

Recommendations and Planning for Statewide Inventories, Inspections of Subsurface Sewage Treatment Systems

Report to the Minnesota Legislature



Legislative Charge

2010 Session Law Chapter 361; section 73 subp (b):

Sec. 73. SUBSURFACE SEWAGE TREATMENT SYSTEMS ORDINANCE ADOPTION DELAY.

(a) Notwithstanding Minnesota Statutes, section 115.55, subdivision 2, a county may adopt an ordinance by February 4, 2012, to comply with the February 4, 2008, revisions to subsurface sewage treatment system rules. By April 4, 2011, the Pollution Control Agency shall adopt the final rule amendments to the February 4, 2008, subsurface sewage treatment system rules. A county must continue to enforce its current ordinance until a new one has been adopted.

(b) By January 15, 2011, the agency, after consultation with the Board of Water and Soil Resources and the Association of Minnesota Counties, shall report to the chairs and ranking minority members of the senate and house of representatives environment and natural resources policy and finance committees and divisions on:

- (1) the technical changes in the rules for subsurface sewage treatment systems that were adopted on February 4, 2008;
- (2) the progress in local adoption of ordinances to comply with the rules; and
- (3) the progress in protecting the state's water resources from pollution due to subsurface sewage treatment systems.

2009 Session Law Chapter 37 Subdivision 2:

The commissioner shall develop recommendations and a plan for directly or indirectly inspecting and providing an inventory for all subsurface sewage treatment systems and submit a report to the chairs of the legislative committees having primary jurisdiction over environment and natural resources policy and finance no later than September 15, 2010. Direct inspection methods shall include field verification of each SSTS on riparian land or a lake or near wetlands or other sensitive waters to determine the owner, location, and which systems are failing or are an imminent health threat. Indirect inspection methods may include census-type data collection to determine the owner and location of each SSTS in the remaining portion of each county. An SSTS with a valid certificate of compliance may be considered inventoried without further work.

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Executive Summary and Recommendations

This report explains the factors that are considered when evaluating compliance, presents a picture of compliance today, and provides information on how problem SSTSs (Subsurface Sewage Treatment Systems) are corrected. The report also outlines the history and regulatory framework of SSTS in Minnesota and describes how the MPCA and local units of government determine just how many systems exist in each county, evaluate their condition and, finally, fix or replace systems that pose a threat to public health and/or the environment.

The report focuses on the current status of SSTS compliance and strategies counties are pursuing to improve compliance beginning on page 9. Identifying and sharing information about the most successful strategies will help us reach our goal of rapidly improving SSTS compliance across the state.

Key to these efforts is identifying and implementing specific triggering events that lead to SSTS inspections, referred to in this report as “triggers.” Inspections result in system upgrades where necessary and help establish a statewide inventory of onsite sewage treatment systems. These triggers are described beginning on page 16 and include:

- SSTS inventories (either jurisdiction-wide or in specific, targeted areas). Inventories can be based upon direct inspections, those made in person by a local SSTS program inspector, as well as indirectly through reviews of existing documentation for SSTS systems in a specific area.
- Local programs that promote SSTS maintenance and have a full management system in place to ensure SSTSs remain in compliance
- Requiring an SSTS inspection before:
 - A bedroom is added to a dwelling
 - Any permit or other land use decision is issued by the local program
 - The transfer of a property

The use of triggers and their effectiveness is dependent on the capacity and priorities of local governments. This report provides information on where triggers are used and their effect on SSTS compliance, beginning on page 12. This report also provides a framework for understanding SSTS upgrade triggers and the opportunity for more dialog on how best to implement them to achieve rapid compliance improvement across the state. Factors that go into local enforcement of SSTS compliance are also discussed in this report; work on facilitating this enforcement will be a continuing focus of the legislatively mandated SSTS Implementation and Enforcement Task Force (SIETF).

No single trigger is recommended as the optimum way to rapidly increase SSTS compliance. However, it is recommended that incentives be created or continued for local implementation of triggers, especially in sensitive areas such as shoreland areas, higher-density developments, and sensitive groundwater areas.

In addition, cooperation between state and local enforcement is critical to overall success of the program. It is recommended that the MPCA and local governments continue communication in areas where an effective working relationship exists. Specialized regional initiatives may be effective in other areas, such as those without land use regulations. This idea, as well as the development of additional enforcement tools, will be explored through the work of the SIETF.

There is no statewide SSTS database similar to one the Minnesota Department of Health has for water wells (the County Well Index). The inventory survey conducted in October 2010 indicates that more discussion should take place on the need for a state-wide SSTS database. This is discussed on page 24. The need for and content of a SSTS database should be discussed with SIETF in 2011.

This report builds upon a report delivered to the Legislature in the fall of 2010 titled “Subsurface Sewage Treatment System Status Report on Recommendations and Planning for Statewide Inventories and Inspections.” That report is referred to in this document as the “Status Report.”



Inspections = Compliance

After Inspection, Faulty Septics Have 10 Months to Achieve Passing Grade

A Certificate of Compliance (CoC) is issued to the owner (a) when a newly-constructed SSTS is determined to have been built correctly in accordance with modern, applicable rules and the design plan, or (b) when an existing system is inspected and determined to meet minimum compliance criteria that ensure the SSTS will not cause human health or environmental problems. A CoC for a new system is valid for five years; a CoC for an existing system is valid for three years.

A Notice of Noncompliance (NoN) is issued for a non-compliant existing SSTS. The NoN documents the compliance criteria the system fails to meet. Noncompliance falls into two categories:

Imminent threat to public health (ITPH) – the system has a sewage discharge to surface water; sewage discharge to ground surface; sewage backup; or any other situation with the potential to immediately and adversely affect or threaten public health or safety.

Failing to protect groundwater – the bottom of the system does not have the required separation to groundwater or bedrock. Requirements state the system:

- must meet vertical separation requirements applicable to the date the system was constructed, its location, or the facility it serves as follows:
 - If built after March 31, 1996, (or in a shoreland area, well-head protection area, or serving food, beverage, or lodging establishments) a three-foot vertical separation is required except that the local ordinance may allow up to a 15 percent reduction in the vertical separation distance to account for settling of sand or soil, normal variation of measurements, and interpretations of the limiting layer conditions
 - If built before April 1, 1996 (and in areas that are not in a shoreland area, well-head protection area, or serving food, beverage, or lodging establishments) a two-foot vertical separation distance is required.

A system that is deemed to be an “imminent threat” must be corrected within 10 months. Systems deemed to be “failing to protect groundwater” must be corrected within the time period specified in local ordinance.

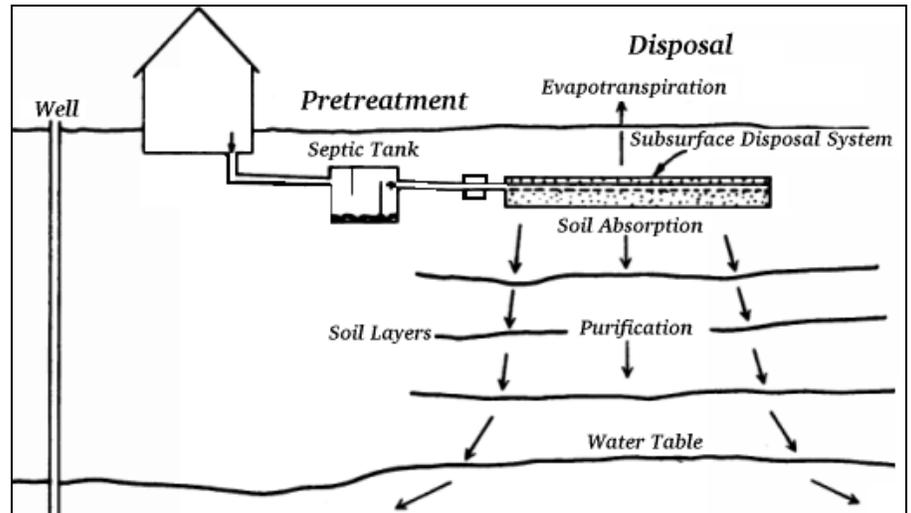
Noncompliance – Problems and Improvements

Today, most SSTs built in Minnesota consist of a septic tank followed by a soil treatment area where sewage moves slowly through at least three feet of unsaturated soil (**Figure 6**). The soil provides a filter that removes organic matter, solids and pathogens, and reduces phosphorus that is found in the wastewater. In areas with high water tables (as is the case in much of Minnesota), the required separation is provided by elevating the soil treatment system in a mound system.

Failing to Protect Groundwater

Some pre-1990s systems may have been constructed with less than the needed three foot separation to groundwater. This type of system is termed “failing to protect groundwater” – one that discharges untreated or partially treated sewage too close to the water table and may cause groundwater contamination. A failing system may have a good, intact tank and a soil absorption system, but fails to protect groundwater because there is not a sufficient amount of unsaturated soil (treatment zone) between where the sewage is discharged and the groundwater.

Figure 6



This may be a serious problem because most Minnesotans with an SSTs also have their own or a neighbor’s private well close by. Private water supplies depend on tapping clean groundwater to provide safe drinking water, since the water is consumed directly from the well without frequent testing or disinfection.

Imminent Threat to Public Health

Based on data from the annual reports that local governments submit to the MPCA, there were an estimated 50,000 ITPH systems in Minnesota in 2000. This is about 10 percent of the locations that should have a good-functioning SSTs. Recent data show a positive trend in this metric – in 2009 the number had dropped to less than 40,000. One type of ITPH is a “straight-pipe” situation, a sewage disposal system that transports raw or partially treated sewage directly to a lake, a stream, a drainage system, or ground surface

How Problem Systems are Upgraded

Correcting problem SSTs with a modern treatment system can be simple or complex, depending on factors that include site conditions (lot size, lot shape, space available for a system) and soil conditions. Many problem systems can be replaced with a new system on the same lot when site and soil conditions are suitable.

On small lots and on lots with poor soil conditions (wet soils, etc.) there are other possible options, including:

- obtain the needed variance(s) for setbacks (for example, wells, building, lake, property line) to install a replacement system on the property.
- install composting toilets and holding tank.
- install composting toilets and a graywater system.
- install advanced treatment, timed-dosing to a reduced-sized system and depth-to-groundwater.
- install a holding tank; although this is cost-effective to install, it is expensive to maintain for year-round homes and facilities because it will have to be pumped regularly by a licensed maintainer.
- obtain suitable land for a replacement system; often this option is chosen when several homes in the same area have problem systems that need to be upgraded. Both individual and cluster systems could be constructed to serve their wastewater needs.
- connect to city sewer if close enough; this can be controversial because annexation may be required,
- construct a cluster or community sewer system for multiple homes and businesses.

History of SSTS Regulation

The MPCA first developed a septic system rule in 1978 as advisory guidelines for local regulatory programs (mandatory in shoreland areas). This rule, known as WPC-40, was adopted by some local governments and modified by others. During this era, some local governments required local licensure of septic system contractors, but this was not a widespread practice. Many local governments did not regulate septic systems outside of shoreland areas, and some did not regulate SSTS at all. Enforcement was often inadequate.

In this same time period, the University of Minnesota began training programs for septic system professionals, and in 1976 the MPCA initiated a voluntary certification program for SSTS professionals. This was the beginning of a more standardized statewide approach to SSTS regulation; however, it was voluntary in nature and not universally adopted across the state. Because it was voluntary, there was no enforcement from the state level.

At that time, the number of local programs to regulate SSTS expanded significantly. This was largely a result of the newly-developed shoreland ordinances from the Department of Natural Resources that required SSTSs in shoreland areas be inspected before issuing a building permit. Local enforcement was rigorous in some areas. Today these areas have high compliance rates (see “Aitkin County Experience,” page 9).

Properly built and maintained SSTSs have been a concern of shoreland management since 1969. The increase in year-round residences in shoreland meant more people using more of the lakeshore for longer periods. This, coupled with the trend of larger lakeshore developments, helped to drive the development of revised DNR shoreland rules (Minnesota Rule chapter 6120.3400 subp. D) in 1989.

These rules required an SSTS compliance check within shoreland areas before a LGU could issue any local variance or permit and also provided LGUs with additional trigger options.

1990s

In 1994, legislation passed that recognized the state’s minimum statewide standards for SSTSs and established a licensing program for SSTS professionals. The licensing program went into effect on April 1, 1996, and the state began to administer tests and certify potential licensees. Statutes were amended in 1997 to institute a system of local government regulation statewide.

From 1996 to 1998, no formal enforcement effort existed at the MPCA. Emphasis was on getting SSTS professionals licensed. After 1998, one staff person initiated a statewide enforcement effort, primarily aimed at unlicensed professionals.

Local programs that met the state standard were developed in the late 1990s. At this time the expectations for local programs increased. Local officials were responsible for plan reviews and inspecting new systems to ensure they met the state standards.

2000 to Present

In 2003, a \$25 fee was established for each sewage tank installed. These fees are sent to the MPCA by SSTS installers. These fees are dedicated to MPCA enforcement efforts. The MPCA currently has 3.5 FTEs committed to SSTS compliance and enforcement work for licensing and straight pipes. The full-time positions are in Detroit Lakes, Brainerd and Rochester. The half-time position is located in St. Paul.

Current Regulatory Framework

SSTS Compliance/Enforcement Process

The basis for the regulatory framework is found in Minnesota Statutes 115.55 and 115.56. These statutes establish a regulatory system in which the MPCA promulgates minimum standards for SSTSs and licenses SSTS professionals. The statutes made regulation of individual SSTSs primarily the responsibility of local governments, who are responsible for permitting and on-site compliance.

The rules developed by the MPCA are found in Minnesota Rules Chapters 7080-7083. These rules or standards are much more specific than the statutes, and provide a level of detail needed for local SSTS regulators and contractors. The rules can be found at: www.pca.state.mn.us/ssts. Counties are required by statute to adopt SSTS ordinances based on the state rule. Counties may be less restrictive than the state rule if they follow the procedures to adopt Alternative Local Standards as allowed in the law.

The majority of SSTS compliance activities are conducted by LGUs--county, township, city or sewer district. LGUs enforce their local SSTS ordinance and issue permits for systems designed with flows up to 10,000 gallons per day. There are approximately 200 LGUs across Minnesota who regulate SSTS – all 87 counties are required to have programs and more than 110 cities and towns choose to do so. County SSTS programs, by law, must cover all areas of the county not covered by city, township, or sanitary district regulation.

In 2010 the Legislature directed the MPCA to appoint a Subsurface Sewage Treatment Systems Implementation and Enforcement Task Force (SIETF) to work with the agency to develop implementation and enforcement methods that rapidly reduce the number of SSTSs that are not in compliance and to effectively enforce all violations of SSTS rules. Membership includes representatives from the Association of Minnesota Counties, Minnesota Association of County Planning and Zoning Administrators, Minnesota Association of Realtors, and the Minnesota Onsite Wastewater Association.

The SIETF will also assist the agency in providing counties with enforcement protocols and a checklist they can use when inspecting systems and enforcing rules. In addition to the legislatively-directed work, the SIETF will work with MPCA to develop guidance and variation/flexibility of rules and/or define variances to the rules that are acceptable to the State. As of Jan. 1, 2011, the SIETF had met four times; future meetings are planned bi-monthly in 2011 or as needed.

Working with the SIETF, the MPCA has created a process and referral document which allows LGUs to request the MPCA be the lead on select local SSTS enforcement issues. After the enforcement referral process is finalized, LGUs statewide will be able to use it in their compliance work. In addition, the SIETF recognized that the ability and eagerness of LGUs to proceed

Aitkin County Experience Proves Trigger/Compliance Connection

From 1994 to 2002, Aitkin County did an inventory of septic systems on developed lakes. The inventory consisted of a review of each parcel file for a record documenting the installation of a conforming septic system. If there were no records, a letter was sent to the landowner asking them to prove compliance or install a new system. This inventory resulted in a cleanup of many systems in critical shoreland areas.

The county ordinance required inspection triggers for property transfers and all zoning permits within shoreland areas in 1992 and non-shoreland areas in 1995. In 1996, compliance inspections were expanded to include a check for soil separation. In 1998, a review of the submitted compliance inspections showed a failing rate of nearly 50 percent.

Ten years later, in 2008, the failing rate of submitted compliance inspections was 6 percent and the failing rate in 2009 was 5.75 percent. The inspection requirements adopted by Aitkin County are credited for the reduction in failing septic systems.

From 1997 to 2007 there were 4,985 septic systems installed in Aitkin County for an average of 453 septic system installations per year. Due to the economy, the number of septic systems installed is now under 200 per year. But looking at the number of systems installed from 1997 to 2007, it is no surprise that the county's failing rate is low and the triggers (property transfer and building permits) are effective in reducing the number of failing systems to a rate that county staff can handle.

with enforcement varies widely from region to region. As a result, the MPCA will continue to work with the SIETF in identifying other enforcement opportunities to support compliance with SSTS rules at all levels.

For example, the task force recommended the MPCA also develop a generic Administrative Penalty Order (APO) that can be utilized for specific categories of cases. The MPCA is looking into this possibility. Alternatively, some members of the task force requested counties be given the authority to issue APOs. This would require a change in statutory authorities. Further work of the SIETF will flesh out these recommendations for future action.

County representatives on the SIETF stated that most problems with specific SSTS installations are handled effectively within the construction inspection process, but there are problems in enforcement on licensed individuals for situations like construction without a local permit. Before 1996, many local governments licensed SSTS professionals and could stop those who did not comply with local requirements from working in that jurisdiction. Now that the state handles SSTS licensure, this local lever is lost and coordination between state and local officials is needed.

The MPCA takes primary responsibility to enforce Minnesota Rules Chapters 7083 that regulate the licensing and certification of individuals and businesses involved in the SSTS industry (Figure 7). Accordingly, the MPCA administers a licensing/certification program that encompasses 400 maintainers (previously called pumpers), 1,200 installers, 400 inspectors, and 800 designers statewide.

Figure 7

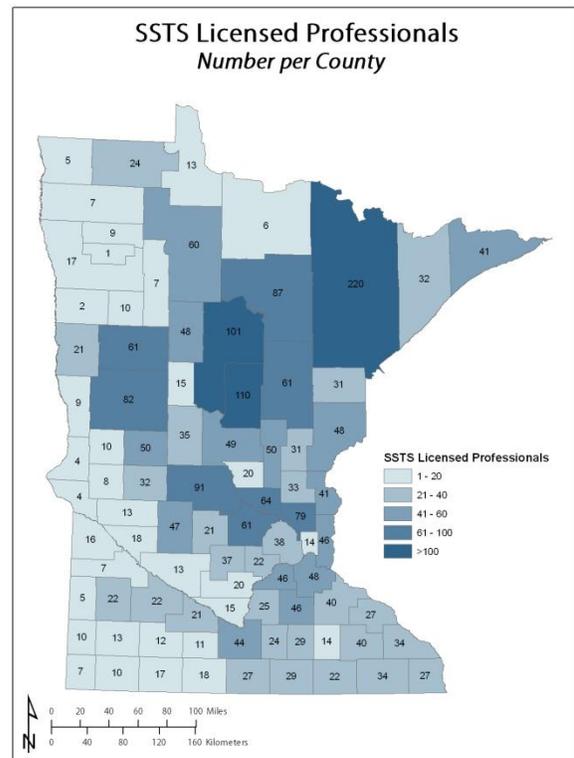


Figure 8 – SSTS APO Penalties for License Violations

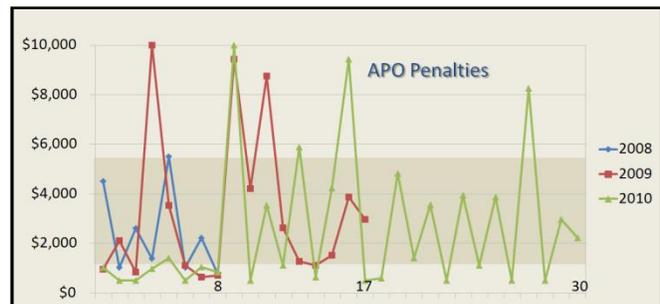


Figure 10 – Cumulative Straight Pipe Referrals

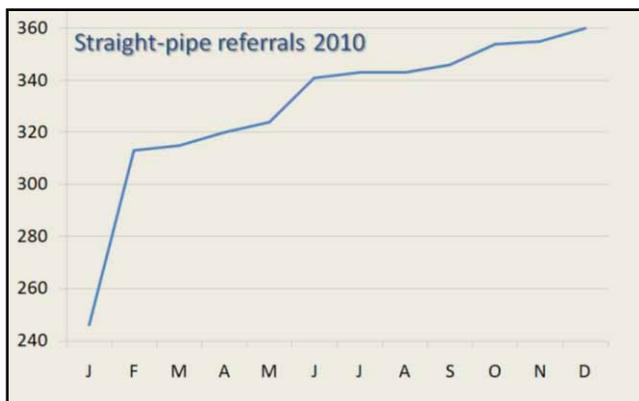
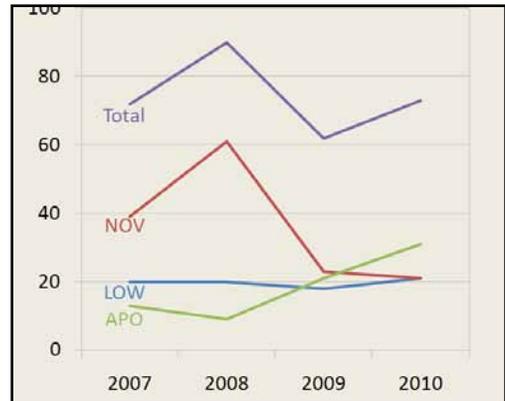


Figure 9 – SSTS Enforcement Actions



Figures 8-10 show the extent of MPCA enforcement activity on a statewide basis for the past several years. Enforcement ranges from sending lower level Notices of Violation (NoV) and Letters of Warning (LoW) to Administrative Penalty Orders (APO) which carry monetary penalties and corrective actions for the most serious situations of noncompliance.

Current SSTS Compliance Picture

The MPCA has developed a picture of SSTS compliance from annual report data from local program administrators and information from other sources. As shown in **Figure 11**, the rate of compliance was fairly consistent through the 2000s with an increase in compliance at the end of the decade. It is reasonable to assume that this trend will continue to increase as the processes put in place work and additional properties trigger inspections and upgrades. Compliance inspection triggers are discussed in greater detail later in this report, beginning on page 14.

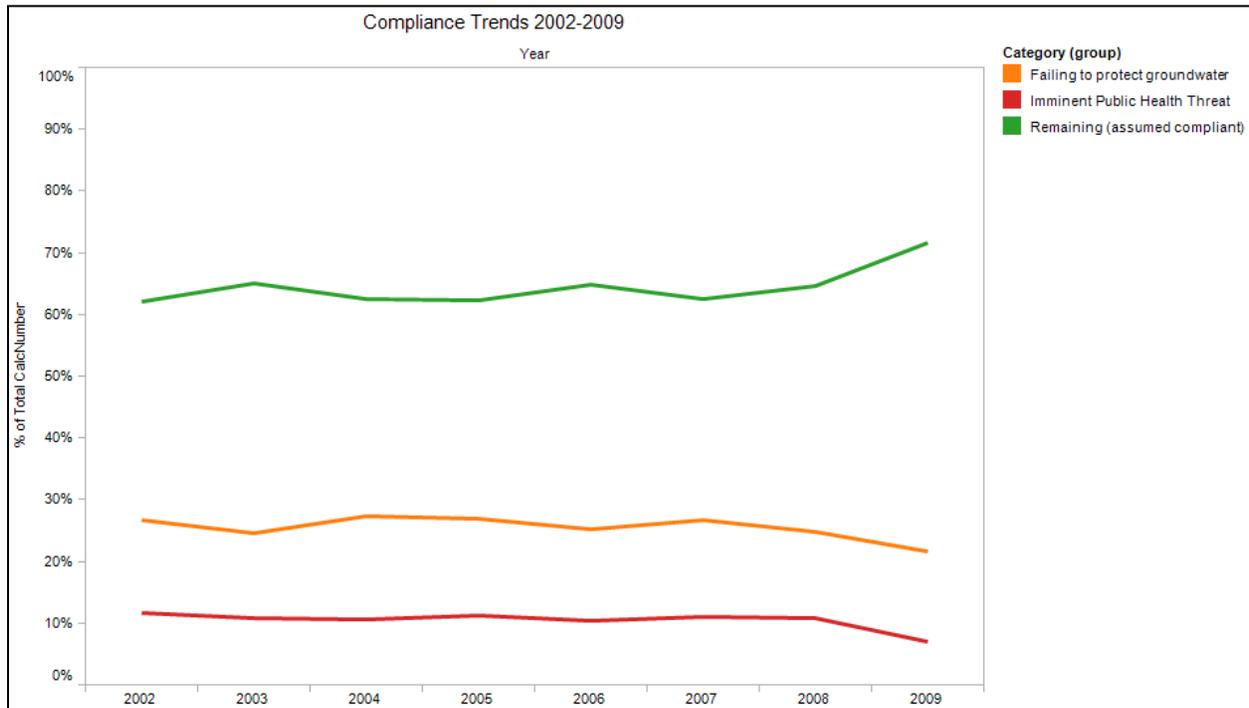


Figure 11 - Recent trends show compliance (green) increasing while the percentage of Imminent Threat systems (red) is diminishing.

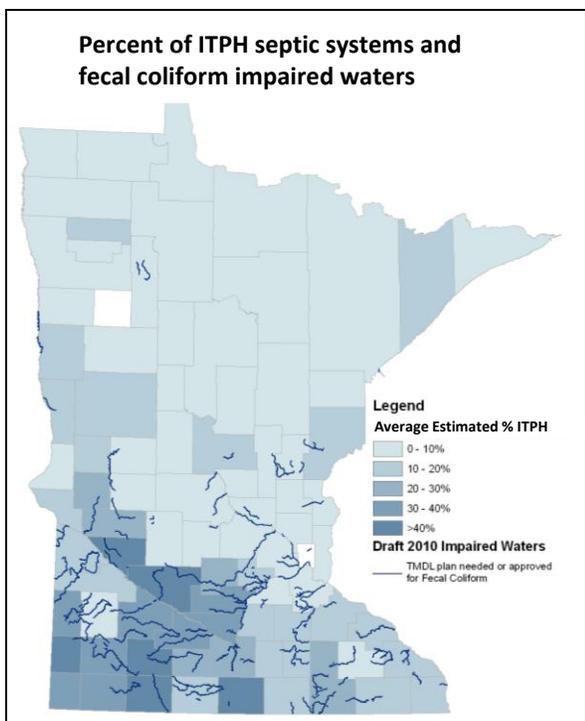


Figure 12 - Percentage of SSTS Imminent Threats overlap by waters impaired by fecal coliform. Other sources of fecal coliform may also contribute to this problem. The actual sources will be identified when cleanup plans are established for each stretch.

SSTS Upgrades Part of Root River Restoration

Fillmore County reduced fecal coliform levels in the south branch of the Root River by 40 percent when comparing levels from 2005-2008 to the 1999-2002 period. One factor cited: the county processed loans for 19 on-site sewer upgrades. Other positive factors cited involved changes made to area feedlots and tilling practices. The projects were begun after a Clean Water Partnership-funded study completed in 2002 showed bacteria levels in the river at three times the state water quality standard.

No Single Trigger Sufficient for Rapid Compliance

As laid out in the 1994/1997 authorizing legislation, the SSTS program is a forward-looking program, focusing on building SSTSs correctly and ensuring that quality work is performed by trained and licensed professionals. The law's initial focus on existing systems and noncompliance was the provision that requires a property seller to disclose to the buyer what the seller knows of the compliance status of the SSTS. This provision has led to the upgrade of many problem SSTSs, but does not systematically assess all existing SSTSs and so is not comprehensive.

Straight-pipe (No Treatment) Sites Addressed

In 2006, a provision was added to the statute that required the reporting of "straight pipes" when found by SSTS inspectors, and imposed a penalty of \$500 per month for straight pipes that are not corrected within 10 months. Of the 357 straight pipes reported since the August 2006 enactment of the statute, 306 systems have been upgraded or otherwise resolved; 45 are still within the 10-month time period allowed to correct the problem (as of 11/24/2010); and six are subject to pending enforcement actions. A three-county pilot project identified 1,103 ITPH with 919 being replaced by August 2010. An additional 226 ITPH were replaced through the Board of Water and Soil Resources described in the September, 2010 Status Report. Sites that have not yet been upgraded either exceeded local contractor capacity or have been unaffordable to the homeowners; measures are being taken to correct these sites as well.

MPCA to use 2010 Survey Results to Accelerate Upgrade Process

The 2010 Legislature began the process of accelerating the rate of SSTS upgrades by requiring the MPCA to work with counties and other interested organizations through the SEITF. As mentioned earlier, this task force was directed to identify ways to "rapidly reduce noncompliance" of SSTSs. This report is, in part, the product of that task force and includes information on ways to increase SSTS compliance.

In the fall of 2010, the MPCA completed a survey of Local Governmental Units (LGUs) compliance efforts and solicited their ideas on how to improve the process statewide. First, it is important to understand the growth projected for Minnesota as shown in **Figure 3** on page 3 showing growth in areas served by onsite sewage treatment systems.

Figure 13 shows which counties require an SSTS inspection when they issue some type of building permit, land use approval or variance. Another commonly-employed trigger is for a local jurisdiction to require that an SSTS is inspected at the time of property transfer. **Figure 14** shows the counties that employ this trigger. Some of these have this requirement in shoreland areas only. Appendix 2 provides a detailed listing, county by county, of SSTS triggers and compliance rates.

Figure 13

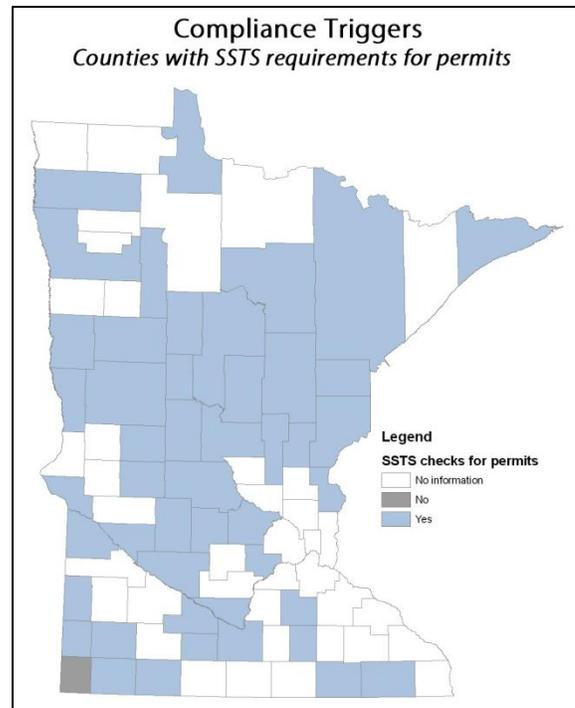
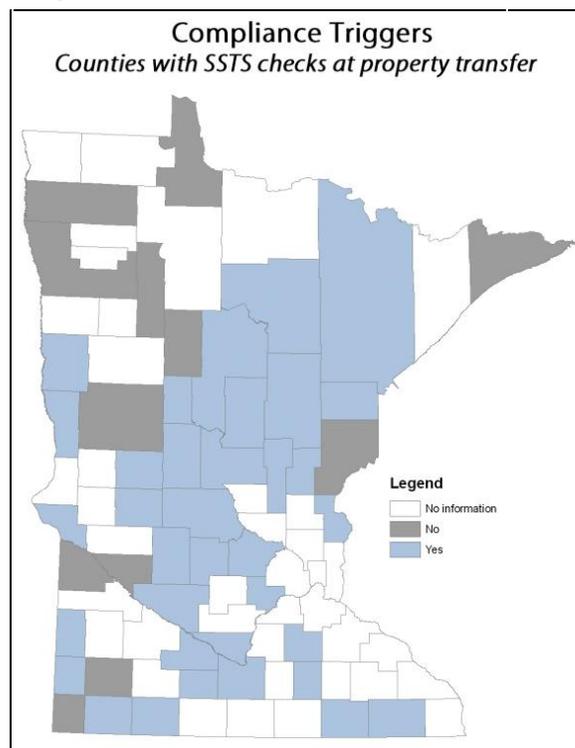


Figure 14



Adopting Mix of “Triggers” Key to Reducing SSTS Noncompliance

Direct/Indirect Inspections

The Legislature has directed the MPCA to develop recommendations and a plan for directly or indirectly inspecting and providing an inventory for all SSTSs. The following are the definitions of direct and indirect inspections and some of the methods used in each category.

1. Direct inspection methods are defined as field verification of each SSTS to determine the owner, location, and which systems are failing to protect groundwater (less than three feet of separation from discharge point to groundwater elevation) or an ITPH. Direct inspections can be initiated by an LGU for a variety of reasons (see “Inspection Triggers” below) or by homeowners in order to complete a permit application, such as for the addition of a bedroom, etc.

2. Indirect inspection methods are defined as utilizing offsite or desktop methods to determine owner, location, and which systems are failing to protect groundwater or an ITPH. Methods may include a review of census type data, soil survey information, building permit records, etc. An SSTS with a valid Certificate of Compliance (CoC) may be considered inventoried without further work.

The MPCA plan for directly or indirectly inspecting systems and building an inventory was jointly developed with county representatives. The plan focuses on leveraging successful strategies counties use to trigger onsite compliance inspections, the results of which can lead to system upgrades and/or be used to build an inventory of SSTSs. These triggers include SSTS inventory efforts, programs that regularly maintain existing SSTS, and requirements for SSTS inspection when permits and other land use approvals are granted or at the time of property transfer.

Why focus on compliance inspection triggers? Inspection of an SSTS results in issuance of one of two documents: a Certificate of Compliance (CoC) or a Notice of Noncompliance (NoN). When an NoN is issued for failure to protect groundwater or other deficiency, specific upgrade timeframes apply.

No single compliance inspection trigger option is exclusively recommended. As seen in the previous discussion, many counties have already adopted a variety of triggers and are making significant progress in addressing past noncompliance. Instead, LGUs should be awarded grants for implementing (first adopting, where necessary) triggers that result in the inspection of existing SSTSs, especially in shoreland and other sensitive areas.

Inspection Triggers

Events that trigger a compliance inspection can include:

- An inventory of systems in a specific area
- A program under which systems are routinely inspected in a specific period of time
- Addition of a bedroom, where the local government issues permits for this (Minn Statute 115.55)
- Issuance of a local permit, variance or other land use action where this trigger is included in the local ordinance (may be only in certain districts within the jurisdiction, or jurisdiction-wide)
- Sale of a property, or when the buyer, lender or local government requires an inspection

Each of these triggering events is discussed in more detail on the following pages. Appendix 3 provides an analysis of methods to identify and upgrade problem SSTSs.

Inventory Triggers

Grant-Funded Projects Boost SSTS Inventories, Lead to Fixes

Through legislation, \$835,000 was distributed through BWSR FY08-FY09 for SSTS inventories. The following is a summary of the scope of each funded inventory. At this time, not all grant recipients have completed reporting. Current records document approximately 12,000 SSTS have been inventoried. BWSR also distributed low income SSTS fix-up grants to 12 LGUs which resulted in replacement of 226 ITPH systems.

Douglas SWCD

A direct inventory was based on MPCA's 2006-2008 unsewered area survey, focusing on three areas to be inspected. Approximately 600 properties on seven different lakes and in two cities were inspected utilizing both contracted private state-licensed SSTS inspectors and certified county staff.

Southeast Minnesota Water Resources Board

An indirect inventory of Lake Zumbro in Wabasha and Olmsted Counties was made. A GIS dataset was created from all SSTS permits on file; properties without permits were identified as possible Imminent Public Health Threat SSTSs.

Cass County

This inventory project included SSTS inspections on approximately 800 properties on four different lakes. Inspections were conducted with private state-licensed inspectors through the Request for Proposal process.

Cook County

This inventory project included two separate projects, utilizing private state-licensed SSTS inspectors selected through the Request for Proposal process. One project encompassed an inspection program on approximately 400 properties around five lakes. The second project area is approximately 110 properties within the Tofte-Schroeder Sanitary District. Septic tank pumping discounts were offered to homeowners. Low-income fix-up funds were made available to qualified applicants.

Crow Wing County

Crow Wing County conducted inventories for SSTSs with and without existing local permit information and those in the Crow Wing Sanitary Management District's area (inclusive of five townships, one unorganized area and one city encompassing approximately 8,000 SSTSs). State-licensed inspectors were selected through the request for proposal process; the county utilized a Web-based records management program to track progress. Four lake association education workshops were also conducted.

Kandiyohi County Making

Progress in Replacing Problem SSTSs

The Green Lake Sanitary Sewer District (GLSSWD) was formed in 1975 and initially was a system of managed on-site systems and cluster systems. Growth in the area resulted in overloaded systems and in 2000 a sewage treatment plant was built for the homes on and around Green Lake.

Within the last five years the areas around Lake Florida, Nest Lake, George Lake, Henderson Lake, and now Diamond Lake have been mainly hooked up to new extensions of the GLSSWD. Property owners were not required to hook up to the sanitary sewer, but those that did not choose to hook up had to prove their systems were in compliance.

Diamond Lake is not fully complete yet, but by the end of 2011 all prescribed properties should be hooked up.

The total number of hookups for these five lakes is 923. On Diamond Lake the county did a complete compliance inventory with field work funded by a Board of Water and Soil Resources (BWSR) grant. The other lakes completed only desktop surveys consisting of a records review and some soil reviews.



Kandiyohi County

An SSTS compliance inventory was made around Diamond Lake in order to advance the community decision-making process toward achieving compliant sewage treatment. Approximately 290 properties were inspected. Compliance information gathered was entered into the county's computerized permit tracking database.

Mower County

An inventory was completed of approximately 250 properties within a quarter mile corridor, along the Cedar River. Properties were visually inspected for Imminent Public Health Threat SSTS.

Rice County

This is an inventory in the Roberds Lake Watershed encompassing over 2,000 developed parcels. An SSTS database was developed and SSTSs were located with GPS units with the information downloaded into the county GIS system for further database enhancement.

Stearns County

An inventory of approximately 1,200 SSTSs within the river and lake and shoreland areas of the Sauk Chain of Lakes. The inventory was requested by the Sauk Chain of Lakes Association. Inspections were conducted by a certified county-employed SSTS inspector.

Wilkin County

An inventory was conducted by certified county staff in 12 townships and one unsewered community, encompassing approximately 460 systems. The data were entered into the county GIS system to assist with SSTS program management.

Three-County SSTS Pilot Program Fixes 919 of 1,103 Health Threats

In 2003, the Minnesota Legislature established the "Three-County SSTS Pilot Program" with support from environmental groups, agreement from county associations, and a willingness to redirect existing base funds from the MPCA. The concept was simple: provide pilot funding (\$60,000 per year) for four years to expedite the identification and replacement of imminent public health threat SSTS discharges.

The actual number of LGUs participating, the amounts of funding provided, and the timeframes for completion varied. **Figure 15** is a condensed summary of the project and outcomes. The most successful efforts occurred in Chisago and Fillmore counties. A total of 8,620 systems in four counties were evaluated. Most of these systems were inspected in Chisago and Fillmore counties. Of these systems, 1,103 were identified as imminent public health threats, or 13 percent of the systems inventoried. Of the 1,103 declared to be ITPH, 919 systems were replaced as of August 2010. The systems not yet updated are being replaced as contractors become available to install the systems and as funds become available for low-income residents that simply cannot afford a new system.

Figure 15

	Total	Systems evaluated	Declared ITPH systems	Failure rate	Systems replaced as of 6/30/09	Systems replaced as of 6/30/2009 (gallons prevented from release per day)
Chisago	\$240,000	4,752	429	9%	389	175,050
Cottonwood	\$118,024	98	98	100%	69	31,050
Fillmore	\$216,312	3,765	571	15%	382	171,900
Olmsted	\$ 2,440	5	5	100%	0	0
Total	\$576,776	8,620	1,103	13%	840	378,000

State-funded Existing SSTS Inventories (Appendix B from September 2010 report "SSTS Status Report on Recommendations and Planning Minnesota Pollution Control Agency for Statewide Inventories and Inspections")

Other Inspection Triggers

Identifying and adopting the most effective triggers for conducting SSTS compliance inspections is considered critical to rapidly reducing the number of problem SSTSs in the state. Counties have adopted various strategies that range from full system management programs that ensure ongoing compliance to inspections triggered by specific events. This report has just addressed the “inventory” trigger; the following are discussions of other types of triggers in use today.

Full System Management

A program under which systems are routinely inspected in a specific period of time and identified problems fixed as a matter of course is a “full system management” program. In these jurisdictions, the regular maintenance and upgrade of SSTSs is ensured. It can be done by a local unit of government, as in the case for some of the homeowners in the Otter Tail Water Management District (OTWMD), or by homeowners as required by the local unit of government, as is the case in Washington County.

In a study of the OTWMD conducted in 2004, the University of Minnesota reported:
(full report can be found at <http://septic.umn.edu/communities/organizationaloptions/index.htm>)

The Otter Tail Water Management District was formed in 1984 as a mechanism to assure the proper onsite treatment of wastewater in a 55 square mile area experiencing decreasing lake water quality and population growth. It is in West Central Minnesota, two and a half hours from Minneapolis - St. Paul. Initially the District served 1200 homes, cabins and businesses and has expanded to cover 1545 connections. Within the District are 6 lakes, 4 townships and portions of the City of Otter Tail, all using an individual system or are connected to one of sixteen cluster systems. The District has the ability to levy taxes and write and enforce ordinances.

The District has an inspection and monitoring program to track performance. To maintain these systems, residents can choose to be either on an active or passive maintenance program. For those on the active program, the District provides maintenance, repairs and replacement of the systems. Those on the passive plan are under the jurisdiction of the District, but maintenance, repair and replacement costs are the owner's responsibility. User fees are assigned based on the type of system and level of maintenance program chosen. The District has the ability to issue compliance orders and has the capability to levy costs to the property tax statements.

When the District was formed, the Board of Managers was required to install ground water monitoring wells around the cluster systems and to monitor domestic wells. These wells have been sampled since 1984. The District has monitored the health of the lakes through Secchi disk readings and phosphorus measurements. The data shows very little impact on groundwater and improved water quality in the lakes. System failure rates have been less than 2% over 20 years which equates to replacement of an average of 1.6 systems per year.

In Washington County, the county tracks when systems are maintained (pumped, cleaned and potential problems identified) and reminds those who are “due” that they also need to maintain their systems. The licensed system maintainers who work in Washington County are required to report problems to the county as part of their records when systems are maintained, and the County staff follow up to ensure that necessary repairs are made. All cities in the seven-county metro area that have SSTS are required by the Metropolitan Council to track system maintenance, but not all go as far as Washington County in requiring subsequent problem reports from the maintainers.

Both of these approaches are effective at keeping good SSTSs healthy and identifying problems as they crop up for all the systems in their jurisdiction. They fit well with the MPCA's Existing System Inspection Form. With the new form, once the soil separation has been verified by two designers or inspectors and a record is kept showing regular maintenance and repairs, all that has to be done to develop a current CoC is for an inspector to visit the property and ensure that there is no surfacing or sewage backups. This makes it much

easier to evaluate SSTs in the winter since the soils have already been determined to be compliant and the tank was found to be intact. All the inspector needs to do is to ensure that sewage is not backing up into the house or discharging to the land surface or surface waters.

The full system management approach was not covered in the survey mentioned earlier. However, during recent testimony at the Legislature and in comments to the SSTs rules, many counties stated they do not have the resources to track maintenance and ensure that homeowners properly care for their SSTs. This was viewed as too invasive and several local officials stated their belief that the proper role of government is to protect the environment and not to provide consumer protection. Based on these statements, the MPCA does not believe there is support at this time for a statewide move to a mandatory full system management model. However, this approach does seem to work very well where it has been implemented so it should remain an option for local governments to employ in areas with critical environmental settings or high density SSTs use.

Bedroom Additions

Current law requires that an SSTs serving a dwelling must be brought into compliance at the time a bedroom is added to a home, at least in those jurisdictions where such construction would require a permit or variance from the local government. Specifically, this law states,

Minnesota Statutes chapter 115.55 subd. 5 (a) and (b). Inspection.

(a) An inspection shall be required for all new construction or replacement of a system to determine compliance with applicable requirements. The manner and timing of inspection may be determined by the applicable local ordinance.

(b) A local unit of government may not issue a building permit or variance for the addition of a bedroom on property served by a system unless the system has been inspected to determine compliance with the applicable requirements, as evidenced by a certificate of compliance or notice of noncompliance issued by a licensed inspection business or certified local unit of government inspector. A local unit of government may temporarily waive the inspection requirement for a building permit or variance for which application is made during the period from November 1 to April 30, provided that an inspection of the system is performed by the following June 1 and the applicant submits a certificate of compliance or notice of noncompliance within 15 days of the inspection. This paragraph does not apply if the local unit of government does not have an ordinance requiring a building permit to add a bedroom.

Information from the 2009 SSTs Annual Report shows that most Minnesota counties are currently implementing this trigger. It is not a comprehensive approach but when coupled up with other triggers, can be an effective approach to finding and fixing SSTs problems since it relies on the homeowner's desire to add a bedroom to the home and does not address all homes in a jurisdiction. However, it does result in system upgrade at a time when the sewage flow from the home is theoretically increasing. In this way, it is an effective check on system quality and size, ensuring that the system can handle a growing family's needs. This trigger is very efficient for local governments to implement and would not overwhelm the LGU capacity and/or industry capacity. In discussions of the SSTs Implementation and Enforcement Task Force, it was noted that local units of government view permit-based triggers as a non-invasive government action in that the need for the inspection was triggered by the property owner. Also, when an LGU has many triggers, it could be argued that in time, this does result in a comprehensive approach.

Issuance of a Local Permit, Variance or Other Land Use Action

This trigger is one that has been used in many jurisdictions as an SSTs upgrade tool in shoreland areas for many years. In this approach, the local ordinance will specify which types of permits, variances and/or land use actions will require an SSTs inspection. Homeowners seeking those types of permits or approvals will need to have their systems inspected and, if needed, upgraded before they can complete their projects.

As is shown in **Figure 19**, (Trigger Effectiveness, page 20) respondents to the MPCA October 2010 survey felt triggers relating to local approvals are effective at resulting in upgrades to problem SSTs. As with the bedroom addition trigger, these additional triggers are very efficient for local governments to implement.

Sale of a Property

When a property changes hands, significant sums of money are generally involved. Many times, conditions are noted that either require correction or result in financial considerations by either the buyer or seller. Many local jurisdictions have taken advantage of this opportunity to require an SSTS inspection at the time a property is transferred. State law is less restrictive; instead requiring only that a seller disclose to a buyer what they know of the compliance status of a system. The law language states:

Minnesota Statutes chapter 115.55 subd. 6. Inspection. *Disclosure of subsurface sewage treatment system to buyer. (a) Before signing an agreement to sell or transfer real property, the seller or transferor must disclose in writing to the buyer or transferee information on how sewage generated at the property is managed. The disclosure must be made by delivering a statement to the buyer or transferee that either:*

(1) the sewage goes to a facility permitted by the agency; or

(2) the sewage does not go to a permitted facility, and is therefore subject to applicable requirements.

For sewage not sent to a permitted facility, the disclosure must include a description of the system in use, including the legal description of the property, the county in which the property is located, and a map drawn from available information showing the location of the system on the property to the extent practicable. If the seller or transferor has knowledge that an abandoned subsurface sewage treatment system exists on the property, the disclosure must include a map showing its location. The seller or transferor shall disclose to the buyer or transferee what the seller or transferor has knowledge of relative to the compliance status of the subsurface sewage treatment system, and whether, to the best of the seller's knowledge, a straight-pipe system exists. A seller or transferor who has in their possession a previous inspection report completed by a licensed inspection business or certified local government inspector in accordance with subdivision 5 or 5a shall attach a copy to the disclosure statement that is provided to the buyer.

(b) Unless the buyer or transferee and seller or transferor agree to the contrary in writing before the closing of the sale, a seller or transferor who fails to disclose the existence or known status of a subsurface sewage treatment system at the time of sale, and who knew or had reason to know of the existence or known status of the system, is liable to the buyer or transferee for costs relating to bringing the system into compliance with the subsurface sewage treatment system rules and for reasonable attorney fees for collection of costs from the seller or transferor. An action under this subdivision must be commenced within two years after the date on which the buyer or transferee closed the purchase or transfer of the real property where the system is located.

In addition, local governments cannot prevent or delay recording with the county recorder:

Minnesota Statutes chapter 115.55 subd. 7 (c). Local standards. *(c) New or replacement systems; local ordinances. A local unit of government may adopt and enforce ordinances or rules affecting new or replacement subsurface sewage treatment systems that are more restrictive than the agency's rules. A local unit of government may not adopt or enforce an ordinance or rule if its effect is to prevent or delay recording with the county recorder or registrar of titles of a deed or other instrument that is otherwise entitled to be recorded. (emphasis added)*

Response to Legislative Charge:

Develop, Implement a Survey to Identify Extent of Existing SSTS Inventories

LGU Survey Reveals Who Inventories What, Trigger Effectiveness

In October 2010, the MPCA surveyed local SSTS program administrators at the county, township and city level. The survey focused on their use of inventories and other SSTS upgrade triggers. Participation in this survey was very good, especially among counties where the response rate was 79 percent (**Figure 16**).

Figure 16 - Response rate for survey

	Responses	Percent Response of Total Invited to Participate
Counties	69	79%
Cities	18	29%
Townships	6	13%
Overall	93	47%

When asked whether they require a point-of-sale inspection for septic systems, the majority of 91 respondents stated they do. This trigger is used most often by cities, as shown in **Figure 17**. In response to a subsequent question, 53 jurisdictions reported that their point-of-sale provision applies jurisdictionwide and five reported its use in shoreland areas only. Data from the MPCA’s Annual Report show that 49 counties employ an SSTS point-of-sale inspection requirement.

Figure 17 - Jurisdictions requiring point-of-sale SSTS inspections

	No	Yes	% Yes
Counties	24	44	65%
Cities	4	13	76%
Townships	3	3	50%

The survey asked additional questions about this trigger, including, “What year was point-of-sale started in your jurisdiction?” The 52 respondents provided start years ranging from 1984 to 2009. The year 1996 was the most common value given (nine responses). When asked, “How many systems would you estimate have been replaced through point of sale?” Thirty-five gave answers totaling more than 20,000. This demonstrates that point-of-sale SSTS inspections are effective at bringing about a significant number of upgrades even though this is not a comprehensive approach to total SSTS compliance.

Jurisdiction Support for Statewide Point-of-Sale Inspection Requirement

There has been discussion of amending state law to require an SSTS inspection for any property sale, statewide. The October 2010 MPCA survey asked respondents to indicate their jurisdiction’s level of support for such a requirement. **Figure 18** shows the 88 responses broken down by type of jurisdiction. These are actual numbers, not percentages.

Figure 18 -Jurisdictions’ support for statewide requirement for point of sale SSTS inspections

	Very supportive	Somewhat supportive	Neutral	Not particularly supportive	Not at all supportive	Do Not Know
County	28	17	9	3	6	2
City	9	7	0	1	0	0
Township	2	3	0	0	0	1

This trigger was discussed in detail at meetings of the SSTS Implementation and Enforcement Task Force in the fall of 2010. This group does not recommend imposition of a statewide mandate for SSTS inspection at the time of property sale. Counties did not support a mandate at this time because of the difficult economic times and the need to reduce mandates that limit spending discretion for local governments. The Minnesota Association of Realtors opposes a mandate as well, based on the fact that this trigger opportunistically addresses only some SSTSs and does not promote overall compliance. This has been a controversial point between the real estate industry and some local SSTS programs, and conflicting perspectives continue. However, at this point both counties and realtors agree there should be no statewide mandate for SSTS inspection at the time of property sale.

Trigger Effectiveness

Local program administrators were asked to rank the following triggers as to how effective they would be in getting problem SSTS upgraded in their jurisdiction and 85 answered this question. **Figure 19** shows their responses. The most votes in each category are indicated in **red**.

Figure 19 - Trigger effectiveness

	Most effective	Second most effective	Third most effective	Fourth most effective	Fifth most effective	Least effective
A county wide inventory effort	18	8	10	7	11	31
A targeted areas inventory effort	14	15	10	8	23	15
Requiring upgrade at the time of point of sale	43	18	9	8	2	5
Requiring upgrade at the time of issuing building permits	17	31	11	10	6	10
Requiring upgrade at the time of issuing variances	7	6	23	12	12	25
Requiring upgrade at the time of issuing any land use permit	15	10	11	24	10	15

Respondents rated “requiring upgrade at the time of point-of-sale” as the most effective trigger, and a county-wide inventory as the least effective.

The results of this survey will be further drawn upon in the following sections of this report. A full report on the survey results is available by request. Contact Gretchen Sabel at the MPCA via phone at 651-757-2686 or by email at gretchen.sabel@state.mn.us

Who Inventories What

Systems are inspected parcel by parcel; those that fail to meet compliance criteria are issued a notice of noncompliance and must be upgraded according to established timeframes. Those that meet compliance criteria are issued a certificate of compliance. Several types of inventories have been used:

1. Inventory that covers an entire jurisdiction (county, city, township or sanitary district)
2. Inventory in targeted watersheds or specific geographic areas
3. Limited assessment for evaluation of sanitary options in a specific area

The October 2010 MPCA survey asked local SSTS program administrators whether their jurisdiction has conducted any inventory activities (**Figure 20**). About half of the 93 respondents reported their jurisdictions have conducted an SSTS inventory (38 counties, 14 cities, and two townships.) An additional four counties and one city indicated in the survey that they have a plan to inspect every SSTS in their jurisdiction.

Figure 20 - Types of Inventories Conducted by Jurisdictions
(not all answered this question that indicated they had conducted inventories)

	Counties	Cities	Townships
Entire County	7	0	0
Entire City	4	4	0
Specific Riparian Area	13	0	0
Specific Watershed	3	1	0
Township	0	0	1
Unincorporated Community	4	0	1
Sanitary Districts	2	1	0

When asked how many SSTSs were inspected based on inventories (**Figure 21**), 48 jurisdictions reported values that ranged from zero to 6120. Some jurisdictions (11) reported inspecting more than 1,000 SSTS in their inventories. More than 40,000 SSTSs were reported to have been inspected by all the responding jurisdictions. It should be noted that many of these inventories utilized assessments or limited compliance inspections instead of full compliance inspections.

Figure 21 - Level of inventories conducted

	Counties	Cities	Townships
Assessment without Compliance Determination	8	4	0
Imminent Threat Evaluation	11	2	1
Full Compliance Inspection	15	7	1

The survey included questions about inventory practices (**Figure 22**). One question asked, “Who conducted the inspections?” Out of 45 responders, four said they require the homeowners to contract with a licensed inspection business, and one noted that they worked with two apprentice-licensed inspection businesses that did the inspections as their mentoring program.

Figure 22 - Type of inspector used for inventories



The survey also asked about the costs of inspections that are conducted as part of an inventory. The 29 respondents’ estimated per-parcel cost figures reported ranged from \$9 to \$500, with an average value of \$166. The average cost reported by 12 of the 18 LGUs that solely contracted with licensed inspection businesses was \$196. Only eight of the 17 LGUs that used regular program staff to conduct the inspections reported costs. The average of this group was \$86.

Two of the counties that conducted full inventories of all SSTs under their jurisdiction were Chisago and Fillmore County. This was done with special funding allotted by the 2003 Legislature as part of the Three-County Pilot Program (see story 15).

Currently, there are state-funded inventories being conducted in eight counties shown in **Figure 23**. All of these are inventories in specific areas (not the entire county). They estimate that at least 4,000 SSTs will be inspected in these projects. These will be full compliance inspections resulting in CoCs or NoNs.

Factors Affecting Inventory Process

The 2008 Legislature directed the MPCA to evaluate what would need to be in place if a statewide SSTS inventory were to succeed. In the Status Report delivered to the Legislature in the fall of 2010, the MPCA identified areas that had been inventoried with funding support from the state. Results of the October 2010 survey of local SSTS program administrators provided additional data on inventory activities. This is shown in **Figure 23**.

This survey also asked questions about the statutory, programmatic and funding elements that would need to be in place if a statewide inventory of SSTS were to be conducted. In one question, local program administrators were asked to rank the factors they felt were important for successfully conducting SSTS inventories. Most respondents who answered this question ranked the factors this way:

- Support from local elected officials
- Funding for inspections
- Support from citizens
- Incentive grants to residents to replace systems
- Funds for low income residents to replace their systems
- Education of board, townships and residents

Another question asked “What obstacles do you see to being able to inventory all SSTS in your jurisdiction?” Again, most respondents (85) identified the following obstacles in order of importance:

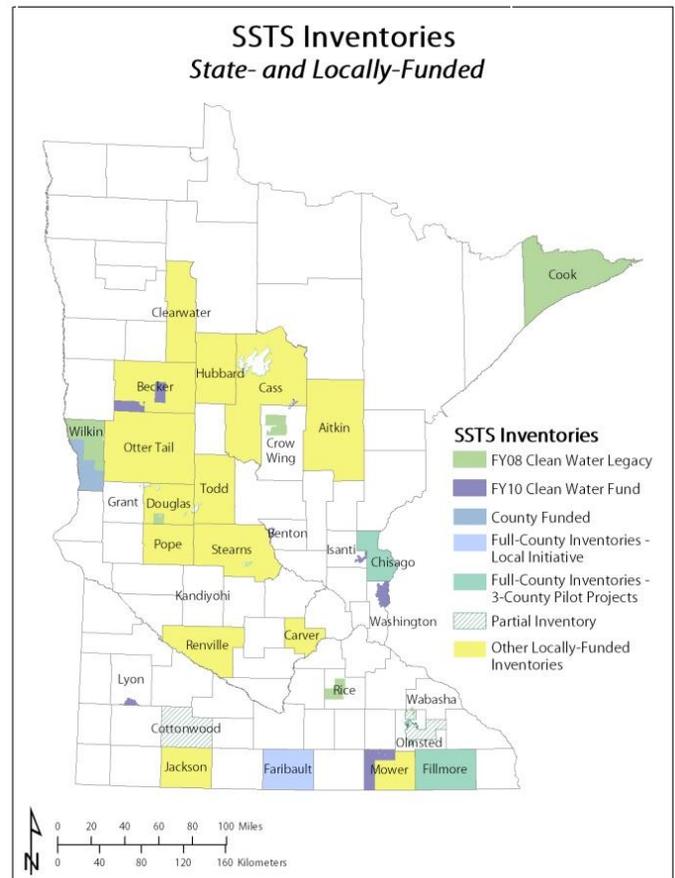
- Lack of staffing to conduct the inventory
- Lack of funding for local program to do the work
- Lack of grants for system upgrades
- Local opposition to inventories
- Database needed to manage information

When asked about the percent of households in their jurisdiction that would need financial assistance to upgrade septic systems, 78 answered with a wide range of values, from 1 to 90 percent. Another question asked about the types of funding needed and 63 said “Incentive Grants for All” was their first. “Grants for low income only” came in as their second choice. Their third choice was “low interest loans.”

The final question in this series asked respondents “Do you think your jurisdiction would have local support from residents to inventory and inspect septic systems?” Responses can be grouped into “unfavorable” (45 responses) “some support” (12 responses); and “generally favorable” (22 responses). The “unfavorable” group included strong “no” responses as well as some more moderated responses. Some (35 percent) stressed the importance and effectiveness of education and communication in building support and lessening resistance.

Several counties assisted the MPCA in reviewing the survey data. They noted critical obstacles that needed to be overcome included funding and lack of political will. Others identified the need to educate and inform local officials about the benefits of conducting SSTS inventories.

Figure 23



Mixed Support for Statewide SSTS Inventory Database

One of the recommendations contained in the 2010 Status Report was to explore the level of county support for creating and maintaining a statewide SSTS inventory database similar to the statewide index of rural wells maintained by the Department of Health. Such a database could be used to help the state and counties maintain all necessary SSTS inventory and compliance status information.

Support from respondents for a statewide inventory was mixed, but the reviewers noted that funding, both for the inventory work and subsequent SSTS upgrades, was the most critical element that the state must provide. Clear goals for the inventories should be set at the state level. For example, is it acceptable to do less than full compliance inspections? What is the inventory trying to accomplish? What level of inventory is appropriate and where are direct inspections necessary and where can records review (indirect inventory) provide good information?

When the idea of developing an inventory methodology was raised, reviewers said this could lessen resistance to conducting inventories since local governments would not have to “reinvent the wheel” but could learn from others who have gone before. One reviewer noted that a state-mandated statewide SSTS inventory rather than being a locally-mandated decision would be better accepted in her jurisdiction due to local political issues.

Discussions in the SIETF were of a similar vein. This group felt that while inventories are effective at identifying problem SSTS, there should be no mandate for a statewide SSTS inventory. They cited concern about exceeding the capacity of local professionals to inspect and correct problem systems. This group also stressed the importance of state funding to assist in conducting inventories, citing recent successes gained through projects funded in the 2008 Legislature.

Recommendations

About 23 percent of Minnesotans rely on decentralized subsurface sewage treatment systems for wastewater treatment. Data from local units of government tell us there are about one half million SSTSs in Minnesota. Roughly 20 percent of existing systems are modern, well-functioning systems. Regulation of SSTS was a local option for most of Minnesota's history; modern county-based programs did not begin in much of Minnesota until the late 1990s. The statutory focus of this program today is to build systems according to state standards that are administered at the local level to ensure protection of public health and the environment.

The status of older systems is variable. Many older systems do not have the required separation to groundwater to ensure drinking water protection. Some directly discharge to surface waters or the ground surface. The problem then becomes one of identifying problem systems and prioritizing their upgrade. There are several ways that this occurs:

- State shoreland rules require that local shoreland programs take some measures to look back at existing systems and promote compliance.
- When homeowners add a bedroom to a home served by the SSTS, current law requires that the system be proven compliant before the permit is issued.
- Some local programs have additional requirements including requiring compliance for approval of any building or land use permit; or for property transfer.
- Local inventories of SSTS have proven effective at identifying noncompliance; many of these are facilitated by the provision of state funds to help with the cost of the inventory and the fixes.
- Local programs that promote SSTS maintenance and ensure constant compliance for systems have proven to be effective and are in use in several areas of the state.

Each of these triggers can be effective. The use of triggers and their effectiveness is dependent on the capacity and priorities of local governments. In areas where the local government regulates land use and/or administers the building code, there is a ready regulatory framework that forms the foundation for effective SSTS regulation. In other areas, extra effort by local governments is required to administer an effective SSTS program. Some areas of the state desire more state assistance than others.

While no single trigger is recommended as the optimum way to rapidly reduce SSTS noncompliance, it is recommended that incentives be created or continued for local implementation of triggers, especially in sensitive areas such as shoreland areas, higher-density developments, and sensitive groundwater areas.

In addition, cooperation between state and local enforcement is critical to overall success of the program. It is recommended that the MPCA and local governments continue communication in areas where an effective working relationship exists. Specialized regional initiatives may be effective in other areas, such as those without a foundation of land use regulation. This idea, as well as the development of additional enforcement tools, will be explored through the work of the SIETF.

There is no statewide inventory system for SSTSs. The inventory survey conducted in October 2010 indicates that more discussion should take place on the need for a statewide SSTS database. The need for and content of such a database should be discussed with SIETF in 2011.

Appendix 2 – SSTS Triggers, Compliance Rates by County

County	SSTS Compliance Checks				Total SSTS	2009 Estimates				2000-2009		Trends	
	Unknown	Property Transfer	Permit	Variance		% Failing to protect groundwater	% Inminent Public Health Threat	% Compliant	% Unknown	% Failing	% IPHT	% Failing	% IPHT
Aitkin					14,103	11		88		24	2		
Anoka*	?				25,944	4		73	22	14	6		
Becker						25		74		28	0		
Beltrami*	?				11,301	3	25	72		3	0		
Benton	?				5,214	30	5	65		31	9		
Big Stone					1,661	24	8	47	21	26	14		
Blue Earth					6,014	34	17	49		47	21		
Brown					2,302	28	28	40	4	42	33		
Carlton					7,400	20	6	74		23	4		
Carver					4,343	26	14	60		47	12		
Cass*					21,911	20	2	77		19	7		
Chippewa					2,227	7	51	42		13	46		
Chisago*					8,773	22		78		17	4		
Clay					2,904	20	10	70		27	12		
Clearwater					3,350		55	5	40	38	6		
Cook					4,351	30	5	65		30	4		
Cottonwood	?				1,632	12	48	40		22	44		
Crow Wing*					25,496	8		87	4	13	2		
Dakota*	?				6,387	8	2	83	7	23	3		
Dodge	?				2,841		46	54		53	25		
Douglas*					5,260	14		83	2	43	6		
Faribault	?				2,122		42	57		16	48		
Fillmore					3,788	5		92		25	16		
Freeborn	?				3,981		40	21	39	33	14		
Goodhue	?				5,210		36	25	40	20	11		
Grant	?				1,055	19	10	56	15	25	11		
Hennepin*	?				3,412	29	1	69		23	4		
Houston	?				55	25	15	50	10	28	18		
Hubbard*					17,572	25	2	45	28	33	6		
Isanti*	?				8,803	14		85		18	2		
Itasca*					16,228	26	3	69	2	38	5		
Jackson					3,277		60	20	20	57	49		
Kanabec					6,535	20		80		16	8		
Kandiyohi					6,846	36	5	60		41	9		
Kittson	?				980	25		75		9	5		
Koochiching	?				1,951		69	10	21	50	9		
Lac Qui Parle					1,792	36		65		11	12		
Lake	?				5,248	11	8	81		15	15		
Lake of the Woods					2,650	10		89		11	1		
Le Sueur	?				7,122	20	20	20	40	15	14		
Lincoln*					1,791	48	20	32		53	32		
Lyon	?				2,300	33	5	62		35	6		
Mahnomen	?						100						
Marshall					2,800	40	10	50		20	6		

County	SSTS Compliance Checks ? Unknown Permit Property Transfer Variance Systematic Inventory	Total SSTS	2009 Estimates				2000-2009 Average Estimate		Trends	
			% Failing to protect groundwater	% Liminal Public Health Threat	% Compliant	% Unknown	% Failing	% IPHT	% Failing	% IPHT
Martin	?	2,400	17	17	66	29	15	↓	↑	
McLeod	?	4,108	40	25	35	7	28	↑	↓	
Meeker	?	5,550	28	19	24	29	15	9	↑	↑
Mille Lacs*	?	5,732	25	10	65	28	7	↓	↑	
Morrison	?	9,658	25	5	70	29	13	↓	↓	
Mower	?	3,631	60	10	30	59	21	↑	↓	
Murray	?	1,115	9	43	48	25	40	↓	↑	
Nicollet	?	2,656	17	30	53	32	34	↓	↓	
Nobles	?	2,182	40	20	40	51	32	↓	↓	
Norman	?	1,161	10	5	85	12	4	↓	↑	
Olmsted*	?	4,140	21	5	74	22	3	↓	↑	
Otter Tail*	?	24,739	23	5	62	20	40	13	↓	↓
Pennington*	?	1,202	15		83	7	11	↑	↓	
Pine*	?	8,387	29	15	56	26	11	↑	↑	
Pipestone	?	1,395	19	14	67	32	45	↓	↓	
Polk	?	6,000	15		83	15	3	↑	↓	
Pope*	?	6,062	25		75	35	7	↓	↓	
Ramsey*	?	1,590	22		78	0	0			
Red Lake	?	833			98	5	5	↓	↓	
Redwood	?	2,550	40	20	40	58	32	↓	↓	
Renville	?	2,486	20	38	42	24	46	↓	↓	
Rice	?	7,153	16	22	60	25	12	↓	↑	
Rock	?	1,305	42	20	38	29	38	↑	↓	
Roseau	?	3,925			100	0	4			
Scott	?	9,143	19		80	20	5	↓	↓	
Sherburne	?	13,559	12		87	10	1	↑	↑	
Sibley	?	2,606	14	34	52	28	39	↓	↓	
St. Louis*	?	32,353	37	3	40	20	34	3	↑	↑
Stearns	?	16,436	17	2	81	24	1	↓	↑	
Steele	?	3,028	30	20	50	36	17	↓	↑	
Stevens	?	1,182	30		68	18	27	↓	↑	
Swift	?	3,969	50	27	22	73	23	↓	↑	
Todd*	?	8,902	23	9	61	7	35	10	↓	↓
Traverse	?	846	16	5	65	12	34	9	↓	↓
Wabasha	?	3,966	22	12	66	24	11	↓	↑	
Wadena*	?	3,662	29	14	57	15	6	↑	↑	
Waseca	?	2,328	20	16	64	29	20	↓	↓	
Washington*	?	15,195	4		93	3	1	↑	↑	
Watonwan	?	1,292	25	30	45	22	29	↑	↑	
Wilkin	?	1,060	56	3	41	48	16	↑	↓	
Winona	?	4,735	32	12	51	5	37	13	↓	↓
Wright*	?	15,101	30	2	68	34	3	↓	↓	
Yellow Medicine	?	1,737	25	25	50	21	19	↑	↑	

*Data compiled from multiple jurisdictions within county

Appendix 3 – Analysis of Methods to Identify and Upgrade Problem SSTS

Method	Description	Voluntary for Homeowners (Can they choose to participate?)	Benefits	Problems	Costs	Time to Implement	Changes Needed to Implement
Continuous Compliance	A local program where SSTS are checked and/or maintained every three years.	No	Ensures good environmental protection. Can save money by catching problems early.	Non-voluntary to homeowners. Costly to establish. May seem intrusive to some homeowners.	Triennial costs to homeowners (or annual fee to cover) Costly to LGU to administer.	Several years for a large jurisdiction	Allowed in law now; requires significant effort by local government to initiate this type of program. Significant funding may be required to review existing system data and build a new database to manage the information.
Inventory - Indirect Inspection (record review)	Systematic record review to identify scope of problem; highlight those systems of unknown quality and prioritize.	No	Focus on the worst systems. Builds a database on who has SSTS and what is known of them.	Non-voluntary to homeowners. Once you have a list of unknown or poor quality systems need to define next steps.	Staff needed to review records. Database creation.	One to three years, depends on quality of records and population.	Can be done now, needs funding.
Inventory - Limited assessment (visual assessment and homeowner interview)	A limited physical assessment of systems where sites are visited and evidence of surface discharges is sought.	No	Identifies the most serious problems.	Incomplete information may be misleading to homeowners. Does not identify all problems. May not be legal under current rules.	Costly to conduct inspections and upgrade systems, although less than for a full compliance inspection. Costly to LGU to administer.	Five to ten years or more to inventory, longer to fix all.	Funding for staff and upgrades. Clarify legal authority for limited assessment (vs full compliance inspection). Clarify authority to enter private property and inspect. Political support.
Inventory - Direct inspection - full Compliance Inspections (County-wide)	A systematic survey throughout the county to document the known status of SSTS and identify problem systems. Lot by lot full compliance inspections, resulting in CoC or NoN	No	Status of systems will be known and corrections made; good environmental results.	Local politics may be difficult. Costly to conduct inspections and upgrade systems. May exceed ability of contractors to fix/replace problems. May seem intrusive to some homeowners.	Costly to conduct inspections and upgrade systems. Costly to LGU to administer.	Five to ten years or more to inventory, longer to fix all.	Funding for staff and upgrades. Clarify authority to inspect. Political support.

Method	Description	Voluntary for Homeowners (Can they choose to participate?)	Benefits	Problems	Costs	Time to Implement	Changes Needed to Implement
Inventory - Direct inspection - full Compliance Inspections (Targeted areas)	Same as above, but only in targeted areas, like shoreland or along specific waterbodies.	No	Status of systems will be known and corrections made; good environmental results. Can target areas of greatest concern.	Local politics may be difficult. Costly to conduct inspections and upgrade systems. May exceed ability of contractors to fix/replace problems. May seem intrusive to some homeowners.	Costly to conduct inspections and upgrade systems. Costly to LGU to administer.	Three to five years or more to inventory, longer to fix.	Funding for staff and upgrades. Clarify authority to inspect. Political support.
Point of Sale (Property Transfer)	Inspection is required before property is transferred.	No, although as with zoning triggers, homeowner may have the ability to choose not to sell.	Status of system is known by buyer at a time when money is changing hands. Easy for LGUs to administer. Protects home buyers from inheriting problem systems.	Not comprehensive at a given point in time, can miss problem systems for long time. Some types of properties don't turn over often (farm properties, corporate ownership). Enforcement may be a problem if not fixed in transaction. Possible delay in property transactions.	Administrative costs to LGUs; cost of system upgrade can be negotiated between buyer and seller.	Properties turn over on average every ten years, could be much longer for some properties.	No changes needed, however some law changes to allow delay of recording would simplify and reduce administrative costs.
Bedroom Addition - this is in current law MS ch 115.55 sub 5 (b)	SSTS must be inspected before an LGU can permit addition of a bedroom to a dwelling.	Yes - they can choose not to add a bedroom.	Results in system upgrade at a time when the sewage flow from the home is theoretically increasing.	Not a frequent occurrence and not comprehensive.	Very efficient for local governments. Homeowner must pay cost of upgrade.	Already in place and being implemented.	None.

Method	Description	Voluntary for Homeowners (Can they choose to participate?)	Benefits	Problems	Costs	Time to Implement	Changes Needed to Implement
Any Building or Land Use Permit - Jurisdiction Wide	SSTS must be inspected before an LGU can issue any building or land use permit.	Yes - they can choose not to seek a permit.	Good acceptance by homeowners; provides an almost-automatic check on many more SSTS.	Not comprehensive at a given point in time, can miss problem systems for long time. Some properties will never have a zoning action.	Very efficient for local governments. Homeowner must pay cost of upgrade.	Very simple to implement through ordinance change, can be implemented quickly.	Ordinance change, already allowed in law.
Any Building or Land Use Permit - Shoreland Only	SSTS must be inspected before an LGU can issue any building or land use permit in shoreland areas.	Yes - they can choose not to seek a permit.	Good acceptance by homeowners; provides an almost-automatic check on many more SSTS in the most critical area for protecting water resources.	Not comprehensive at a given point in time, can miss problem systems for long time. Some properties will never have a zoning action.	Very efficient for local governments. Homeowner must pay cost of upgrade.	Very simple to implement through ordinance change, can be implemented quickly.	Ordinance change, already allowed in law. Many LGUs already have this provision.
Zoning Actions of Conditional/Interim Use Permits or Variance	SSTS must be inspected before an LGU can approve any zoning action on a property.	Yes - they can choose not to seek a zoning approval or variance.	Good acceptance by homeowners; provides an almost-automatic check on more SSTS. Provides check on more systems than "permit" alone trigger would.	Not comprehensive at a given point in time, can miss problem systems for long time. Some properties will never have a zoning action. Affects very limited number of properties annually.	Very efficient for local governments. Homeowner must pay cost of upgrade.	Very simple to implement through ordinance change, can be implemented quickly.	Ordinance change, already allowed in law.