

Report Title

*Validating
 Pollutant Load
 Estimates from
 Highways and
 Roads*



Why was it studied?

Rain and snowmelt that runs off of roadways carries pollutants. Runoff is treated in retention ponds, gravel wetlands, swales, and other methods to improve stormwater quality before that water enters rivers, lakes, and wetlands. NHDOT uses the Simple Method for estimating the pollution load in this runoff. The Simple Method assumes pollutant loads from historic data rather than more complicated and time-consuming physical models. This study looked at pollution runoff from New Hampshire roads to check if they are reflected by the Simple Method.



What was done?

Stormwater runoff was collected and sampled after rainfall events in the summer and fall of 2014 and 2015. Three locations were picked to represent low, medium, and high traffic volume roadways. The water samples were analyzed in a lab to determine the amount of various pollutants present. The actual, measured amount of pollutants was compared to the loading predictions of the Simple Method.

Principal Investigators

*Dr. Thomas P. Ballesterio
 James J. Houle
 Anthony A. Puls
 University of New Hampshire
 Stormwater Center*

Report Link

*[http://www.nh.gov/dot/org/
 projectdevelopment/
 materials/research/projects/
 documents/15680Y-
 FINALREPORT.pdf](http://www.nh.gov/dot/org/projectdevelopment/materials/research/projects/documents/15680Y-FINALREPORT.pdf)*

What did we learn?

The NHDES Simple Method is acceptable for estimating pollutant loads off of New Hampshire roadways. The Simple Method tends to generate slightly higher estimates than actual measured pollutant loads; this provides a factor of safety. Designing filtering systems to handle higher expected pollutant loads results in better water quality after treatment. In addition, the pollutant load generated from a roadway does not vary based on the traffic volume. This study confirmed that using one modeling approach is effective for all New Hampshire roadways.



Stormwater Gravel Wetland

NHDOT Research Unit

*Bureau of Materials and
 Research
 5 Hazen Drive
 Concord, NH 03302
 (603) 271-3151*

How can we use it?

NHDOT will continue to use the Simple Method to estimate pollutant loading from New Hampshire Roadways. This study provides renewed confidence that our methods allow stormwater to be properly treated before entering our rivers, lakes, and wetlands.