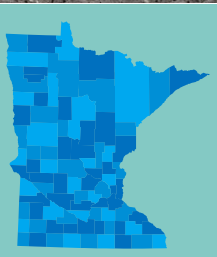
Wastewater

May 2025

2024 SSTS Annual Report

Subsurface Sewage Treatment Systems in Minnesota

MINNESOTA POLLUTION CONTROL AGENCY



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Contributors/acknowledgements

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Thank you to Aaron Jensen, Cody Robinson, Madalyn Bollig, James (Jimmy) Lipps, and Nick Haig for their support, contributions, and peer review of the content within this report.

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Acronyms

ALS	Alternative local standards
FTPGW	Failing to protect groundwater
GPD	Gallons per day
ITPHS	Imminent threat to public health or safety
LGU	Local governmental unit
MPCA	Minnesota Pollution Control Agency
SSTS	Subsurface sewage treatment system
TCPA	Township Cooperation Planning Association

Executive summary

There were 190 local governmental units (LGUs) who administered subsurface sewage treatment system (SSTS) programs in 2024 that submitted annual report data to the Minnesota Pollution Control Agency (MPCA). The 190 local SSTS programs consist of 86 counties, 72 cities, 29 townships, and 3 other special purpose units of government with permitting authority.

A total of 648,641 SSTS were reported across Minnesota, representing an estimated 44.4 billion gallons of wastewater treated by SSTS per year (assuming 2.5 person/permit; 75 gallons/person; 365 days/year).

The LGUs issued 10,551 SSTS construction permits in 2024 for 4,942 new systems, and 5,375 replacement systems. Additionally, there were 211 permits issued for system repairs. Of the SSTS permitted in 2024, approximately 96% serve residential dwellings and 4% serve other establishments.

Approximately 71% of the SSTS permitted in 2024 were Type I systems, including 4,535 Type I mounds. There were 1,445 Type II systems, 1,476 Type III systems, 72 Type IV systems, and 9 Type V systems permitted in 2024.

The majority of SSTS construction permits issued in 2024 were for systems with a flow volume between 1-2,499 gallons per day (gpd); however, there were 29 new, and 13 replacement systems with a flow volume between 2,500-4,999 gpd. There were 3 new and 3 replacement systems with a flow volume between 5,000-10,000 gpd permitted.

The LGUs reported that 13,315 sewage tanks were installed in 2024.

There were 12,810 existing system compliance inspections conducted in 2024. The LGUs reported that 1,446 noncompliant properties were mitigated by centralized sewer connection, abandonment or removal, or a government buyout in 2024.

Of the 191 LGUs with SSTS programs in 2024, 98% approve SSTS designs before issuing construction permits, 99% verify soils at some point during the review process, 42% track SSTS maintenance activities, and approximately 76% have property transfer compliance inspection requirements.

Over 108,800 SSTS construction permits have been issued within the last ten years, indicating that over 16% of Minnesota's 648,641 SSTS have been constructed within the last ten years or contain components that are less than ten years old.

The number of estimated compliant SSTS has increased over the last ten years, from approximately 431,000 systems in 2015 to approximately 541,150 systems in 2024.

Trends observed from the 2024 SSTS Annual Report suggest continued improvements in subsurface wastewater treatment across the state.

Introduction

Minn. R. 7082.0040 requires local SSTS programs to submit annual reports to the MPCA by February 1 documenting their SSTS activities for the previous calendar year. Local SSTS programs occur at four governmental levels: 1) county, 2) city, 3) township, and 4) other special purpose units of government with permitting authority.

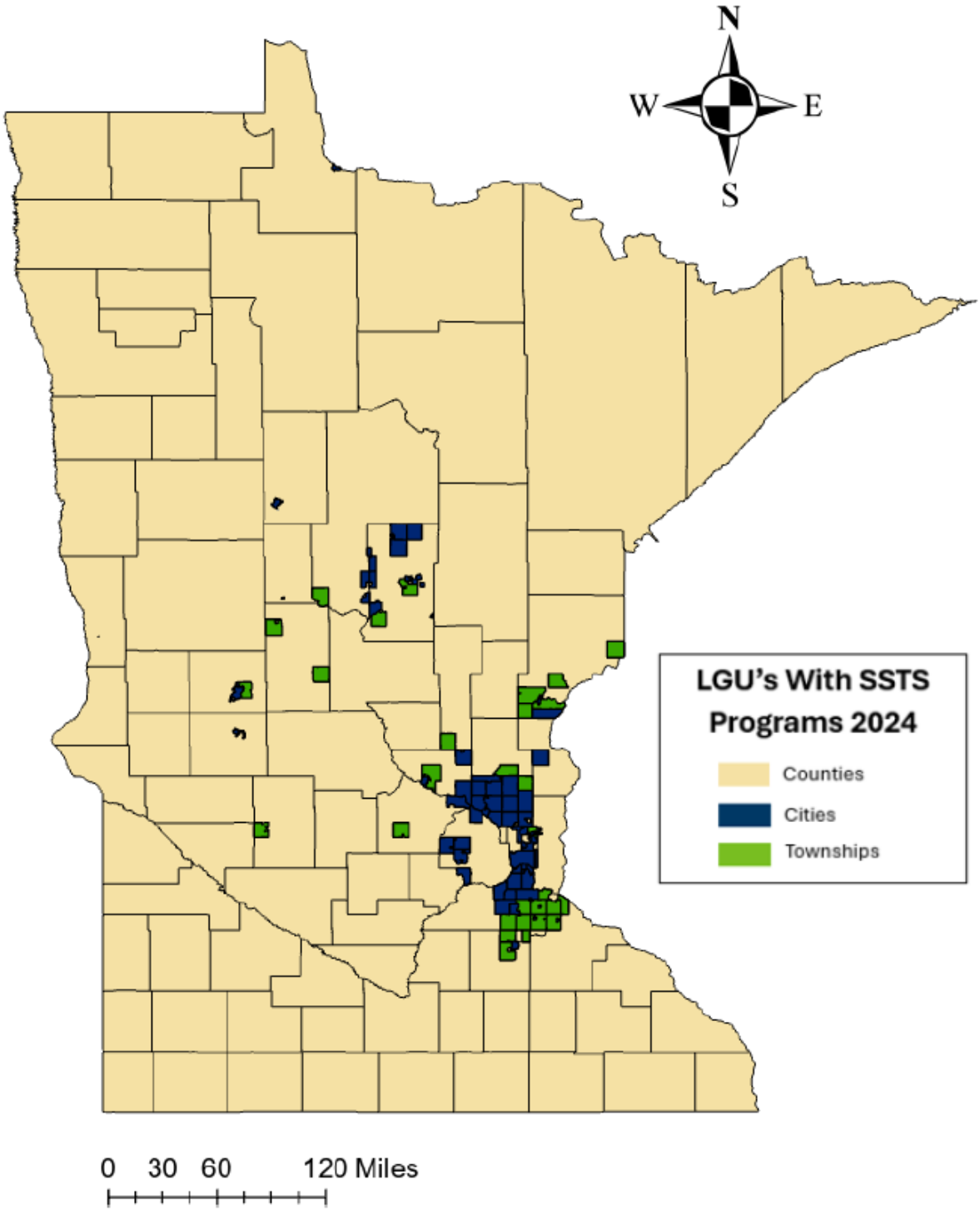
In December 2024, the MPCA sent out a web-based annual report survey to LGUs with known SSTS programs for them to complete. The annual report survey was used to obtain data from each local SSTS program so that relevant information could be summarized into a statewide 2024 SSTS Annual Report. The annual report survey is also used to track the number of sewage tanks installed and to ensure tank fee payments from licensed SSTS installers are made. Tank fees were approved by the Legislature in 2003 to help fund SSTS compliance efforts in the state.

The 2024 SSTS Annual Report generally follows the format used in the 2023 SSTS Annual Report and includes a broad analysis of SSTS trends. The analysis is based on data that LGUs provided in their annual report survey submissions. Some of the data is considered hard data, such as the reported number and types of permits issued. Other data is considered soft data, such as the estimates of SSTS compliance rates and the total number of SSTS in each jurisdiction. Additionally, the 2024 SSTS Annual Report includes information about SSTS certification and licensing, which was compiled by the MPCA's certification and training unit.

Annual report responses

In 2024, there were 191 LGUs that administered SSTS programs in Minnesota. The number of county programs remained the same at 86; however, the number of city and township programs changed from 2023. Appendix B1 contains a list of cities with SSTS programs in 2024. Appendix B2 contains a list of townships with SSTS programs in 2024. Appendix B3 contains a list of other special purpose units of government with SSTS programs in 2024. The distribution of LGUs with SSTS programs in 2024 is displayed in Figure 1.

Figure 1. LGUs with SSTS programs in 2024



LGU participation

In December 2024, the 191 LGUs that were reported to have SSTS programs in 2024 were contacted by the MPCA and requested to submit annual report data through a web-based survey. The 2024 surveys were sent electronically to each SSTS administrator email contact previously provided in the 2023 annual report survey. In 2024, five LGUs notified the MPCA that they no longer administer an SSTS program. The 2024 SSTS Annual Report had a 99% response rate as 190 of the 191 expected annual report surveys were submitted. Table 1 provides the 2024 SSTS Annual Report response rate by LGU type.

Recipients who didn't report by the deadline were contacted by MPCA staff to determine if the LGU no longer had an active SSTS program, or to identify who was the correct LGU SSTS program contact or assist with submission of the survey.

Ensuring the annual report survey is sent to, and completed, by the right individual can be challenging. Common reasons for issues are: county staff are unsure of the local city or township contact for programs operating within the county boundaries, city and township programs with privately contracted inspection services changed, or annual report responsibilities were not transferred when LGU staff changed.

There were 86 counties, 73 cities, 29 townships, and 3 other special purpose units of government that made up the 191 LGUs with SSTS programs as of 2024 survey. Ramsey County is not required to submit an annual report survey as their entire jurisdiction is served by city and township SSTS programs. The special purpose units of government with permitting authority are the University of Minnesota, , Otter Tail Water Management District, and the Olmsted Township Cooperation Planning Association (TCPA).

Table 1. 2024 SSTS Annual Report response rate by LGU type

	County	City	Township	Other	Total
LGUs – contacted per 2023 reporting	86	72	32	4	195
LGUs – indicated no active program as of 2024	0	0	3	1	4
LGUs – submitted 2024 data	86	72	29	3	190
LGUs – no response	0	1	0	0	1

Number of SSTS

In 2024, LGUs estimated that there were 648,641 total SSTS in Minnesota. In 2024, 10,349 SSTS construction permits were issued across the state. Additionally, there were 211 repair permits issued in 2024. Table 2 provides statewide values, as well as the highest and lowest countywide values, for the total number of SSTS reported and construction permits issued in 2024.

The greatest number of total SSTS was reported in St. Louis County (40,627); the lowest number of total SSTS was reported in Traverse County (622). The greatest number of construction permits issued in 2024 was reported in St. Louis County (740); the lowest number of construction permits issued in 2024 was reported in Kittson County (1). City, township, and other special purpose units of government data were consolidated into their respective counties to tabulate this information.

Table 2. Total number of SSTS reported and construction permits issued in 2024

	Total number of SSTS	Construction permits issued in 2024
Statewide	648,641	10,551
Highest county	40,627	740
Lowest county	979	1

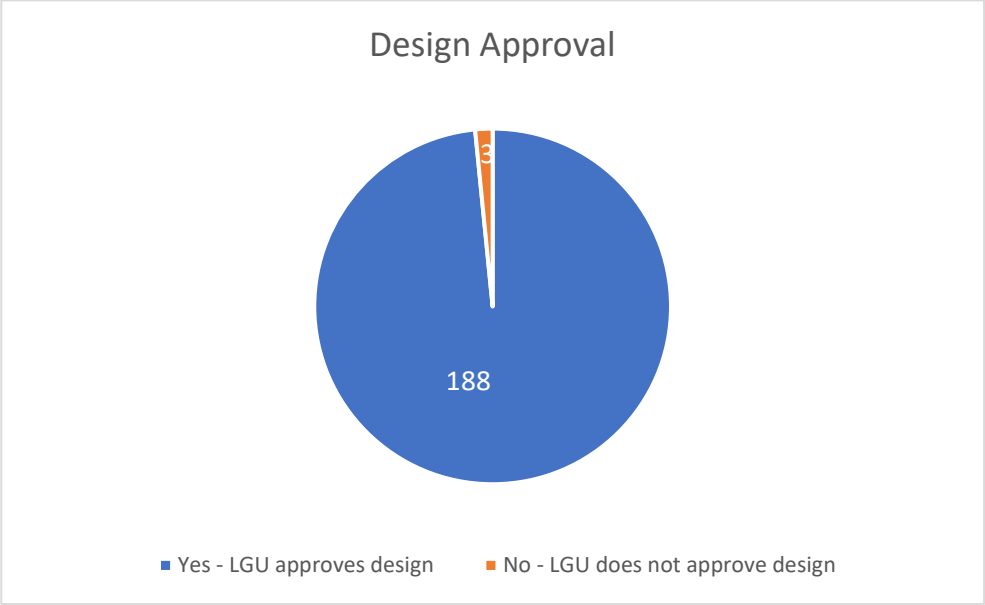
Appendix A contains a countywide list of the following information:

1. Number of SSTS reported in 2024.
2. Number of SSTS construction permits issued in 2024.
3. Number of SSTS construction permits issued over the last 22 years (2002-2024).
4. Number of existing system compliance inspections conducted in 2024 countywide (private inspector and LGUs).
5. Percentage of existing SSTS inspected in 2024 out of total SSTS reported in county.
6. Counties with property transfer compliance inspection requirements.

Design approval

The annual report survey asks LGUs to indicate if they approve SSTS designs before issuing construction permits. Of the 191 LGUs with SSTS programs in 2024, 188 (98.4%) reported that they approve SSTS designs before construction permit issuance (Figure 2). The seven LGUs that reported not approving SSTS designs before construction permit issuance will be contacted to discuss rule requirements.

Figure 2. 2024 LGU status for SSTS design approval before construction permit issuance



Soil verification

The annual report survey asks LGUs to indicate when they most often perform infield soil verification during the review process. In 2024, over 98% of LGUs reported verifying soils at some time before, during, or after system construction. There were 144 LGUs that reported verifying soils before construction permit issuance, 34 LGUs that reported verifying soils during construction, and 11 LGUs that reported verifying soils after construction. There were 2 LGUs that reported not verifying soils at any time before, during, or after system construction. Those jurisdictions that reported not verifying soils will be contacted to discuss the requirements of Minn. R. 7082.0500.

Provides a breakdown of when LGUs most often perform infield soil verifications in 2024.
Figure 4 Photo of testing the soil moisture before construction begins.
Figure 5 Displays the time of soil verification throughout the state by county.

Figure 3. 2024 LGU status for soil verification timing.

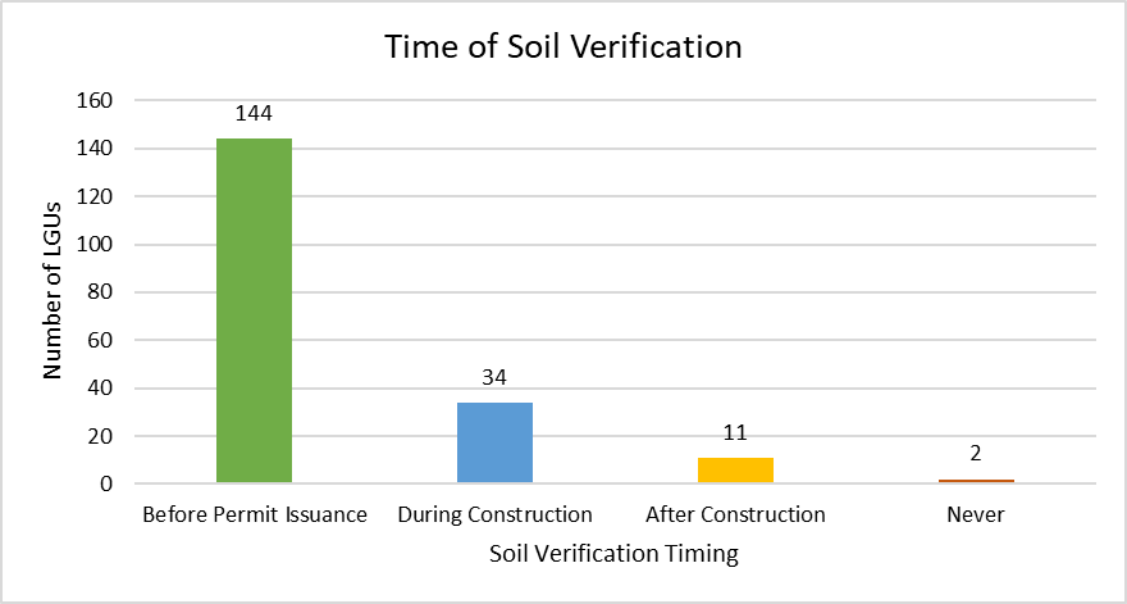
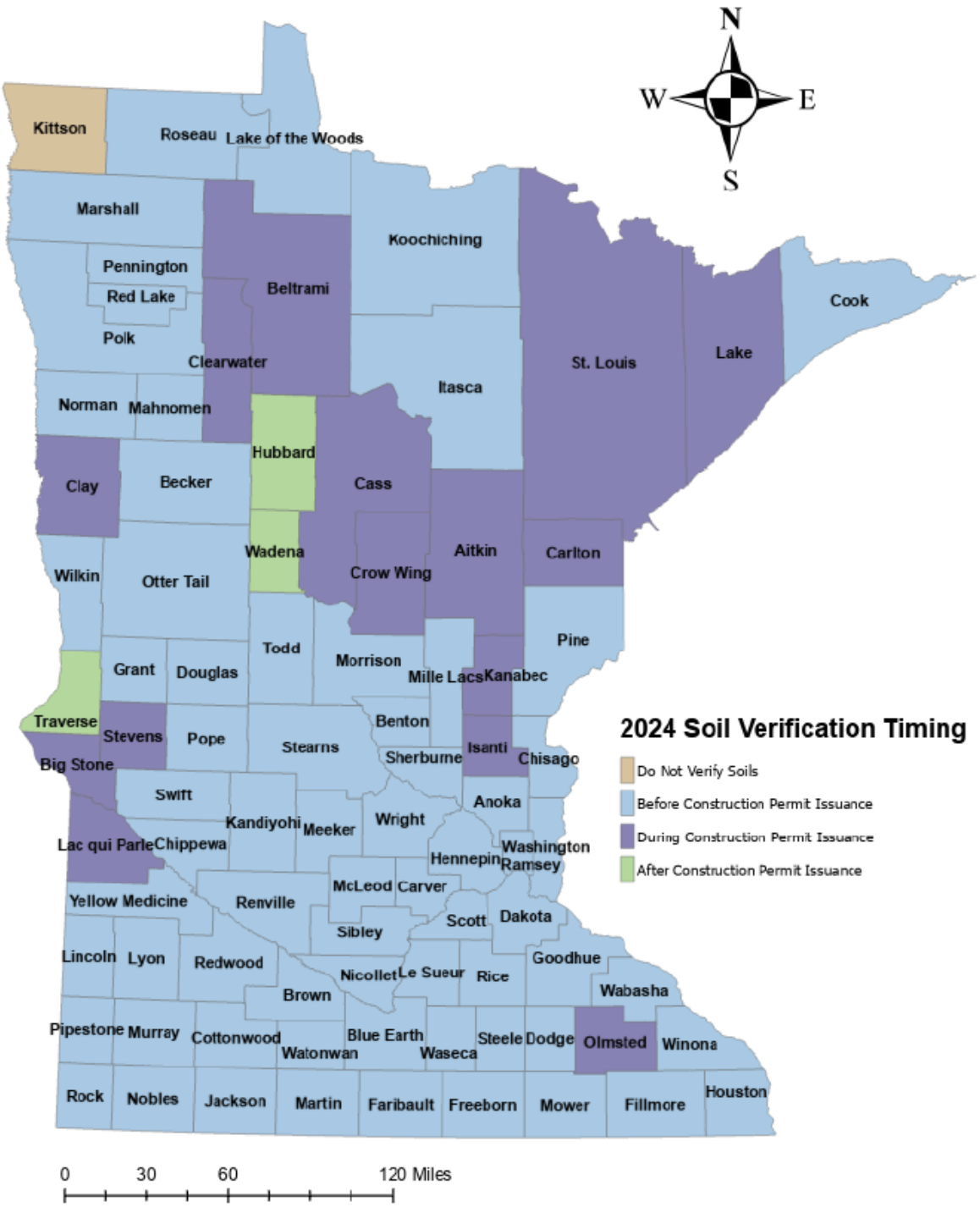


Figure 4. Testing soil moisture before construction.

Figure 5. Timing of soil verification as of 2024 by county.



Systems by type

The following section describes each of the types of SSTS.

Type I Systems are mounds, at-grades, trenches, or beds built in accordance with the prescriptive requirements of Minn. R. chs. 7080-7081.

- Specific prescriptive requirements in Minn. R. chs. 7080 and 7081.
- Requires a management plan.
- Has been termed “standard systems”.
- Designed by a basic, intermediate, or advanced designer – based on flow.

Type II Systems are holding tanks, privies, or SSTS in floodplain areas.

- Employed to fit non-standard site conditions (e.g., floodplain) or special dwelling and “other establishment” situations (privy or holding tank).
- Requires a management plan.
- Has been termed “alternative systems”.
- Designed by a basic, intermediate, or advanced designer – based on flow.

Type III Systems are systems that do not have one foot of natural soil, are determined to have disturbed soils, or have limited space for a soil dispersal area, among other potential deviations.

- Deviates from certain allowable Type I prescriptive standards when needed.
- Employed to fit non-standard soil and site conditions or organic loading-limited design without the use of pretreatment.
- Requires a management plan.
- Has been termed “other systems”.
- Designed by a basic, intermediate, or advanced designer – based on flow.

Type IV Systems are systems, which employ a treatment component registered under Chapter 7083.4030 and can have a reduced infiltration area and/or vertical separation.

- Follows Type I prescriptive design requirements when site conditions allow.
- Deviates from Type I prescriptive standards due to the use of a registered treatment product.
- Employed to:
  - Reduce the vertical separation distance requirement.
  - Reduce the absorption area.
  - Extend the life of the soil system.
  - Reduce waste strength.
- Higher operation and maintenance requirements than a Type I – III.
- Requires a management plan.
- Requires an operating permit and service provider.
- Designed by an intermediate or advanced designer – based on flow.

Type V Systems are systems designed by a professional engineer that deviate from the prescriptive requirements of a Type I system.

- Does not need to follow prescriptive design standards.

- Must meet environmental and safety performance outcomes.
- Components not following Type I – IV design standards authorized by a professional engineer.
- Employed to use registered and/or non-registered treatment and dispersal products.
- Requires a management plan.
- Requires an operating permit and service provider.
- Designed by an advanced designer and signed off by a professional engineer or appropriately licensed professional.

SSTS reported by type

The number of SSTS construction permits reported by system type is presented in Table 3. The majority of SSTS permitted in 2024 were Type I systems; approximately 43% were mound systems. Over 5% of Type I systems permitted in 2024 contained proprietary distribution media (534chamber trenches and 34 EZ Flow trenches).

There were 1,445 Type II systems, 1,476 Type III systems, 72 Type IV systems, and 9 Type V systems permitted in 2024.

Table 3. 2024 SSTS construction permits reported by system type

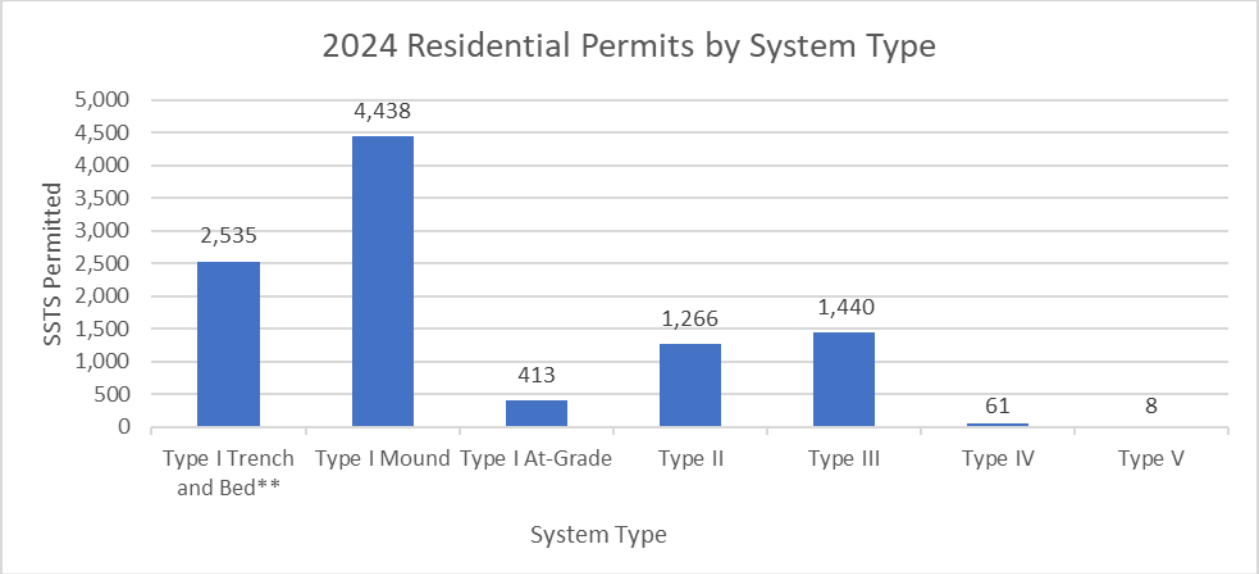
System Type	System Subtype	Residential	Other Establishment	Total	% Change From 2023
Type I	All	7386	160	7546	-1%
	At-Grade	413	4	417	10%
	Chamber Trench	524	10	534	-8%
	EZ Flow Trench	33	1	34	100%
	Mound	4438	97	4535	-2%
	Rock Trench	661	12	673	6%
	Seepage or Pressure Beds	1317	36	1353	-5%
Type II		1266	179	1445	-6%
Type III		1440	36	1476	4%
Type IV		61	11	72	-10%
Type V		8	1	9	0%
Total		10161	387	10548	-1%

Note: The totals in this dataset are inconsistent with construction permit data included elsewhere in this report due to inconsistencies among reporting LGUs. This dataset should only be used for identifying trends and proportional analysis.

Residential SSTS

The number of SSTS construction permits issued in 2024 for residential dwellings, reported by system type, is presented in Figure 6. A total of 10,161 residential SSTS were permitted in 2024. Type I systems accounted for approximately 70% of total residential SSTS permitted, including 2,535 trenches and beds, 4,438 mounds, and 413 at-grades. There were 1,266 Type II systems, 1,440 Type III systems, 61 Type IV systems, and 8 Type V systems permitted in 2024 for residential dwellings.

Figure 6. 2024 SSTS construction permits, reported by system type, for residential dwellings

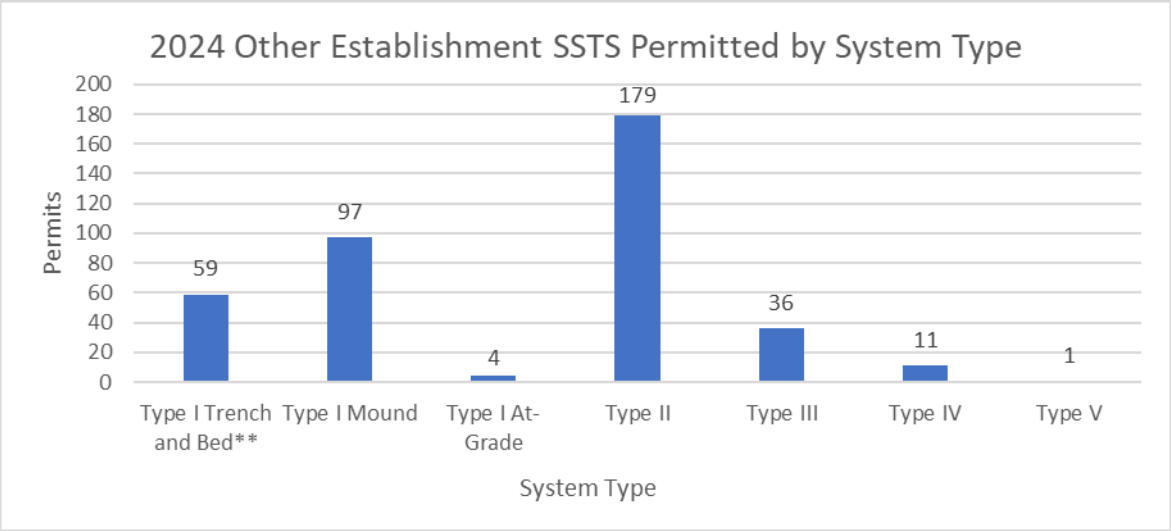


**Chamber Trench, EZ Flow Trench, Rock Trench, and Seepage or Pressure Bed Type I systems

Other establishment SSTS

The number of SSTS construction permits issued in 2024 for other establishments, reported by system type, is presented in Figure 7. A total of 387 other establishment SSTS were permitted in 2024. Type I systems accounted for approximately 41% of total other establishment SSTS permitted, including 59 trenches and beds, 97 mounds, and 4 at-grades. There were 179 Type II systems, 36 Type III systems, 11 Type IV systems, and 1 Type V systems permitted in 2024 for other establishments.

Figure 7. 2024 SSTS construction permits, reported by system type, for other establishments

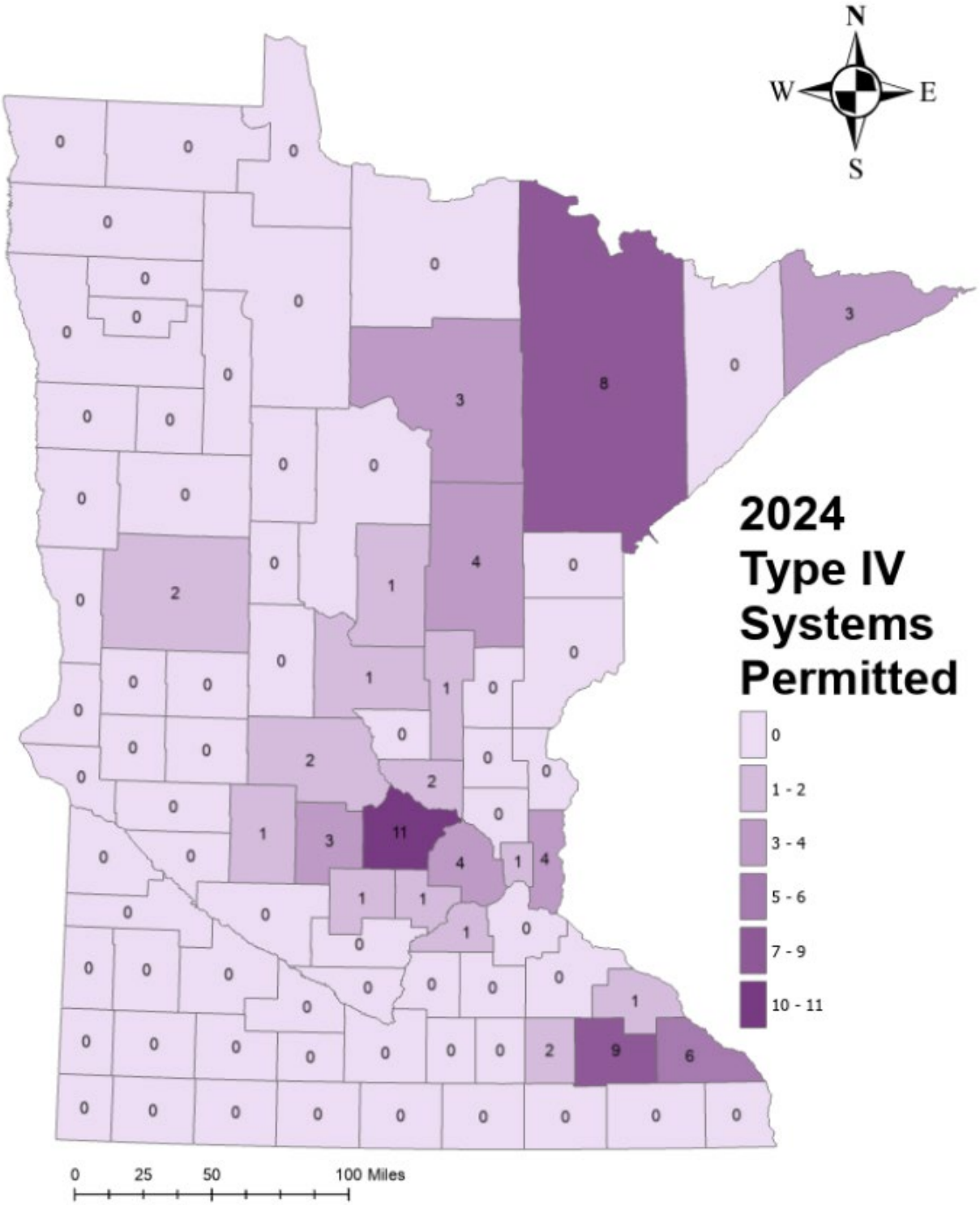


Type IV systems

A total of 72 Type IV systems were permitted in 2024, consisting of 61 residential SSTS and 11 other establishment SSTS. An example of a registered proprietary treatment product used in a Type IV system is shown in Figure 8. The greatest number of Type IV systems was reported in Wright County (11). Figure 9 presents the distribution of Type IV systems permitted in 2024 by county.

Figure 8. Sampling a Type IV system.

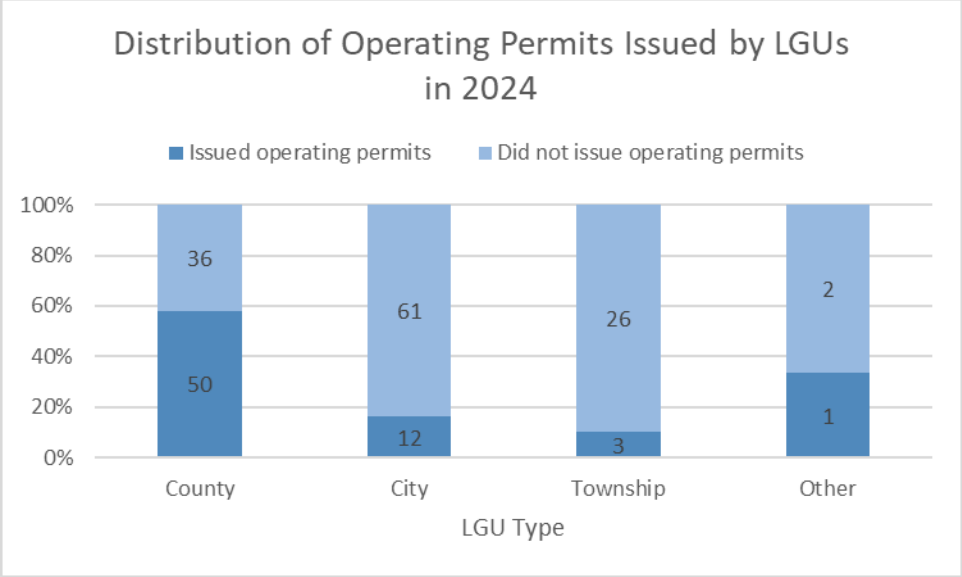
Figure 9. Type IV systems permitted in 2024 by county



Operating permit issuance

Operating permits are site-specific regulatory documents that outline various parameters for maintenance, monitoring, and other service functions for a variety of SSTS types. It was reported that 3277 operating permits were issued in 2024 for both residential and other establishment systems. The LGUs that issued operating permits in 2024 consist of 50 counties, 12 cities, 3 townships, and 1 other special purpose units of government. The distribution of LGUs who issued operating permits in 2024 is presented in Figure 10.

Figure 10. LGU status for issuing operating permits in 2024



SSTS by wastewater flow volume

Over 99% of the total SSTS construction permits issued in 2024 were for systems with a flow volume between 1-2,499 gpd, consisting of 9,864 residential SSTS and 408 other establishment SSTS. Of the total SSTS with a flow volume between 1-2,499 gpd permitted, approximately 52% were replacement systems and 48% were new systems.

A total of 42 systems with a flow volume between 2,500 and 4,999 gpd were permitted in 2024, consisting of 29 residential SSTS and 13 other establishment SSTS. Of the total SSTS with a flow volume between 2,500 and 4,999 gpd permitted, 13 were replacement systems and 29 were new systems.

A total of 6 systems with a flow volume between 5,000 and 10,000 gpd were permitted in 2024. Of the total SSTS with a flow volume between 5,000 and 10,000 gpd permitted, 3 were new systems, consisting of and 3 other establishment SSTS. All of the systems with a flow volume between 5,000 and 10,000 were residential SSTS.

Table 4 provides the number of SSTS construction permits issued in 2024 by wastewater flow volume.

Table 4. SSTS permitted in 2024 by flow volume

Construction Permits Issued in 2024 by Flow Volume

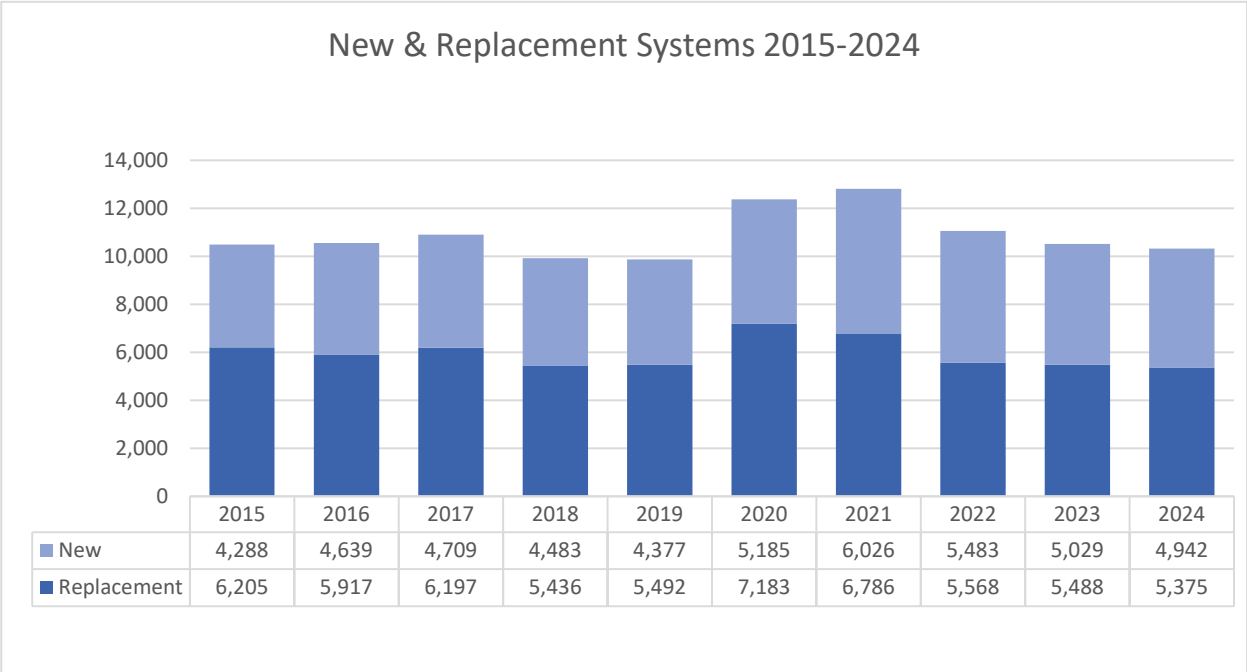
	Residential		Other Establishment		
Flow Volume	**New**	**Replacement**	**New**	**Replacement**	**Total**
1 – 2,499 gpd	4,632	5,232	279	129	10,272
2,500 – 4,999 gpd	24	5	5	8	42
5,000 – 10,000 gpd	3	3	0	0	6
Total	4,659	5,240	284	137	10,320

New and replacement SSTS

The number of SSTS construction permits issued for new and replacement systems over the last ten years is presented in Figure 11. Over 108,800 construction permits have been reported by LGUs since 2015; approximately 55% were for replacement systems and 45% were for new systems.

The LGUs issued 10,370 construction permits (not including repair permits) in 2024 for 4,943 new systems and 5,376 replacement systems. Existing systems may be replaced due to failing to protect groundwater (FTPGW) or posing an imminent threat to public health or safety (ITPHS). These conditions are typically identified through various local inspection triggers such as: property transfer inspections, land use permits, building permits, conditional use permits, variances, and complaints.

Figure 11. SSTS construction permits for new and replacement systems 2015-2024



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
New	4,288	4,639	4,709	4,483	4,377	5,185	6,026	5,483	5,029	4,942
Replacement	6,205	5,917	6,197	5,436	5,492	7,183	6,786	5,568	5,488	5,375

Sewage tanks installed

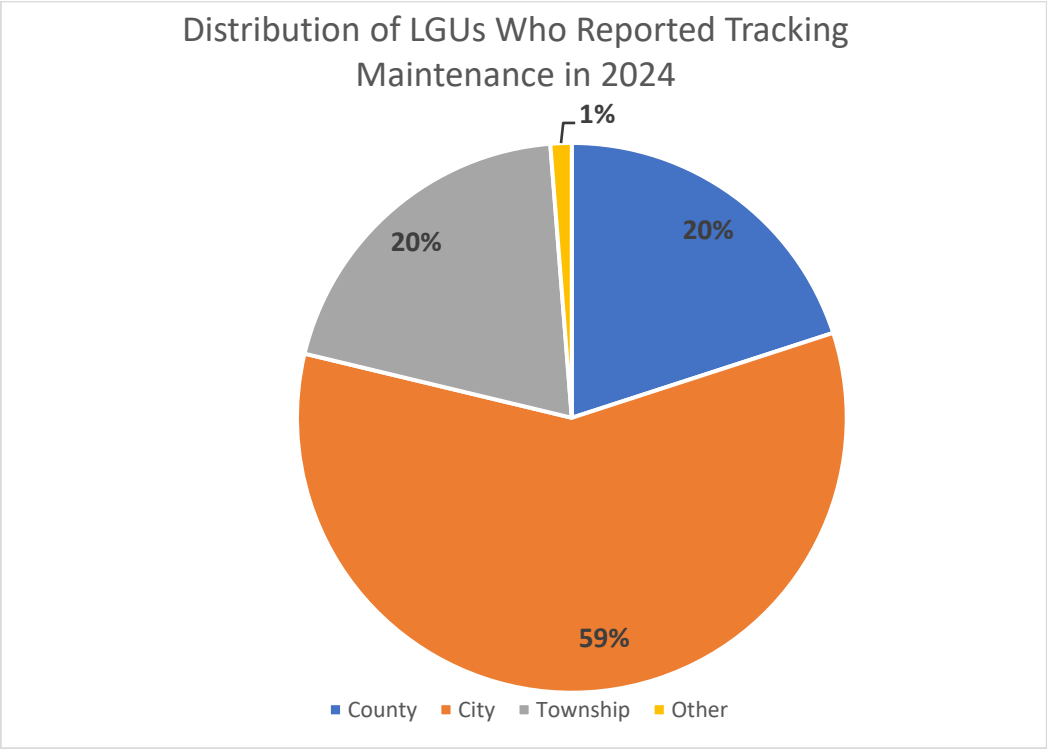
The LGUs reported that 13,315 sewage tanks were installed in 2024, including 13,231 standard sewage tanks and 84 performance-based system tanks. Collecting tank installation data supports the administration of Minn. Stat. § 115.551, which requires installers to pay a fee of $25 for each tank installed in the previous year. For performance-based systems, the tank fee is limited to $25 per household system installation.

Figure 12. New concrete tanks being installed

Tracking SSTS maintenance activities

The annual report survey asks LGUs to indicate if they track SSTS maintenance activities. Of the 191 LGUs with SSTS programs in 2024, 80 (42%) reported that they track SSTS maintenance activities. There were 16 counties, 47 cities, 16 townships, and 1 other special purpose unit of government that reported tracking the maintenance of SSTS (Figure 13). The high proportion of city programs can be attributed to entities, such as the Met Council, requiring maintenance tracking in metropolitan areas.

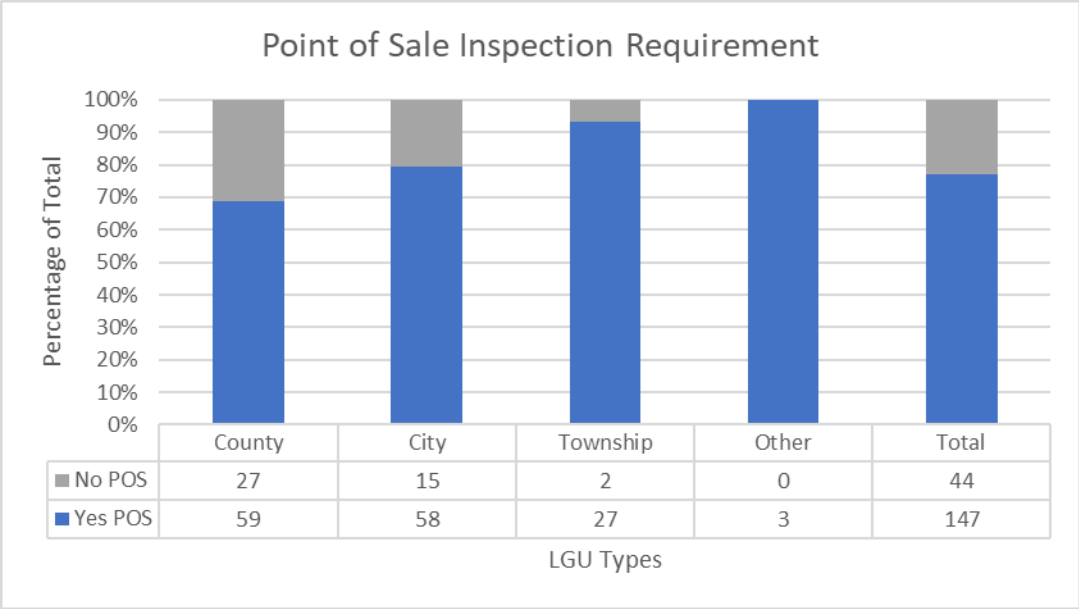
Figure 13. 2024 LGU status for tracking SSTS maintenance activities



Compliance inspections for property transfers

There is currently no state-level requirement for LGUs to require compliance inspections for property transfers; however, many LGUs have indicated that this is the most effective trigger for identifying noncompliant systems. The annual report survey asks LGUs to indicate if they require compliance inspections for property transfers. Of the 191 LGUs with SSTS programs in 2024, 147 (77 %) reported that they require compliance inspections for property transfers. The LGUs with property transfer compliance inspection requirements consist of 59 counties, 58 cities, 27 townships, and 3 other special purpose units of government (Figure 14).

Figure 14. 2024 LGU status for requiring compliance inspections for property transfers



Existing system compliance inspections

The LGUs reported that there were 12,810 existing system compliance inspections in 2024, representing an 9% decrease from 2023 (14,111). Compliance inspections are an important part of addressing existing systems that pose an environmental or human health risk. The LGUs include inspection triggers in their ordinances, such as at the time of property transfer or when a building permit is sought, to create a mechanism for verifying system compliance and correcting noncompliant systems.

The number of existing system compliance inspections broken down by LGU type is provided in Table 5; counties reported 10,482, cities reported 1,719, townships reported 470, and other special purpose units of government reported 140. Figure 15 displays the total number of existing system compliance inspections reported countywide. Figure 16 displays the amount of existing system compliance inspections for 2024 as a percentage of total SSTS reported countywide.

Table 5. 2024 existing system compliance inspections by LGU type

Local unit of government	Number of existing system compliance inspections	LGU percentage of total compliance inspections
County	10,482	82%
City	1,719	13.5%
Township	430	3.5%
Other	140	1%
Total	**12,811**	**100%**

Figure 15. 2024 existing system compliance inspections per county

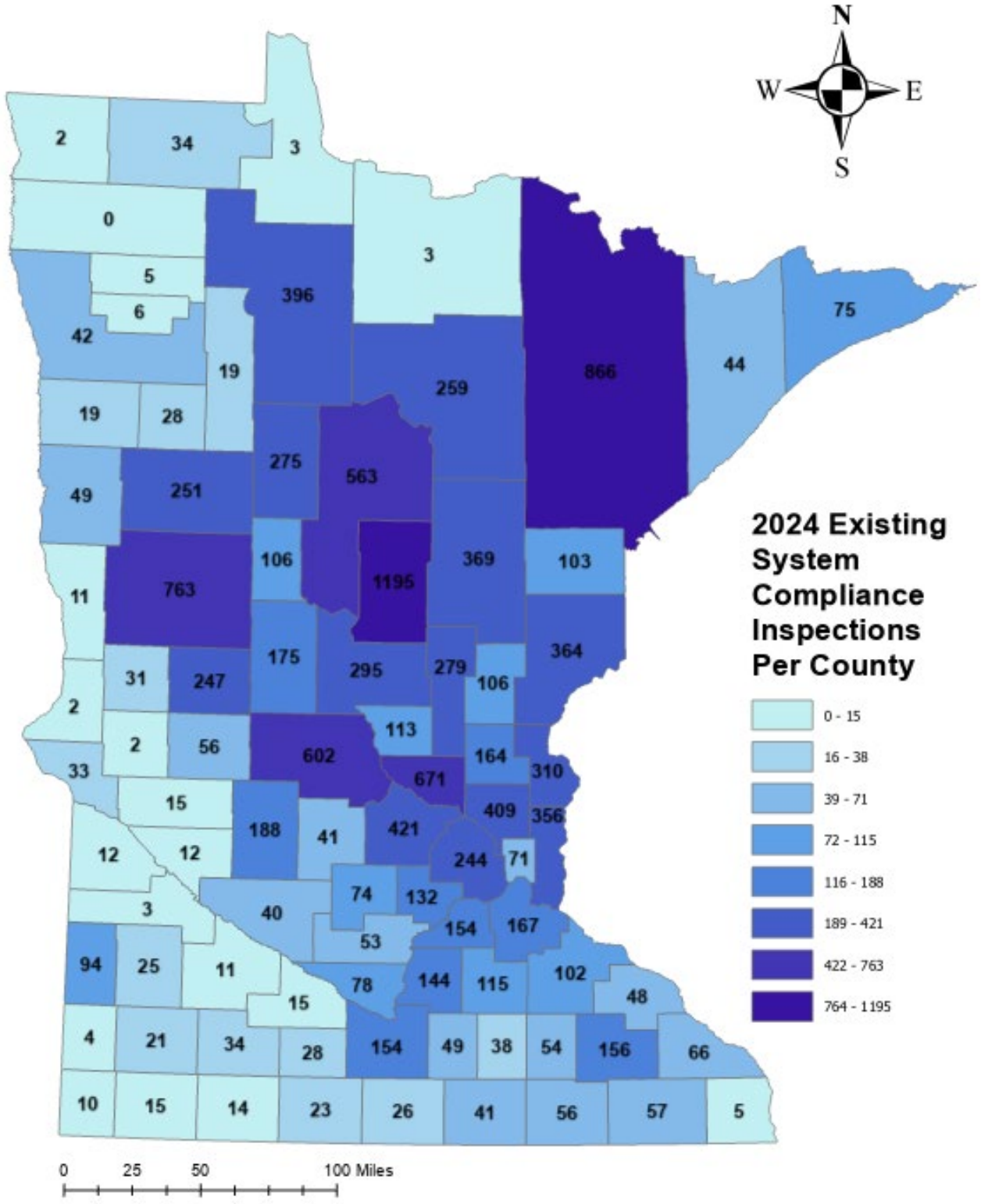
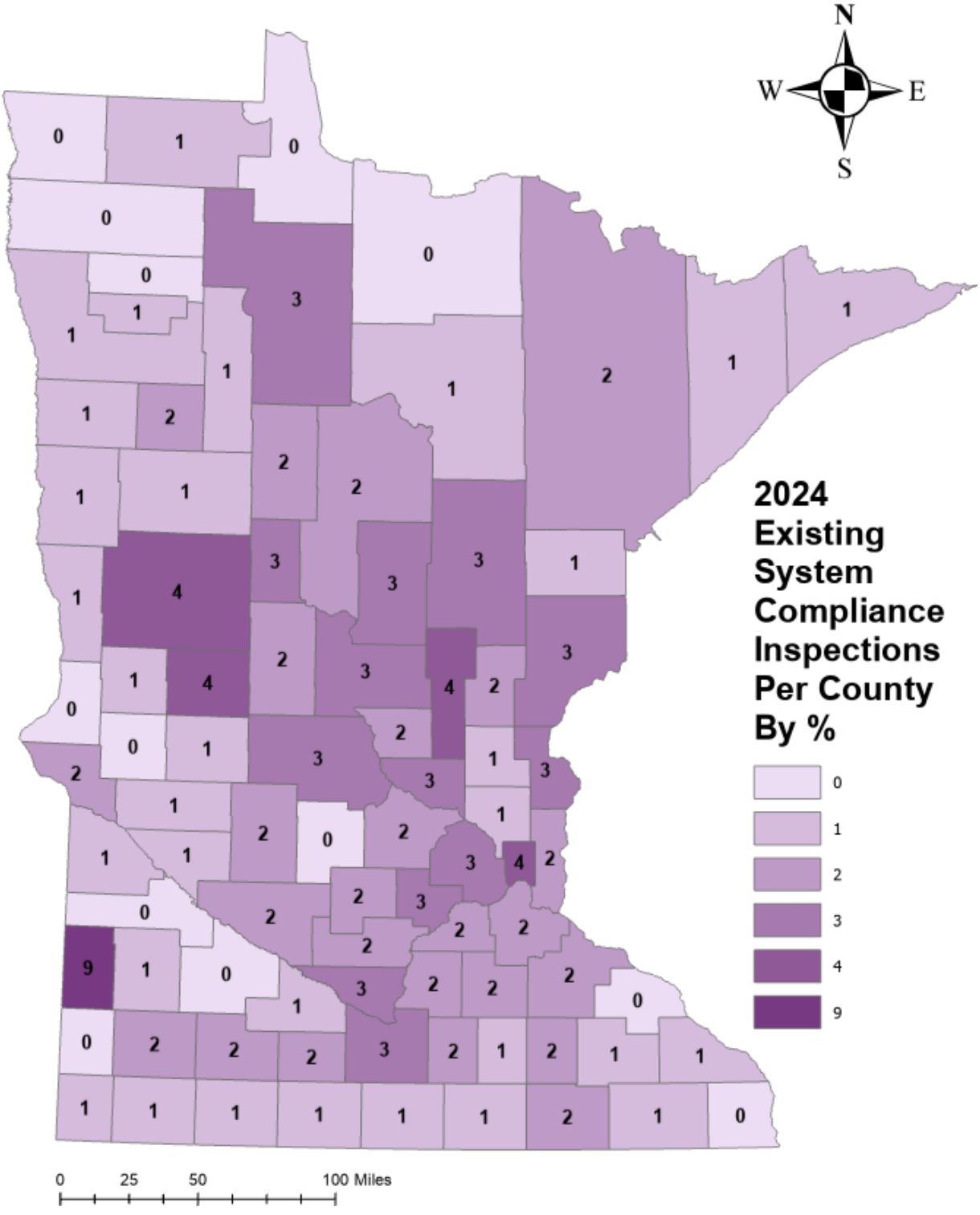


Figure 16. 2024 existing system compliance inspections presented as a percentage of total systems in county



Noncompliant properties mitigated by centralized sewer connection, abandonment or removal, or government buyout

The number of noncompliant properties mitigated in 2024 by 1) connecting to centralized sewer, 2) abandonment or removal, or 3) a government buyout is provided in Figure 17. The LGUs reported that 1446 noncompliant properties had SSTS discontinued through one of these three mechanisms. Of the noncompliant properties with SSTS discontinued in 2024, 934 were connected to centralized sewer, 501 were abandoned or removed, and 11 were part of a government buyout program.

Figure 17. Noncompliant properties with discontinued SSTS in 2024

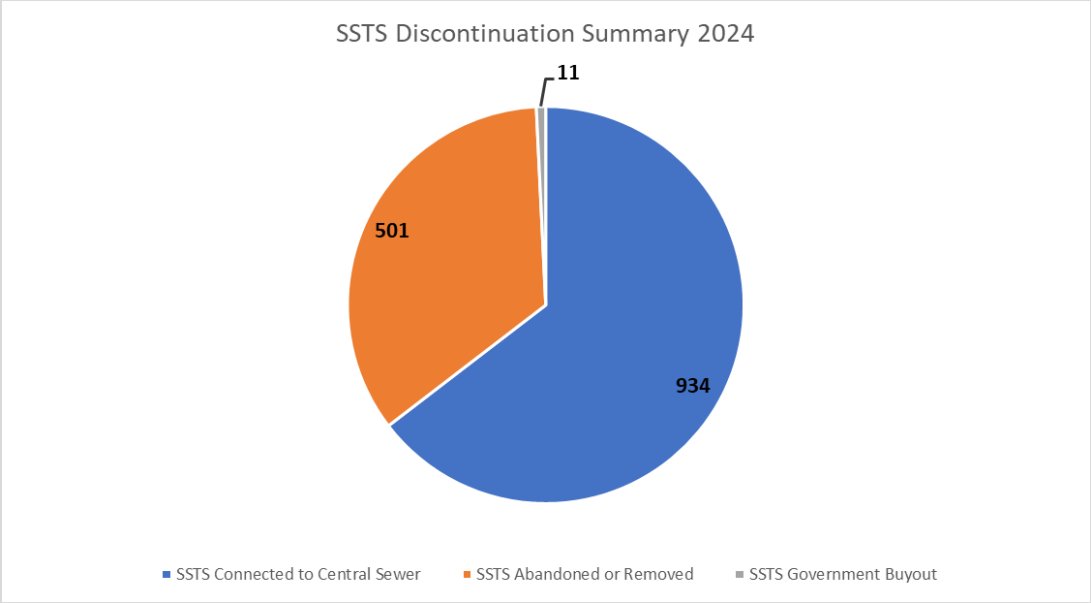
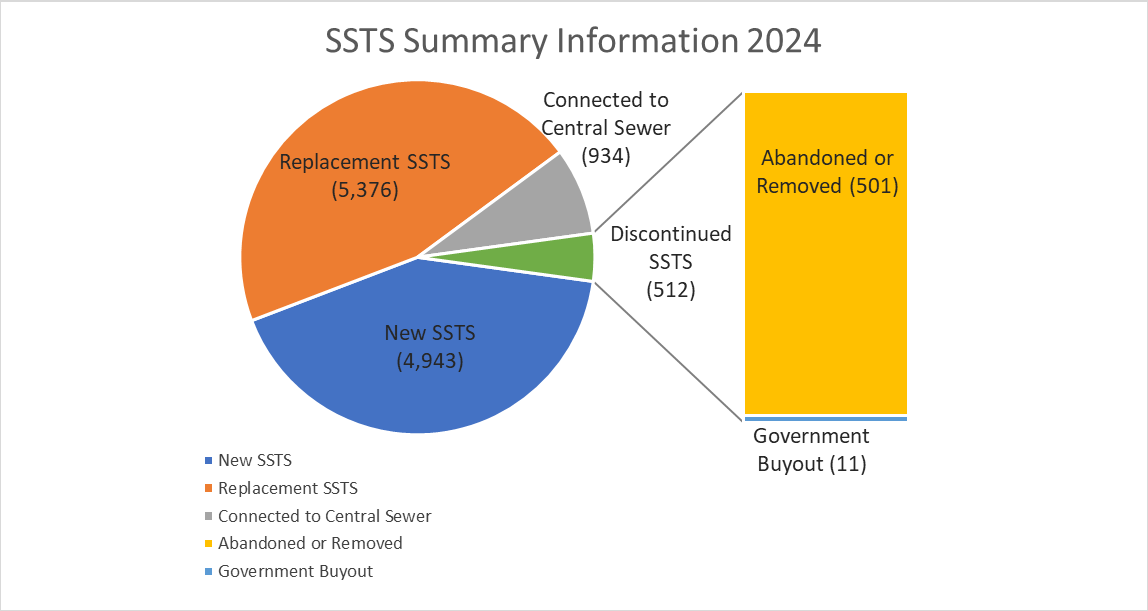


Figure 18 presents a summary of SSTS activity for 2024, including new SSTS permitted, replacement SSTS permitted, and noncompliant properties with SSTS discontinued through centralized sewer connection, abandonment or removal, or a government buyout. The total number reported for these SSTS activities in 2024 was 11,765.

Figure 18. Summary of new SSTS, replacement SSTS, noncompliant properties with discontinued SSTS in 2024



SSTS compliance trends

Each LGU was asked to provide their ***best estimate*** of SSTS compliance in their jurisdiction. This included the following information:

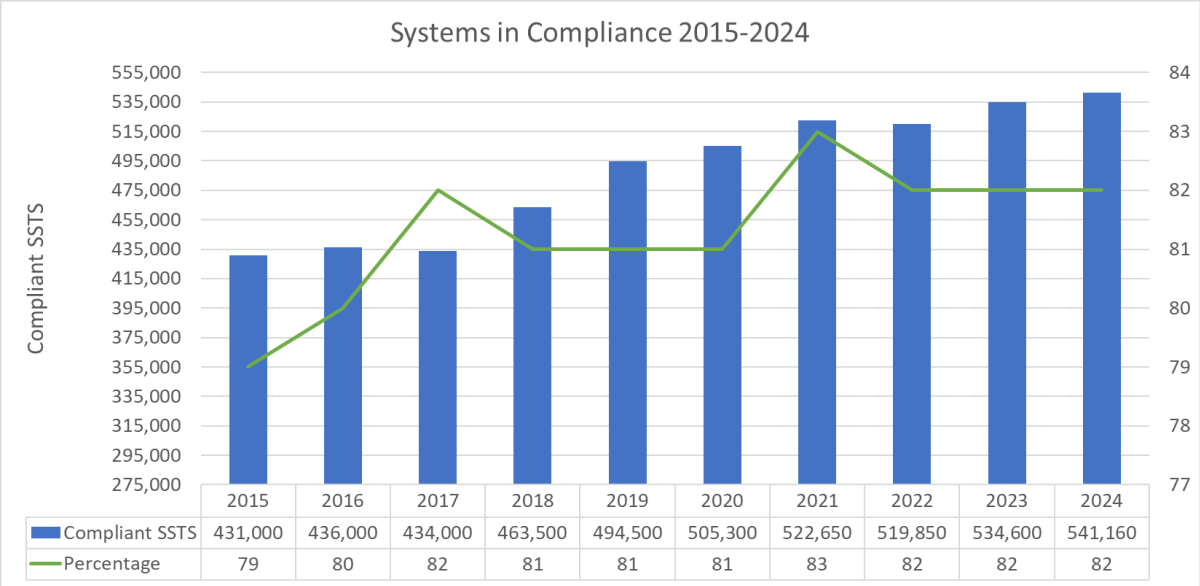
- Total number of SSTS in jurisdiction;
- Number of SSTS estimated to be compliant;
- Number of SSTS estimated to be an ITPHS; and
- Number of SSTS estimated to be FTPGW.

Figures 19, Figure 20, and 21 present annual estimates of SSTS compliance status from 2015 to 2024.

Overall, SSTS in Minnesota are becoming increasingly compliant year to year. Negative trends in some years can conflict with overall compliance trends. Many LGUs are involved with developing databases, reviewing old files, completing inventories, and other processes that facilitate more accurate data.

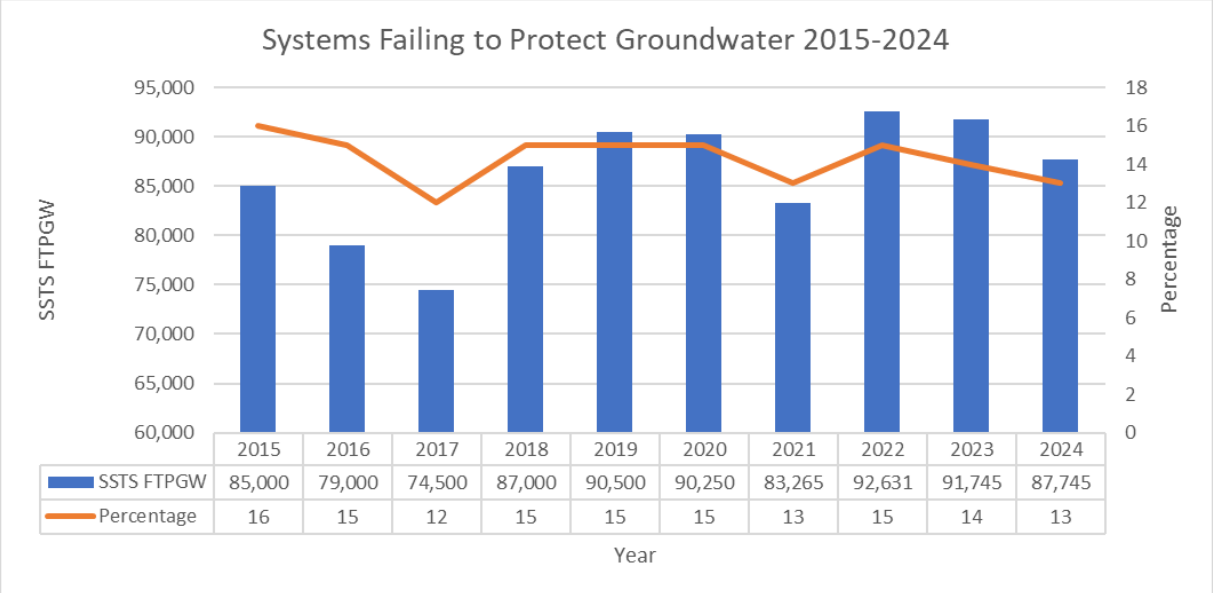
The number of estimated compliant SSTS has increased over the last ten years, from approximately 431,000 in 2015 to 541,160 systems in 2024. Additionally, the estimated percentage of compliant SSTS out of total SSTS increased from 79% in 2015 to 82% in 2024. Figure 19 displays the number and percentage of SSTS with compliant status estimated by LGUs over the last ten years.

Figure 19. Estimated SSTS with compliant status 2015-2024



The estimated number of SSTS FTPGW has on average stayed about the same over the last ten years, from approximately 85,000 systems in 2015 (15%), to 87,745 systems in 2024 (13%). Some of the significant changes in percentage from this time frame can be attributed to changes in how LGUs report these data. Figure 20 displays the number and percentage of SSTS with FTPGW status estimated by LGUs over the last ten years.

Figure 20. Estimated SSTS with FTPGW status 2015-2024

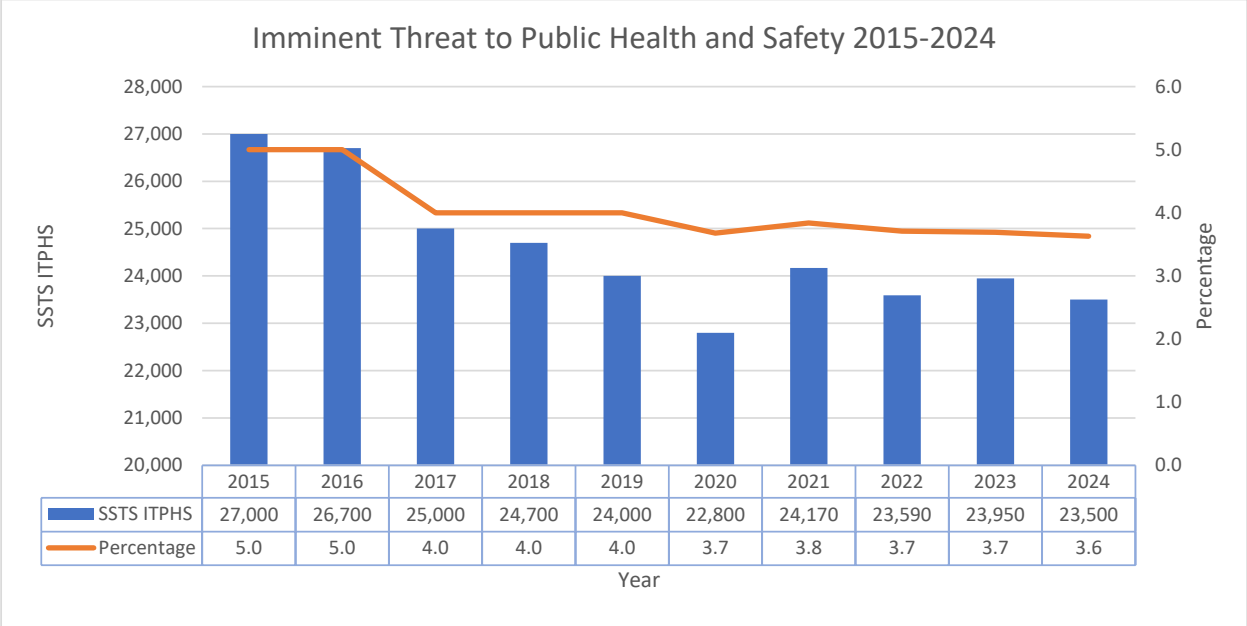


The estimated number of SSTS with an ITPHS status has decreased over the last ten years, from approximately 27,000 (5%) systems in 2015 to 23,500 (3.6%) systems in 2024. Figure 21 displays the number and percentage of SSTS with ITPHS status estimated by LGUs over the last ten years. Systems that have been identified as an ITPHS may include when there is sewage backup into the dwelling or other establishment, sewage discharge to the ground surface (see

Figure 22. Sewage discharging to the surface.

) or surface waters, and unsecured or damaged maintenance hole covers. Per state statute, systems identified as an ITPHS must be upgraded, replaced, repaired, or discontinued within ten months of receipt of a notice of noncompliance or within a shorter period if required by local ordinance.

Figure 21. Estimated SSTS with ITPHS status 2015-2024



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
SSTS ITPHS	27,000	26,700	25,000	24,700	24,000	22,800	24,170	23,590	23,950	23,500
Percentage	5.0	5.0	4.0	4.0	4.0	3.7	3.8	3.7	3.7	3.6

Figure 22. Sewage discharging to the surface.

2024 SSTS certification and licensing

In 1978, the MPCA Citizens' Board adopted standards for Individual Sewage Treatment Systems. In cooperation with the University of Minnesota, they began hosting voluntary Onsite Sewage Treatment System workshops. In 1994, the Minnesota Legislature made it mandatory for SSTS professionals to be certified and licensed.

Since then, over **1,400** workshops have taken place throughout Minnesota, with just over **61,000** participants. More than 30**,000** certification exams have been taken, resulting in just under 1,300 business licenses and just under **3,500** individual certifications being awarded by the MPCA to SSTS designers, installers, maintainers, service providers, and inspectors.

Figure 23 presents 2024 data for all SSTS certification exam types. Figure 24,

Figure 25,

Figure 26,

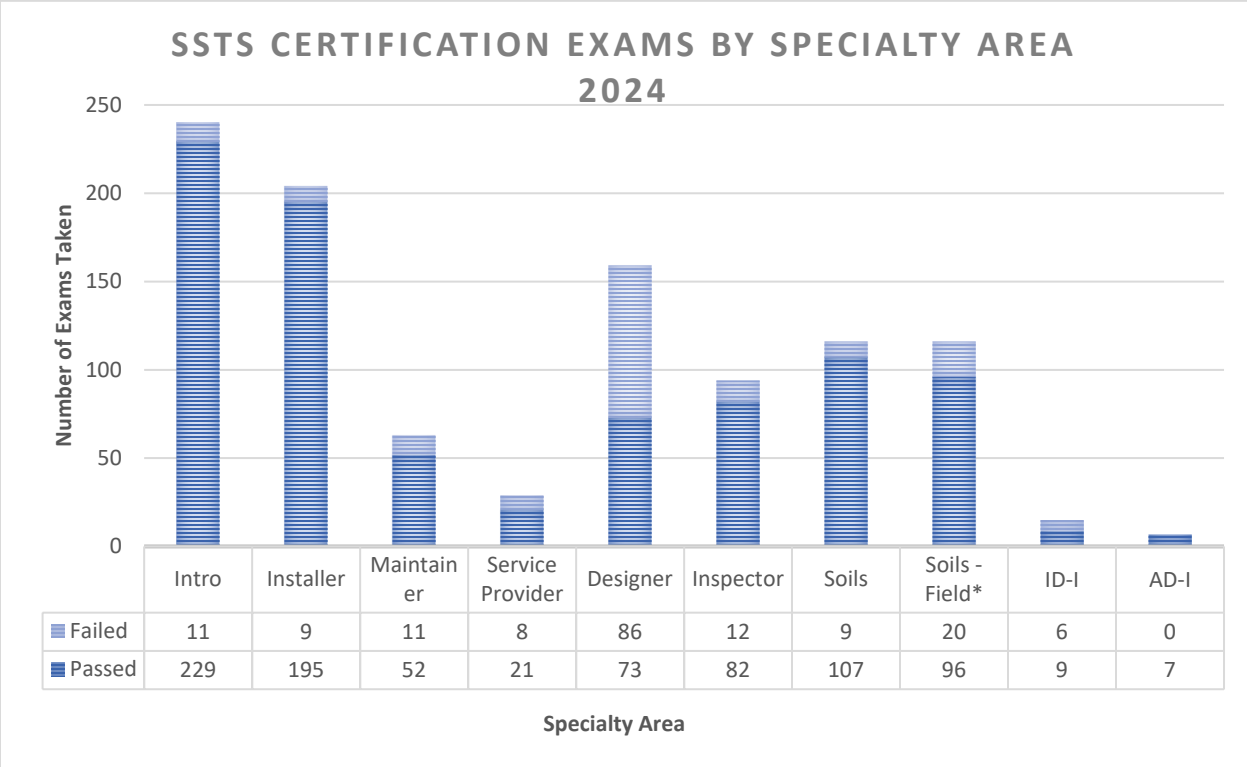
Figure 27, Figure 28, Figure 29, Figure 30,

Figure 31

Figure 31,

Figure 32, and Figure 33 present data on individual certification exam types over the last ten years.

Figure 23. 2024 SSTS certification exams by specialty area



	Intro	Installer	Maintainer	Service Provider	Designer	Inspector	Soils	Soils - Field*	ID-I	AD-I
Failed	11	9	11	8	86	12	9	20	6	0
Passed	229	195	52	21	73	82	107	96	9	7

Observations on 2024 Exam Data

In 2024, there were 925 SSTS examinations taken across all specialty areas, compared to an average of 664 exams taken during the same time period in 2015-2019, which is an increase of 39% from pre-COVID years. These 2024 numbers also show continued year after year growth in SSTS examinations administered post-COVID. In 2023, there were 873 examinations taken, compared to the 925 exams taken in 2024, which equates to a 5.9% increase in examinations administered from 2023 to 2024.

The vast majority of passage rates across specialty areas have stayed consistent with ten-year averages. The Design specialty area exam saw a slight uptick in total fails as a percentage of overall examinations taken as opposed to other specialty areas, which warrants additional contextual information:

- 2024 saw a passage rate which hovered just below 50% in Design
- 26% (22 out of 86) of the total fails were the result of failed successive attempts
    - 14 of these individuals who took multiple exams passed eventually in 2024
        - 9 of these individuals passed in the Design Review short course
        - 3 of these individuals went back to the full course
        - 2 did not receive additional training
- If you take out failed retakes, there were 64 individual fails and 73 individual passes in 2024.

This being said, a significant portion of failed attempts in Design are the result of failed multiple attempts. This group of individuals have greatly benefitted from additional instruction time in smaller review sessions. The Certification and Training Unit and the University of Minnesota's Onsite Sewage Treatment Program will continue to offer additional review opportunities to individuals who receive a failing score in this specialty area.

Figure 24,

Figure 25,

Figure 26,

Figure 27, Figure 28, Figure 29, Figure 30,

Figure 31,

Figure 32, and Figure 33 present data on individual certification exam types over the last ten years.

Figure 24. Introduction to Onsite Systems certification exams 2015-2024

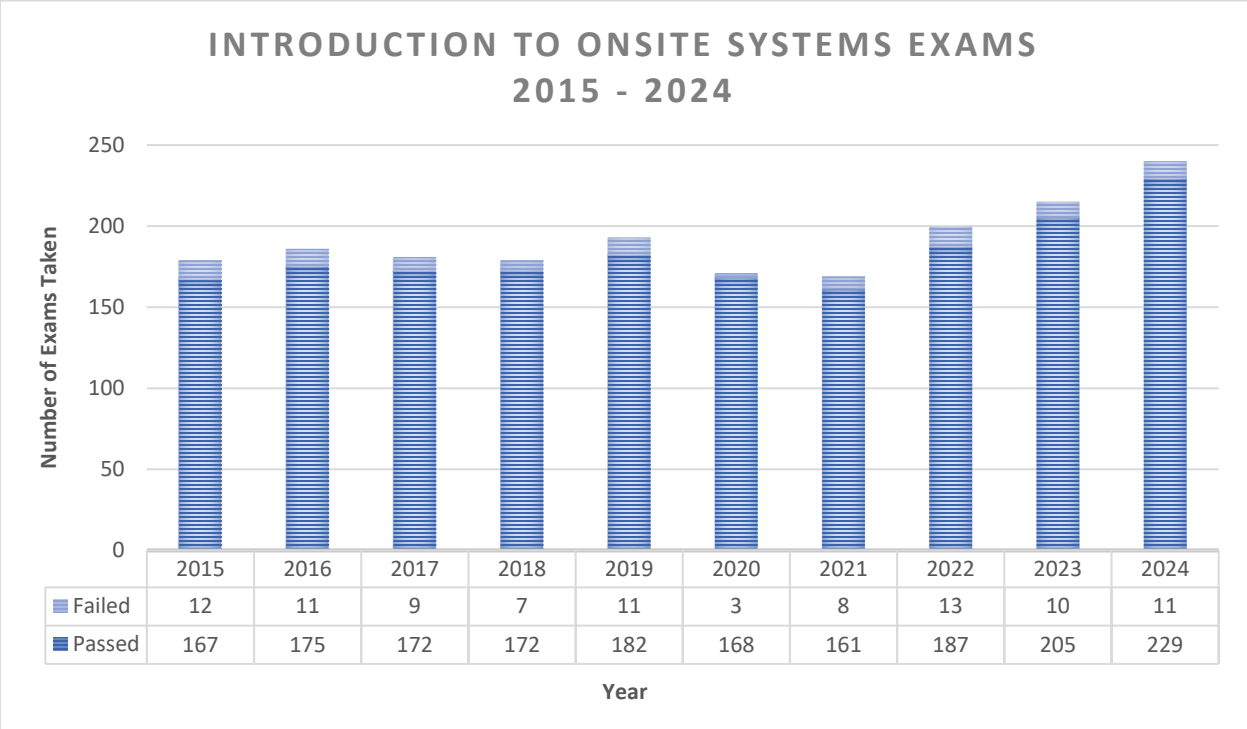


Figure 25. Installing Onsite Systems certification exams 2015-2024

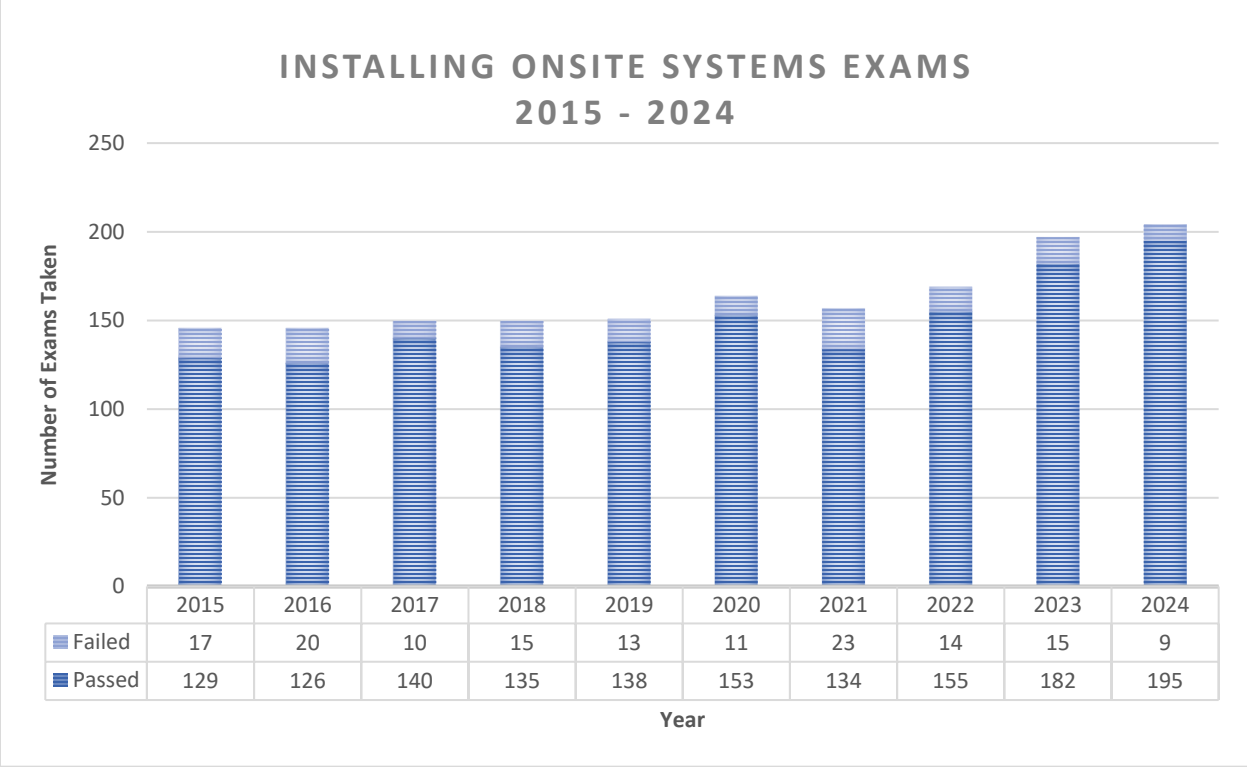


Figure 26. Maintaining Onsite Systems certification exams 2015-2024

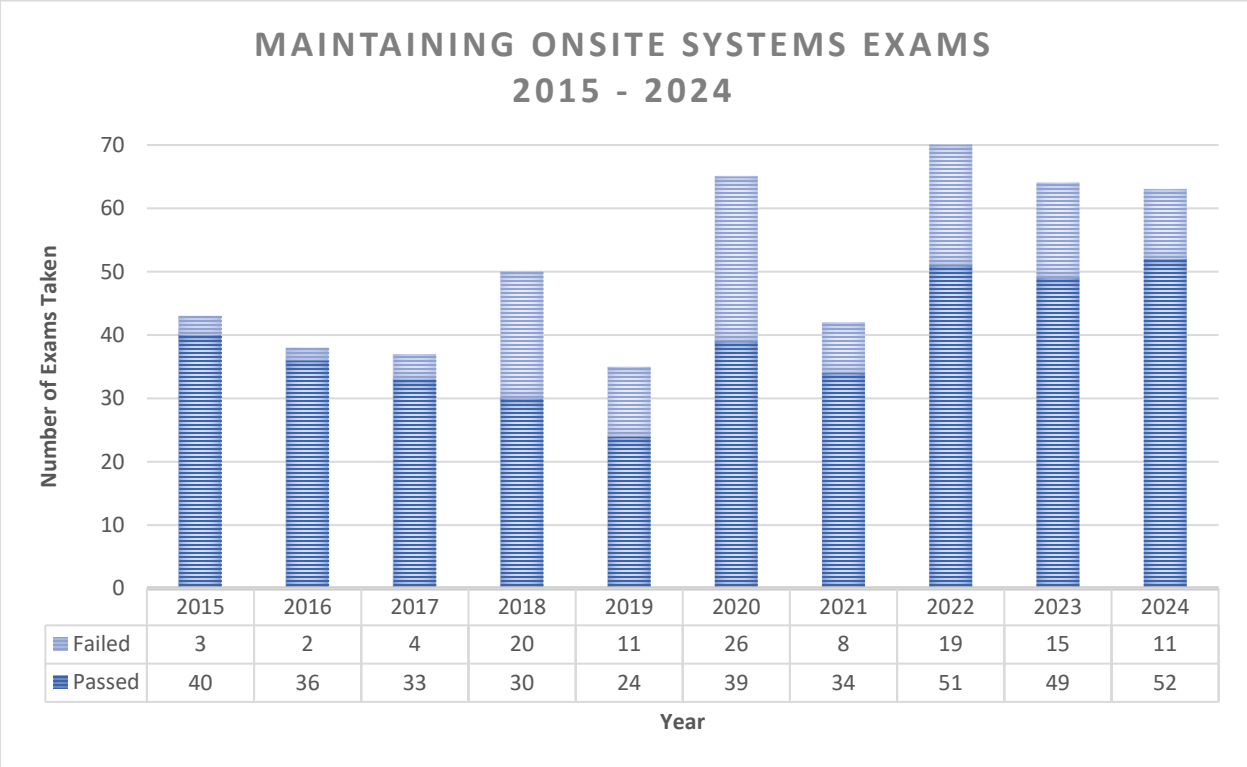


Figure 27. Service Provider for Onsite Systems certification exams 2015-2024

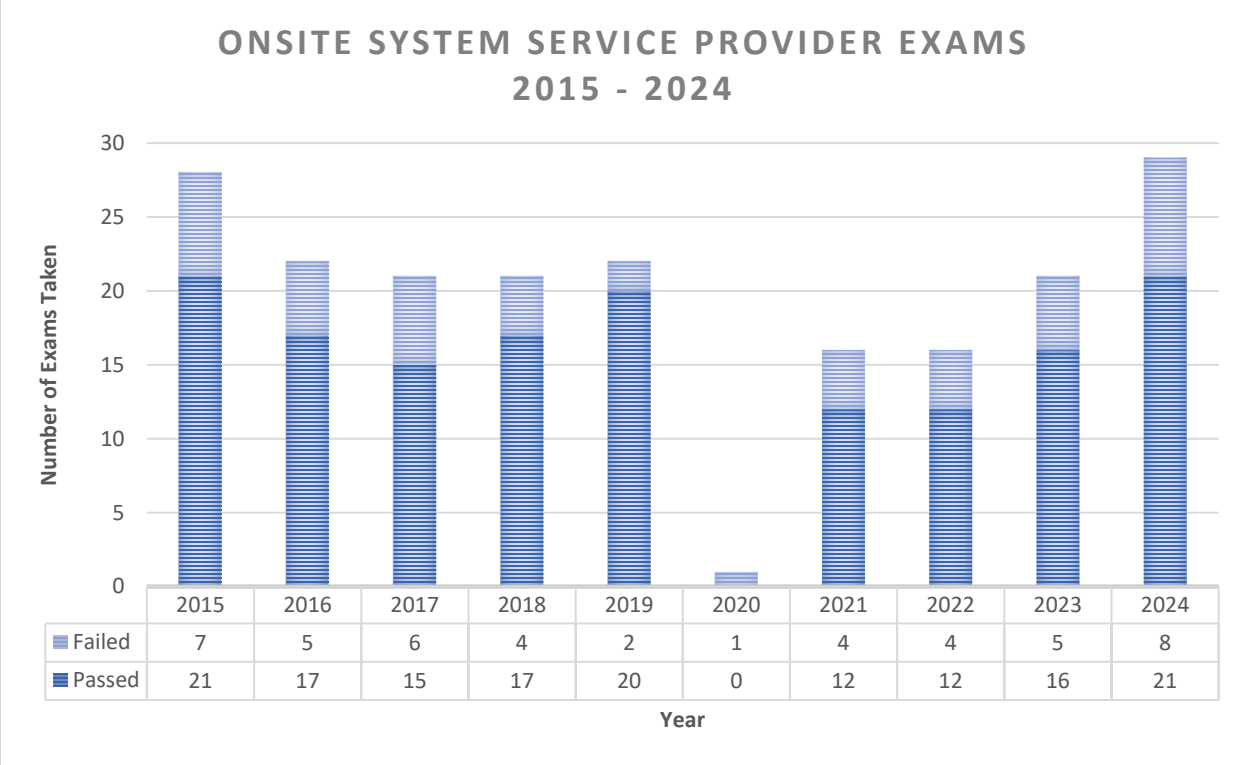


Figure 28. Designing Onsite Systems certification exams 2015-2024

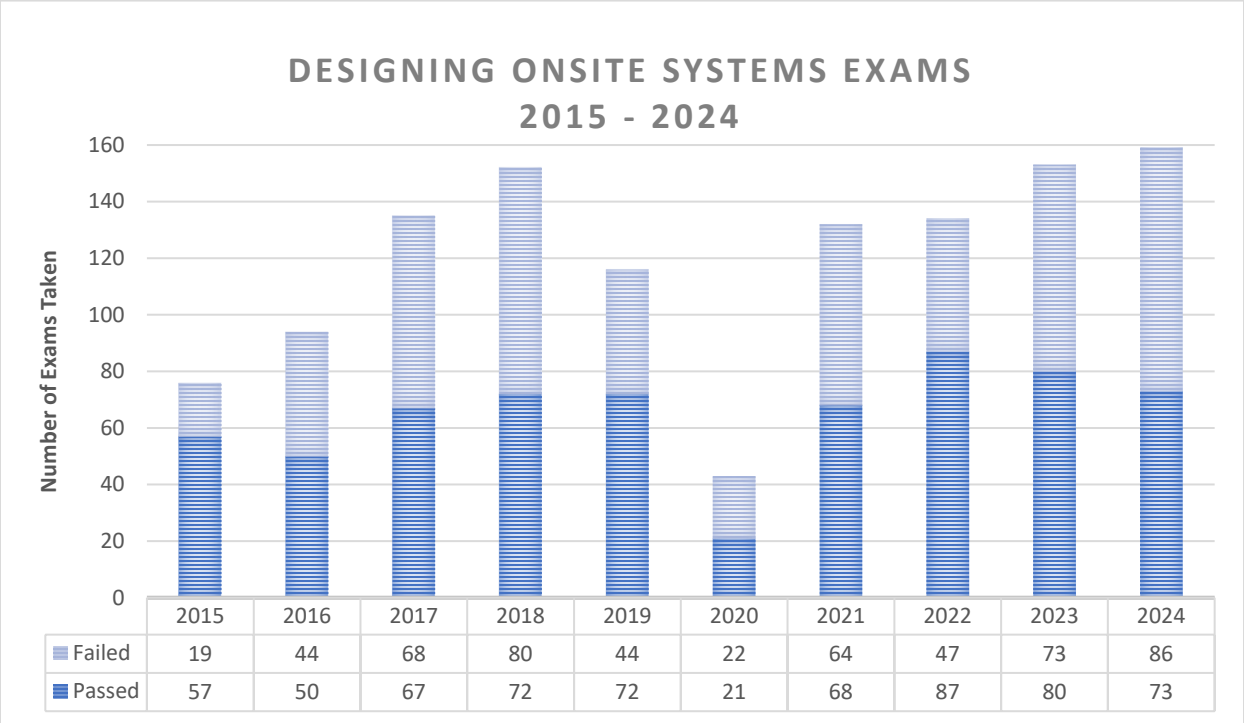


Figure 29. Inspecting Onsite Systems certification exams 2015-2024

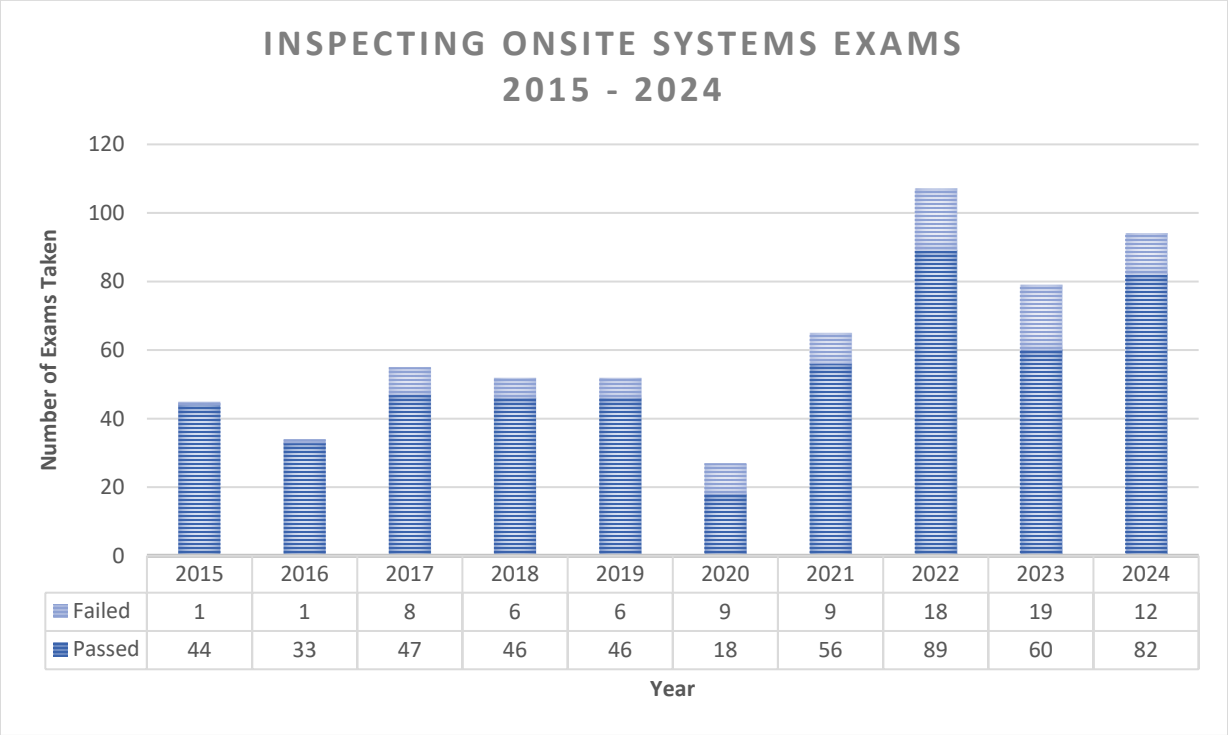


Figure 30. Soils and Onsite Systems certification exams 2015-2024

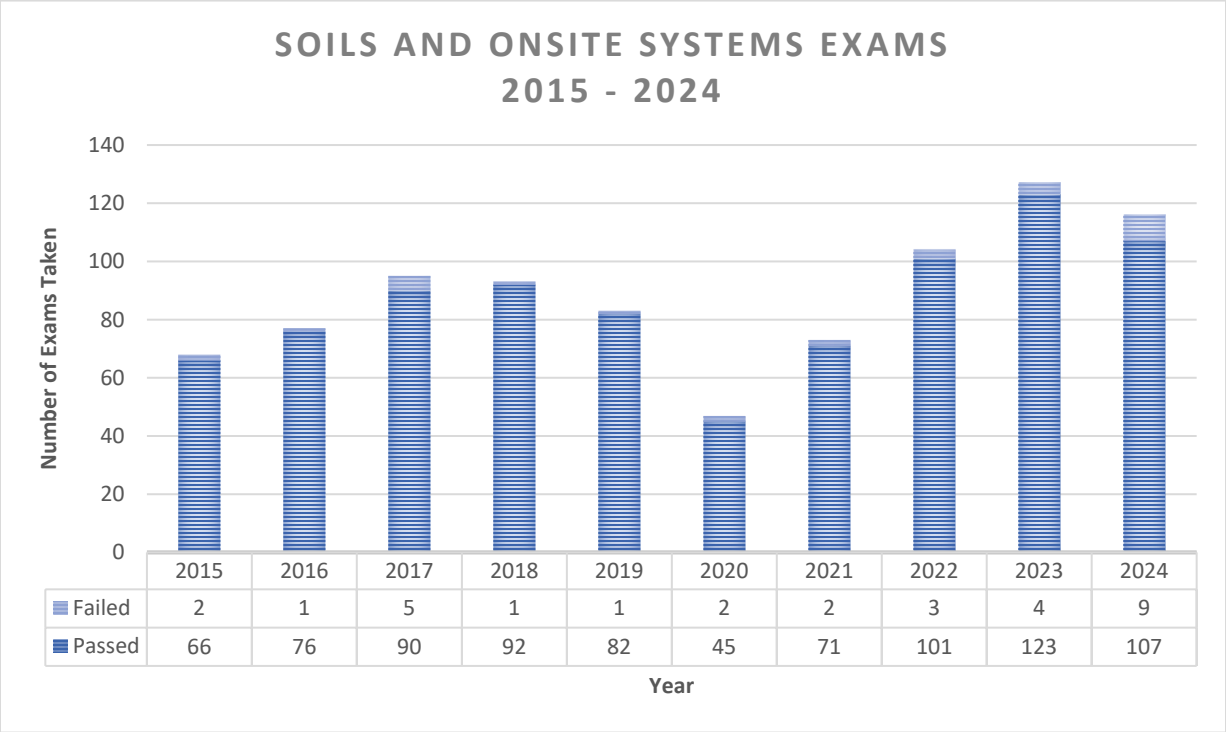


Figure 31. Soils (Field Portion) and Onsite Systems certification exams 2015-2024

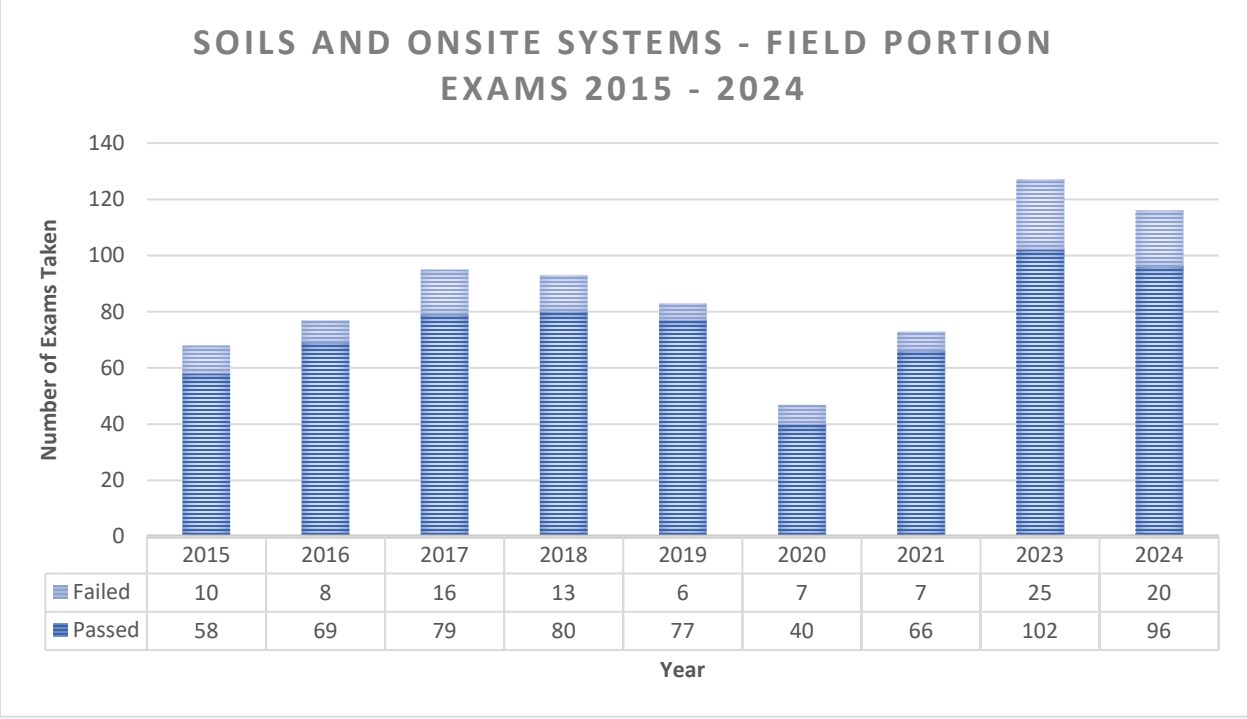
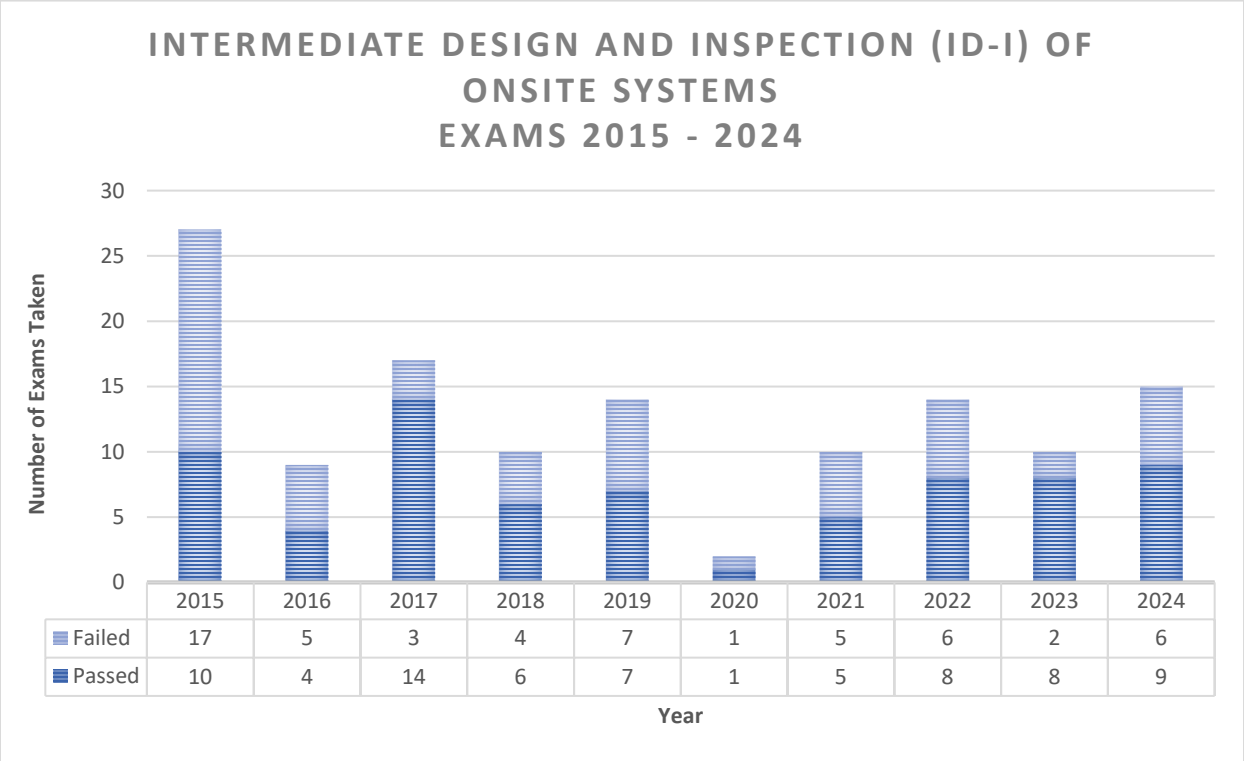
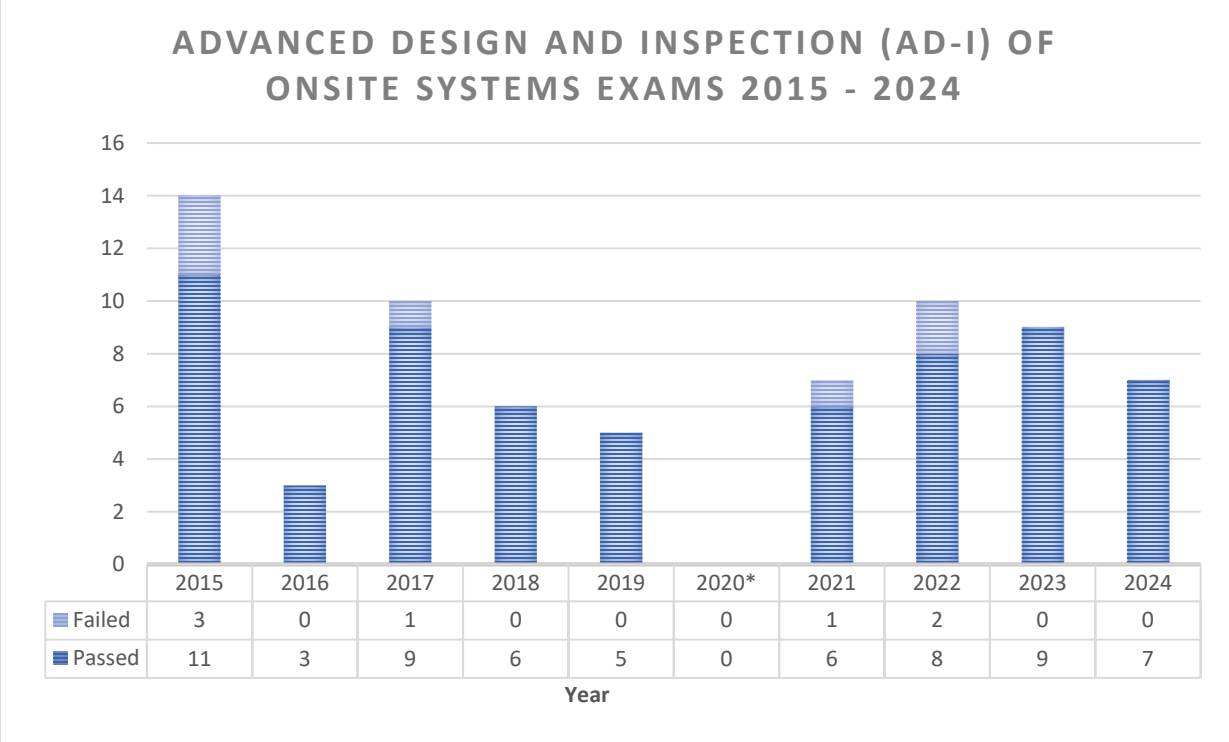


Figure 32. Intermediate Design and Inspection (ID-I) of Onsite Systems certification exams 2015-2024



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Failed	17	5	3	4	7	1	5	6	2	6
Passed	10	4	14	6	7	1	5	8	8	9

Figure 33. Advanced Design and Inspection (AD-I) of Onsite Systems certification exams 2015-2024



	2015	2016	2017	2018	2019	2020*	2021	2022	2023	2024
Failed	3	0	1	0	0	0	1	2	0	0
Passed	11	3	9	6	5	0	6	8	9	7

* Advanced Design and Inspection (AD-I) of Onsite Systems was not offered prior to 2014 & 2020.

Summary and conclusions

Minn. R. 7082.0040 requires local SSTS programs to submit annual reports to the MPCA by February 1 documenting their SSTS activities for the previous calendar year. In December 2024, the MPCA sent out a web-based annual report survey to LGUs with known SSTS programs. The annual report survey collected data from each local SSTS program so that relevant information could be summarized into the statewide 2024 SSTS Annual Report.

There were 191 LGUs (86 counties, 73 cities, 29 townships, and 3 other special purpose units of government with permitting authority), who administered SSTS programs in 2024, 190 of those LGU's submitted annual report data.

A total of 648,641 SSTS were reported across Minnesota, representing an estimated 44.4 billion gallons of wastewater treated by SSTS in 2024 (assuming 2.5 person/permit; 75 gallons/person; 365 days/year).

The LGUs issued 10,551 SSTS construction permits in 2024 for 4,942 new systems and, 5,375 replacement systems. Additionally, there were 203 permits issued for system repairs. Of the 10,530 SSTS permitted in 2024, approximately 96% serve residential dwellings and 4% serve other establishments.

Approximately 71% of the SSTS permitted in 2024 were Type I systems, including, 4,438 Type I mounds and 2,594 in ground systems. There were 1,445 Type II systems, 1,476 Type III systems, 72 Type IV systems, and 9 Type V systems permitted in 2024.

The majority of SSTS construction permits issued in 2024 were for systems with a flow volume between 1-2,499 gpd; however, there were 42 systems permitted with a flow volume between 2,500-4,999 gpd and 6 systems permitted with a flow volume between 5,000-10,000 gpd.

The LGUs reported that 13,315 sewage tanks were installed in 2024.

There were 12,810 existing system compliance inspections conducted in 2024. The LGUs reported that 1,446 noncompliant properties were mitigated by centralized sewer connection, abandonment or removal, or a government buyout in 2024.

Of the 191 LGUs with SSTS programs in 2024, 98% approve SSTS designs before issuing construction permits, over 98% verify soils at some point during the review process 41% track SSTS maintenance activities, and approximately 77% have property transfer compliance inspection requirements.

Over 108,000 SSTS construction permits have been issued within the last ten years, indicating that over 16% of Minnesota's 648,641 SSTS have been constructed within the last ten years or contain components that are less than ten years old.

The number of estimated compliant SSTS has increased over the last ten years, from an estimated 431,000 systems in 2025 to approximately 541,160 systems in 2024. An increase of over 110,000 systems.

Trends observed from the 2024 SSTS Annual Report suggest continued improvements in subsurface wastewater treatment across the state.

Appendix A

Countywide statistics

County	Total SSTS reported in 2024	Construction permits reported in 2024	Total construction permits issued 2002-2024	Number of compliance inspections of existing SSTS conducted countywide (private inspector and LGU)	Percent of total existing SSTS inspected in 2024 out of total SSTS	Counties with compliance inspections for property transfer
Aitkin	13675	253	5791	369	2.7%	Yes
Anoka*	30707	386	10269	409	1.3%	No
Becker	17933	263	7326	251	1.4%	No
Beltrami*	12399	253	4888	396	3.2%	Yes
Benton	5043	93	2277	113	2.2%	Yes
Big Stone	1770	22	622	33	1.9%	Yes
Blue Earth	5605	110	3055	154	2.7%	Yes
Brown	2390	44	1232	15	0.6%	Yes
Carlton	10028	112	3114	103	1.0%	No
Carver*	5239	99	2278	132	2.5%	Yes
Cass*	24321	433	10499	563	2.3%	Yes
Chippewa	1586	34	704	12	0.8%	No
Chisago*	11480	249	4542	310	2.7%	Yes
Clay	3920	44	1821	49	1.3%	Yes
Clearwater	3671	43	874	19	0.5%	No
Cook	6262	143	3032	75	1.2%	No
Cottonwood	1619	35	773	34	2.1%	Yes
Crow Wing*	39099	551	11254	1195	3.1%	Yes
Dakota*	9365	124	3544	167	1.8%	Yes
Dodge	3266	74	1649	54	1.7%	Yes
Douglas*	6938	118	4460	247	3.6%	Yes
Faribault	2262	32	1443	26	1.1%	Yes
Fillmore	4821	96	2150	57	1.2%	Yes
Freeborn	3982	58	2130	41	1.0%	Yes
Goodhue	6254	106	2583	102	1.6%	Yes
Grant	3108	43	708	31	1.0%	Yes
Hennepin*	9376	131	3019	243	2.6%	No
Houston	2449	40	1219	5	0.2%	No
Hubbard*	14344	290	6145	275	1.9%	No

County	Total SSTS reported in 2024	Construction permits reported in 2024	Total construction permits issued 2002-2024	Number of compliance inspections of existing SSTS conducted countywide (private inspector and LGU)	Percent of total existing SSTS inspected in 2024 out of total SSTS	Counties with compliance inspections for property transfer
Isanti*	13588	200	3961	164	1.2%	Yes
Itasca*	17887	197	7185	259	1.4%	No
Jackson	1880	44	970	14	0.7%	Yes
Kanabec	7020	118	2050	106	1.5%	No
Kandiyohi*	7535	156	3839	188	2.5%	Yes
Kittson	979	1	210	2	0.2%	No
Koochiching	2220	27	838	3	0.1%	No
Lac qui Parle	1860	33	663	12	0.6%	Yes
Lake	5815	100	1939	44	0.8%	Yes
Lake of the Woods*	3131	49	2947	3	0.1%	No
Le Sueur	9366	86	2913	144	1.5%	Yes
Lincoln	1049	21	764	94	9.0%	Yes
Lyon	2520	29	1061	25	1.0%	Yes
Mahnomen	1255	10	357	28	2.2%	No
Marshall	2100	13	351	0	0.0%	No
Martin	2680	55	1251	23	0.9%	Yes
McLeod	4373	71	2239	74	1.7%	Yes
Meeker	9134	99	2963	41	0.4%	Yes
Mille Lacs	7134	212	4051	279	3.9%	Yes
Morrison	10007	164	5924	295	2.9%	Yes
Mower	3518	75	1938	56	1.6%	Yes
Murray	1209	33	875	21	1.7%	Yes
Nicollet	2961	41	1409	78	2.6%	Yes
Nobles	2625	54	822	15	0.6%	Yes
Norman	1912	16	276	19	1.0%	No
Olmsted*	15913	161	3000	156	1.0%	Yes
Otter Tail*	20326	670	11577	763	3.8%	Yes
Pennington	1868	28	436	5	0.3%	No
Pine*	13610	266	4669	364	2.7%	Yes
Pipestone	1243	18	595	4	0.3%	Yes
Polk	6543	103	1957	42	0.6%	No
Pope*	4854	69	1787	56	1.2%	Yes

County	Total SSTS reported in 2024	Construction permits reported in 2024	Total construction permits issued 2002-2024	Number of compliance inspections of existing SSTS conducted countywide (private inspector and LGU)	Percent of total existing SSTS inspected in 2024 out of total SSTS	Counties with compliance inspections for property transfer
Ramsey*	1742	20	407	71	4.1%	N/A
Red Lake	896	16	252	6	0.7%	Yes
Redwood	2610	42	1063	11	0.4%	No
Renville	2606	45	1439	40	1.5%	Yes
Rice*	7138	105	3194	115	1.6%	Yes
Rock	1451	12	519	10	0.7%	No
Roseau	4153	34	375	34	0.8%	No
Scott	8923	121	3228	154	1.7%	No
Sherburne*	21790	271	11389	671	3.1%	Yes
Sibley	2699	47	1338	53	2.0%	Yes
St. Louis	40627	740	15216	866	2.1%	Yes
Stearns	18690	373	9181	602	3.2%	Yes
Steele	2928	30	1365	38	1.3%	Yes
Stevens	2047	16	503	2	0.1%	No
Swift	1610	25	609	15	0.9%	Yes
Todd*	10898	158	3978	175	1.6%	Yes
Traverse	622	16	316	2	0.3%	Yes
Wabasha	12421	62	1621	48	0.4%	No
Wadena	3714	103	2102	106	2.9%	Yes
Waseca	2465	57	1232	49	2.0%	Yes
Washington*	19918	251	5918	356	1.8%	Yes
Watonwan	1316	32	652	28	2.1%	Yes
Wilkin*	1073	17	606	11	1.0%	Yes
Winona	5155	84	2031	66	1.3%	No
Wright*	18298	343	6792	421	2.3%	Yes
Yellow Medicine	1737	31	696	3	0.2%	No
Total	**648,554**	**10,549**	**265,768**	**12,810**	**1.98%**	**(59) Yes**

*County, City, Township, and other special purpose units of government data were added to their respective counties to tabulate this information.

Appendix B

Appendix B1

City programs

County name Number of cities with SSTS programs	City Submitted annual report	City No annual report submitted
Anoka County (12)	Andover City	
	Anoka City	
	Blaine City	
	Columbus City	
	Coon Rapids City	
	East Bethel City	
	Ham Lake City	
	Lino Lakes City	
	Nowthen City	
	Oak Grove City	
	Ramsey City	
	Saint Francis City	
Beltrami (1)	Wilton City	
Carver County (1)	Chanhassan City	
Cass County (2)	East Gull Lake City	
	Lake Shore City	
Chisago County (2)	North Branch City	
	Wyoming City	
Crow Wing County (13)	Baxter City	
	Crosby City	
	Crosslake City	
	Cuyuna City	
	Deerwood City	
	Emily City	
	Fifty Lakes City	
	Garrison City	
	Jenkins City	
	Manhattan Beach City	
	Nisswa City	
	Pequot Lakes City	
	Trommald City	
Dakota County (16)	Apple Valley City	
	Burnsville City	

County name Number of cities with SSTS programs	City Submitted annual report	City No annual report submitted
	Coates City	
	Eagan City	
	Farmington City	
	Hampton City	
	Inver Grove Heights City	
	Lakeville City	
	Lilydale City	
	Mendota Heights City	
	Miesville City	
	Rosemount City	
	South Saint Paul City	
	Sunfish Lake City	
	Vermillion City	
	West Saint Paul City	
Douglas County (1)	Alexandria City	
Hennepin County (5)	Dayton City	
	Independence City	
	Medina City	
	Orono City	
	Woodland City	
Hubbard County (1)	Park Rapids City	
Lake of the Woods (1)	Baudette City	
Pine County (2)	Rock Creek City	
	Pine City	
Pope County (1)	Glenwood City	
Ramsey County (7)	Gem Lake City	
	Little Canada City	
	Maplewood City	
	North Oaks City	
	Saint Paul City	
	Shoreview City	
	White Bear Lake City	
Rice County (1)	Northfield City	
Sherburne County (4)	Becker City	
	Baldwin City	

County name Number of cities with SSTS programs	City Submitted annual report	City No annual report submitted
	Elk River City	
	Zimmerman City	
Washington (1)	Dellwood City	
Wilkin County (1)		Doran City
Wright County (1)	Otsego City	

Appendix B2

Township programs

County name Number of townships with SSTS programs	Township Submitted annual report	Township No annual report submitted
Anoka County (1)	Linwood Township	
Crow Wing County (2)	Crow Wing Township	
	Irondale Township	
Dakota County (11)	Castle Rock Township	
	Douglas Township	
	Empire Township	
	Eureka Township	
	Greenvale Township	
	Hampton Township	
	Marshan Township	
	Nininger Township	
	Ravenna Township	
	Scotia Township	
	Vermillion Township	
Douglas County (1)	Alexandria Township	
Isanti County (1)	Athens Township	
Kandiyohi County (1)	Saint Johns Township	
Mille Lacs County (1)	Greenbush Township	
Pine County (5)	Arna Township	
	Munch Township	
	Pine City Township	
	Pokegema Township	
	Royalton Township	
Ramsey County (1)	White Bear Township	
Rice County (1)	Bridgewater Township	
Sherburne County 1)	Becker Township	

Todd County (2)	Bertha Township	
	Bruce Township	
Wright County (1)	Middleville Township	
Anoka County (1)	Linwood Township	
Crow Wing County (2)	Crow Wing Township	

Appendix B3

Other special purpose units of government programs

County name	Other
Number of townships with SSTS programs	**Submitted annual report**
Olmsted County (1)	TCPA
Otter Tail County (1)	Otter Tail Water Management District
Other (1)	University of Minnesota

Appendix C

List of 2024 SSTS Annual Report questions

1. **General program information – Yes or No answer.**
    a. Alternative Local Standards (ALS) for existing systems?
        i. ALS are standards that are less restrictive than Minn. R. chs. 7080-7083, do not confuse them with the old system category of 'Alternative Systems' (floodplains, holding tanks, privies).
    b. ALS new or replacement SSTS using a minimum of two foot of separation in allowable areas of the LGU?
    c. ALS new or replacement SSTS using 2006 Rules?
    d. Do you track SSTS maintenance/pumping?
    e. Do you have jurisdiction-wide compliance inspections for property transfer?
    f. Do you approve SSTS design before issuing permit?
    g. When in your permitting process do you verify soils?
2. **Residential SSTS by system type – Write number of permits issued for each category.**
    a. # permits issued for Type I/Rock Trenches.
    b. # permits issued for Type I/EZflow.
    c. # permits issued for Type I/Chamber Trenches.
    d. # permits issued for Type I/Seepage or Pressure Beds.
    e. # permits issued for Type I/Mounds.
    f. # permits issued for Type I/At-Grades.
    g. # permits issued for Type II/Privies, Holding Tanks, and Floodplain Areas.
        i. # Holding tank operating permits issued.
    h. # permits issued for Type III.
    i. # permits issued for Type IV/Registered Product Systems.
    j. # Type IV Operating Permits issued.
    k. # permits issued for Type V.
    l. # Type V Operating Permits issued.
3. **Residential SSTS by flow volume – Write number of permits issued for each category.**
    a. New systems 1-2,499 gpd.
    b. New systems 2,500-4,999 gpd.
    c. New systems 5,000-10,000 gpd.
    d. Replacement systems 1-2,499 gpd.
    e. Replacement systems 2,500-4,999 gpd.
    f. Replacement systems 5,000-10,000 gpd.
4. **Other establishment SSTS by system type – Write number of permits issued for each category.**
    a. # permits issued for Type I/Rock Trenches.
    b. # permits issued for Type I/EZflow.
    c. # permits issued for Type I/Chamber Trenches.
    d. # permits issued for Type I/Seepage or Pressure Beds.

e. # permits issued for Type I/Mounds.
f. # permits issued for Type I/At-grades.
g. # permits issued for Type II/Privies, Holding Tanks, and Floodplain Areas.
h. # Holding tank operating permits issued.
i. # permits issued for Type III.
j. # permits issued for Type IV/Registered Product Systems.
k. # Type IV Operating Permits issued.
l. # permits issued for Type V.
    i. # Type V Operating Permits issued.

5. Other establishment SSTS by flow volume – Write number of permits issued for each category.

a. New systems 1-2,499 gpd.
b. New systems 2,500-4,999 gpd.
c. New systems 5,000-10,000 gpd.
d. Replacement systems 1-2,499 gpd.
e. Replacement systems 2,500-4,999 gpd.
f. Replacement systems 5,000-10,000 gpd.

1. Permits issued for SSTS repairs – Write number of permits issued for each category.

Complete this part only if you issue repair permits.

a. Residential SSTS repairs.
b. Other establishment SSTS repairs.

2. Jurisdiction-wide SSTS questions – Write number for each category.

a. # Fulltime dwellings with SSTS.
b. # Seasonal dwellings with SSTS.
c. # Cluster SSTS.
    i. # Dwellings served by Cluster SSTS.
d. # other establishments with SSTS.

3. SSTS compliance – Write whole numbers only, do not use a decimal or use the percent sign. For example, if your answer is <1%, enter 1.

a. Percentage of failing systems within jurisdiction.
b. Percentage of imminent systems within jurisdiction.
c. Percentage of compliant SSTS within jurisdiction.
d. Total percentage SSTS – You do not enter anything here, the spreadsheet will calculate this answer.
    i. This should total 100, if it does not check your answers to a, c, and/or e and adjust accordingly.

4. The number of compliance inspections of existing SSTS conducted in their jurisdiction.
5. The number of noncompliant properties connected to centralized sewer.
6. The number of noncompliant properties mitigated by abandonment or removal of a dwelling.
7. The number of noncompliant properties mitigated through government buyout.
8. Inspector information.

a. Name of department head.
b. Name of Trained Administrator.

c. Name and email address of SSTS contact.
d. Inspector(s) name(s) and;
    i. License numbers if inspections are contracted out to a licensed SSTS inspection business.
    ii. Certification numbers if inspections are done in-house by LGU staff certified as SSTS inspectors.

9. Tank Installation Report.

a. Installer name.
b. Installer license number.
c. Number of septic tanks installed.
    i. This includes pump/lift tanks and holding tanks.
d. Number of Performance/Type V systems installed.
    i. Minn. Stat. § 115.551 limits the number of septic tanks for Performance/Type V systems to one per household.
e. Number of tanks installed by homeowners (if allowed in your jurisdiction).
    i. Name of homeowner.
    ii. Address.