Carver County Board of Commissioners
September 18, 2007
County Board Room
Carver County Government Center
Human Services Building
Chaska, Minnesota

PLEASE NOTE TIME CHANGE FOR THIS WORK SESSION

County Board Work Session Agenda

David Hemze
County Administrator

CARVER COUNTY

REQUEST FOR BOARD ACTION

AGENDA ITEM : **Public Works Topics**

Originating Division: Public Works | Meeting Date: September 18, 2007

Amount of Time Requested: 20 minutes | Attachments for packet: ☐Yes ☒ No

Item Type: ☐Consent ☐Regular Session ☐Closed Session ☒Work Session ☐Ditch/Rail Authority

BACKGROUND/EXPLANATION OF AGENDA ITEM:

❖ **Transportation**

20 Minutes

➢ Old TH 212 Wayside Rest (Little Rapids Fur Post Marker)
- Preservation / Restoration

ACTION REQUESTED:

No action is requested.

FUNDING

County Dollars = $

Other Sources & Amounts = = $

TOTAL = $

Related Financial Comments:

FISCAL IMPACT

☐*None*
☐*Included in current budget*
☐*Budget amendment requested*
☐*Other:*

☒Reviewed by Division Director RMG **Date:** September 13, 2007

CARVER COUNTY

REQUEST FOR BOARD ACTION

AGENDA ITEM **: Discussion of Curtain Drain Issues**

Originating Division: Land Water Services

Meeting Date: 9/18/07

Amount of Time Requested: 45 minutes

Attachments for packet: ☒Yes ☐ No

Item Type: ☐Consent ☐Regular Session ☐Closed Session ☒Work Session ☐Ditch/Rail Authority

BACKGROUND/EXPLANATION OF AGENDA ITEM: Over the past 18 months a number of issues have arisen associated with "curtain drain" septic systems. The purposes of the workshop are: to provide the Board with a history of curtain drains – how did we get to where we are; facts and statistics about curtain drains and the ISTS program; discussion of issues that have been raised; an assessment of the current situation; identification of potential courses of action for consideration by the Board. The attached documents expand on these topics.

ACTION REQUESTED: Direction to staff regarding the curtain drain program

FUNDING

County Dollars = $

Other Sources & Amounts =

= $

TOTAL = $

Related Financial Comments:

FISCAL IMPACT

☐*None*

☐*Included in current budget*

☐*Budget amendment requested*

☐*Other:*

☒**Reviewed by Division Director**

Date: 7 Sept 2007

Land & Water Services Division
Carver County Government Center
600 East 4th Street
Chaska, Minnesota
(952) 361-1820 fax (952) 361-1828

Date: 12 September 2007

To: Carver County Board

From: LWS Staff

Subject: Curtain Drain Individual Sewage Treatment Systems (ISTS)

For about the past 18 months Curtain Drain ISTS have been an item of discussion and controversy both in the Board Room and other venues. The LWS staff would like to take this opportunity to present a comprehensive look at Curtain Drains. In order to do this we will present basic information on how ISTS and a Curtain Drain systems work; how Carver County came to have a much higher number of these systems than surrounding counties, and a chronology of the ISTS program in Carver County. This information will be presented at the workshop in PowerPoint format.

Additionally, questions and misconceptions have arisen during the on-going curtain drain discussion. The following is a discussion that should clear up some of these:

Misconception - CURTAIN DRAINS WERE NEVER LEGAL AND ARE NOT MENTIONED IN ANY PCA RULES.

Fact – CURTAIN DRAIN TECHNOLOGY HAS BEEN ADDRESSED IN PCA RULES, MANUALS, AND EDUCATIONAL MATERIALS FOR MANY YEARS

One can search both old and new PCA Rules regarding ISTS and not find the term "curtain drain". The Minnesota Code of Agency Rules (MCAR) and the subsequent 7080 Rules discuss the use of agricultural drain tile around a system to lower a high or fluctuating groundwater level. Moreover, Mike Lein's presentation demonstrated curtain drain technology is addressed in MPCA documents. For example, the current design manual and educational materials includes an illustration of a "curtain drain". Additionally it must be noted that the current rules limit the use of curtain drains to a very limited, special set of circumstances. They would be classified as a "Performance System" which requires monitoring and maintenance. This type of system would now be permitted only under exceptional circumstances. in Carver County. The term "curtain drain" was an industry term used to describe the use of agricultural drain tile to lower a high water table.

Misconception - CURTAIN DRAINS ARE A MAJOR SOURCE OF FECAL COLIFORM IN LAKES AND STREAMS AND ARE A SIGNIFICANT FACTOR IN THE FECAL TMDL

Fact – CURTAIN DRAINS ARE NOT A SIGNIFICANT CONTRIBUTOR TO FECAL COLIFORM LEVELS ADDRESSED IN THE BEVENS/CARVER FECAL TMDL – DIRECT DISCHARGE SYSTEMS HOWEVER ARE.

Comments have been made and questions asked regarding curtain drains and the levels of

fecal coliform in waters which are part of the TMDL studies. The TMDL studies identify septic systems that have a direct discharge - either from the tank or directly from the home – into a road ditch, drainage ditch, tile line or other direct connection to surface water as one of the principal sources of fecal coliform contamination. While a curtain drain system that has less than the required separation from the groundwater may not be adequately treating sewage, it is typically not a direct contributor to the fecal coliform levels in surface water. If a curtain drain, or any other system for that matter, is discovered through a Compliance Inspection or other means, to be directly discharging to surface water it would be an imminent public health threat and would need to be replaced within 10 months. It would not be placed in the monitoring program.

Misconception - SEPTIC SYSTEMS WILL LAST FOREVER

Fact – SEPTIC SYSTEMS HAVE A LIMITED LIFE SPAN; 20 YEARS IS COMMONLY REFERRED TO AS A REASONABLE SERVICE LIFE EXPECTANCY. THE USEFUL LIFE OF A SYSTEM IS DEPENDENT UPON MANY FACTORS; A MAJOR FACTOR IS HOW THE PROPERTY OWNER MAINTAINS & MANAGES THE SYSTEM

A septic system has a limited life expectancy depending on how it is designed, installed, and operated after installation. The homeowner must properly maintain the system (periodic pumping), and avoid doing things that will damage the system There is a very long list of things not to do, here are some examples: DO NOT: add septic system boosters; park on the drainfield; install a garbage disposal; substantially increase water use; let trees or shrubs grow on the drainfield; fail to remove solids from the tank; dispose of toxic chemicals in the septic system, divert surface water to the drainfield site. Literature cites 20 years as a reasonable life expectancy of a system – the life can be longer or shorter depending on how the system is managed and used (or abused).

Question - SOMEONE BUYS A HOUSE WITH A CURTAIN DRAIN A FEW YEARS AGO, IT WAS PASSED BY THE COUNTY, NOW THAT SAME OWNER WANTS TO SELL IT AND IT IS FAILED BY THE COUNTY. HOW CAN THAT HAPPEN?

It is important understand how the inspection process works. The only time the County approves a system is when a system is being installed or repaired under a construction permit issued by the County or when a system has been entered in the curtain drain monitoring program as a result of a Compliance Inspection conducted by a licensed private sector inspector. In this instance, the County will approve or fail the system based on the results of the monitoring. The County may also make a decision where there is a difference in the determination of seasonal high water table used in the compliance inspections by 2 separate private inspectors conflicts – one shows adequate separation the other does not. Properly accredited County staff may review the soils and make a determination breaking the tie. The County does not get involved in other aspects of the Compliance Inspection. All other Compliance Inspections and related decisions are made by licensed private inspectors, <u>not</u> the County.

When an existing system is entered into the monitoring program, it is monitored for up to 3 years. If adequate separation is not met in any of the years the system is failed. The system could pass in the first 2 years of monitoring and fail during the third or a system could also meet the standard for all 3 years of one monitoring period and fail during a subsequent monitoring period. Wet/dry cycles are typically longer than 3 years, the first monitoring cycle could have been during a dry cycle and the second during a period of groundwater levels that would cause the system to not meet the standard. Other factors

may have affected the system between the first Compliance Inspection and the second. The system could have been improperly managed and maintained or simply worn out - reached the end of its service life.

Misconception - AN INSPECTION BY THE COUNTY IS A "GUARANTEE " THAT THE SYSTEM IS FREE FROM ALL DEFECTS AND WILL WORK FOREVER.

Fact - THE INSPECTION PROCESS PROVIDES SOME COUNTY OVERSIGHT TO THE INSTALLATION PROCESS, THE INSPECTOR IS NOT ON SITE THROUGHOUT THE PROCESS. THE COUNTY INSPECTION IS NOT A GUARANTEE. THE INSTALLER IS ULTIMATELY RESPONSIBLE FOR THE PROPER INSTALLATION OF THE SYSTEM.

The inspection protocol during the "curtain drain" period called for an inspection early in the process and another final inspection toward the end of the process. The inspector is not on the site to oversee the entire installation process; the inspector tries to be there at key points in the process. The inspector could only report on what could be seen at the time of the inspection. For example, the inspector might visit the site during the time of final construction of the trenches & installation of the rock & pipe, will inspect these items, and rely on the installer to properly install the curtain drain. The inspector makes the determination based on what is seen at the time of the inspection. Ultimately it is the responsibility of the installer to properly install the system. If circumstances indicate a major change in design is necessary, it is the responsibility of the installer to coordinate with the designer and owner to develop revised plans and to submit them to the permitting agency for approval.

The current process of design approval and installation inspection is much more extensive and in-depth today than during the "curtain drain" period.

Other factors to keep in mind:

- Discussions with legal counsel indicate the County is not liable for the actions or mistakes of an installer.
- All on-site treatment systems have a limited life span. They cannot be expected to last forever – 20 years is a reasonable expectation of life span assuming proper design, installation, and management. Curtain drains have been in use for 12- 25 years so they have been in use at least half if not all of their service life.

Current Situation

SYSTEM & PERMIT INFORMATION

# of ISTS – approximately 4,150; (does not include about 380 in Chanhassen which has its own program)

# of permits since 1985 – 2,742 - 66% of the systems have had a permit of some sort since 1985

# of permits since 1996 – 1,857 - 45% have had a permit since 1996

COMPLIANCE INSPECTION INFORMATION

# of Compliance Inspections Since Inception of Program 1996 – 1,168

systems issued Certificate of Compliance (Passed) 803 (69%)

systems issued Notification of non-Compliance (Failed) 307 (26%)

58 systems 5% - exempt, in monitoring, pending, other

The ratio of Passing systems to Failing is about 3 to 1

CURTAIN DRAIN INFORMATION

Estimated # of curtain drains 200-300

CD's as a percentage of the total # of systems - 4.8% - 7.2% of the total systems

# of Curtain drains that have been enrolled in the monitoring program – 65

Four systems that were designed as curtain drains were found to meet the required separation during a Compliance Inspection without the influence of a curtain drain. These systems are then considered standard systems and are no longer classified as curtain drains.

# of systems that were monitored at least once – 31

# of systems that were monitored and passed – 23 - **74%**

# of systems that were monitored and failed – 8 - 26%

74% of Curtain Drain systems pass the monitoring and have the required separation

For every failing curtain drain system, 3 curtain drain systems pass, a 3 to 1 Pass/Fail ratio.

As noted in other documents a number of systems moved through the monitoring program without actual monitoring and were issued Certificates of Compliance. Of these 17 systems, 4 property owners replaced their systems for reasons unknown to the Department.

There are currently 11 systems in the program monitoring program; 2 of these systems are repeats- they passed at some earlier time but an event occurred which triggered a Compliance Inspection which caused them to re-enter the program.

Assessment of Current Situation:

While curtain drains systems have been controversial and the subject of much discussion, in actuality direct discharge systems are a much more significant source of water contamination. The results of the monitoring program show a majority have passed and meet the separation requirements. While there are issues surrounding curtain drains, the situation does not rise to the level of a crisis.

In the 1980's the Board approved the widespread use of curtain drain technology to address what was at the time a significant issue. Curtain drains provided what appeared to be a viable alternative to mound systems in some areas of high seasonal water table. This decision has had unintended consequences. However, their decision was in response to the information and circumstances of the time and did not have the benefit of 15-25 years of

hindsight,.

In 1998, the Board, in response to major changes in the program at the State level, initiated the current curtain drain monitoring system. There have been some operational changes in the program, but essentially the program establishes a 3 year monitoring period for curtain drain systems that are otherwise meet the requirements for issuance of a Certificate of Compliance. Final issuance of a Certificate of Compliance or Notification of Non-Compliance is dependent upon the outcome of the monitoring.

Options

Three options are immediately available to the Board:

1. Classify all curtain drains as non-conforming and require replacement at such time as a compliance inspection is required. Systems that can meet the required separation without the curtain drain would not be affected. This action would require the replacement of a significant number of systems that are have been monitored and meet the separation requirement and are functioning properly.

2. Classify all curtain drains as conforming with the separation requirements – this action does not recognize the fact that a significant number of systems do not meet the separation requirements. This option would likely not be acceptable to the MPCA.

3. Continue the current monitoring program in some form. There are some possible modifications that could be made to the current system:

The following is a basic description of the operation of the current system:

A. System meets required separation based on current soil borings – remove "Curtain Drain" – designation - no further action – CoC issued

B. Does not meet separation – goers into monitoring program

C. Monitoring is successfully completed – Certificate of Compliance is issued

Option to consider – separation is met – any future compliance inspections to recognize separation distance has been met. This would alleviate any need for monitoring in the future.

D. Monitoring indicates failure – Notification of Non-Compliance is issued; system must be upgraded in 3 years.

Within the context of Option 3. (the current program) an alternative might be to offer entry into the monitoring program free of charge for a time window such as 2 years. Thus a resident would save $300 in monitoring fees and know the status of their system. However, they would have to replace the system if it failed the monitoring. It must be noted that because curtain drains were classified and recorded in permit records as standard systems until about 1991, staff would need to individually check all septic permit records to identify curtain drains during this period to ensure everyone possible is notified of the opportunity. Given the ambiguity of some of the early records, even this effort may not identify all curtain drains.

This alternative would have staff resource and financial impacts:

The current cost for one systems in the monitoring program - $300 to contractor to install the system; 5 hours of staff time over the 3 year monitoring period @ $40/hour (current cost recovery rate in the fee schedule) - $200; total of $500. Currently a participant pays a $300 fee; the County carries $200 of the total cost.

Assuming 200 of the estimated 300 systems participate (65 are in or have already been through the system) the total cost would be $100,000. Currently the property owner fee would cover $60,000. If the fee were removed the total cost to the County would be $100,000 as opposed to $40,000.

Other options could include modifying the current low interest loan program to provide a longer term [currently 4-5 years], lowering the interest rate [currently 1.5%] or waiving permit and application fees [ISTS Permit for mound is $400], waiving fees for loan program [$300].

The financial impact to this potion would depend upon a variety of variables – to calculate the maximum impact in the shortest period of time the following assumptions are made: the option above is implemented and based on the 3 to 1 pass/fail ratio, 50 systems require replacement, and they all require a mound; cost of the replacement system is relatively close to a new system (some of the original components may be retained).

Waive the permit application fee – 50 systems x $400 permit fee = $20,000

Waive the loan processing fee (CDA reimbursement would still be required) - $15,000

Reduce interest to 0% - approximately $500 per system - $25,000.

The cost analyses above do not include things like mileage, other internal costs such as clerical, attorney, risk management, etc, nor do they reflect the impact on existing staffing level and other programs.

OTHER ALTERNATIVES - The staff has not attempted to anticipate and/or explore all possible courses of action the Board could take. Based on this memo and other information that may be provided during the workshop, the Board may choose to further explore additional alternatives to address this issue. The staff is requesting that the Board provide direction to the staff as to alternatives the staff should investigate. Consideration of other alternatives should include a financial impact analysis.