

# 3F SANITARY SEWER DISCHARGE

This chapter includes information on the role of the CCWMO in addressing water quality issues surrounding sanitary sewer discharge, including subsurface sewage treatment systems and wastewater treatment plants.

## 1. ISSUE: SUBSURFACE SEWAGE TREATMENT SYSTEMS

### 1.1 Issue

Failing and improperly maintained Subsurface Sewage Treatment Systems (SSTS) present a substantial threat to the quality of surface water and groundwater.

### 1.2 Background

Approximately 4,800 of the total of 32,000 households in Carver County utilize systems other than the municipal sewer systems to treat their sewage. Of this 4800, approximately 300 are served by some type of alternative community system. The remaining 4500 households and businesses are served by Subsurface Sewage Treatment Systems (SSTS) – also known as individual sewage treatment systems (ISTS), septic systems, or on-site sewer systems. Properly sited, designed and operated, SSTS do not pose a risk of contamination to surface water or groundwater. Failing systems can contaminate surface and groundwater with contaminants such as nitrates, phosphorus, harmful bacteria and viruses, and other toxic substances. While some of these systems will be abandoned after the structure is connected to a municipal system as the cities continue to develop, the vast majority of households and business currently served by SSTS will continue to be served by these systems for the foreseeable future.

State statute and rules require that Carver County adopt and implement programs and ordinances to manage SSTS throughout the County. The City of Chanhassen has chosen to adopt and implement its own program. No other cities have chosen to establish their program so the County is responsible for all of the cities and townships with the exception of the City of Chanhassen.

Since the CCWMO Plan was adopted in 2001, the County has been heavily engaged in the Impaired Waters/Total Maximum Daily Load (TMDL) program. As TMDL studies have been adopted it is clear that fecal coliform is a significant pollutant in many of the streams in the CCWMO. Research has shown that the major contributors are animal agriculture and direct discharge SSTS. An Implementation Plan for the Carver & Bevens Creeks Fecal Coliform TMDL has been approved and one of the key components is the elimination of direct discharge systems.

### 1.3 Proper System Construction & Maintenance

An SSTS needs to be properly designed and constructed in order to function properly. The County has had a permitting system in place since 1970 and has performed inspections since the 1970's. The County also had a contractor education and licensing program until the program was adopted by the State in 1996. Because of these programs, system design and construction within the county has been at a reasonable level of quality for many years.

However, because of past issues in the interpretation of soil borings used to determine the depth to periodically saturated soils, the state now requires additional checks on soil boring interpretations. The depth to periodically saturated soils is critical because a three foot separation must be maintained between periodically saturated soils and the SSTS. The amount of separation is used to determine the type of system that can be used and is also used to determine whether an existing system is conforming.

New SSTS installations are inspected by Carver County staff. Compliance inspections of existing SSTS are completed by a licensed contractor. A compliance inspection of an existing system can be triggered by any of the following:

- A complaint
- Transfer of property
- An application for a building permit within shoreland areas
- An application for a building permit on a property with incomplete or missing information on the SSTS

#### **1.4 On-Going System Maintenance**

A system can be properly designed and constructed, but if the homeowner fails to properly maintain and operate the system, it can fail before its normal useful life expectancy. Many homeowners often have little idea how an SSTS works or how to properly manage and operate the system. Failing systems are often not detected until sewage is found in a contaminated well, in the basement, or on the lawn. For SSTS to be a viable long term method to treat sewage, programs must be in place to encourage homeowners to properly operate and maintain their SSTS.

#### **1.5 Number Of Systems**

SSTS are used for treatment of sewage in both the cities and in the unincorporated areas (townships) in the county. Table 3F-1 lists the number of SSTS and non-conforming SSTS by local government unit (LGU). Non-conforming systems listed in the table include systems that have failed a recent compliance inspection and systems built before 1985. Systems constructed before 1985 have a high likelihood of not meeting current system requirements (e.g. three foot separation of periodically saturated soils) and it can be assumed that a high percentage of these systems are failing to some extent.

The number of SSTS remaining in cities depends upon if, where, and when the Metropolitan Urban Sewer Area (MUSA) line is extended. In some areas within cities, SSTS will continue to be installed even after the MUSA line has been extended depending on topography and proximity to sewer connections. Most sewage in the unincorporated area will be treated by SSTS for the foreseeable future.

**Table 3F-1. Number of SSTS by Local Government Unit**

<b>LGU</b>	<b>Number of Systems (1996)</b>	<b>Number of Systems (2010)</b>	<b>Estimated Number of Systems that have failed a compliance inspection (2009)</b>	<b>Estimated Number of Systems Built Prior to 1985</b>
City of Carver	30	39	0	36
City of Chanhassen	490	404	-- <sup>1</sup>	-- <sup>1</sup>
City of Chaska	45	140	4	96
City of Cologne	0	5	0	4
City of Hamburg	0	0	0	0
City of Mayer	0	6	0	6
City of New Germany	0	5	0	5
City of Norwood-Young America	0	15	0	12
City of Victoria	102	86	5	73
City of Waconia	5	19	1	14
City of Watertown	0	23	2	15
Benton Township	301	321	4	121
Camden Township	325	353	5	119
Chaska Township <sup>2</sup>	54	-	-	-
Dahlgren Township	472	532	5	179
Hancock Township	122	136	3	28
Hollywood Township	384	415	6	155
Laketown Township	419	401	7	117
San Francisco Township	301	324	7	110
Waconia Township	435	462	5	152
Watertown Township	499	498	14	190
Young America Township	280	292	7	108
<b>Total</b>	<b>4,264</b>	<b>4,476</b>	<b>78</b>	<b>1944</b>

**NOTES:**

1 Chanhassen has its own septic system permitting and inspection program and information on the numbers of systems was not available.

2 Chaska Township was annexed by the City of Chaska in 2005.

## 1.6 Direct Discharge Elimination Program

Direct discharge systems (a SSTS that discharges from the home or other source, either through a straight pipe or from a tank with no drainfield or other treatment system, into a ditch, stream, lake, road ditch, ground surface, or agricultural tile) are imminent threats to public health and a source of water quality degradation. In 2008, Carver County began a program to eliminate direct discharge systems through the installation of properly constructed SSTS. Through the program, Carver County provides both cost share and loan incentives to help landowners upgrade or replace direct discharge systems. The program focuses on systems in TMDL priority sub-watersheds but any direct discharge system within the county is eligible.

## 1.7 Number of Systems Updated

In 2008, 22 systems within TMDL priority sub-watersheds were replaced; 27 systems were replaced outside TMDL priority sub-watersheds. In 2009, 22 systems within TMDL priority sub-watersheds were replaced; 14 systems were replaced outside TMDL priority sub-watersheds.

## 1.8 SSTS Goal

Goal SSD-1 Ensure, to the extent possible, that all SSTS are properly designed, installed, operated, maintained and/or replaced in order eliminate health hazards and discharges to surface water or groundwater.

## 1.9 SSTS Policies

Policy SSD-1 **Eliminate Direct Discharge Systems.** The elimination of direct discharge systems is the highest priority. This effort will have the highest priority for resources in the SSTS program.

Policy SSD-2 **Proper Maintenance.** The maintenance of existing systems is necessary to ensure that the systems are viable over the long term. Carver County will implement programs to promote and encourage proper maintenance of SSTS.

Policy SSD-3 **Regulatory Controls.** Carver County will maintain up-to-date SSTS ordinances as required by Minnesota Statute and Rule. The County will administer and enforce the ordinance.

Policy SSD-4 **Eliminate Failing Systems.** The replacement of existing non-conforming systems, particularly those that are an imminent public health threat and/or are contributing to surface water impairments. All reasonable, feasible means will be used to eliminate failing systems. The most crucial systems are those in high groundwater sensitivity areas; systems that discharge in to surface water, tile lines or on to the ground surface; seepage pits or cesspools; and shoreland zones.

## 1.10 SSTS Implementation

Imp Strategy SSD-1 The CCWMO relies on the Carver County SSTS Program to regulate and enforce SSTS. Carver County Land and Water Services Division is responsible for the implementation of the program, including the following activities:

1. **Regulatory Controls.** Follow and implement all state statutes and rules as they are updated. State rules, statutes, and standards change periodically. The County implements the State standards through the SSTS ordinance. The ordinance also includes provisions that the County feels are necessary due to local conditions. At the time of writing of this chapter the County is in the process of updating the SSTS ordinance to comply with the most recent changes in statute and rule.
2. **Regulatory Controls.** Implement the provisions of the County SSTS Ordinance. The SSTS ordinance regulates the design, location, installation, construction, alteration, extension, repair, and maintenance of SSTS's. The County currently enforces the ordinance in the unincorporated area; cities have historically been responsible in their jurisdiction. The law gives responsibility throughout the county unless a city specifically develops and implements its own program and SSTS ordinance.
3. **Regulatory Controls.** Require all lot splits and plats to have systems upgraded. Any time a lot is split or platted, the County requires that the septic system be inspected and brought into compliance. There are currently some limited exceptions to this rule – the appropriate ordinances should be changed to eliminate any loopholes.
4. **Connect to Municipal Systems.** Eliminate SSTSs in cities by connection to municipal systems. An easy way to remove non-compliant systems is connect the systems to a central sewer system. In most cases in the unincorporated area, this is not feasible for financial and system design reasons. Most systems located near municipalities will slowly be absorbed by growing urban areas and will be connected to municipalities as is feasible.
5. **Proper Maintenance.** Continue to implement programs to ensure proper maintenance of SSTS – education, incentives, notification, and inspection. Much of the contamination risk in the county stems from improperly maintained systems. A variety of strategies have been and will continue be used to ensure system maintenance. These strategies include educational programs, incentive programs, notification programs, and inspection programs.
6. **Proper Disposal.** Develop and implement a process to eliminate improper disposal, and improper land application of septic waste pumped from SSTS. In addition to improper maintenance of SSTS, improper disposal of pumped waste can pose a direct contamination risk to surface and groundwater. The land use

practices chapter of this section provides more detail on the process for encouraging proper disposal of this waste.

7. **Monitor New SSTS Technologies.** New SSTS designs may be approved by the state as they are developed. The County will monitor the function and practicality of new technologies and may choose to be more restrictive than the state in allowing new technologies.

Imp Strategy SSD-2 **Eliminate Failing Systems.** Continue to develop and implement programs, including financial incentives, focused on the replacement of direct discharge systems with highest priority given to TMDL implementation. The replacement of existing failing systems is a major component of an SSTS program. The replacement process can be accelerated by providing financial assistance to property owners. As funding allows, the County and CCWMO will continue to provide assistance to property owners to replace old, failing systems, through grants, loans, and other financial assistance.

## **2. ISSUE: URBAN DISCHARGES (waste water treatment plant discharges)**

### **2.1 Issue**

Proper treatment and disposal of wastewater plays an important part in protecting and preserving water resources.

### **2.2 Background**

The Minnesota Pollution Control Agency (MPCA) permits and regulates wastewater treatment plant (WWTP) discharges (see Minnesota Rules Chapters 7050 and 7053). Permits typically included specific concentrations and mass limitations on discharges. Although regulated, these discharges can contribute to surface water impairments and waste load reductions may be assigned to a treatment plant as part of the Total Maximum Daily Load (TMDL) process.

### **2.3 Urban Discharge Goals**

Goal SSD-2 Ensure that urban waste water discharge meets water quality standards.

### **2.4 Urban Discharge Policies**

Policy SSD-5 Ensure that waste load reductions for WWTPs identified in TMDLs are incorporated into WWTP permits.

### **2.5 Urban Discharge Implementation**

Imp Strategy SSD-3 Coordinate with the MPCA, WWTP operators, LGUs, etc., to ensure that waste load reductions identified through the TMDL process are incorporated into WWTP permits.