

# Madison Water Pollution Control Authority

## Water Pollution Control Plan

### November 2015

In accordance with Section 7-246 of the CT General Statutes, the Madison Water Pollution Control Authority has developed this Water Pollution Control Plan for the Town. As stated in these statutes, this plan is to be prepared and periodically updated, and “shall designate and delineate the boundary of:

- (1) Areas served by any municipal sewerage system;
- (2) areas where municipal sewerage facilities are planned and the schedule of design and construction anticipated or proposed
- (3) areas where sewers are to be avoided
- (4) areas served by any community sewerage system not owned by a municipality
- (5) areas to be served by any proposed community sewerage system not owned by a municipality; and
- (6) areas to be designated as decentralized wastewater management districts.”

This plan also describes the means by which municipal programs are being carried out to avoid community pollution problems and describe any programs wherein the local director of health manages subsurface sewage disposal systems. The plan identifies areas of town that are served by large conventional subsurface sewage disposal systems or alternative wastewater treatment systems, and the management and monitoring programs the WPCA employs to ensure these systems are functioning properly.

The term “Community Sewerage System” is defined in Connecticut General Statutes at Section 7-245 as “... any sewerage system serving two or more residences in separate structures which is not connected to a municipal sewerage system ...”. These sewerage systems may consist of large standard septic systems or “alternative sewage treatment systems”, as defined in this Statute. All community sewerage systems are permitted by the State Department of Energy and Environmental Protection, regardless of size, flow, type, etc. In addition to DEEP permitting authority, Section 7-246f of the CT General Statutes notes that the WPCA “... may ensure the effective management of a community sewerage system ... not owned by a municipality by requiring that the system be owned and managed as provided in this subsection.”

There are other sewage treatment systems that are under the exclusive permitting authority of DEEP. These include any property on which there is an expected or actual sewage flow of greater than 5,000 gallons per day. The DEEP also has permitting authority over most alternative sewage treatment systems. The WPCA has little official involvement with these large or alternative sewage systems. Section 7-247 of the Statutes provides a regulatory framework for the WPCA and local Health Department to establish and manage a “Decentralized Wastewater Management District” in which alternative sewage treatment systems could be required for individual homes, based on specified criteria.

#### **1. Areas Currently Served by a Municipal Sewerage System**

There are no municipal sewers or sewerage systems in Madison.

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#### **2. Areas Where Municipal Sewerage Facilities Are Planned**

In 1981, the Town completed the “Wastewater Facilities Plan for the Town of Madison”. The plan identified downtown Madison as requiring a structural solution (sewers) to solve community pollution problems. As of this time, this plan has not been implemented.

The 1981 facilities plan also identified the Garnet Park area of town as needing public sewers to address a water quality issues due to the predominance of shallow, dug wells for water supply. This problem was rectified in part by the extension of CT water Company service to this area. There are no plans to install sewers in Garnet Park at this time.

For all intents and purposes, the 1981 facilities plan including the designation of areas of concern where public sewers should be considered, is outdated. The WPCA has stated the need and justification for an updated plan that should be undertaken as soon as possible.

The Madison Economic development Commission has considered the installation of a sewerage system in the immediate downtown area, roughly defined as the “Bradley Road Superblock”. This area consists of CT Route 79 from CT Route 1 to Bradley Road on the west; Bradley Road from CT Route 79 to Wall Street on the north; Wall Street from Bradley Road to CT Route 1 on the east and CT Route 1 from Wall Street to CT Route 79 on the south. This plan was presented in the “Bradley Road Vision Study”. As of this time there are no immediate plans to initiate this work.

The 2013 update of Madison’s “Plan of Conservation and Development” calls for a renewed study of sewerage the downtown Madison area. This area encompasses several districts of Madison’s zoning map labeled “Downtown District”, “Downtown Commercial District” and “Downtown Water Restriction District”. This latter district allows only those land uses that do not consume in excess of 1 gallon of water per day for each 10 square feet of building area, or generally the equivalent of typical office/retail uses. This significant water restriction has been in existence since the early 1980’s and has been effective at limiting businesses in this district to low water use activities.

The Health Director works closely with the Zoning Enforcement Officer to screen each potential business in this district to ensure potential water use meets this standard and that the existing subsurface sewage disposal systems (or improved versions) serving each building will be able to accommodate proposed sewage flows. In some instances, a business may be required to amend their practices to be in compliance with these water restrictions or to close down.

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#### 3. Areas Where Sewers are to be Avoided

Except for downtown Madison and Garnet Park, the entire town is considered a Sewer Avoidance Area, and has been for as long as this term has been in use in Connecticut. . The 1981 plan identified three categories of areas throughout town, designated Areas I, II and III.

Designation I areas required immediate structural solutions (sewers). These areas are discussed in Section 2, above.

Designation II areas required ground and surface water monitoring, as well as annual walkover inspections of each property to detect potential sewage system failures. Any degradation of ground or surface water quality or large numbers of sewage system failures in one of these Designation II areas would then indicate the need for a structural solution similar to the Designation I areas. The CT DEEP issued the Town Pollution Abatement Orders in 1981 to implement these recommendations.

The ground water monitoring program carried out in these Designation II areas consisted of sampling and monitoring 10% of the drinking water wells, where available, twice per year for indicators of sewage contamination. This monitoring program was performed for a number of years with no indication of groundwater contamination in these areas and has now been discontinued. Alternatively, the Health Department reviews well water results from private testing laboratories each year as a result of home sales from random locations around town. These results continue to indicate no sewage contamination of the groundwater in those areas of town served by individual wells.

An intensive surface water monitoring program was performed in all Designation II areas. Samples were collected in the larger streams throughout town, along the streams' length and analyzed for indicators of sewage contamination. This monitoring program was performed for a number of years with little to no indication of surface water contamination of these water resources and has been discontinued.

Every lot in these Designation II areas was inspected annually for several years for signs of failing septic systems. Failure rates were initially on the order of 5% in a few of the areas. The Health Department has ensured adherence to the requirements of the Public Health Code concerning installation of new subsurface sewage disposal systems in these areas. Repairs to existing septic systems are made in conformance with the Public Health Code to the greatest extent possible.

Designation III areas covers 95% of the town's land area. These areas require some ground and surface water monitoring and strict adherence to the Public Health Code concerning the installation of subsurface sewage disposal systems.

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A ground water monitoring program carried out in these Designation III areas consisted of sampling and monitoring 5% of the drinking water wells, where available, twice per year for indicators of sewage contamination. This monitoring program was performed for a number of years with no indication of groundwater contamination in these areas and has since been discontinued. The Designation III areas of town in which drinking water wells are available consist of one- and two-acre lots. The Health Department reviews well water results from private testing laboratories each year as a result of home sales, and these come from random locations around town. These results continue to indicate no sewage contamination of the groundwater in those areas of town served by individual wells.

A surface water monitoring program was performed in all Designation III areas. Samples were collected in numerous streams, along the streams' length and analyzed for indicators of sewage contamination. This monitoring program was performed for a number of years with little to no indication of surface water contamination of these water resources and has since been discontinued.

For all intents and purposes, the 1981 facilities plan including the Designations I, II and III, and the water sampling programs are outdated. The WPCA has stated the need and justification for an updated plan that should be undertaken as soon as possible.

#### **4. Areas Served by Community Sewerage Systems Not Owned by the Town**

There are sewage disposal systems in Madison that constitute "community sewerage systems" in accordance with the General Statutes. They generally consist of standard subsurface sewage disposal systems (septic systems; i.e. septic tanks followed by leaching systems) serving residential or mixed use buildings such as condominiums. Some of the systems include additional treatment systems. The WPCA, through the director of health, maintains a list of these systems and their owners. Each of these community sewerage systems is subject to an agreement with the WPCA to "ensure the effective management" of these systems. The Madison WPCA requires such an agreement with the developer, and subsequently the property owners' association, after the developer has sold his interest, for each community sewerage system. The major elements of these agreements are contained in the Operational Guidelines for Sewerage Systems, in Section 8 of this Plan.

The WPCA holds funds on behalf of each of the existing community sewerage system owners to act as a guaranty that Town money will not be needed to operate or repair these systems in an emergency. These funds are currently in the State's Short-term Investment Fund overseen by the State Treasurer's Office. A list of these systems is included in Attachment A.

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The WPCA maintains records on operational conditions for each of these community sewage systems. The WPCA reviews inspection reports prepared by the system operators' or engineers' including flow, the depth of ponding of effluent in the leaching fields, ground water monitoring down gradient of the systems and/or the effluent quality from the treatment system. These data are entered into a database, and periodically reviewed to ensure these systems are working properly. If problems are noted or adjustments are needed, the operator and/or engineer is notified.

**5. Areas to be Served by Proposed Community Sewerage Systems Not Owned by the Town**

The WPCA has no pre-defined area in which privately-owned Community Sewerage Systems will be allowed or encouraged. The Town's zoning regulations allow Open Space Conservation District subdivisions throughout town. These types of subdivisions have the effect of concentrating the houses on lots smaller than the underlying zoning district would otherwise allow. This, in turn, results in a larger amount of land left in open space. These smaller lots may make it more difficult to properly site a standard subsurface sewage disposal system, and thus may result in the construction of community sewerage systems. This has generally not been the case, however, as the cost in time and money associated with the permitting process with the CT DEEP discourages community sewerage systems, except on large scales. The design and permitting of community sewerage systems is under the authority of the CT DEEP. As noted above, community sewerage systems can be as simple as standard subsurface sewage disposal systems or can involve alternative treatment and disposal systems, requiring a licensed treatment plant operator. Any community sewerage system in Madison will rely on subsurface disposal of wastewater effluent, since the Town has no municipal sewers. Site hydraulics, depth to groundwater and other site conditions will impose significant limitations on any proposed community sewerage system.

**6. Areas to be Designated as Decentralized Wastewater Management Districts**

CT General Statutes Section 7-247 describes a regulatory framework for establishing and managing a decentralized wastewater management district, in which improvements to individual septic systems can be mandated, up to and including the use of alternative sewage treatment systems at individual homes. This process is appropriate for several areas of town with dense development and where this development is near sensitive water resources. There are no designated WWMDs at this time.

**7. Areas served by Large or Alternative Sewage Treatment Systems**

There are a number of properties in town which are served by large septic systems or alternative sewage treatment systems.

The WPCA typically has no official involvement in the oversight or management of the sewage systems serving these systems. The WPCA has no statutory requirement to

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ensure their effective management, like in the case of community sewerage systems, but the community looks to the WPCA to ensure effective functioning of all sewage systems in town. The WPCA holds no funds on behalf of these systems, and has no responsibility to repair or perform any work on these properties, if the owners fail to do so. A list of these systems is included on Attachment B.

The WPCA receives monitoring reports from a number of these systems and maintains records on operational conditions for these systems. The WPCA reviews inspection reports prepared by the system operators' or engineers' including flow, the depth of ponding of effluent in the leaching fields, ground water monitoring down gradient of the systems and/or the effluent quality from the treatment system. These data are logged into a database, and periodically reviewed to ensure these systems are working properly. If problems are noted or adjustments are needed, the operator and/or engineer is notified.

#### **8. Wastewater Management Programs**

##### **A. Individual Subsurface Sewage Disposal Systems**

The WPCA works with the Madison Health Department, and the goals of these two agencies related to wastewater treatment and disposal are closely aligned. The Health Department ensures that septic systems that will serve new homes are designed and installed in strict conformance with Section 19-13-B103 of the Public Health Code. Similarly, repairs and additions to existing septic systems are made as close as is possible to the Public Health Code regulations, given existing site conditions. Discharge Permits are issued for all new homes that specify the Maximum Daily Flow, required septic tank and recommended outlet filter inspection and cleaning frequency, and statements discouraging disposal of cooking grease into the system and the use of garbage disposals.

Section 10-72 of the Madison Town Ordinances requires the inspection, at least once every 5 years, of each septic tank in town and the cleaning of the tank if necessary. The Town maintains a database of septic system installations, repairs and septic tank cleanouts. Reminder cards are sent out annually to those homeowners who have not had their septic tanks cleaned in over 5 years. The Health Department sends annual reminders to restaurant owners reminding them of the importance of regular cleaning of grease traps at their facilities. The Health Department promptly follows-up on complaints it receives regarding potential sewage overflows and regularly re-inspects properties that have had a history of sewage system problems.

Section 10-2 of the Madison Town Ordinances specifies detailed procedures for the conversion of seasonal homes to year-round. The ordinance requires homeowners to submit a plan for a septic system, prepared by a Professional Engineer, which demonstrates full compliance with the Public Health Code. The requirement for such a plan is similar to the requirements of Section 19-13-B100a of the Public Health Code for the conversion of a seasonal home to year-round. The Town's requirements go a step beyond the state requirement, however in that, upon approval of this plan, the ordinance

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requires this septic system to be installed and approved by the Health Department, after which the homeowner is issued a Winterization Permit.

#### **B. Operational Guidelines for Community Sewerage Systems**

Community Sewerage Systems, as defined in Section 7-246-f of the Connecticut General Statutes are subject to regulation by the CT DEEP and the WPCA. The WPCA must “ensure the effective management” of all community sewerage systems not owned by it, and the WPCA will accomplish this via the following framework.

- All community sewerage systems in Madison will be owned, initially by the developer and ultimately by the property owners’ association.
- All community sewerage systems in Madison will be installed, operated, managed, repaired and replaced, initially by the developer and ultimately by the property owners’ association.
- The owners of all properties served by any community sewerage system in Madison must be members of a property owners’ association which is organized and operated in accordance with Chapter 602 (Non-Stock Corporation) of Connecticut General Statutes and the association must exist as long as any property is served by the system.
- The property owners’ association must have the authority and the responsibility to operate, maintain, repair and improve the community sewerage system in a manner which will prevent pollution of the waters of the state. The property owners’ association shall have all the additional authority and responsibilities enumerated in Section 7-246f of the Connecticut General Statutes.
- All of the properties to be served by any community sewerage system and all land upon which is located any part of the system must be owned in fee or be subject to a long-term leasehold or a system of perpetual easements held by the association or by the members thereof.
- All community sewerage systems in Madison will be operated to meet the applicable State Discharge Permit limits and in such a way as to not cause pollution of the waters of the State of Connecticut.
- The developer must establish, in the WPCA’s name and in an account to which the WPCA has exclusive control on behalf of the property owners’ association, an Emergency Account, which will be equal to the cost of three year’s operating, maintenance, repair and monitoring costs for the Community Sewerage System.
  - Interest or other earnings earned on this account will remain in the account.
  - Adjustments to this account may be needed based on the engineering evaluation noted below.
- The developer must establish and the property owners’ association must contribute annually to a Replacement Reserve Account, which will cover, after a 10-year period replacement of mechanical components of the system and after a 30-year period replacement of all other components of the system.

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- Interest or other earnings earned on this account will remain in the account.
  - Adjustments to this account may be needed based on the engineering evaluation noted below, in accordance with increases in the cost of living as reflected in the Engineering News Record statistics.
- The property owners' association must develop an annual budget to properly operate, maintain, repair and monitor their Community Sewerage System.
  - This budget must be submitted to the WPCA annually, within 30 days of adoption by the association.
- The property owners' association must develop and contribute to an annual budget to properly fund the Replacement Reserve Account noted above, established to cover replacement of components of their Community Sewerage System.
  - This budget must be submitted to the WPCA annually, within 30 days of adoption by the association.
- The property owners' association must have an annual financial statement prepared that summarizes annual expenditures by the association for operation, maintenance, repair and monitoring of the Community Sewerage System.
  - This financial statement must be submitted to the WPCA annually, within 30 days of receipt by the association.
- The property owners' association must have an annual financial statement prepared that summarizes annual contributions and withdrawals from the Reserve and Replacement Fund established for the Community Sewerage System.
  - This financial statement must be submitted to the WPCA annually, within 30 days of receipt by the association.
- The property owners' association must have an annual inspection of the Community Sewerage System components and function by a professional engineer with expertise in wastewater treatment systems.
  - This engineer shall review the function and effectiveness of the System and make recommendations for improvements or adjustments in the operation, maintenance, repair or monitoring of the System.
  - This engineer shall review the adequacy of funds used for routine operation and maintenance of the system and the Reserve and Replacement Fund set aside for long-term repair/replacement of system components.
  - The report of this engineering inspection must be submitted to the WPCA annually, within 30 days of receipt by the association.
- The property owners' association must maintain general liability insurance and pollution liability insurance, with limits acceptable to the WPCA, to cover the insurable components of the System and due to failure of the System, respectively.
- The property owners' association must grant to the WPCA the authority to enter upon its land (including with heavy equipment) to inspect, operate, maintain, repair or replace the Community Sewerage System, if the association refuses to undertake needed repairs.

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- All Community Sewerage Systems in Madison will be subject to an agreement between the developer/property owners' association and the WPCA that establishes these conditions.

The property owners' association must ensure that all monitoring results its operator generates or receives that are submitted to the State DEP are also submitted to the WPCA at the same frequency. The WPCA will review these reports and may provide comments to the property owners' association and/or operator.

**C. Operational Guidelines for Alternative and Large Wastewater Treatment Systems**

Alternative and large wastewater treatment systems operate under permits issued by the State Department of Environmental Protection or the local Health Department, which typically specify operating and monitoring parameters.

DEEP discharge permits specify effluent Maximum Concentrations and Average Monthly Limits and/or 12-month Rolling Average Limits. Sampling is generally required twice per month, and reporting is done monthly. Monitoring reports are generally received by the WPCA up to a month after the end of the month to which the monitoring report refers. The Madison Health Department issues a Discharge Permit for any large conventional subsurface sewage disposal system, with a design flow of less than 5,000 gallons per day. Violations of wastewater effluent limits constitute violations of a DEEP discharge permit, but there is no detailed procedure delineated in the DEEP permit program that dictates DEEP's response or action based on these violations. This Madison WPCA does not have procedures in place to respond to permit violations.