

# GROUNDWATER PROTECTION ORDINANCE SUBCOMMITTEE

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Subcommittee of the Groundwater Citizens Advisory Committee

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## NOTICE OF MEETING

**THURSDAY, AUGUST 31<sup>st</sup>, 2017 AT 7:00 P.M.**  
Conference Rooms 1 & 2, County Annex  
1462 Strongs Avenue, Stevens Point, Wisconsin

## AGENDA

1. Call to Order
2. Review/Approval of Minutes from August 3, 2017
3. Discussion/Possible Action on Summary Report
4. Discussion/Possible Action on outcome for the proposed ordinance
5. Adjournment

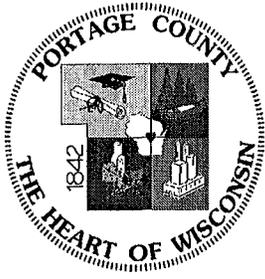
**Notice:** A quorum of the Portage County Board of Supervisors or any committee thereof may be present at this meeting.

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Any person who has special needs, and plans on attending this meeting, should contact the Planning and Zoning Department as soon as possible to ensure that reasonable accommodations can be made.

Telephone 715-346-1334

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# PLANNING AND ZONING DEPARTMENT

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To: Groundwater Protection Ordinance Subcommittee  
From: Jen McNelly, Water Resource Specialist  
Date: August 24, 2017  
Re.: August 31, 2017 Subcommittee Meeting

The Groundwater Protection Ordinance Subcommittee will hold a meeting on Thursday, August 31, 2017 at 7 pm. in Conference Rooms 1 and 2 of the Portage County Annex Building.

In this packet you will find a copy of the minutes from the August 3, 2017 meeting. These minutes will need to be approved as a first order of business.

The primary purpose of this meeting is for the subcommittee members to have time to discuss the proposed ordinance, groundwater issues, and possible actions. At the request of the subcommittee and in order to help facilitate this discussion, a summary report of the subcommittee minutes and discussion was created. The subcommittee will have the opportunity to review and discuss this summary report during the meeting. If they find that it is lacking anything, they will be able to share these requests with staff.

The subcommittee will spend the remainder of the meeting discussing the proposed ordinance and possible next steps.

It is important to note that this is a meeting being held in the public. While the public is welcome to attend and listen to what is discussed at the meeting, any public comment will be at the discretion of the chair.

We look forward to meeting with all of you at the meeting on the 31<sup>st</sup>. If you are unable to attend please notify Amy Heins, Administrative Associate in the Planning and Zoning Office, as soon as you are able to. Her contact information is: 715-346-1334 or [heinsa@co.portage.wi.us](mailto:heinsa@co.portage.wi.us). If you have any other questions or concerns you can contact Jen McNelly at 715-346-1334 or [mcnellyj@co.portage.wi.us](mailto:mcnellyj@co.portage.wi.us).

GROUNDWATER PROTECTION ORDINANCE SUBCOMMITTEE  
AUGUST 3, 2017

MEETING MINUTES

**Roll Call**

Members present: McFarlane, Jakubek, E. Burns, Garth, and Droske. Absent: Mangin  
Staff present: McNelly, Heins, Schuler, and Bradley, Planning & Zoning Department.

**Others Present**

Matt Hintz, Tom Jenner, Don Lutz, Anne Abbott, Pete Arntsen, Jenny Larsen, Jim McKnight, Susan Tupper, Todd Knepfel, Pat Martin, Nancy Turyk, Nathan Sandwick – UW Extension, Ken Schroeder – UW Extension, Patty Dreier – Portage County Executive, Matt Jacowski – Portage County District 22, Bob Gifford – Portage County District 10, Barry Jacowski – Portage County District 23, Gerry Zastrow – Portage County District 24, Larry Raikowski – Portage County District 18, and Dale O'Brien – Portage County District 19.

**1. CALL TO ORDER**

The meeting was called to order at 7:01 p.m. by E. Burns.

**2. REVIEW/APPROVAL OF MINUTES FROM MAY 30, 2017 AND JUNE 29, 2017**

Droske moved to approve both sets of minutes as presented; seconded by McFarlane. Motion passed by voice vote, 4-0.

\*\* 7:03 p.m. Jakubek arrived.

**3. DISCUSSION, OBSERVATIONS, QUESTIONS, AND ANSWERS CONCERNING PACKET MATERIALS**

McNelly gave a brief overview on packet materials. McNelly stated Kevin Masarik wanted everyone to know that when discussing monitoring you have to be very specific about what you are looking for, and what it is meant to accomplish. Monitoring can be very costly and time intensive for the entity that is putting it in place, and he wants thought and effort put into developing that. This includes knowing how you are going to use the data that you are getting for any monitoring program you put in place. McNelly stated Masarik felt the countywide drinking water sampling is a great project and will be beneficial in gauging the overall drinking water quality in the County. McNelly also stated that Masarik felt that one instance where monitoring on a field scale might be useful is when there is a significant land use change. Masarik is willing to come in and speak to members and audience should they have more questions.

McFarlane asked Bradley the percentage of farmers he has trained in nutrient management. Bradley replied approximately 1/3 of the 188,000 acres in the County.

**4. DISCUSSION ON THE MERITS OF THE PROPOSED ORDINANCE**

Sandwick asked members and audience for positive feedback on the ordinance. The following was noted:

- Moving in a positive direction
- Recognizes there are multiple perspectives to consider
- Way to enforce the Groundwater Management Plan
- We need more than education
- Groundwater Management Plan started the conversation which prompted the creation of the Subcommittee
- Doing nothing is not an option, something needs to be done
- Great discussions, things are moving forward, and glad we are looking into an Agronomist
- In 2017 EPA drinking standards changed

**5. DISCUSSION AND REFLECTION ON THE VALUE OF DELIBERATION ABOUT THE ORDINANCE TO DATE**

Sandwick stated participation is important and helpful, and asked if anyone has anything to add about how this conversation has been helpful in any way. The following was noted:

- We all want to come together with a solution to address these issues
- There has been good education from both members and audience
- Members haven't had a chance to discuss amongst each other as they have been mostly listening
- Good discussion, and wish we had more time to research, but it has been challenging since members have not been able to discuss with one another
- Important to discuss old ordinances and why they are not being enforced
- Learned each other's language more

**6. DISCUSSION/POSSIBLE ACTION ON THE RECOMMENDATION OF SPECIFIC CONCERNS FOR CONSIDERATION BY GCAC OR OTHER ENTITIES**

Sandwick asked what other committees or entities may have a role to play in this. The following was noted:

- Health and Human Services Board
- Land & Water Conservation Committee
- Planning & Zoning Committee
- Agriculture and Extension Education Committee
- County Board

Abbott stated one action step in the Groundwater Management Plan is to review existing ordinances which is good for this small committee to discuss. E. Burns asked if we would need a new subcommittee to do that. Sandwick asked Schuler to clarify what other jurisdictions matter. Schuler referenced 7.1 of the Zoning Ordinance, and stated we keep a list of problems we find or issues that arise based on citizen or committee feedback and we also look at new legislation that comes through. We then share our potential changes with the P&Z committee for approval to proceed with a new draft ordinance, it is then shared with all municipalities for their input, brought back to the committee for public hearing, and committee review/approval. Schuler stated we need to figure out how to best use GCAC to review and forward things onto governing committees. Dreier stated GCAC needs to keep broad concepts with main points and let staff draft changes and bring back to them before recommending to governing committees.

Sandwick asked what input would be best for staff. Schuler replied as of tonight for this Subcommittee, we need to draft a general summary report for GCAC to review in order to move forward with changes to ordinances. Droske stated the citizen involvement is inspiring, and stated he was under the impression members are there to say "yes or no" to the ordinance. Schuler went over the following 5 points of the Subcommittee:

- Identify threats to groundwater resources and public health from current land use, water, and waste management practices in Portage County;
- Review current County ordinances to determine if they are addressing identified threats;
- Draft recommendations for addressing identified threats to groundwater resources and public health, which may include creation of a groundwater protection ordinance;
- Determine statutory authority for recommendations;
- Maintain constant communication with GCAC, including a written report to the GCAC Committee that will be distributed with the meeting packet.

Lutz stated in order to put an ordinance in place, you need to exert power from people within the industry. Sandwick replied yes, their input is important.

**7. DISCUSSION ON THE EXPECTATIONS FOR THE SUBCOMMITTEE AND DEFINITIONS OF "SUCCESS"**

E. Burns asked if a vote is needed. McNelly replied members need to make recommendations on how to proceed. Droske stated he is impressed with all of the citizen participation, but members have not have had a lot of time to discuss amongst each other. McNelly stated there has been so much conversation that we kind of lost our way, and we need to sort through all if the information that has been discussed. McFarlane stated we have touched base on all 5 points of the charter, we are just missing the written report to GCAC.

McKnight stated the subcommittee has done a great job, but he is disappointed in other aspects of County government, especially since the Groundwater Management Plan had been in the works for many years. Schuler replied he is unaware if other committees discussed groundwater in regards to their ordinances or not. Schuler stated what we need to do today is ask ourselves if this ordinance takes into account the information in the Groundwater Management Plan, and the desire to have more concrete answers or steps taken towards improvement. Arntsen suggested referring to it as "an" ordinance, not "the/this" ordinance. Abbott stated there are a lot of ordinances and fees that have not been updated in years. We have to think of ways to move this forward.

Sandwick provided notecards and asked everyone to provide comments/feedback/concerns.

**8. PRESENTATION: KEY FEATURES OF COMMUNITY ENGAGED GOVERNANCE; POTENTIAL NEXT STEPS**

Sandwick provided a "Model of Effective Community Governance" handout. (Handout on file)

Tupper stated we need to look at all current County ordinances; none address nitrates. McNelly replied the intentions of protecting groundwater quality is there, but is kind of buried in the ordinance. McNelly stated 2 acre minimums protect water quality, in the Wellhead Protection Ordinance we limit land uses within contributing areas to protect municipal water supplies, manure storage does not allow someone to dig a hole and fill with manure;

certain criteria has to be met to help prevent issues. Arntsen stated he did cover a few of these in his presentation; there is language out there that addresses small portions of groundwater, but we need more. Schuler stated we need to find a way to summarize what the County is doing and educate. Sandwick stated there are two alternatives moving forward; 2 month itinerary which would be looking at how best to wrap up the initial charge of this subcommittee, or a 6 month itinerary.

Larsen stated there is another GCAC subcommittee that she has not heard anything about, and that is the Continual Assessment Subcommittee, and suggested the discussions regarding other ordinances should go through that subcommittee.

**9. DISCUSSION/POSSIBLE ACTION ON NEXT STEPS**

E. Burns suggested we look into the existing ordinances. Schuler suggested having staff draft the summary report which talks about the conversations we have had in this subcommittee. Schuler stated we need to get these issues to County committees so they can work on addressing them. This may not be "the" ordinance to vote on, but it is a good compilation of good information and points to be considered. McKnight stated we need to draft recommendations for addressing identified threats to groundwater; writing a summary report is not good enough. Schuler asked McKnight to hold off judgment on the report until it has been drafted and brought back.

E. Burns suggested to use the proposed ordinance as a tool to judge the existing ordinances when we review them. Droske suggested the subcommittee recommends to GCAC an ordinance regarding groundwater quality in Portage County be considered, and that GCAC should consider the following: the proposed ordinance as well as existing ordinances. Sandwick suggested listing the concerns from the ordinance. Sandwick stated two possible steps are: look at research to know what current kinds of assessments are done already, and basic goal clarifications. Abbott suggested to give feedback not start over, and use it to compare other ordinances to.

Jakubek asked how we go about having a sit down to talk with fellow members without interruptions. Dreier suggested having a discussion with audience observation and possible debrief at the end; that way there will be no interruptions, and you will still have minutes.

Droske motioned the Groundwater Protection Ordinance Subcommittee recommends to GCAC an ordinance regarding groundwater quality in Portage County be considered, and towards the end, GCAC consider the following: the proposed ordinance, existing ordinances, and the Groundwater Management Plan. Motion was seconded by McFarlane. Sandwick asked if this meant everything would be back in GCAC's court. Droske replied yes, and they can decide how to proceed and if new subcommittees would be necessary. Subcommittee members agreed. Frost suggested having one more subcommittee meeting to discuss the 35 recommendations and 23 page annex that reference State statutes and codes amongst fellow members. Schuler stated that is why he suggested seeing the summary report before moving forward.

Members agreed to postpone the motion until the next meeting.

- **OUTLINE A COLLABORATIVE APPROACH TO ESTABLISH MEASUREABLE AND ACHIEVABLE GOALS, DISCOVER AND EXPLORE EFFECTIVE SOLUTIONS, AND PURSUE A SET OF SOLUTIONS TO ACHIEVE RESULTS** \*\* No Formal Discussion. \*\*

**10. IDENTIFY HOW GCAC MAY SUPPORT PROPOSED NEXT STEPS**

\*\* No formal discussion.

**11. DISCUSSION/POSSIBLE ACTION ON OUTCOME FOR THE PROPOSED ORDINANCE**

\*\* No formal discussion.

**12. ADJOURNMENT**

Subcommittee members agreed the next meeting will take place on August 31, 2017 at 7:00 p.m., location to be determined. At said meeting they will discuss the meeting summary, ordinance recommendation, and postponed motion.

Jakubek moved to adjourn the meeting; seconded by McFarlane. Meeting adjourned at 9:24 p.m.

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Amy Heins, Recording Secretary

\_\_\_\_\_  
Ed Burns, Chair

\_\_\_\_\_  
Date

# Summary Report

## Committee Background

This report is meant to summarize all of the information that has been discussed to date by the limited term Public Health and Groundwater Protection Ordinance Subcommittee (the subcommittee) in relation to proposed Public Health and Groundwater Protection Ordinance.

The Portage County Groundwater Citizens Advisory Committee voted to form the subcommittee on January 19, 2017. At the same time the subcommittee was formed the following subcommittee charter was discussed and voted on.

### **SUBCOMMITTEE CHARTER 1-19-2017**

*“Section 3.2 Subcommittees. GCAC may appoint subcommittees made up of Committee members, and shall designate the Chair of such subcommittee”.* Groundwater Citizen Advisory Committee By-Laws adopted 12-17-2015

The Groundwater Citizens Advisory Committee (GCAC) Groundwater Protection Ordinance Subcommittee (subcommittee) is intended to consist of a subset of five GCAC members, and other individuals as appointed by the GCAC Chair, with a general purpose of research, analysis, and providing preliminary findings and recommendations to the full GCAC on a specific set of issues.

This subcommittee is being formed to analyze the proposed draft “Public Health and Groundwater Protection Ordinance” and 35 recommendations submitted to GCAC by concerned citizens of Portage County, while concurrently addressing related issues, which include, but are not limited to:

- Identify threats to groundwater resources and public health from current land use, water, and waste management practices in Portage County;
- Review current County ordinances to determine if they are addressing identified threats;
- Draft recommendations for addressing identified threats to groundwater resources and public health, which may include creation of a groundwater protection ordinance;
- Determine statutory authority for recommendations;
- Maintain constant communication with GCAC, including a written report to the GCAC Committee that will be distributed with the meeting packet.

The Subcommittee will utilize Planning and Zoning Department staff assistance in the conducting and summarizing of information utilized in the discussions.

The projected length of the subcommittee is February 2017 through August 2017.

The work of the Groundwater Protection Ordinance GCAC Subcommittee is undertaken in an advisory capacity for the Portage County Groundwater Citizens Advisory Committee, which is responsible for review and recommendation of the results to the Portage County Planning and Zoning Committee.

The subcommittee met once a month in the months of February, March, May, June, and August to discuss various topics and information related to the proposed ordinance so they could accomplish the tasks laid out in the subcommittee charter. This report will go through each of the tasks listed in the

charter and summarize any and all information that was shared during the subcommittee meetings and relates to the listed task.

**Identified Threats to Groundwater**

The majority of the threats identified in the proposed ordinance and during the discussion in the subcommittee dealt with water quality issues, although water quantity was briefly mentioned. The threat most often discussed was **nitrate-nitrogen** followed by **bacteria**. Also identified were **pesticides** and **pharmaceuticals**. There is in depth detailed information on all of these identified threats in the Portage County Groundwater Management Plan and the proposed Public Health and Groundwater Protection Ordinance. The proposed Ordinance and discussions in the subcommittee support all of the findings in the Groundwater Management Plan. Please reference those for additional information. We will be summarizing the discussion of these threats that took place in the meetings. No previously unidentified threats were introduced into the discussion.

One of the primary reasons that all of the water quality and water quantity threats were identified was due to the underlying geology and soils found in Portage County. Most of the County has soils that are highly permeable (water can easily soak into them) and porous (there are relatively large spaces between the soil particles). The combination of high permeability and high porosity creates a situation that allows for groundwater to flow easily and freely. This also allows contaminants to impact groundwater; once they enter the groundwater resource they are able to easily travel. These soils also have a low attenuation capacity or a low ability for the soil to hold these contaminants in place.

**Nitrate-nitrogen**

Nitrate-nitrogen concentrations in groundwater were the most often identified and discussed threat. This could be in part due to the fact that nitrate-nitrogen concentrations are often used as an indicator of other possible contaminants. Wells that have high nitrate-nitrogen concentrations are most likely to be contaminated with agricultural pesticides, pharmaceuticals and other chemicals (June 29, 2017 Meeting).

Nitrogen is essential for all living things to grow and survive. Contributing sources of nitrogen have been identified as 90% agricultural, 9% septic systems, and 1% lawns/other. Agricultural sources of nitrogen can be further broken down into manure and/or commercial fertilizer (May 30<sup>th</sup> Meeting). Citizens have shared that there are concerns that the bio-solids and manure being land applied in the County are contributing to increased nitrate-nitrogen concentrations (February 30 2017 Meeting).

Land use in the County does effect the nitrate concentrations found in groundwater in Portage County. According to the Wisconsin DNR drinking water is three times more likely to exceed the nitrate standard in agricultural areas compared to forested areas.

Elevated nitrate-nitrogen concentrations pose public health concerns (February 23, 2017 meeting). The health effects of elevated nitrate-nitrogen concentrations include methoglobinemia (blue baby syndrome), possible links to birth defects and miscarriages (both humans and livestock) and cancer. In the human body, nitrates can convert into nitrite and then to n-nitroso compounds, which are some of the strongest known carcinogens. As a result, additional human health concerns can include an increased risk of non-hodgkin's lymphoma, stomach cancer, bladder and ovarian cancer. Additionally

fish, amphibians, and aquatic invertebrates can have serious health issues and possible death from elevated nitrate-nitrogen concentrations (June 29, 2017).

Approximately one out of every five private wells in the County tested currently exceed the federal and state drinking water standard for nitrate-nitrogen, a level nearly twice the state average. Of the 118 community water systems (bars, restaurants, churches, etc) tested in 2016 22% had increasing nitrate-nitrogen concentrations, 11% were decreasing, and 67% had no trend up or down; 10% of these community water systems exceed the drinking water standard and almost 1/3 are approaching the standard (June 29, 2017 Meeting).

The public has shared numerous concerns that there are instances of residential wells that have been tested and have increased nitrate-nitrogen levels, including levels of 38 mg/L in the Town of New Hope in a recent 2017 water test. A resident in the Town of Hull has levels testing in the 50- 60 mg/L range. YMCA Camp Glacier Hollow this year exceeded the 10 mg/L drinking water standard and kids are having to bring their own drinking water to camp. (February, March, May, June, and August Meetings)

Additionally, citizens have expressed concern over trying to determine the source of nitrate/nitrogen in these wells that have elevated nitrate/nitrogen concentrations (August 3, 2017 Meeting). A number of factors can make direct identification of a contaminant source difficult, however.

### **Bacteria**

Bacteria, specifically *E. coli* bacteria, were also identified as a threat to groundwater (February 23, 2017 Meeting). Bacteria can be both naturally occurring and human induced. Coliform bacteria are naturally occurring in soil and are found on vegetation and surface waters. While coliform bacteria does not cause illness or health risks for humans, its presence is an indication that a water system is at risk of more serious forms of contamination.

The presence of *Escherichia coli* or *E. coli* bacteria is an indication of fecal contamination of the groundwater. *E. coli* bacteria are present in the intestines of warm blooded animals and are typically found in their fecal matter along with other pathogenic bacteria, viruses, and parasites which can cause illnesses.

There is again citizen concern that the bio-solids and manure being land applied in the County are contributing to an increased risk of bacterial contamination (February 23, 2017 meeting).

### **Pharmaceutical and pesticides**

Pharmaceuticals and pesticides were also listed as threats to groundwater by concerned citizens. There was little discussion of these items specifically, only that they often occur in tandem with elevated nitrate-nitrogen concentrations. Additionally, there was concern that the bio-solids and manure being land spread in the County could contribute to an increase in these products. Both of these items can have health related impacts associated with them.

### **Nutrient Management**

## **Current County Regulations**

With all of the threats, the comment heard the most was that Portage County must do something to protect its water quality from the threats listed above. There is a shared sentiment from meeting attendees that what the County has done in the past is not working for solving the water quality issues in the County or that the County needs to be doing a better job enforcing the current regulations that it has.

The second task the subcommittee had was to review current County ordinances to determine if they are addressing identified threats. Below are the current County Ordinances, State Statutes and Federal Regulations that deal with the identified threats and how they address them.

### **7.1 Portage County Zoning Ordinance**

The Portage County Zoning Ordinance is meant to promote public health, safety, and general welfare, to determine establish, regulate, and restrict the areas within which agriculture, forestry, industry, trades, businesses and recreation and residential uses may be conducted; the areas in in and along natural water courses, channels, streams and creeks in which trades or industries, filling or dumping, erection of structures and location of buildings, may be prohibited or restricted; certain areas, uses or purposes which may be subjected to special regulation and building setback lines and such other uses authorized pursuant to section 59.69, 59.694 and 87.30, Wisconsin Statutes.

The zoning Ordinance does not deal directly with water quality issues. Within the different zoning districts there are specific districts (A4 and R1) in rural areas that have specific lot size minimums of 2 acres. These lot size minimums were designed to try and provide enough separation and treatment time of septic system discharges between lots. There are other lots size requirements in rural areas that require larger lots sizes.

### **7.2 Portage County wellhead Protection Ordinance**

The purpose of the Wellhead Protection Ordinance is to institute land use regulations and restrictions to protect the municipal water supplies of the Villages of Junction City, Plover, and Whiting and the City of Stevens Point, and to promote the public health safety and general welfare of the residents of Portage County. The regulations specified in the Wellhead Protection Ordinance apply to the unincorporated areas of the Portage County that lie within the recharge areas for municipal water supply wells and are in addition to the requirements in the underlying zoning district. There are three zones, based on the amount of time it takes for the groundwater in a given area to reach the municipal well. Each zone has permitted and prohibited land uses listed, as well as land uses that may be permitted on a case by case basis, as determined by the Board of Adjustment. Permitted uses in Zone B and Zone C also have design standards for permitted uses that should be followed. The land uses outlined for each zone were all determined by their potential impacts to groundwater quality. These regulations do not limit or target any one contaminant but are meant as a general protection for municipal water sources.

### **7.4 Portage County Subdivision Ordinance**

The purpose of the Portage County Subdivision Ordinance is to guide the growth and development in the unincorporated areas in accordance with adopted development guides and land use plans. Part of this development includes protecting public health as well as preserving natural resources and

preventing the pollution of groundwater. The Portage County Planning and Zoning Office has the ability to review the land suitability for any major land subdivision, County plan or minor subdivision. Part of this suitability is determining if there is adequate quantity and quality to support further development in an area. This ordinance really provides any landowner with an indication of current water quality on the property that is to be subdivided. If the subdivided land does not meet current water quality standards a notation is made on the certified survey map, so that any future buyer of the property may be aware of potential water quality issues.

The Subdivision Ordinance further outlines the process for determining adequate water supply and quality by outlining steps for water testing and/or monitoring to be completed on the property prior to the subdivision

### **7.9 Private Onsite Sewage System Ordinance**

The Private Onsite Sewage System Ordinance is intended to protect public health and groundwater by designing, constructing, installing and maintaining properly functioning private onsite sewage systems. These requirements are met with permits, inspections, and maintenance programs overseen by the County. Private onsite sewage systems are designed to first and foremost remove bacteria and pathogens from private waste that is either maintained on-site in a holding tank or discharged to drainage field. A properly functioning septic system may still discharge nutrients, such as phosphorus and nitrogen to groundwater unless specialized treatment is added to the system. The Ordinance does not currently address the issue of nutrient discharge.

### **7.10 Animal Manure Storage Ordinance and Nutrient Management Standards**

The Animal Manure Storage Ordinance and Nutrient Management Standards Ordinance is intended to prevent water pollution and the spread of disease by regulating the location, design, construction, installation, alteration, and use of animal manure storage facilities, and the application of manure and nutrients. Any person who uses, constructs, installs, reconstructs, replaces the liner, enlarges, or substantially alters an animal manure storage facility or transfer mechanism is subject to the provisions of the ordinance. The Portage County Land and Water Conservation Department may require upgrading, replacement or closure, of any facility that poses an imminent threat to public health, aquatic life or is causing a violation of water quality standards.

The Ordinance contains standards for design, management, and construction of animal manure storage facilities, standards for closure of an animal storage facilities and standards for management and utilization of animal manure and other nutrients.

The Portage County Animal Manure Storage Ordinance and Nutrient Management Standards reference the Wisconsin State Statute NR 151 and the Federal Natural Resource Conservation Service 590 Nutrient Management Standards. All three of these items are used to address nutrient management. Nutrient Management is the science that links soil, crops, weather, and hydrological factors with cultural, irrigation, and soil and water conservation practices to achieve the goals of optimizing nutrient use efficiency, yields, crop quality, and economic returns, while reducing off-site transport of nutrients that may impact the environment (USDA, 2017).

## **NR 151**

Wisconsin State Statute NR 151 establishes runoff pollution standards for non-agricultural facilities and transportation facilities and performance standards and prohibitions for agricultural facilities and practices designed to achieve water quality standards. The subcommittee was primarily concerned with the agricultural components of this statute which include erosion, tillage setback, phosphorus, manure store, wastewater handling and clean water standards; nutrient management, manure management prohibitions, and local livestock operation ordinances. As well as implementation and enforcement for cropland and livestock ordinances.

## **Federal 590 Standards**

The Natural Resource Conservation Service 590 Nutrient Management Standards direct the amount (rate), source, placement (method of application), and timings of plant nutrients and soil amendments. These standards are what outline the specifics of what must be in a nutrient management plan.

Nutrient management and nutrient management planning was the topic of much discussion in the subcommittee. There was concern over how effective nutrient management plans were as a tool to address the identified threats. Most of this concern was based on the fact that nutrient management plans are based on the greatest amount of economic benefit to a farmer, not necessarily on the conservation of natural resources; especially when it comes to nitrogen applications.

There was also concern with the lack of enforceability of plans or even general follow-up with farmers to see if plans were being used/followed. There were additional concerns that expanding nutrient management plans may potentially increase the use of nitrogen in the County because they may be applying less than the recommendations allow.

There was also discussion surrounding the need to include best management practices into nutrient management plans and/or potentially limit the amount of nitrogen recommended in them.

## **Recommendations**

Throughout the subcommittee discussions there have been a number of recommendations on actions that the Committee should consider and/or take action on. The citizen's request made it quite clear that something needs to be done to address the problem. Additionally, the citizens have made it clear that what has been done in the County is not working or addressing the problem enough. The feeling expressed at the meetings is that any action that is taken should be at the local level.

Suggested recommendations have included:

- Look at the land use practices that are used within the County
- Nutrient Management Plans need to take into consideration water quality impacts
- Increase the number acres covered by nutrient management plans in the County. If the County is covered by nutrient management plans and nitrate-nitrogen doesn't improve this would emphasize this fact.
- Nutrient management plans should include best management practices that must be followed
- Increase cost share funding for manure storage, etc. This would increase the required nutrient management plans
- Alternative forms of nitrogen can be used/encouraged

- Examine what laws the State is not enforcing and see if there are actions that the County can take
- Examine what is and is not currently being enforced in current County regulation. Do a better job with enforcement
- Restrict the spreading of manure in the winter
- Explore alternative methods of disposing of manure, IE composting, anaerobic digestion
- Encourage the use of cover crops
- Restrict the amount of nitrogen that could be applied on fields via nutrient management plans
- Use farmer-led groups to help come up with solutions
- Provide incentives to use different farm practices
- Install recirculating sand filter to minimize nitrates come from septic systems
- Explore denuded cow lots as sources of nitrate-nitrogen in the County
- Put pressure on the 590 standard to make it more groundwater appropriate
- Encourage the state to tax nitrogen fertilizers
- Encourage the use of grazing plans/ permanent vegetation on grazed lots or heavily used lots that are not contained.
- An agronomist should be added to County staff to write, implement, and check nutrient management plans
- Update current ordinances that we have an place to reflect current needs in the county
- We need monitoring to understand what is happening with nutrients in our groundwater
- Monitoring at the edge of field will let us know what is happening with nutrients on the field
- Monitoring may be useful when there is a significant land use change
- None of the Ordinances in the County specifically address nitrates. We need one that addresses this specifically