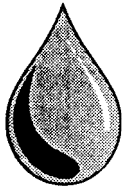


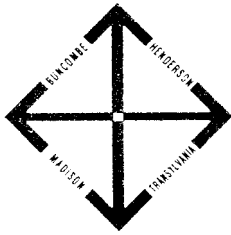
Managing Stormwater In Small Communities: How To Get Started



Stormwater Fact Sheet No. 6

This fact sheet is part of a series for local government officials and citizens on stormwater runoff problems and control strategies. The series covers:

1. Stormwater Problems And Impacts
2. Control Principles And Practices
3. Rules And Regulations
4. Local Program Elements And Funding Alternatives
5. Municipal Pollution Prevention Planning
6. Managing Stormwater In Small Communities: How To Get Started
7. Maintaining Wet Detention Ponds
8. Plan Early For Stormwater In Your New Development
9. How Citizens Can Help Control Stormwater Pollution



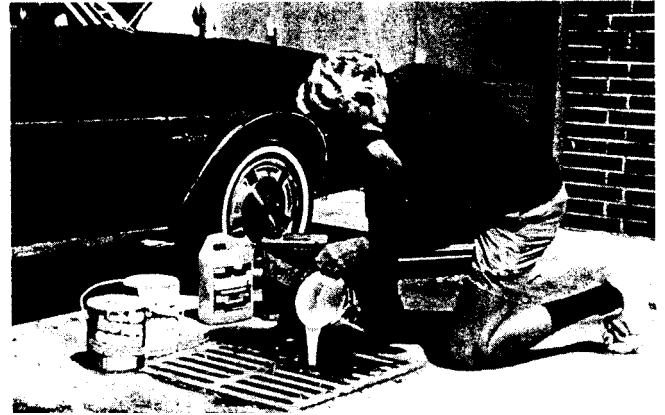
Land-Of-Sky Regional Council
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Asheville, NC 28806
(704) 251-6622

Stormwater Woes

If you are like most growing communities in North Carolina, you experience problems caused by stormwater runoff. As communities grow, impervious surfaces (e.g., roads, buildings and parking lots) increase, reducing the ability of rain to soak into the ground. This causes an increase in the volume and rate of stormwater runoff and more flooding and stream bank erosion.

Studies have shown that stormwater runoff is also a significant source of water pollution in developing areas. Various pollutants are washed off the land

surface by stormwater runoff including sediment, bacteria and disease causing organisms, oil and grease, pesticides and fertilizers, salts, heavy metals and other potentially toxic chemicals.



Sometimes Pollutants Are Illegally Dumped Into Storm Drains And Waterways

Photo Courtesy of City of Fayetteville

Why Address Stormwater Pollution?

Our streams, rivers, lakes and coastal waters across North Carolina are impacted by unmanaged stormwater runoff and other water pollution. These are valuable resources we use in many ways. Stormwater pollution threatens drinking water supplies, swimming areas, fishing, shellfishing and tourism industries and other water uses. These waterbodies need our help.

Getting Started

Can stormwater pollution be prevented or minimized? Yes! Is it going to be easy? No! However, there are a number of things smaller communities with limited resources can do to begin addressing the problem.

Start slow and build a stormwater quality management program as you go. Search out partners to help. There are a lot of groups willing to assist you in planning and implementing your program. Focus on cost effective source reduction and pollution prevention activities.

Suggestions For Local Action

□ Get Informed

Try to learn as much as possible about stormwater problems and management strategies.

Obtain guidebooks and other documents, attend workshops and contact experts in the field for advice, including staff of N.C. communities with stormwater management programs.

□ Define The Problem

• **Determine local water quality conditions** – Collect existing information on the water quality and condition of waterbodies within and downstream of your community. Contact the NC Division of Environmental Management, local universities, health department, soil and water conservation district and other organizations for available information. If good information is not available, ask these groups to assist in collecting the necessary data or develop your own monitoring program. In some communities, citizen volunteers are monitoring water quality at minimal cost.



Photo Courtesy of City of Fayetteville.

Water Sampling Helps Define The Problem.

Identify Pollution Sources – Examine land uses and activities within watersheds in your community. Are land uses primarily residential, commercial,

institutional, industrial or a combination of land uses? Are land disturbing activities taking place? Is illegal dumping a problem? Your water quality data may also help you identify potential pollution sources in your community. Again, citizen volunteers can conduct streamwalks and use other means of identifying pollution sources.

• **Inventory Your System** – Do you have an inventory of your storm sewer system? An inventory of inlets, pipes, outfalls and other components of the storm sewer system can help identify pollution sources, including illicit connections, and help identify stormwater management alternatives. Several NC towns have used college students or other low cost means of conducting inventories.

□ Start With Pollution

Prevention Opportunities

It is more cost effective to prevent stormwater pollution than to treat it once it is contaminated. There are many source reduction and pollution prevention measures you can use including:

• **Municipal Pollution Prevention Practices** – Look at your own municipal facilities and activities first and modify existing practices/programs to address stormwater quality concerns. Identify pollution prevention opportunities at vehicle fueling and maintenance areas, airports, water and sewer treatment plants, chemical storage and application sites, salt storage areas, etc. See Municipal Pollution Prevention Planning Fact Sheet #5 for details.

• **Illicit Connection Elimination Programs** – Illicit connections including sanitary sewer interconnections, floor drains, washing machines, and other non-stormwater discharges may represent a significant source of pollutants entering storm sewers. Identifying and eliminating these illegal connections in existing and new developments is a cost effective pollution prevention measure.

• **Land Use Planning and Management Techniques** – Plan and manage all growth to prevent impacts on your community's waterways. Specific techniques include impervious surface limitations, vegetative buffers along streams, and reducing curbs and gutters by allowing runoff to flow off streets or parking areas to vegetated areas for infiltration.



Photo Courtesy City of Fayetteville.

Used Oil And Household Hazardous Waste Collection Day.

• **Used Oil and Waste Collection Programs** – Local governments can establish collection and recycling/disposal programs for household hazardous wastes, used oil and other potential pollutants to prevent their entry into storm drains. Counties in the Raleigh-Durham area have developed a cost effective regional collection program. Contact the TriangleJ Council of Governments for details.

• **Street/Catch Basin Cleaning** – Improved street and catch basin cleaning programs can remove pollutants before they get washed into nearby waters. More frequent sweeping using vacuum street sweepers helps remove the very fine particles containing most pollutants.

• **Erosion and Sedimentation Control Programs** – Sediment is a major pollutant in stormwater runoff. Local erosion control programs may be the most effective means of preventing the contamination of stormwater runoff

and protecting waterbodies in developing areas.

• **Public Education and Involvement Programs** – Educating employees and the public about stormwater problems, best management practices and the individual's role in minimizing runoff and protecting water quality is a very cost effective preventive measure. Changing citizen behavior and practices is key to a successful program. Citizens need to learn environmentally sound lawn care practices and how to properly dispose of used oil, yard wastes, pesticides and other chemicals. Stenciling storm drains with "Don't Dump - Drains to Stream" messages warns citizens that dumping into storm sewers can pollute local waterways. The NC Sea Grant Program and Cooperative Extension Service can help you implement a stenciling program (see page 4 for contacts).

CASE STUDY: CHAPEL HILL, NC: "Addressing Urban Stream Quality on a Shoestring Budget"

In 1992, Chapel Hill appointed a Stormwater Management Committee to address stormwater management issues in the community. Since its inception, the Committee has accomplished a great deal with a minimal budget of approximately \$50,000 including:

1. Completed a basic inventory of the storm drainage system;
2. Established a chemical, physical and biological stream water quality monitoring program with Carrboro and UNC;
3. Initiated a citizen volunteer stream monitoring effort and stream cleanup program; and
4. Established public education and storm drain stenciling programs.

The Town also has a Resource Conservation District in its land use regulations that has created 60 linear miles of buffers along streams within the community.

For more information, contact Mike Neal, Town Engineer at (919) 968-2737.

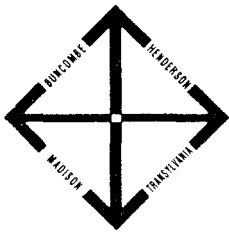
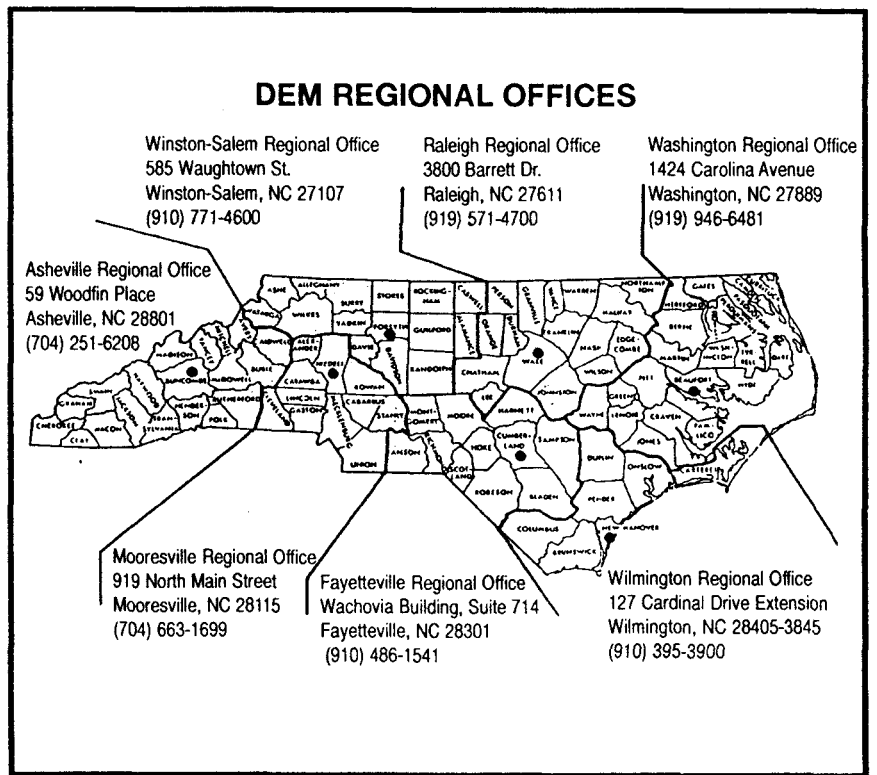
For More Information

☐ Reference Documents

- Stormwater Management in NC: A Guide For Local Officials, 1994, Land-of-Sky Regional Council. - (704) 251-6622.
- Stormwater Management Guidance Manual, 1994, NC Cooperative Extension Service and NC DEHNR - (919) 515-3723.

☐ Contacts

- NC DEM Stormwater Management Group - (919) 733-5083, and DEM Regional Offices.
- Greg Jennings, N.C. Cooperative Extension Service - (919) 515-6795.
- Barbara Doll, UNC Sea Grant Program - (919) 515-5287.
- Leigh Scott-Prater, Triangle J Council of Governments - (919) 558-9400.



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