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ALABAMA A & M AND AUBURN UNIVERSITIES

The Urban Environment And NPS Pollution Regulating Urban Stormwater Runoff

Regulating urban stormwater runoff is difficult because programs that control point source pollutants and programs that control nonpoint source (NPS) pollutants often overlap. The reason for this is that point sources may become nonpoint sources and vice versa, especially in the urban environment. For instance, industrial pollutants normally considered point sources may get dispersed through spills, leaks, or other releases and become nonpoint source pollutants. On the other hand, pollutants that originate as nonpoint sources, may be channelized in urban stormwater runoff and ultimately become point sources.

Efforts to control nonpoint source pollutants through stormwater runoff are underway at the federal, state, and local levels. Section 4.7.3 summarizes current programs and legislation.

Federal Legislation

The Clean Water Act. Enacted as part of the 1987 amendments to the Clean Water Act, the stormwater permit program in section 402(p) requires EPA to establish requirements for obtaining a permit to discharge stormwater associated with industrial activity. The stormwater permit program is to be enacted in two phases.

Under Phase I, National Pollutant Discharge Elimination System (NPDES) permits are required to be issued for municipal separate storm sewers serving large or medium-sized populations (greater than 250,000 and 100,000 people, respectively) and for stormwater discharges associated with industrial activity. Industrial facilities include manufacturing plants, where stormwater comes in contact with raw materials or wastes; construction operations that disturb 5 or more acres; landfills receiving industrial wastes; hazardous waste treatment, storage and disposal facilities; junkyards; power plants, including their transformer storage facilities; mining operations; some oil and gas operations; and airports.

Permits may also be issued on a case-by-case basis if EPA or a state water quality agency determines that a stormwater discharge leads to violation of a water quality

standard or contributes a significant level of pollutants to waters of the United States.

Under Phase II of the stormwater permit program, EPA is to prepare two assessment reports to Congress on the remaining stormwater discharges not controlled under Phase I. Then EPA is to issue regulations which designate additional stormwater discharges to be regulated to protect water quality. These regulations were to have been issued by EPA not later than October 1, 1992. However, because of the numerous discharges to be covered by the studies and regulations, EPA had not issued these regulations prior to the preparation of this article.

Coastal Zone Act Reauthorization Amendments (CZARA). Congress enacted section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) in late 1990 to require that states develop coastal NPS pollution control programs, which conform with EPA management measures. These programs are to be developed by July 1, 1995.

Coastal NPS pollution control programs exclude all stormwater discharges that are covered by Phase I of the NPDES stormwater permit program. Thus EPA is excluding any discharge from the following: municipal separate storm sewer systems serving populations of 100,000 or more; any point source discharge associated with a permitted industrial activity; any discharge which has already been permitted; and any discharge which contributes to violation of a water quality standard or causes significant contamination to waters of the United States as determined by EPA or the state water quality agency. All of these activities are clearly addressed by the stormwater permit program and, thus, are excluded from the coastal nonpoint pollution control program.

Some of the activities covered by the coastal NPS pollution control program and, therefore, exempt from the NPDES permit requirements include the following: construction activities on sites fewer than 5 acres; discharges from wholesale, retail, service or commercial activities, including gas stations, which are not covered by Phase I of the NPDES stormwater program; and on-

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site disposal systems which are generally not covered by the stormwater permit program.

Coastal NPS pollution control programs will also cover discharges from urban areas that may be ultimately covered by Phase II of the stormwater permits programs. Any stormwater discharge that is ultimately issued an NPDES permit will become exempt from the coastal NPS pollution control program at the time that the permit is issued.

While different legal authorities may apply to different situations, the goals of the NPDES and CZARA programs are to be complimentary. Many of the techniques and practices used to control urban runoff are equally applicable to both programs, yet the programs do not work identically. States have the option to implement the CZARA section 6217(g) management measures throughout the state's coastal zone, including Phase I stormwater areas, as long as the NPDES requirements are met for areas subject to NPDES permitting. States are encouraged to develop consistent approaches to addressing urban runoff throughout their entire coastal zones.

State Authority

The Alabama Department of Environmental Management (ADEM) is the state agency with responsibility for carrying out all federal regulations that deal with stormwater management under the Clean Water Act (CWA) and Coastal Zone Act Reauthorization Amendments (CZARA). ADEM also has the legal authority to limit, restrict, or moderate any action that changes the conditions of Alabama water so that beneficial use of that water by any citizen is affected.

ADEM General Requirements For Stormwater Run-Off From Construction, Land Disturbance, And Associated Areas. State law and ADEM regulations require that appropriate, effective BMPs for control of pollutants in stormwater runoff be fully implemented and maintained for **all** construction and land disturbance activities, regardless of permit status or size of the disturbance, to prevent or minimize discharges of sediment and other pollutants to Alabama waters (Alabama Water Pollution Control Act, Code of Alabama 1975, Sections 22-22-1 through 22-22-14).

ADEM General Permit Requirements For Stormwater Runoff From Construction, Land Disturbance, And Associated Areas. In accordance with Phase I federal stormwater permitting requirements, effective October 1, 1992, an operator is required to apply for a permit from ADEM for construction, land disturbance activities, and associated areas that exceed 5 acres or is part of a larger plan of development. Most areas smaller than 5 acres come under the general requirements.

On August 1, 1992, ADEM issued a NPDES General Permit (GP) ALG610000 for stormwater runoff

from construction, excavation, land clearing, other land disturbance activities, and associated areas to allow industry a simpler method of complying with federal regulations for discharging stormwater. This GP requires:

- A company or individual to use BMPs to control stormwater runoff.
- Monthly inspections by ADEM.
- Monitoring of on-site precipitation by permittee.
- Monitoring of discharges from the site by permittee at a minimum rate of once every 6 months. Samples must be analyzed for pH, total solids, flow, and—in some cases—oil, grease, and biochemical (BOD) and chemical (COD) oxygen demand.

Contact ADEM for applicable forms and details.

In 1993, an Office of Water Resources was established within the Alabama Department of Economic and Community Affairs (ADECA). A Water Resources Commission was also created to carry out the rules and regulations for the Office of Water Resources. Statewide planning and management efforts to protect the availability of waters of the state could result in significant rural and urban watershed management strategies that protect both surface water and groundwater from contamination caused by stormwater runoff. A Coastal Programs Office (CPO) in ADECA is also involved in the overall development of Alabama's coastal NPS control program.

Local Authority

Programs developed under local authority are most effective in preventing pollution from urban stormwater runoff. Since local governments generally hold authority to enforce land use regulations, the primary responsibility for stormwater control and management is in the hands of county and municipal officials.

The most common method of regulating land-use is through **zoning ordinances**. Most states have zoning-enabling legislation that allows local governments to regulate development by setting certain restrictions. These restrictions are commonly based on housing density, type of development, impervious surface limits, septic tank restrictions, and high risk areas.

Interim regulations, also known as moratoriums, can also be used to temporarily prevent urban development or other potentially damaging land uses until long-term policies, plans, or regulations are adopted. Interim controls for urban watersheds temporarily restrict development through the denial of building permits, rezoning requests, water and sewer connections, septic system permits, or other permits until permanent controls are adopted. These interim regulations can apply to a particular jurisdiction (such as a county, township, or city), to an entire watershed, or to critical portions of a watershed. Such regulations are generally initiated by concerned citizens and their elected representatives or

through the formation of a special entity that can deal with water-related issues.

Finally, comprehensive **information and education** programs for the general public can play a major role in people accepting environmental regulations. A certain percentage of the citizenry will always remain indifferent, but there is often a cooperative effort within the community to improve environmental conditions once people at the local level are made aware of problems and how to solve them.

Regional And Local Entities

In most states a number of regional and local entities have authority to deal with water-related issues. Most of these entities can be formed in rural areas or areas affected by metropolitan growth, depending on the nature of the water issues. They are authorized and capable of undertaking projects, programs, and activities within the boundaries of Alabama municipalities. Once established, most of these entities can control development and land use by their authority to acquire property through the power of eminent domain. This means they have the power to take private property for public use upon compensating the owner. Most of these entities have bonding authority, so they can issue bonds for funding any authorized purpose of the entity.

In addition to regional and local entities, individual waterway or reservoir management authorities have been established by specially tailored legislation. Authorities such as Bear Creek Development Authority, Elk River Development Agency, and Tombigbee Valley Development Authority can either directly or indirectly affect land use and the type of development allowed within their boundaries and, thus, potential stormwater impacts from such areas.

In Alabama, there are currently eleven types of general regional and local authorities, districts, subdistricts, agencies, and public corporations which may be chartered to manage or otherwise oversee water-related issues.

Mutual Economic Associations develop and operate waterworks.

County Water Conservation And Irrigation Corporations develop and operate irrigation projects; they can also develop water power and municipal and industrial water supply. They operate under the county commission.

Water Conservation And Irrigation Agencies are multi-county alternatives to the County Water Conservation And Irrigation Corporations.

Soil And Water Conservation Districts prevent or control soil erosion and siltation and the effects caused by silting in and sedimentation of stream channels, reservoirs, dams, and harbors. They oversee establishment of Watershed Conservancy Districts and Watershed Management Authorities.

Watershed Conservancy Districts develop construction projects and other programs relating to water conservation, water usage, flood prevention, flood control, erosion prevention, and control of erosion, floodwater, and sediment damage.

Watershed Management Authorities develop and execute plans, projects, and programs related to water conservation, water usage, flood prevention and control, water pollution control, wildlife habitat protection, and erosion, floodwater, and sediment damage control. They are similar to the Watershed Conservancy District except in the following way: any resident inside the watershed boundary can take part in formation of a watershed management authority, whereas only landowners can vote on formation of a watershed conservancy district.

Water Management Districts construct, manage, and maintain levees, drainage systems, and other structures and improvements for the purposes of preventing floods, providing drainage, reducing sediment, and reclaiming wet, swampy, or overflowed lands.

County Drainage Districts And Subdistricts develop systems of surface water distribution to protect land owners through the prevention, elimination, or control of overflow waters from wet, swampy, and overflow lands.

Water, Sewer, And Fire Protection Authorities establish, operate, and maintain public water systems, which may consist of facilities and systems useful in supplying or distributing water, including (but not limited to) reservoirs, wells, intakes, aqueducts, filtration and purification plants, and all necessary appurtenances and equipment.

Water, Sewer, Solid Waste Disposal And Fire Protection Districts can be multi-county alternatives to the county water, sewer, and fire protection authorities. They manage solid waste in addition to water supply services.

Environmental Improvement Authorities have the power to acquire, operate, and maintain equipment, plants, and systems which may be useful in the control, abatement, or prevention of water pollution. Their primary activity is general watershed improvement. They must be approved by the governor to operate within an area where environmental pollution is above normal, acceptable tolerances.

Municipal Entities

Municipal governments in Alabama can authorize entities to provide water for municipal residents and businesses. In general, all municipal entities that deal with water resources and water issues have the basic authorities of municipalities. They can enter into agreements with and cooperate with other entities. They can sell water to other entities or municipalities. They also have the power (directly or indirectly through the governing board of the municipality) to do whatever is nec-

essary to protect the municipal water supply from pollution problems. This could entail a number of restrictions on urban development depending on the nature and location of the municipal water supply.

Municipalities have provided water supplies in Alabama since the nineteenth century under general municipal governmental authorities, but the current provisions of Alabama law authorize five distinct types of approaches or bodies, which a municipality may follow, create, or charter to arrange for the supply of water to its citizenry.

Direct Municipal Operation. Municipalities have authority to own and operate water systems and other utility systems. They have bonding authority, they can sell their water, and they have the power of eminent domain to acquire and protect sources of water, watersheds, property, and rights-of-way in order to maintain and provide water services. They cannot acquire properties of or duplicate services provided by a water, sewer, and fire protection authority; a water, sewer, solid waste disposal, and fire protection district; or a mutual economic association without the consent of the governing board of the other entity.

Waterworks And Sewer Boards. Municipalities can allow a public corporation to assume responsibility for municipal water supply and protection. The board has bonding authority and the power of eminent domain to acquire, construct, operate, enlarge, improve, and maintain a water system to provide municipal services.

Water, Sewer, Gas And Electric System Boards. Municipalities can also give a public corporation flexibility to provide gas and/or electric services in addition to water and sewer services.

Boards Of Water And Sewer Commissioners. Municipalities have authority to establish an entity within the municipal government itself—rather than a separate public corporation. This entity has the same powers and

responsibilities of the public corporation but operates under the governing board of the municipality.

Waterworks Utility Boards. Municipalities have the alternative of establishing a less “independent” form of internal water system management. Although this entity has very similar powers and responsibilities of the previous boards, it cannot spend in excess of \$5,000 without consent and approval of the municipality’s governing board.

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