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Environmental Management

All levels of government play a vital role in environmental management. The federal government's role generally includes funding research and development activities; establishing minimum national standards; addressing interstate and international issues; providing technical assistance; responding to emergency situations; assuring compliance with federal requirements/enforcement; overseeing implementation of delegated federal programs; and providing funds for program implementation and other purposes. State governments are mostly responsible for day-to-day implementation of federal environmental protection programs, which includes planning; setting standards; issuing permits; monitoring resources (air, water, and other resources); enforcing state laws; providing compliance assistance and training; administering funding (grant and loan) programs; collecting and analyzing data and information; and responding to emergencies.

Local governments often find themselves in a unique situation. As providers of public services, their activities are subject to federal and state environmental requirements. However, in the exercise of their governmental functions, they assume the role of regulator. In many cases, they develop and implement building, fire, health, and safety codes in addition to carrying out delegated state programs, such as erosion and sediment control. Local governments also design, construct, operate, and maintain environmental facilities; finance infrastructure; respond to emergencies; exercise land-use planning and zoning authority; and are required to coordinate service delivery.

Georgia is a state with abundant and diverse natural resources and a temperate climate. Air, land, and water resources support a wide variety of uses, from providing a strong economy to offering

recreational opportunities to affording citizens a good quality of life. As a result of these resources and other factors, some areas of Georgia have experienced phenomenal population growth and industrial and commercial development over the past few decades. Georgia agriculture, the backbone of many rural economies, remains strong and continues to prosper. Many local governments look to growth and development in order to provide jobs, tax revenue, and retail business opportunities, thus allowing communities to improve the quality of life for their citizens. However, this growth and prosperity also have affected the state's air, water, and land. In order to address these impacts, state and local leaders must take a thoughtful and comprehensive approach. It is anticipated that Georgia's population growth and economic expansion will continue, further increasing water and energy demands, conversion of land, development of coastal areas, and waste generation. County officials will be called upon to help meet these needs and minimize adverse impacts on their communities.

Local government officials truly are on the front lines of efforts to protect public health and the environment. County commissioners often receive calls from constituents regarding environmental concerns and nuisances, regardless of a commissioner's authority to address a situation. As a result of county operations, counties incur some environmental liabilities. In some cases, those liabilities may remain, even if facility operations or services are contracted out to other parties. For these reasons, county officials should be aware of environmental requirements associated with governmental operations.

This chapter provides an overview of selected federal and state environmental laws and programs, with an emphasis on those aspects establishing responsibilities and/or liabilities or providing opportunities for county governments. It also summarizes basic environmental information so that commissioners will have a better understanding of the basis for environmental requirements associated with county operations. However, it is not intended to serve as a definitive statement on means and approaches for environmental compliance or to provide legal advice. The chapter recognizes that counties are unique entities with differing characteristics, service levels, and capacities to address environmental protection issues.

The chapter addresses four themes: air quality protection, water resources management, land-use management, and other relevant issues. Each section begins with a discussion of relevant federal requirements and roles, followed by information on state-specific matters and other appropriate information. While solid waste management is an essential

component of environmental management, that subject is covered in depth in Chapter 12. Readers who would like more information on specific matters may consult the *Environmental Management Handbook for Georgia Local Government Officials*.¹

Before discussing specific federal and state environmental laws, it is important to set forth a few general principles.² Both federal and state governments enact environmental laws and implement environmental programs, usually dealing with activities in a single subject area (such as air pollution control, water pollution control, waste management, endangered species protection, or drinking water quality protection). Rules and regulations set forth detailed requirements that must be followed by regulated parties. Sometimes, particularly on technical matters, rules and regulations may be supplemented by more specific information in the form of guidance, procedures, and policies. Most federal environmental laws discussed in this chapter are implemented by the U.S. Environmental Protection Agency (EPA). The agency has a headquarters office in Washington, D.C., 10 regional offices, and numerous laboratories and support offices and facilities located across the country. Staff at the EPA's Atlanta regional office (Region 4) work with state and local environmental regulatory agencies and programs in eight southeastern states, including Georgia.

In enacting federal environmental laws, Congress usually includes provisions that allow appropriate state agencies to implement day-to-day program responsibilities. In order to obtain the authority to implement federal environmental programs (commonly referred to as program delegation or authorization), states must develop a program at least as strict as and consistent with the federal program. Therefore, most state environmental laws are very similar to the corresponding federal environmental laws. Federal environmental laws typically provide minimum standards that apply nationwide (federal programs provide a "floor"). States may adopt laws regarding matters not addressed by federal law or may adopt requirements that are stricter than federal requirements. For example, the Georgia General Assembly adopted the Erosion and Sedimentation Act in 1975, before the federal Clean Water Act (CWA) had any specific provisions regarding storm water management. However, the erosion and sedimentation program had to subsequently conform to the EPA's storm water management program in the early 2000s.

Although some Georgia environmental laws were enacted before the corresponding federal law, the General Assembly has usually amended those laws over the years in order to minimize the differences. In most instances, the Georgia Environmental Protection Division (EPD) of the

Department of Natural Resources (DNR) is designated as the primary state environmental regulatory agency. The state Board of Natural Resources adopts appropriate rules and regulations for implementation of those laws.

AIR QUALITY PROTECTION

Air pollutants are substances in the air that can cause harm to human health or the environment. These substances can be gases such as carbon monoxide or chemical vapors, liquid droplets, or tiny solid particles such as dust, soot, or smoke. Air pollutants come from numerous sources, including stationary sources (such as smokestacks at factories and power plants), mobile sources (such as tailpipes from on-road vehicles [cars, light-duty trucks, and motorcycles] and nonroad vehicles and equipment [construction equipment, sweepers, and mowers]), and other sources resulting from human activity (open burning or use of solvents) as well as natural sources (dust storms, volcanic activity, and wildfires). Some pollutants, such as ground-level ozone, are not directly emitted but are created by reactions between other pollutants. Since air does not respect political boundaries, wind patterns can move air pollutants locally, across state lines, and even internationally, thereby creating unique regulatory challenges.

Both federal and state laws contain requirements for air pollution control focusing on the establishment and maintenance of healthy air quality in outdoor (also referred to as ambient) air. Federal law sets minimum requirements that must be implemented nationally; however, state agencies, and in some cases local governments, carry out the day-to-day program responsibilities. State and local governments may also adopt broader or stricter requirements or regulations.

Given the broad extent of their operations, county governments may be subject to certain air pollution control requirements and programs. Applicability can vary widely.

Federal Requirements

Nationally, the Clean Air Act (CAA) establishes a framework for the prevention and control of air pollution by federal, state, and local governments.³ Five major parts of the act are discussed in this section: ambient air quality standards, mobile source control, acid rain control, federal operating permit requirements, and stratospheric ozone protection.

National Ambient Air Quality Standards

The law requires the EPA to establish national standards for the maximum allowable levels of six common pollutants in ambient air.⁴ Since 1970, the agency has established and revised national ambient air quality standards for (1) ground-level ozone (the principal component in smog), (2) particulate matter (sometimes referred to as soot), (3) sulfur dioxide, (4) nitrogen dioxide, (5) lead, and (6) carbon monoxide. Because these standards must be reviewed every five years, many standards have either recently changed or may soon change. In order to ensure compliance, a network of air quality monitors across the country checks the concentrations of these pollutants periodically.

When a standard is revised, the EPA, in coordination with state agencies, classifies geographic areas based on the most recent monitoring information as attainment (meeting the standard), unclassifiable, or nonattainment (not meeting the standard). Because local air quality must meet the standards for all pollutants, an area may be classified as attainment for one pollutant and nonattainment for another.

In nonattainment areas, states, and in some cases local governments, must adopt control measures and strategies (rules, regulations, policies, and programs) to attain and maintain a standard. The state air pollution control agency includes these measures and strategies as part of the state's federally enforceable plan for complying with the CAA, commonly referred to as the state implementation plan.⁵ Among the programs included in Georgia's plan are a permitting program for major sources of air pollution and a motor vehicle inspection and maintenance program to reduce ozone in the 13-county Atlanta metropolitan nonattainment area (Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale).

If a county is designated as part of a nonattainment area, it is important that local officials work with state officials to identify, develop, and implement control measures and strategies. In those areas where violations of a standard have been shown (that is, potential future nonattainment areas, since designations are made only after the revision of a standard), county officials should consider adopting reasonable voluntary control measures (such as idling reduction requirements) in order to reduce concentrations of harmful air pollutants. Early implementation of these measures may allow an area to avoid a nonattainment designation. State and federal air pollution control officials can provide assistance in identifying such voluntary control measures.

In order to help meet the ambient air quality standards, the CAA established the New Source Review⁶ program to ensure that an area's air quality would not be degraded by the addition of a new or major modification of a stationary source. Stationary sources, including factories, industrial boilers, and power plants, emit air pollution primarily through smokestacks. The New Source Review program requires preconstruction review and permitting for new stationary sources and major modifications focusing on the new or modified source's potential emissions in light of the existing air quality conditions.

County operations may also be subject to CAA requirements for technology-based permit limits under the new source performance standards program. Municipal solid waste or sewage sludge incinerators and landfill gas recovery systems at municipal solid waste landfills may be subject to the new source performance standards nationally uniform emission technology standards.

The CAA also requires the EPA to control emissions of hazardous air pollutants, also referred to as air toxics.⁷ The EPA is required to identify categories of industrial sources for 187 air toxics and take steps to reduce emissions from these sources. Particularly relevant to some local governments are the agency's national emission standards for hazardous air pollutants for landfills and wastewater treatment units (also referred to as publicly owned treatment works).

Climate Change and Regulation of Greenhouse Gases

One area of substantial discussion is climate change and the EPA's efforts to regulate the emission of greenhouse gases. Climate change involves long-term variations in temperature, precipitation patterns, and other aspects of the earth's climate. While scientific consensus exists that climate change is occurring, particularly on a global scale, there is considerable debate regarding the extent to which human activities are contributing to this change. Human activities result in the emission of greenhouse gases, which include carbon dioxide, methane, and nitrous oxide. As the concentration of these gases in the air rises, more heat is trapped in the atmosphere. The buildup of these gases could affect agricultural and forestry production, public health (hotter days or more days with poor air quality), the availability of water resources and thus the economies of local governments.

The U.S. Supreme Court has ruled that greenhouse gases fall within the definition of air pollutant under the CAA and that the EPA may regulate their emissions from new motor vehicles. The EPA is developing regulations to control greenhouse gas emissions from new motor vehicles

and other sources. Interested parties have filed lawsuits challenging many of these actions. The regulation of greenhouse gas emissions is likely to be the subject of controversy for the foreseeable future.

Mobile Source Control Program

A second major part of the CAA deals with mobile sources.⁸ Efforts to reduce pollution from these sources generally focus on three areas: (1) cleaner engines, (2) cleaner fuels, and (3) education and awareness. A focus on cleaner engines has resulted in tighter emission standards and use of advanced emission control technologies (catalytic converters and particulate filters). A focus on cleaner fuels has led to the introduction and use of low-sulfur diesel fuel and reformulated gasoline as well as progress in the development of electric vehicles, biodiesel, E85 for use in flex-fueled vehicles, and conversion of gasoline-fueled vehicles to operate on compressed natural gas or propane, alcohol fuels, or electricity. In support of these efforts, the EPA has provided significant funding to local governments and others through the National Clean Diesel Campaign (more specifically, the National Clean Diesel Program and State Clean Diesel Grant Program). The focus on education and awareness emphasizes reductions based on activities such as carpooling, teleworking, idling reduction, and other steps that individuals can take. Because of their vehicle and fleet maintenance and fueling operations, counties may participate in mobile source emission reduction programs. County commissioners may become involved in this area while considering policies for growth management, vehicle acquisitions, idling reduction, and commuting alternatives (e.g., teleworking and carpooling/vanpooling subsidies).

Acid Rain Control Program

The CAA also establishes programs to reduce acid rain by requiring lower emissions of sulfur dioxide and nitrogen oxides.⁹ Typically, these programs only affect counties that operate large stationary sources such as waste combustors, sludge incinerators, and large boilers.

Federal Operating Permit Program

Federal and state laws require permits for new or major modifications to stationary sources, particularly larger (major) sources.¹⁰ These permits, which are required before beginning construction and/or operation, include allowable levels of emissions as well as monitoring, recordkeeping, and reporting requirements. The CAA sets forth federal operating permit requirements for major sources and certain smaller sources of air

pollution (often referred to as the Title V program). A specific source may require a Title V permit based upon the amount and types of air pollutants emitted. The program, which is designed to streamline regulation of air pollution, allows inclusion of all air pollution control requirements for a source in a single document and contains requirements for public participation in the permitting process. Title V also requires the imposition of a fee on regulated sources to pay for program implementation. Counties that operate incinerators, certain boilers/generation units, or other large sources may be subject to Title V requirements.

Stratospheric Ozone Protection Program

Provisions of the CAA also protect stratospheric ozone by restricting the use of ozone-depleting chemicals.¹¹ The manufacture of many of these chemicals has already been phased out. These requirements are applicable to local government operations involving repair and maintenance of vehicle or building air conditioning units. Unlike many other CAA programs that are enforced by state or local agencies, the EPA implements this program directly.

Application of Federal Requirements in Georgia

The Georgia Air Quality Act authorizes the adoption of air quality standards and emission limits, requires permits for stationary sources, and mandates enforcement of air quality requirements.¹² The Board of Natural Resources has adopted a range of rules to control pollution from stationary sources, restrict open burning, and implement motor vehicle inspection and maintenance programs.¹³ The EPD administers and enforces the law and its associated regulations. The EPA has delegated most of its day-to-day federal air pollution control program implementation and enforcement responsibilities to the EPD and provides some funding to support those activities.

Across Georgia, air quality has historically met or exceeded federal standards for all pollutants; however, controlling ground-level ozone and particulate matter in urban and nearby areas has been challenging. Air pollution in the Atlanta metropolitan area has exceeded federal standards for ozone since the late 1970s. In 1991, the EPA listed the 13-county Atlanta region as a serious nonattainment area for the one-hour ozone standard. Because the area did not come into attainment by 1999, its classification was bumped up to a severe nonattainment area, which required the imposition of more pollution reduction requirements. In order to enhance pollution control efforts, the EPD designated 32 additional counties (Banks, Barrow, Bartow, Butts, Carroll, Chattooga,

Clarke, Dawson, Floyd, Gordon, Hall, Haralson, Heard, Jackson, Jasper, Jones, Lamar, Lumpkin, Madison, Meriwether, Monroe, Morgan, Newton, Oconee, Pickens, Pike, Polk, Putnam, Spalding, Troup, Upson, and Walton) as “contributing counties” and subjected areas in those counties to certain regulations. In 2005, the EPA redesignated Atlanta as an attainment area for the one-hour ozone standard.

Although it has met the one-hour standard, the Atlanta area continues to face challenges in meeting a new eight-hour ozone standard originally adopted in 1997. In 2004, the EPA designated 20 counties (Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton Counties) as the metropolitan Atlanta marginal nonattainment area. Failing to attain this standard by 2007, the Atlanta area was bumped up to the moderate classification in 2008 and was required to attain the standard before June 15, 2010. The area again failed to attain the eight-hour ozone standard, but due to significant improvement, it was granted a one-year extension. The next evaluation in 2011 will rely on air quality–monitoring data from 2008–10.

Metropolitan Atlanta has also faced challenges in meeting the fine particulate matter ($PM_{2.5}$) standard. The EPA designated all or part of 22 counties in the region (Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, a portion of Heard, Henry, Newton, Paulding, a portion of Putnam, Rockdale, Spalding, and Walton Counties) as a nonattainment area in 2005. The CAA requires that designated areas achieve the standards in no more than five years but authorizes the EPA to issue a five-year extension. The agency did not designate any additional counties following the 2006 standard revision.

In recent years, other areas of Georgia have begun addressing air quality challenges. Walker and Catoosa Counties are part of the Chattanooga area, which has faced difficulties in meeting the ozone and $PM_{2.5}$ standards. The Macon metropolitan area (Bibb and a portion of Monroe Counties) has also faced challenges with regard to ozone and fine particle pollution. Although the EPA designated a portion of Muscogee County as a nonattainment area for the lead standard in 1992 (redesignated as an attainment area in 1999), more recent concerns have arisen in meeting the ozone and fine particle standards. Other areas in Georgia that have faced and may continue to face air quality issues include a portion of Murray, Richmond, and Houston Counties (eight-hour ozone standard); Floyd, Harris, Dade, Madison, and Oconee Counties ($PM_{2.5}$ standard); and Clarke County (ozone and $PM_{2.5}$ standard). All of these

counties were either proposed for a nonattainment designation or were ultimately designated as part of a nonattainment area. Counties in the Chattanooga and Macon areas took aggressive steps to reduce ozone pollution and have been redesignated as attainment areas. The agency has redesignated the portion of Murray County as an attainment area for the ozone standard and Clarke and Muscogee Counties as attainment areas for the fine particle standard.

Moving Forward

Air quality in Georgia has improved as the result of (1) operation of new pollution controls at stationary sources, particularly power plants; (2) use of cleaner fuels; (3) implementation of tighter emission standards; and (4) continued focus on reducing vehicle miles traveled through activities such as carpooling and high-occupancy vehicle lane usage. However, as some areas of Georgia continue to grow, more pollution-reducing actions will be required in order to keep pace with population increases, additional energy demands, and tightening federal standards.

The time frames for implementation of effective air pollution control programs are often lengthy. The EPA has been criticized for adopting tighter standards when programs to obtain reductions under previous standards have often just begun. The five-year standards review cycle under federal law may be too ambitious; however, the EPA will continue its best efforts to comply with the legal time frames in reviewing and revising standards if necessary.

Georgia will continue to face deadlines for meeting federal air quality requirements. As standards are revised, it is incumbent upon local governments to implement policies and programs (some at little or no cost) in order to reduce the odds of being designated a nonattainment area. While such a designation often does not produce the perceived disastrous economic consequences, as evidenced by the continued growth in the Atlanta metropolitan area, it is designed to force actions to reduce air pollution that may be better achieved voluntarily.

WATER RESOURCES MANAGEMENT

Like air, water is a life-sustaining resource that is essential to the survival of humans and all other life on earth. Water also has significant economic value to businesses and industries that use it as part of their processes. It can be used directly to generate power or as coolant, thereby allowing other technologies to produce power. Water is vital in agricultural and forestry operations, producing the food and fiber that is used daily.

Water and waterways continue to play important roles in commerce and recreational uses and in supporting ecological needs, including providing an aquatic habitat for plants and animals.

Given the extensive need for water and its limited availability, competition among uses (and users) of water has increased. This competition exists not only within the state but also on an interstate basis, resulting in environmental conflicts. Intrastate competition has historically been manifested in numerous attempts to limit interbasin transfers. Current state surface water allocation laws contain a provision limiting interbasin transfers.¹⁴ In addition, the law creating the Metropolitan North Georgia Water Planning District specifically prohibits the district from including in its studies or planning any interbasin transfers of water into the district.¹⁵

Interstate conflicts have been most pronounced in the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa river basins. Concerns have also been expressed about potential withdrawals from the Savannah River and the Tennessee River. Most interstate concerns/conflicts have focused on water use in the metropolitan Atlanta area. In addressing these concerns, Georgia officials have held conversations and negotiations with leaders from Alabama, Florida, and South Carolina. Potential disputes remain largely unresolved. However, a federal district court ruled that water supply withdrawals for metropolitan Atlanta are not among the authorized purposes for Lake Lanier. The U.S. Army Corps of Engineers must end most water supply withdrawals from the lake by July 2012 unless specific authorization for these withdrawals is given by Congress. Georgia leaders are currently working to address this situation.

Laws regarding water resource management are fragmented. Although general agreement exists among policymakers regarding the interrelatedness of water quality and quantity (supply and use) as well as the interconnection between surface water and groundwater in many areas, laws and policies have typically focused on major issues occurring at the time of their adoption and legal constraints on federal, state, and local governmental authority in water resources-related matters. Given that water resources are vital for so many reasons, it is important for county officials to be aware of local water resource conditions and be informed about opportunities and responsibilities relating to water resource management issues.

This section reviews federal and state laws related to surface water quality protection, drinking water quality protection (including policies protecting groundwater resources), and water supply and allocation.

Federal requirements provide the overall framework. As with most major environmental protection programs, Georgia has enacted corresponding state statutes, thus allowing the EPD to implement the federal programs in Georgia. As is the case in many environmental management programs, county governments may find themselves to be regulated entities as well as regulators or managers. For example, counties' drinking water and wastewater management services are regulated, but counties may be regulators of industrial wastewater pretreatment programs.

Water Quality Protection

Federal water pollution control efforts began in the 19th century with the enactment of the Rivers and Harbors Act, prohibiting obstruction of navigable waterways without a permit from the Secretary of the Army. It also prohibited the placement of materials such as solid waste or sewage sludge on the banks of those waterways if the material was likely to be washed into a river or stream. The implementation of provisions that are still applicable has been consolidated with the Army Corps of Engineers' responsibilities under the dredge and fill permitting program of the CWA.

The CWA (formerly known as the Federal Water Pollution Control Act) sets forth the framework for protecting and restoring surface water quality.¹⁶ Programs implemented under the act seek to restore and maintain the chemical, physical, and biological integrity of the nation's waters. These programs involve water pollution control permitting, water quality standards development and implementation, wetlands permitting, sewage sludge management, spill prevention and reporting, nonpoint source pollution management, and provision of financial assistance for construction of wastewater treatment systems. The EPA primarily oversees implementation of these programs, while the EPD implements the federal requirements as well as other state-specific water pollution control programs under the Georgia Water Quality Control Act.¹⁷

Water Pollution Control Permitting Programs

Before discussing the specific regulatory requirements, it is important to clarify that the CWA's regulatory provisions apply to navigable waters, which include all waters of the United States. Federal regulations define waters of the United States as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, and interstate waterways; intrastate waterways that could be used in interstate or

foreign commerce; tributaries of these waterways; certain coastal waters; and wetlands adjacent to any of these waters.¹⁸

The CWA prohibits the discharge of a pollutant by any person into navigable waters, unless that discharge is permitted under the act through the National Pollutant Discharge Elimination System (NPDES) program. In general, permits must be obtained by point sources, which include industrial, municipal (which includes county governments), commercial, and agricultural activities discharging through pipes or ditches. Those permits, which are issued by the EPD, contain specific conditions regarding the quality and amount of the discharge as well as monitoring, recordkeeping, and reporting requirements. Effluent limits, which limit the concentration of pollutants in a discharge, are based on industry-specific technology standards for reducing pollutants and/or water quality-based limits that are imposed in order to address location-specific concerns. Permits must be renewed at least once every five years. County governments that operate publicly owned treatment works with a direct discharge into waters of the United States must have an NPDES permit.

Dealing with pollution from storm water discharges (runoff from rainfall events) such as combined sewer overflows, sanitary sewer overflows, and runoff from industrial and construction sites has posed unique challenges. Combined sewers (which exist mainly in older urban areas) carry both domestic sewage and runoff from storm events. In order to address pollution problems, combined sewer overflows must now be permitted under the NPDES program, and permitted local governments must take steps to minimize those overflows in the short term and eliminate them in the long term. Sanitary sewers are constructed to carry only domestic sewage. Overflows of raw sewage generally occur as a result of poor maintenance, improper operation, or inadequate capacity. These overflows constitute a violation of the CWA.

The NPDES program also requires permits for storm water discharges from industrial activities, construction sites, and municipal separate storm sewer systems.¹⁹ The EPD may authorize or permit storm water discharges through individual NPDES permits or coverage under a general permit (an NPDES permit that allows discharges from a category of sources within an area). During the first phase of the storm water management program, operators of large and medium-sized municipal separate storm sewer systems located in urbanized areas and construction site operators who engage in activities disturbing five acres or more of land were required to obtain permits. The programs also required permits for storm water discharges from 10 categories of industrial activities. The

second phase addressed discharges from regulated small municipal separate storm sewer systems and construction sites that disturb one acre or more of land. Today, numerous local governments across the state must meet storm water management requirements. These governments, which generally engage in land-disturbing activities, must implement storm water management controls in order to meet permit conditions.

Another CWA permit program regulates indirect discharges—those made by industrial users into publicly owned treatment works—through the national pretreatment program.²⁰ This program allows the establishment of effluent limits (in accordance with industry-specific, technology-based limitations or local limits) in order to protect publicly owned treatment works operations and reduce undesirable chemicals in the sludge. In Georgia, the EPD issues pretreatment permits to any industrial users who release pollutants into a treatment works. Operators of publicly owned treatment works typically become regulators by enforcing permits and limitations on users of their systems.

Establishing and Protecting Water Quality Standards

The CWA requires states to establish water quality standards based upon a water body's particular characteristics and use. The EPD's standards may be numeric (e.g., a limit of 0.000064 micrograms per liter of polychlorinated biphenyls [PCBs]) or narrative (e.g., waters shall be free from oil, scum, and floating debris).²¹ States must periodically determine if the water bodies are meeting those standards. If a portion (segment) of a water body is impaired (not meeting a standard for a particular pollutant), that portion is listed, and the process of developing a total maximum daily load is begun. During the total maximum daily load process, the EPD examines all sources for that pollutant and determines how much reduction is needed in order to allow the segment to meet the standard. The reductions may be obtained through tighter requirements on NPDES permits or increased use of best management practices for runoff. While the EPA does not set water quality standards, most states follow the agency's guidelines for those standards.

Permitting the Discharge of Dredged or Fill Materials (Wetlands Program)

Operations that dispose of dredged or fill materials in waters of the United States require a permit from the Army Corps of Engineers, subject to guidance issued by the EPA.²² In order to facilitate implementation of this program, commonly referred to as the wetlands program, the corps and the EPA have entered into an interagency agreement. As part of its

evaluation of a permit application, the corps conducts a public interest review, assesses probable adverse impacts, and ensures that the applicant has taken appropriate steps to avoid, minimize, and/or mitigate those impacts. Federal regulations provide that the corps issue a permit if no practicable alternative exists to the proposed project, no significant adverse impacts on aquatic resources will result, all reasonable mitigation measures are employed, and the proposed project will not violate any other statute.²³ However, before the corps can issue any dredge-and-fill permit in Georgia, the EPD must certify that discharges from the requested activity will not cause a violation of state water quality standards.

Managing Sewage Sludge

The CWA also requires the development of regulations for the use and disposal of sewage sludge (also referred to as biosolids).²⁴ The Biosolids Rule (Section 503 Program) regulates sludge management practices. Federal requirements contain limits on toxic chemicals in the sludge based on the proposed disposal practice such as land application, surface disposal, or incineration. The requirements also require controls for pathogens (e.g., bacteria, viruses, and certain fungi) in the sludge and practices to reduce the attractiveness of the sludge to disease-carrying vectors such as flies. Publicly owned treatment works in Georgia that generate biosolids must obtain an NPDES permit, a land application system permit, or a pretreatment permit from the EPD and may have to submit a sludge management plan. Depending on the selected management method, a local government may also be required to obtain additional approvals or permits.

Spill Management

The CWA requires certain facilities that store and use oil to develop a plan for the control and prevention of spills. Spills must be reported, and the facility owner/operator must pay the cleanup costs.²⁵ If local governments operate fueling facilities, they may be subject to the spill prevention, control, and countermeasures program.

Nonpoint Source Pollution Management

In addition to its regulatory provisions, the CWA contains assistance provisions. Dealing with nonpoint sources pollution (i.e., runoff from agricultural and forestry operations and mining, urban areas, or construction activities) has been and continues to be a challenge in certain areas, despite the best efforts of some operators engaged in those activities

to reduce the pollution. Under the CWA's nonpoint source pollution management program (Section 319 program), states must identify water bodies that cannot meet water quality standards due to nonpoint sources pollution, identify the activities responsible for the problem, and prepare management plans specifying controls and programs to reduce pollution from those sources.²⁶ The EPA also provides states with funding to implement programs and projects in order to prevent or reduce nonpoint sources pollution. County governments that have eligible projects may receive 319 funding.

Clean Water State Revolving Fund Loan Program

The most notable CWA assistance program involves the distribution of funds to local governments for the construction of wastewater treatment facilities and associated sewage collection systems. The federal government has historically provided funds for the design and construction of these facilities. The CWA originally provided for a construction grants program.

As a result of continuing federal budgetary challenges, a Clean Water State Revolving Fund loan program was created in 1987.²⁷ The EPA provides states with annual capitalization grants for use in their programs, and the states in turn make low-interest loans to local governments for eligible projects. The program, administered by the Georgia Environmental Finance Authority (GEFA), makes loans for a broad range of projects, including construction of new wastewater treatment plants, expansion or upgrade of existing plants, installation of new sewage collection lines, system rehabilitation, efforts to maintain compliance, and other water security measures.

Erosion and Sediment Control Program

Many provisions of the Georgia Water Quality Control Act correspond to CWA provisions. The authority of the state to regulate water quality is similar to that of the federal government. State law and the associated rules authorize the EPD to implement a variety of water pollution control programs in Georgia.²⁸ The remainder of this section briefly describes some state-specific laws.

Georgia's Erosion and Sedimentation Act protects the state's land and water resources from adverse impacts associated with land-disturbing activities.²⁹ Under this law, areas within local jurisdictions are either covered under state requirements enforced by the EPD or local ordinances enforced by local issuing authorities. In order to be certified

as a local issuing authority, a county must adopt an erosion and sediment control ordinance at least as stringent as state requirements and hire qualified inspectors.³⁰ Local issuing authorities must respond to requests for permits for land-disturbing activities and enforce their ordinances. Those who want to engage in land-disturbing activities (i.e., clearing and grading a site) must prepare and submit an erosion and sediment control plan with the permit application. If permitted, those operators must use best management practices consistent with the Georgia Soil and Water Conservation Commission's *Manual for Erosion and Sedimentation Control in Georgia* to reduce erosion as well as other requirements contained in the permit. The act prohibits land-disturbing activities in certain areas (e.g., stream buffers and floodplains) and specifies activities that are exempt from its requirements. The Erosion and Sedimentation Act also has education and training certification requirements for certain individuals engaged in erosion and sediment control activities.

Georgia law authorizes the EPD to regulate the disposal of treated wastewater onto land instead of discharging it into waters of the United States (which requires an NPDES permit). Any person discharging domestic, municipal, commercial, or industrial wastewaters into a land disposal system must obtain a land disposal permit.³¹

Septic System Regulation

Publicly owned treatment works and associated sewer systems and other types of on-site sewage management systems are used primarily in more heavily populated areas. In rural areas, septic tanks are predominantly used. If these systems are not properly operated and maintained, they can be sources of surface water or groundwater pollution. State law designates the Department of Community Health as the agency responsible for regulating on-site sewage management.³² The department's requirements govern the location, design, permitting, construction, inspection, maintenance, and operation of septic systems. Local governments may adopt additional requirements for septic systems. County health department personnel conduct permitting and inspection activities.³³ Any person wanting to build a structure in which a septic system will be used or install a septic system must have a permit from the appropriate county health department. State rules require the property owner to maintain and operate the septic system in a safe and sanitary manner.³⁴ County health department personnel may be called upon to investigate and cite property owners for failure of a septic system (i.e., when seepage or discharge of sewage to the surface occurs).

State Financial Assistance

In addition to funds available through the Clean Water State Revolving Fund, GEFA offers qualified local governments low-interest loans through the Georgia Fund Program for water and wastewater infrastructure projects. The Environmental Emergency Loan Program provides funding to address public health hazards or environmental violations resulting from an unanticipated event. In addition, GEFA offers certain small cities, counties, and water and sewer authorities the opportunity to receive a one-time grant up to \$100,000 to build or expand a public sewer system.³⁵

Drinking Water Quality Protection

The federal Safe Drinking Water Act has four main purposes:

1. To establish standards and treatment requirements for public water systems
2. To control injection into underground sources of drinking water
3. To protect sources of drinking water
4. To provide financing for drinking water infrastructure³⁶

This law specifically recognizes the state's lead role in implementation and enforcement.

Drinking Water Quality Standards

The Safe Drinking Water Act requires the EPA to adopt national health-based standards setting enforceable maximum contaminant levels (primary drinking water standards) for public water systems (defined as a system providing water to the public for human consumption through pipes, if that system serves at least 15 connections or a minimum of 25 people for at least 60 days annually).³⁷ Certain public water systems in Georgia are exempt from compliance with the primary standards. Secondary standards provide nonenforceable guidelines to address substances affecting the odor, color, or aesthetics of drinking water. The Safe Drinking Water Act does not regulate the quality of water from private wells or bottled water.

Regulation of Public Water Systems

Owners and operators of public water systems in Georgia must obtain a permit from the EPD. Public water systems must monitor water quality, conduct periodic laboratory analyses, maintain records, and notify customers if there have been any violations of standards that could result in serious health effects. Most systems must also annually

provide customers with a report disclosing information on water sources, contaminant testing, and any health concerns (Consumer Confidence Report). Drinking water treatment plants must be operated by certified operators. The Georgia State Board of Examiners for the Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysis certifies 13 classes of licenses. The Safe Drinking Water Act gives small water systems special consideration regarding use of treatment technologies and other resources and calls for implementation of programs to ensure these systems have the technical, financial, and managerial capacity to comply with drinking water standards. The act also requires certain public water systems to conduct assessments of their vulnerability to terrorist acts and other intentional acts of contamination. Systems are required to have emergency response plans specifying response measures that will be taken in the event of an incident.

Protecting Underground Sources of Water

The act also requires the EPA to develop and implement an underground injection control program to protect underground sources of drinking water.³⁸ This permitting program regulates the construction, operation, and closure of injection wells that are used for the storage or disposal of fluids. Wells are classified into one of five categories. Local governments that operate Class V (i.e., shallow wells injecting nonhazardous fluids) are subject to these regulations. The EPD implements the underground injection control program in Georgia.

Provisions of the Safe Drinking Water Act also seek to protect sources of drinking water. Through the wellhead protection program, activities on land around public water supply wells or well fields can be controlled in order to prevent uses that may result in contamination. States are required to submit a source water assessment plan (for both surface water and groundwater). The EPD has completed source water assessment plans for existing surface water-supplied drinking systems that use groundwater. The EPD continues to develop wellhead protection plans for proposed new drinking water systems.

The Resource Conservation and Recovery Act addresses concerns regarding water pollution, particularly groundwater pollution, resulting from leaking underground storage tanks (USTs).³⁹ A UST system includes the tank and any underground piping to the tank that has at least 10 percent of its combined volume underground. Most USTs contain petroleum products such as gasoline. Tank owners and operators, including county governments, must comply with program requirements for the following:

- Tank system installation
- Leak detection
- Spill/overflow protection
- Corrosion protection
- Tank closure
- Reporting and record keeping

The UST provisions in the Resource Conservation and Recovery Act also require that owners and operators demonstrate their financial ability to take corrective action and compensate third parties for bodily injury and property damage. In order to meet these requirements, Georgia established the Underground Storage Tank Trust Fund.⁴⁰ This fund receives the proceeds from a state environmental assurance fee of \$0.005 on each gallon of gasoline sold in the state.⁴¹ If local government tank owners and operators meet certain requirements set out by the EPD, they may be partially reimbursed for costs associated with release response and corrective action as well as for compensation of third parties for bodily injury and property damage caused by an accidental release. However, the local government is liable for the first \$10,000 in costs and must provide financial assurance for that amount. If a local government is not in compliance with the EPD requirements, it is liable for all costs associated with an accidental release.

Drinking Water State Revolving Fund Loan Program

The Drinking Water State Revolving Fund loan program helps eligible owners and operators of drinking water systems fund infrastructure and improvements.⁴² The EPA provides states with annual capitalization grants for use in their programs, and the states in turn make low-interest loans to local governments for eligible projects. Like the Clean Water State Revolving Fund loan program, the Drinking Water State Revolving Fund loan program is administered by GEFA and provides funds for a broad range of projects, including construction of new drinking water systems, expansion or upgrade of existing systems, installation of new water distribution lines, system rehabilitation, efforts to maintain compliance, and other water security measures. Georgia may also set aside and use funds for small system assistance, funding for economically disadvantaged systems, technical assistance and capacity development programs, and source water protection efforts.

Georgia Safe Drinking Water Act

The Georgia Safe Drinking Water Act of 1977 is the state's counterpart to the federal Safe Drinking Water Act and provides the legal basis for the regulation of drinking water systems in Georgia.⁴³

Georgia Underground Storage Tank Act

The requirements under Georgia's Underground Storage Tank Act⁴⁴ are similar to those of the federal government. State law exempts the following:

- Tanks storing heating oil to be used on the premises
- Tanks on or above the floor of underground areas
- Septic tanks and systems used for collecting storm water and wastewater
- Tanks holding 100 gallons or less
- Emergency spill and overflow tanks from UST requirements⁴⁵

Water Well Standards Act

The EPD also administers the Water Well Standards Act,⁴⁶ which creates a program for licensing water well contractors (i.e., well drillers and drilling contractors) in accordance with standards set by the Water Well Standards Advisory Council. The law prohibits any person from drilling a water well without a water well contractor's license.⁴⁷ In addition, the law sets forth standards for the siting, construction, and abandonment of individual wells (single-family residence/domestic use); nonpublic water wells (wells that provide drinking water to the public but are below the size threshold for a public water system), irrigation wells, industrial wells, and dewatering wells.⁴⁸

Water Supply/Allocation

Federal regulatory requirements regarding water supply and allocation are very limited. The Army Corps of Engineers has undertaken numerous water infrastructure projects and remains responsible for operating reservoirs around Georgia. The corps can also provide assistance through its continuing authorities program, which focuses on water resource-related projects that are smaller in scope and cost. Among the potentially eligible projects are those that address flood damage reduction, aquatic system restoration, and snagging and clearing of waterways for flood control.⁴⁹

Another federal program that arguably falls into this category is the National Flood Insurance Program. This program provides flood insurance for structures and contents in communities that adopt and enforce an ordinance outlining minimal floodplain management standards. The three components of the National Flood Insurance Program are flood insurance, floodplain management, and flood hazard mapping.⁵⁰ The Federal Emergency Management Agency implements this program federally, and the EPD assists local governments by providing flood maps, flood hazard data, and guidance in understanding, implementing, and maintaining program compliance.

With regard to water allocation, the CWA gives each state the authority to allocate quantities of water within the state. Nothing in the CWA may supersede the state's authority to allocate its water resources. Further, federal agencies must cooperate with the state and local governments to develop comprehensive solutions to prevent, reduce, and eliminate pollution while managing water resources.⁵¹

Any federal role in water allocation has resulted primarily from the federal operation of reservoirs, the participation of federal representatives in interstate water compacts, and water allocation decisions issued by the U.S. Supreme Court.

Several key aspects of Georgia law relating to water withdrawal permitting, reservoirs, water conservation, flood protection, and drought management are discussed in the following sections. However, today, the most notable water resource management program involves the ongoing statewide water resources planning effort.

Comprehensive Statewide Water Management Plan

The Comprehensive Statewide Water Management Planning Act created a framework and process for the development of a state water management plan, with the EPD designated as the lead agency.⁵²

Under the plan approved by the General Assembly and the governor, the EPD will facilitate an ongoing, substate/regional planning process consisting of four major steps:

1. Provision of water resource assessments that describe water supply and wastewater treatment capacities of regional water resources to regional water planning councils
2. Forecasting of needs for water supply and wastewater treatment capacities by regional councils based upon population and employment projections

3. Preparation of a regional water development and conservation plan that identifies management practices for meeting forecasted water supply and wastewater management needs
4. Review and adoption of the regional plan, if it is consistent with the criteria established in the statewide plan

Once the EPD adopts a plan, the water users in the region must implement the plan. The plan will also serve as the basis for the division's water permitting decisions.⁵³

Water Withdrawal Permitting

In the area of water rights, Georgia has adopted a regulated riparian approach in order to allocate surface water and a regulated reasonable use approach for use of groundwater. Under both approaches, the state regulates water withdrawals and transfers to ensure that uses of large amounts of water are reasonable. The Georgia Ground-Water Use Act and water withdrawal provisions of the Georgia Water Quality Control Act both require a permit from the EPD for any water withdrawal exceeding 100,000 gallons per day.⁵⁴ Applicants requesting new or additional surface water or groundwater withdrawals must submit a water conservation plan to the EPD for approval. Before granting a permit, the agency must consider the reasonableness of the withdrawal and the effect on other water resource users. Municipal (i.e., local government) and industrial water withdrawal permits contain limits on the amount of water that may be withdrawn as well as requirements pertaining to monitoring and reporting. Permit terms are usually 10 to 20 years but may extend up to 50 years.

Reservoirs

Georgia law contains several provisions that address reservoirs. Many local governments in Georgia, particularly in North Georgia, use reservoirs to store water for public water supply needs. Local governments that seek to construct a new reservoir must obtain federal authorization, including a permit for the disposal of dredged-and-fill material from the Army Corps of Engineers (for more on these requirements, see the earlier discussion on surface water quality protection), and meet applicable state requirements. In addition, local governments must obtain a water withdrawal permit⁵⁵ and may be required to obtain a dam safety permit⁵⁶ and special approval, if the reservoir is to be built on a designated trout stream. Local governments that own a water supply reservoir must develop and implement a reservoir management plan.

In accordance with the Georgia Water Supply Act of 2008, GEFA conducted an inventory of potential sites for multi-jurisdictional water supply reservoirs. The final report identified 161 existing water supply reservoirs and 114 sites from previous studies. Sixteen reservoirs were deemed to have the “potential for increased water supply yield.” In addition, eight reservoirs are under development or currently in the permitting process.⁵⁷

If a local government wants to construct a reservoir for which more than 50 percent of the total cost is funded by a grant from a state agency or a grant of more than \$250,000 from a state agency is used, that local government must prepare an environmental effects report if the construction of the reservoir might have a significant adverse effect on the natural environment.⁵⁸ GEFA is authorized to provide loans or grants to local governments to expand or increase the capacity of existing reservoirs.⁵⁹

Water Conservation

Water conservation efforts are also very important. In order to promote greater efficiency in residential and commercial water use, Georgia law requires all residential and commercial buildings constructed after 1992 to have low-flow toilets, showerheads, and faucets installed in them.⁶⁰ Other than for plans associated with water withdrawal permits, drought mitigation measures, and plumbing code requirements, Georgia law contains few requirements pertaining to water conservation. However, local governments have numerous opportunities to implement policies requiring water conservation measures, including the following:

- Use of conservation pricing for locally owned water utilities
- Installation of low-flush urinals for new industrial, commercial, and institutional buildings
- Use of rain sensor shutoff switches on new irrigation systems
- Requirements for subunit meters in new multifamily buildings
- Assessment and reduction of water system leakage
- Implementation of residential and commercial water audits
- Provision of low-flow retrofit kits for residential toilets
- Adoption of an e-education and public awareness plan
- Review and oversight of water conservation implementation and performance⁶¹

In response to the 2009 federal district court ruling regarding continued water withdrawals from Lake Lanier, the Georgia Water Stewardship Act of 2010 was passed.⁶² Key provisions of the act include

1. requirements for certain state agencies to review policies and programs to encourage water conservation and enhance water supply;
2. mandates for some public water systems to detect water losses;
3. revisions to state minimum construction standards for new buildings, including use of high-efficiency plumbing fixtures and sub-metering for water use;
4. modification of state and local government authority to impose outdoor watering restrictions;
5. amendments to the permitting system for agricultural water withdrawals; and
6. creation of a joint legislative committee on water supply to examine opportunities for enhancing the state's water supply.

Drought Management Planning

Provisions of Georgia law also provide for drought management planning. The Georgia Drought Management Plan adopted by the Board of Natural Resources includes pre-drought mitigation strategies (water conservation measures) and drought response strategies used in the phased response approach based on drought severity.⁶³ Local governments may adopt mitigation or response strategies beyond those required by the state.

Moving Forward

Counties in many parts of Georgia will continue to face water resource management challenges in the foreseeable future. Demands from population increases and economic expansion coupled with periods of water scarcity and water quality concerns may create difficulties in meeting water supply needs. These difficulties may be intensified by continued interstate water conflicts. Through its current water management planning process, the state is making great strides toward addressing many of these issues, and its regional approach to water resource management shows great promise in reducing intrastate water-use conflicts.

As service providers, county governments will also likely continue to struggle with drinking water and wastewater management costs. Not-

withstanding the need for new service, rehabilitation and replacement of aging infrastructure remain issues. In order to address these needs, local governments may be forced to focus more attention on water and wastewater rate structures, which are generally controversial issues. In addition, as regulatory programs continue to tighten standards on contaminants and pollutants, management costs may increase in order to meet those new requirements.

LAND-USE MANAGEMENT

Through the establishment of sound land management policies, local government officials can protect public health and welfare, enhance the quality of life for local citizens, and preserve the community character. The Georgia Constitution places the authority for land-use management decisions primarily at the local level.⁶⁴ Using this authority, officials can direct growth and development, including the density and location of houses, industries, business and commercial establishments, farming operations, and other land uses, thereby separating incompatible land uses. Although the imposition of land-use controls is often controversial, many counties have discovered too late that without these measures in place, local control may not be available to prevent undesirable land uses that could create nuisance conditions associated with noise, odors, or aesthetics.

Moreover, land-use decisions can influence the amount and types of pollutants generated within a county. For example, poor land-use planning often results in sprawl, which likely increases air pollution. In addition to reducing air pollution, proper land-use planning can mitigate adverse impacts to water quality from storm water runoff, which carries oil, litter, sediment, and chemicals into local waterways.

Land-use decisions also determine the need for a county to provide public infrastructure and services as well as its revenue capacity to finance those services. This aspect of land-use management is particularly important in areas of higher population density. Residents moving from urban areas to rural areas often expect the same availability of services. In terms of the revenue capacity to provide county services, certain land uses do not require a high level of local government or school system services. Thus, land used for commercial, agricultural, or forestry purposes actually generates more tax revenue than the county spends on services. The opposite is true of land developed for residential purposes, as levels of service exceeding the tax revenues generated are

required.⁶⁵ If overall revenues become insufficient to pay the service costs, county officials may be forced to either raise revenue (by imposing fees or taxes) or cut services.

Land-use management decisions also play a key role in preserving vital areas and community character. In many cases, development results in a change in land use—conversion of farms, forests, or other rural lands to a residential, commercial, or industrial use. Moreover, additional property may be converted, taking the form of roads, parking lots, homes, stores, and other developments in order to support the new use.⁶⁶

This section provides an overview of the roles of federal, state, and local governments with regard to land-use management, including regulatory provisions and nonregulatory programs.

Federal Governmental Role

The primary interest of the federal government in land-use management arises from its property ownership and management responsibilities and efforts to restrict discriminatory land-use practices. The U.S. Constitution authorizes Congress to regulate federal property⁶⁷ and gives Congress preemptive power over state and local control of federal lands.⁶⁸ Although that preemption is absolute in many cases, activities regarding certain federal property may be subject to local constraints.

Various federal agencies own and/or protect more than two million acres of property across Georgia. These agencies include the U.S. Forest Service, the U.S. Fish and Wildlife Service, the National Park Service, and the U.S. Department of Defense, including the Army Corps of Engineers.⁶⁹ Georgia also contains nearly 57 miles of federally protected wild (40 miles), scenic (2.5 miles), and recreational (15 miles) rivers.⁷⁰

Since land-use management authority lies primarily at the state and local level, there is no comprehensive federal land-use planning or federal land-use plan. Thus, federal authority over private land-use decisions is limited. Congress has continued to limit any federal land-use authority.⁷¹

Federal Statutes That May Affect Land Use

Despite the lack of direct land-use control authority, the federal government may indirectly control land use through several statutes. Section 404 of the CWA requires localities to obtain a permit from the Army Corps of Engineers in order to discharge dredged or fill materials into waters of the United States. In most cases, these permits are being sought in order to fill wetland areas. Federal law exempts certain activities

from the permitting requirements. Permits issued by the Army Corps of Engineers often contain conditions, restrictions, and requirements for mitigating adverse impacts.

The Endangered Species Act seeks to prevent extinction of threatened and endangered species as well as provide protection for critical habitat areas on which those species rely.⁷² Administered by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, the Endangered Species Act provides a process for species listing and critical habitat designation and limits certain activities on land designated as critical habitat. Because critical habitat may include nonfederally owned lands, the Endangered Species Act provides for the issuance of incidental taking permits, which allow limited destruction or harm to a species, and the development of habitat conservation plans, which allow land uses not jeopardizing the listed species or its recovery. Upon approval of a plan by the U.S. Fish and Wildlife Service, the agency will issue an incidental take permit. The agency has taken other actions to reduce adverse impacts on nonfederal landowners (e.g., “no surprises” rule, safe harbor agreements, and candidate conservation agreements).

The National Environmental Policy Act establishes procedural requirements for federal agencies to follow when taking any action that significantly affects the quality of the human environment.⁷³ Defined broadly, major federal actions include situations in which federal agencies provide assistance, financing, or approval of projects as well as those in which an agency conducts the action. The act’s guidelines contain exemptions and exclusions for certain projects and programs. For actions that are subject to the requirements of the National Environmental Policy Act, agencies must conduct environmental assessments. If the assessment finds no substantial effects on the environment, the agency may produce a Finding of No Significant Impact. If the assessment finds significant impacts, the agency must conduct a more detailed evaluation of those impacts and produce an Environmental Impact Statement. The act does not require an agency decision maker to select the environmentally preferred alternative or prohibit adverse environmental effects. Given the breadth of National Environmental Policy Act requirements, many local government activities may be affected, particularly those funded in part with federal assistance.

Congress enacted the federal Coastal Zone Management Act to preserve, protect, and where possible, restore or enhance the many natural and unique resources of coastal areas.⁷⁴ Recognizing the primacy of state decision making, the law encourages coastal states to develop

and implement coastal zone management plans. Once the National Oceanographic and Atmospheric Administration approves a state plan for program development, it provides funds for program implementation. State plans define the boundaries of the coastal zone, identify uses subject to state regulation, specify the mechanism(s) used in regulation, and provide guidelines on use priorities. A significant provision in the law requires that activities needing a federal license or permit or receiving federal financial assistance that have reasonably foreseeable adverse coastal effects be fully consistent with the state coastal management programs.

Federal Assistance Programs

Federal programs also provide nonregulatory means by which to assist local governments in land-use management, mostly through financial assistance programs. Some of these programs are as follows:⁷⁵

- *Habitat Conservation Plan Land Acquisition Grants.* Pertains to acquisition of lands associated with existing habitat conservation plans.
- *Land and Water Conservation Fund.* Pertains to the purchase of lands for new or existing parks and recreation lands.
- *Wildlife Habitat Incentives Program.* Pertains to incentives for the creation, maintenance, and protection of certain wildlife habitats, with emphasis on those for rare species.
- *The Farm and Ranch Lands Protection Program.* Pertains to support for state and local farmland protection efforts.
- *The Coastal and Estuarine Land Conservation Program.* Pertains to the purchase of land or easements to protect important coastal and estuarine lands.

Cleaning Up Contaminated Properties

Recognizing that there are many areas with abandoned or underutilized properties, particularly urban areas, that face challenges in terms of revitalization and redevelopment, Congress passed the Small Business Liability Relief and Brownfields Revitalization Act of 2002.⁷⁶ The EPA defines brownfields as property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Because these properties are often found in commercial areas that have appropriate transportation,

electrical, and water management infrastructure, they have an increased potential for reuse or redevelopment. Brownfields redevelopment is generally considered to be an urban issue. However, rural areas also have brownfields in the form of old gas stations or closed factories.

Developers are usually reluctant to redevelop brownfields out of concern for cost and liability issues. Costs associated with the actual development of brownfields are 20 percent to 60 percent higher than comparable projects at the urban fringe.⁷⁷ Federal and state laws also impose financial liability on previous and current owners of contaminated property, regardless of fault. Moreover, brownfields owners may be hesitant to sell out of fear that they may be liable for as yet unidentified contamination or undetermined cleanup costs.⁷⁸

The EPA has implemented a brownfields revitalization program that provides technical and financial assistance to states, communities, and stakeholders. The brownfields grants program provides funds to eligible participants, including local governments, for site assessments, cleanup activities, capitalization of revolving loan funds for site cleanups, and job training. Grantees have leveraged an average of \$18.68 for each federal dollar spent and an average of 7.75 jobs per \$100,000 of federal funding. Other benefits include decreases in air and water pollution, increases in property values, and reduction in crime.⁷⁹ Although all local governments are eligible for brownfields program funding and several Georgia municipalities have received such funding, historically it has been more difficult for counties to obtain this funding.

State Governmental Role

In order to better address planning and growth-related concerns, the Georgia General Assembly passed the Georgia Planning Act in 1989 (see Chapter 9 for a comprehensive discussion of planning requirements). The law recognizes that there is an essential public interest in establishing minimum standards for land use in order to protect and preserve the state's natural resources, environment, and vital areas.⁸⁰ The law authorizes the DNR to develop minimum standards and procedures for the protection of these assets.

Georgia law addresses vital areas of the state—those natural resources deemed to be in the interest of the public to protect and preserve, such as wetlands, water supply watersheds, significant groundwater recharge areas, higher elevations in the mountains, and river corridors. The Board of Natural Resources has developed minimum standards and procedures for protecting vital areas, known as environmental planning criteria,

which may include requirements for resource assessments, management plans, and protection ordinances.

In order to fulfill the mandate of protecting vital areas, local officials must identify such areas within their jurisdiction in the local comprehensive plan. If vital areas are present, county officials must determine whether all or a portion of the environmental planning criteria will be implemented through local protection measures. The Department of Community Affairs reviews local comprehensive plans and protection measures to determine consistency with the requirements of the Georgia Planning Act and environmental planning criteria. Satisfying these requirements allows counties to maintain qualified local government status, which establishes eligibility for financial assistance programs.

Protecting Coastal Areas

Three state laws control development in coastal areas: the Coastal Marshlands Protection Act, the Shore Protection Act, and the Georgia Coastal Management Act. The Coastal Marshlands Protection Act authorizes the Coastal Resources Division of the DNR to require permits for erecting structures such as docks, walkways, and buildings and for dredging or filling in estuarine areas.⁸¹ The Shore Protection Act prohibits use of motor vehicles on dunes and beaches while authorizing the Coastal Resources Division to issue permits for limited construction activity in the sand dune areas.⁸²

The Georgia Coastal Management Act enables Georgia to reenter the federal Coastal Zone Management Program.⁸³ The Coastal Resources Division must prepare a coastal zone management plan that includes locally developed policies to guide public and private uses of land and waters in the coastal area. The Georgia Coastal Management Program balances the economic development concerns and natural resource preservation issues identified by the public. This program works with local governments in the 11-county coastal zone service area to monitor water quality, implement the coastal nonpoint source pollution and shellfish sanitation programs, provide education and outreach, and review federal actions (licenses, permits, and projects as well as federally funded activities) in order to ensure consistency with the program.⁸⁴

The Coastal Management Program offers technical assistance to local governments on a variety of coastal issues and provides funding to eligible parties (including county governments) through the Coastal Incentives Grant Program. Under this competitive grant program, a request for proposal is issued outlining the aspects of the project that

should receive priority funding. The program has also developed and submitted a Coastal and Estuarine Land Conservation Program plan to the National Oceanic and Atmospheric Administration, thus allowing potential federal funding for acquisition of lands for preservation.

Georgia Environmental Policy Act

The Georgia Environmental Policy Act requires state agency heads to consider potentially adverse environmental impacts resulting from the actions of their agencies.⁸⁵ The law also applies to any action by a county that receives more than 50 percent of the total project cost from the state or a grant of more than \$250,000 from the state. If the proposed action may result in a significant adverse environmental impact, the responsible agency must prepare an environmental effects report that examines the nature of the impact, alternative actions, measures to avoid or minimize the impact, and other specified factors. The responsible official must publish the report, send it to the EPD, provide legal notice and an opportunity for public comment, and consider all received comments before deciding on a course of action. A public hearing may also be required. Finally, the official must provide notice of his or her final decision.

Nonregulatory Land Conservation Initiatives

The State of Georgia implements several nonregulatory programs to provide funding for land conservation and preservation at the local level. The Georgia Land Conservation Act created a framework for local governments, state and federal agencies, and private partners to protect the state's natural resources.⁸⁶ The Georgia Land Conservation Council, composed of state agency heads and gubernatorial appointees, considers and approves eligible land conservation project proposals. The DNR serves as the lead programmatic agency; however, GEFA reviews the financial aspects of project proposals and makes recommendations to the council. The Georgia Land Conservation Trust Fund provides grant funds annually to local governments that implement approved land conservation projects. In addition, the Georgia Land Conservation Revolving Loan Fund provides loans annually to local governments and state authorities for approved projects. Funds must be used for the acquisition of conservation land or conservation easements supporting the goals of the act.

Georgia has also encouraged land conservation through tax policy. The Land Conservation Tax Credit Program provides income tax credits for donations of real property for conservation purposes.⁸⁷ Because real property tax assessments are based on property value, land committed

to conservation purposes (e.g., through conservation easements) may be subject to a reduction in ad valorem taxes under the program.⁸⁸ In addition to its other duties, the Georgia Land Conservation Program provides assistance with implementation of the Land Conservation Tax Credit Program. Since the program was created in 2005, 210 grant, loan, and tax credit applications have been approved to help preserve over 150,000 acres in Georgia.⁸⁹

Local Governmental Role

Because authority for land-use decisions rests primarily with local governments, county officials can exercise significant influence over land-use management. Local governments have several regulatory mechanisms by which to direct and/or control local land uses.

Over the years, land-use planners have become more innovative with zoning schemes, thereby allowing public officials some flexibility. Available options include the following:

- Conventional zoning
- Incentive zoning
- Nonexclusive agricultural zoning
- Floodplain zoning
- Cluster zoning
- Performance zoning
- Overlay zoning⁹⁰

County governments can adopt subdivision regulations in order to establish minimum standards for subdivision development. These regulations can set requirements for storm water drainage and retention, streamside buffers, wastewater management, drinking water systems, and recreational areas. In many cases, subdivision regulations protect communities by ensuring a properly built environment. They also typically make developers responsible for the installation of basic public infrastructure before the sale of parcels.

Nonregulatory Land Conservation Initiatives

County governments can also play nonregulatory roles in land-use management through land-use planning, acquisition of property or an interest in property, and the creation of tradable development rights programs.⁹¹ Land-use planning identifies unique areas (such as environ-

mentally sensitive areas, historical sites, and parks) that may be targeted for acquisition or preservation. While effective land-use planning can certainly serve as a strong basis for zoning ordinances or subdivision regulations, the practice itself is not regulatory.

Another land-use management tool available to local governments is conservation easements. Georgia law defines a conservation easement as a “non-possessory interest of a holder in real property imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural, scenic, or open-space values of real property; assuring its availability for agricultural, forest, recreational, or open-space use; protecting natural resources; maintaining or enhancing air or water quality; or preserving the historical, architectural, archeological, or cultural aspects of real property.”⁹²

Local governments may also purchase development rights. In these situations, a landowner typically sells the rights to develop a parcel to a government entity. The landowner retains all remaining property rights. Georgia law allows local governments to create Transfer of Development Rights programs.⁹³ This concept allows landowners in restricted areas (sending areas) to transfer certain development rights to landowners in areas where higher-density development may be appropriate and/or supported (receiving areas). In order to create a Transfer of Development Rights program, a local government must pass an ordinance outlining the specifics of the program and may also be required to amend zoning and planning documents.⁹⁴ (For more information on Transfer of Development Rights programs, see Chapter 9).

Tree Ordinances

A number of counties and cities in Georgia have enacted tree ordinances in their communities. Tree ordinances are developed for a variety of reasons, most often in response to rapid land development or in order to improve water quality, protect quality of life, and address natural resource issues. Tree ordinances can range in complexity from simple tree replacement standards to more comprehensive ordinances that address a vast number of natural resources and tree replacement and banking policies.

Moving Forward

Local government land-use controls and land-use management initiatives will remain important to protecting Georgia’s environment and natural resources. As populations increase in parts of the state, land-use

controls will be needed in order to direct growth and development, thus inhibiting sprawl. In more rural parts of the state, land-use controls should be considered in order to prevent locally unwanted land uses. Throughout the state, it is essential that county governments consider implementing land conservation initiatives in order to preserve sensitive areas that contribute to the character of the state.

ENVIRONMENTAL ENFORCEMENT

Federal and state environmental protection agencies have several approaches to enforcement: administrative enforcement, civil enforcement, and criminal enforcement. Citizen lawsuits are another means by which violators may be brought into compliance.

Administrative Enforcement

Administrative enforcement typically provides the most flexibility in resolving an enforcement issue. Within this process, agency staff may conduct facility inspections, investigate activities, request records and information, and issue administrative orders or consent orders. These orders may require alleged violators to take certain actions and may include monetary penalties. Within the EPA, administrative enforcement is considered part of the civil enforcement program.

Civil Enforcement

In the civil enforcement process, the agency files a lawsuit, usually seeking injunctive relief and a civil penalty. An injunction is a court order that either compels a party to take or prohibits a party from taking an action. Policies adopted under some federal environmental laws require that actions seeking a penalty amount above a certain threshold be referred to the U.S. Department of Justice for civil enforcement. The goal of civil enforcement in environmental protection laws is to return an alleged violator to compliance.

Civil and administrative penalties associated with each violation of federal and state environmental laws can be substantial. Under the CAA and the CWA, civil penalties for some violations could bring a maximum fine of \$25,000 per day per violation. Since 1996, the EPA has been required by federal law to adjust federal environmental civil penalties for inflation every four years. As a result, the agency revised the \$25,000 daily maximum penalty to \$37,500 per day effective January 2009. It should also be noted that in this area, Georgia law is stricter than federal law.

Georgia law provides a maximum civil penalty of \$50,000 per day for the first violation of the Georgia Water Quality Control Act and \$100,000 per day for subsequent violations within a 12-month period.⁹⁵

In considering penalty amounts, environmental regulatory agencies usually take into account several factors such as whether the violation was deliberate, damages to the environment and natural resources, past performance history of the alleged violator, and any economic benefits that accrued as a result of noncompliance. Incentives (reduction in penalties) may exist if regulated organizations self-report violations they discover through environmental self-audit programs or evaluations.

Another aspect of the civil enforcement process involves the use of supplemental environmental projects to reduce the penalty amount that may be paid. As part of a settlement agreement, an alleged violator may agree to perform an environmentally beneficial project (a supplemental environmental project) that is somewhat related to the alleged violation. That project cannot be legally required in order to bring the violator back into compliance. For example, a company alleged to have violated sections of the CAA may propose funding for technical assistance to local governments on air quality issues or for retrofits of diesel-powered public equipment in order to reduce emissions. The EPA has a supplemental environmental projects policy that provides further details.

Criminal Enforcement

Criminal enforcement is usually reserved for the most serious environmental violations. Violations for which criminal sanctions are sought involve serious negligence, intentional acts, and “knowing” disregard for the law. Particular attention is paid to situations in which the violator knowingly places another person in imminent danger of death or serious bodily injury. Convictions for criminal violations of environmental laws can carry very significant fines and prison sentences. For example, criminal penalties for tampering with a public water system carry a fine and prison sentences (10 to 20 years).⁹⁶ As expected, the goals of criminal enforcement are punishment and prevention of future crimes.

Citizen Lawsuits

Another approach to environmental enforcement involves citizen lawsuits. Many major federal environmental laws contain sections that allow

“citizens” (defined in the broadest sense and including public interest environmental groups, such as the Southern Environmental Law Center or Greenlaw) to file lawsuits in federal court against regulated parties for alleged violations of environmental laws. Before filing the lawsuit, the citizen (or his or her legal counsel) must provide a 60-day notification (referred to as an intent to sue) to the alleged violator and the EPA. In addition, a continuing violation must exist at the time the lawsuit is filed. Citizen lawsuits are not allowed if a federal or state regulatory agency is diligently prosecuting the alleged violation. While citizens may recover attorney fees in successful actions, they cannot recover any monetary amounts for damages.⁹⁷ Citizens may also sue the administrator of the EPA for failing to perform a duty mandated by federal law. The lawsuit would seek a court order requiring the administrator to perform that duty within a given time. Georgia environmental protection laws do not contain citizen lawsuit provisions.

FEDERAL ENVIRONMENTAL GRANTS AND CONTRACTS

One area that receives little mention in discussions regarding environmental management involves the use of federal grant funds. The EPA provides numerous financial assistance opportunities in many different programs, and county governments are among the eligible participants. Federal environmental grants come with many conditions involving recordkeeping and reporting, procurement of goods and services (typically requiring competition in procurement of services), avoidance of conflicts of interest, and requirements for closeouts. Problems may also arise regarding contracts that use federal environmental funding.

Most local government officials are aware that violations can result in withholding of funds or demands to repay improperly spent funds. However, many officials are not aware that very serious violations may result in suspension or debarment. Suspension usually results in individuals or organizations (including local governments) being denied access to all federal grants and contracts on a temporary basis. Debarment actions usually cover a longer term and may be permanent. In order to avoid these outcomes, county personnel should remain well trained and up-to-date on federal grant/contracting requirements as well as the list of persons who are currently suspended or debarred. Staff at the EPA regional office can provide assistance.

CONCLUSION

Environmental protection efforts have resulted in progress toward better quality of life over the past few decades. Air and water quality have improved. Contaminated property has been identified and cleaned up. As highlighted in Chapter 12, waste generation has been reduced in some areas. People have generally become more aware of environmental issues. Much of this improvement has occurred while the population has increased, the economy has prospered, energy consumption has risen, and vehicle miles traveled have increased. Improvements in environmental quality have occurred as a result of not only regulatory programs but also voluntary and collaborative efforts.

County governments have assumed more responsibilities in response to public expectations for services and actions. They have been delegated greater responsibility for environmental programs from federal and state governments and have made commitments to improve the quality of life for local citizens. As a result, local governments generally provide more services and implement more programs than at any time in the past.

Attention continues to be given to conservation of water, energy, and other resources. County governments can practice conservation in their operations, thereby reducing costs and providing other benefits. As respected members of the community, county officials can encourage business owners, industry leaders, and constituents to incorporate conservation measures into their daily practices. In some cases, these measures can be taken at little or no cost. With a renewed focus on sustainability, county governments across the country are undertaking “green” building projects and implementing other green practices in their operations. Successful implementation of conservation measures and sustainable projects reduces not only current use but also the vulnerability to increased future costs.

It is vital that individuals conducting and supervising county environmental management responsibilities maintain a working knowledge of current requirements. Environmental regulatory requirements are numerous, complex, and ever changing. Given tighter budgets and scores of other priorities, environmental regulatory issues may not always be at the top of the list. However, attention to these details can help local governments avoid future problems.

NOTES

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