

Developing Effective Odor Management Plans

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Odor Experience: Direct odor sampling, monitoring, modeling, training, expert testimony, international conferences



Chair of Odor Technical Committee, A&WMA

A&WMA Odour Management Conference: Embracing Global Perspectives in Toronto, May 2024



Outline

- ▶ Need for odor management plans
- ▶ Minnesota odor legislation
- ▶ Developing effective odor management plans



Odor is Special

- ▶ Odor is everywhere
- ▶ Odor regulation is minimal
- ▶ Odor is not well understood

Odor Management Plans

- ▶ A tool that can be used to manage and minimize odor
- ▶ Advisable for sites that have odor “issues”
- ▶ May be requested by regulators
- ▶ May be required by rule (categorically, under certain conditions)

MN Odor Legislation

MN Odor Legislation

- ▶ Established in 2023 in Minn. Stat. 116.064
- ▶ Applies to 7 county Twin Cities metro
- ▶ Some sources are exempt:
 - (1) on-farm animal and agricultural operations;
 - (2) motor vehicles and transportation facilities;
 - (3) **municipal wastewater treatment plants;**
 - (4) single-family dwellings not used for commercial purposes;
 - (5) materials odorized for safety purposes;
 - (6) painting and coating operations that are not required to be licensed;
 - (7) restaurants;
 - (8) temporary activities and operations;
 - (9) **refineries;** and
 - (10) **Metropolitan Council wastewater systems.**

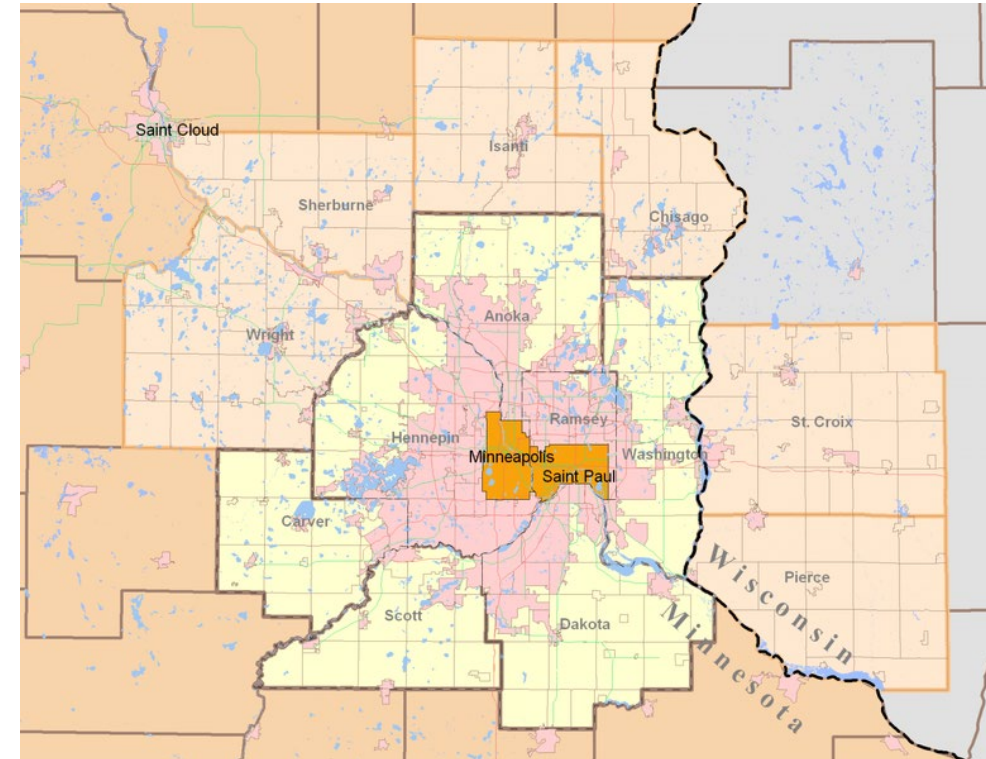


Image: https://commons.wikimedia.org/wiki/File:Twin_Cities_Metro_Area_%2813_County%29.png

MN Odor Legislation

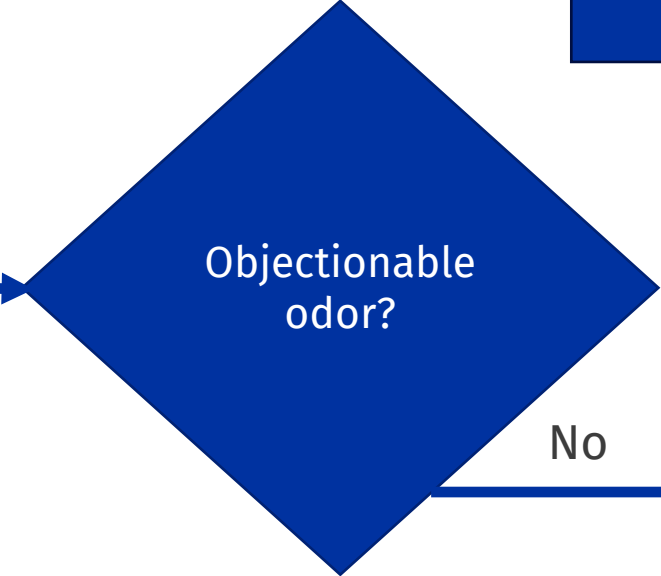
- ▶ Facilities cannot emit “objectionable odor” beyond property line
 - MPCA must conduct a site investigation of any facility against which 10 or more verifiable odor complaints have been submitted
 - MPCA determines whether odor emitted from the facility constitutes an “objectionable odor”
- ▶ Facilities that emit an “objectionable odor” are required to develop and submit an odor management plan within 90 days

MN Odor Legislation

Located in 7 county metro & not an exempt source

10 verifiable complaints within 48 hours

MPCA site investigation



Yes

Submit odor management plan within 90 days

No



Yes

No further action required

No

MN Odor Legislation

- ▶ Required elements of odor management plan
 - Description of operations/materials that generate odors
 - Proposed changes in equipment, operations, or materials to mitigate odors
 - Estimated effectiveness in reducing odor emissions
 - Estimated cost to implement plan
 - Schedule of implementation activities
- ▶ Agency must provide technical assistance
 - Identify odor control technology and equipment that may reduce odor emissions
 - Identify alternative methods of operation and materials that may reduce odor emissions

MN Odor Legislation

- ▶ Rulemaking required to include
 - Odor standard(s) that may qualify as “objectionable odor”
 - Process for determining if an odor is objectionable
 - Process for investigating and addressing odor complaints
 - Guidance for developing odor management plans
 - Procedures and criteria for determining success and failure of an odor management plan

Effective Odor Management Plans

Basic Elements

- ▶ Identify/rank odorous sources
- ▶ Minimization/mitigation techniques for key odorous sources
- ▶ Complaint response management?
- ▶ Training and continuous improvement

Considerations – Source Characterization

- ▶ Identify/rank odorous sources
 - Day-to-day
 - Intermittent activities
 - Measurements if needed
- ▶ Consider surroundings
 - Neighbors
 - Nearby odorous sources
 - Community



Considerations – Communication

- ▶ Audience of plan
 - Site personnel
 - Corporate stakeholders
 - Regulators
 - Public
- ▶ Complaint response
- ▶ Community engagement

◀ Agriculture

Jacob Aloï · October 11, 2024 1:05 PM

Yes, that is the scent of manure in the Twin Cities



An aerial view captures farmland divided by Minnesota State Highway 52 in Vermillion Township. ◀ Kerem Yücel | MPR News

<https://www.mprnews.org/story/2024/10/11/yes-that-is-the-scent-of-manure-in-the-twin-cities>

Considerations – Implementation & Monitoring

- ▶ Initial plan
 - Procedures
 - Physical and/or operational controls
 - Communication
- ▶ Ongoing maintenance
 - Confirming process conditions
 - Perimeter or off-site checks



Determining Effectiveness

- ▶ Eliminating odor is not realistic
- ▶ Dependent upon site-specific circumstances
 - Having a plan
 - Procedures for when complaints occur
 - Improved community relationship



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Conclusion

- ▶ Odor management plans are a tool that can be used to manage and mitigate odors
- ▶ MPCA is developing an odor rulemaking which will include an odor management plan requirement
- ▶ The effectiveness of an odor management plan is partially dictated by site-specific circumstances (relationship with community, regulators)
- ▶ Effective odor management plans may consider elements related to communication and ongoing activities

Questions?



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