

## **DRAFT Municipal Road General Permit Standards**

### **PART 6: ROAD STORMWATER MANAGEMENT STANDARDS**

The following standards are required for all “hydrologically-connected” municipal road segments within the road ROW and municipal stormwater infrastructure. If the implementation of one of the following standards will trigger the need for an additional state permit for a specific location, the Secretary may waive the requirement at that location. Additionally, extremely challenging sites and conditions may preclude the implementation of the MRGP Standards in certain situations. Some examples include: historic stone walls, historic trees, excessive ledge, buried utilities, and other significant and sensitive areas, and/or unique cultural and environmental resources. Municipalities shall document the reasons why an MRGP standard cannot be met for each location where a waiver is requested. Waivers will not be granted until review and approval by the Secretary. Fiscal reasons are not a basis for non-compliance or basis for a request of a waiver.

When planning for and implementing road stormwater management practices, follow the three primary principles: 1<sup>st</sup> disconnection; 2<sup>nd</sup> infiltration; and 3<sup>rd</sup> stable conveyances.

#### **6.1 Required Standards for Gravel and Paved Roads with Ditches**

This part includes the required standards for all hydrologically-connected gravel and paved municipal roads with drainage ditches, whether or not erosion is present. These standards also apply to all new road construction and significant road upgrades. For new construction or upgrades, all bare or unvegetated areas shall be re-vegetated and/or stone lined within 48 hours of disturbance of soils, or sooner if precipitation is forecast. There are separate standards for paved roads with catch basins (see Part 6.3) and for Class 4 roads (see Part 6.4).

##### **A. Roadway/Travel Lane Standards**

###### **1. Roadway Crown**

- a. Gravel roads shall be crowned, in or out-sloped;

Minimum: ¼”/foot

Recommended: ¼” – ½”/foot or 2% - 4%.

- b. Paved/ditched roads shall be crowned during new construction, removal of old pavement or addition of new pavement;

Minimum: 1/8”/foot or 1%

Recommended: 1% - 2%.

###### **2. Grader Berm/windrows**

Grader berms shall be removed to allow precipitation to shed from the travel lane into the road drainage. Roadway runoff shall flow in a distributed manner to the drainage ditch or filter area and there shall be no grader berms or evidence of a “secondary ditch”.

## B. Road Drainage Standards

Roadway runoff shall flow in a distributed manner to grass or a forested area by lowering road shoulders. Road shoulder shall be lower than travel lane elevation. If distributed flow is not possible, roadway runoff may enter a drainage ditch, stabilized as follows:

1. For roads with slopes of 0% - <5% - Grass-lined ditch, no bare soil.

Recommended shape: trapezoidal or parabolic cross section with mild side slopes; 2H:1V or flatter.

2. For roads with slopes of 5% - <8%:

- a. Stone-lined ditch; Minimum: 6-8" minus stone, or
- b. Grass-lined ditch with stone check dams, or
- c. Grass-lined ditch if installed with disconnection practices such as cross culverts and/or turnouts to reduce road stormwater runoff volume.

See Appendix B for check dam installation specifications.

3. For roads with slopes  $\geq 8\%$ ; Stone-lined ditch.

For slopes  $\geq 8\%$  - 10%, Minimum: 6-8" minus stone.

For slopes  $>10\%$ , Minimum: 12" minus stone.

4. If appropriate, bioretention areas, level spreaders, armored shoulders, and sub-surface drainage practices may be substituted for the above Road Drainage Standards.

## C. Stable Conveyances – Drainage Outlets to Waters & Turnouts

Roadway drainage shall be disconnected from waterbodies whenever possible and shall flow in a distributed manner to a grass or forested filter area. If this is not possible, drainage outlets and conveyance areas must be stabilized as follows:

1. Turn-outs - all drainage ditches shall be turned out to avoid direct outlet to surface waters, whenever possible.

2. There must be adequate outlet protection at the end of the turnout, based upon slope ranges below:

- a. For conveyances with slopes of 0% - <5%, stabilize with grass.
- b. For conveyances with slopes  $\geq 5\%$ , stabilize with stone.

For slopes  $\geq 5\%$  - 10%, Minimum: 6-8" minus stone.

For slopes of  $>10\%$ , Minimum: 12" minus stone.

## 6.2 Standards if Rill or Gully Erosion is Present on Gravel and Paved Roads with Ditches

Required standards if rill or gully erosion or sedimentation is present. These standards also apply to new construction.

### A. Municipal Drainage Culverts/Cross Culverts/Conveyance Culverts

1. Culvert end treatment and/or headwall required for areas with slopes  $\geq 5\%$ , if erosion is due to absence of these structures. End treatment and/or headwall is required for new construction.
2. Stabilize outlet such that there will be no scour erosion, if erosion is due to absence or inadequacy of outlet stabilization. Stone aprons or plunge pools required for new construction.
3. Upgrade to 18" culvert (minimum), if erosion is due to inadequate size or absence of structure. In some instances, intermittent streams may become part of the municipal road drainage network. In these cases, the Secretary recommends culvert sizing based on in-field and mapping techniques described in (link).
4. A French Drain or French Mattress sub-surface drainage practice may be substituted for a cross culvert.

### B. Driveway Culverts within the municipal ROW

1. Culvert end treatment and/or headwall required for areas with slopes  $\geq 5\%$ , if erosion is due to absence of these structures. End treatment and/or headwall is required for new construction.
2. Stabilize outlet such that there will be no scour erosion, if erosion is due to absence or inadequacy of outlet stabilization. Stone aprons or plunge pools required for new construction.
3. Upgrade to 15" culvert (minimum), 18" recommended, if erosion is due to inadequate size or absence of structure. In some instances, intermittent streams may become part of the municipal road drainage network. In these cases, the Secretary recommends culvert sizing based on in-field and mapping techniques described in (link).

### **6.3 Standards for Paved Roads with Catch Basins**

A. For catch basin outlets from paved/curbed roads, complete the CB Inventory and Outlet Erosion Evaluation to identify areas of gully erosion.

#### **B. Catch Basin Outlet Stabilization**

All catch basin outlets shall be stabilized to eliminate all rill and gully erosion. Municipalities shall stabilize all catch basin outlets per the following schedule:

1. Category 1 Towns (see Appendix A)

Implement catch basin outlet stabilization on 6% of eroded outlets per year (minimum), each year 2021-2038.

2. Category 2 Towns (see Appendix A)

Implement catch basin outlet stabilization on 7% of eroded outlets per year (minimum), each year 2024-2038.

### **6.4 Standards for Connected Class 4 Roads**

Stabilize any areas of gully erosion identified in the Road Erosion Inventory with the practices described above or equivalent. Disconnection practices such as broad-based dips and water bars may replace cross culverts and turnouts.