



Odor Management Rulemaking

May 28, 2026 • 6 p.m.

- background of odor management rulemaking
- rulemaking process
- rule concept development
- wrap-up

Minn. Stat. § 116.064

Currently, the MPCA does not have authority to regulate odor, so odor management regulation is handled by local governments through local ordinances.

The MPCA was given statutory authority to adopt new rules that will establish odor standards and require the development and submittal of an odor management plan from facilities determined to have emitted an objectionable odor.

<https://www.revisor.mn.gov/statutes/cite/116.064>

Statutory directives per Minn. Stat. 116.064, subd. 7(c)

“The rules must include:

1. an odor standard or standards for air pollution that may qualify as an objectionable odor
2. a process for determining if an odor is objectionable
3. a process for investigating and addressing odor complaints
4. guidance for developing odor-management plans
5. procedures and criteria for determining the success or failure of an odor-management plan”

What is odor? Why is it important?

- distinctive smell, could be unpleasant
- coffee roasters, paper mills, rendering facilities, asphalt manufacturers
- odors will be perceived differently by everyone, but some odors can be so strong that our daily lives are impacted
- can affect quality of life such as causing headaches, inhibiting use of outdoor spaces or ability to open windows in your home



Where does this rule apply?

By statute, this rule will apply to facilities located in the Twin Cities metro area:

- Anoka County, Carver County, Dakota County, Hennepin County, Ramsey County, Scott County, and Washington County



Mandatory actions for the rule

The adopted rule will be complaint driven.

- Statute requires the MPCA to conduct an investigation when 10 complaints in 48 hours are received about a facility.
- Results of the investigation may lead to the facility needing to develop and implement an odor management plan to address objectionable odors.

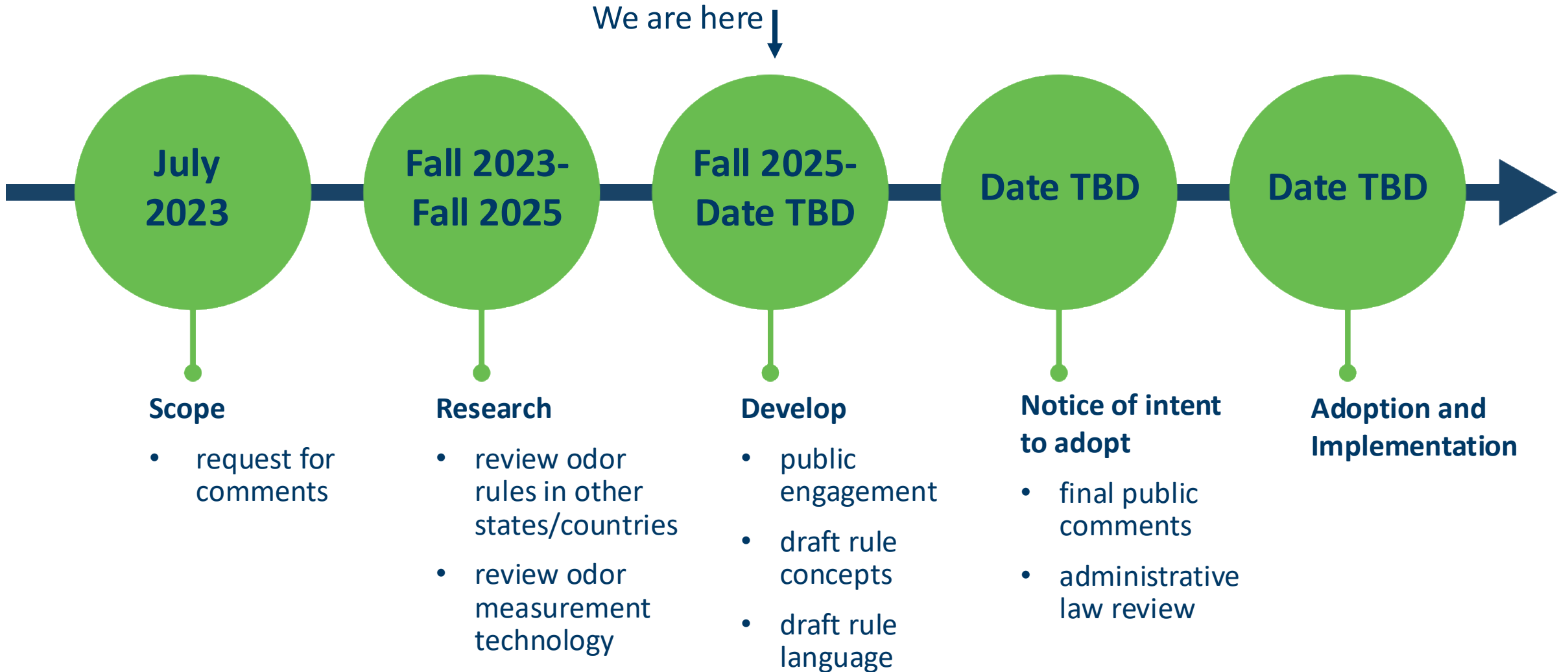


What is exempt from this rule?

By statute, the following facilities or operations are exempt from the rule:

- on-farm animal and agricultural operations
- motor vehicles and transportation facilities
- municipal wastewater treatment plants
- Metropolitan Council wastewater systems
- single-family dwellings not used for commercial purposes
- materials odorized for safety purposes
- painting and coating operations that are not required to be licensed
- restaurants
- temporary activities and operations
- refineries

Timeline



Odor laws in other states

What do odor standards and regulations look like in other states and municipalities?

- Complaint driven vs. data collected using field olfactometer vs. FIDOL (Frequency, Intensity, Duration, Offensiveness, and Location), or a combination of these methods.
- Typically include a threshold of a specified number of complaints in a specified amount of time triggering action from the governing body.

Objective and subjective odor standards

Objective standards:

- dilution-to-thresholds (D/T): 15:1, 7:1, 4:1, or 2:1
- health-based (emission concentration of odorous pollutant)

Subjective standards:

- nuisance/impact to quality of life
 - Often relies on hedonic tone (pleasantness or unpleasantness) of odor



Research quantifying odors

How can the MPCA quantify odors?

- field olfactometer quantifies odor intensity (D/T)
- laboratory olfactometry
- odor modeling
- concentration/odor threshold comparison



The **FIDOL method** is a systematic approach used to evaluate odors.

Frequency: How often does the odor occur?

Intensity: How strong is the odor?

Duration: How long does the odor last?

Offensiveness: How unpleasant is the odor?

Location: Where is the odor coming from?

Based on language in the statute, the MPCA is directed to consider using a combination of the FIDOL method and a measurement tool like an olfactometer.

Dilution-to-threshold

Dilution-to-threshold (D/T) is a critical concept in odor measurement that quantifies the strength or intensity of an odor.

The D/T value indicates how many times an odor sample must be diluted with odor-free air before it can no longer be detected.

Objectionable odor examples



May be objectionable

Objectionable

Ratio of fresh air to odorous air to dilute sufficiently

2:1 ○○ ✓

4:1 ○○○○ ✓

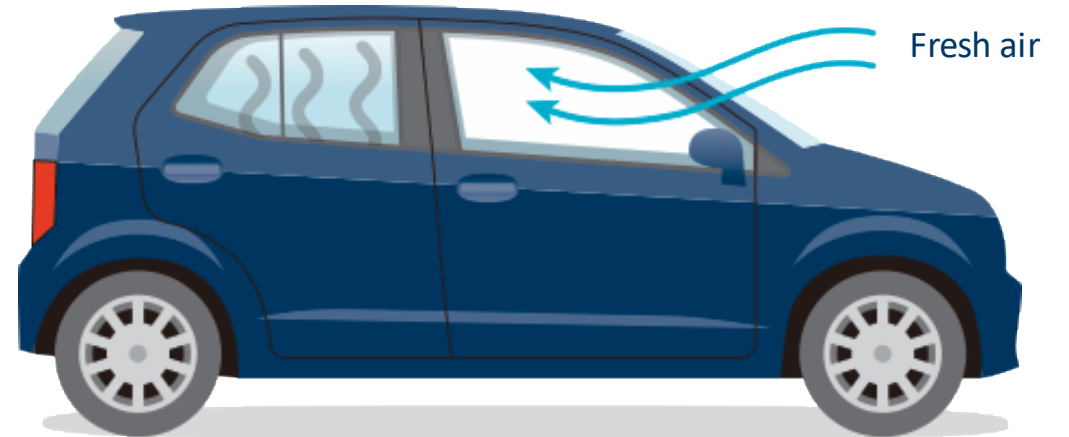
7:1 ○○○○○○○○ ✓

Odor dilution example

Inside car = 100% odorous air



Inside car = 13% stinky air
87% fresh air



Can you still smell the odorous
air?
(7:1 dilution)

All information is conceptual

- We appreciate everyone's time and contributions to this effort.
- We are asking for feedback on the concepts so far.
- Terminology is specific to this rulemaking process.
- There is no proposed rule language to respond to yet.
- No final decisions have been made.

Odor standard 1

Intensity

Odor detected with field olfactometer at 2:1 ratio of fresh air to odorous air

2:1 ratio



Frequency

Odor detected by MPCA staff **three times in one hour**



Human Impact

MPCA determines the odor to be reasonably injurious to public health/welfare, or unreasonably interfering with the enjoyment of life or use of property

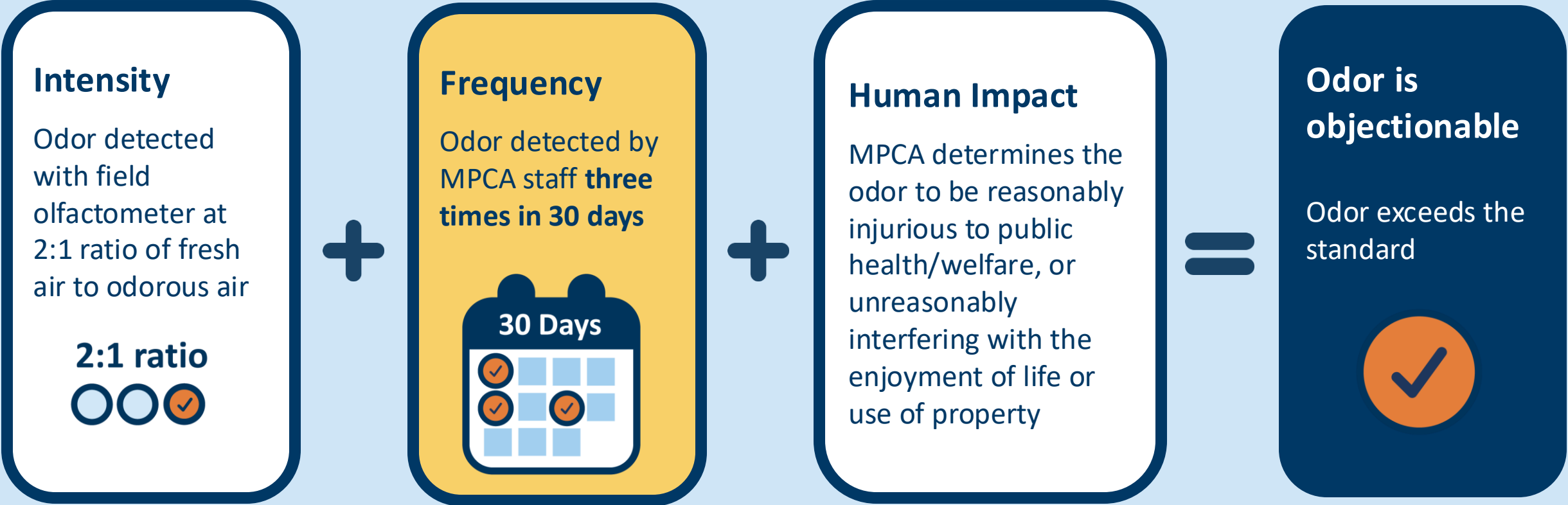


Odor is objectionable

Odor exceeds the standard



Odor standard 2



Odor standard 3

Intensity

Odor detected with field olfactometer at 7:1 ratio of fresh air to odorous air

7:1 ratio



Frequency

One time



1 time



Human Impact

Negative human impact assumed based on intensity and complaints



Odor is objectionable

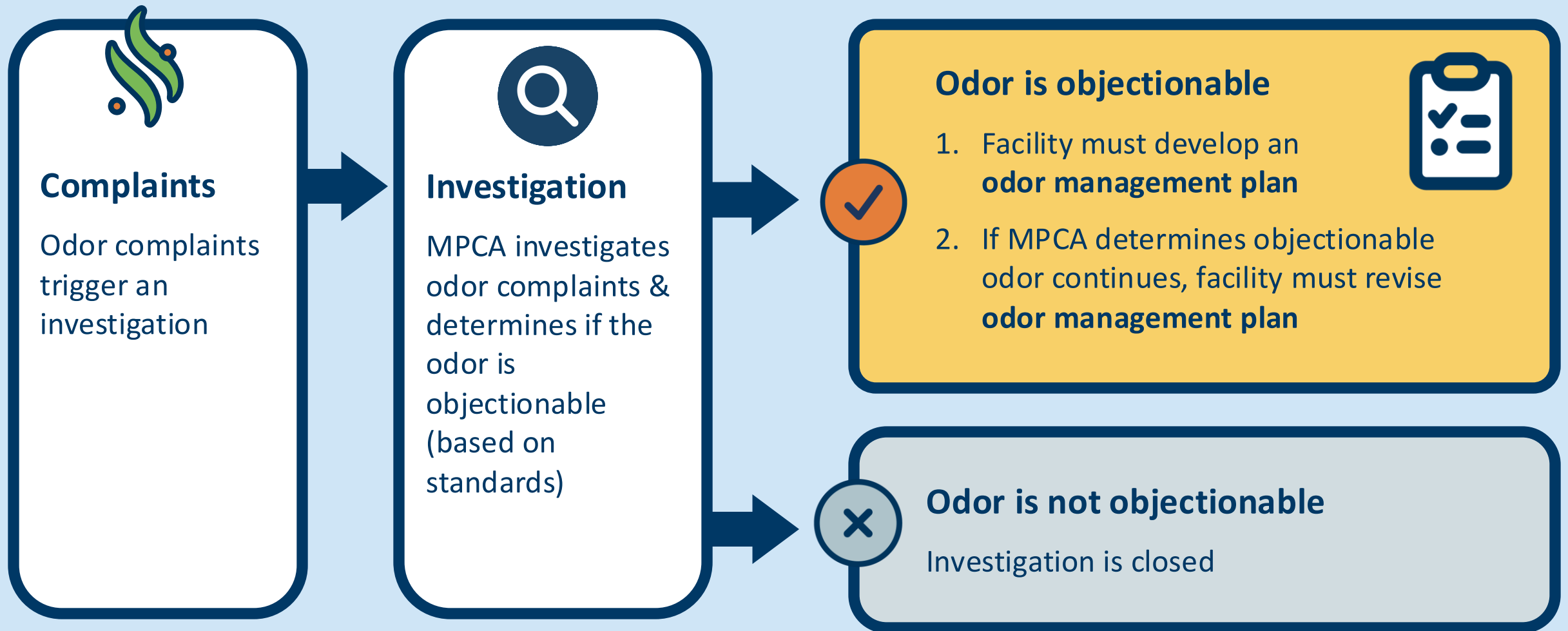
Odor exceeds the standard



Concept: objectionable odor standards

Standard	Intensity (odor free air : odorous air)	Frequency	Human impacts to health, welfare, or enjoyment of life
1	2:1	3 times in 1 hour	Yes
2	2:1	3 times in 30 days	Yes
3	7:1	Once	Assumed based on intensity

Odor rule process flow based on statute



Odor complaints

- Minn. Stat. § 116.064, defines an "odor complaint" as a notification from an identifiable person that describes the nature, duration, and location of the odor.
- Minn. Stat. § 116.064, Subd. 4, requires the agency to conduct an investigation of any facility against which 10 or more "verifiable" odor complaints have been submitted within 48 hours.



Rule concept development: investigating odor complaints

Concept: investigating odor complaints

What information would be needed to submit a verifiable odor complaint:

- **name** and **contact information**
- **time and date** of complaint
- **suspected source** and **location** where odor is observed
- **description** of the odor, including **intensity**, **frequency**, and **duration**

Rule concept development: objectionable odor

Concept: determining if an odor is objectionable.

Minn. Stat. § 116.064 defines an "objectionable odor" as pollution of the ambient air beyond the property line of a facility consisting of an odor that, considering its characteristics, intensity, frequency, and duration, can:

- be, or can reasonably be expected to be, injurious to public health or welfare
- unreasonably interfere with the enjoyment of life or the use of property of persons exposed to the odor

Investigation process



Odor management plan requirements

Minn. Stat. § 116.064, subd. 5(b), requires an odor management plan to contain, at minimum:

- description of plant operations and materials that generate odors
- proposed changes in equipment, operations, or materials that are designed to mitigate odor emissions
- estimated effectiveness of the plan in reducing odor emissions
- estimated cost of implementing the plan
- schedule of plan implementation activities

Rule concept development: odor management plans

Concept: odor management plans

Potential additional requirements:

- description of plant operations, materials, equipment, and emissions that generate odors
- odor compliance testing
- compliance verification procedures and schedule
- recordkeeping

Rule concept development: evaluating odor management plans

Concept: evaluation of odor management plans

- If follow-up inspection determines an odor standard is exceeded, the facility must revise its odor management plan.

High-level rule items set in statute

- where the rule applies: seven-county Twin City metro area
- complaint number and frequency that requires an agency investigation: 10 complaints in 48 hours
- must use a precision instrument capable of measuring odors in ambient air and consider nature, intensity, frequency, duration of odor and other relevant factors to determine whether an odor is objectionable
- an exceedance of an odor standard triggers development of an odor management plan
- exemptions list

Examples of rule items open for input

- odor standards for what qualifies as an objectionable odor
- what information must be provided as part of a verifiable complaint
- what other relevant factors determine whether an odor is objectionable
- additional elements to be included in an odor management plan
- other topics, not included in statute



How to get involved

The MPCA wants to hear from you!

- Visit the odor management rulemaking webpage.
- Join our email list and receive updates.
- Provide input through SmartComment.



mnpca.info/126



Odor management rule contacts

Technical issues

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Community engagement

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Questions?

Thank you!

Current complaint investigation process:

- 1) Complaint is submitted through online Citizens Complaints form.
- 2) Complaint gets assigned to staff member that oversees the applicable media in the applicable county.
- 3) Staff member investigates the complaint.
 - Often, complainant will not be notified investigation has commenced.
- 4) Once investigation and associated case have been concluded, complainant is provided an update on the outcome of the case.

***Investigations that result in a case can take months, or longer, to be concluded.**