VERMONT

VCGI

LiDAR Data Supports the Vermont Clean Water Initiative:

LiDAR (**L**ight **D**istance **A**nd **R**anging) is a remote sensing technology that produces elevation models of sufficient resolution[1] to support high precision river, stream, and unnamed tributary mapping in support of Clean Water initiatives.   This increase in resolution affords analysis at the site level that is simply not possible with current elevation data. LiDAR data supports Act 64 and the VT Clean Water Initiative as follows:

Required Agricultural Practices (RAPs):

LiDAR supports the mapping of ditches, diversions, gullies, swales and surface water features in direct support of nutrient management planning goals:

- Stacking manure outside of floodways and set back from various features, i.e., Property lines (200'), private water supplies (200') and perennial (200') and intermittent (100') surface waters.
- Not applying manure within certain distances of: private wells (100'), public water supplies (200'), perennial (25') and intermittent (10') surface waters.
- Establishing buffer widths on certain features, i.e., ditches, diversions, swales (10') and perennial (25') and intermittent (10') surface waters.
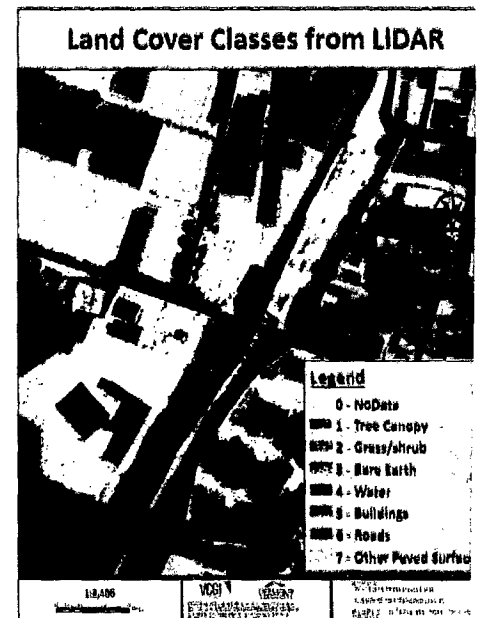

Using LIDAR to locate Ravine & Gullies - Conduits of nutrients and sediment in Lake Champlain (Credit: Caroline Alves – USDA/NRCS

VT DEC Municipal Roads Program:

As part of the municipal roads storm water permit, municipalities will have to identify, inventory and prioritize erosion areas on local roads hydrologically connected to perennial streams.

- LiDAR elevation models can be used to map ditches, gullies, swales and unnamed tributaries. These features can then be used to:
  - Identify Town highways with drainage systems connected to perennial streams;
  - Inventory roads identified with ditch slopes GT 5% to be stone lined;
  - Prioritize connected roads in a reliable and consistent way around the state to help ensure that:
    1. Only the local roads that affect water quality are regulated; and
    2. Water quality funds are targeted only on the roads that matter.

Land Cover Classes from LIDAR

Legend
0 - NoData
1 - Tree Canopy
2 - Grass/shrub
3 - Bare Earth
4 - Water
5 - Buildings
6 - Roads
7 - Other Paved Surface

Impervious surfaces can be derived from LiDAR

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[1] An increase from 36 to 8400 data points per acre compared to current elevation data