

Chapter 4

Public Wastewater Treatment

Introduction

Clean Water Act

On October 18, 1972, the Federal Water Pollution Control Act Amendments became Public Law 92-500. These amendments established a comprehensive water pollution control program. The Act's objective was to *"restore and maintain the chemical, physical, and biological integrity of the Nation's waters."* It established programs to carry out these goals:

- uniform, enforceable national standards for clean water and regulations to enforce those standards;
- a national permit program for discharge from all point sources -- industrial, municipal, commercial, agricultural, and other facilities that release pollutants through pipes and sewers;
- federal funds for construction of sewage treatment systems;
- state and areawide water quality planning programs to coordinate pollution control decisions and to implement feasible methods to achieve clean water over the long term.

The Act was reauthorized and amended in 1977, 1982, and 1987. Among the many changes were to shift responsibility for management and funding from the Federal Government to State and Local agencies. In the 70s, the *Areawide Water Quality Management Plan* was used for issuing Construction Grants for public sewers and wastewater treatment under §201 of the Act. Today, the Construction Grants have been replaced with Revolving Loan programs administered by Ohio EPA and Michigan DNRE. US EPA provides the working capital for these programs through grants. Each State provides matching funds, and loans the money to local governments to build or upgrade public sewerage systems. Both State agencies have reduced interest rate funding available for projects based on financial need.

The Purpose statement of §201 states that: *"To the extent practicable, waste treatment management shall be on an Areawide basis and provide control or treatment of all point and nonpoint sources of pollution, including in place or accumulated pollution sources."* This goal remains relevant despite the declining Federal role.

An Areawide Approach to Public Wastewater Treatment

Facility Planning Areas

Section 208(a)(2) of the Clean Water Act directs that: *"The Governor of each State ... shall identify each area within the State which, as a result of urban-industrial concentrations or other factors, has substantial water quality control problems..."* This language led to the establishment of Facility Planning Areas (FPAs) as a key element of this Areawide Water Quality Management Plan. An FPA may cover a municipality and surrounding developed areas, or areas where public wastewater treatment may be provided more economically or more effectively at a regional level than for each individual political jurisdiction. FPAs provide individual jurisdictions with a means of planning and cooperation to provide service to residents.

Service includes collection of household sewage in pipelines that carry it by gravity and pumping to a "wastewater treatment plant" (WWTP), which may also have a limited ability to treat industrial wastes and/or sludge pumped out of private septic tanks (septage). The term WWTP may also be applied to treatment facilities owned and operated by industries solely for their own process wastes; but in this Plan it normally refers to a municipal facility. The entire system of pipes, fittings, valves, pumping stations, and treatment facilities is called a sewerage system. A Publicly-Operated Treatment Works (POTW) refers specifically to a sewage treatment plant operated by a County, a municipal government, or a sewerage

authority.

This chapter of the Areawide Water Quality Management Plan defines the region's FPAs—both physical boundaries and their application. FPAs are a mechanism for predicting future wastewater collection and treatment needs, and planning facilities to meet them. The FPAs also define the service areas of the designated treatment facilities for purposes of ORC. §6111.03(J)(2)(B).

For FPAs where there is an existing sewerage system, population forecasts corresponding to the FPA boundary allow pipelines, pumping facilities, and treatment equipment to be sized to provide wastewater treatment and meet NPDES permit requirements for the next twenty years. For areas where there is no existing sewerage system, the FPA predicts future needs to help select the best means of providing service to the area.

Regional Wastewater Management Issues

Several wastewater problems or issues are common throughout the TMACOG region. These issues are often referred to in the descriptions of individual FPAs, and discussed here to give the reader a general understanding.

Extraneous Flows

Infiltration and Inflow: Perhaps the single greatest problem experienced by WWTPs throughout the region is that of infiltration and/or inflow.

- **Infiltration** refers to extraneous water entering a sewer system below the ground. It includes leaking service connections - for example, from defective pipes, joints, connections, or manholes.
- **Inflow** refers to extraneous water entering a sewer system above ground through improper openings or connections. It includes catch basins, yard drains, and downspouts hooked into the sanitary sewer instead of a storm sewer; it also includes surface water getting into the sewer through a manhole cover.

Both sources of excess water overload sewers and interfere with the treatment plant's ability to do its job. The excess flow overloads the hydraulic capacity of the WWTP, resulting in by-passes of untreated wastewater during storm events. This issue becomes a critical factor when expansion of a WWTP is proposed due to growth when that growth could be accommodated by the present facility if the problem of infiltration was solved.

Anti-Degradation

US EPA set anti-degradation policy in 40 CFR 131.12 (40 FR 51400 November 8, 1983), stating:

"The State shall develop and adopt a statewide anti-degradation policy and identify the methods for implementing such policy ... consistent with the following:

"Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

A new package plant with a discharge to a local stream would come under anti-degradation requirements, especially where public sewers are available or proposed. In such a case the issue is whether a PTI ought to be issued to allow the package plant, or whether a sewer extension ought to be built instead.

Extensions of existing sanitary sewer systems often come under anti-degradation regulations. This happens when extraneous stormwater overloads the sewerage system, resulting in bypasses or untreated or incompletely treated sewage. Ohio EPA policy requires elimination of extraneous flows as a condition of the PTI. Usually there is a removal multiplier-requirement: e.g., three gallons of extraneous flow must be

eliminated for every gallon of sanitary sewage to be taken on by the system. Michigan DNRE has similar regulations for removal of extraneous stormwater flows, but not through anti-degradation rules.

It is the recommendation that anti-degradation requirements for extraneous flows be consistent and based on a defined storm and removal multiplier.

Industrial Discharge Pre-Treatment

Industrial pretreatment is treatment of wastewater by an industrial facility before it discharges to a WWTP. Pretreatment removes industrial wastes that the WWTP was not designed to treat. Industrial wastes can create problems in sewers (fire, corrosion, explosion), inhibit municipal sewage treatment processes, and pass into the environment by accumulating in the POTW's sludge. Industrial pollutants causing any of the above problems are incompatible with the POTW, and, if industry is to discharge into the public system, industrial effluent will require pretreatment before entering the system.

Under a pre-treatment program, the State and the public sewerage system can require the industry to treat its wastewater to set standards before discharging it to the public sewer. Pre-treatment programs have eliminated many separate industrial wastewater discharges throughout the region.

Package Wastewater Treatment Plants

In many unsewered areas, privately-owned treatment plants are used for sewage disposal. The most commonly-used type of facility is the *extended aeration* treatment plant, which works on a principle similar to the *extended aeration activated sludge* process used in municipal sewage treatment. These small "package" extended aeration treatment plants are manufactured in prefabricated modules, purchased and installed as a "package." The term "package plant" as used in this plan covers all privately owned, sewage treatment plants serving businesses or residential uses with more than three families. The great majority of these systems are extended aeration plants, but the term as used in this plan and policies includes lagoons, trickling filters, Imhoff plants, and other mechanical sewage treatment devices. It does not include commercial septic systems.

Package plants typically range in design capacity from 1,500 to 100,000 gpd. They are used by commercial operations in unsewered areas when the amount of sewage is too great for disposal by a septic tank/leaching field system and/or where soil conditions won't permit a leaching field to operate properly. Package plants are commonly found at gas stations, restaurants, motels, mobile home parks, subdivisions, marinas, rest areas, schools, retail stores, and occasionally at private residences in outlying areas. Often, there is a high concentration of package plants just outside a city's sanitary sewer service area.

Frequently these facilities are not properly operated or maintained. In Ohio, most do not have NPDES permits or licensed operators, although NPDES permits for package plants are becoming more common. In Michigan, all surface water discharges are required to comply with NPDES permits. Package plant owners are often reluctant to tap into a public sewer because they made a substantial investment in the package plant.

Wastewater Sludge Management

Sludge is the solid or slurry byproduct produced in the treatment of water or wastewater. Sewage is treated using a biological process: microorganisms remove organic matter from sewage by digesting it. In the process, the microorganisms grow and reproduce. Over time, it is necessary to remove excess microorganisms from the treatment plant - these excess microorganisms are referred to as "waste activated sludge."

Waste sludge undergoes further treatment before disposal. It may undergo further organic digestion. It may also be dewatered, changing a large volume of slurry into a much smaller volume of "sludge cake."

Waste sludge may be disposed of in one of three ways:

- By incineration
- By placement in a sanitary landfill
- By application to agricultural land

Application to agricultural land is the most common practice in our region, and it is the recommendation of this plan that land application be the preferred alternative. Incineration and land filling are simply disposal, discharging pollutants to the air, soil, and possibly waterways.

Land application recycles nutrients and organic matter in sludge by returning it to agricultural land. Land disposal is regulated by Ohio EPA and Michigan DNRE under Part 503 of Chapter 40 of the Code of Federal Regulations.

The regulatory controls on land application of sludge are extensive. Before a wastewater facility may apply waste sludge to land, it must have an approved Sludge Management Plan from the State agency. This document states how the facility will treat and apply sludge in such a manner as to meet regulatory requirements. Sludge application is limited by its nutrient and heavy metal content. Sampling is required for dioxin/dibenzofurans. Other regulations control the methods and locations of sludge application to prevent runoff, contamination of surface or groundwater, or becoming a nuisance while stockpiled.

Sewage sludges are classified as Class “A” or Class “B” depending on the thoroughness of the treatment process used in killing pathogens. Class “A” is a higher-quality sludge, and fewer restrictions apply to its land application.

Areawide Policies

Designated Management Agencies

For each FPA, one or more Designated Management Agencies (DMAs) are listed. DMAs have local responsibility for facility planning and requesting Plan Amendments as necessary. Each DMA’s responsibility for collection and/or treatment of sanitary sewage is described later in this chapter in each facility planning area, and in the DMA table in Chapter 3. DMAs are responsible for planning and financing facilities needed to carry out their role, and all DMAs are responsible for cooperating in planning sewerage systems that involve multiple DMAs. Typically, the DMA is the County or municipality that owns and operates the central WWTP, but not always. In cases where an FPA does not include a treatment plant, the DMA is typically the entity responsible for building, operating, and maintaining the sewers.

The DMA’s role includes:

- Preparing Facility Plans or sewerage studies to meet Ohio EPA or Michigan DNRE requirements and this Plan’s environmental goals.
- Serve as lead applicant to arrange financing for the construction of needed sewerage improvements.
- Join into service agreements with other political jurisdictions within the FPA to operate and maintain sewers, administer billings, and other activities for system operation.
- Request Areawide Water Quality Management Plan amendments as necessary. Where a conflict arises among the jurisdictions of an FPA, any political jurisdiction may request a plan amendment. TMACOG encourages neighboring governments to resolve sewage service conflicts through a collaborative process. If the affected jurisdictions are unable to resolve conflicts regarding an amendment to TMACOG’s plan through a collaborative process, then these issues will be resolved by TMACOG’s Board of Trustees’ vote on the plan amendment, which is TMACOG’s final decision on the matter.
- The Environmental Council reviews the Ohio EPA and Michigan DNRE revolving loan fund priority lists, and makes any necessary recommendations to achieve the water quality goals of the region.

- DMAs cooperate with Environmental Council in the Plan Amendment and updating process.

Package plants may be permitted in areas of FPAs where public sewerage service is not available.

Facility Planning Area Descriptions and Data

The largest part of this chapter is devoted to discussing each FPA in turn. Each FPA description addresses, where applicable, the following:

- A map showing its boundaries, areas presently served with public sanitary sewers;
- Population forecasts to help predict future needed collection and treatment capacity;
- Description and capacity of current sewerage facilities, including known package plants, regardless of whether they are presently in use;
- Discussion of sludge treatment and disposal practices, and availability of septage treatment services;
- Industrial wastewater pre-treatment services, policies, and capacity;
- Discussion of the adequacy of sewerage facilities to achieve the environmental goals; and
- Recommends needed facility improvements to meet the environmental goals. Examples of these improvements include sewage treatment capacity expansion or upgrades, abatement of combined sewer overflows, elimination of stormwater from sanitary sewers, elimination of package plants, or extension of public sewerage service to presently unsewered areas.

Facility Planning Area Policies

The FPAs were first defined in the §201 Facility Plans, most of which were prepared between 1974 and 1985. Facility Plans were detailed engineering studies of the most cost-effective means of complying with Clean Water Act wastewater treatment requirements. The Facility Plan weighed the costs and benefits of various types of sewer and wastewater treatment plants, and reached a final recommendation. The recommendation was used as a funding request for a Construction Grant under §201 of the Clean Water Act.

The Areawide Water Quality Management Plan consolidates and updates the Planning Areas originally collected from the Facility Plans. This Plan supersedes the FPA boundaries in the Facility Plans, and provides the local governments with a means of fostering cooperation between neighboring Planning Areas.

Generally speaking an FPA is a current or proposed sanitary sewer service area. In most cases, the FPA has a central wastewater treatment plant. In some cases, the FPA is a discrete service area whose wastewater is treated by a neighboring plant. In such cases, a regional approach to wastewater treatment was found to be more cost-effective and/or more environmentally beneficial than a separate wastewater plant.

For the remaining unsewered FPAs, whether to build a new treatment plant or join an existing facility is a key decision, based on:

- Ability to protect public health and produce effluent that will not compromise the receiving stream's environmental quality
- Lowest cost to users
- Feasibility of providing service

Planning areas provide Ohio EPA and Michigan DNRE and local governments with a decision-making tool for the construction of public sewers. It is the policy of this Plan that:

- Ohio EPA and Michigan DNRE may approve sanitary sewer extensions proposed within FPAs if they are consistent with this Plan.
- Areas outside FPAs should be reserved open space, farmland, or low density residential. "Low density residential" is here considered development that is sparse enough to provide onsite sewage treatment according to the policies laid out in the Home Sewage Treatment Chapter of this Plan. Public sanitary sewers should not be extended to areas outside FPAs. Where a road is an FPA

boundary, properties immediately adjacent to either side of that road may be served, as noted below under “Land Use Planning.”

- If a DMA proposes serving an area outside its currently established Facility Planning Area, it may request a Plan Amendment as described in Chapter 3.
- Once an area has sanitary sewerage service as part of an FPA, it shall continue to be served by that wastewater facility, except:
 - When the wastewater facility is no longer able to meet its NPDES permit requirements due to extraneous water, unanticipated growth, or treatment quality problems.
 - By mutual agreement of the affected DMAs.
- Package plants within FPAs shall not be permitted where a public sewer is “available” under applicable state or local regulations. Availability of public sewers is determined by the DMAs responsible for providing sanitary sewerage service at the location in question. In Ohio, Ohio EPA makes a determination whether or not to require connection to a sanitary sewer when the permit to install is approved. The policies of this plan are that:
 - New or existing package plants shall be permitted inside FPAs only where public sewers are not available.
 - NPDES Permits shall be required for all package plants regardless of their size.
 - All Permits to Install and NPDES Permits for new or existing package plants shall be required to tap when public sewers become available.
 - No Permit to Install or NPDES Permit shall be issued for a new or existing package plant where a public sewer is available
 - No Permit to Install or NPDES Permit shall be issued for a new, expanded, or upgraded package plant where making a public sewer available would cost the same or less than the cost of the new, expanded, or upgraded package plant.
 - No NPDES permit shall be granted or renewed for either a new or existing package plant where a public sanitary sewer is available.
- Under this Plan, a “package plant” is inherently a temporary sewage treatment facility, to be used only until such a time as public sewerage service becomes available. As a temporary facility, a package plant does not require a Facility Planning Area. In some cases a small prefabricated extended aeration wastewater treatment plant is owned and operated by a DMA as a permanent facility. In such a case, the plant is considered a POTW, requiring an FPA, for which it is the principal wastewater treatment facility.
- Septic systems shall not be permitted within an FPA when a public sewer is available. Where sewers are not available within an FPA, septic systems shall be permitted, subject to policies set in the On-Site Sewage Treatment Chapter.

Considerations for Setting FPA Boundaries

The Clean Water Act calls for an areawide approach to water quality management, originally used to foster areawide cooperation in wastewater treatment: “...*shall identify each area within the State which, as a result of urban-industrial concentrations or other factors, has substantial water quality control problems...*” This very broad language takes on a new meaning with the elimination of most point source pollution problems, and the recognition that water quality control is now dependent on nonpoint source pollution and aquatic habitat.

The guiding principles used in delineating FPAs under this plan are:

FPAs must be in compliance with the Clean Water Act requirements, notably

- a. “Waste treatment management shall be on an Areawide basis.” [Clean Water Act §201(C)]
- b. “Identification of those areas which, as a result of urban-industrial concentrations or other

factors have substantial water quality control problems”[Clean Water Act §208(A)(2)]

FPA should use sound planning practices to identify future needs for wastewater collection and treatment facilities. An FPA boundary is a planning area for a single specific present or future wastewater plant as well as a service area for the designated wastewater treatment plant. An FPA may include service areas for multiple treatment plants when those plants are interconnected to treat varying flow rates.

- a. FPAs should be compact and contiguous concentrations of urban land uses without islands of one FPA surrounding another.
- b. Remote service areas may be included in an FPA when connected by force main and separated by areas that should remain un-urbanized.
- c. FPAs should be designed to serve residents in the most cost-effective manner without duplication of service.
- d. FPA boundaries should be consistent with adopted local land use plans.
- e. FPA boundaries should be developed through cooperative dialogue among affected local jurisdictions. TMACOG encourages neighboring governments to resolve sewerage service conflicts through a collaborative process. If affected local jurisdictions are unable to resolve conflicts regarding an amendment to TMACOG’s plan through a collaborative process, then these issues will be resolved by TMACOG’s Board of Trustees’ vote on the Plan Amendment which is TMACOG’s final decision in the matter.

Land Use Planning and Sewerage Facility Planning

Land use planning is inseparable from planning sanitary sewers service areas. The availability of public sewers is necessary for urban development, especially in a region where soil conditions are very often unsuitable for onsite sewage disposal. With urban development comes pollution from urban runoff, drainage of wetlands, and loss of farmland. A link between established land use plans and sewer planning allows local governments to anticipate infrastructure needed for growth, rather than reacting to water pollution problems.

Land use plans, zoning, and the Areawide Water Quality Management Plan are closely related and are coordinated through the TMACOG Growth Strategies and Environmental Councils. The FPAs are based on county and local land use, comprehensive, or master plans. Areas designated for urban development by these plans have been included within FPA boundaries. Where a sewer is built along a boundary road, it makes sense to serve both sides of the road. Land use and development policies should be applied to FPAs with this level of detail in mind. This Plan’s policy is a sewer extension be approved:

- When a developed area is outside an FPA but contiguous to it, and
- Sewers in the FPA are close enough to be considered “available” under the applicable Ohio State law or local ordinance in Michigan.
- When sewers are extended outside an FPA, the FPA boundary should be amended to include the served area.

Zoning is the local government’s tool for implementing its land use plan. Since zoning controls what is built, and where, it is important for zoning and this Plan to support each other. FPAs and the information they contain are an integral part of land use planning. In deciding an area’s future land use, it is essential to ask whether sewerage facilities will be adequate to provide service:

- Is the collection system adequate to handle the planned growth?
- Does the wastewater treatment facility responsible for providing service to the area have capacity for the planned growth?

- How much growth is projected for that wastewater treatment facility in the land use plans and zoning of other jurisdictions in its service area?
- Does the FPA's sewerage system have problems with sewer overflows, or extraneous stormwater entering the sewers? Will it be necessary to remove stormwater flows from the system in order to handle sanitary sewage due to planned growth?
- What will the ultimate development density be? If an area is developed as low-density and sewers are sized accordingly, the sewers may become overloaded if the density is increased later on.

Privately-Owned Septage Pretreatment Facilities

Septage is sludge removed from individual septic systems. Unlike waste activated sludge from a wastewater plant, septage has not been stabilized by a treatment process, nor has it been dewatered. As its name implies, septage is anoxic, and can have a strong septic odor.

Disposal of septage is addressed in Chapter 5. There are several options, including disposal in a landfill or application to agricultural land. Taking septage to a landfill is disposal, a means of getting rid of it, but does not recycle the nutrients. Agricultural application is not accepted except under strict controls, and is banned in some counties. Besides odor issues, land application of septage has potential exposure of pathogens to vectors, and can pollute surface water if not properly incorporated into the soil.

A third septage option is discharge to a POTW. A large volume of this high-strength waste, anoxic waste can disrupt the activated sludge treatment process, in addition to causing odor problems. Most POTWs do not accept septage for these reasons. A relatively small number of the larger facilities with capacity/facilities to handle septage do accept it.

A septage pretreatment facility may be designed specifically for this waste stream. A septage pretreatment facility would treat it, producing two waste streams. First, treated liquid effluent that would be discharged to a POTW for final treatment. Second, it would produce stabilized sludge, subject to EPA "Part 503" regulations.

The policy question is whether a privately-owned septage pretreatment facility duplicates a public investment in a POTW. In most cases, it does not. In areas outside FPAs, and in FPAs that do not include restrictions, privately-owned septage pretreatment facilities may be permitted. In cases where POTWs provide septage receiving facilities and have adequate capacity, restrictions on private septage pretreatment facilities may be stipulated in the FPA description. If no restriction is mentioned in the FPA description, they may be permitted.

Plan Amendment Process

This Plan is subject to regular updates as conditions change. Any changes are reviewed and enacted through the TMACOG Environmental Council, which has been charged with responsibility for maintaining the §208 Plan. The Environmental Council, through its operating procedures, provides representation throughout the region, including a seat reserved for each County and the City of Toledo. Designated Management Agencies recognized by this Plan may request a Plan Amendment. Please refer to Chapter 3, Water Quality Management Framework for detail.

State and Federal Programs

Overview

The goal of Areawide Water Quality Management set by the Clean Water Act is to clean up rivers, streams and lakes so that they can support fish and other aquatic life and be used for swimming. Once achieved, the goal is to keep the waters from again becoming polluted. Policies to carry out these goals are set by US EPA and implemented by the State regulatory agencies, Ohio EPA and Michigan DNRE. The main programs are

described below.

Water Quality Standards and Regulations

Section 303 of the Clean Water Act provides that States are to adopt Water Quality Standards to serve as goals. These standards set "use classifications," for waters of the state, water quality criteria to support those uses, and an anti-degradation policy.

Effluent limitations are established as the maximum allowable rate of discharge, concentration, or amount of a pollutant that may be released from a point source into any body of water.

The level of treatment required is based on a *wasteload allocation*. The wasteload allocation assesses treatment responsibility to all sources discharging into a given stream so that each assumes an equitable share. Ohio EPA and Michigan DNRE have the responsibility to prepare these allocations.

NPDES Permits

The National Pollution Discharge Elimination System was established under Section 402 and is a principal enforcement mechanism for regulating point source discharges, including those from municipal wastewater treatment plants. The NPDES permit contains several significant items that affect the planning and operation of POTWs such as the effluent limitations. The degree of treatment to be achieved is defined by the effluent limitations developed by the Ohio EPA or the Michigan DNR. The specific effluent limitations vary with the nature of the receiving waters. The effluent limitations directly influence the type of treatment process; the physical treatment works and the operational efficiency required and are, therefore, of considerable importance.

The NPDES permit also contains limitations, conditions, or schedules that can require the municipality to undertake the construction, upgrading or expansion of its WWTP. Meeting the treatment and time requirements of the NPDES permit is often the stimulus for a community to participate in the SRL Program.

State Revolving Funds Capitalization Grants

In 1987 Amendments to the CWA (P.L. 100-4) began phasing out Construction Grants in favor of State Water Pollution Control Revolving Funds (SRFs) that are to be used by the State to help finance construction of wastewater treatment facilities and programs. These programs are administered by Ohio EPA and Michigan DNRE, and use priority systems to determine the use of funds.

Facility Plans and Sewerage Studies

Facility Plans and sewerage studies are two types of reports used to identify and request approval and funding for sewerage facilities.

The Facility Plans were extensive planning documents of prescribed format. They were a required step for funding of Construction Grants under §201. A **Facility Plan's** purpose is to weigh the alternatives for sewerage service in an area, and recommend the best, most cost-effective solution. A **General Plan** (Ohio EPA) or a **Detailed Engineering Report and Basis of Design** (Michigan DNRE) are more commonly used today. The evaluation of alternatives is less rigorous; it is a statement from the local jurisdiction of how it intends to comply with its NPDES Permit, and show a feasible financing plan.

State and Areawide Planning

There are planning programs for publicly-owned wastewater treatment services, at the State level and at the

Areawide level. The State programs are carried by Ohio EPA and Michigan DNRE, while TMACOG is the designated Areawide agency.

State Level Planning: The States were given several planning responsibilities under the Clean Water Act.

1. The identification of relationship, linkages and strategies for programs authorized by the Clean Water Act, the Resource Conservation and Recovery Act and the Safe Drinking Water Act;
2. Construction Grant and Revolving Loan Fund management;
3. Administration of the permits programs;
4. Water quality management planning and certification;
5. Water quality standards development, review and revision;
6. Enforcement, including compliance assurance activities.

Areawide Water Quality Planning: The object of Areawide Water Quality Planning under Section 208 of the *Clean Water Act* is to develop a comprehensive program(s) for the collection and treatment of water and for controlling water pollution from all point and non-point sources. TMACOG, as the regional 208 planning agency has developed an Areawide strategy for the responsibilities for pollution abatement of participating jurisdictions in the region.

1. Establish and maintain an Areawide policy decision-making forum to oversee implementation of the 208 Areawide plan and resolve conflict that may arise among participants in the 208 Areawide plan,
2. Implement changes in the *Areawide Water Quality Management Plan* following the amendment process defined in Chapter 3 of this plan.