



2007 ANNUAL TRACKING REPORT FOR NEW WASTEWATER FACILITIES

Date: January 31, 2008

Prepared by:



Minnesota Pollution Control Agency

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This report identifies the total number of new wastewater treatment systems built in Minnesota after May 1, 2000. The statutory requirement for this report is found in Minn. Stat. § 115.447, which reads:

115.447 TRACKING REPORT FOR NEW WASTEWATER FACILITIES.

Subd. 1. Annual report required. The Pollution Control Agency shall annually prepare a report tracking the location and capacity of each new wastewater treatment system requiring a national pollutant discharge elimination system or state disposal system permit built after May 1, 2000. The report shall also include the name of the owner, primary engineering firm that designed the facilities, the primary contractor that constructed the facilities, and any management company, other than the owner, that manages the facilities. The annual report must also provide the total number of new systems built after that date. The commissioner shall submit the report to the legislative committees with jurisdiction over environmental policy and finance, and publish the report on the agency's Web site, by February 1 of each year.

Subd. 2. New facilities not meeting permit requirements. (a) The report required under subdivision 1 shall include the information required in paragraphs (b) and (c) for the first five years of operation of a new facility.

(b) For national pollutant discharge elimination system permitted facilities, provide a list of reported effluent violations that occurred during each calendar year. This list should include the effluent parameter violated; the violation date; and, if available, any known information regarding the causes of the reported limit violations.

(c) For state disposal system permitted facilities, provide a summary of conditions at the facilities which pose an imminent threat to public health and safety as defined in rules of the Pollution Control Agency, or a list of reported limit violations that occurred during each calendar year. This list should include the parameter violated; violation date; and, if available, any known information regarding the causes of the reported public health risk or limit violations.

History: 2000 c 492 art 1 s 43; 2006 c 244 s 1

Estimated Cost of Report Preparation (as required by Minn. Stat § 3.197)

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Introduction

Minn. Stat. § 115.477 was passed in 2000, creating the requirement for the Minnesota Pollution Control Agency (MPCA) to submit an annual report identifying the total number of new wastewater treatment systems constructed after May 1, 2000. From 2001 through 2005, the MPCA prepared this annual report as required by statute language (see Table 5 for the 2005 report in this format).

In 2006 the Minnesota Legislature added a number of new items to this statute to be included in this report. This was in response to reported small communities problems with properly treating wastewater and meeting their permit requirements. These new items, required in Subdivision 1 of the Statute, included identification of the design engineering firm, the primary construction contractor, and any management or contract operations company that is assisting the owner to manage the facilities. In addition, the new language in Subdivision 2 required five (5) years of reporting relating to systems that are not meeting their permit requirements. The 2006 Statute changes resulted in a modification in the format and appearance in the 2006 report, and in fact will likely cause the format of the annual report to slowly evolve each year to include each subsequent year of compliance data until the first five (5) years from initial operation of the reported 2006 new facilities is reached in 2010. This report will begin with a section on the new facilities for 2007.

2007 New Wastewater Systems Report

There have been a total of 90 new Minnesota permitted wastewater treatment systems since May 1, 2000. These communities, housing developments and locations previously had no central collection and treatment system that required either a National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) permit.

This total number includes the 11 new systems that were constructed and began operation during 2007, which are listed in Table 1.

Table 1 includes four (4) new NPDES permitted wastewater systems, and none of these systems reported effluent violations during the period that they were in operation during 2007. In addition, 7 new SDS permitted wastewater systems began operation in 2007 and one (1) of these systems reported one (1) violation. The other six (6) new SDS permitted wastewater systems did not report any violations. None of the seven (7) new SDS permitted wastewater systems reported any imminent threats to public health.

Table 2 lists the community, permit type, effluent parameter, violation date, and the known information regarding the causes of the reported violations. The statute language requires a violation date to be reported, in most cases permit effluent limitations are monthly averages and the violation will not identify a specific individual date of when it occurred. We will identify the month and year of the violation in the list.

Table 1: 2007 New Wastewater Systems Report

Community	County	Capacity (gallons per day)	Population Equivalent (a)	Permit Type	Owner	Primary Engineering Firm	Primary Contractor	Management Company	2007 NPDES or SDS Limit Violations
Audubon Development	Washington	13,000	173	SDS	MBM Development	Ayers Associates	Kober Excavating	Peterson Management	No
Conger, City of	Freeborn	20,730	276	NPDES	City of Conger	Ayres Associates	Contractors Edge Inc.		No
Diamond Lake Woods	Hennepin	13,500	180	SDS	Patrick DeWing	Jacques Whitford NAWE	Kober Excavating	Jacques Whitford EcoCheck	No
Evan, City of	Brown	12,800	171	NPDES	City of Evan	DeWild Grant Reckert and Associates	TNT Construction		No
Lake Shetek Sanitary District	Murray	232,000	3,093	NPDES	Lake Shetek Sanitary District	Bolton and Menk, Inc.	Dunnick Brothers	City of Currie	No
Rockpoint Church	Washington	14,000	187	SDS	Charles Palmer	Jacques Whitford NAWE	Kober Excavating	Jacques Whitford EcoCheck	No
Sanctuary	Washington	21,000	280	SDS	John Arkel	Jacques Whitford NAWE	Kober Excavating	Jacques Whitford EcoCheck	No
Tom's Harbor	Cass	11,832	158	SDS	Ralph Schmitz	Landecker	Kober Excavating	Harbor Shores LLC	No
Viking, City of	Marshall	10,500	140	NPDES	City of Viking	Liesch Associates	SJ Louis Construction		No
Villard, City of	Pope	34,300	457	SDS	City of Villard	Wideth Smith Nolting & Associates, Inc.	Riley Brothers Construction, Inc.		No
Whistling Valley Development, Phase 2	Washington	9,000	120	SDS	Anderson Sorenson Homes, Inc.	Jacques Whitford NAWE	Kober Excavating	Jacques Whitford EcoCheck	Yes
Total = 11		392,662	5,235						

(a) Population Equivalent – The population equivalent is calculated by dividing the design capacity by average per capita usage estimated at 75 gallons per day. The number does not necessarily match the U.S. census population of the community.

Table 2: 2007 New Wastewater Systems Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Whistling Valley Development, Phase 2	SDS	Total Nitrogen	Jan-07	Calendar Quarterly Average (January to March) violated. Likely due to low flow to system and difficulty establishing denitrifying bacteria. Returned to compliance.

2007 Update to the 2006 New Wastewater Systems Report

Table 3 lists the 21 new systems that were constructed and began operation during 2006. As the MPCA first reported in January 2007, this list includes four (4) new NPDES permitted wastewater systems, and none of these systems reported effluent violations during the period that they were in operation during 2006. In addition, 17 new SDS permitted wastewater systems began operation in 2006 and none of these systems reported any violations or imminent threats to public health.

We have updated the Table 3 information to show a column to indicate if any of these systems have experienced any violations or imminent threats to public health during 2007. Table 3 shows that 3 of the NPDES permitted wastewater systems reported no effluent violations during 2007 and 13 of the SDS permitted wastewater systems reported no limit violations. We also can report that none of the 17 SDS permitted wastewater systems reported any imminent threats to public health during 2007.

Table 3 does identify that one (1) NPDES permitted wastewater system did report an effluent violation during 2007 and also indicates that four (4) SDS permitted wastewater systems did report limit violations. A summary of the reported violations for these five (5) systems is included in Table 4.

Table 4 shows a majority of the reported violations for the SDS permitted systems were of the Total Nitrogen limit. While we reported that known information regarding the cause of these violations is not available, it is likely these systems were experiencing low influent flow and loadings that is contributing to difficulty with establishing denitrifying bacteria in the treatment system.

Table 3: 2006 New Wastewater Systems Report (with 2006 & 2007 Data)

Community	County	Capacity (gallons per day)	Population Equivalent (a)	Permit Type	Owner	Primary Engineering Firm	Primary Contractor	Management Company	2006 NPDES or SDS Limit Violations	2007 NPDES or SDS Limit Violations
Cambridge Isanti Middle School	Isanti	10,176	136	SDS	ISD 911	North American Wetland Engineering	Kober Excavating	EcoCheck Inc.	No	Yes
Camp Victory	Wabasha	27,000	360	NPDES	Camp Victory Ministries	Arden Environmental Engineering	Ellingson Companies		No	No
Credit River Township - Stonebridge	Scott	14,400	192	SDS	Credit River Township	Halling Engineering	K.A. Witt Construction, Inc.	EcoCheck Inc.	No	No
Credit River Township - Territory, Phase 7	Scott	15,300	204	SDS	Credit River Township	Halling Engineering	K.A. Witt Construction, Inc.	EcoCheck Inc.	No	No
Diamond Lake Woods	Hennepin	13,500	180	SDS	Dewing Development Corp.	North American Wetland Engineering	Kober Excavating	EcoCheck Inc.	No	No
Edgewood Estates Second	Dodge	24,252	323	SDS	Bigelow Enterprises	Massey Land Surveying and Engineering	Swenke Construction		No	No
Emily, City of	Crow Wing	41,600	555	SDS	City of Emily	Short Elliott Hendrickson Inc	Hammerlund Construction		No	No
Farms of Lake Elmo	Washington	10,000	133	SDS	M & K Development	Ayers Associates	J.R. Ferche	EcoCheck Inc.	No	No
Gary, City of	Norman	27,800	371	NPDES	City of Gary	Wideth Smith Nolting & Associates, Inc.	R.J. Zavoral and Sons, Inc.		No	No
Hammond, City of	Wabasha	23,000	307	NPDES	City of Hammond	Ayres Associates	Ellingson Companies	Peoples Service	No	Yes
Lake Volney Estates	Le Sueur	11,993	160	SDS	Brian Kocina	I&S Engineers & Architects, Inc	Fessel Environmental Service Inc		No	No
Meadows of Whisper Creek	Hennepin	20,000	267	NPDES	Greenfield Development, LLC	RLK Kuusisto	Ashbrook, Inc.	Veolia Water	No	No
Miller Farms Cluster Development	Washington	32,000	427	SDS	Derrick Construction Co.	Ayers Associates	Kober Excavating		No	No
Nordwall Estates	Sherburne	34,200	456	SDS	Gregg Nordwall	John Oliver and Associates	West Branch Construction		No	No
Preserve at Birch Lake	Chisago	34,425	459	SDS	SMC Land Development, LLC	North American Wetland Engineering	J.R. Ferche	EcoCheck Inc.	No	No
River Park	Olmsted	31,250	417	SDS	Journey Developing, Inc.	McGhie & Betts Inc	Jech Construction		No	Yes
Riverwood Hills Septic Drainfield Site	Olmsted	23,081	308	SDS	Fitzpatrick Construction	McGhie & Betts Inc	Fitzpatrick Construction		No	Yes
Tapestry	Washington	25,125	335	SDS	St. Croix Farms, LLC	Wenck Associates	Kober Excavating	Advanced Septic Solutions Inc.	No	No
Trophy Lake Estates III	Chisago	16,700	223	SDS	Trophy Lake Estates	North American Wetland Engineering	Ferguson Brothers Excavating	EcoCheck Inc.	No	Yes
Waters Edge @ Leech Lake LLC	Cass	14,100	188	SDS	Wayne Overby	Ecos Engineering	Royal Oaks Construction Inc.		No	No
Windsor Meadows	Sherburne	14,850	198	SDS	Alan Gilyard 10-24 Development LLC	Bogart, Pederson, & Associates, Inc.	Meadowvale Construction, Inc.	EcoCheck Inc.	No	No
Total = 21		464,752	6,197							

(a) Population Equivalent – The population equivalent is calculated by dividing the design capacity by average per capita usage estimated at 75 gallons per day. The number does not necessarily match the U.S. census population of the community.

Table 4: 2006 Wastewater Systems Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Cambridge Isanti Middle School	SDS	Total Nitrogen	Sep-07	Not available. Ongoing resolution pending.
Hammond, City of	NPDES	Fecal Coliform	Apr-07	Not available. Returned to compliance.
River Park	SDS	Flow	Apr-07	Not available. Returned to compliance.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	May-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jun-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jul-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Aug-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Sep-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Oct-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Jul-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Aug-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Sep-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Oct-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Nov-07	Not available. Ongoing resolution pending.

**Table 5: 2005 Annual Tracking Report for New Wastewater Facilities
(for years 2000 – 2005) Minn. Stat. § 115.447**

2005 – The following (12) wastewater treatment facilities were put into service during calendar year 2005 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Big Sandy Lodge & Resort	Aitkin	25,070	334	SDS
Clearwater Harbor Sewage Treatment Facility	Stearns	28,000	373	SDS
Clontarf, City of	Swift	23,500	313	NPDES
Credit River Township - Territory	Scott	13,500	180	SDS
Frontenac Heritage Acres 3 rd Addition	Goodhue	19,875	265	SDS
Garvin, City of	Lyon	21,500	286	NPDES
Highland Farms	Sherburne	14,000	186	SDS
Otsego (West), City of	Wright	72,000	960	NPDES
Prinsburg, City of	Kandiyohi	40,875	545	NPDES
Thumper Pond Development	Otter Tail	49,100	654	SDS
Windsor Oaks of Elk River	Sherburne	12,363	164	SDS
Whispering Ridge Cluster Development	Sherburne	45,450	606	SDS
		365,233	4,866	

2004 – The following (15) wastewater treatment facilities were put into service during calendar year 2004 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Aspen Hills (Star City Builder)	Sherburne	19,500	260	NPDES
Avoca, City of and Iona, City of	Murray	74,000	986	NPDES
Cedar Mills, City of	Meeker	9,150	122	NPDES
Crane Lake, City of	St. Louis	52,390	698	NPDES
Crosslake, City of	Crow Wing	150,000	2,000	NPDES
Delft Sanitary District	Cottonwood	5,700	76	NPDES
Dehli, City of	Redwood	14,400	192	NPDES
Hidden Haven (Schlichting Development, Inc.)	Sherburne	22,500	300	SDS
Lakes of Fairhaven (Sienna Corporation)	Stearns	15,525	207	SDS
Lutsen Resort (Lutsen Resort Company)	Cook	25,500	340	SDS
Nerstrand, City of	Rice	48,000	640	NPDES
Revere, City of	Redwood	17,900	238	NPDES
Roscoe, City of	Stearns	15,955	212	SDS
Woods at Eagle Lake (Scott Breuer Const., Inc.)	Sherburne	13,838	184	SDS
Wyldeewood Acres	Washington	9,000	120	SDS
		493,358	6,575	

2003 – The following **(11)** wastewater treatment facilities were put into service during calendar year 2003 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Benton Utilities	Benton	150,000	2,000	NPDES
Country Meadows/Cmark Builders	Sherburne	17,100	228	SDS
Delavan, City of	Faribault	54,000	720	NPDES
Lansing Township	Mower	26,000	347	NPDES
Lismore Hutterian Brethren	Big Stone	13,000	173	SDS
Monterey Heights/Rolling Oaks	Scott	23,400	312	SDS
Sergeant , City of	Mower	10,600	141	NPDES
Town & Country Aspen Hills Development	Sherburne	19,500	260	NPDES
Turtle Run South	Anoka	85,000	1,133	SDS
Whistling Valley	Washington	11,000	147	SDS
Windsor Park 3rd Addition	Sherburne	39,600	528	SDS
		449,200	5,989	

2002 – The following **(7)** wastewater treatment facilities were put into service during calendar year 2002 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Dumont, City of	Traverse	14,900	199	NPDES
Farwell-Kensington	Douglas	76,300	1,017	NPDES
Greenfield, City of	Hennepin	200,000	2,667	NPDES
Lewisville, City of	Watonwan	37,700	503	NPDES
Lutsen (Superior National Golf Properties)	Cook	21,000	280	SDS
Tamarack, City of	Aitkin	7,000	93	NPDES
Woodstock, City of	Pipestone	18,500	247	NPDES
		375,400	5,006	

2001 – The following (5) wastewater treatment facilities were put into service during calendar year 2001 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Andover Elementary School (ISD # 11)	Anoka	15,000	200	SDS
Bejou, City of	Mahnomen	17,700	236	SDS
Carriage Station (Lake Elmo)	Washington	44,000	587	SDS
Big Stone Hutterite Colony (near Graceville)	Big Stone	10,400	139	NPDES
Turtle Run South (Oak Grove)	Anoka	86,300	1,151	SDS
		173,400	2,313	

2000 – The following (8) wastewater treatment facilities were put into service from May 1st to December 31st of calendar year 2000, in communities that previously had no central collection and treatment (the May 1st start date for calendar year 2000 is as stipulated in Minn. Stat. § 115.447):

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Birchwood Terrace (mobile home park)	Chisago	21,000	280	SDS
Fields of St. Croix Phase 2 (Lake Elmo)	Washington	31,000	413	SDS
Hanover, City of	Hennepin/Wright	645,000	8,600	NPDES
Hidden River (near South Haven)	Wright	17,000	227	SDS
Jackson Meadows (Marine on St. Croix)	Washington	5,500	73	SDS
Kilkenny, City of	Le Sueur	23,000	307	NPDES
Otsego (East), City of	Wright	400,000	5,333	NPDES
Palisade, City of	Aitkin	13,000	173	NPDES
		1,155,500	15,406	

*Pop. Equiv. – The population equivalent to the daily design flow of the treatment plant where average *per capita* usage is estimated at 75 gallons per day. This number does not necessarily match the US census population of the community.

New Wastewater Facilities Analysis and Trends

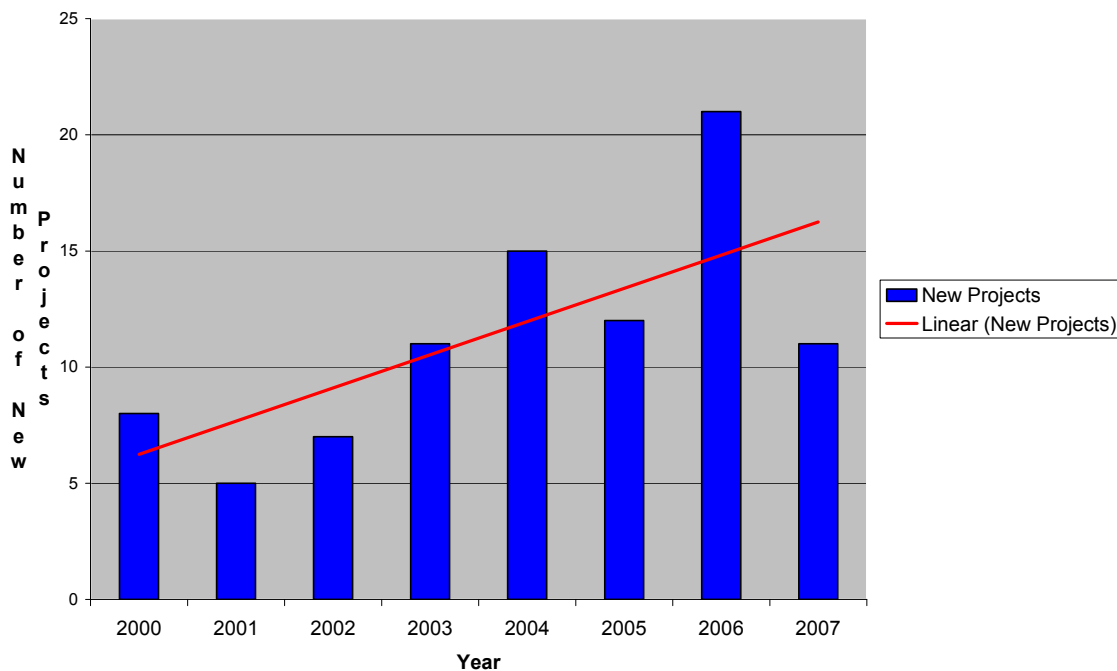
The MPCA has been reporting to the Legislature on new wastewater treatment systems since 2001 and has enough data points to provide some analysis on the trends that have been observed. In the 2006 New Wastewater Facilities Report we reported these four general observations:

1. Increase in the number of new wastewater systems per year
2. Decrease in average wastewater treatment system design capacity per year
3. Smaller average population served per new wastewater treatment system
4. Higher percentage of new land treatment (SDS permit) systems per year

In this section, the MPCA will discuss each of these observations again and provide a comparison with the results of the 2007 new wastewater facilities data.

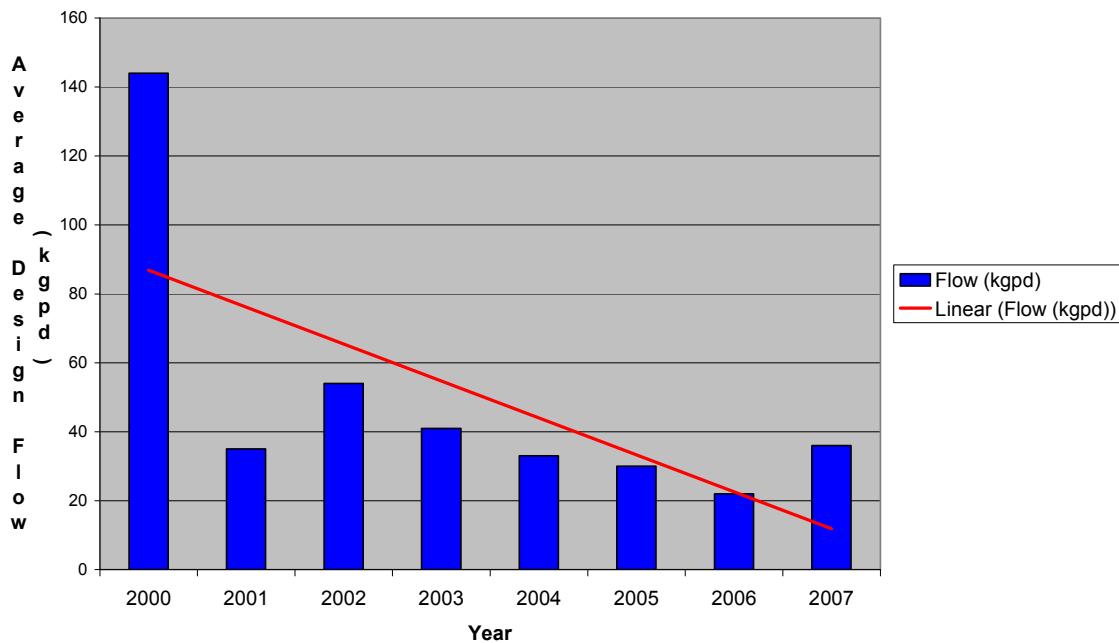
The first trend that MPCA has noted in the data is that the average number of new wastewater systems reported per year is generally increasing. Figure 1 shows this relationship. The average number per year did increase from eight (8) new systems in 2000 to 21 new systems in 2006. The trend line shows for 2007 the general increasing trend in the number of new systems should have continued however there was a decrease to 11 new systems reported. This slowing in growth of the number of new systems appears to be mainly due to a decrease in the number of new privately owned housing development related wastewater systems constructed in 2007 in the Metro area counties. 2007 had a total of six (6) new privately systems which is down from a total of 14 in 2006.

Figure 1: Number of New Wastewater Treatment Systems Per Year



As shown in Figure 2, the average capacity or design flow of the new wastewater systems reported per year is generally decreasing. The design flow decreased from 144 kilogallons per day (kgpd) per system in 2000 to 22 kgpd per new system in 2006. There was a slight increase in design flow reported in 2007, to 36 kgpd. This slight increase in average design flow was due to construction of one large new system to serve users of the Lake Shetek Sanitary District. The 2007 average design flow per system would have dropped below the 2006 average design flow of 22 kgpd without construction of this one large project.

Figure 2: New Wastewater Treatment Systems - Facility Average Design Flow (kgpd)



The third trend that the MPCA has noted is that the average population equivalent (P.E.) served per new wastewater system per year is generally decreasing. Figure 3 shows this relationship. The average population equivalent served per system decreased from approximately 1926 P.E. per new system in 2000, to 295 P.E. per new system in 2006. There is a slight increase in the 2007 data served per system to 476 P.E. This increase in average P.E. per system is again due directly to the Lake Shetek Sanitary District project. The average 2007 P.E. per system would have dropped below the 295 P.E. per system without this one large project.

Figure 3: New Wastewater Treatment Systems - New Facilities Average Population Equivalent Served

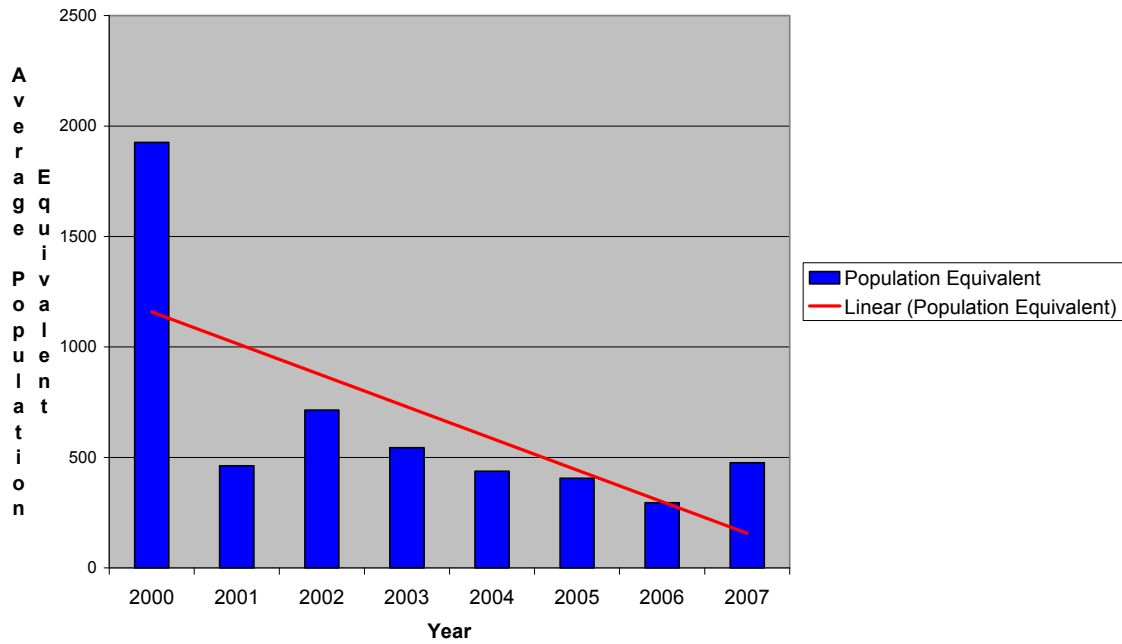
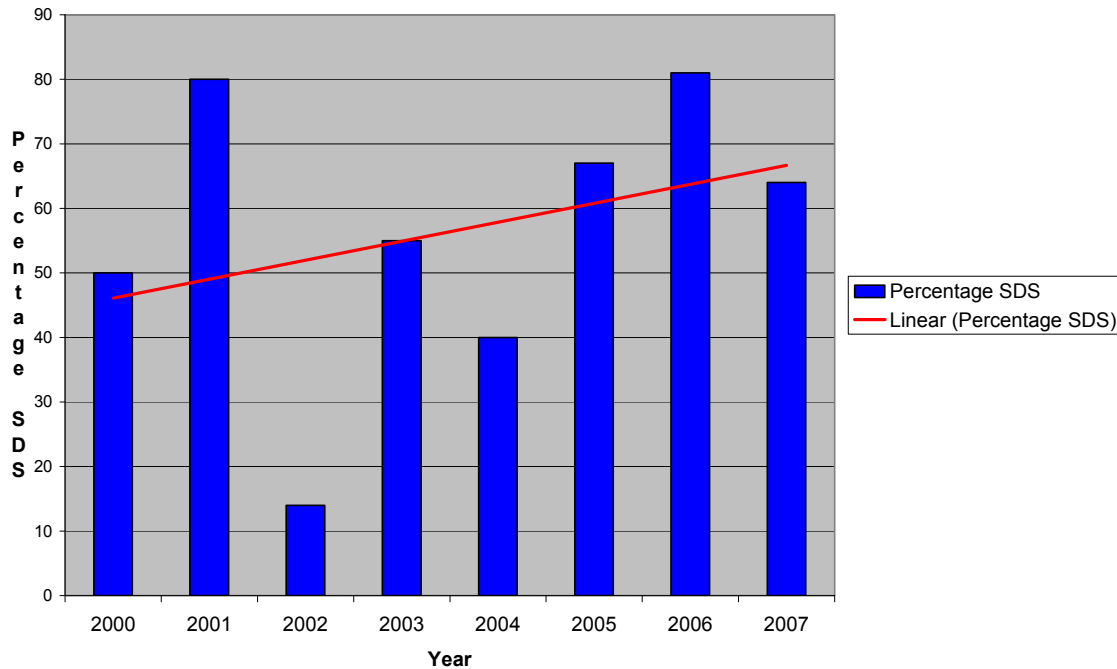


Figure 4 shows that, in general, the percentage of new systems using a land treatment method (SDS permit) has been generally increasing from 2002 to 2006. The percentage of SDS permitted facilities was 14 percent in 2002, and increased to 81 percent in 2006. The percentage of SDS permitted facilities decreased somewhat to 64 percent for 2007. This results in the trend line for the data showing a slight flattening of the slope, but it still is indicating a small general increasing trend for the number of the percentage of SDS permitted facilities.

Figure 4: Percentage SDS



Conclusions

The 2006 changes to Minn. Stat. § 115.477 added new information to be reported by the MPCA beginning with the 2006 Annual Report, and is reflected in evolving format modifications for the 2007 Annual Tracking Report for New Wastewater Treatment Facilities. During the 2007 period, the MPCA can report that only one (1) of the 11 new systems recorded a permit limit violation and the total number of violations for that system was one (1).

The 21 new facilities from the 2006 period reported that no permit limit violations were reported to the MPCA in 2006. During 2007, five (5) of these 21 systems reported a permit limit violation, and a total of 14 violations were recorded. The MPCA will continue to track the operating record of these facilities in this reporting format through 2010 per the Statute.

The MPCA also observed the general trends, from 2000 to 2006, were an increasing number of new wastewater treatment systems being constructed each year with these systems decreasing in size and serving smaller populations. In 2007, each of these trends were moderately reversed with fewer new systems being constructed, and the systems average design flow and populations served slightly increasing. The decreasing number of new systems seems to be mainly attributed to fewer private housing development wastewater treatment systems being constructed, which makes sense since the economic news reports in Minnesota are that the number of new houses being constructed is down and housing sales market is down. The slight increase in the design flow size and

population served per system seems to be more a function of one large project being constructed this year. In general, the size and population served per system is still reflecting that MPCA is working with small system projects.

Additionally, from 2002 to 2006 there has been a general increase in the use of land based wastewater disposal systems (SDS permits) as the new systems decrease in size. In 2007 the portion of projects that were SDS permits was also down slightly, but the percentage of SDS systems still exhibited a majority of the new systems for this year. The general observations made in the 2006 report still are accurate. This includes that the MPCA is working more with smaller communities (or new developing areas) to provide their first wastewater treatment systems, reducing the number of communities without central wastewater collection and treatment systems, and that a land treatment option is the primary choice for these small community treatment systems.