ISSUE STATEMENT #1: GROUNDWATER AND DRINKING WATER QUALITY

Groundwater and drinking water quality are negatively impacted by human actions, including manure and nitrogen fertilizer application, use of chlorides from salt, land management, non-compliant septic systems, pesticides, and contaminants of public health concern.

DESIRED FUTURE CONDITION

Groundwater is safe to drink.

GOAL 1: Decrease nitrates in vulnerable areas.

Measurable outcome: The concentration and occurrence of excessive nitrates in groundwater (or drinking water?) is reduced.

Measure:

- Change in the number of wells that test above benchmark 5 mg/L (count and percent)

Frequency of measure: To be determined.

Considerations/Notes regarding analysis and assessment:

- Areas of concern will be identified. Potential willing landowners will be identified, contacted and asked to participate in the program. Well water will be sampled to establish baseline N levels. Follow up sampling at intervals every *X* years to document change.
- Sampling intervals may be evaluated based upon the degree to which BMPs that address N, infiltration/recharge have been implemented within the target area so we don't recheck too early.

Potential measures of level of effort/activity to address goal:

- Tracking on an annual basis of the number of BMPs implemented within target area to address contaminant sources (via e-Link or similar BMP database)

Targeting implementation activities:

- Target areas with known high nitrates and/or areas with land use likely to result in high nitrates (ag/livestock)
- Implementation actions include:
  - Feedlot updates
  - Nutrient management planning

GOAL 2: Decrease non-compliant septic systems.

Measurable outcome: Achieve 90% compliance rate (watershed rate in '17 & '18 was approximately 84.5%)

Measure:

- Actual number of systems; determine baseline number and then assess %.
- # systems brought into compliance within time window

Frequency of measure: Annual

Considerations/Notes regarding analysis and assessment:

- Annual reporting by each county, however the cities in Anoka county have the data, so it will need to be assembled
- Annual MPCA SSTS Report
- Reducing noncompliant systems seems more difficult to quantify than the overall compliance rate. MPCA report asks for estimates, it would be worthwhile for each jurisdiction to reevaluate their reporting data (e.g. Isanti dropped 9% between '17 and '18 - that probably isn't accurate)
- IPHT systems don't necessarily pose an increased threat to the resources (e.g. exposed electrical and missing riser covers are IPHT criteria)
- % compliance rate in shoreland might be a worthwhile measure, but it is not likely something that is probably not easily measured in those counties without spatial SSTS inventories.

Potential measures of level of effort/activity to address goal:

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Targeting implementation activities:

- Target areas with known high nitrates and vulnerable areas

GOAL 3: Reduce impacts on groundwater from feedlots.

Measurable outcome: An increase in the number of acres that are covered by a nutrient management plan and a decrease in the number of feedlots that are assessed as high risk.

Measure:

- Number of acres covered by an approved nutrient management plan and change in that number over time;
- Number of feedlots assessed as high risk/prioritized using MinnFARM that have reduced their risk/prioritization number to an acceptable range.

Frequency of measure:

Considerations/Notes regarding analysis and assessment:

- MinnFARM assessment can only take place if there is a willing landowner.
- Morrison is the only delegated county

Potential measures of level of effort/activity to address goal:

- e-Link or similar BMP database

Targeting implementation activities:

- Target areas with known high nitrates
- Conduct Level 3 Feedlot inventories in these areas. (Morrison County is the only delegated county + MPCA)
- Use MinnFARM evaluation Prioritization Index numbers to target initiatives to upgrade manure management facilities and develop and implement nutrient management plans.

Potential Resources;

- MPCA Feedlot Staff:
  - Anoka/Isanti: Will Martens
  - Aitkin/Crow Wing/Mille Lacs/Sherburne: Kourtney Frank

GOAL 4: Locally understand and protect vulnerable areas that have not been developed or are currently under a land use that does not negatively impact groundwater quality.

Measurable outcome:

- No net loss of acres rated as high or very high risk (as assessed by the protocol yet to be established) to less suitable, higher risk land uses.
- Net improvement or trend in land uses in favor of reduced risk to GW.

Measure:

Frequency of measure:

Considerations/Notes regarding analysis and assessment:

Potential measures of level of effort/activity to address goal:

- Risk assessment protocol is established.
- Number of acres protected through conservation easements or permanent acquisition
- Number of acres enrolled in perennial/conservation cover

Targeting implementation activities:

- Develop a risk assessment protocol that assigns a risk ranking to areas considered high or very high risk. The risk assessment protocol will use GIS & zoning maps to identify vulnerabilities.
- Identify/quantify areas vulnerable to land use that could put GW at risk. (manure storage/fertilizer application over sensitive geology)
  - Consider future likelihood of different land uses/change (ag vs residential vs commercial) and consider which uses could create negative impacts. For example, the transition from agricultural to residential land use on sensitive geology might reduce risk and be a type of GW protection or improvement. Agricultural in less sensitive groundwater areas may pose less threat than conversion to residential.
- Strategies could target areas with high risk rankings. For instance, a target area for BMP efforts could be where agriculture is concentrated over vulnerable soils. Concentrated residential areas with private SSTS in vulnerable areas could be targeted for considering municipal solutions for septage.