those "blessings hitherto enjoyed" by our forefathers face vastly different pressures 150 years later. Iowa's population in the 20th Century made a huge shift from farm to city. During this shift, growing cities and their abundance of concrete and asphalt have replaced woodlands, wetlands and fertile Iowa farm ground.

Historically most rainfall in Iowa was absorbed by the surrounding landscape, only becoming runoff during large storms after the soil became saturated. Later, native ecosystems were replaced with streets, rooftops, driveways, sidewalks, parking lots and suburban lawns on compacted sub-soil. These landscape changes prevent the infiltration of rainwater and shorten the time it takes for runoff to move across the landscape into receiving waters such as creeks, streams, rivers, lakes and wetlands. The longer that journey, the better the filtration of pollutants found in stormwater runoff. Urbanization has increased the variety and amount of pollutants transported to receiving waters via the storm drain system.

Managing Iowa Stormwater for Quantity and Quality

*By Stacie Johnson, Pat Sauer,
Teresa Galluzzo and David Osterberg*

*See the report at
www.iowapolicyproject.org*

Hot stormwater runoff, or thermal pollution, is one of many such pollutants. Other typical urban pollutants are sediment from unprotected soil during construction; oil, grease, toxic chemicals and heavy metals from automobiles and manufacturing facilities; nutrients and pesticides from turf management and gardening; viruses and bacteria from failing septic systems; and road salt and sand. Sediments and trash are the largest volume of pollution sent to receiving waters from urban areas. In older parts of many cities, polluted runoff is often released directly into the closest water body without any treatment. A myriad of problems are caused by water pollution, including contaminated drinking water, fish kills and adverse effects on outdoor activities such as fishing, swimming or just wading in local creeks.

Quantity vs. Quality

Traditionally, storm sewers in urban areas were designed to provide efficient drainage for the increased volume of stormwater runoff due to land development. This "out of sight, out of mind" philosophy was to drain excess water away from developed sites as fast as possible. With a few exceptions, a transition from efficient drainage to a controlled release of urban runoff through stormwater detention was made in Iowa during the 1990s. This change occurred due to problems with urban flooding, which is a quantity issue, rather than a quality issue.

With detention, stormwater runoff is no longer conveyed directly to receiving waters. Instead, it is routed to a basin designed to control runoff release at a rate that mimics that of its pre-developed state, for large storms (such as five-year storms or storms with 4-inch rainfall in 24 hours). Two downsides come with this approach:

- First, some argue that detention actually exacerbates flooding by only addressing the rate at which runoff is released. Since rainfall does not infiltrate, it is discharged more slowly than when it was flushed away, but not as slowly as if the rain had fallen on undeveloped green fields.
- Second, detention does nothing for stormwater quality as these basins are typically designed for large storms and end up passing the "first flush" events quickly into receiving streams.

Stormwater management has matured in Iowa, and attention to water quality has grown stronger.

Who Does What?

Four entities in Iowa have regulatory authority for stormwater management: the Iowa Department of Natural Resources (DNR), U.S. Environmental Protection Agency, regulated municipal systems (generally, larger Iowa cities and state universities), and Soil and Water Conservation Districts. In addition, government agencies, nongovernmental organizations, nonprofits and educational institutions provide non-regulatory assistance on stormwater management issues.

Funding for water-quality projects takes many forms – federal money through the 319 program, watershed improvement grants, low-interest loans from the State Revolving Fund.

What Issues Need Addressing?

The majority of Iowans live in urban areas, a lifestyle that includes lawn chemicals, sand, salt, sediment, trash, oil, grease, pet waste and other pollutants. Precipitation running off driveways, roofs, yards and sidewalks flows to storm drains and on to streams with little or no treatment. Public policy strategies can begin to better address this water-quality challenge, and not just the water-quantity issues where current practice quickly puts pollution concerns out of sight, and out of mind.

State Leadership

- **Use best practices in state-assisted projects.** The state should demonstrate its commitment to water quality. Iowa can require best-management practices in construction on state properties as well as construction of any facilities that receive state funding.
- **Help communities reach established goals.** Some communities permitted under federal requirements need better guidance to meet their permit requirements.
- **Enforce requirements of stormwater permits.** Better state enforcement would set a good example for communities, and encourage the private sector to take responsibility for water-quality impacts as well.

Funding for Stormwater Quality Management

- **Dedicate stormwater permit fees to stormwater issues.** Not all such revenue now goes to stormwater issues. These funds could go toward education, outreach and enforcement.
- **Use environmental protection funds for the environment.** On every gallon of gasoline, Iowans pay a penny that was intended for use in cleanup due to underground fuel tanks and other water quality issues, but is not set aside for these purposes.
- **Continue efforts to fund urban stormwater projects.** Recent moves to redirect environmental funds toward urban stormwater practices should be continued.
- **Fund pollution prevention in urban areas.** The Iowa DNR can use federal grants to increase drinking-water protection efforts.
- **Hire urban conservation specialists.** Staff dedicated to stormwater issues could help landowners and communities.
- **Allow use of REAP (Resource Enhancement and Protection) funds for urban projects.** Rules should allow money to be spent by urban and rural landowners on practices consistent with REAP.

The Iowa Policy Project

Formed in 2001, the Iowa Policy Project is a nonprofit, nonpartisan research organization based in Mount Vernon. IPP reports on a wide range of topics of concern to the citizens of Iowa are available on the web at <http://www.iowapolicyproject.org>. Contributions to the Iowa Policy Project are tax-deductible.

318 2nd Ave. N • Mount Vernon, IA 52314 — 120 N. Dubuque St., #208 • Iowa City, IA 52245
Phone (319) 338-0773 • Fax (319) 354-4130 • ipp@Lcom.net