VTrans Policy, Planning & Intermodal Development Division
Mapping Section Functions

Overview of functions

Process the Mileage Certificates and maintain the record of "official" town and state highway miles

Generate the Summary of Annual Highway Mileage

Maintenance of the General ("Town") Highway Maps

Generate the Certified Public Highway Mileage and submit to FHWA

Maintain the National Highway System and Functional Class data and mileage

Process Class 2 Town Highway Transfer Requests

Maintenance of the Route Logs

Production of Standard Maps and Map Series

Assistance in the Development of the Agency's GIS Capabilities

Repository for Maps and Orthophotos

Process the Mileage Certificates and maintain the record of "official" town and state highway miles

- Provide Towns with the annual Mileage Certificate for all public highways and maintain files on Town Highways and Mileage changes. These files contain historical highway information dating to the 1970's and in most cases from the 1950's. The Mileage Certificates are the document used as a base for processing changes in mileage used to compile the summary of highway mileage used in the formula for payment of State Aid for Highway Maintenance.

- Processing of any highway additions, alterations, reclassifications and discontinuances submitted by the Towns and Cities within Vermont.   Staff reviews the paperwork submitted with the completed annual Mileage Certificate to make sure the changes meet statutory compliance.   Then staff inventories the new roads or changes in the field to assess surface type, width and true length. This information is compiled and entered into the highway files, then used in the production of the Town Highway Maps.

- Generation of the Highway Mileage Summary by County, by District, and by Regional Planning Commission (RPC) showing highway mileage totals by classification. This mileage data is used in the calculations used in the appropriation of state aid for town highways and in the "Certified Public Highway Mileage" submitted to the Federal Highway Administration (FHWA).

- As a result of Act 178 of 2006, the Mapping Section has gained expertise in the area of ancient roads and provides guidance to towns regarding how to add class 4 town highways and comply with the requirements of Act 178.

    http://vtrans.vermont.gov/planning/maps/publications

Maintenance of the General Highway Maps

- Maintain the statewide geographic information system (GIS) road centerline files used in the generation of the General Highway Maps, also known as the Town Highway Maps.   Maintenance is performed using the Highway Mapping System.

- Produce 319 General Highway Maps for all Towns, Cities, Gores, Grant, Villages and Urban Compacts.

- Provide copies of the General Highway Maps in various formats, including full size (approx. 30" X 36" and half size (15" X 18") and 8 ½" X 11" or in a digital PDF format. Copies are provided to Agency personnel, municipalities, RPC's and the public.

- The road centerline data layer is provided to the Vermont Center for Geographic Information (VCGI) on a semi-annual basis for distribution to GIS users through Vermont Open Geodata Portal.

    http://vtrans.vermont.gov/planning/maps/town-maps
    http://geodata.vermont.gov/datasets/VTrans::vt-road-centerline

Generate the Certified Public Highway Mileage and submit to FHWA

- Annually generates the Certified Public Highway Mileage based on mileage compiled from the Mileage Certificates and meeting Highway Performance Monitoring System (HPMS) mileage requirements, with submittal to FHWA by June 1st

- Mileage data is supplied to the HPMS Coordinator and Technician for use in the annual processing of HPMS

Maintain the National Highway System and Functional Class data and mileage

- Maintain and update to the National Highway System (NHS) data and mileage through consultation with locals, RPCs and VTrans staff, with submittal to FHWA for approval. This includes maintenance of geometry and mileage files.

- Maintain and update to the Functional Class System data and mileage through consultation with locals, RPCs and VTrans staff, with submittal to FHWA for approval. This includes maintenance of geometry and mileage files.

- VTrans Mapping is the point of contact regarding changes to the NHS and functional class for VTrans

  http://www.arcgis.com/home/webmap/viewer.html?webmap=7abe20f73dfd47fc8155f2a111f5368a

  ftp://vtransmaps.vermont.gov/Maps/Publications/Maps/NationalHighwaySystem/Vermont_NHS_2016.pdf

  ftp://vtransmaps.vermont.gov/Maps/Publications/Maps/FunctionalClassMaps/RuralFunclStatewide_2016.pdf

  ftp://vtransmaps.vermont.gov/Maps/Publications/Maps/Federal_Urban_Area_Maps/FAU_Maps_2016/

Process Class 2 Town Highway Transfer Requests

- Mapping oversees the process to transfer class 3 town highways to class 2, providing guidance to the DTAs and municipalities on the process, providing criteria sheets, receiving transfer requests, rating the requests and supplying the Secretary of Transportation with recommendations of the class 2 town highway transfers.

- VTrans Mapping is the point of contact regarding class 2 town highway transfer requests

Maintenance of the Route Logs

- Maintain the straight-line diagrams of the Federal Aid Highway System, also known as Route Logs, with construction projects, accidents, traffic, structures and any other pertinent information. The route logs are created using a GIS-based Route Log System and deployed as PDF's via the Agency's FTP site.

- Maintain the linear reference system (LRS) for the Agency of the Federal Aid Highway System, reflecting any mileage changes due to projects, new highways, relinquishments, or realignments. This includes update of the Master Route Definition Table (MRDTable) and the linear reference coding in the road centerline (RDS) GIS data layer. The LRS is the backbone of the Route Log System and serves other applications throughout the Agency, including HPMS.

- FHWA has expanded the requirement for the linear reference system and has included local roads (functional class 7). The Mapping Section has generated a local road linear reference system (LRS) which has been submitted to FHWA as part of the HPMS process, this layer will be a standard product generated by the Mapping Section.

  http://vtrans.vermont.gov/planning/maps/route-logs

Production of Standard Maps and Map Series

▪ The Section maintains a standard set of maps as a resource to the Agency and others. These maps include the following:

> Town & County Outline Map
> Rural Functional Class Map
> Federal Urban Area Maps – 9 in the series
> Transportation Map of the State of Vermont – Map No. 1
> State Highways, Class 1 & 2 Town Highways Map
> Transportation Facilities Map – Map No. 4
> Average Annual Daily Traffic (AADT) Map
> VTrans Maintenance District Map
> Airport Map
> Bridge Inspection Map Series
>
> http://vtrans.vermont.gov/planning/maps/maps

Production of Additional Maps, Map Series and Data

▪ The Section also produces additional maps and map series to meet specific demands within the Agency. These maps and map series are not on the same update cycle as the standard maps, and may be produced once and never updated. Some maps may become widely used and be updated frequently based on user need and availability of up to date data layers.   These maps include the following:

> Scenic Byway Maps
> County-Town Map Series
> Field Assessment Map Series
> Town Short Structure Map Series
> Emergency Evacuation Maps
> Bicycle Level of Customer Service
> Maps and data to support projects

Assistance in the Development of the Agency's GIS Capabilities

▪ The Mapping Section provides assistance with the generation of data and maintenance of existing data layers used throughout VTrans and the GIS community. This data is accessible primarily internally through the use of ArcMap software.

▪ Cooperative work with the GIS staff throughout the Agency in the maintenance of data on the GIS Server.

▪ The Section provides technical support for use of GIS software on an ad hoc basis to users. More formalized training is available through the Geographic Information Technology (GIT) Unit. The VTrans Mapping Section receives numerous questions regarding highways, GIS, route logs, and mapping from numerous sources, including VTrans staff, State Agencies, municipalities, and the public.

Repository for Maps and Orthophotos

• The Mapping Section is a repository for historical Town Highway Maps dating from the 1931 to the present. The Section also has copies of various other maps sets, including the Beers Atlas's covering the State (1860's–1870's), the Sanborn Insurance Maps, 7 ½ & 15 Minute USGS Topographic Map Series and various photogrammetric maps.

• The Section also has the Digital Orthophotos covering the whole State of Vermont. These images have been posted on the GIS Server in a compressed image format. The original disks are on file in the Mapping Section. The Section has acquired several other imagery sets, including the NAIP 2003, 2006, 2008, 2009, and 2011 imagery, and has worked on the Interstate Fiber Optic project that generated high resolution orthophotos and LiDAR data of the interstate corridor. The Section has also worked on LiDAR data collection for 122 miles of highway corridor damaged by TS Irene.

- The Mapping Section has a collection of aerial photos including the full statewide 1962-3 and 1974 series in 9" X 9" format. The Section nit also has aerial photos taken for specific projects from the 1950's to the present. The images are cataloged and accessible for review. Periodically, the Section receives requests for this imagery and provides technical assistance with the aerial photos.

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On-Line Mapping Resources

- The Mapping Section has made accessible a substantial amount of data in a digital format on-line. Please find links to the maps and data posted by the VTrans Mapping Section.

Main Mapping Section Page – http://vtrans.vermont.gov/planning/maps

Annual Mileage Summaries - http://vtrans.vermont.gov/planning/maps/publications

Town Highway Maps - http://vtrans.vermont.gov/planning/maps/town-maps

Map Archive - http://vtrans.vermont.gov/planning/maps/archive

Route Logs – http://vtrans.vermont.gov/planning/maps/route-logs

Bridge and Culvert Inspection Map Series – ftp://vtransmaps.vermont.gov/Maps/Publications/Maps/Inventory/

Field Assessment Map Series - ftp://vtransmaps.vermont.gov/Maps/Publications/Maps/Inventory/FieldAssessment/

Historic Projects - http://vtrans.vermont.gov/planning/maps/historic

Rural Functional Class Map –
ftp://vtransmaps.vermont.gov/Maps/Publications/Maps/FunctionalClassMaps/RuralFunclStatewide_2016.pdf

Federal Aid Highways and Functional Class Web Map –
http://www.arcgis.com/home/webmap/viewer.html?webmap=7abe20f73dfd47fc8155f2a111f5368a

County-Town Map Series, District Maps, and more - http://vtrans.vermont.gov/planning/maps/maps

VTrans Map Portal and *VTransparency* - http://vtrans.maps.arcgis.com/home/ (VTrans Asset Management Bureau)