

# MS4 General Permit Training Guidance

## Background information

Federal regulations found at 40 CFR 122.34(b)(6) requires permits for small Municipal Separate Storm Sewer Systems (MS4s) to include a training component. The Minnesota Pollution Control Agency effectively issued the first National Pollution Discharge Elimination System (NPDES)/State Disposal System (SDS) MS4 General Permit for small MS4s in 2006. Since then, the Permit has required permitted municipalities in Minnesota to develop, implement, and enforce a Stormwater Pollution Prevention Program (SWPPP) designed to reduce the discharge of pollutants from the small MS4. The Permit requires training for staff and individuals responsible for implementing the SWPPP.

*Disclaimer: The information below is intended to serve as guidance for the [2020 MS4 General Permit](#) (Permit), which was issued on November 16, 2020. Always refer to the most current version of the MS4 General Permit MNR040000 for the applicable training requirements.*

## Who must be trained

The Permit requires individuals that are responsible for the implementation of a permitted municipality's SWPPP receive commensurate training. Individuals include those performing activities described in the Permit on behalf of a permitted municipality (e.g., full-time, part-time, and seasonal employees, contractors, volunteers, etc.). Training requirements, including frequency, are identified in the following Minimum Control Measures (MCMs):

### MCM 3: Illicit Discharge Detection and Elimination (IDDE)

18.8 At least once each calendar year, the permittee must train all field staff in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation. Field staff includes, but is not limited to, police, fire department, public works, and parks staff. Training for this specific requirement may include, but is not limited to, videos, in-person presentations, webinars, training documents, and/or emails. [Minn. R. 7090]

*Guidance notes:* Permitted municipalities need to determine any other field staff, besides those listed in the Permit requirement above, that perform field work on their behalf. Field staff are staff whose job function regularly takes place outdoors in the regulated MS4 area (MS4 mapping tool available at <https://www.pca.state.mn.us/business-with-us/municipal-stormwater-ms4>). This would include staff that perform activities such as:

- Field inspections (e.g., construction activity, facility, and structural stormwater treatment practice inspections)
- Forestry
- Landscaping
- Lawncare (e.g., mowing and herbicide, pesticide, and fertilizer application)
- Road, street, sidewalk, and parking lot maintenance (e.g., sweeping, pothole repair, road shoulder maintenance, pavement marking, sealing, and repaving)
- Storm sewer system maintenance (e.g., pipe and culvert repairs, ditch maintenance)
- Vehicle and equipment management (e.g., outdoor fueling, washing, and maintenance)
- Winter maintenance (e.g., snow plowing, salt application)

18.9 The permittee must ensure that individuals receive training commensurate with their responsibilities as they relate to the permittee's IDDE program. Individuals includes, but is not limited to, individuals responsible for investigating, locating, eliminating illicit discharges, and/or enforcement. The permittee must ensure that previously trained individuals attend a refresher-training every three (3) calendar years following the initial training. [Minn. R. 7090]

*Guidance notes:* Training for individuals responsible for investigating, locating, eliminating illicit discharges, and/or enforcement should largely focus on municipality specific procedures, as required in [Section 18](#) of the Permit, including:

- Regulatory authority to conduct illicit discharge inspections and enforcement (e.g., regulatory mechanisms such as contract language, ordinances, permits, legal agreements, etc.)
- Priority areas the municipality identifies as having a higher likelihood for illicit discharges
- Written procedures for investigating, locating, and eliminating the source of illicit discharges, including:
  - Timeframe to investigate a reported illicit discharge
  - Use of visual inspections to detect and track the source of an illicit discharge
  - Tools to investigate and locate an illicit discharge (e.g., mobile cameras, collecting and analyzing water samples, smoke testing, dye testing, etc.)
  - Cleanup methods to remove an illicit discharge or spill
- Written procedures for responding to spills, including emergency response procedures to prevent spills from entering the MS4 and immediate notification of the Minnesota Department of Public Safety Duty Officer, if the source of the illicit discharge is a spill or leak as defined in [Minn. Stat. 115.061](#)
- Enforcement response procedures, including enforcement tools available and appropriate use of each (e.g., written warnings, fines, perform necessary maintenance and assess costs to BMP owner, etc.)
- Process for documenting illicit discharge inspection findings and follow-up actions taken
- Process for documenting enforcement conducted

#### **MCM 4: Construction Site Stormwater Runoff Control**

19.11 The permittee must ensure that individuals receive training commensurate with their responsibilities as they relate to the permittee's Construction Site Stormwater Runoff Control program. Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews, site inspections, and/or enforcement. The permittee must ensure that previously trained individuals attend a refresher-training every three (3) calendar years following the initial training. [Minn. R. 7090]

*Guidance notes:*

Site plan review training should cover the following topics:

- Designing site plans
- Understanding the environmental impacts of construction activity
- General NPDES construction stormwater permit requirements including erosion prevention and sediment control BMPs
- Dewatering requirements
- Chemical treatments and their requirements
- Recordkeeping requirements (inspections, BMP maintenance, site plan amendments)
- Pollution prevention measures regarding storage and handling of construction products, materials, and wastes; including solid wastes, hazardous wastes, sanitary wastes, petroleum products, herbicides and fertilizers, wash water from concrete pouring or equipment washing
- Estimated preliminary material quantities tabulation
- Fueling planning and spill prevention and response procedures use of contracts for delegating site plan responsibility
- Construction phasing

- Understanding that local stormwater requirements may be more stringent than state requirements
- Low impact development (LID) innovations and new products
- Permanent stormwater management requirements

Site inspection training should cover the following topics:

- An overview of the importance of erosion, sediment, and waste controls and protecting water quality
- Temporary Best Management Practices (BMPs), including:
  - Silt fence
  - Mulch
  - Erosion control blankets
  - Ditch checks
  - Compost logs
  - Inlet protection
  - Hydro seeding or liquid soil stabilizers
  - Flocculants
  - Temporary sediment basins
- Erosion prevention practices, sediment control practice, and dewatering and basin draining requirements in the NPDES construction stormwater permit
- Pollution prevention management measures as required by the NPDES construction stormwater permit
- Inspection and recordkeeping requirements as required by the NPDES construction stormwater permit
- Maintenance requirements for temporary BMPs as required by the NPDES construction stormwater permit
- Permanent BMPs, including:
  - Infiltration systems (e.g., infiltration basins, infiltration trenches, rainwater gardens, bioretention areas, and swales with impermeable check dams)
  - Filtration systems (e.g., sand filters with underdrains, biofiltration areas, swales using underdrains with impermeable check dams, underground sand filters)
  - Wet sedimentation basins (i.e., stormwater ponds and stormwater wetlands)
- Municipality specific information, including:
  - Regulatory authority to conduct site inspections (e.g., regulatory mechanisms such as contract language, ordinances, permits, legal agreements, etc.)
  - Written procedures for identifying priority sites for inspection
  - Written procedures for conducting site inspections
  - Process for documenting site inspection findings

Enforcement training should cover the following topics:

- Municipality specific information, including:
  - Regulatory authority to conduct enforcement and require corrective actions (e.g., regulatory mechanisms such as contract language, ordinances, permits, legal agreements, etc.)
  - Enforcement response procedures, including enforcement tools available and appropriate use of each (e.g., written warnings, fines, stop work order, etc.)
  - Process for documenting enforcement conducted

## **MCM 5: Post-Construction Stormwater Management**

20.18 The permittee must ensure that individuals receive training commensurate with their responsibilities as they relate to the permittee's Post-Construction Stormwater Management program. Individuals includes, but is not limited to, individuals responsible for conducting site plan reviews and/or enforcement. The permittee must ensure that previously trained individuals attend a refresher-training every three (3) calendar years following the initial training. [Minn. R. 7090]

### *Guidance notes:*

Site plan review training should cover the following topics:

- Designing site plans
- Understanding the environmental impacts of construction activity
- Low impact development (LID) innovations and new products
- Permanent stormwater management requirements, including when infiltration is prohibited
- Permanent BMPs, including:
  - Infiltration systems (e.g., infiltration basins, infiltration trenches, rainwater gardens, bioretention areas, and swales with impermeable check dams)
  - Filtration systems (e.g., sand filters with underdrains, biofiltration areas, swales using underdrains with impermeable check dams, underground sand filters)
  - Wet sedimentation basins (i.e., stormwater ponds and stormwater wetlands)
- Municipality specific information, including:
  - Post-construction stormwater management regulatory mechanism and any other internal written policies with structural stormwater BMP criteria (e.g., engineering design manual)
  - Legal mechanism for the long-term maintenance of permanent BMPs
  - Written procedures for site plan reviews
  - Process for documenting site plan reviews

Enforcement training should cover the following topics:

- Municipality specific information, including:
  - Regulatory authority to conduct enforcement and require corrective actions for structural stormwater BMPs not owned or operated by the permitted municipality (e.g., legal mechanism for the long-term maintenance of structural stormwater BMPs)
  - Enforcement response procedures, including enforcement tools available and appropriate use of each (e.g., written warnings, fines, perform necessary maintenance and assess costs to the BMP owner, etc.)
  - Process for documenting enforcement conducted

## **MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations**

21.7 Each calendar year, the permittee must ensure all individuals that perform winter maintenance activities for the permittee receive training that includes:

- a. the importance of protecting water quality;
- b. BMPs to minimize the use of deicers (e.g., proper calibration of equipment and benefits of pretreatment, pre-wetting, and anti-icing); and
- c. tools and resources to assist in winter maintenance (e.g., deicing application rate guidelines, calibration charts, Smart Salting Assessment Tool).

The permittee may use training materials from the Agency's Smart Salting training or other organizations to meet this requirement. [Minn. R. 7090]

*Guidance notes:* Permitted municipalities may fulfill this training by having their winter maintenance staff participate in an appropriate MPCA Smart Salting training course. More information available at <https://www.pca.state.mn.us/business-with-us/smart-salting-training>. In-house training is acceptable provided the training covers the items identified above.

21.12 The permittee must implement a stormwater management training program commensurate with individual's responsibilities as they relate to the permittee's SWPPP, including reporting and assessment activities. The permittee may use training materials from the United States Environmental Protection Agency (USEPA), state and regional agencies, or other organizations as appropriate to meet this requirement. The training program must:

- a. address the importance of protecting water quality;
- b. cover the requirements of the permit relevant to the responsibilities of the individual not already addressed in items 18.8, 18.9, 19.11, 20.18, and 21.7; and
- c. include a schedule that establishes initial training for individuals, including new and/or seasonal employees, and recurring training intervals to address changes in procedures, practices, techniques, or requirements.

[Minn. R. 7090]

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*Guidance notes:* Permitted municipalities must train individuals that perform municipal operations identified in [Permit item 21.4](#). The training must cover the individual's responsibilities so they can adequately perform their responsibilities to prevent or reduce pollutant discharges associated with those activities. Individuals includes those that perform any of the following activities:

- Waste disposal and storage, including dumpsters
- Management of temporary and permanent stockpiles of materials such as street sweepings, snow, sand, and sediment removal piles
- Vehicle fueling, washing, and maintenance
- Routine street and parking lot sweeping
- Emergency response
- Cleaning of maintenance equipment, building exteriors, dumpsters, and the disposal of associated waste and wastewater
- Use, storage, and disposal of significant materials (significant materials is a defined term in the [Permit item 27.33](#))
- Landscaping, park, and lawn maintenance
- Road maintenance, including pothole repair, road shoulder maintenance, pavement marking, sealing, and repaving
- Right-of-way maintenance, including mowing
- Application of herbicides, pesticides, and fertilizers
- \*As applicable, permitted municipalities must also ensure individuals have received adequate training for the operation, inspection, and maintenance of an alum or ferric chloride phosphorus treatment system (these systems are described in [Section 23](#) of the Permit).

To cover specific responsibilities, a training should answer the following questions:

- How does the activity have the potential to impact water quality?
- What can someone performing this activity do to prevent or reduce the likelihood of discharging pollutants to the MS4 and receiving waters?
- What tools or resources are available those responsible for performing the activity? Examples:
  - Written procedures, guidelines, and/or checklist to follow
  - Spill kit
  - Phone number to contact appropriate municipal staff for containment/clean-up in the event of a spill
  - Phone number to contact duty officer in the event of a spill

- If applicable, what does someone need to document when they perform this activity (e.g., related to inspection, maintenance, enforcement)?

## Training content

The content and extent of training must be commensurate with an individual's responsibilities covered under the Permit. This means training must be as extensive as necessary for an individual to competently perform their job duties required by the Permit and the municipality's SWPPP. For example, police are considered field staff. Their responsibility under the Permit is to understand what an illicit discharge is, and upon discovery of an illicit discharge, report it to the appropriate person or department at the permitted municipality for further investigation. Therefore, training for police may be limited to that specific topic (e.g., 5-10 minutes to deliver a slide show presentation on illicit discharge recognition and reporting).

In contrast to the example above, an individual responsible for performing site plan reviews and construction activity inspections, needs more training to perform those duties (e.g., 12+ hours of training which includes examples, group participation, discussions, and field demonstrations). For further discussion on topic of training related to construction activity, refer to the guidance *Training requirements for the Construction Stormwater Permit (wq-strm2-31)* available at <https://www.pca.state.mn.us/business-with-us/construction-stormwater-permit-faqs>. The guidance focuses on compliance with the NPDES/SDS Construction Stormwater Permit (Permit No. MNR100001), but provides applicable training examples for designing site plans, site management, and BMP installation.

## Municipality specific training

Permitted municipalities must ensure individuals receive training that covers applicable regulatory mechanism(s), written procedures, and documentation requirements. For example, an individual that inspects construction sites for erosion, sediment, and waste controls on behalf of a permitted municipality should be knowledgeable about that municipality's:

- Regulatory authority to conduct site inspections (e.g., regulatory mechanisms such as contract language, ordinances, permits, legal agreements, etc.)
- Written procedures for identifying priority sites for inspection
- Written procedures for conducting site inspections
- Process for documenting site inspection findings

As another example, someone that conducts construction site enforcement on behalf of a permitted municipality for non-compliant erosion, sediment, and waste controls should be knowledgeable about the municipality's:

- Regulatory authority to conduct enforcement (e.g., regulatory mechanisms such as contract language, ordinances, permits, legal agreements, etc.)
- Enforcement response procedures, including enforcement tools available and appropriate use of each (e.g., written warnings, fines, stop work order, etc.)
- Process for documenting enforcement conducted

Regulatory mechanisms, written procedures, and documentation processes tend to be highly customized and unique to fit the needs and ability of each permitted municipality. It is unlikely that a training program developed for a broad audience (e.g., a national or statewide training program) would satisfy the bullets listed above. Therefore, permitted municipalities will more than likely need to develop and implement at least some level of in-house training to cover these procedures and processes. Permitted municipalities are highly encouraged to utilize existing events, meetings, or other communication methods to integrate training topics required by this Permit. The Permit provides broad latitude for meeting the training requirements (e.g., a slideshow presentation or a video may qualify as training provided it covers relevant content for the audience) but permitted municipalities must document training activities as required by the Permit.

## Documentation of training

The Permit requires permitted municipalities to document the following for each training:

- General subject matter covered
- Names and departments of individuals in attendance
- Date of each event

*Guidance notes:* Permitted municipalities are encouraged to utilize any methods available to them to deliver and document trainings. For example, in large group settings, permitted municipalities may want to consider using sign-in sheets to track individuals in attendance.

## Where training is available

Established topic area trainings:

- Erosion prevention, sediment control, or permanent stormwater management for construction activity, and pertinent MS4-focused topics, such as:
  - Illicit discharge management
  - Regulatory enforcement
  - Inspection and maintenance of permanent stormwater treatment practices  
Available at: <https://erosion.umn.edu/>
- Winter maintenance (Smart Salting training):  
<https://www.pca.state.mn.us/business-with-us/smart-salting-training>
- Lawn/turf care maintenance:  
<https://www.pca.state.mn.us/business-with-us/turf-grass-maintenance-training>

Entities that may offer additional training opportunities include:

- The University of Minnesota
- The Minnesota Erosion Control Association
- Private industries
- Local, state, federal agencies, professional organizations, or other entities with expertise in stormwater management

## More information

If you have questions, contact one of the MPCA Municipal Stormwater Program staff listed at

<https://www.pca.state.mn.us/business-with-us/municipal-stormwater-ms4>