New Road and Bridge Standards—**Yes** or **No** option to each:

- MRGP Standards for non-connected roads (but no permit coverage)
- Class 4 road standard for non-connected roads
- Intermittent stream crossing standard
- Roadway construction standard
- Guard rail
- Driveway access
<table>
<thead>
<tr>
<th>Road and Bridge Standards Sections</th>
<th>Hydrologically-connected roads (segments)*</th>
<th>Non-hydrologically-connected roads (segments)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1 - Municipal Road Standards</td>
<td>YES (Required by Act 64)</td>
<td>YES NO</td>
</tr>
<tr>
<td>Section 2 - Class 4 Road Standards</td>
<td>YES (Required by Act 64)</td>
<td>YES NO</td>
</tr>
<tr>
<td>Town wide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 3 - Perennial stream-bridge and culvert standards</td>
<td>YES (Required by DEC Stream Alteration Standard)</td>
<td></td>
</tr>
<tr>
<td>Section 4 - Intermittent stream crossings</td>
<td>YES NO</td>
<td></td>
</tr>
<tr>
<td>Section 5 - Roadway construction standards</td>
<td>YES NO</td>
<td></td>
</tr>
<tr>
<td>Section 6 - Guardrail standard</td>
<td>YES NO</td>
<td></td>
</tr>
<tr>
<td>Section 7 - Driveway access standard</td>
<td>YES NO</td>
<td></td>
</tr>
</tbody>
</table>
Intermittent Stream Sizing- the Active Channel width
What type of culvert is it??

**Drainage**
- No defined channel below structure
- 15” minimum for drives (18” recommended)
- 18” minimum for road drainages

**Intermittent**
- Defined channel bed but dries up most years
- 18” minimum
  (Recommend **Active Channel** width)

**Perennial**
- Defined channel and runs year-round (most years)
- **Bankfull Width** generally required with Stream Alteration Permit
Discharges of Stormwater (SW) from municipal roads including:

- Town highways, Classes 1-4

- SW infrastructure associated with town highways under the operational control of the municipality

- Exemptions:
  - Unorganized towns and gores exempt from MRGP permit
  - MS4 towns - exempt from MRGP fee and permit application but MRGP standards implementation will be required in future SW Management Plans
What is **not** covered by the MRGP

- Perennial stream crossing replacements or retrofits

- Road embankment streambank or lakeshore embankment stabilization-related to stream or wave erosion

- Standard implementation considered infeasible if the implementation of that practice will trigger another state or federal permit (except non-reporting permits such as ACOE Self-Verified)
Hydrologically-Connected Road Segments
Hydrologically-Connected Roads

Connected Criteria:

- Within 100’ of a water resource
- Bisects (crosses) and drains to a water resource
- Located within the DEC river corridor
- Connectivity status can be changed during the inventories
- Catch basin outfalls within 500’ of a water resource and those segments associated with those outfalls

Water Resources:

- Perennial streams
- Intermittent streams/Defined channel (even if dry)
- Wetlands
- Lakes and Ponds
Road Stormwater Management Plan

Components

Inventory

Prioritize - Implementation Table

Implement
Road Erosion Inventories (REIs)

Separate REIs and standards for:
- Paved and gravel roads with ditches
- Paved roads with catch basins
- Class 4 roads

REI “scores” for each 328 foot segment:
- Fully Meets
- Partially Meets or
- Does Not Meet
MRGP Requirements: Road Erosion Inventory

This Survey123 form is the easiest way for municipalities to complete their required assessment of catch basin outfall systems while submitting the data directly to ANR for reporting.

Road Erosion Inventory (REI) was developed for municipalities to fulfill requirements of the Vermont Department of Environmental Conservation’s Municipal Roads General Permit (MRGP). The form is based on practice standards that have developed as part of the MRGP. Vermont municipalities will have to adhere to the MRGP requirements starting in 2018. These requirements include conducting road erosion inventories of all hydrologically-connected roads.

This general permit is intended to achieve significant reductions in stormwater-related erosion from Vermont’s municipal roads, both paved and unpaved. Municipalities will implement a customized, multi-year plan to stabilize their road drainage system. The plan will include bringing road drainage systems up to basic maintenance standards, and additional corrective measure to reduce erosion as necessary to meet a TMDL or other water quality restoration effort. The permit is required by Act 64, the Vermont Clean Water Act, and the Lake Champlain Phase I TMDL.

For more information on the DEC Municipal Roads program and the development of the Municipal Roads General Permit, contact Jim Ryan by email or at (802) 490-6140.
Approximately 65% of connected roads already meet the MRGP Standards.
• Towns will submit REI results and Implementation Tables by 12/31/2020

• All “connected” roads brought up to MRGP standards no later than 12/31/2036
Very High Priority (VHP) Segments Criteria

- Gravel and Paved Roads with Drainage Ditches:
  - *Does Not Meet* MRGP on slopes >10%
- Paved Roads with Catch Basins:
  - *Does Not Meet* with outfall erosion of 3 cubic yards or more
- Class 4 Roads:
  - *Does Not Meet* MRGP (gully erosion) on slopes >10%
Very High Priority Segments
Implementation Schedule

VHP Paved and Gravel Roads with Ditches:
» Shall meet standards by 12/31/2025

VHP Class 4 roads:
» Shall meet standards by 12/31/2028

VHP Paved Roads with Catch Basins:
» Shall meet standard by 12/31/2025

(Gully erosion)
| Segment | Assessment | Road Name       | ID   | Date       | Reason          | Road Type             | Slope  | Crown | Rain window | Drainage | Conveyance | Erosion Cutoff | Drainage Culvert | Status          | Priority    |
|---------|------------|-----------------|------|------------|-----------------|-----------------------|--------|-------|-------------|----------|------------|-----------------|----------------|-----------------|---------------|--------------|
| 10443   | Work Done  | BLUSH HILL RD   | 500  | 7/1/2017   | Work Done       | Paved - Non Curbed   | 6.75   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 10446   | Work Done  | BLUSH HILL RD   | 502  | 7/1/2017   | Work Done       | Paved - Non Curbed   | 7.79   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 10447   | Work Done  | BLUSH HILL RD   | 504  | 7/1/2017   | Work Done       | Paved - Non Curbed   | 13.95  | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106178  | 7/1/2017   | GREGG HILL RD   | 507  | 7/1/2017   | Work Done       | Paved - Curbed      | 6.45   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106200  | 7/1/2017   | GREGG HILL RD   | 505  | 7/1/2017   | Work Done       | Paved - Curbed      | 0.13   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106201  | 7/1/2017   | GREGG HILL RD   | 507  | 7/1/2017   | Initial Inventory| Paved - Curbed      | 4.62   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106218  | 5/1/2017   | GREGG HILL RD   | 514  | 7/1/2017   | Work Done       | Paved - Curbed      | 5.66   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106223  | 7/1/2017   | GREGG HILL RD   | 511  | 7/1/2017   | Work Done       | Paved - Curbed      | 12.13  | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106224  | 7/1/2017   | GREGG HILL RD   | 516  | 7/1/2017   | Work Done       | Paved - Curbed      | 1.81   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106226  | 7/1/2017   | GREGG HILL RD   | 508  | 7/1/2017   | Work Done       | Paved - Curbed      | 6.16   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106227  | 7/1/2017   | GREGG HILL RD   | 512  | 7/1/2017   | Work Done       | Paved - Curbed      | 2.5    | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106230  | 7/1/2017   | GREGG HILL RD   | 213  | 1/1/2017   | Initial Inventory| Class 4            | 3.33   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106233  | 7/1/2017   | GREGG HILL RD   | 509  | 7/1/2017   | Work Done       | Paved - Curbed      | 5.76   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106239  | 7/1/2017   | GREGG HILL RD   | 227  | 1/1/2017   | Initial Inventory| Paved - Curbed      | 10.58  | F     | F           | D        | F          | F               | F              | Does Not Meet  | Very High   |
| 106241  | 7/1/2017   | GREGG HILL RD   | 510  | 7/1/2017   | Work Done       | Paved - Curbed      | 0.15   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106242  | 7/1/2017   | GREGG HILL RD   | 513  | 7/1/2017   | Work Done       | Paved - Curbed      | 6.45   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106247  | 7/1/2017   | GREGG HILL RD   | 506  | 7/1/2017   | Work Done       | Paved - Curbed      | 5.11   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106248  | 7/1/2017   | GREGG HILL RD   | 515  | 7/1/2017   | Work Done       | Paved - Curbed      | 5.14   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106599  | 7/1/2017   | GROVE LN        | 229  | 1/1/2017   | Initial Inventory| Paved - Curbed      | 6.98   | F     | D           | D        | F          | F               | F              | Does Not Meet  | High        |
| 106600  | 7/1/2017   | GROVE LN        | 228  | 1/1/2017   | Initial Inventory| Paved - Curbed      | 3.39   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 106601  | 7/1/2017   | GROVE LN        | 230  | 1/1/2017   | Initial Inventory| Paved - Curbed      | 10.18  | P     | F           | F        | F          | F               | F              | Partially Meets| Moderate    |
| 111106  | 7/1/2017   | HENRY HOUGH RD  | 243  | 1/1/2017   | Initial Inventory| Paved - Curbed      | 15.67  | D     | F           | F        | F          | F               | F              | Does Not Meet  | Very High   |
| 111513  | 7/1/2017   | HUBBARD FARM RD | 250  | 1/1/2017   | Initial Inventory| Paved - Non Curbed  | 6.85   | F     | F           | F        | F          | F               | F              | Fully Meets    |              |
| 111516  | 7/1/2017   | HUBBARD FARM RD | 248  | 1/1/2017   | Initial Inventory| Paved - Non Curbed  | 8.18   | D     | F           | F        | F          | F               | F              | Does Not Meet  | High        |
| 111518  | 7/1/2017   | HUBBARD FARM RD | 249  | 1/1/2017   | Initial Inventory| Paved - Non Curbed  | 5.5    | P     | P           | P        | P          | F               | F              | Does Not Meet  | High        |
| 115433  | 7/1/2017   | HUNGER MTN RD   | 251  | 1/1/2017   | Initial Inventory| Paved - Curbed      | 0.05   | F     | F           | D        | F          | F               | F              | Does Not Meet  | Moderate    |
| 1159.1  | 7/1/2017   | ARMORY AV       | 195  | 1/1/2017   | Initial Inventory| Paved - Non Curbed  | 5.93   | F     | F           | F        | F          | F               | F              | Incomplete Data|             |
MRGP Implementation Example 1:

Town A. has 52 total road miles (VT average)

- 26 road miles (50%) are hydrologically-connected road segments

- 26 miles not considered connected (no BMP work needed)

- 13 connected road miles (50%) currently fully meet MRGP standards (maintenance of BMPs only)

- 13 remaining connected miles – required to be brought up to MRGP Standards before 2036

- 15% of 13 miles = 1.95 miles or 31.2 segments will be brought up to standards over a 2 year period 2021 and 2022 = **1.0 miles per year (50% connectivity and 50% Fully Meets)**
MRGP Implementation Example 2:

Other examples:

• 60% connectivity and 50% Fully Meets: 15% of 15.6 miles = 2.32 miles over a 2 year period = 1.2 miles per year

or

• 60% connectivity and 40% Fully Meets: 15% of 18.72 miles = 2.8 miles over 2 years = 1.4 miles per year
MRGP Principles

• **Read the Road** - work from the top of road down and center of road out

• Disconnect road Stormwater whenever possible, perpendicular flow

• Infiltrate stormwater

• Stabilize conveyances and turn out ditches
Standards Check List:

- Does your road have a good crown?
- Are the road shoulders lower than the travel lane?
- If no, question - do you have an adequate ditch?
- Is your ditch stone lined if 8 percent or higher?
- Is your ditch stone lined or have check dams or have 2 cross culverts or turnouts if 5-7.99 percent slope?
- Are your ditches turned away from water and/or stable?
- Are your drainage and drive culverts adequately sized and not eroding?
Types of Erosion

Rill erosion 1” to <12” deep

Gully erosion 12” plus
Following construction and soil disturbance on a hydrologically-connected road segment, all bare and unvegetated areas shall be revegetated with seed and mulch, hydroseeded, or stone lined within 5 days of disturbance of soils, if precipitation is forecast, sooner.
Baseline Standard- Crowning
Grass and stone-lined drainage ditches/distributed flow
Subsurface drainage systems
Required Baseline Standard – Stable Turnouts
Removal of shoulder/grader berm
Distributed flow = road shoulders lower than travel lane (no ditch needed)
Driveway culvert erosion
Erosion from lack of culvert headwall/header
Culvert outlet erosion
Culvert outlet stabilization
(Detail from VTrans Better Roads Manual)

PLAN

SECTION

DETAIL - ROCK APRON
Catch basin outlet erosion
Standards Implementation “Exemptions”

- Historic trees
- Historic stone walls
- Buried utilities
- Excessive ledge
- Lake shore vegetation
Annual Reports - due April 1st

• For 4/1/19 and 4/1/20:
  • Simple 1 page form-
  • REI complete?

• For future years: 2021+
  • Segment compliance status changes due to road upgrades
MRGP Timeline of Deliverables
(Near-Term)

- **Summer-Fall 2017**:
  - MRGP public hearings and comments

- **2017**:
  - Draft municipal roads general permit

- **January 2018**:
  - MRGP Issued

- **July 31, 2018**:
  - Municipalities apply for MRGP coverage (NOI) and pay fees

- **2021 and 2022**:
  - Required implementation of priority road projects. A minimum of 15% of non-compliant segments upgraded to meet standards in 2021 and 2022

- **Starting in 2019**: Annual Reports due April 1st

- **December 31, 2020**:
  - Initial Road Erosion Inventory and Implementation Table Due
MRGP Timeline of Deliverables (Longer-Term)

On-going MRGP practice implementation and maintenance throughout

December 31, 2025

- All Very High Priority segments (except Class 4) upgraded

December 31, 2028

- All Class 4 Very High Priority segments upgraded

December 31, 2028

- All connected roads meet MRGP Standard. On-going practice maintenance forward

Annual MRGP schedule updates - due April 1st
Assistance to Towns

- Funding – Municipal Grants-in-Aid
- Outreach and Technical Assistance
- Small Equipment Grants
Grants-in-Aid (GIA)- Funding Levels

FY 18 GIA - Actual Funding:
- 186 participating towns - 70% participation
- $2.6 million
- Approximately 42 road miles brought up to the new MRGP standards in 2017

FY 19 GIA -
$3.1 million

FY 20 GIA- $3.5 million (proposed)
Municipal Grants-in-Aid Equipment Funding

Eligible Equipment (up to 80%):

- Roller/compactors
- Small hydroseeders
- Shoulder discs
- Hay bale shredders
- Leaf blowers
- Plate compactors

Eligible watersheds this grant round-July 2019:

- White River
- Black/Ottauquechee
- South Champlain/Poultney-Mettowee
  (watersheds rotated annually)
VTrans and DEC Road Roundtable Trainings

Spring 2019 Roundtable Forums schedule:

- 4/23 Hartland
- 4/25 Coventry
- 5/9 Lincoln
- 5/15 Shaftsbury
For Additional Information:
http://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program#Development of Permit

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