




Jim Ryan



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
WATERSHED
MANAGEMENT DIVISION
STORMWATER PROGRAM

Roads Roundtable Forum- DEC and VTrans



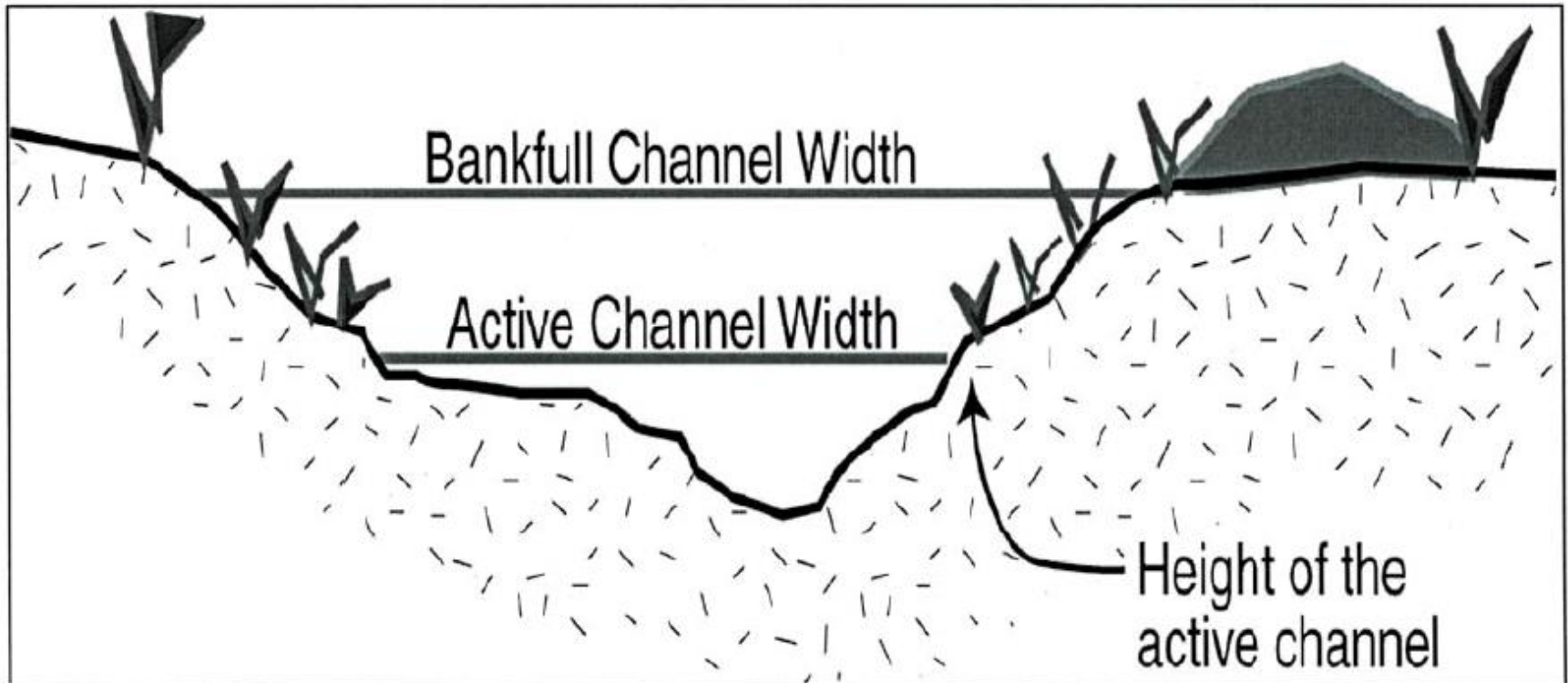
New Road and Bridge Standards- **Yes** or **No** option to each:

- 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

New Vermont Road and Bridge Standards

Road and Bridge Standards Sections	Hydrologically-connected roads (segments)*	Non-hydrologically-connected roads (segments)**	
Section 1 - Municipal Road Standards	YES (Required by Act 64)	YES	NO
Section 2 - Class 4 Road Standards	YES (Required by Act 64)	YES	NO
Town wide			
Section 3 - Perennial stream- bridge and culvert standards	YES (Required by DEC Stream Alteration Standard)		
Section 4 - Intermittent stream crossings		YES	NO
Section 5 - Roadway construction standards		YES	NO
Section 6 - Guardrail standard		YES	NO
Section 7 - Driveway access standard		YES	NO

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



MRGP Coverage

Discharges of Stormwater (SW) from municipal roads including:

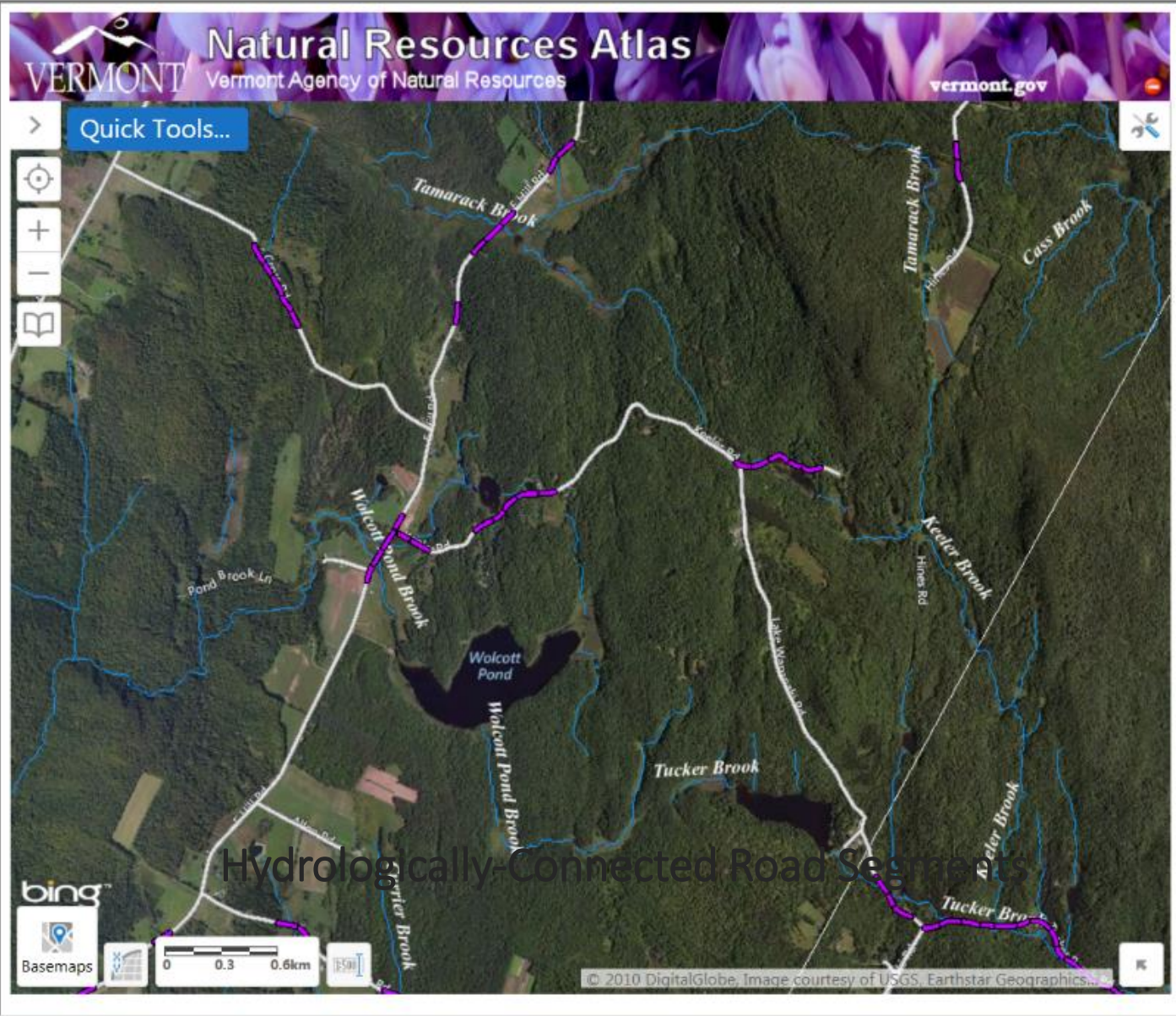
- Town highways, Classes 1-4
- SW infrastructure associated with town highways under the operational control of the municipality
- Exemptions:
 - **Unorganized towns and gores exempt** from MRGP permit
 - **MS4 towns-** exempt from MRGP fee and permit application but MRGP standards implementation will 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)

- Permitting
- Mapping
- Natural Resources Atlas
- Maps
- Environment



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



Implement

Prioritize - Implementation Table

Segment		Assessment		Reason	Road Type	Slope	Crown	Base / Subgrade	Drainage	Conveyance	Flow Control	Discharge Control	Status	Priority
Num :	Road Name :	ID	Date											
10443	BLUSH HILL RD	500	7/1/2017	Work Done	Paved - Non Curbed	6.75	F	F	F	F	F	F	Fully Meets	
10446	BLUSH HILL RD	502	7/1/2017	Work Done	Paved - Non Curbed	7.79	F	F	F	F	F	F	Fully Meets	
10447	BLUSH HILL RD	504	7/1/2017	Work Done	Paved - Non Curbed	13.96	F	F	F	F	F	F	Fully Meets	
106187	GREGG HILL RD	507	7/1/2017	Work Done	Paved - Curbed	6.45	F	F	F	F	F	F	Fully Meets	
106200	GREGG HILL RD	505	7/1/2017	Work Done	Paved - Non Curbed	0.13	F	F	F	F	F	F	Fully Meets	
106201	GREGG HILL RD	226	1/1/2017	Initial Inventory	Paved - Curbed	6.42	F	F	F	F	F	F	Fully Meets	
106218	GREGG HILL RD	514	7/1/2017	Work Done	Paved - Curbed	5.86	F	F	F	F	F	F	Fully Meets	
106223	GREGG HILL RD	511	7/1/2017	Work Done	Paved - Curbed	12.13	F	F	F	F	F	F	Fully Meets	
106224	GREGG HILL RD	516	7/1/2017	Work Done	Paved - Curbed	1.81	F	F	F	F	F	F	Fully Meets	
106226	GREGG HILL RD	508	7/1/2017	Work Done	Paved - Curbed	6.16	F	F	F	F	F	F	Fully Meets	
106227	GREGG HILL RD	512	7/1/2017	Work Done	Paved - Curbed	2.5	F	F	F	F	F	F	Fully Meets	
106230	GREGG HILL RD	213	1/1/2017	Initial Inventory	Class 4	3.33							Fully Meets	
106233	GREGG HILL RD	509	7/1/2017	Work Done	Paved - Curbed	5.76	F	F	F	F	F	F	Fully Meets	
106239	GREGG HILL RD	227	1/1/2017	Initial Inventory	Paved - Curbed	10.58			D	F	F	F	Does Not Meet	Very high
106241	GREGG HILL RD	510	7/1/2017	Work Done	Paved - Curbed	0.15	F	F	F	F	F	F	Fully Meets	
106242	GREGG HILL RD	513	7/1/2017	Work Done	Paved - Curbed	6.45	F	F	F	F	F	F	Fully Meets	
106247	GREGG HILL RD	506	7/1/2017	Work Done	Paved - Curbed	5.11	F	F	F	F	F	F	Fully Meets	
106248	GREGG HILL RD	515	7/1/2017	Work Done	Paved - Curbed	5.14	F	F	F	F	F	F	Fully Meets	
106599	GROVE LN	229	1/1/2017	Initial Inventory	Paved - Curbed	6.98	F		D	F	F	F	Does Not Meet	High
106600	GROVE LN	228	1/1/2017	Initial Inventory	Paved - Curbed	3.39	F	F	F	F	F	F	Fully Meets	
106601	GROVE LN	230	1/1/2017	Initial Inventory	Paved - Curbed	10.18			P	F	F	F	Partially Meets	Moderate
111105	HENRY HOUGH RD	243	1/1/2017	Initial Inventory	Paved - Non Curbed	15.67			D	F	F	F	Does Not Meet	Very high
115163	HUBBARD FARM RD	250	1/1/2017	Initial Inventory	Paved - Non Curbed	6.85	F	F	F	F	F	F	Fully Meets	
115165	HUBBARD FARM RD	248	1/1/2017	Initial Inventory	Paved - Non Curbed	8.18	D	F	F	D	F	F	Does Not Meet	High
115168	HUBBARD FARM RD	249	1/1/2017	Initial Inventory	Paved - Non Curbed		S	P	P	P	F	F	Does Not Meet	High
115433	HUNGER MTN RD	251	1/1/2017	Initial Inventory	Paved - Curbed	0.05			F	D	F	F	Does Not Meet	Moderate
1199.1	ARMORY AV	195	1/1/2017	Initial Inventory	Paved - Non Curbed	5.93			F	F	F	F	Incomplete Data	Incomplete





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

Verizon 7:42 AM 90%

Paved Roads with Catchbasins: 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.

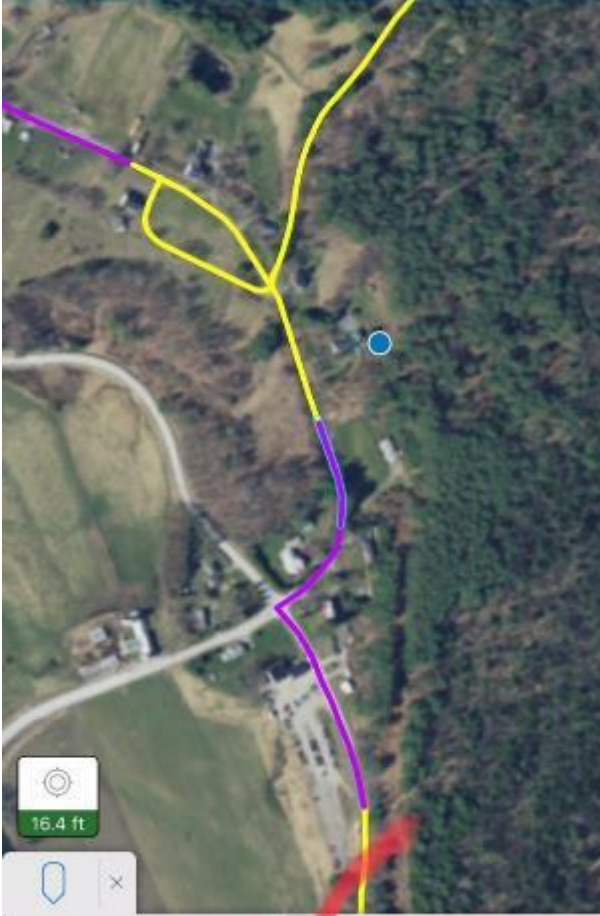
For more information on the DEC Municipal Roads program and the development of the Municipal Roads General Permit, contact Jim Ryan by email or at (802) 490-6140.


 **Collect**
Start collecting data

 **Outbox**
Send your completed survey data

Verizon 9:16 AM 53%


Maps



 **Municipal Roads General Permit**
STOCKBRIDGE COMMON

Verizon 11:45 AM 100%

Map Details

 **Length**
328.1 ft

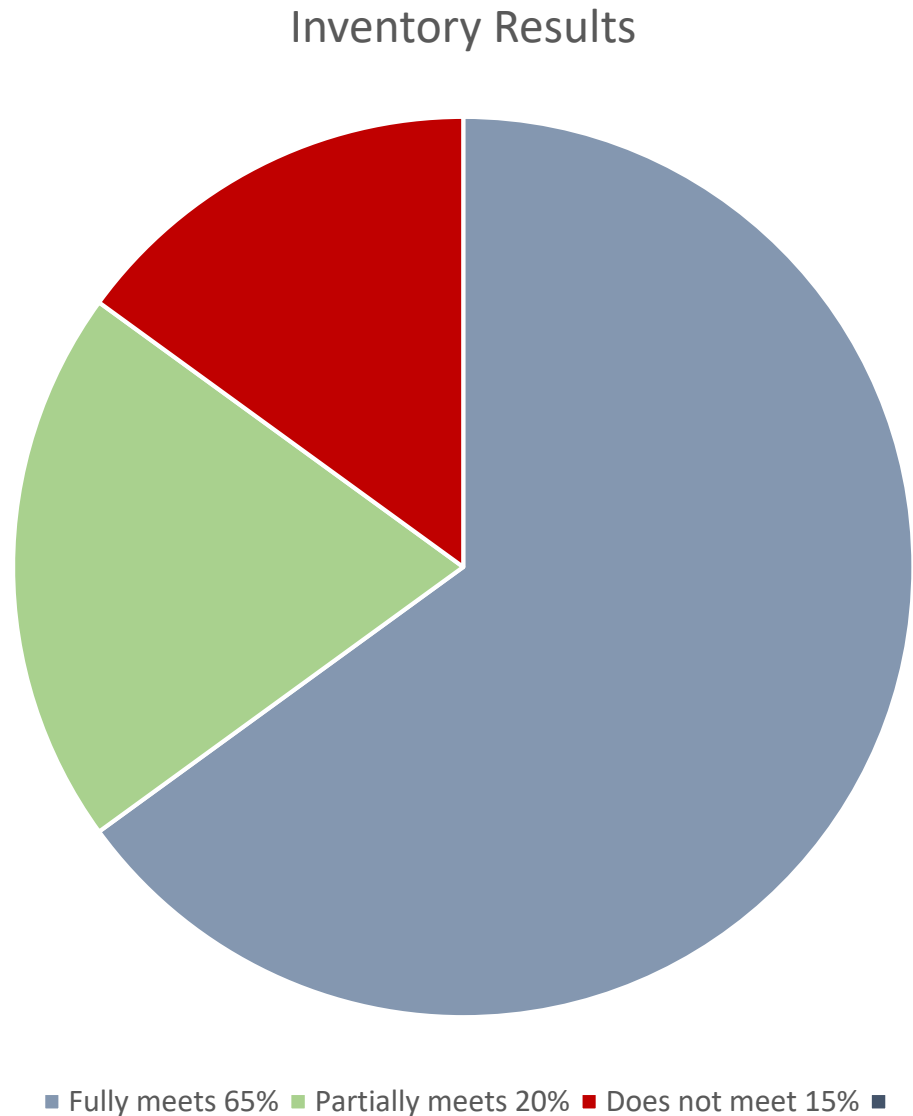
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Municipal Roads General Permit

Launch Inventory for Connected Road Segment

Segment ID: 63656.1
STOCKBRIDGE COMMON, Stockbridge, Vermont
Hydrologically Connected: Yes

Approximately
65% of
connected
roads already
meet the
MRGP
Standards





Implementation Prioritization

- 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)

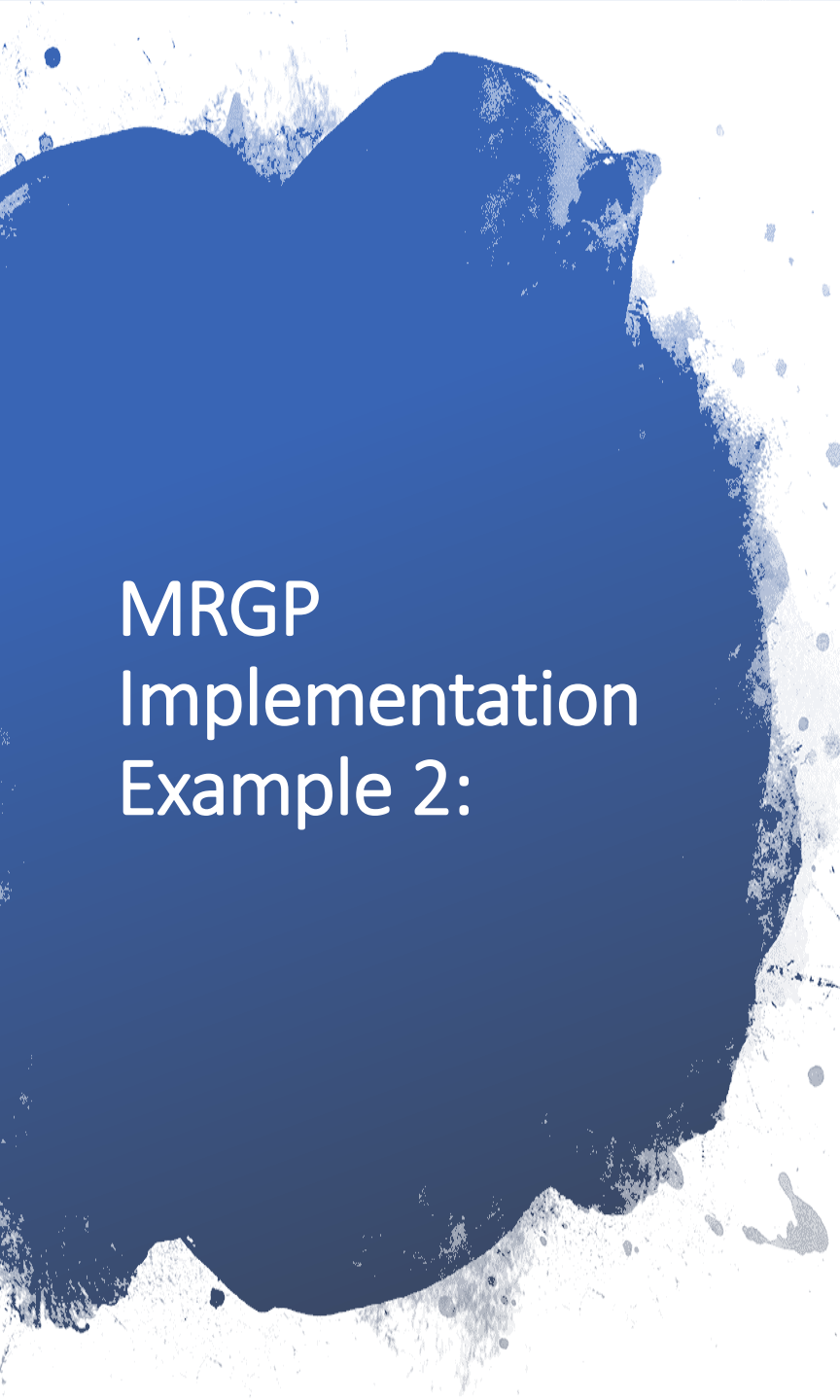
MRGP Implementation Table

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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

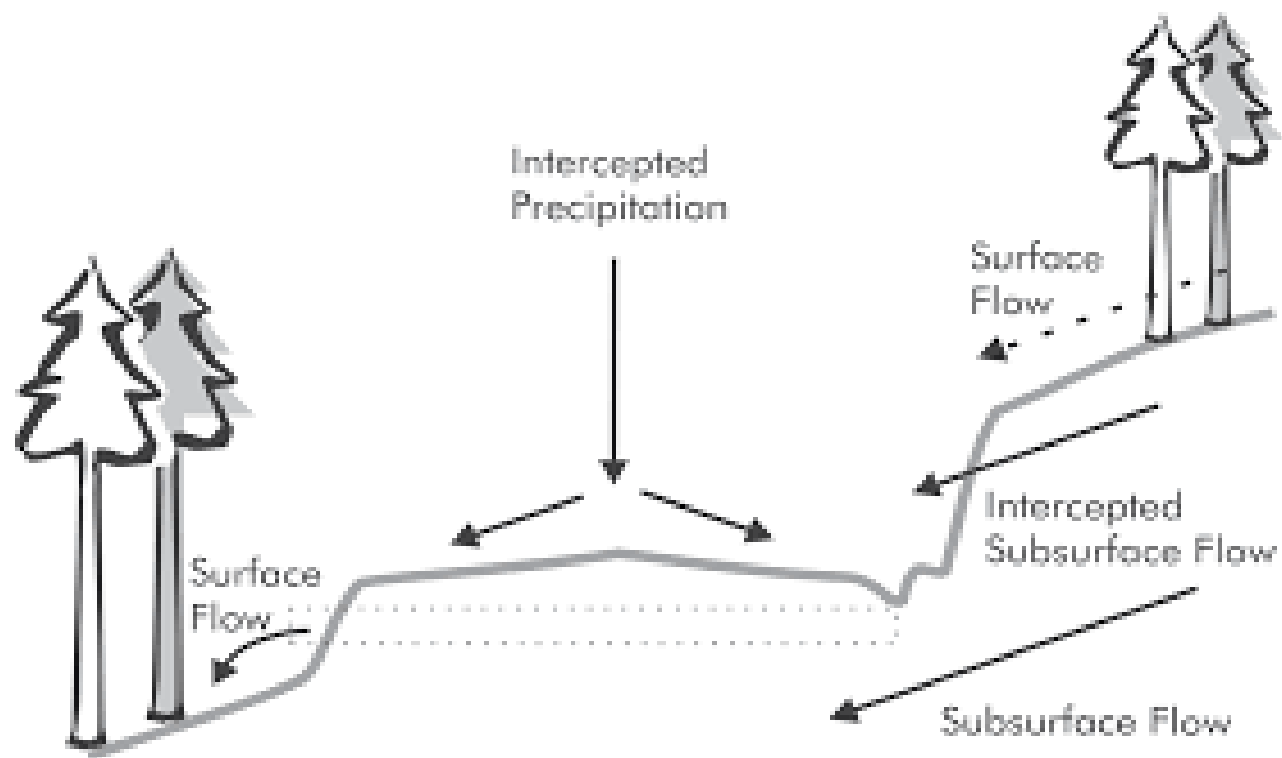


Gully erosion 12" plus

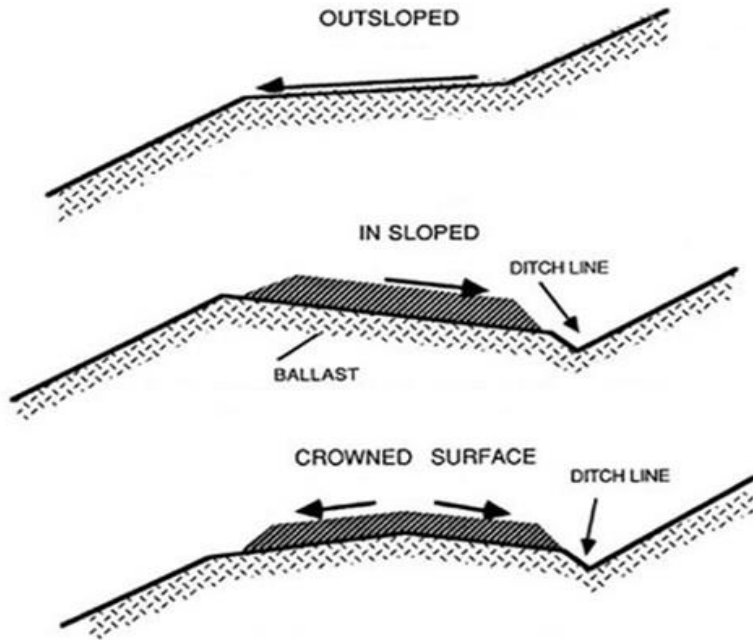


Following construction and soil disturbance on a hydrologically-connected road segment, all bare and unvegetated areas shall be revegetated with seed and mulch, hydroseeded, or stone lined within 5 days of disturbance of soils, if precipitation is forecast, sooner.



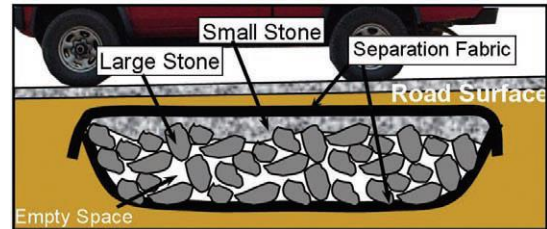


Baseline Standard- Crowning

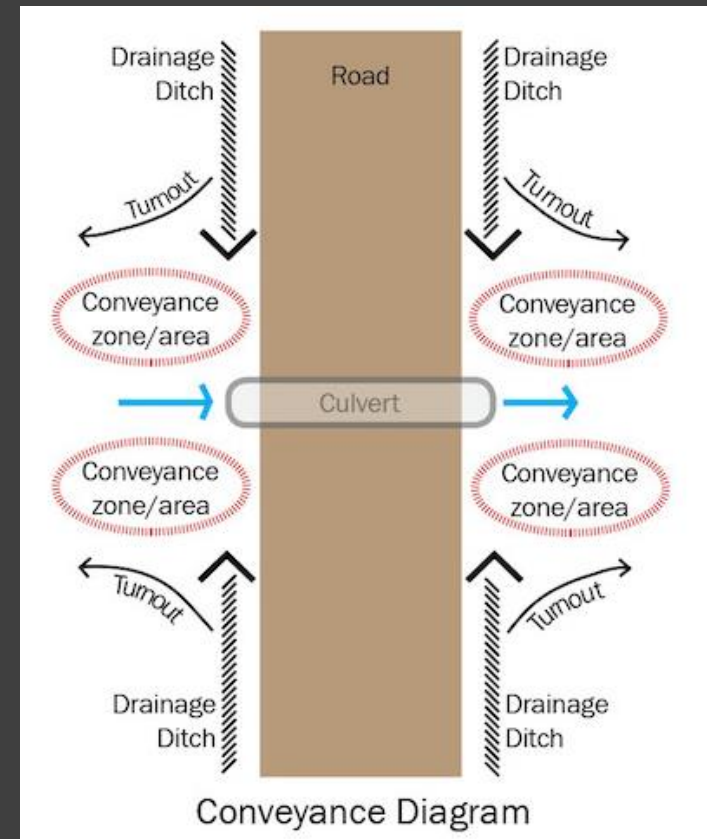




Grass and stone-lined drainage
ditches/distributed flow



Subsurface drainage systems



Required Baseline Standard –
Stable Turnouts



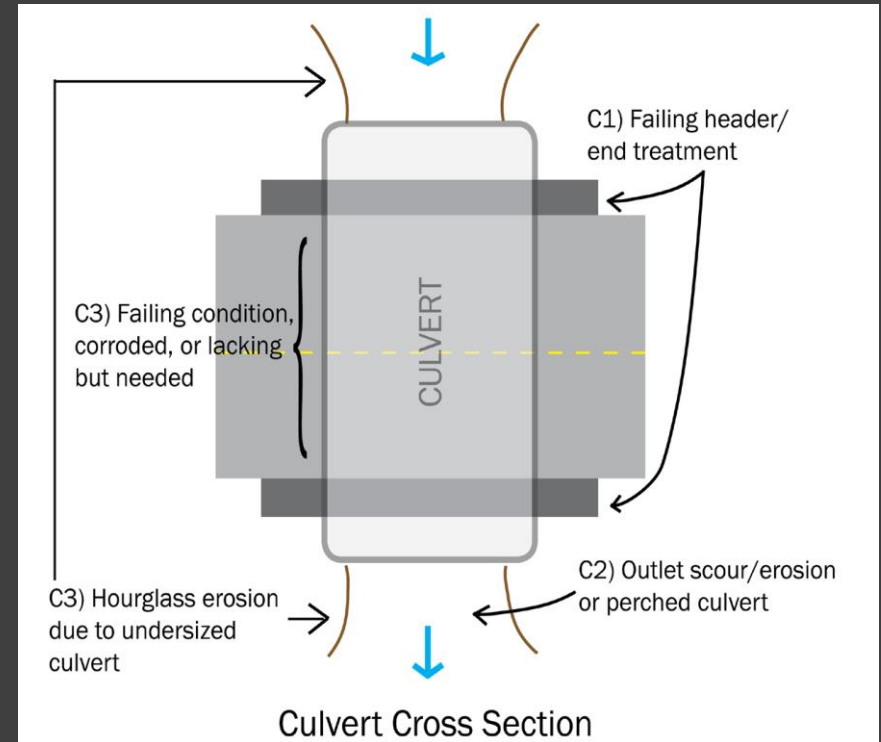
Removal of shoulder/grader berm

Distributed flow=road shoulders lower than travel lane (no ditch needed)





Driveway culvert erosion

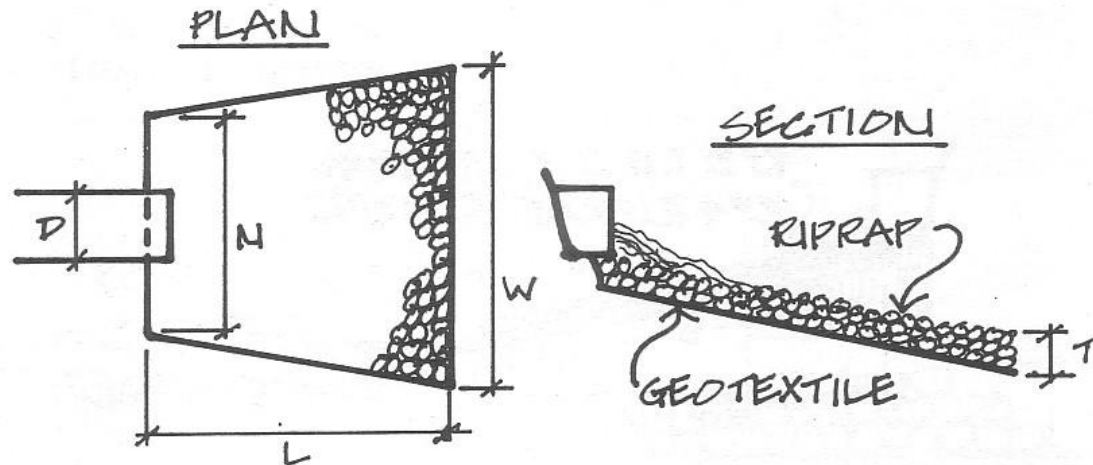


Erosion from lack of culvert
headwall/header



Culvert outlet erosion

Culvert outlet stabilization (Detail from VTrans Better Roads Manual)



DETAIL - ROCK APRON



Catch basin outlet erosion



Standards Implementation “Exemptions”

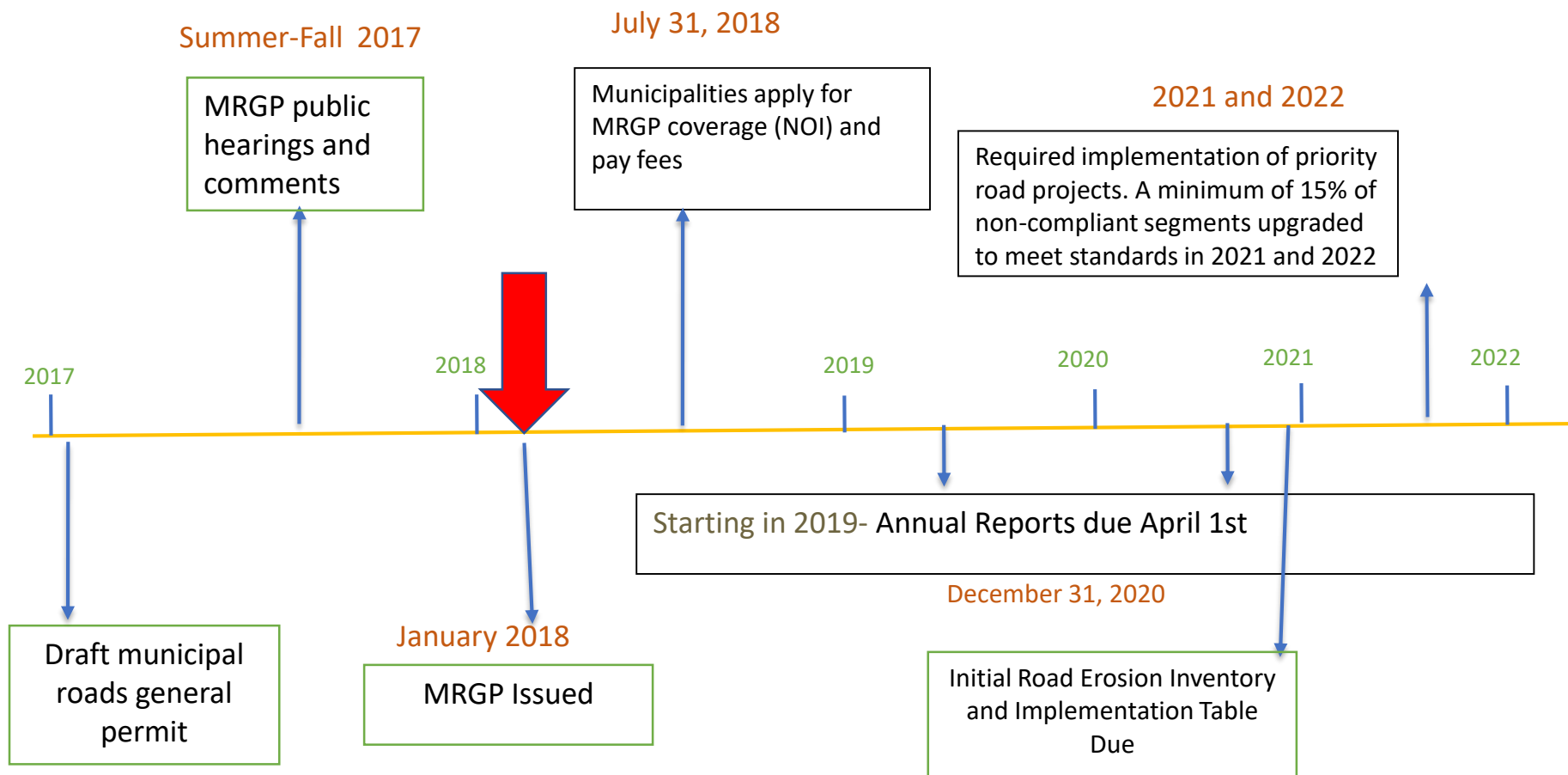
- Historic trees
- Historic stone walls
- Buried utilities
- Excessive ledge
- Lake shore vegetation



Annual Reports- due
April 1st

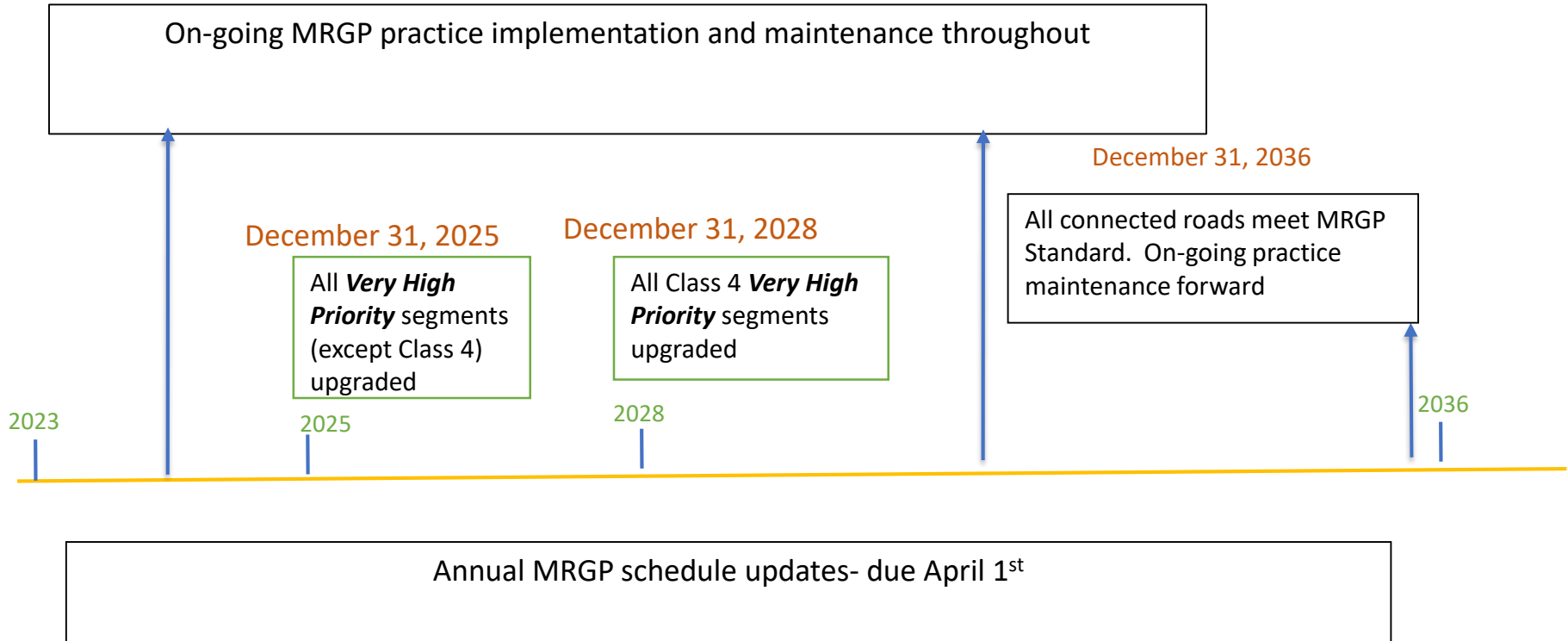
- **For 4/1/19 and 4/1/20:**
 - Simple 1 page form-
 - REI complete?
- **For future years: 2021+**
 - Segment compliance status changes due to road upgrades

MRGP Timeline of Deliverables (Near-Term)



VERMONT DEPARTMENT OF
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WATERSHED
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STORMWATER PROGRAM

MRGP Timeline of Deliverables (Longer-Term)





- Funding – Municipal Grants-in-Aid
- Outreach and Technical Assistance
- Small Equipment Grants

Assistance to Towns

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/Ottawaquechee
- ▶ 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](http://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/municipal-roads-program#Development%20of%20Permit)

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