City of Afton

Natural Resources and Groundwater Committee (NRGC)

Agenda
Wednesday, June 15, 2016
6:30 PM

1. **Call to Order**

2. **Roll Call**

3. **Approval of Agenda**

4. **Approval of minutes from May 18th**

5. **Business**
   - **A.** Well Testing Update
   - **B.** Septic System Compliance Inspections
   - **C.** Meeting with Jennifer Sorenson (DNR)?
   - **D.** Natural Resources and Groundwater Management Organizations updates
   - **E.** General Resource and groundwater information sharing

6. **Adjournment**

Natural Resources and Groundwater Committee
May 18, 2016 meeting minutes

1. **Call to order**
2. **Roll call:** Jill Chezik, Mark Have, Keith Hoffman, Annie Perkins, Susan Winsor were present
   Absent were Mayor Bend, Perry Eggers, Sondra Larson, Jack Kollmer. Winsor volunteered to take minutes in Sondra Larson's absence.
3. **The Agenda was approved**. Susan Winsor moved to approve the agenda, Jill Chezik seconded the motion.
4. **Minutes approval:** The committee could not approve the April 16 minutes because they were not distributed.
5. **Business:**
   A. Well testing update: (Afton citizens would be eligible for free nitrate or nitrate+ other materials well testing). The next step is for the City Council to approve or fine-tune the plan. Keith Hoffman isn't sure that that's happened yet. He thinks it's been three years since the last well-testing program. Program costs hinge on how many samples are processed and what materials are tested for. Keith Hoffman has the county well data (hard copy). He will ask Kim to re-circulate the plan and related reference materials to committee members.

   Have suggests that each local city council person introduce the well-testing person to citizens, also a newsletter article in advance to communicate the program once it's launched.

   B. Jennifer Sorenson, DNR east metro area hydrologist meeting with Mayor and NRGC liaison Annie Perkins did not happen.

   C. Organization updates:

   1. Middle St. Croix Watershed report by Annie Perkins: She attended but not much to report.
   2. Valley Creek Watershed (VBW) notes from Mark Have: Beavers are causing problems somewhere between Trading Post trail and the creek mouth. Afton city office has contact info for residents needing to have trappers remove beavers.

      Because VBW meets 2x per month, Have asked for someone on the NRGC to cover the second meeting. Kollmer is the only committee member without a meeting to cover, it was discovered, we will ask him whether he can do that.

      Also Washington Conservation District is working on rain-garden construction and eliminating buckthorn and restoring prairies. Lake Edith shows improved phosphorus, transparency and chlorophyll readings for the most recent 10-year period, according to Barr Engineering 2015 annual report.
   3. Washington County Soil & Water Conservation District (WCSWCD): Susan did not attend but shared this from the April 16 minutes:

      WCSWCD unanimously approved an estimated $68,975. for the "FY2014 Lake St. Croix CWF Encumbrance Request." One-quarter of this is provided by South Washington Watershed district. This involves installing three grade stabilizations on the Schaffer property Denmark Township, according to James Landini, WCSWCD engineer. It will remove a projected 143.8 lbs./year total phosphorus, according to BWSR gully model. When asked to describe the project, Landini wrote in a project summary email, "In Denmark Township, just south of Afton State Park, is a farm field that has multiple gullies down to the St. Croix River. The project will

build three berms on the edge of the field with small pipes to slow the water that is eroding the gullies. For size comparisons: one gully I could hide a semi truck and trailer in, the other I could hide a full size school bus in, and the third I could hide a standard sedan in for a size of erosion comparison. This won't have any benefit to the Afton residents, the project is in Denmark Township. The project will finish design in May, go to contractors for quoting in June and when the contractors can fit it in a schedule they will be constructed."

The WSWC district voted to jointly apply for Monarch conservation grant from National Fish and Wildlife Foundation jointly with Chisago SWCD.

Conservation district representatives 1, 3 and 5 are up for election this fall. District 3, representing Afton and Woodbury, Lake Elmo, West Lakeland, Stillwater Township, is held by John Rheinberger, who's expected to run again.

4. South Washington Watershed report from Jill Chezik: More suburbs are mandating reduced lawn-watering. Richfield is one of the latest to embrace this non-necessary watering. Half of Woodbury's watering budget is summer lawn-watering.

D. General resource and groundwater information sharing

1. Winsor says she's been thinking about the Mayor's earlier question about what could Afton do using the overlay district authority to improve water quality? How about taxing contaminants that can be traced to a source/farm? Nitrates can't be traced to a specific location; could sediment/phosphorus? Or could the sale of farm inputs, such as fertilizers and or chemicals, that ultimately contaminate groundwater, be taxed, similar to what the state of Iowa does? Iowa taxes farm input sales and channels those monies to conservation activities.
2. Newspaper article: EPA will tax methane (greenhouse gas contaminant). 30% comes from livestock; 60% comes from people.
3. A re-discussion of the NRGC's possible committee goals/activities:
   a) Well testing
   b) Aligning park dedication parcels so as to comprise a wildlife corridor, long term.
   c) Conservation farming practices
4. In reviewing accumulated well-testing data gathered from State Ag and Health departments, county and various other agencies, Have notices that one column heading is parcel numbers, with section number, township and parcel ID Code.
5. Hoffman wonders why the report has no well-depth information. Mark got that data some from co some from state

E. **Adjournment:** Perkins motioned to adjourn, Have seconded it.

Post adjournment: Someone noticed a supplemental packet that had been distributed when the previous meeting adjourned before the NRGC meeting. Because it was not on the meeting agenda, those present decided to add it to the agenda of the next NRG committee. It is a request from Mayor Bend and Council member Stan Ross for the NRGC to make a recommendation as to whether the City Council should require additional triggers for septic compliance inspections, given the high proportion of non-compliant septic systems installed

before 1972. If so, what should those triggers be for septic inspections, the request also says. This is a Valley Branch Watershed District (VBWD) Kelle's Creek voluntary Septic System Inspection Program. A water quality study indicated that the watershed's impairment comes from non-compliant septic systems making up 60-84% of the bacteria load to Kelle's Creek. A Clean Water Fund Grant will pay for voluntary septic systems in close proximity to the Creek (an estimated 100 households). Residents are highly encouraged to participate. Owners of septic systems found to be non-compliant will be connected to potential funding sources for replacing the septic system. A video of a Barr Engineering presentation updating the City Council on this can be found at:
Go to www.ci.afton.mn.us .
Then click: City Government, City Council Meetings, Meeting Videos --CC.
This is a presentation at the ***3-15-16* City Council meeting.**

The City Council's request to the NRGC adds, "One option discussed by the Council is whether to reduce the threshold value of the building permit trigger to $50,000 or another amount, rather than 50% of a house's value. Some cities are requiring mandatory septic inspections, either in targeted areas or periodically, according to the Washington County Public Health staff."

5B

VBWD meeting notes: May 26

For NRGC for June 15, 2016 meeting

Ravine stabilization work in the Valley Creek watershed has been enlarged to include property of Darlene Moynagh. The managers approved $14,850 to cover this additional work. Work is near 30th and Trading Post.

Approval was granted to move the driveway from Manning to 22nd Street for the address, 1987 Manning Ave. S., Afton. Impervious area will be 0.6 acres, and a buffer of 50' (from center line) on each side of drive is required. A variance for 30' each side was approved.

Four 5-acre parcels were permitted to be development-ready on Lake Edith as part of the Nelson Estate. Roads were made several years ago, and now the family wants to complete the subdivision. Apparently, Afton's shoreline ordinance can be met.

There are presently 10 participants who have signed up for septic-system inspections in the Kelle's Creek watershed.

Mark Have
markhave@q.com

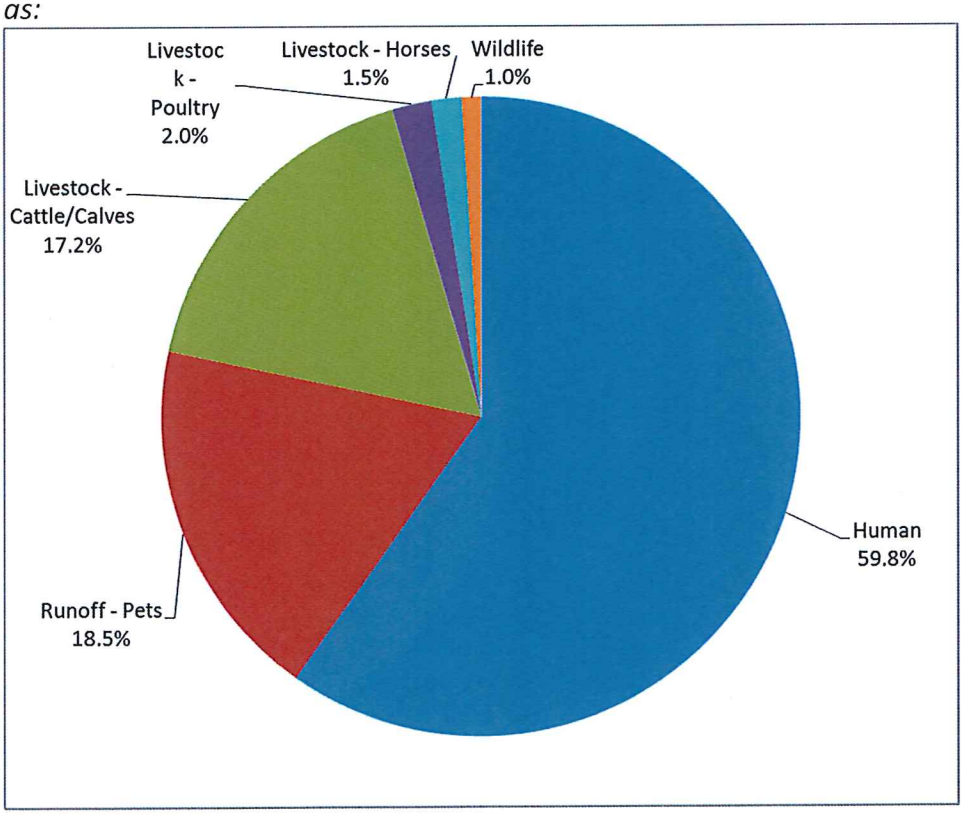
Information request for work session from Susan Winsor

Answers to these questions would be very helpful to have in writing at a work session scheduled for the Afton Natural Resource and Groundwater Committee, relating to the Afton City Council recommendation request:
The city council has asked the NRGC to make a recommendation on whether and possibly details of "how/when" to make residential septic system inspections mandatory in the Valley Branch Watershed district. The present program is entirely voluntary and has a cost-share component for septic-system upgrades.

In an effort to reduce reading stacks of reports, could as much as possible of this info be summarized in graphs to provide context?

*Could you provide a graph/visual of the relative contributions to Kelle's Creek contaminants that include the following substances? (Trying to get a handle on why septic systems are important to water quality):
*Human coliform contaminants
*Feedlot/livestock coliform contaminants
*Sediment/phosphorus
*Other categories of contaminants

Kelle's Creek is impaired for excessive bacteria. The MPCA has not listed it as impaired for other contaminants. The MPCA's Total Maximum Daily Load study estimated the bacteria loading to Kelle's Creek by the various bacteria sources in the watershed (during wet weather conditions) as:



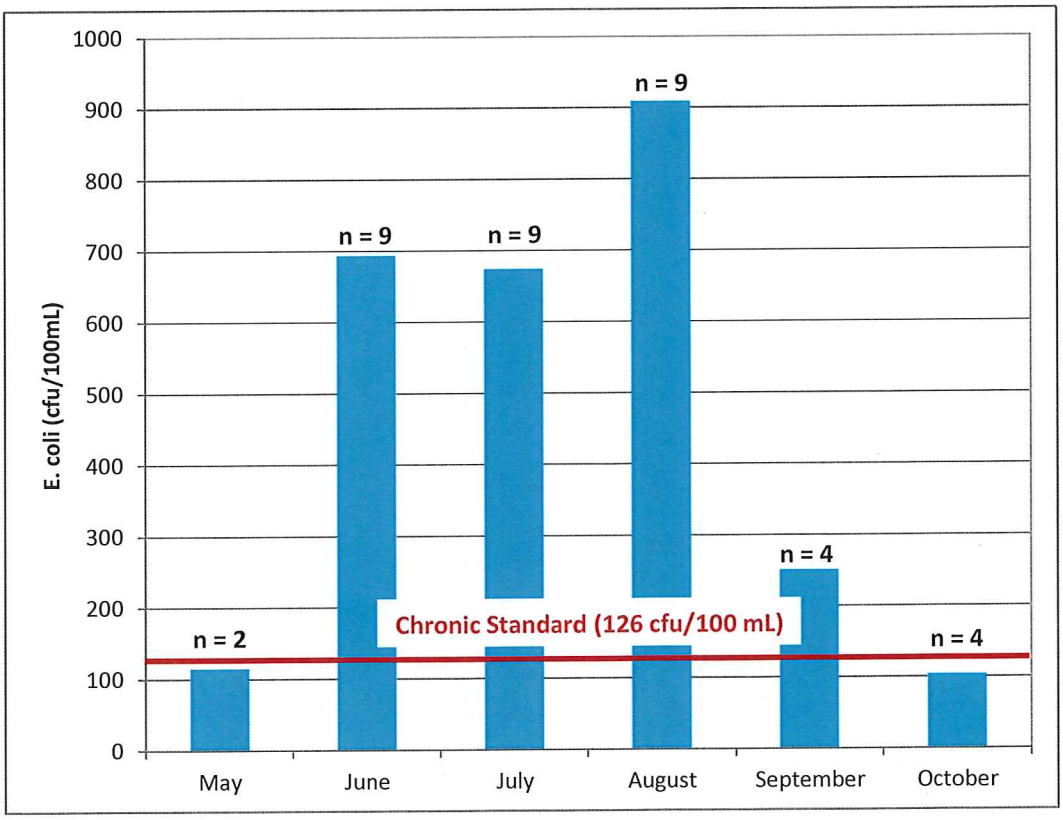
*Visual/graphic highlights of Kelle's Creek e coli or coliform study done by VB watershed. What are the data on these contaminants in local surface waters compared to other contaminants?

Comparing E. coli to other parameters (e.g., phosphorous, nitrogen, etc.) was not done in in the TMDL study because the contaminants are different, various sources produce different amounts of each contaminant, etc. The MPCA ordered the study because Kelle's Creek has excessive numbers bacteria.

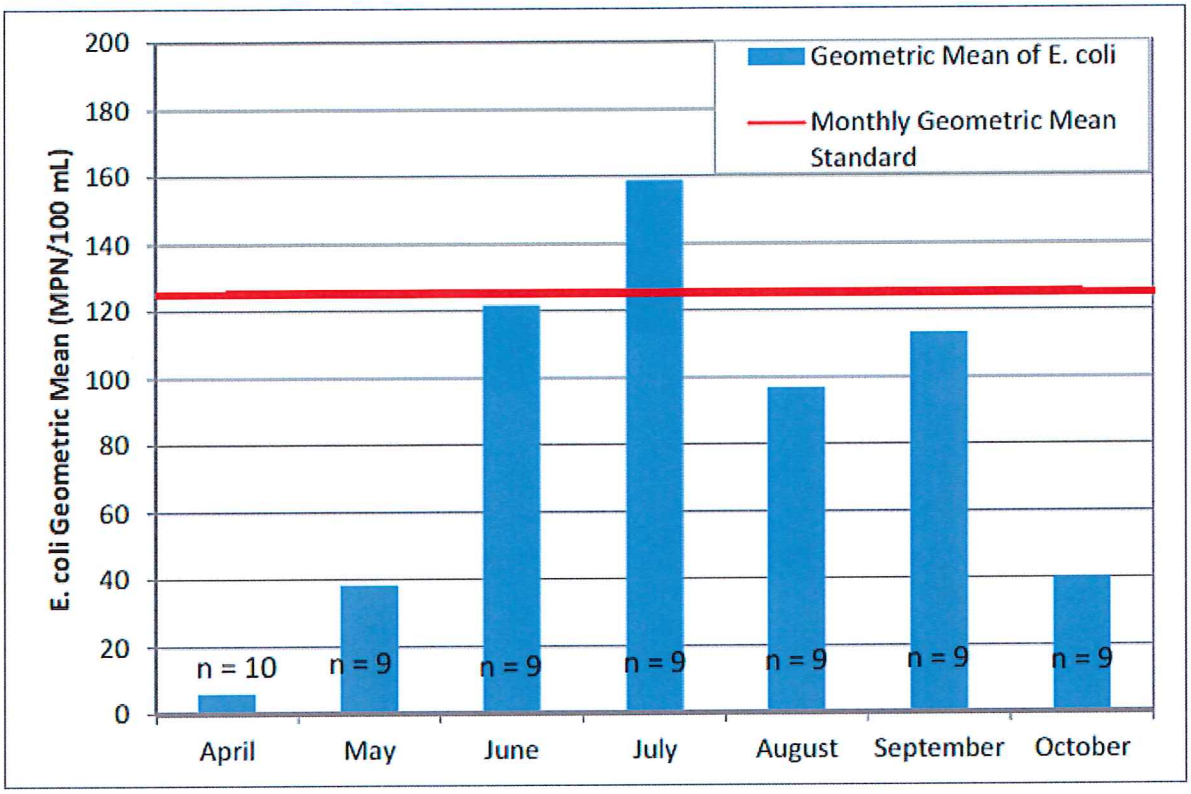
*Visual/graphic depiction of how coliform contaminants in Kelle's Creek, Valley Creek and St. Croix River compare to other contaminants. How big is this problem in these water bodies relative to other contaminants?

Again, it's not relevant to compare E. coli to other contaminants. The MPCA listed Kelle's Creek as impaired for excessive bacteria because it had monitoring data that shows it does not conform to the state water quality standards for bacteria. The MPCA either does not have sufficient data or the data is within standards for other contaminants. For Valley Creek, the MPCA did not have enough data to determine whether it meets the standards for bacteria. However, the VBWD has collected that would indicate Valley Creek might also be impaired for elevated bacteria levels; however, the bacteria levels are not as high as in Kelle's Creek.

Kelle's Creek monthly E. coli bacteria data:



Valley Creek monthly E. coli bacteria data:



Note: Includes all data collected in main branch of Valley Creek for years 2006–2015.

*What are the potential nitrogen and phosphorus and sediment savings projected by VBWD voluntary inspections compared to other things like rainwater gardens and other possible measures?

While the VBWD voluntary inspection and replacement program is focused on reducing the E. coli bacteria load to Kelle's Creek, replacing failing septic systems will also help protect groundwater and receiving surface waters from phosphorus and nitrogen. Based on a tool developed by the University of Minnesota extension, replacement of a residential septic system that isn't functioning properly could prevent 5 pounds/year of phosphorous and over 20 pounds/year of nitrogen from getting to Kelle's Creek (and ultimately Lake St. Croix). In comparison, rainwater gardens (depending on the runoff that drains to them) typically remove less than 1 pound/year of phosphorus.

*What are the highlights of the most recent Kelle's Creek water quality study presented within the last year?

Results of E. coli monitoring in 2015 continue to show impairments due to elevated bacteria levels.

*What percentage of Valley Branch watershed residents have volunteered, to date, to voluntarily have their septic systems inspected under the recent VBWD voluntary program? *10 of approximately 160 residents in the Kelle's Creek watershed have participated in the voluntary program.*

*What are the data for the past 15 years, on what percent of Washington County and Afton septic-system inspections that have failed/passed? Could you present this data also broken down by decade of residence construction?
County

*What is the range of septic system upgrade and replacement costs?
County

*What are the details of counties who HAVE made residential septic system inspections mandatory? What have been their provisos for inspection triggers?
County

*What can be learned from other municipality or county inspection programs that have more teeth?
County/Ron

*What percent of Washington County, MN, residential septic systems are sub standard? I heard a figure on the MPR and haven't been able to find it.
County

*What years of construction are most likely to have sub-standard residential septic systems?
County

*Could you forward media articles that would be helpful to read in an advance packet to our committee that summarizes relevant data to understand the magnitude of this problem and the of the potential to remediate it through a septic-system inspection program, be it voluntary or mandatory?
http://www.startribune.com/urgency-needed-on-problem-septic-systems-washington-county-says/208003391/

http://www.twincities.com/2014/06/27/septic-tanks-are-going-down-the-drain-in-lake-elmo-elsewhere-in-minnesota/

http://stillwatergazette.com/2014/12/10/failing-city-owned-septic-system-prevents-sale-of-lake-elmo-home/

http://www.mprnews.org/story/2016/05/23/water-rainy-lake-septic-sewer

*Is there data on what percent of property sales have had septic system information not properly disclosed, for whatever the reason? I hear a lot of anecdotal stories about failed septic systems that are discovered after a property closes.

County/Ron

*If Kelle's Creek is cleaned up through more stringent septic-system inspections....what if anything is being done to address the same contaminants in Valley Creek? Does it make sense to view this water-quality problem in a broader context?
No study has been conducted on Valley Creek to determine the likely sources of contamination. Given similar soils, bedrock, and land use conditions, septic systems are likely also a contributor to the bacteria levels in Valley Creek.

*What recommendations have been made by relevant county officials on septic system inspections and upgrades?
County

*What are the data for the past 15 years, on what percent of Washington County and Afton septic-system inspections that have failed/passed?

From 1996 to December 31, 2015 there were 2,073 compliance inspection reports submitted to Washington County. Of these 1,424 (69%) were compliant. For Afton, 95 out of 149 (64%) were compliant.

*Could you present this data also broken down by decade of residence construction?

SSTS Compliance Data for the City of Afton
Compliance Inspections from 1996 – December 31, 2015
Note: Systems with unknown installation years (i.e. the compliance inspector was unable to ascertain the year of installation) are either listed as "Unknown" or included in the listings for the years 1999 and 2000 (this is an artifact from a previous database that ascribed default data to null data fields). Therefore, compliance data for system installations attributed to 1999 or 2000 should be viewed in a similar way as the "Unknown" data.

Date System Installed	System Status
1/1/1945	Non-Compliant
1/1/1959	Compliant
1/1/1960	Non-Compliant
1/1/1962	Non-Compliant
1/1/1962	Non-Compliant
1/1/1965	Compliant
1/1/1965	Non-Compliant
1/1/1969	Non-Compliant
1/1/1970	Non-Compliant
1/1/1972	Non-Compliant
1/1/1973	Non-Compliant
1/1/1974	Compliant
1/1/1974	Compliant
1/1/1974	Non-Compliant
1/1/1975	Compliant
1/1/1976	Compliant
1/1/1976	Compliant
1/1/1976	Compliant
1/1/1977	Compliant
1/1/1977	Compliant
1/1/1977	Compliant
1/1/1977	Non-Compliant
1/1/1978	Compliant
1/1/1978	Compliant

1/1/1978	Compliant
7/31/1978	Non-Compliant
1/1/1979	Non-Compliant
1/1/1979	Non-Compliant
1/1/1979	Non-Compliant
1/1/1979	Non-Compliant
1/1/1980	Compliant
1/1/1980	Non-Compliant
1/1/1981	Non-Compliant
1/1/1983	Compliant
1/1/1983	Compliant
8/31/1983	Non-Compliant
9/12/1983	Compliant
1/1/1984	Compliant
1/1/1984	Non-Compliant
1/1/1986	Compliant
1/1/1986	Compliant
1/1/1987	Compliant
1/1/1987	Compliant
1/1/1987	Compliant
5/1/1987	Non-Compliant
12/9/1987	Non-Compliant
12/28/1987	Non-Compliant
1/1/1988	Compliant
1/1/1988	Compliant
1/1/1988	Compliant
10/10/1988	Compliant
1/1/1989	Compliant
1/1/1989	Compliant
1/1/1989	Compliant
1/1/1990	Compliant
7/13/1990	Compliant
1/1/1991	Compliant
11/27/1991	Compliant
1/1/1992	Compliant
1/1/1992	Compliant
1/1/1992	Non-Compliant
1/1/1993	Compliant
1/1/1994	Compliant
1/1/1994	Compliant
1/1/1994	Compliant

5/6/1994	Compliant
1/1/1995	Compliant
1/1/1995	Compliant
1/1/1995	Compliant
1/1/1995	Compliant
4/12/1995	Compliant
1/1/1996	Compliant
1/1/1996	Compliant
1/1/1996	Compliant
1/1/1996	Compliant
1/1/1996	Compliant
9/12/1996	Compliant
9/12/1996	Non-Compliant
1/1/1997	Compliant
1/1/1997	Compliant
1/28/1997	Non-Compliant
1/1/1998	Compliant
1/1/1998	Compliant
1/1/1999	Compliant
1/1/1999	Compliant
1/1/1999	Compliant
1/1/1999	Compliant
1/1/1999	Compliant
1/1/1999	Compliant
1/1/1999	Compliant
1/1/1999	Non-Compliant
1/1/1999	Non-Compliant
1/1/1999	Non-Compliant
1/1/1999	Non-Compliant
1/1/1999	Non-Compliant
1/1/1999	Non-Compliant
1/1/2000	Compliant
1/1/2000	Compliant
1/1/2000	Non-Compliant
1/1/2000	Non-Compliant
1/1/2000	Non-Compliant
1/1/2001	Compliant
1/1/2001	Compliant
1/1/2001	Non-Compliant
1/1/2002	Compliant
1/1/2002	Compliant

1/1/2002	Non-Compliant
1/1/2004	Compliant
1/1/2004	Compliant
1/1/2004	Compliant
6/20/2005	Compliant
10/1/2005	Compliant
1/1/2006	Compliant
11/2/2006	Non-Compliant
1/1/2007	Compliant
1/1/2008	Compliant
2/2/2011	Non-Compliant
8/29/2011	Non-Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Non-Compliant
Unknown	Non-Compliant
Unknown	Non-Compliant
Unknown	Non-Compliant
Unknown	Non-Compliant
Unknown	Compliant
Unknown	Compliant
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Unknown	Non-Compliant
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Unknown	Non-Compliant
Unknown	Non-Compliant
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Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant
Unknown	Compliant

Unknown	Non-Compliant
Unknown	Compliant

*What is the range of septic system upgrade and replacement costs?

Septic system replacement costs generally correlate with system size and complexity (i.e. larger more complex systems cost more). Three or four bedroom homes typically run $14k - $20k. Upgrade costs range from several hundred up to the cost for a new system, depending on the work involved.

*What are the details of counties who HAVE made residential septic system inspections mandatory? What have been their provisos for inspection triggers?

Appendix A of the most recent SSTS Annual Report produced by the Minnesota Pollution Control Agency indicates which counties have property transfer compliance triggers.

*What percent of Washington County, MN, residential septic systems are sub standard? I heard a figure on the MPR and haven't been able to find it.

This is difficult question to answer with any precision because we have a limited sample size and a wide array of variables. What can be ascertained is the compliance rate for those systems which receive compliance inspections – which is 69%.

*What years of construction are most likely to have sub-standard residential septic systems?

In general, older systems have higher rates of non-compliance.

*Is there data on what percent of property sales have had septic system information not properly disclosed, for whatever the reason? I hear a lot of anecdotal stories about failed septic systems that are discovered after a property closes.

In 2014, there were 985 properties with septic systems sold (or otherwise transferred to another party). Of these properties, 619 (63%) did not have a compliance inspection performed. In Afton 37 properties, out of 67 sold, did not have a compliance inspection performed (55%).

*What recommendations have been made by relevant county officials on septic system inspections and upgrades?

On April 28, 2015 the Washington County Board of Commissioners adopted Ordinance #196 which establishes the minimum standards for septic systems in Washington County. The Ordinance establishes when septic systems must receive compliance inspections and the timelines to remedy non-compliant systems.

Chapter 9 of the 2014-2024 Washington County Groundwater Plan establishes policy directives for the county as well as provides a number of implementation strategies to prevent groundwater contamination from failing septic systems.