

## **Interim Guidance for completing municipal road erosion inventories and capital budgets 2016-2018- March 2, 2016 (from DEC Municipal Roads Program)**

**Background:** Act 64, the Vermont Clean Water Act, requires DEC to develop a draft Municipal Roads General Permit (MRGP) by December 2016 and final MRGP by December 2017. Towns will begin applying for coverage under the permit in fall of 2018 (proposed). As part of the development of the MRGP, new municipal road practice standards will be developed. A MRGP Technical Team has been formed to assist the DEC Stormwater Management Section develop the new MRGP standards. As the MRGP and standards are finalized, updated road erosion inventory templates will be developed.

The information below is meant only as guidance of how to conduct road erosion inventories and capital budgets in the interim (2016-2018). This guidance only applies to gravel (not class 4) and paved roads with drainage ditches. This guidance does not apply to Class 4 roads or paved roads with catch basins, since these road types will have different standards, which have yet to be developed. For example, for roads with catch basins, the MRGP standards may include regular street sweeping and catch basin cleanout schedules. As these standards are drafted, we will amend this interim document accordingly.

**Inventory Schedule:** We generally recommend that towns conduct road erosion inventories every 5 years. This schedule will likely be a requirement of the MRGP. If at all possible, conduct inventories for towns within basins where DEC tactical basin plans are about to be or are currently being developed.

### **Interim Road Erosion Inventory Guidance- The 5 C's**

- **Connectivity**
- **Culverts**
- **Crowns**
- **Conveyance**
- **Capital Budgets**

**Connectivity:** All interim and future road erosion inventories should identify road sites that are a moderate to high risk for causing erosion (sediment and nutrients) to impact a water of the state.

GIS Connectivity determination-Initial road connectivity can be determined at the GIS level by using the *Road Erosion Risk Ranking* layer in the ANR Natural Resources Atlas. High, moderate, and low erosion risk segments (red, yellow, and green) should be at least visited in each town.

Field Connectivity Determination- As part of the road erosion field assessments, delineate the entire road segment that could drain (road watershed) to a surface water and conduct the inventory of that entire segment. These segments will ultimately become **Priority Road Segments (or Connected Segments)**. Field criteria development is underway by DEC, but in the interim use the following connectivity criteria:

- Does road segment bisect (is perpendicular to) a water of the state (stream, lake, pond or wetland)?
- Does the road run parallel to a water of the state? If so, what is that lateral distance? Is the water less than 500' away (or further away but evidence of erosion conveyance to a water of the state)?
- Does the road bisect an intermittent stream (intermittent streams have a defined channel even if dry)? If so, is a perennial water less than 500' from the road-intermittent stream convergence/confluence, on a steep slope (>5%), and/or have evidence of gully erosion within the conveyance? If the conveyance is not a defined channel (sheet flow only) or is greater than 500' and not likely to impact a water of the state, it is not likely a moderate to high road erosion risk (unless otherwise observed in the field)
- If you answered yes to one or more above, map the road segments draining to that water and evaluate these road segments and prepare a capital budget (using **the 4 remaining Cs guidance below**). Use GPS lat-long points if at all possible to delineate the segments. Document your justification for including the segment within the inventory (i.e. road bisects a stream).

#### **Culverts, Crowns, and Conveyance the actual inventory of the Priority Road (connected)**

**Segment:** (*Town and Bridge Standards, 2013 and Better Backroads Manual, 2009*). When conducting inventories, use the existing *Town Road and Bridge Standards, 2013* (VTrans Orange Book p. 7-6) as a guide for evaluating whether road segments meet or do not meet standards. These standards will likely change as the MRGP standards are developed to match the different road types, but serve as a good guide in the interim. For example evaluate the road crown/grading, ditching, drainage and driveway culvert diameters, drainage culverts/inlets and outlets, and turnouts, along the entire delineated segment. **MRGP Standards must be met for entire connected (priority road) segment once the MRGP is in place- see above regarding connectivity delineation.**

**Capital Budgets:** When preparing capital budgets, determine construction quantities (i.e. CY of stone, excavator time, hourly rates, etc.). In preparing remediation plans for road erosion sites. Capital budgets should include site restoration recommendation, cost estimate, construction quantities, and restoration sketch and approximately 5 year time period of implementation. A comprehensive capital budget plan could be used to assist municipalities in applying for Better Roads grants. Capital budgets should use practices described in the existing *Road and Bridge Standards* and/or *Better (Back) Roads Manual*.

Separate in-stream culvert priorities and river-road conflict priorities in a separate section of the road erosion inventory and capital budget (i.e. Town of Groton inventory). Since these practices will not be required by the MRGP but are important none the less for flood resiliency, aquatic organism passage, and/or promoting stream equilibrium. These practices are eligible for *Better Roads* grant funding.

**Existing Tools and Guidance for conducting road erosion inventories include** (see below for more specific information):

- The *Road Erosion Risk Ranking* Layer on the ANR Natural Resources Atlas <http://anrmaps.vermont.gov/websites/anra/>
- *Better Backroads Manual*, 2009 <http://vtransengineering.vermont.gov/bureaus/mab/better-back-roads>
- *Town and Bridge Standards*, 2013 (VTrans Orange Book p. 7-6) [http://vtransoperations.vermont.gov/sites/aot\\_operations/files/The%20Orange%20Book-online%20version%202014-2016%2004May15%20REV2.pdf](http://vtransoperations.vermont.gov/sites/aot_operations/files/The%20Orange%20Book-online%20version%202014-2016%2004May15%20REV2.pdf)
- DEC and Watershed Consulting Associates Road Erosion Inventory and Capital Budget Template <http://watershedca.com/>

Good current examples of recent road erosion inventories include (there are many others), completed by RPCs, NRCDs (Caledonia, Orleans and Essex Counties), consultants, and DEC. You may refer to one of these inventories for guidance but **please also include addressing the 5 Cs above:**

**NEK towns:** Groton, St. Johnsbury, Burke, and Concord. Contact Doug Morton at NVDA [dmorton@nvda.net](mailto:dmorton@nvda.net)

**Lamoille County towns:** Wolcott, Hyde Park, Belvidere, Johnson, Elmore, and Eden. Contact Rob Moore [Rob@lcpvvt.org](mailto:Rob@lcpvvt.org)

**For general questions regarding this document or the DEC MRGP please contact:**

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