

## **Chapter 5**

### **Management Measures for Urban Areas**

#### **5.1 Introduction**

Ohio's water resources show a pattern of less attainment with greater urbanization. Ohio EPA has found few healthy watersheds in older, more extensively urbanized areas of Ohio (Yoder, 1995) and no sampled headwater streams (i.e., draining <20 mi.) exhibited full attainment of the Warmwater Habitat (WWH) use designation (Yoder and Rankin, 1997). Yoder and White (Ohio EPA, 1998) state:

The activities that have the greatest impacts on aquatic life in Ohio's urban watersheds include the wholesale alteration of watershed hydrology, loss and degradation of riparian habitat, direct in-stream habitat degradation via channelization, culverting, and interceptor sewer line placement, excessive sedimentation resulting from land disturbance activities and stream bank erosion (strongly linked to riparian encroachment), and contributions of excessive nutrients, oxygen demanding wastes, and toxic chemical pollutants via urban runoff, point source discharges (both permitted and unpermitted), and spills and other releases.

Whether in urban or less intensive suburban development, these observations agree with research showing an increase of impacts with increased watershed imperviousness (Schueler, 1994). Increases in impervious surfaces are associated with negative changes in hydrology, stream morphology, water chemistry, stream temperature, and biodiversity. Significant stream health impacts have been shown to occur with relatively small increases in impervious surfaces in a watershed.

Major changes in land use have occurred over the past 25 years as farmland, woodland and open areas have been converted to urban land uses. In the Lake Erie Basin, impervious areas are estimated to be about 9 percent of the land area. In the Coastal Management Area (CMA), this figure is over 23 percent. This reflects growth of over 12 percent between 1974 and 1994 in the CMA. (Satellite imagery, which was used to estimate impervious area, underestimates actual hard surfaces because of tree canopy.)

Some river watersheds and CMA areas have experienced much higher growth than others. For example, ODNR estimates shows the Rocky River watershed has seen a 23.6 percent growth in urban areas. This pattern of faster growth in outer metropolitan areas is projected to continue by regional planning organizations. Table 5-1 summarizes the 1974 to 1994 growth in impervious areas.

Urban stormwater pollution is a significant problem for water resources in the Lake Erie Basin and the immediate coastal area. Although other sources of pollutants, such as agricultural runoff, are more widespread and contribute a larger total load, urban stormwater pollution is significant and increases as land uses change. As stormwater and pollutant loads increase, channel modification and loss of floodplains and riparian areas diminish the natural capacity for pollutant assimilation and attenuation.

Studies dating from the National Urban Runoff Project (1978–1983) have shown urban runoff to be a major contributor to poor water quality. The major pollutants found in runoff

from urbanized areas include sediment, nutrients, oxygen-demanding substances, road salts, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. While new construction contributes the highest loading of suspended sediments to runoff, the total contribution of pollutants from existing urban areas is best correlated with the percent of impervious cover. Impervious rooftops, streets, and infrastructure tend to accumulate and transport pollutants directly to streams and lakes during rain events. Higher amounts of imperviousness are correlated to higher rates of stream degradation, although the thresholds (percent of imperviousness) at which streams are stressed seems to be relatively low (at or below ten percent).

Roads, highways, and parking areas contribute pollutants to water resources, both during construction and through normal operation and maintenance. Atmospheric deposition and vehicle wear may account for higher levels of heavy metals found in highway runoff. As a rain event occurs, the first runoff washes pavement thus contributing higher concentrations of pollutants than subsequent runoff (first flush phenomena). Roads with higher traffic loads have been shown to produce higher pollutant concentrations. Additionally highways and salt storage areas produce higher concentrations of chlorides in receiving streams (deicing). As highways expand and vegetated medians and shoulder areas are reduced, suspended solids and runoff discharges increase (Wu et al., 1998). Petroleum hydrocarbons also result mostly from transportation-related sources such as parking and roadway areas.

Nutrient and bacterial sources of pollution in urban runoff include household, landscaping, and commercial fertilizer usage, pet wastes, leaves, grass clippings, and faulty on-site septic disposal systems. Portions of the coastal area have combined sewer overflows, which contribute to periodic high fecal coliform counts.

## **5.2 Existing Programs**

Although several agencies have some regulatory control over urban stormwater, Ohio EPA's control is the most geographically comprehensive under its NPDES stormwater and construction site permit programs. ODNR's Division of Soil and Water Conservation provides technical support to county SWCDs that review development plans for pollution control, and educate and assist contractors, engineers, and developers regarding developing and implementation of Stormwater Pollution Prevention Plans. Standards for abating soil erosion and degradation of the waters of the state by sediment are defined by the Division of Soil and Water Conservation and set out in OAC1501:15-1-01 through OAC1501:15-106. Guidance for reducing impacts to water resources during development has been developed by the Division of Soil and Water Conservation and NRCS (*Rainwater and Land Development*, 1996).

There are no existing statewide requirements governing the control of nonpoint pollution from small construction sites that are exempt under the NPDES program, although county or municipal authorities may provide such standards for their localities. The following is a description of existing programs in Ohio that encourage or mandate implementation of management measures for the control of urban sources of nonpoint pollution.

### 5.2.1 Urban Runoff and Construction Activities

Ohio's **Stormwater Discharge Permit Program** is administered by Ohio EPA under its NPDES program. According to the § 6217 program guidance, activities permitted under NPDES are not subject to the management measures set forth under the coastal nonpoint program. The following sources are covered by Ohio's Stormwater Discharge Permit Program and are thus exempt from the management measures in this section:

- Municipal systems located in the § 6217 management area with populations of over 100,000—Akron and Toledo. (Cleveland is serviced by a combined sewer system and is not covered under this permit.)
- All construction sites with land disturbing activities affecting five or more acres of total land.

The Phase II expansion of the NPDES stormwater regulations, published in the Federal Register on December 8, 1999, will increase coverage under the NPDES stormwater permit system to include municipal separate storm sewer systems serving 100,000 people or fewer, certain commercial operations, and construction sites disturbing areas greater than one acre in size. This expanded coverage under NPDES will include the vast majority of urban runoff and construction activity sources present in the § 6217 management area. A listing of additional communities to require coverage is available in the Federal Register (Vol. 63, No. 6, Page 1626-1627).

Ohio's guidelines for stormwater management, land development and urban stream protection have been developed by ODNR in cooperation with the NRCS and Ohio EPA. *Rainwater and Land Development*, published in 1996, sets forth recommended BMPs, pollution prevention during construction, and post-construction pollution prevention. The current NPDES General Permit for Construction activities requires practices to conform with *Rainwater and Land Development* guidelines. ODNR's Division of Soil and Water Conservation, with the help of the NRCS, provides technical assistance and training to SWCDs and Ohio EPA field staff to encourage and promote the use of these guidelines for all construction and land development projects. In Ohio, responsibility for regulating stormwater is held by both local and state authorities. Ohio EPA administers the state regulations which require stormwater permits for construction sites under NPDES. Local zoning and site development requirements can set local standards for development or restrict development in areas that are unsuitable for building. The Ohio Constitution, Article XVIII, Section 3, provides municipalities with the authority to adopt such standards. Ohio Revised Code Chapter 307.79 enables boards of county commissioners to adopt urban sediment control regulations, and Ohio Revised Code Chapter 519 provides townships with the authority to enact zoning resolutions to control sediment and stormwater runoff. The ODNR Division of Soil and Water Conservation has prepared Model Regulations for Water Management and Sediment Control (Appendix J) to assist local authorities in developing their own local requirements to control urban nonpoint pollution.

Construction activities in coastal areas susceptible to erosion are regulated under the **Lake Erie Coastal Erosion Area Management** policy. **Ohio's Scenic Rivers Program** regulates activities that alter the watercourse of any designated wild and scenic river outside of municipal boundaries. Portions of the Maumee, Sandusky, Chagrin, Upper Cuyahoga and Grand Rivers have been designated Wild or Scenic Rivers.

Several Ohio programs provide funding to promote watershed protection activities in developing areas. Grants for projects pertaining to Lake Erie water quality protection are provided through the **Lake Erie Protection Fund**. Financial assistance for the implementation of conservation and pollution prevention projects is also provided through grants from ODNR's **NatureWorks** program, and Ohio EPA's **CWA Section 319 Grant Program**.

Other enforceable controls that can be invoked to reduce urban stormwater pollution include Ohio EPA's authority under ORC 6111 to enforce water quality standards, the NPDES permit system for stormwater discharges associated with industrial activity, and the ODNR Division of Wildlife's authority under ORC 1531, including the Stream Litter Law.

- **ORC 6111:** ORC requires that changes to Ohio's appropriate TMDL procedures be adopted in rules and enforced for all stormwater discharges.
- **NPDES Industrial Stormwater Permitting:** Under the NPDES system, permits are required for stormwater discharges associated with industrial activity. Under the system, coastal waters are to receive special attention by regulators. It is important to note that activities on sites that result in runoff discharge that is not covered by Phase I of the NPDES permit requirements, are subject to regulation under a state's CNPCP. Furthermore, on-site disposal systems that are generally not covered by the stormwater permit program are subject to the state's CNPCP.
- **ORC 1531 and the Stream Litter Law:** On the basis of biological data and public input, the ODNR Division of Wildlife can issue regulations that protect wildlife by requiring permits for activities that threaten or kill aquatic life. The Stream Litter Law prevents stream litter or other discharges that kill or endanger wild animals and stream life in the waters of Ohio.

### **5.2.2 Regional Watershed Planning**

Watershed management is a growing concern in Ohio as local efforts to control pollution increase. However, local watershed organizations, especially non-governmental groups, typically lack financial support to plan, implement, and sustain their projects. Sustainable watershed partnerships provide the long-term interest and focus needed for effective, local watershed management. The State of Ohio acknowledges the importance of sustainable watershed partnerships to water resource protection, and will support and encourage the formation and existence of a sustainable watershed partnership for every watershed in Ohio. In 1997, the Ohio EPA published the *Guide to Developing Watershed Action Plans in Ohio*. Ohio EPA is directing all watershed-based projects to use this guide to develop watershed plans in advance of implementation. Currently, there are ten watershed planning projects underway, funded through ODNR and Ohio EPA, to test the usefulness of the guide and provide input for future editions.

Regional planning for development and watershed management in the § 6217 management area is coordinated through the efforts of four municipal planning organizations: the Toledo Metropolitan Area Council of Governments (Lucas, Ottawa, Sandusky and Wood Counties), the Eastgate Development and Transportation Agency (Mahoning and Trumbull Counties), the Northeast Ohio Areawide Coordinating Agency (NOACA) (Cuyahoga, Geauga, Lake, Lorain and Medina Counties), and the Northeast Ohio Four County Regional Planning and

Development Organization (NEFCO) (Summit and Wayne Counties). These planning organizations work with the local entities within their areas to assist them in developing, funding and implementing measures to preserve and protect their watersheds. Currently the four regional planning agencies are involved in updating regional **CWA Section 208 Water Quality Management Plans** to reflect current water quality conditions and to recommend strategies to enhance wastewater facilities and watershed protection planning in the Lake Erie basin.

The Northeast Ohio Water Quality Management Plan Update is being prepared through a cooperative effort of NOACA and NEFCO to provide for the protection of those water resources that have special or unique benefits to the residents of the region. A Critical Resources Working Group was established to identify those water resources that could benefit from the kinds of protection available under a regional Water Quality Management Plan. A Protective Measures work group was also formed, charged with the task of identifying a broad set of legislative or administrative tools, which could be used to protect special resources. NOACA and NEFCO are also working with the Ohio EPA and Local Health Departments to develop recommendations aimed at upgrading the state's on-site disposal system standards.

Watershed planning efforts are also well underway within the four Lake Erie AOCs through the **Remedial Action Plan (RAP)** process (see Section 2.1.4). RAP Groups for these watersheds have made considerable progress in identifying impairments and developing RAPs to protect their watersheds using a systematic ecosystem approach with considerable community involvement.

Local watershed planning efforts are also promoted by Ohio EPA's **CWA Section 319 Grant Program** and ODNR's **Urban Streams Program**. Both agencies provide financial and technical assistance to local organizations interested in initiating watershed planning efforts. In the Toledo Metropolitan Area, the Maumee River Regional Stormwater Coalition, funded by the Lake Erie Protection Fund, formed to initiate a regional stormwater management district that would be able to develop and adopt regional stormwater management standards

Ohio State University Extension's **Community-Based Watershed Management Program** will provide expanded assistance to the development of new and emerging watershed partnerships and the watershed planning that they will need to undertake. Funded through the state's Watershed Action Agenda, five Extension agents will provide educational assistance in organizational development and watershed planning.

### **5.2.3 On-Site Disposal Systems**

The authority to regulate household wastewater disposal systems is shared by the Ohio Department of Health (ODH), the Ohio EPA, and local health departments. Minimum standards for the location, design, construction, installation, operation, maintenance, and abandonment of on-site household sewage disposal systems were established under the broad authority of ORC 3701.34. Ohio's **Household Sewage Disposal Rules** for one, two, and three family dwellings are contained in OAC Rules 3701-29-01 through 3701-29-21. The ODH and local health departments are responsible for implementing on-site sewage disposal programs, with ODH also being responsible for regulatory development and technical

assistance. Local health departments are required to enforce all sanitary regulations adopted by the ODH. The rules allow the local health departments to adopt the minimum state standards or more stringent standards when necessary to implement the program effectively. Under Ohio's **Semipublic Sewage System Program**, the authority to regulate semipublic sewage disposal systems is shared by the Ohio EPA and local health departments who contract with the Ohio EPA to conduct activities in this program under ORC 3709.085 and ORC 6111. This authority allows local health departments to conduct maintenance inspections and surveys, collect samples, and take limited enforcement actions for non-compliance. Ohio's **Phosphorus Reduction Strategy** reduces phosphorus loadings to on-site systems in all counties located in the Lake Erie watershed by prohibiting the sales and distribution of household laundry detergent containing greater than 0.5 percent by weight phosphorus. The **Source Water Protection Program** establishes initiatives for public drinking water suppliers to inventory and control potential sources of pollution to their source waters, including on-site disposal facilities.

#### **5.2.4 Pollution Prevention**

The Ohio EPA, through its Office of Pollution Prevention, has developed pollution prevention strategies for the State of Ohio. Ohio EPA is a member of the National Pollution Prevention Roundtable and also participates in the Great Lakes Regional Pollution Prevention Roundtable. Office of Pollution Prevention's efforts primarily focus on industrial/commercial entities incorporating pollution prevention into Ohio EPA's regulatory activities. The agency distributes numerous publications to inform and educate citizens regarding pollution prevention strategies, programs, and practices. In addition, the state's **Solid Waste Management Districts** promote programs on the local level for the proper separation and disposal of household hazardous wastes and yard wastes. Part of the ODNR Division of Soil and Water Conservation's **Agricultural Pollution Abatement Cost Share Program**, focuses on helping new or expanding livestock farmers design and install pollution prevention BMPs. The Division of Soil and Water Conservation annually provides nearly \$200,000 for such efforts.

Effective maintenance and enhancement of the existing urban forest is an important component of urban runoff prevention strategies. The vegetated buffer that the urban forest provides removes and sequesters nutrients and helps to maintain an efficient filter through vigorous vegetation. Urban forests also have the capacity to reduce energy consumption and thereby reduce production of pollutants; increase precipitation infiltration and evapotranspiration, thereby reducing water yield to streams; and filter runoff and air, thereby reducing the transport of pollutants to water bodies. The crucial role the urban forest plays in the prevention and abatement of urban nonpoint source pollution was recognized by the coastal nonpoint forestry work group. Members of this work group recommended that future urban forestry programs be considered as a BMP not only in nonpoint source plans, but also in regional water, air quality, and energy plans. Moreover, existing state and federal regulations are often supplemented by a variety of additional specific county- and local-level controls on urban runoff and construction activities.

The Ohio Comparative Risk Project has studied the effects of population change and urban sprawl on Ohio's environment. In its Draft Strategy Document, the Project proposed that Ohio consider the implementation of the following five specific strategies to control environmental stresses caused by development:

- Revise existing enabling legislation and encourage the local or regional comprehensive planning process.
- The Governor should create a commission composed of legislators, land use professionals, and lay persons to study existing laws and recommend new legislation.
- Create a public/private partnership among state and local government agencies and the private sector to protect land.
- Inform the residents or citizens about environmental issues through an outreach campaign.
- Educate local governments, developers, and citizens on the benefits of open space zoning and farm village developments.

### **5.2.5 Roads, Highways, and Bridges**

ODOT administers projects for the construction of roads, highways, and bridges for most state-owned and federally funded projects, and often consults during the preliminary development phase on transportation projects for counties, municipalities, local planning agencies, and other units of government. In addition, ODOT standards for construction and maintenance are often adopted and followed by the Ohio Turnpike Commission for construction and maintenance of the Ohio Turnpike, and by local agencies and municipalities for local transportation-related projects. However, state law does not mandate the adoption and implementation of ODOT standards for non-ODOT projects.

Sediment and erosion control measures for new transportation construction projects are a required feature in ODOT-administered project contract language regardless of project size. ODOT's Handbook for Erosion and Sediment Control sets forth erosion and sediment control standards and specifications for new transportation construction projects. In addition, ODOT recently developed a supplemental specification that changed the 1997 Construction and Material Specifications document for erosion control. This specification, Temporary Sediment and Erosion Control SS 877, incorporates the NPDES permit requirements, and shifts responsibility for implementation of erosion control measures to the contractors. Enforcement provisions for the implementation of erosion and sediment control measures on new ODOT projects are provided in each project's contract language.

ODOT, working in cooperation with ODNR's Division of Soil and Water Conservation, initiated modifications to its Location and Design Manual regarding channel relocations. As a result, channel relocations are to be designed as close as possible to existing and idealized stream geometry and pattern. Additionally greater detail has been given to designers regarding planning for erosion and sediment control.

In addition to ODOT contract language, implementation of some portions of the roads, highways, and bridges management measures is accomplished through Ohio's **Clean Water Act Sections 319, 401, and 404; RCRA; Ohio's Scenic Rivers Program, Lake Erie Coastal Erosion Area Management Program, and Pesticide Licensing and Applicator Certification Program**. Environmental assessment procedures as specified in the **National Environmental Policy Act (NEPA)** are also required to be followed for all federally funded transportation projects; and all construction projects that disturb over 5 acres in area

(including those involving roads, highways, and bridges) are required to obtain a stormwater discharge permit under Ohio's NPDES program.

### **5.3 § 6217(g) Management Measures: Urban Runoff**

#### **5.3.1 New Development Management Measure**

- (1) By design or performance:
  - (a) After construction has been completed and the site is permanently stabilized, reduce the average annual total suspended solid (TSS) loadings by 80 percent. For the purposes of this measure, an 80 percent TSS reduction is to be determined on an average annual basis,\* or
  - (b) Reduce the postdevelopment loadings of TSS so that the average annual TSS loadings are no greater than predevelopment loadings, and
- (2) To the extent practicable, maintain postdevelopment peak runoff rate and average volume at levels that are similar to predevelopment levels.

\*Based on the average annual TSS loadings from all storms less than or equal to the 2-year/24-hour storm. TSS loadings from storms greater than the 2-year/24-hour storm are not expected to be included in the calculation of the average annual TSS loadings.

#### **Applicability**

This management measure is intended to control urban runoff and to treat associated pollutants generated from new development, redevelopment, and new and relocated roads, highways, and bridges. This management measure applies throughout Ohio's § 6217 management area to construction site activities, including construction of new and relocated roads, highways, and bridges of less than 5 acres in area (except for those activities occurring in municipal areas covered by an NPDES permit). As discussed in Section 5.2, the proposed NPDES Phase II stormwater regulations, when enacted, will expand coverage under that program to include municipalities of less than 100,000 people and construction sites of greater than 1 acre, thus exempting those sources from coverage under this management measure.

#### **Existing Programs and Enforceable Policies and Mechanisms**

Activities under a variety of existing federal, state, and local programs implement erosion and sediment control provisions and new land development sites. These programs are listed in Table 5-2 and are more fully described in Section 5.2; see also the roads, highways, and bridges management measures described later in this chapter.

ODNR's Division of Soil and Water Conservation, Ohio EPA, and NRCS together have defined recommended practices for post construction pollution prevention for the State of Ohio which are set forth in ODNR's *Rainwater and Land Development*. Recommended practices aimed at maintaining pre-development runoff rates and loadings include the establishment of forested buffer strips, grass filter strips, multi-stage channels, infiltration trenches, and water quality ponds. Planning and design criteria for these recommended practices are provided in the manual to assist the site designer and plan reviewer in tailoring

runoff control practices to fit specific site conditions. Locally, municipalities, townships, and counties all have authority to regulate stormwater and land development through local ordinances, resolutions, or zoning resolutions, although the ability of counties and townships to enforce these types of regulations is limited to that provided for in the enabling state legislation.

State authority to enforce the control of urban runoff and pollutants from development sites can be invoked by Ohio EPA for violations of the State's Water Quality Standards under **ORC 6111**. In addition, Ohio EPA administers the state regulations, which require stormwater permits for construction under the NPDES permit program for all construction sites greater than 5 acres. The ODNR Division of Soil and Water Conservation provides funding to SWCDs, which have sponsored educational events and demonstration projects dealing with stormwater quality and BMPs.

Ohio EPA is developing approaches to the establishment of TMDLs for nearly 900 impaired stream and river segments. These segments do not meet water use designations because of pollutant concentrations. Sediment is considered a "pollutant" and, therefore, must have limits established to reduce sediment loads in any segment where it is listed as a cause of impairment.

Through a multitude of partners, OSU Extension is coordinating **Nonpoint Education for Municipal Officials**. This program focuses on the problems related to urban development and increased runoff due to decreases in pervious surfaces. A pilot project in the Lake Erie basin is currently underway on the Grand River.

### **5.3.2 Watershed Protection Management Measure**

Develop a watershed protection program to:

- (1) Avoid conversion, to the extent practicable, of areas that are particularly susceptible to erosion and sediment loss;
- (2) Preserve areas that provide important water quality benefits and/or are necessary to maintain riparian and aquatic biota; and
- (3) Site development, including roads, highways, and bridges, to protect to the extent practicable the natural integrity of waterbodies and natural drainage systems.

#### **Applicability**

This management measure applies to new development or redevelopment including construction of new and relocated roads, highways, and bridges that generate nonpoint source pollutants. This management measure applies throughout Ohio's § 6217 management area.

#### **Existing Programs and Enforceable Policies and Mechanisms**

Ohio's State Water Quality Management Plan, developed under **Clean Water Act Section 208**, is currently being updated through a coordinated effort by Ohio's Municipal Planning Organizations. The **Lake Erie Protection Fund** promotes the protection of environmentally sensitive areas through the funding of research and projects aimed at protecting the quality of Lake Erie's resources. Authority to preserve Ohio's Water Quality Standards is provided to

Ohio EPA under **ORC 6111**. Ohio EPA's **CWA Section 319 Grant Program** provides funding for demonstration projects that involve urban watershed planning and implementation. ODNR's **NatureWorks** Streambanking program has provided funding for the preservation or establishment of buffers along streams, and its **Urban Streams Program** provides funding for the creation of an Urban Streams Specialist position in targeted watersheds located in seven Ohio counties within the § 6217 Management Area (Cuyahoga, Medina, Summit, Lake, Lorain, Erie, and Huron). The Urban Streams Specialist provides technical assistance for the implementation of watershed plans in the targeted watersheds. The **RAP** process for the four Lake Erie AOCs is well underway. RAP Groups for these watersheds have made considerable progress in identifying impairments and developing RAPs to protect their watershed using a systematic ecosystem approach with considerable community involvement. When the development of roads, highways and bridges requires CWA Section 401/404 permitting, ODOT works in conjunction with Ohio EPA to protect natural drainage systems potentially affected. A listing of applicable existing programs that implement this management measure is provided in Table 5-3; Section 5.2 of this document provides a more detailed description of these programs (see also the roads, highways, and bridges management measures described later in this chapter).

### **5.3.3 Site Development Management Measure**

Plan, design, and develop sites to:

- (1) Protect areas that provide important water quality benefits and/or are particularly susceptible to erosion and sediment loss;
- (2) Limit increases of impervious areas, except where necessary;
- (3) Limit land disturbance activities such as clearing and grading, and cut and fill to reduce erosion and sediment loss; and
- (4) Limit disturbance of natural drainage features and vegetation.

#### **Applicability**

This management measure applies to all site development activities including those associated with roads, highways, and bridges. This management measure applies throughout Ohio's § 6217 management area.

#### **Existing Programs and Enforceable Policies and Mechanisms**

Several existing federal, state, and local programs provide measures to protect and preserve natural features and control erosion and sediment loss as a result of site development activities in Ohio. These programs are listed in Table 5-4 and are more fully described in Section 5.2; see also the roads, highways, and bridges management measures described later in this chapter.

ODNR's **Rainwater and Land Development** is targeted specifically for use during site planning and design. Specific recommendations concerning site design and layout set forth in Part I—Stormwater Planning, Site Layout include the following: 1) keep as much of the existing drainage system as possible; 2) avoid encroachment upon riparian areas and streams; and 3) minimize impervious areas.

Locally, municipalities, townships, and counties all have statutory authority to regulate stormwater and land development, and may draft regulations addressing site design, erosion and sediment control, runoff, and preservation of natural site features. Ability to enforce local authorities created under this statutory language is limited to that provided for in the enabling state legislation. State authority to enforce the control of urban runoff and pollutants can be invoked by Ohio EPA for violations of the State's Water Quality Standards under **ORC 6111**. In addition, Ohio EPA administers the state regulations which require stormwater permits for construction sites greater than 5 acres under the NPDES permit program. Ohio EPA currently employs two full-time staff members to implement the stormwater program within the coastal area. **Ohio's Scenic Rivers Program** regulates activities that alter the watercourse of any designated wild and scenic river outside of municipal boundaries. When the development of roads, highways, and bridges requires CWA Section 401/404 permitting, ODOT works in conjunction with ODNR to protect natural drainage systems potentially affected.

## **5.4 § 6217(g) Management Measures: Construction Activities**

### **5.4.1 Construction Site Erosion and Sediment Control Management Measure**

- (1) Reduce erosion and, to the extent practicable, retain sediment on-site during and after construction, and
- (2) Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

#### **Applicability**

This management measure applies to all construction activities on sites less than 5 acres in area that do not have an NPDES permit in order to control erosion and sediment loss from those sites. This management measure does not apply to: (1) construction of a detached single family home on a site of 0.5 acre or more or (2) construction that does not disturb over 5,000 square feet of land on a site.

#### **Existing Programs and Enforceable Policies and Mechanisms**

A listing of the existing programs that implement the provisions of this management measure is provided in Table 5-5; Section 5.2 of this document provides a more detailed description of these programs.

ODNR's Division of Soil and Water Conservation, Ohio EPA, and NRCS, have defined recommended practices for stormwater management, land development and urban stream protection for the State of Ohio which are set forth in ODNR's **Rainwater and Land Development**. Recommendations for implementation of specific practices for sediment control, temporary runoff control, and soil stabilization, along with general pollution prevention procedures are provided in Part III of the Manual. Planning and design criteria for these recommended practices are provided in the manual to assist the site designer and plan reviewer in tailoring erosion and runoff control practices to fit specific site conditions. Locally, municipalities, townships, and counties all have statutory authority to regulate

stormwater and land development, and may draft regulations addressing site design, erosion and sediment control plans, runoff, and preservation of natural site features.

State authority to enforce the control of urban runoff and pollutants can be invoked by Ohio EPA through citation for violations of the State's Water Quality Standards under **ORC 6111**. In addition, Ohio EPA administers the state regulations that require stormwater permits and erosion and sediment control plans for construction sites greater than 5 acres under the NPDES permit program.

#### **5.4.2 Construction Site Chemical Control Management Measure**

- (1) Limit application, generation, and migration of toxic substances;
- (2) Ensure the proper storage and disposal of toxic materials; and
- (3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.

#### **Applicability**

This management measure applies to all construction sites less than 5 acres in area and to new, resurfaced, restored, and reconstructed road, highway, and bridge construction projects of less than 5 acres in area. This management measure does not apply to: (1) construction of a detached single family home on a site of 0.5 acre or more; or (2) construction that does not disturb over 5,000 square feet of land on a site.

#### **Existing Programs and Enforceable Policies and Mechanisms**

Requirements under several existing federal, state, and local programs in Ohio implement the chemical control provisions of this management measure. A listing of the existing programs that implement this management measure is provided in Table 5-6; Section 5.2 of this document provides a more detailed description of these programs.

ODNR's Division of Soil and Water Conservation, Ohio EPA, and NRCS have defined recommended practices for stormwater management, land development, and urban stream protection for the State of Ohio which are set forth in ODNR's *Rainwater and Land Development*. Chapter 7 of the Manual describes general pollution prevention practices to be followed on all construction sites.

State authority to enforce the control of construction site chemicals can be invoked by Ohio EPA under the Clean Water Act to enforce water quality standards, and under RCRA to regulate the storage, disposal, application, generation, and migration of toxic and hazardous substances; by ODA under its Pesticide Licensing and Registration Program to regulate pesticide use; and by the Division of Wildlife under the Stream Litter Law to prevent stream litter or other discharges that kill or endanger wild animals and stream life.

## **5.5 § 6217(g) Management Measures: Existing Development**

### **5.5.1 Existing Development Management Measure**

Develop and implement watershed management programs to reduce runoff pollutant concentrations and volumes from existing development:

- (1) Identify priority local and/or regional watershed pollutant reduction opportunities, e.g., improvements to existing urban runoff control structures;
- (2) Contain a schedule for implementing appropriate controls;
- (3) Limit destruction of natural conveyance systems; and
- (4) Where appropriate, preserve, enhance, or establish buffers along surface waterbodies and their tributaries.

#### **Applicability**

This management measure applies to all urban areas and existing development in order to reduce surface water runoff pollutant loadings from such areas. This management measure applies throughout Ohio's § 6217 management area.

#### **Existing Programs and Enforceable Policies and Mechanisms**

The development of watershed programs in Ohio is promoted through a variety of existing programs. Ohio's State Water Quality Management Plan, developed under the **Clean Water Act Section 208**, is currently being updated through a coordinated effort by two Northeast Ohio Municipal Planning Organizations, NOACA and NEFCO. Authority to preserve Ohio's Water Quality Standards is provided to Ohio EPA under **ORC 6111**. Ohio EPA's **CWA Section 319 Grant Program** provides funding for demonstration projects that involve urban watershed planning and implementation. Financial assistance for the implementation of conservation and pollution prevention projects is also provided through grants from Ohio EPA's **CWA Section 319 Grant Program**, and NRCS's **Public Law 566 Watershed Programs**. ODNR's **NatureWorks** Streambanking program provides funding for the preservation or establishment of buffers along streams, and its **Urban Streams Program** provides funding for the creation of an Urban Streams Specialist position in targeted watersheds located in seven Ohio counties within the § 6217 Management Area. The Urban Streams Specialist provides technical assistance for the implementation of watershed planning in the targeted watersheds. Federal funding for the implementation of three watershed management projects in the § 6217 management area is currently being sought through the **Ohio Coastal Management Enhancement Program**. The proposals submitted for consideration include requests to fund: 1) the support of ODNR in the development of stream mitigation guidance for developments that have negative impacts on small and medium sized streams; 2) the initiation of the Special Area Management Planning process in the area of the Mentor Marsh, City of Mentor Lagoons and Nature Preserve, and surrounding communities; and 3) the development of a watershed plan for Arcola Creek in Lake County. The **RAP** process for the four Lake Erie AOCs is well underway. RAP groups for these watersheds have made progress in identifying impairments and developing RAPs to protect their watershed using a systematic ecosystem approach with considerable community involvement.

A listing of applicable existing programs that implement this management measure is provided in Table 5-7; Section 5.2 of this document provides a more detailed description of these programs.

## **5.6 § 6217(g) Management Measures: On-Site Disposal Systems**

### **5.6.1 New On-Site Disposal Systems Management Measures**

- (1) Ensure that new On-Site Disposal Systems (OSDS) are located, designed, installed, operated, inspected, and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge of pollutants into groundwaters that are closely hydrologically connected to surface waters. Where necessary to meet these objectives: (a) discourage the installation of garbage disposals to reduce hydraulic and nutrient loadings; and (b) where low-volume plumbing fixtures have not been installed in new developments or redevelopments, reduce total hydraulic loading to the OSDS by 25 percent. Implement OSDS inspection schedules for pre-construction, construction, and post-construction.
- (2) Direct the placement of OSDS away from unsuitable areas. Where OSDS placement in suitable areas is not practicable, insure that the OSDS is designed or sited at a density so as not to adversely affect surface waters or groundwater that is closely hydrologically connected to surface water. Unsuitable areas include, but are not limited to, areas with poorly or excessively drained soils; areas with shallow water tables or areas with high seasonal water tables; areas overlying fractured bedrock that drain directly to groundwater; areas within floodplains; or areas where nutrient and/or pathogen concentrations in the effluent cannot be sufficiently treated or reduced before the effluent reaches sensitive waterbodies.
- (3) Establish protective setbacks from surface waters, wetlands, and floodplains for conventional as well as alternative OSDS. The lateral setbacks should be based on soil type, slope, hydrologic factors, and type of OSDS. Where uniform protective setbacks cannot be achieved, site development with OSDS so as not to adversely affect waterbodies and/or contribute to a public health nuisance.
- (4) Establish protective separation distances between OSDS system components and groundwater that are closely, hydrologically connected to surface waters. The separation distances should be based on soil type, distance to groundwater, hydrologic factors, and type of OSDS.
- (5) Where conditions indicate that nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from groundwater, require the installation of OSDS that reduce total nitrogen loadings by 50 percent to groundwater that is closely hydrologically connected to surface water.

### **Applicability**

This management measure applies to all new OSDS including package plants and small-scale or regional treatment facilities not covered by NPDES regulations in order to manage the siting, design, installation, and operation and maintenance of all such OSDS. This management measure applies throughout Ohio's § 6217 management area.

## **Existing Programs and Enforceable Policies and Mechanisms**

The authority to regulate household wastewater disposal systems is shared by ODH, the Ohio EPA, and local health departments. Minimum standards for the location, design, construction, installation, operation, maintenance, and abandonment of on-site household sewage disposal systems were established under the broad authority of ORC 3701.34. Ohio's **Household Sewage Disposal Rules** for one, two, and three family dwellings are contained in OAC 3701-29-01 through 3701-29-21. Under Ohio's **Semipublic Sewage System Program**, the authority to regulate semipublic sewage disposal systems is shared by the Ohio EPA and local health departments who contract with the Ohio EPA to conduct activities in this program under ORC 3709.085 and ORC 6111. This authority allows local health departments to conduct maintenance inspections and surveys, collect samples, and take limited enforcement actions for non-compliance. Ohio's **Source Water Protection Program** established under the **Safe Drinking Water Act**, provides for public drinking water suppliers to inventory and control potential sources of nitrogen pollution to their surface or groundwater source. A listing of existing programs that pertain to this management measure is provided in Table 5-8; a more detailed description of the aforementioned programs can be found in Section 5.2.

### **5.6.2 Operating On-Site Disposal Systems Management Measure**

- (1) Establish and implement policies and systems to ensure that existing OSDS are operated and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge of pollutants into groundwaters that are closely hydrologically connected to surface waters. Where necessary to meet these objectives, encourage the reduced use of garbage disposals, encourage the use of low-volume plumbing fixtures, and reduce total phosphorus loadings to the OSDS by 15 percent (if the use of low-level phosphate detergents has not been required or widely adopted by OSDS users). Establish and implement policies that require an OSDS to be repaired, replaced, or modified where the OSDS fails, or threatens or impairs surface waters.
- (2) Inspect OSDS at a frequency adequate to ascertain whether OSDS are failing.
- (3) Consider replacing or upgrading OSDS to treat influent so that total nitrogen loadings in the effluent are reduced by 50 percent. This provision applies only:
  - (a) where conditions indicate that nitrogen-limited surface waters may be adversely affected by significant groundwater nitrogen loadings from OSDS, and
  - (b) where nitrogen loadings from OSDS are delivered to groundwater that is closely hydrologically connected to surface water.

### **Applicability**

This management measure applies to all operating OSDS throughout Ohio's § 6217 management area. Nutrients, such as nitrogen and phosphorus, are prime constituents of domestic wastewater. Although these nutrients are essential to the health and continued functioning of aquatic ecosystems, excessive inputs of nutrients, organic matter, and sediments result in the excessive growth of macrophytes or phytoplankton leading to eutrophication. In most lakes, including Lake Erie, phosphorus is the limiting nutrient—lowering the input of phosphorus to the lake will limit excessive plant growth. Phosphorus

has long been determined to be a critical pollutant in Lake Erie, and a discharge limit of 11,000 metric tons of phosphorus from all sources was set as the annual target load by the IJC in the Great Lakes Water Quality Agreement.

### ***Existing Programs and Enforceable Policies and Mechanisms***

Existing federal, state, and local programs which support the implementation of the provisions of the Operating On-Site Disposal Systems Management Measure are the same as those listed under Management Measure for New On-Site Disposal Systems. In addition, Ohio's **Phosphorus Reduction Strategy** reduces phosphorus loadings to on-site systems in all counties located in the Lake Erie watershed by prohibiting the sales and distribution of household laundry detergent containing greater than one-half percent by weight phosphorus. See Table 5-9 for a listing of the existing Ohio programs applicable to this management measure.

## ***5.7 § 6217(g) Management Measures: Pollution Prevention***

### ***5.7.1 Pollution Prevention Management Measure***

Implement pollution prevention and education programs to reduce nonpoint source pollutants generated from the following activities, where applicable:

- (1) The improper storage, use, and disposal of household hazardous chemicals, including automobile fluids, pesticides, paints, solvents, etc.;
- (2) Lawn and garden activities, including the application and disposal of lawn and garden care products, and the improper disposal of leaves and yard trimmings;
- (3) Turf management on golf courses, parks, and recreational areas;
- (4) Improper operation and maintenance of on-site disposal systems;
- (5) Discharge of pollutants into storm drains, including floatables, waste oil, and litter;
- (6) Commercial activities including parking lots, gas stations, and other entities not under NPDES purview; and
- (7) Improper disposal of pet excrement.

### ***Applicability***

This management measure applies in all areas within the § 6217 management area and is intended to reduce the generation of nonpoint source pollution.

### ***Existing Programs and Enforceable Policies and Mechanisms***

Ohio EPA, through its Office of Pollution Prevention, has developed pollution prevention strategies for its programs and for the State of Ohio. Ohio EPA is a member of the National Pollution Prevention Roundtable and also participates in the Great Lakes Regional Pollution Prevention Roundtable. The agency distributes numerous publications to inform and educate citizens regarding pollution prevention strategies, programs, and practices. Pollution prevention educational publications and programs designed to reduce nonpoint pollutants are also provided through Ohio's local Solid Waste Management Districts, which promote

programs on the local level for the proper separation and disposal of household hazardous wastes, yard wastes, and pet wastes (HB 592). ODNR, through the SWCD offices, and The OSUE Service through its local offices also offer a variety of educational programs and publications to the public concerning pollution prevention. Also, as stated earlier, most of Ohio's watershed programs are focused on pollution prevention by providing technical and financial assistance. Increasingly, these programs are focusing on permanent protection of critical areas such as riparian buffers. Existing Ohio programs applicable to this management measure are listed in Table 5-10 and are more fully described in Section 5.2.

## **5.8 § 6217(g) Management Measures: Roads, Highways, and Bridges**

### **5.8.1 Management Measure for Planning, Siting, and Developing Roads and Highways**

Plan, site, and develop roads and highways to:

- (1) Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss;
- (2) Limit land disturbance such as clearing and grading and cut and fill to reduce erosion and sediment loss; and
- (3) Limit disturbance of natural drainage features and vegetation.

#### **Applicability**

This management measure applies to site development and land disturbing activities for new, relocated, and reconstructed (widened) roads (including residential streets) and highways in order to reduce the generation of nonpoint source pollutants and to mitigate the impacts of urban runoff and associated pollutants from such activities.

#### **Existing Programs and Enforceable Policies and Mechanisms**

Existing programs in Ohio that provide for the implementation of this management measure for roads, highways, and bridges are listed in Table 5-11, and are more fully described in Section 5.2. ODOT administers projects for the construction of roads, highways, and bridges for all state-owned highways, and has environmental review responsibility for all federally funded projects. All federally funded transportation projects must follow NEPA procedures for an environmental assessment of the project action. Sediment and erosion control measures for new transportation construction projects are a required feature in ODOT-administered project contract language regardless of project size. ODOT's Handbook for Erosion and Sediment Control sets forth erosion and sediment control goals and accepted BMPs for new transportation construction projects. The ODOT project engineer assigned to each project is tasked with the responsibility of overseeing the implementation and effectiveness of the erosion and sediment control measures put in place by the contractor for that project. Enforcement provisions for the implementation of erosion and sediment control measures on ODOT projects are provided in each project's contract language. When the development of roads, highways, and bridges requires CWA Section 401/404 permitting, ODOT works in conjunction with Ohio EPA to protect natural drainage systems potentially affected. For road, highway, and bridge projects not administered by ODOT, local

municipalities, townships, and counties all have statutory authority to regulate stormwater discharges.

### **5.8.2 Management Measure for Bridges**

Site, design, and maintain bridge structures so that sensitive and valuable aquatic ecosystems and areas providing important water quality benefits are protected from adverse effects.

#### **Applicability**

This management measure applies to new, relocated, and rehabilitated bridge structures in order to control erosion, streambed scouring, and surface runoff from such activities. This management measure applies throughout Ohio's § 6217 management area.

#### **Existing Programs and Enforceable Policies and Mechanisms**

Existing federal, state, and local programs that support the implementation of the provisions of this management measure are the same as those listed under the Management Measures for Planning, Siting, and Developing Roads and Highways and are shown in Table 5-12.

### **5.8.3 Management Measure for Construction Projects**

- (1) Reduce erosion and, to the extent practicable, retain sediment on-site during and after construction; and
- (2) Prior to land disturbance, prepare and implement an approved erosion control plan or similar administrative document that contains erosion and sediment control provisions.

#### **Applicability**

This management measure applies to new, replaced, restored, and rehabilitated road, highway, and bridge construction projects in order to control erosion and off-site movement of sediment from such project sites. This management measure applies throughout Ohio's § 6217 management area.

#### **Existing Programs and Enforceable Policies and Mechanisms**

Existing federal, state, and local programs that support the implementation of the provisions of this management measure are the same as those listed under the Management Measure for Planning, Siting, and Developing Roads and Highways and are shown in Table 5-13.

### **5.8.4 Management Measure for Construction Site Chemical Control**

- (1) Limit the application, generation, and migration of toxic substances;
- (2) Ensure the proper storage and disposal of toxic materials; and
- (3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface water.

### ***Applicability***

This management measure applies to new, resurfaced, restored, and rehabilitated road, highway, and bridge construction projects in order to reduce toxic and nutrient loadings from such project sites. This management measure applies throughout Ohio's § 6217 management area.

### ***Existing Programs and Enforceable Policies and Mechanisms***

Requirements under several existing federal, state, and local programs in Ohio implement the chemical control provisions of this management measure. A listing of the existing programs that implement this management measure is provided in Table 5-14; Section 5.2 of this document provides a more detailed description of these programs.

ODOT administers projects for the construction of roads, highways, and bridges for all state-owned highways, and has environmental review responsibility for all federally funded projects. Sediment and erosion control measures for new transportation construction projects are a required feature in ODOT-administered project contract language regardless of project size. ODOT's Handbook for Erosion and Sediment Control sets forth accepted BMPs for new transportation construction projects. The ODOT project engineer assigned to each project is tasked with the responsibility of overseeing the implementation and effectiveness of the erosion and sediment control measures put in place by the contractor for that project. State authority to enforce the control of construction site chemicals can be invoked by Ohio EPA under the **Clean Water Act** to enforce water quality standards, and under **RCRA** to regulate the storage, disposal, application, generation and migration of toxic and hazardous substances; by ODA under its **Pesticide Licensing and Registration Program** to regulate pesticide use; and by the Division of Wildlife under the **Stream Litter Law** to prevent stream litter or other discharges that kill or endanger wild animals and stream life.

### ***5.8.5 Management Measure for Operation and Maintenance***

Incorporate pollution prevention procedures into the operation and maintenance of roads, highways, and bridges to reduce pollutant loadings to surface waters.

### ***Applicability***

This management measure applies to existing, restored, and rehabilitated roads, highways, and bridges. This management measure applies throughout Ohio's § 6217 management area.

### ***Existing Programs and Enforceable Policies and Mechanisms***

The standard operation and maintenance procedures followed by ODOT and its contractors incorporate BMPs to reduce the potential for the release of pollutants into the environment. State authority to enforce the control of chemicals and other pollutants resulting from highway operation and maintenance activities can be invoked by Ohio EPA under the **Clean Water Act** to enforce water quality standards, and under **RCRA** to regulate the storage, disposal, application, generation, and migration of toxic and hazardous substances; by ODA under its **Pesticide Licensing and Registration Program** to regulate pesticide use; and by the Division of Wildlife under the **Stream Litter Law** to prevent stream litter or other discharges that kill or endanger wild animals and stream life.

A listing of programs that implement this management measure is provided in Table 5-15.

### **5.8.6 Management Measure for Road, Highway, and Bridge Runoff Systems**

Develop and implement runoff management systems for existing roads, highways, and bridges to reduce runoff pollutant concentrations and volumes entering surface waters.

- (1) Identify priority and watershed pollutant reduction opportunities (e.g., improvements to existing urban runoff control structures; and
- (2) Establish schedules for implementing appropriate controls.

#### **Applicability**

This management measure applies to existing, resurfaced, restored, and rehabilitated roads, highways, and bridges, located in areas where Ohio's NPDES Permit Program does not already apply, that contribute to adverse effects in surface waters.

#### **Existing Programs and Enforceable Policies and Mechanisms**

The need for additional runoff management controls for existing roads, highways, and bridges is determined and implemented by ODOT on a case-by-case basis when runoff problems are indicated. In addition, State authority to enforce the control of pollutants from runoff can be invoked by Ohio EPA under the **Clean Water Act** to enforce water quality standards, and under **RCRA** to regulate the storage, disposal, application, generation, and migration of toxic and hazardous substances; by ODA under its **Pesticide Licensing and Registration Program** to regulate pesticide use; and by the Division of Wildlife under the **Stream Litter Law** to prevent stream litter or other discharges that kill or endanger wild animals and stream life.

Table 5-16 provides a listing of the existing programs that implement this management measure; Section 5.2 of this document provides a more detailed description of these programs.

## **5.9 Strategies and Recommendations**

Over the past two years several public participation processes were put in place to assess nonpoint sources of pollution in the coastal area and throughout the state. In September 1997, ODNR convened six committees to assess coastal nonpoint problems, including those arising from expanding urban development. Subsequently, the Department initiated a statewide nonpoint source planning process, creating ten work groups. The work of both the coastal and statewide work groups have been integrated here, and forms the basis for the coastal urban nonpoint program priorities of the State of Ohio for the next five years.

Measures to control urban runoff and urban nonpoint pollution in Ohio are currently implemented through a variety of existing federal, state, and local programs that involve regulatory and voluntary approaches to achieving substantial conformity with the aforementioned specified management measures. Substantial conformance with urban runoff management measures related to construction activities can be achieved by the Phase I and II

stormwater program, as well as the voluntary implementation of ODNR/NRCS-recommended standards for new development. ODOT administers the implementation of nonpoint abatement measures (primarily erosion and sediment control) in new state and federally funded transportation projects through contract requirements on a project-by-project basis. ODOT specifications for road, highway, and bridge construction are often adopted by local agencies and municipalities; however, statewide standards for such projects are not mandated. Enforcement authority is provided for certain mandatory pollution abatement measures and is initiated primarily on a complaint-driven basis, consisting largely of administrative orders. Enforcement authority and mandatory implementation requirements are not currently provided for all sources and for all management measures identified in the Urban Areas category.

The proposed Phase II expansion of the NPDES stormwater regulations, when enacted, will increase coverage under the NPDES stormwater permit system to include municipal separate storm sewer systems (MS4s) in urbanized areas, certain commercial operations, and construction sites affecting areas of greater than one acre in size. In addition, the NPDES permitting authority in Ohio can expand coverage to include any MS4 or construction activity, regardless of size, that has the potential for adverse impacts on water quality or for significant contribution of pollutants based on a TMDL, watershed, or other local assessment. This expanded coverage under NPDES will address stormwater concerns for the vast majority of urban runoff and construction activity sources present or anticipated in Ohio's § 6217 management area.

Similarly, enhanced review and enforcement of Ohio's Section 401 Water Quality Certification and Anti-Degradation Programs is integral to prevent further water quality degradation and to improve conditions in Ohio's urban areas. Revising the State agency review process under the Section 401/404 Permit Program to allow for review of proposed projects during project planning and design, rather than after the project plan/design is complete, should serve to increase compliance with program requirements. In addition, development of specific criteria and regional conditions to be considered in the Section 401/404 and anti-degradation review processes will provide for additional water quality protection from degradation due to urban nonpoint sources.

Future efforts to improve implementation and enforcement of specific management measures will be directed to those areas where water quality impairments persist after program implementation. The following recommendations relating to urban problems affecting coastal waters represent a sampling taken from the statewide nonpoint source work group reports (July 1999). (A complete listing of the work group rosters is provided in Appendix F.)

**The following recommendations were derived from coastal and statewide nonpoint source work groups. Although several recommendations are being implemented or are under consideration, taken as a whole they do not, at this time, represent policy adopted by the State of Ohio. Further evaluation and consensus building will be undertaken to allow Ohio to develop a comprehensive implementation agenda.**

## Objective 1

Strengthen support for urban stream protection and restoration by local government and residents.

Objective 1 Recommendation	Measure(s) of Success	Resource(s) Needed	Responsible Organization(s)	Time Frame Beginning
Utilize transportation funding (TEA-21) to restore and enhance headwater streams and riparian corridors.	Develop demonstration projects in conjunction with highway reconstruction	Federal and state funding	ODOT	Years 1-5
Alter priorities of State Revolving Loan Fund to provide greater incentives for nonpoint source control plans and implementation.	Increased percentage of WPCLF dollars for nonpoint BMPs	Changes in policy, prompted by watershed groups, et al.	Ohio EPA	Years 1-3
Encourage local land use planning that includes green space protection and stormwater control.	5 workshops Agenda number of people	Funding	ODNR County and Areawide Planning Agencies	Ongoing
Evaluate current on-site systems in use throughout the state to determine their effectiveness for various site conditions and publish survey results.	Development of survey and evaluation report	Staff Funding	ODH OSUE	Years 2-3
Integrate stream protection standards specifications into ODOT's Location and Design Manuals and standard drawings to improve consistency in engineering design and construction statewide.	Standards and specifications revised	Staff Technical Assistance	ODOT ODNR	Years 1-2
Enact legislation to require state minimum standards for septic system inspection and maintenance.	Development, passage, and implementation of statute	Staff Funding/fees Technical Assistance	ODH	Years 1-2
Update enabling legislation in Township, County, and Municipal Regulations (Ohio Revised Code 519, 303, 711) to include <i>general welfare</i> to enable adoption of local stream protection ordinances.	Adoption of revised regulations	Staff	County Commissioners Assn. Ohio Municipal League Township Trustees Assn. ODNR	Years 2-3

<b>Objective 1 Recommendation</b>	<b>Measure(s) of Success</b>	<b>Resource(s) Needed</b>	<b>Responsible Organization(s)</b>	<b>Time Frame Beginning</b>
Develop set of standards for stream modification for incorporation into existing regulatory programs to improve consistency across county and municipal boundaries	Standards for stream protection, restoration or modification developed	Staff Technical Assistance	ODNR	Years 1-2
Develop comprehensive land use planning guidelines that include natural resource protection component.	Model guidelines developed	Coastal grants	ODNR Local and areawide planning agencies OSUE	Year 2
Increase size and scope of urban forests, including riparian forested buffers, to address pollution prevention and abatement as part of comprehensive planning process.	10% canopy increase within 10 years	Incentive grants Changes in program priorities	ODNR Regulatory air pollution control agencies Local stormwater utilities	Year 1
Update <i>Rainwater and Land Development</i> to aid designers of BMPs for post-construction control and stream restoration projects.	Manual updated	Printing funds Staff time	ODNR, Ohio EPA, NRCS Local engineers Consultants	Year 1
Encourage fishing in urban rivers by holding clinics, performing creel surveys, & increasing urban river recreation as part of "Wild Ohio."	Increased ODNR recreational events	Greater priority for urban river recreation	ODNR	Years 2-10
Apply existing research to reduce the pollutants in highway runoff.	Analyses of FHWA data for application to stormwater runoff programs	None	ODOT	Years 2-5
Establish funding mechanism to be used for retrofitting stormwater BMPs, stream restoration, and buffers along streams in areas where highways have impacted water quality.	5-10 demonstration projects cooperatively funded by state and federal programs	TEA-21 funding (coupled with other grants and stream mitigation monies)	ODOT ODNR	Year 1

<b>Objective 1 Recommendation</b>	<b>Measure(s) of Success</b>	<b>Resource(s) Needed</b>	<b>Responsible Organization(s)</b>	<b>Time Frame Beginning</b>
Establish model watershed project using comprehensive planning in which partner communities utilize BMPs to reduce imperviousness and pollution controls for stormwater, conservation development, and floodplain/riparian easements to lessen impacts of future development.	One model project started by end of 2001	Incentive grant(s) from CZMA (coupled with other funds)	ODNR Regional planning organizations	

## **Objective 2**

Support community-based watershed groups.

<b>Objective 2 Recommendation</b>	<b>Measure(s) of Success</b>	<b>Resource(s) Needed</b>	<b>Responsible Organization(s)</b>	<b>Time Frame Beginning</b>
Encourage creation of regional watershed councils to help organize and establish local groups, assist with watershed planning, and serve as information clearinghouse.	Councils created	Funding Technical Assistance	ODNR OSUE	Years 1-5
Create a process for involving communities in setting goals for urban watersheds.	Advisory or other group	None	OEPA Areawide planning organizations ODNR	Years 2-3
Dedicate \$2 million of General Revenue Funds annually to match dollar for dollar, local and federal funds acquired by local watershed partnerships for implementation.	Line item in biannual budget Support programs in place	Funding	ODNR	Years 1-3

### **Objective 3**

Increase oversight and performance of onsite sewage systems programs.

<b>Objective 3 Recommendation</b>	<b>Measure(s) of Success</b>	<b>Resource(s) Needed</b>	<b>Responsible Organization(s)</b>	<b>Time Frame Beginning</b>
Improve consistency among OEPA district offices for design requirements of onsite semi-public systems.	Adopted consistent design requirements	Policy changes	OEPA	Years 2-3
Analyze appropriateness of 50% nitrogen reduction standard in management measures 5.6.1 & 5.6.2 to determine availability of systems meeting criteria & "at risk" streams needing such systems.	Report on meeting nitrogen reduction standard	Priority for staff resources and/or grant funding	ODH ODNR	Years 2-5

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**Table 5-1. Estimated Increased Impervious Areas for Watersheds and Coastal Management Areas by River between 1974 and 1994**

<b>Watershed Area</b>	<b>1994 Imperviousness</b>	<b>1974-1994 Increase</b>	<b>CMA 1994 Imperviousness</b>	<b>CMA 1974-1994 Increase</b>
Cuyahoga River	31.20%	8.70%	100%	0.10%
Ottawa River (Toledo)	30.80%	9.60%	67.80%	7.70%
Rocky River	25.60%	23.60%	67.00%	15.10%
Chagrin River	21.10%	7.10%	77.50%	2.40%
Black River	9.60%	15.50%	78.20%	1.30%
Ashtabula River	8.00%	5.40%	80.40%	2.50%
Lower Maumee	6.10%	10.40%	48.00%	3.00%
Grand River	4.10%	11.10%	70.30%	4.60%
Huron River	4.00%	14.70%	25.90%	11.80%
Portage River	3.10%	17.40%	7.10%	46.00%
Sandusky River	3.10%	7.30%	7.00%	6.30%
Vermilion River	2.20%	13.30%	65%	28.10%
Ohio Lake Erie Basin	9.00%	10.21%	23.10%	12.20%

Note: this method only captured large impervious areas (>0.25 ac) such as roads, buildings, parking lots and similar hard surfaces not obstructed from aerial view by tree cover.

Source: ODNR Division of REALM

**Table 5-2. Urban Runoff Measure—New Development**

<b>Program</b>	<b>Legislation</b>	<b>Regulation/ Program</b>	<b>Applicable Measures</b>	<b>Status</b>	<b>Implementing Agency</b>	<b>Enforcement Authority</b>	<b>Evaluation Measures</b>
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
ODNR Stormwater Program	ORC 1511	OAC 1501:15	Construction Site and Stormwater Quality Standards; Education, Tech. Assistance	Voluntary	DSWC, NRCS		
Urban Water Quality Grants Program			Funding for NPS Planning Demonstration & Implementation Projects	Voluntary	ODNR/DSWC		
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/ Township	Injunctive Relief	
Nonpoint Education for Municipal Officials (Pilot project in Grand River watershed)			Education, Technical Assistance Related to Urban Development and Stormwater Management		OSUE		

**Table 5-3. Urban Runoff Measure—Watershed Protection**

Program	Legislation	Regulation/Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
State Water Quality Management Plan	CWA Section 208		Water Quality Management Planning	Regulatory	Ohio EPA		
Clean Water Act	Sections 401/404	OAC 3745-32	Water Quality Certification for Protection of Wetlands Wetland Permitting	Regulatory	USACE, Ohio EPA	Permit Authority	Administrative Orders
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs Grants Program	Regulatory Voluntary	Ohio EPA	Permit Authority	Administrative Orders
Urban Streams Program			Tech. Assist. & Funding for Targeted Watersheds	Voluntary	ODNR		
Remedial Action Plan Process			Watershed Action Planning for Four Lake Erie Areas of Concern	Voluntary	Local RAP Committee		
Lake Erie Protection Fund			Grants for Projects Pertaining to Lake Erie Water Quality Protection	Voluntary	Lake Erie Office		
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/Township	Injunctive Relief	
Environmental Impacts Assessment for Roads, Highways & Bridges	CWA 404/401 WQ Certifications		BMPs for Erosion & Sediment Controls, Runoff Controls, Drainage & Conservation Measures	Required, In Contract Language	ODOT	Permit Authority	Administrative Orders
CWA Section 319 Grants Program			Grants to Upgrade Nonperforming Systems in Huron County	Voluntary Incentive	LHD		

**Table 5-4. Urban Runoff Measure—Site Development**

Program	Legislation	Regulation/ Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
	Clean Water Act Sections 401/404	OAC 3745-32	Water Quality Certification for Protection of Wetlands Wetland Permitting	Regulatory	USACE, Ohio EPA	Permit Authority Administrative Orders	
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
ODNR Stormwater Program	ORC 1511	OAC 1501:15	Construction Site and Stormwater Quality Standards; Education, Technical Assistance	Voluntary	DSWC, NRCS		
Urban Water Quality Grants Program			Funding for NPS Planning Demonstration & Implementation Projects	Voluntary	ODNR/DSWC		
Ohio Scenic Rivers Program	ORC 1501.17		ODNR Approval Required for Public Projects Within 1,000 Ft. of Scenic River (Outside of Municipalities)	Regulatory	ODNR	Injunctive Relief	
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/Township	Injunctive Relief	
Environmental Impacts Assessment for Roads, Highways & Bridges	CWA 404/401 WQ Certifications		BMPs for Erosion & Sediment Controls, Runoff Controls Drainage & Conservation Measures	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	

**Table 5-5. Construction Activities Measure—Construction Site Erosion and Sediment Control**

Program	Legislation	Regulation/Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
ODNR Stormwater Program	ORC 1511	OAC 1501:15	Construction Site and Stormwater Quality Standards. Tech. Assist. and Review	Voluntary	DSCW, NRCS		
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/Twp	Injunctive Relief	

**Table 5-6. Construction Activities Measure—Construction Site Chemical Control**

Program	Legislation	Regulation/ Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
	Resource Conservation and Recovery Act Subtitle D (Solid Waste Management) ORC 3734 Subtitle C (Hazardous Waste Management)	OAC 3745-27-05 OAC 3745-50	Regulates Disposal of Solid & Hazardous Wastes	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
Pesticide License Applicator Certif. Program	ORC 921.01		Training/Licensing Program for Restricted Pesticide Use, Handling	Regulatory	OCES, ODA	Permit Authority Administrative Orders	
ODNR Stormwater Program	ORC 1511	OAC 1505:15	Construction Site and Stormwater Quality Standards; Education Technical Assistance	Voluntary	DSWC, NRCS		
	Stream Litter Law ORC 1531		Prohibits Placement of Litter of Any Kind in Any Watercourse	Regulatory	ODNR	Citation	
Environmental Impacts Assessment for Roads, Highways & Bridges	CWA 404/401 WQ Certification		BMPs for Erosion & Sediment Controls, Runoff Controls, Drainage & Conservation Measures	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	

**Table 5-7. Existing Development Measure—Existing Development**

Program	Legislation	Regulation/ Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
State Water Quality Management Plan	Section 208		Water Quality Management Planning	Regulatory	Ohio EPA		
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
Urban Streams Program			Technical Assistance & Funding for Targeted Watersheds	Voluntary	ODNR		
Remedial Action Plan Process			Watershed Action Planning for Four Lake Erie Areas of Concern	Voluntary	Local RAP Committee		
NatureWorks Streambanking Program			Cost-Sharing for Establishment of Forested Buffers	Voluntary	ODNR		
Urban Water Quality Grants Program			Funding for NPS Planning Demonstration & Implementation Projects	Voluntary	ODNR/DSWC		
OCMP Enhancement Program			Funding for Watershed Planning in the Lake Erie Coastal Zone	Voluntary	ODNR		
Environmental Impacts Assessment for Roads, Highways & Bridges	CWA 404/401 WQ Certification		BMPs for Erosion & Sediment Controls, Runoff Controls, Drainage & Conservation Measures	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	

**Table 5-8. On-Site Disposal Systems Measure—New On-Site Disposal Systems**

Program	Legislation	Regulation/ Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
Household Sewage Disposal Rules	ORC 3701.34	OAC 3701-29	Minimum Standards for Siting, Design, Construction, Installation, Operation, Maintenance, and Abandonment of On-Site Household Sewage Systems	Regulatory	ODH, LHD	LHD Citation	
Semipublic Sewage System Program	ORC 3709.085 ORC 6111	OAC 3745-1 Water Quality Standards NPDES Permit System	Permits for Installation, Operation. Standards for Siting, Design, Maintenance and Operation of Semi-Public On-Site Sewage Treatment Systems; Anti-Degradation Rules; TMDLs.	Regulatory	Ohio EPA, LHD	Ohio EPA, LHD Citation	
CWA Section 319 Grants Program			Grants to Upgrade Nonperforming Systems in Huron County	Voluntary Incentive	LHD		
Ohio Source Water Protection Program	SDWA	ORC 743.25	Potential Pollution Source Inventories, Contamination Susceptibility Assessments for Public Water Supplies	Regulatory	Ohio EPA, Local Authorities		

**Table 5-9. On-Site Disposal Systems Measure—Operating On-Site Disposal Systems**

<b>Program</b>	<b>Legislation</b>	<b>Regulation/Program</b>	<b>Applicable Measures</b>	<b>Status</b>	<b>Implementing Agency</b>	<b>Enforcement Authority</b>	<b>Evaluation Measures</b>
Household Sewage Disposal Rules	ORC 3701.34	OAC 3701-29	Minimum Standards for Siting, Design, Construction, Installation, Operation, Maintenance, and Abandonment of On-Site Household Sewage Systems	Regulatory	ODH, LHD	LHD Citation	
Semipublic Sewage System Program	ORC 3709.085 ORC 6111	OAC 3745-1 Water Quality Standards NPDES Permit System	Permits for Installation, Operation. Standards for Siting, Design, Maintenance and Operation of Semi-Public On-Site Sewage Treatment Systems; Anti-Degradation Rules; TMDLs.	Regulatory	Ohio EPA, LHD	Ohio EPA, LHD Citation	
CWA Section 319 Grants Program			Grants to Upgrade Nonperforming Systems in Huron County	Voluntary Incentive	LHD		
Ohio Source Water Protection Program	SDWA	ORC 743.25	Potential Pollution Source Inventories, Contamination Susceptibility Assessments for Public Water Supplies	Regulatory	Ohio EPA, Local Authorities		
Ohio Phosphorus Reduction Strategy for Lake Erie	ORC 6111.10		Prohibition on Sale and Distribution for Sale of Household Laundry Detergents Containing More than 0.5% by Weight of Phosphorus in All Ohio Counties in Lake Erie Watershed	Regulatory	Ohio EPA		

**Table 5-10. Urban Management Measure—Pollution Prevention**

Program	Legislation	Regulation/Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
Household Sewage Disposal Rules	ORC 3701.34	OAC 3701-29	Minimum Standards for Siting, Design, Construction, Installation, Operation, Maintenance, and Abandonment of On-Site Household Sewage Systems	Regulatory	ODH, LHD	LHD Citation	
Semipublic Sewage System Program	ORC 3709.085 ORC 6111	OAC 3745-1 Water Quality Standards NPDES Permit System	Permits for Installation, Operation. Standards for Siting, Design, Maintenance and Operation of Semi-Public On-Site Sewage Treatment Systems; Anti-Degradation Rules; TMDLs.	Regulatory	Ohio EPA, LHD	Ohio EPA, LHD Citation	
Ohio State Solid Waste Management Plan/Pollution Prevention	HB 592		Establishes Solid Waste Management Districts; Pollution Prevention Goals and Objectives; Education Programs Re: HHW, Composting	Regulatory Voluntary	Ohio EPA DSIWM, OPP, Public Interest Center		
Conservation & Water Quality Education			Education, Cost & Tech. Assistance, Special Projects	Voluntary	OSUE		

**Table 5-11. Roads, Highways, and Bridges Measure—Planning, Siting, and Developing Roads and Highways**

Program	Legislation	Regulation/Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
	National Environmental Policy Act		Environmental Assessment of Federally-Funded Actions	Regulatory	ODOT		
	Clean Water Act Sections 401/404	OAC 3745-32	Water Quality Certification for Protection of Wetlands Wetland Permitting	Regulatory	USACE, Ohio EPA	Permit Authority Administrative Orders	
Lake Erie Coastal Erosion Area Management Program	ORC 1506	OAC 1501:6	Permit Req'd for Construction Activities in Coastal Erosion Areas	Regulatory	ODNR		
Environmental Impacts Assessment for Roads & Highways	CWA 404/401 WQ Certification		BMPs for Erosion & Sediment Controls, Runoff Controls, Drainage & Conservation Measures	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	
Ohio Scenic Rivers Program	ORC 1501.17		ODNR Approval Required for Public Projects Within 1,000 Ft. of Scenic River (Outside of Municipalities)	Regulatory	ODNR	Injunctive Relief	
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/ Township	Injunctive Relief	

**Table 5-12. Roads, Highways, and Bridges Measure—Bridges**

Program	Legislation	Regulation/Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
	National Environmental Policy Act		Environmental Assessment of Federally-Funded Actions	Regulatory	ODOT		
	Clean Water Act Sections 401/404	OAC 3745-32	Water Quality Certification for Protection of Wetlands Wetland Permitting	Regulatory	USACE, Ohio EPA	Permit Authority Administrative Orders	
Lake Erie Coastal Erosion Area Management Program	ORC 1506	OAC 1501:6	Permit Req'd for Construction Activities in Coastal Erosion Areas	Regulatory	ODNR		
Environmental Impacts Assessment for Roads & Highways	CWA 404/401 WQ Certifications		BMPs for Erosion & Sediment Controls, Runoff Controls, Drainage & Conservation Measures	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	
Ohio Scenic Rivers Program	ORC 1501.17		ODNR Approval Required for Public Projects Within 1,000 Ft. of Scenic River (Outside of Municipalities)	Regulatory	ODNR	Injunctive Relief	
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/Township	Injunctive Relief	

**Table 5-13. Roads, Highways, and Bridges Measure—Construction Projects**

Program	Legislation	Regulation/ Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
	National Environmental Policy Act		Environmental Assessment of Federally-Funded Actions	Regulatory	ODOT		
	Clean Water Act Sections 401/404	OAC 3745-32	Water Quality Certification for Protection of Wetlands Wetland Permitting	Regulatory	USACE, Ohio EPA	Permit Authority Administrative Orders	
Lake Erie Coastal Erosion Area Management Program	ORC 1506	OAC 1501:6	Permit Req'd for Construction Activities in Coastal Erosion Areas	Regulatory	ODNR		
Environmental Impacts Assessment for Roads & Highways	CWA 404/401 WQ Certifications		BMPs for Erosion & Sediment Controls, Runoff Controls, Drainage & Conservation Measures	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	
Ohio Scenic Rivers Program	ORC 1501.17		ODNR Approval Required for Public Projects Within 1,000 Ft. of Scenic River (Outside of Municipalities)	Regulatory	ODNR	Injunctive Relief	
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/Twp	Injunctive Relief	

**Table 5-14. Roads, Highways, and Bridges Measure—Construction Site Chemical Control**

<b>Program</b>	<b>Legislation</b>	<b>Regulation/ Program</b>	<b>Applicable Measures</b>	<b>Status</b>	<b>Implementing Agency</b>	<b>Enforcement Authority</b>	<b>Evaluation Measures</b>
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	Ohio EPA	Permit Authority Admin. Orders	
	Resource Conservation and Recovery Act Subtitle D (Solid Waste Management) ORC 3734 Subtitle C (Hazardous Waste Management)	OAC 3745-27-05 OAC 3745-50	Regulates Disposal of Solid & Hazardous Wastes	Regulatory	Ohio EPA	Permit Authority Admin. Orders	
Pesticide License Applicator Certif. Program	ORC 921.01		Training/Licensing Program for Restricted Pesticide Use, Handling	Regulatory	OCES, ODA	Permit Authority Admin. Orders	
Environmental Impacts Assessment for Roads, Highways & Bridges	CWA 404/401 WQ Certifications		BMPs for Erosion & Sediment Controls, Runoff Controls, Drainage & Conservation Measures on Construction Activities	Required, In Contract Language	ODOT	Permit Authority Admin. Orders	
Local Authorities	ORC 307.79 (Counties) ORC 505.75 (Townships)		Authority to Adopt Zoning, Building Codes and Standards	Regulatory	County/ Township	Injunctive Relief	
	Stream Litter Law ORC 1531		Prohibit Placement of Litter in Any Watercourse	Regulatory	ODNR	Citation	

**Table 5-15. Roads, Highways, and Bridges Measure—Operation and Maintenance**

Program	Legislation	Regulation/Program	Applicable Measures	Status	Implementing Agency	Enforcement Authority	Evaluation Measures
Environmental Impacts Assessment for Roads, Highways & Bridges	CWA 404/401 WQ Certification		Operation and Maintenance Procedures for Roads, Highways, Bridges; Pollution Prevention Procedures Runoff Management	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
	Resource Conservation and Recovery Act Subtitle D (Solid Waste Management) ORC 3734 Subtitle C (Hazardous Waste Management)	OAC 3745-27-05 OAC 3745-50	Regulates Disposal of Solid & Hazardous Wastes	Regulatory	Ohio EPA	Permit Authority Administrative Orders	
Pesticide License Applicator Certif. Program	ORC 921.01		Training/Licensing Program for Restricted Pesticide Use, Handling	Regulatory	OCES, ODA	Permit Authority Administrative Orders	
	Stream Litter Law ORC 1531		Prohibit Placement of Litter in Any Watercourse	Regulatory	ODNR	Citation	

**Table 5-16. Roads, Highways, and Bridges Measure—Runoff Systems**

<b>Program</b>	<b>Legislation</b>	<b>Regulation/ Program</b>	<b>Applicable Measures</b>	<b>Status</b>	<b>Implementing Agency</b>	<b>Enforcement Authority</b>	<b>Evaluation Measures</b>
Environmental Impacts Assessment for Roads, Highways & Bridges	CWA 404/401 WQ Certification		Operation and Maintenance Procedures for Roads, Highways, Bridges; Pollution Prevention Procedures Runoff Management	Required, In Contract Language	ODOT	Permit Authority Administrative Orders	
Nonpoint Source Program	Section 319, ORC 6111	OAC 3745-1	Water Quality Standards, Antidegradation Rule; TMDLs	Regulatory	OEPA	Permit Authority Administrative Orders	
	Resource Conservation and Recovery Act Subtitle D (Solid Waste Management) ORC 3734 Subtitle C (Hazardous Waste Management)	OAC 3745-27-05 OAC 3745-50	Regulates Disposal of Solid & Hazardous Wastes	Regulatory	OEPA	Permit Authority Administrative Orders	
Pesticide License Applicator Certif. Program	ORC 921.01		Training/Licensing Program for Restricted Pesticide Use, Handling	Regulatory	OCES, ODA	Permit Authority Administrative Orders	
ODNR Stormwater Program	ORC 1511	OAC 1505:15	Construction Site and Stormwater Quality Standards; Education Technical Assistance	Voluntary	DSWC, NRCS		
	Stream Litter Law ORC 1531		Prohibits Placement of Litter of Any Kind in Any Watercourse	Regulatory	ODNR	Citation	

