

***TECHNICAL MEMORANDUM #2B***  
**Vermont Agency of Transportation**  
***Existing Conditions:***  
***Data Collection & Classification***

**Vermont Bicycle and  
Pedestrian Policy Plan**

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## Technical Memo #2B

# Existing Conditions: Data Collection and Classification

*Disclaimer: The information below is presented for purposes of providing an overview of applicable VTrans Data Collection and Classification practices and to facilitate the discussion of how they may relate to the revision of the Vermont Bicycle and Pedestrian Policy Plan.*

## 2.13 INTRODUCTION

The purpose of this Technical Memorandum is to:

- Provide an outline of the general types of bicycle and pedestrian related data that VTrans now collects in conjunction with its management of the States transportation system,
- Describe how the data are currently accessed by the VTrans staff and the public, and
- Inform the discussion of what types of data can currently be collected to help in the development and use of performance measures relating to bicycling and walking in Vermont.

Vtrans currently collects a vast amount of information relating to the State's Transportation system. This memo is not meant to provide an exhaustive analysis of all of this data. Instead, it provides a general discussion of the types of data collected and includes only selected discussions of specific data that may be relevant to potential performance measures relating to bicycling and walking in Vermont. Likewise, the methods of organizing, classifying and retrieving the information are generally described without providing a detailed explanation of the methods of retrieval specific to each data set collected.

## 2.14 DATA COLLECTION

### 2.14.1 Roadway Data

The majority of the data collected by VTrans is still vehicle based. VTrans collects a variety of data related to the condition and use of State highways and Class 1 and 2 Town Highway Major Collectors in Vermont. Some of the data is collected directly from the roadways while other data is collected from secondary sources.

Some of the primary roadway conditions and use data collected by VTrans tied to mile markers on the roadways includes:

- The number and types of vehicles using the road, including turning movement counts at selected intersections;
- Vehicle speeds;
- Physical roadway surface and subsurface conditions;

- Drainage and shoulder conditions and structures (except small culverts);
- Bridge conditions;
- Railroad crossing conditions;
- Vertical and horizontal alignments;
- Driveway types and locations; and
- History of construction project locations and improvements.

Secondary roadway use data collected by VTtrans includes:

- Vehicle crash data collected by enforcement agencies;
- Access permits; and
- Other construction related permits.

VTtrans also keeps records of the changes to the roadway. Such data includes data on paving, repaving, reconstruction, widening, realignments, and other modifications to the roadway over time.

This information is collected by a variety of means; digital video logs are one form of data collection that also becomes a permanent record of roadway conditions. VTtrans creates a new video log of all state highways every two years. VTtrans also undertakes 600 automated vehicle (tube) counts per year at different locations around the State, in addition to 19 permanent weight-in-motion counter locations. The count data is extrapolated to provide traffic volume data for any portion of the highway system not specifically counted.

### **2.14.2 Bicycle and Pedestrian Data**

In addition to roadway data, Vtrans also collects video logs on a limited number of shared use paths around the State. It is also beginning to work with the regional planning commissions to gather bicycle and pedestrian counts on a select group of shared use paths and sidewalks.

### **2.14.3 Other Data**

VTtrans collects data on transit provisions and use from the transit operators around the State.

## **2.15 DATA CLASSIFICATION & MANAGEMENT**

### **2.15.1 Data Cleansing**

Due to the large amount of data VTtrans gathers, it must constantly check to make sure that it is accurate and internally consistent. It refers to this ongoing process as “Data Cleansing.” Using the identical name for a roadway, making sure that each data set uses the same mile

marker referencing system, or coordinating the computer input procedures are examples of “Data Cleansing.” VTrans not only works to ensure consistency in newly gathered data, but is also reviewing older information to ensure its continued compatibility with newer information. These efforts make it easier to look at trends and changes in data over time, supporting efforts to create benchmarks and track performance measures.

### **2.15.2 Data Sources**

Data consistency allows VTrans to make much of its data available internally to VTrans staff via a computer based data warehouse. The data base is searchable by queries. Portions of this data are also available to the general public.

Crash location is one of the data sets available through the Route Log. Summary crash reports are available on the VTrans web site. It provides information on the location, type and severity of vehicle crashes on the roadway system. The data is also analyzed to provide information on which locations within the State roadway system have higher crash rates that would be expected by the volume of traffic and other conditions of any particular roadway.

The data warehouse includes a sign inventory, listing and describing the numerous signs VTrans erects around the State. The warehouse also includes the results of the yearly traffic counts and extrapolations.

Roadway data is also made available through route logs which provide a plan focused on the center line of the roadway organized by mile markers. Additional information shows much of the specific roadway data described in Section 2.14 above, referenced to the appropriate location of the roadway via the mile marker system. This information is available to the public. **Attachment 2F** contains a sample page of a route log.

A third data management system, Maintenance Activity Tracking System (MATS), tracks and organizes all the VTrans maintenance activities conducted by the Operations Division personnel. This information is quite detailed and includes such information as pothole repairs and litter pickup. This information is available only to VTrans staff.

Some of the data VTrans collects is still not readily available. In addition to its ongoing data cleansing efforts, VTrans is working to make more of its current and historic data more accessible.

### **2.15.3 Data Gaps**

VTrans collects a good deal of data. According to one data manager, “VTrans is awash in data!” Even so, it is still not collecting data that meets all of the many different needs of either VTrans staff or the public. This is particularly true of bicycling and walking data. VTrans is working to correct this limitation. The Bicycle and Pedestrian Program has recently begun working with the regional commissions to initiate a bicycling and walking

count program. This program will greatly expand the existing data on the number of bicyclists and pedestrians using bicycling and walking facilities in the State. As yearly counts accumulate, they will help to chart the effectiveness of the State's programs to increase walking and bicycling.

VTrans is also developing an inventory of sidewalks and crosswalks within State right-of-ways by examining the video logs. New VTrans software also lets VTrans staff measure the width of the sidewalks, as well as shoulders, travel lanes and the separation distances between the edge of pavement and the edge of adjacent sidewalks directly from the video logs. The ability is making it easier to develop vital inventories of bicycling and walking facilities in State right-of-ways.

While crash data is generally getting much better, the improvements typically only cover crashes involving motor vehicles that result in a certain dollar amount of damage or injury. Most independent bicycling and walking crashes or mishaps do not appear to be recorded in the system at present.

There is still very limited correlation of VTrans data with data from other State agencies, such as tourist or economic data from the Agency of Commerce and Community Development or health data from the Agency of Human Services. The need for such correlation is now realized, and VTrans is beginning to take efforts to encourage the coordination of related data from various State agencies.

VTrans is also reviewing, evaluating and testing cutting edge systems for counting bicycle and pedestrian traffic.