



The Municipal Primer

Your Guide to
Creating a
"Green and Growing"
Community



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Commissioner





Wastewater Planning and Management



Photo: CT DEP

Pictured —
Wastewater Treatment Plant,
Jewett City, Connecticut

Wastewater is generated in every municipality and there are different approaches to its management. The issues surrounding how sewage, or wastewater, is managed are very complex and have significant implications for landscape stewardship and responsible growth. Higher densities of development that may be supportive of responsible growth require more intensive wastewater management. Conversely, the availability of more intensive wastewater management systems can increase pressure for more dense development, sometimes in areas that may be sensitive to development for other reasons.

Municipalities are responsible for planning and managing, or making arrangements to manage, the wastewater generated within their boundaries. Solutions to municipal wastewater management are not “one size fits all” and optimal approaches vary by municipality and situation. Wastewater treatment approaches can generally be separated into two categories: 1) centralized sewer systems (e.g., municipal wastewater/sewage treatment plants); and 2) decentralized systems (e.g., individual on-site septic systems and/or community sewerage systems*).

Another variable in wastewater planning is the technology selected for treatment, which can range from traditional to alternative technologies. Specific municipal situations may call for the use of only one of these approaches or technologies; however, it is more likely that a combination of approaches and technologies will be appropriate for managing wastewater generated within municipal boundaries.

The CT DEP and the CT Department of Public Health share regulatory (permitting) responsibility for wastewater management in Connecticut.

To aid in coordination between municipal wastewater management efforts and the CT DEP, this section of *The Municipal Primer* provides fact sheets on:

- *Municipal Wastewater Management Planning*
- *Wastewater Management Approaches*
- *Regulating Wastewater at the State Level*



* “community sewerage system” is defined in statute to mean “any sewerage system serving two or more residences in separate structures which is not connected to a municipal sewerage system or which is connected to a municipal sewerage system as a distinct and separately managed district or segment of such system” (CGS Section 7-245(3)).

Municipal Wastewater Management Planning

Description

CT DEP uses “sewage” and “wastewater” interchangeably. “Sewage” is defined in the Connecticut General Statutes to mean “human and animal excretions and all domestic and such manufacturing wastes as may be detrimental to public health (CGS Section 22a-423).

Municipal Connection

A municipality is responsible for managing the wastewater generated within its boundaries.

Municipal Responsibility

Through their Water Pollution Control Authority (WPCA), municipalities are responsible for managing, or making arrangements to manage, the wastewater generated within their boundaries. For rural towns, this responsibility may require only the development and implementation of a water pollution control plan. However, most municipalities have more complex wastewater management needs and their responsibilities are correspondingly more complex.

Statutory Citations

CGS Sections 7-245 through 7-273a

CGS Section 22a-416(b)

Discussion

Wastewater is generated in every city and town, and each municipality is responsible for planning and managing, or making arrangements to manage, the wastewater generated within its boundaries (CGS Sections 7-245 through 7-273a). In most municipalities, this responsibility lies with the local Water Pollution Control Authority. In many instances, managing wastewater will involve the construction and operation of a municipal wastewater treatment facility. In other cases, it will involve reliance on individual, on-site septic systems. In most municipalities, however, wastewater is managed through a

combination of a municipal facility and on-site septic or other wastewater management systems.

Water Pollution Control Plans

Municipalities should plan for wastewater management and a key authority in this effort is the ability to prepare a Water Pollution Control Plan (WPCP)(CGS Section 7-246). A WPCP is a strategic plan that summarizes wastewater management issues in a municipality, and sets forth general goals and objectives and specific implementation measures. While such plans are not mandatory, they do provide for more orderly wastewater management. For non-sewered areas, the WPCA should develop a WPCP that describes the means by which municipal programs are carried out to avoid community wastewater pollution problems. A WPCP must identify areas with existing or planned sewer service, as well as areas where the municipality wants to avoid the installation of municipal sewers. The WPCP must also identify where “community sewerage systems”¹ and decentralized wastewater management districts are specifically allowed, and conversely, disallowed.

For some rural municipalities without existing municipal facilities, the development of a WPCP may be all that is necessary to adequately plan for wastewater management. Such a plan might include a goal of relying solely on individual, subsurface wastewater treatment systems and include implementation measures consisting of the hiring of a qualified sanitarian and the establishment of a town-wide schedule for the inspection and maintenance (pump-out) of each system. Coordination with local health officials during the development of this plan is strongly recommended.

¹ a community sewerage system is “any sewerage system serving two or more residences in separate structures which is not connected to a municipal sewerage system or which is connected to a municipal sewerage system as a distinct and separately managed district or segment of such system” (CGS Section 7-245(3)).

Municipal Wastewater Management Planning

Municipal Wastewater Facilities Plan

For most Connecticut municipalities, wastewater management issues are too complex to be adequately addressed solely by a WPCP. In these instances, the WPCP should be supplemented with a Municipal Wastewater Facilities Plan (MWFP). An MWFP (often referred to as either a “facilities plan” or “engineering report/s”) is any document produced by or for a municipal WPCA that relates to the conveyance or treatment of wastewater. A complete MWFP is often, but not always, a series of documents that provide a clear description of existing conditions including identification of problem areas, an analysis of alternatives and costs, and a WPCA’s long-term intentions for managing their wastewater disposal needs.

Sewer Service Area Map

An MWFP also typically includes a map delineating areas where sewer service exists or is planned, and areas where sewers are to be avoided. It may also identify decentralized management districts, as well as areas where community sewerage systems will be allowed or will be prohibited. Such a map is commonly called a “sewer service area map” (SSA map). Having an approved SSA map is a logical and necessary planning tool that can be utilized not only by the municipality for wastewater management, but by the municipal planner, the planning and/or zoning commission, economic development agency and other local officials to guide development to those areas most suited for more intensive use.

An SSA map must be consistent with the State Plan of Conservation and Development (Plan of C&D) to demonstrate eligibility for Clean Water Fund financing for any sewer extension project or proposed wastewater treatment plant upgrade costing more than \$200,000. (More information on the Plan of C&D is available on the Office of Policy and Management Web site at: www.ct.gov/opm Select “Publications” at the top of the page then select “Physical & Natural Resources;” then *Conservation and Development. Policies Plan 2005-2010*). If a

municipality’s SSA map is approved by CT DEP as part of the MWFP, such approval demonstrates consistency with the Plan of C&D and can be a key to potential funding through the Clean Water Fund.

The best time to develop an SSA map is when there is no large development pending that requires a change in the existing sewer service. Based on CT DEP’s experience, a reasonable schedule for SSA development is 6-9 months assuming it is an inclusive process that involves all concerned parties, as discussed below.

Coordinating Planning Efforts

The provision of wastewater management, along with potable water availability, is a key municipal service that may influence land development patterns. In many cases, higher densities of development can be accommodated in areas where centralized sewage treatment systems can provide a level of treatment that meets state standards. Community sewerage and alternative treatment systems may or may not support relatively dense development. Individual, on-site septic systems generally require more land area per system, particularly where the water supply is provided by on-site wells. Thus, reliance on individual, on-site septic systems is often a contributing factor to sprawl.

Because of the significant land use implications of wastewater treatment planning, each WPCA is strongly encouraged to conduct their planning in a comprehensive way by coordinating with all relevant municipal departments, agencies, boards and commissions. It is especially important to coordinate with the local health department and sanitarians, planning, zoning, conservation, inland wetlands and watercourses, agriculture, historic preservation, and economic development commissions, the municipal finance board, and the chief elected official. The local land use agencies should also consider the MWFP and associated SSA map in their planning efforts and these

Municipal Wastewater Management Planning

documents should become an integral part of the municipality's plan of conservation and development.

CT DEP Reviews

In addition to reviewing Municipal Wastewater Management Plans, the CT DEP must review and approve all extensions and modifications of wastewater conveyance facilities (sewers and pumping stations) and treatment facilities prior to the initiation of construction. When submitted to CT DEP, the project design documents undergo a technical review for consistency with standards established by the New England Interstate Water Pollution Control Commission, and for consistency with Connecticut's Plan of C&D prepared by the CT Office of Policy and Management (OPM).

Potential CT DEP Permits, Registration and/or Certifications

Wastewater Treatment Plant Discharge Permit

Wastewater Treatment Plant Operator Certification

Approval of plans and specifications of all wastewater infrastructure

Financial Assistance

Financial assistance is generally available for wastewater management planning. Follow the link for "Water" at www.ct.gov/dep/financialassistance.

Model Regulations for Municipal Consideration

No.

Web Pages

www.ct.gov/dep Select "Programs and Services" at the top of the page, then select "Municipal Wastewater."

Department of Public Health

www.ct.gov/dph Select "Environmental Health" then follow the link for "Subsurface Sewage (Septic Systems)."

Contact

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Municipal Facilities Section
Phone: 860-424-3704



Description

Wastewater management approaches are ways to collect, treat and dispose of wastewater (sewage).

Municipal Connection

Municipal water pollution control authorities can utilize more than one approach to wastewater management within their water pollution control plan.

Municipal Responsibility

Municipalities are responsible for the management of wastewater generated within their boundaries.

Statutory Citations

CGS Sections 22a-416 through 22a-438

CGS Sections 22a-475 through 22a-483

CGS Sections 22a-500 through 22a-519

Discussion

On-site Wastewater Management

Some municipalities rely entirely on on-site subsurface wastewater disposal without the establishment of a district. This wastewater management approach is suitable in areas where the development densities do not exceed the soils' ability to renovate and absorb the wastewater discharges. Small on-site septic systems (those systems with capacity of less than 5,000 gallons per day) are regulated through the local sanitarian or director of health and the Connecticut Department of Public Health. Larger systems require authorization from the CT DEP.

Centralized Wastewater Systems

Centralized wastewater collection, treatment and disposal systems typically include a collection system of pipes that convey wastewater to a single, large treatment system, often called a "sewage treatment plant." There are approximately 90 Connecticut municipalities that operate publicly-owned

centralized wastewater systems. With an average life expectancy of 20 years, treatment plants must periodically be rebuilt so they continue to meet the minimum national standard of secondary treatment. In addition, many municipalities must modify or rebuild their plants to meet higher levels of treatment, called advanced treatment, in order to meet "fishable-swimmable" water quality standards in the river receiving the discharge. Other needs that prompt system modifications include correction of combined sewer overflows, and increasing the hydraulic capacity of a plant and/or expanding the sewer system to meet growth needs or to address septic system failures in existing developed areas. The newest identified need is nutrient removal to protect Long Island Sound from low levels of dissolved oxygen which are threatening fish and other aquatic life.

Decentralized Wastewater Management Districts

Decentralized wastewater management districts are an approach to managing wastewater characterized by multiple and scattered subsurface sewage treatment and disposal systems. There are three types of wastewater systems that can be used in a decentralized approach:

- 1) a conventional subsurface sewage treatment and disposal system (conventional system), which consists of a house sewer connected to a septic tank connected to a leaching field, along with any necessary pumps or siphons and any groundwater control system on which the operation of the leaching field is dependent;
- 2) a community subsurface sewage treatment and disposal system (community system), is defined in statute as any sewerage system serving two or more residences in separate structures. Most community systems are not connected to a municipal sewerage system; however, some may be part of a municipally-managed decentralized wastewater management district; and

Wastewater Management Approaches

- 3) an alternative subsurface sewage treatment system (AT system), which is often designed for nutrient reduction (typically nitrogen).

A decentralized wastewater management district can rely on one of these approaches or it can include a combination of conventional systems, community systems and alternative systems.

Municipalities have authority to create decentralized wastewater management districts, which are areas designated by the municipality through a local ordinance. In order to establish a decentralized wastewater management district, there must be an engineering report stating that the existing subsurface sewage disposal systems may be detrimental to public health or the environment and that decentralized systems are required to correct the problem. The engineering report must be approved by the Commissioner of CT DEP with concurrence by the Commissioner of Public Health, after consultation with the local director of health. Approval of decentralized management districts typically requires a municipal commitment to upgrading individual systems to a pre-determined standard, through conventional septic systems, alternative technology, or both. A key to a successful district is the continued management by the municipality.

The benefits of establishing decentralized wastewater management districts include: new tools for improved management of new and existing sewage systems; use of alternative treatment technologies for remediation of existing problems; and the avoidance of large-scale infrastructure (centralized treatment systems). In some instances, decentralized wastewater management may be a cost-effective way to address municipal wastewater issues; however, in other instances installation and operation of a decentralized wastewater management district may be as costly as a centralized wastewater system. Decentralized alternatives require a substantial local

maintenance and management commitment in order to be properly implemented. The implementation of such a district requires a coordinated effort between the local health department and the local water pollution control authority.

Regional Water Pollution Control

Authorities

Under CGS Sections 22a-500 through 22a-519, two or more municipalities may create a regional water pollution control authority to provide municipal wastewater services for each of the constituent municipalities of the regional authority. The ownership and operation of the municipal wastewater infrastructure belongs to the regional authority and not the individual constituent municipalities.

Potential CT DEP Permits, Registrations and/or Certifications

Wastewater Discharge Permit

Financial Assistance

The CT DEP provides funding, as available, to municipalities for wastewater management through the Clean Water Fund. See www.ct.gov/dep/financialassistance and select “Water.”

Model Regulations for Municipal Consideration

No.

Web Pages

www.ct.gov/dep Under “Programs and Services” at the top of the page, select “Water” then select “Regulating Water” on the right navigation bar, then select “Subsurface Sewage Treatment and Disposal Systems / Septic Systems.”

Department of Public Health

www.ct.gov/dph Select “Environmental Health” then follow the link for “Subsurface Sewage (Septic Systems).”

Contact

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Municipal Facilities Section
Phone: 860-424-3704



Description

“Sewage” is defined in state statute to mean “human and animal excretions and all domestic and such manufacturing wastes as may be detrimental to public health” (CGS Section 22a-423). CT DEP uses “sewage” and “wastewater” interchangeably.

Municipal Connection

A municipality is responsible for managing the wastewater generated within its boundaries. Planning for wastewater management will result in frequent contact with the CT DEP and the CT Department of Public Health (CT DPH).

Municipal Responsibility

Many activities related to municipal wastewater management require prior authorization and/or approval from the CT DEP or the CT DPH.

Statutory Citation

CGS Sections 22a-416 through 22a-599

Discussion

Although the CT DEP is responsible for regulating discharges to the waters of the state, including both surface waters and groundwaters, it has delegated permitting authority over household and small commercial subsurface disposal systems to the Commissioner of the Department of Public Health (CT DPH) and local sanitarians. How this responsibility is divided is dictated by statute and is based on the type and size of wastewater system proposed. In general, systems involving the discharge of less than 5,000 gallons per day (gpd) of domestic sewage to any one lot are regulated by the CT DPH and/or the local director of health.

Systems with flows greater than 5,000 gpd are regulated by the CT DEP. Additional information on the systems under CT DEP’s authority can be found on CT DEP’s Wastewater Web page (see below). For additional information on the CT DEP programs that regulate subsurface disposal systems, please refer to the section of *The Municipal Primer* titled: *Guide to CT DEP Permits, License and Other Authorizations*.

Potential CT DEP Permits, Registrations and/or Certifications

Wastewater Discharge Permit

Approval of plans and specifications of all wastewater infrastructure

Financial Assistance

The CT DEP provides funding, as available, for municipal wastewater management through the Clean Water Fund. See www.ct.gov/dep/financialassistance and select “Water.”

Model Regulations for Municipal Consideration

No.

Web Pages

www.ct.gov/dep Under “Programs and Services” at the top of the page, select “Water” then select “Regulating Water” on the left navigation bar, then “Subsurface Sewage Treatment and Disposal Systems / Septic Systems.”

Department of Public Health

www.ct.gov/dph Select “Environmental Health” then follow the link for “Subsurface Sewage (Septic Systems).”

Regulating Wastewater at the State Level

Contacts

Systems regulated by CT DEP

- Centralized/municipal wastewater collection and treatment systems

Bureau of Water Protection and Land Reuse
Planning and Standards Division
Municipal Facilities Section
Phone: 860-424-3704

- Conventional septic systems with design flows greater than 5000 gallons per day, including sites where multiple smaller systems on a single “lot” have a combined flow greater than 5000 gallons per day
- Community sewerage systems*
- Any sewerage system utilizing alternative treatment technology, regardless of size

Bureau of Materials Management and
Compliance Assurance
Permitting and Enforcement Division
Subsurface Disposal Program
Phone: 860-424-3018

* “community sewerage system” is defined in statute to mean “any sewerage system serving two or more residences in separate structures which is not connected to a municipal sewerage system or which is connected to a municipal sewerage system as a distinct and separately managed district or segment of such system” (CGS Section 7-245(3)).

Systems where regulation is delegated to others

- Conventional septic system with design flow greater than 2000 gallons per day but less than 5000 gallons per day

DPH Sewage Program
860-509-7296

- Conventional septic system with design flow less than 2000 gallons per day

Local health department in the town the site is located

