

Feedlot and manure storage area setbacks from wells, waterbodies, and sinkholes

Requirements for new construction

State feedlot rules require new animal feedlots and manure storage areas to comply with minimum setback distances to wells, waterbodies, and sinkholes. In general, setbacks are not applied retroactively to existing feedlots or existing feedlot components.

A new animal feedlot or manure storage area includes either of the following:

- Construction of an entirely new animal feeding or manure storage operation.
(ie. brand new site)
- Construction of a new animal holding area or manure storage area at an existing operation.
(ie. new component at an existing facility)

Note: Local county zoning regulations may have restrictions beyond those summarized in this fact sheet.

Setbacks from wells

State feedlot rules and the state well code administered by the Minnesota Department of Health (MDH) have restrictions for new feedlots and manure storage areas located near wells. The requirements vary based upon the number of people served by the well (ie. private wells or public water supply wells).

Private wells

Private wells are protected by requiring a setback (isolation distance) between new feedlots or manure storage areas and wells.

Table 1. Private well isolation distance summary

Component	Isolation distance (feet)	
	Cased well	Sensitive well ^a
Animal feedlot	100	100
• Unroofed with 300+ animal units	100	200
Manure stockpiles	100	200
Liquid manure storage areas	150	300
• Concrete or composite ^b lined	100	200
• Unpermitted/non-certified/unlined	300	600
Feeding or watering area within a pasture	50	100
Animal or poultry building (non-feedlot), including a horse riding arena	50	100
Other related components: Feed storage areas, dead animal treatment areas, filter strip/vegetative treatment area, or waste pipelines/"dirty water" diversions	50	100

^a Well with less than 50 ft. of watertight casing where the casing does not penetrate a confining layer or multiple layers of confining materials with an aggregate thickness of 10 ft. or more.

^b A liner designed to achieve a theoretical seepage rate of 1/560 inch per day or less and consists of a geomembrane liner, geosynthetic clay liner, or other comparable material, laid over a constructed cohesive soil liner having a thickness of 2 ft. or greater.

Public wells

Increased setbacks for new feedlots and manure storage areas are required around certain types of public wells, including wells that serve a community, a public or private school (excluding home school sites), or a licensed child-care center. Setback distances depend on the proximity to and vulnerability of the drinking water supply management area (DWSMA) designated for the public well.

- DWSMAs with moderate or low vulnerability rating.
 - New feedlots or manure storage areas must follow the isolation distances identified in table 1 for private wells.
- DWSMAs with high vulnerability rating.
 - New feedlots or manure storage areas **within the DSWMA** must be at least 1,000 feet from the well.
 - New feedlots or manure storage areas **outside the DWSMA** must be at least 200 feet from the well.
- No DWSMA established.
 - New feedlots or manure storage areas must be at least 1,000 feet from the well.

A map of DWSMAs and their vulnerability rating is available on the Minnesota Department of Health website: <https://www.health.state.mn.us/communities/environment/water/swp/mapviewer.html>.

Setbacks from waterbodies

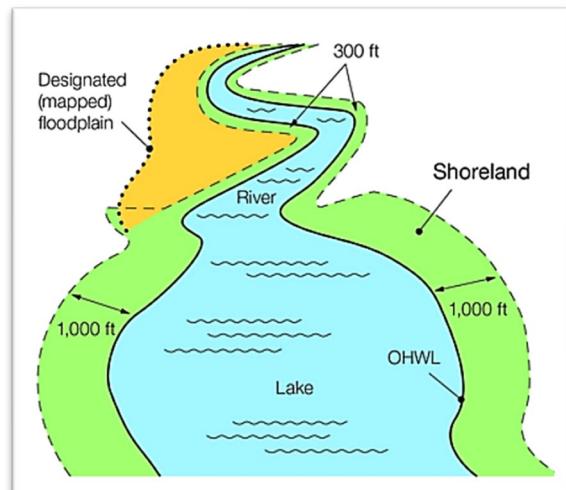
State feedlot rules restrict construction of new animal feedlots or manure storage areas when they are or will be located within shoreland or a floodplain.

Restrictions in shoreland

Shoreland - Land located within:

- 1,000 feet of a lake, pond, or flowage; or
- 300 feet of a river or stream or the floodplain of the river or stream, whichever is greater.

- New feedlots and manure storage areas are prohibited in shoreland.
 - Exception: Existing operations in shoreland may expand so long as the animal holding or manure storage capacity does not exceed 1,000 animal units. This may include construction of new animal holding areas and manure storage areas in shoreland so long as the new components are at least as far from the water as an existing component and do not present a potential source of pollution to waters of the state.



In general, land near public waters or other lakes, ponds, or flowages of 25 or more acres is regulated as shoreland; however, some local ordinances may designate shoreland areas around public waters less than 25 acres. It is best to check with your local county planning and zoning office to determine shoreland areas.

Restrictions in floodplains

Floodplain - Land adjoining a watercourse which may be covered by the 100-year flood.

- New feedlots and manure storage areas are prohibited in floodplains.
 - Exception: A new liquid manure storage area can be constructed in a floodplain to correct a pollution hazard at a facility with less than 300 animal units.

Maps delineating floodplains are created by the Federal Emergency Management Agency (FEMA) and can be accessed here: <https://msc.fema.gov/portal/home>. Also check with your local county planning and zoning office.

Additional restrictions for short-term stockpiles

In addition to being prohibited in shoreland or a floodplain, short-term stockpiles must also meet the following restrictions near waterbodies:

- The stockpile must be located 300 feet of flow distance (path that runoff travels) and at least 50 feet from any waters of the state, sinkholes, rock outcroppings, tile intakes, and road ditches.
- Waters of the state includes all types of waterbodies including lakes, rivers, streams, ponds, marshes, wetlands, uncultivated wetlands, drainage ditches, grassed waterways, etc.

Other requirements for short-term stockpiles that can be found in the fact sheet [Technical guidelines for stockpiling of manure](#) available at: <https://www.pca.state.mn.us/feedlots>.

Setbacks from sinkholes

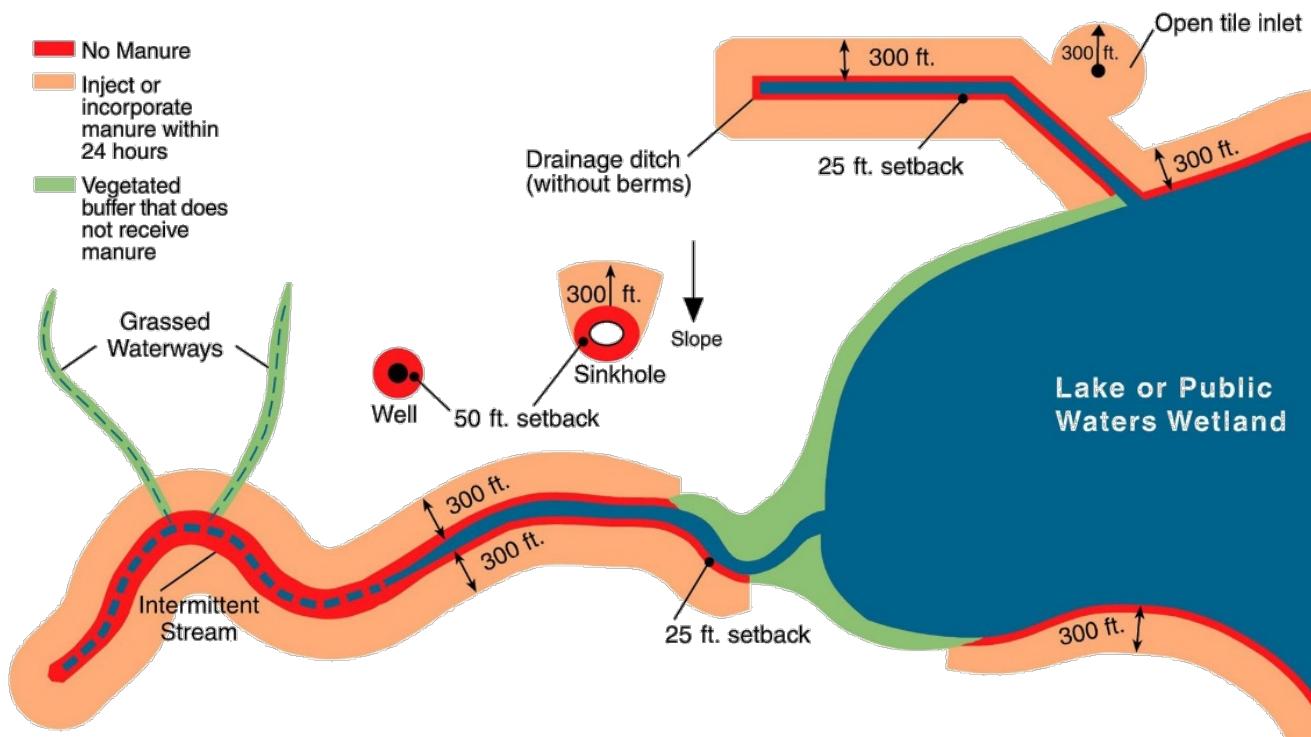
Sinkhole - a surface depression caused by a collapse of soil or overlying formation above fractured bedrock.

- New feedlots and manure storage areas are prohibited within 300 feet of a sinkhole.
- Exception: A new liquid manure storage area can be constructed within 300 feet of a sinkhole to correct a pollution hazard at a facility with less than 300 animal units.

The [Minnesota Karst Feature Inventory](#) identifies the location of sinkholes and is available as a map at: https://www.dnr.state.mn.us/waters/groundwater_section/mapping/springs.html. Additional sinkholes exist beyond those identified on the map due to the dynamic of ever-changing karst landscape associated with sinkhole development. Setbacks are required from all mapped and un-mapped sinkholes.

Land application setbacks

The graphic below summarizes the required setbacks for land application of manure.



More information

The [interactive nutrient management planning map](#), available at the link below, displays locations of most private wells, DWSMAs, public waters, floodplains, and sinkholes as well as applicable land application setbacks.

More information can also be found at: <https://www.pca.state.mn.us/feedlots>