

April 17, 2024

**RFP ADDENDUM # 1**

**RE: Request for Proposals – SHSO TRCC Annual Planning Services 2025**

The Request for Proposals (RFP) for the above-mentioned services has been modified to clarify the RFP by addressing the following questions:

1. The Scope of Work requires *the contractor to Coordinate and attend regular TRCC meetings*. The Cost Proposal template shows the TRCC meetings to be “virtual or on-site.” Will you please confirm that contractor attendance can be virtual?

**A: Yes.**

2. The Scope of Work requires *the contractor to Coordinate Schedule and attend quarterly meetings with the TRCC Chair(s) to review and coordinate contract deliverables*. The Cost Proposal template shows the TRCC meetings to be “virtual or on-site.” Will you please confirm that contractor attendance can be virtual?

**A: Yes.**

3. *Re: Develop annual Section 405 grant application and deliver to the federal agency one month before deadline. This is contingent on Vermont providing the vendor all information required for the Section 405 grant application 30 days prior to the federal agency deadline listed previously.* Will you please clarify the timing? Will VTrans supply the contractor with all information 30 days before the contractor deadline, so 60 days total before the Federal deadline?

**A: Yes.**

4. Does the *Section 405 grant application* include all subsections or only the 405 (c)?

**A: Only 405c.**

5. Will you please clarify *Provide support in applying for other Federal Grant Applications?* What is the estimated number of Grant Applications anticipated and what level of assistance is VTrans seeking?

**A: It could be one but no more than one and level of assistance could be guidance and basic support to VTrans, if additional support is beyond the SOW then an amendment would be required.**

6. Will you please provide a copy of the *Vermont Traffic Records Inventory Document*?

**A: See the attached Vermont Traffic Records Inventory Documented.**

Sincerely,

*Caryn Pletzer*

Caryn Pletzer  
Contract Administration

cc: Contract Manager  
Project File

# State of Vermont Traffic Records Inventory

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September 30, 2023

**Vermont Highway Safety Office**

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**DOCUMENT INFORMATION**

**DOCUMENT CONTACT INFORMATION**

State Highway Safety Office  
 Vermont Agency of Transportation  
 2178 Airport Road  
 Berlin, VT 05641  
 Attn: Evelyn McFarlane  
 Phone: (802) 595-4661

**DOCUMENT REVISION HISTORY**

Date	Revision	Comments
9/30/2023		Release

For any changes or updates to the Traffic Records Inventory document, please email them to Evelyn McFarlane at [Evelyn.McFarlane@vermont.gov](mailto:Evelyn.McFarlane@vermont.gov) .

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# Vermont Traffic Records Inventory

## PURPOSE OF TRAFFIC RECORDS INVENTORY

The Vermont Traffic Records Inventory is a consolidated reference of the Vermont Traffic Records Data Systems. The component systems of the Vermont Traffic Records Data Systems are the crash, citation, driver, vehicle, roadway, and injury surveillance data systems. Injury surveillance systems include the EMS Run Reports, Trauma Registry, Emergency Department, Hospital Discharge, and Vital Records data systems.

The Vermont Traffic Records Coordinating Committee (TRCC), state agencies, and highway safety stakeholders can reference this document when planning improvements to the component data systems that will provide increased highway safety analysis capabilities.

Ideally, the Traffic Records Inventory will provide the reader with up-to-date data governance information and will be a reference for system documentation, data dictionaries, and user documentation. As systems are updated and/or replaced, this document must be updated to reflect the most current system information.

The goal of the Traffic Records Inventory document is to provide a reference document that can be used as part of the TRCC's efforts to improve the accessibility, completeness, uniformity, accuracy, integration, and timeliness of Vermont's traffic records data.

## TRAFFIC RECORDS DATA SYSTEMS OVERVIEW

### TRAFFIC RECORDS DATA SETS



### HIGH LEVEL INTER-SYSTEM INTERFACES

System interfaces between the component traffic records data systems include:

- Roadway to WebCrash - MRD table, ESRI feature services
- WebCrash to DMV – Crash data
- WebCrash to SAFETYNET – Commercial FMSCA crashes
- Valcour to WebCrash – Initial crash prefill
- Valcour to Vermont Judiciary Odyssey – E-Ticket
- Vermont Judiciary Odyssey to DMV Driver – Dispositions, point waivers, and compliances
- DMV Driver to NLETS – Law enforcement queries
- DMV Driver to Vermont Judiciary Odyssey – VT PID numbers, social security numbers

- DMV Driver to Vermont Secretary of State – Voter registration
- DMV Vehicle to NLETS – Law enforcement queries
- Department of Health – Death Notifications to DMV Driver

## DATA SYSTEMS

This section can be leveraged as a reference for developing linkages between the various traffic records data systems to improve traffic records integration and analysis. Linking of data systems allows for deeper highway safety analysis capabilities. Examples include linking crashes to roadway data to facilitate roadway improvement analyses, linking crash data to injury surveillance data to improve crash injury analysis and cost estimations, and linking various injury data sets together to fully understand the human costs associated with motor vehicle crashes.

The following table details each system along with any applicable comments.

Data System	System Name	Host Agency	Remarks
Driver	VT PICS	Agency of Transportation, Department of Motor Vehicles	Major technology update is scheduled for CY2025
Vehicle	VT TRIPS	Agency of Transportation, Department of Motor Vehicles	Major technology update is scheduled for CY2023 Q4
Courts Case Management	Odyssey	Vermont Judiciary	Tyler Technologies
Citation	Valcour DPS eTicket	Department of Public Safety	Deployed to production in July 2016
Crash	WebCrash	Agency of Transportation	Deployed to production in 2008
Roadway	Roadway	Agency of Transportation	Anticipated MIRE FDE compliance is September 30, 2026
EMS Run Reporting	SIREN	Department of Health	Deployed to production in 2017. Currently, NEMESIS 3.4 Compliant
Trauma Registry	No System	Department of Health	

## TRAFFIC RECORDS DATA SYSTEMS

### CRASH

#### System Description

According to Vermont State Statute 23 V.S.A. § 1603(b), the Agency of Transportation is the crash data repository for reports submitted by law enforcement agencies in the State. The Department of Motor Vehicles is the repository agency for all operator crash reports.

Current interpretation of Vermont State Statute 23 V.S.A § 1016 as it relates to crash reports is that law enforcement has 30 days after the investigation is complete.

Motorists involved in a traffic crash are required to submit an operator's crash report within 72 hours of the incident. As described in the Investigator's Guide for Completing the State of Vermont Uniform Crash Report, law enforcement reports shall be forwarded within 30 days of the investigation.

Even though the statute designates DMV as the crash report custodian, in practice, the Agency of Transportation (VTrans) has custodial responsibility for the State's crash repository. Law enforcement crash reports are entered and submitted into the VTrans WebCrash system. VTrans does not enter data from the operator reports into the crash repository or use the information for traffic safety analysis. The operator reports are used to support financial responsibility.

Vermont's crash data is housed in a single, consolidated statewide database at VTrans. Vermont's Web Crash web-based application is used to submit all law enforcement crash reports. VTrans has improved the application by merging its functionality from two separate systems into one, which provides additional efficiencies in the field data collection and submission process.

Law enforcement crash data collection is accomplished in several ways; directly entered into the WebCrash system or collecting the data on a paper crash report (or field notes) and then entering the data into WebCrash at the agency or regional offices. Ultimately, regardless of how the data is initially collected, crash data is entered electronically by the law enforcement agency into Vermont's WebCrash statewide crash data system.

The Investigator's Guide is the primary documentation for the key processes governing the collection, reporting, and posting of crash data. The documentation supports procedures for all reportable crashes and describes in detail the processes for reporting commercial motor

vehicle-involved crashes to the FMCSA, including the ability to export crash data from the Web Crash application where the results are auto-populated in the SafetyNET system. The Guide describes how enforcement agencies are required to notify VTrans when fatal crashes occur. The notification includes preliminary information related to the crash. The VTrans FARS analyst then gathers other supplemental information to populate the data in the Federal database. The Vermont crash system data dictionary is an automated output from the SQL database model that includes all the tables and elements residing in the database but does not show linked or derived variables.

## WEBCRASH – AOT WEBCRASH

### System Owner

**Agency:** Vermont Agency of Transportation

**POC Name:** Mandy Shatney

**Title:** Data Section Manager & FARS Analyst

**Email:** Mandy.Shatney@vermont.gov

### System Architecture

#### Database Software

Microsoft SQL Server

#### Web Application Server

IIS

#### Technology Stack

ASP.NET, CSharp, .NET 4.8

### Interfaces

- WebCrash to SAFETYNET – commercial FMSCA crashes
- WebCrash to Carfax – VIN data
- WebCrash to DMV Driver – crash data
- Valcour to WebCrash – initial crash prefill
- Roadway to WebCrash – MRD table, ESRI feature services

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>1</sup>

## Data Access Policies

### Security Agreement

Drivers Privacy Protection Act (DPPA) Permissible Use Descriptions

**By clicking "I Agree", I acknowledge that:**

Some services provided via this site may include the provision of certain personal information data obtained from the state Department of Motor Vehicles ("DMV Data") and that such DMV Data is governed by the Federal Driver's Privacy Protection Act (15 U.S.C. § 2721 et seq.) and related state laws (collectively, the "DPPA").

I certify that I have a permissible use for such DMV Data and further certify that I will use such DMV Data obtained from this site for the following permissible use:

## Legislative Requirements

### **Vermont Statutes Annotated Title 23: Motor Vehicles**

#### *Chapter 13, Subchapter 13: Accident Reports:*

Drivers must report accidents involving injury, death, or significant property damage. The statute specifies the reporting timeframe to law enforcement and their documentation responsibilities. It also covers how long reports are retained and who can access them.

#### *Chapter 14: Financial Responsibility and Insurance*

Drivers in accidents must provide evidence of insurance to law enforcement and involved parties. Drivers without required insurance in accidents face penalties, including fines and license suspension. The Uninsured/Underinsured Motorist Coverage section describes situations where an insured individual encounters an uninsured or underinsured driver in an accident.

## Data Standards

NHTSA Model Minimum Uniform Crash Criteria (MMUCC)

SAFETYNET Data Export XML Schema

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<sup>1</sup>[Data governance - Wikipedia](#)

## Change Management

The Vermont AOT's WebCrash system follows a structured change management process to ensure consistent and reliable updates. The process involves the following steps:

1. **Change Requests:** These can originate from multiple sources, including:
  - Users of the WebCrash system
  - Vermont ADS (IT agency)
  - Vermont AOT crash stakeholders
  - Security reviews
  - Vendor suggestions
2. **Prioritization:** The WebCrash data system manager evaluates and prioritizes these requests in collaboration with the AOT team.
3. **Tracking:** Change requests are monitored using Azure DevOps, a platform specialized in tracking work items and changes.
4. **Development & Scheduling:** Changes are developed and then slated for inclusion in upcoming sprints.
5. **Vendor Testing:** Post-development, changes are first rolled out to the vendor's internal Prep server to undergo testing.
6. **Vermont AOT Testing:** After successful vendor testing, changes are deployed to the Vermont Test server for a comprehensive evaluation by VT AOT.
7. **Deployment:** On receiving the VT AOT WebCrash data system manager's approval, a production deployment is organized. Subsequently:
  - Users are informed about the impending deployment and its potential impacts.
  - The vendor carries out the deployment to the production environment.

In summary, this change management procedure ensures that all updates to the WebCrash system undergo rigorous testing and approval, safeguarding system reliability and user experience.



### User Demographics – Types and Numbers of Users

- Approximate Number of Law Enforcement Agencies: ~90.
- Approximate Number of Law Enforcement Users: ~1,100.

### System Documentation

#### Data Dictionary and Schema

<b>Title</b>	<b><i>Data Dictionary and Schema</i></b>
<b>Agency</b>	Vermont Agency of Transportation
<b>Point of Contact</b>	Mandy Shatney
<b>Document Location/ Hyperlink</b>	By request.
<b>Summary/Description</b>	XML Schema for law enforcement crash data submissions to the AOT WebCrash statewide crash database.

#### Crash User Manual

<b>Title</b>	<b><i>INVESTIGATOR’S GUIDE FOR COMPLETING THE STATE OF VERMONT UNIFORM CRASH REPORT</i></b>
<b>Agency</b>	Vermont Agency of Transportation
<b>Point of Contact</b>	Mandy Shatney
<b>Document Location/ Hyperlink</b>	Downloadable PDF: <a href="https://vtrans.vermont.gov/sites/aot/files/crashmanual/FINAL-LE%20UCRF%20Guide%20Manual%20Version%201.6-January%202017.pdf">https://vtrans.vermont.gov/sites/aot/files/crashmanual/FINAL-LE%20UCRF%20Guide%20Manual%20Version%201.6-January%202017.pdf</a>  Online Version: <a href="https://vtrans.vermont.gov/crash-manual">https://vtrans.vermont.gov/crash-manual</a>
<b>Summary/Description</b>	Law enforcement instructions for completing a Vermont Uniform Crash Report.

## CITATION – ADJUDICATION

### System Description

The State of Vermont has a unified court system utilizing a common case management system and has a well-developed citation and adjudication process. The Vermont Judiciary Bureau's case management system tracks all citation dispositions and transmits dispositions required by State Statute 23 V.S.A. § 2308 to the Vermont Department of Motor Vehicles (DMV). All law enforcement agencies, parole agencies, probation agencies, and courts within the State have access to several systems providing information on individuals' driving and criminal histories. The Vermont Judiciary has a public portal where law enforcement can view criminal cases, conditions, citations, and dispositions.

The Vermont citation and adjudication system consists of a law enforcement component managed by the Vermont Department of Public Safety (DPS) and a courts component managed by the Vermont Judiciary Bureau.

The law enforcement component of eTicket is implemented by the Vermont DPS' Valcour Records Management System (RMS) system.

Valcour has an electronic citation module (i.e., eTicket) that provides participating Vermont law enforcement agencies the ability to issue electronic citations. Once electronic citations are issued, they are transmitted to the Vermont Judiciary Bureau's Odyssey court case management system for adjudication.

The court component of eTicket is handled by the Vermont Judiciary Bureau's Odyssey court case management system. Odyssey tracks all citation dispositions, deferrals, and dismissals within the Judiciary Bureau. Reportable dispositions are transmitted electronically to the Vermont Department of Motor Vehicles (DMV), while dismissals and deferrals remain accessible in Odyssey. There are no citation dispositions outside of the Judiciary Branch.

The Vermont Judiciary Bureau currently receives electronic and paper citations. The Vermont TRCC, Vermont Judiciary Bureau, and the Vermont DPS are continuing to promote and provide funding for continued expansion of eTicket throughout the State.

The Vermont Judiciary Bureau assigns unique citation numbers for paper traffic ticket books used by law enforcement and provides requirements to eTicket vendors to generate unique citation numbers within their systems. With the advent of Vermont's eTicketing program, agencies on the Valcour system receive a numeric generated ticket number from the system. The Vermont Judiciary Bureau assigned a unique starting number sequence, and the CAD/RMS then generates the ticket number based on the beginning sequence number.

The Judiciary Bureau transmits all dispositions nightly to the DMV via FTP in the form of a list of Judiciary Bureau civil complaint adjudications or judgments for the day as well as a list of notices to suspend for non-payment. The next business day the Judiciary transmits compliances to the DMV electronically. Final judgements, after an appeal, are posted to the driver data system. Dispositions of dismissals are not transmitted to DMV.

Vermont is committed to utilizing national data standards in its court system, as evidenced by its membership in the Justice Court initiative and compliance with the National Information Exchange Model (NIEM) Justice domain guidelines. Vermont is a supporting member of the Justice Court initiative of the National Center for State Courts (NCSC). Vermont's citation and adjudication system complies with the National Information Exchange Model (NIEM) Justice domain guidelines in several key interfaces.

The State of Vermont utilizes the National Information Exchange Model (NIEM) 2.1 standards for a data exchange between the Valcour and Odyssey. NIEM compliance is planned as part of an upgrade to the interface between the VCIC and the National Instant Criminal Background Check System (NICS). The State has plans to upgrade to NIEM 3.0 standards.

Both the Odyssey and eTicket systems utilize data dictionaries to provide definitions for each field of citation and adjudication data.

The Odyssey court case management system has a proprietary data dictionary that provides a definition for each field relating to citation and adjudication data.

The law enforcement eTicket system has a data dictionary based on the NIEM 2.1 national data standard and provides a definition for each field and is consistent with field data collection manuals, training materials, coding manual, and corresponding reports.

The State of Vermont can track citations from issuance to when they are posted on the driver's record. The information about the citation and its resolution is stored in two systems, Odyssey, and the DMV's system. Odyssey holds information on the citation's issuance and adjudication, while the DMV keeps the corresponding information in the driver history.

The Vermont Judiciary, in conjunction with the Vermont DMV, engages in sample-based audits conducted periodically for commercial enforcement citations to verify the accuracy of CDL license, commercial vehicle, and HazMat data.

## COURT INFORMATION SYSTEM – ODYSSEY

### System Owner

**Agency:** Vermont Judiciary  
**POC Name:** Joanne Charbonneau  
**Title:** Clerk of the Statewide Courts  
**Email:** [Joanne.Charbonneau@vermont.gov](mailto:Joanne.Charbonneau@vermont.gov)

### System Owner

**Agency:** Vermont Judiciary  
**POC Name:** Jennifer Morse  
**Title:** Court Operations Manager  
**Email:** [Jennifer.Morse@vermont.gov](mailto:Jennifer.Morse@vermont.gov)

### System Architecture

#### Database Software

N/A

#### Web Application Server

N/A

#### Technology Stack

N/A

### Interfaces

- **Valcour Citation to Vermont Judiciary Odyssey** – Valcour transmits to VJISS Data Broker then the Data Broker submits to GlobalScape which then transmit to Xfer directory to Odyssey job citation interface.
- **Vermont Judiciary Odyssey to DMV Driver** – Dispositions, point wavers, and compliances are transmitted nightly via FTP from the Odyssey system to the DMV.
- **DMV Driver to Vermont Judiciary Odyssey** – DMV sends daily jobs that populate VT PID numbers and social security numbers if the information is available.

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>2</sup>

## Data Access Policies

Data and Information Requests can be found at the VermontJudiciary.org website at <https://www.vermontjudiciary.org/about-vermont-judiciary/data-and-information-requests>

MOUs with Law Enforcement – custom MOUs for elevated access that are tailored to the data and agency. To arrange MOUs and elevated access, the requesting agency must contact the Vermont Judiciary.

## Legislative Requirements

State Statute 23 V.S.A. § 2308 – Title 23 Motor Vehicles, Reports

### § 2308. Reports

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The Court Administrator shall prepare audits, records, and reports relating to traffic complaints and violations. The Court Administrator shall also notify the Commissioner of Motor Vehicles of any violations that are uncontested or admitted or that are determined after hearing to have been committed or in connection with which a default judgment has been entered. The Commissioner of Motor Vehicles shall file and record information on violations received under this section.

## Data Standards

National Center for State Courts (NCSC)

National Information Exchange Model (NIEM)

National Instant Criminal Background Check System (NICS)

## Change Management

**Odyssey Issue Tracking** – The Odyssey vendor, Tyler Technologies, uses JIRA for change and issue tracking.

**Vermont Judiciary Internal Ticketing System (Help Desk Ticketing System)** – The Help Desk has established a CRM in conjunction with the vendor's JIRA platform. This ensures a systematic approach to log, track, and resolve user inquiries and issues efficiently.

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<sup>2</sup>[Data governance - Wikipedia](#)

**Vermont Judiciary Change Advisory Board (CAB)** – The CAB convenes on a monthly basis to assess and integrate legislative modifications into the court case management system. Their responsibilities encompass:

- Reviewing and ranking proposed changes.
- Approving or declining them based on their evaluation.
- Offering an online form for system users to suggest changes.

Subsequently, the voting members of the CAB decide to approve, reject, or seek additional details for each submission. This may sometimes include a financial assessment.

### User Demographics – Types and Numbers of Users

Number of State users is approximately 200.

User Types: System Administrators, Developers, Court Staff, Judges, Management

Vermont Judiciary Public Portal – <https://publicportal.courts.vt.gov/Portal/> is available to the general public and requires no special access. Attorneys, DMV, Law Enforcement can request elevated access. Additionally, law enforcement agencies may be required to sign MOUs for elevated access.

## System Documentation

### Data Dictionary

Available to Vermont Judiciary authorized users only.

### Training Documentation

Vermont Judiciary has in in-house Tyler Training User Guides, Odyssey Procedure Manual, internal training videos, Judge User Guides developed to document procedures and how to handle the various scenarios encountered. Training documentation is available on the internal Vermont Judiciary SharePoint site.

## LAW ENFORCEMENT CITATION SYSTEM – VALCOUR

### System Owner

**Agency:** Vermont Department of Public Safety

**POC Name:** Betty Wheeler

**Email:** betty.wheeler@vermont.gov

### System Architecture

#### Database Software

N/A

#### Web Application Server

N/A

#### Technology Stack

N/A

### Interfaces

- Valcour Citation to Vermont Judiciary - Valcour transmits E-Tickets to VJISS Data Broker, then the Data Broker submits to GlobalScape which then transmit to Xfer directory to Odyssey job citation interface.

### Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>3</sup>

#### Data Access Policies

##### Security Agreement

N/A

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<sup>3</sup>[Data governance - Wikipedia](#)

### Legislative Requirements

Traffic citations are primarily governed by Title 23 (Motor Vehicles) of the Vermont Statutes. Within Title 23, there are various chapters that deal with different aspects of motor vehicle operations and violations.

- Chapter 13: Operation of Vehicles – This chapter deals with rules of the road, including speed restrictions, overtaking, and passing rules, and more.
- Chapter 13, Subchapter 13: Traffic Violations – Provides details on traffic violations, the responsibilities of motorists, and the powers vested in law enforcement.
- Chapter 24: Penalties and Proceedings – Discusses penalties for various offenses and the processes associated with them.

### Data Standards

National Information Exchange Model (NIEM)

### Change Management

The Valcour Governance Board oversees the strategic direction and change management of Vermont's Law Enforcement Records Management System (RMS). Through regular reviews and stakeholder consultations, the Board ensures that the RMS aligns with evolving law enforcement needs. The board streamlines the decision-making process, balancing technological advancements with user interests and system continuity.

### User Demographics – Types and Numbers of Users

There are approximately 47 law enforcement agencies using electronic citations.

## System Documentation

### Data Schema

Title	<i>Data Schema</i>
Agency	Vermont Department of Public Safety
Point of Contact	Betty Wheeler
Document Location/ Hyperlink	Available to authorized parties.
Summary/Description	E-Ticket XML Schema



**Data Dictionary**

<b>Title</b>	<i><b>Data Dictionary</b></i>
<b>Agency</b>	Vermont Department of Public Safety
<b>Point of Contact</b>	Betty Wheeler
<b>Document Location/ Hyperlink</b>	Available to authorized parties.
<b>Summary/Description</b>	E-Ticket Data Dictionary

## DRIVER

### System Name

VT PICS

### System Description

The Vermont Department of Motor Vehicles (DMV) has custodial responsibility for the Vermont driver data system. The driver system maintains all critical information for both commercial and non-commercial drivers including personal information, driver license type, endorsements, status, conviction history, and crash involvement information. Driver training information is only captured for drivers under 18 years old.

The State's driver data system interacts with the National Driver Register's Problem Driver Pointer System (PDPS) and the Commercial Driver's License Information System (CDLIS). System documentation includes a data dictionary that is well documented with each field defined and value depicted. The driver system has edit checks and data collection guidelines. Updates to the data dictionary and edit checks occur through a formal process whenever there are changes to administrative rules, laws, or updated procedures.

Most licensing and issuance procedures for the Vermont driver data system are documented and accessible to staff through the DMV Intranet. Vermont DMV has a standard of no more than one percent error rate for transactions. Vermont has processes in place to administratively suspend licenses based on an impaired arrest independent of adjudication.

Vermont has procedures and automated methods for deterring and detecting fraudulent non-commercial and commercial driver license activity. The DMV utilizes manual methods of comparing on-file Driver License photos to new photos and requires review of documents at multiple levels. The American Association of Motor Vehicle Administrators' (AAMVA) Fraudulent Document Recognition Training is provided to all front-line staff. The State also has a Fraud Unit comprised of sworn law enforcement that investigates suspicious activity for further appropriate action if necessary.

The State has policies and procedures for system and information security. All DMV staff are required to complete the Driver's Privacy Protection Act (DPPA) training, and the use of a "watchdog report" assists with tracking and monitoring access and release of driver data. Access to driver data is granted to law enforcement through the Vermont Department of Public Safety.

Vermont's crash data is linked to the driver data system using a nightly export file. The State's citation/adjudication systems transmit a data file daily that contains, adjudicated/citation data that is used to update driver history. Commercial driver license (CDL) drivers have their driver

history records electronically received and transferred to other states and Vermont performs driver license number surveys on drivers coming from other states.

For the driver data system, a major technology update (cloud-based) is scheduled for July 2025.

### System Owner

**Agency:** Agency of Transportation, Department of Motor Vehicles

**POC Name:** Nancy Prescott

**Title:** Director of Operations

**Email:** Nancy.Prescott@vermont.gov

### System Architecture

#### Database Software

Mainframe database

#### Web Application Server

TBS

#### Technology Stack

COBOL

### Interfaces

- WebCrash to DMV – export crash data nightly
- American Association of Motor Vehicle Administrators (AAMVA)
- DMV Driver to NLETS – law enforcement queries
- DMV Driver to Vermont Secretary of State – Voter registration
- Department of Health to DMV Driver– Death Notifications
- Vermont Judiciary Citation and Adjudication to Driver – Dispositions, point wavers, and compliances
- Social Security Online Verification (SSOLV)
- Commercial Driver's License Information System (CDLIS)
- Problem Driver Pointer System (PDPS)
- Ignition Interlock Installation and Removal Interface
- ROOSTER – electronic transfer of CDL skills tests

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>4</sup>

### Data Access Policies

#### Security Agreement

DPPA – Drivers Privacy Protection Act

DMV Access Policies

### Legislative Requirements

Title 23 Motor Vehicles, Chapter 9 Operator's Licenses

<https://legislature.vermont.gov/statutes/chapter/23/009>

### Data Standards

American Association of Motor Vehicle Administrators (AAMVA)

FMCSA for Commercial Driver Licenses

Social Security Online Verification (SSOLV)

Commercial Driver's License Information System (CDLIS)

Problem Driver Pointer System (PDPS)

Department of Homeland Security Identification Requirements

### Change Management

Work requests are submitted to the IT team and logged in JIRA. These requests are then transformed into change requests, which detail the proposed modifications, related risks, and possible effects. Next, a Change Advisory Board evaluates and ranks these change requests based on their importance, risks, and available resources. For critical changes, the Director of Operations is notified and has the final say. All steps and decisions are recorded in JIRA to maintain a clear record. This process, using JIRA, helps manage changes effectively while reducing interruptions to the organization.

### User Demographics – Types and Numbers of Users

The VT DMV staff that accesses the mainframe and credentialing system consists of approximately 125 users that access the system.

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<sup>4</sup>[Data governance - Wikipedia](#)

**System Documentation**

**Training Documentation**

<b>Title</b>	<i><b>VT PICS Training Documentation</b></i>
<b>Agency</b>	VT DMV
<b>Point of Contact</b>	Nancy Prescott
<b>Document Location/ Hyperlink</b>	Available on request to authorized users.

**Data Dictionary**

<b>Title</b>	<i><b>VT PICS Data Dictionary</b></i>
<b>Agency</b>	ADS
<b>Point of Contact</b>	Kelly Reagan
<b>Document Location/ Hyperlink</b>	By request.

## VEHICLE

### System Description

The Vermont Department of Motor Vehicles (DMV) has custodial responsibility for the existing mainframe State vehicle data system and will launch a new vehicle registration and titling data system in Q4 2023, called VT TRIPS (Vermont Titling Registration, Identification, Permitting System). The current mainframe system holds all pertinent information related to vehicle identification and ownership in Vermont, including make, model, year, body type, and title brand history.

The Vermont DMV validates each vehicle identification number (VIN) during registration data entry and identifies VINs needing further correction. The State's vehicle data system provides daily title data updates to the National Motor Vehicle Title Information System (NMVTIS), with manual NMVTIS queries for new out-of-state title transactions only. Vermont also participates in the Performance and Registration Information Systems Management (PRISM) program.

Comprehensive documentation supports the Vermont vehicle data system, covering content and structure, as well as titling and registration procedures. This documentation includes data definitions, edit checks, and data collection rules for each data field. Title and registration procedures are outlined in several documents maintained on the DMV's internal SharePoint site. A process flow diagram is maintained, illustrating key data process flows, timeliness information, and error correction procedures. Edit check and data validation procedures are integral to the system, with automated reports generated for quality control review.

The system retains title brand history from other states, allowing users to access title brand history for individual vehicle transactions. Vermont's vehicle and driver data systems reside in the DMV mainframe system, connected via driver license numbers. Error correction procedures support the vehicle data system, overseen by the Vermont Quality Control Unit staff authorized to carry out these tasks.

### Vehicle Registration System

#### System Owner

**Agency:** Agency of Transportation, Department of Motor Vehicles

**POC Name:** Nancy Prescott

**Title:** Director of Operations

**Email:** Nancy.Prescott@vermont.gov

## System Architecture

### Database Software

Mainframe database

### Technology Stack

COBOL

## Interfaces

- WebCrash to DMV – export crash data nightly
- DMV Vehicle to NLETS – law enforcement queries
- Polk VIntelligence
- American Association of Motor Vehicle Administrators (AAMVA)
- Performance and Registration Information Systems Management (PRISM)
- FMCSA Safety and Fitness Electronic Records (SAFER)
- National Motor Vehicle Title Information System (NMVTIS) for Titles
- International Registration Plan (IRP)
- International Fuel Tax Agreement (IFTA)
- Vessel Information System (Planned)

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>5</sup>

### Data Access Policies

Security Agreement

DMV Access Policies

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<sup>5</sup>[Data governance - Wikipedia](#)

## Legislative Requirements

Title 23, Motor Vehicle Law Book

Title 32, Taxation and Finance

## Data Standards

American Association of Motor Vehicle Administrators (AAMVA)

National Motor Vehicle Title Information System (NMVTIS)

FMCSA – rules and regulations that cover CDL issuance, testing, and commercial carriers.

## Change Management

Work requests are submitted to the IT team and logged in JIRA. These requests are then transformed into change requests, which detail the proposed modifications, related risks, and possible effects. Next, a Change Advisory Board evaluates and ranks these change requests based on their importance, risks, and available resources. For critical changes, the Director of Operations is notified and has the final say. All steps and decisions are recorded in JIRA to maintain a clear record. This process, using JIRA, helps manage changes effectively while reducing interruptions to the organization.

## User Demographics – Types and Numbers of Users

The VT DMV staff that accesses the mainframe system consists of approximately 125 users that access the system.

## System Documentation

### Data Dictionary

Vehicle Data Dictionary is available upon request from the Vermont DMV to authorized users.

### User Manual

Vehicle Data System Procedures and Policies are available via SharePoint to Vermont DMV staff.



## ROADWAY

### System Description

Vermont's roadway network includes 15,763 miles as of 2023. The State maintains approximately 17% of the roads, Town Highways maintain approximately 73%, and approximately 10% are unmaintained. All roadways and major assets are mapped in a geographic information system (GIS) stored in an Esri enterprise geo-database. Two linear referencing methods (LRM) are used, the first based on the town-based measures that re-zero at each town boundary and the second using cumulative mileage for the whole route from start to end. The Vermont Agency of Transportation's (VTrans) Mapping Section maintains a master route definition table that includes town-based and end-to-end route codes. Both LRMs are based on the same geometry, with the appropriate route codes and measures applied. The State has the capability of mapping roadway and traffic data using compatible linear reference systems (LRS) and has an online portal that displays route logs (straight line diagrams) and Annual Average Daily Traffic (AADT).

Most crashes are located using the two LRS methods and crashes not located using the LRS system are geolocated using several different methods, including GPS and E911 address. Vermont has about 94% of crashes mapped and the crash locations can be easily linked to other data layers for analysis.

There is a nightly geolocation process that locates crashes for the Vermont Public Query Tool.

VTrans has been working to modify databases to support the Model Inventory of Roadway Elements (MIRE) data elements; adding missing FDE data elements and developing the datasets to meet the MIRE FDE data requirements. A large portion of those FDEs is part of the Highway Performance Monitoring System (HPMS) or other systems within VTrans. Most of the MIRE FDEs are collected for all public roads. Below are the percentages from 3/31/2023 for completeness:

2023 Roadway Segment = 93.24 %

2023 At-Grade Intersection/Junctions 96.89 %

2023 Intersection Leg (Each Approach) 93.26 %

2023 Interchange/Ramp 85.45 %

Vermont also has a scorecard providing which data fields VTrans has developed that clearly map to the MIRE FDE fields.

Vermont has individual data dictionaries for road centerline data, intersections, road width, linear reference system, functional class, and limited access, but this information has not been loaded into an enterprise data dictionary. The centerline and intersection documents cover all public roadways while the others only cover the federal aid roads. VTrans also receives roadway data from Metropolitan Planning Organizations (MPO), regional planning commissions, and municipalities.

VTrans has a Central Data Inventory project within the Data Governance Committee to improve the data, data descriptions, field definitions, and field domains. A subcommittee is working on systems and architecture for agency data. The goal is to create a library for all relevant data dictionaries. Information from the project will provide the architecture for the development of an enterprise data dictionary.

The VTrans Mapping Section integrates new data elements into the roadway information system. When a new element needs to be included, a data schema and authoritative source are defined, and the data is then set up and validated. A process is created between the data steward and IT to ensure the data is published on the preferred publishing cycle. The Data Governance Committee is working to implement more formal data governance that will develop workflows for incorporating new elements, assessment of existing standards, and linkage to existing systems.

Several guidelines have been developed for the collection of roadway data elements and are accessible to data collectors via the internet. The LRS is made available to the regional and local agencies through REST services. Local and regional entities have access to the feature services through the AOT ArcGIS server which allows them to do edits to intersection and road centerline attributes. The Open Geodata Portal is available publicly as well.

Vermont has nightly quality control and assurance routines for road centerline and intersections and those results are emailed to Mapping Section staff. Prior to publishing, quality assurance routines are run for the LRS and other elements, field domains, topology, and mileage values are validated. If any errors are found, a queue is developed, and corrections are typically done the following morning. Errors identified using other means go into a different queue where some research on the issue is done. These may take longer than those found in the regular routines.

The State has several completeness and uniformity performance measures with benchmark values and targets.

The State has plans to meet the 2026 deadline for the addition of all MIRE FDEs.

## VERMONT ROADS CENTERLINE DATA

### Description

The Vermont Agency of Transportation (VTrans) Road Centerline data layer contains all town and state highways, as well as many private roads within Vermont. This dataset provides the core geometry and attributes of the highway network, including attributes for highway classification, functional class, road name, surface type, mileage, linear route code and other descriptions. The geometry from the road centerline data layer is used in the generate of the linear reference system, including the town-based and end-to-end linear reference methods, as well as the All Roads Network of Linear-referenced Data (ARNOLD) for submittal with the Highway Performance Monitoring System (HPMS). The road centerline data is also the source for the highways shown on the General Highway Maps, also known as the Town Highway Maps that show highway classification, surface types and mileage.

### System Owner

**Agency:** Agency of Transportation (AOT)

**POC Name:** Johnathan Croft

**Title:** Mapping Section Chief

**Email:** [Johnathan.Croft@vermont.gov](mailto:Johnathan.Croft@vermont.gov)

### System Architecture

#### Database Software

Microsoft SQL Server database that uses the Esri Enterprise Geo-database technology

#### Web Application Server

Provided as a web service via ArcGIS server in the VT Open Geodata Portal

(<https://geodata.vermont.gov/>)

ALL ROADS feature service

<https://maps.vtrans.vermont.gov/arcgis/rest/services/Master/General/FeatureServer/39>

#### Technology Stack

Esri ArcGIS and ArcGIS, Esri Enterprise Geo-database, ArcGIS Server

## Interfaces

- Roadway to WebCrash - MRD table, ESRI feature services
- Various Esri Online applications (e.g., Road Surface Type Reviewer <https://experience.arcgis.com/experience/0cfaa027afe14a14961244cf25a02748>)
- Class 1 Town Highways) that interfaces with the Vermont AOT in-house base map.

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>6</sup>

### Data Access Policies

Access to editing of roadway data is restricted to individuals based on granted roles and permissions.

The road centerlines layer is publicly available.

### Legislative Requirements

Title 19, Statute 305 (<https://legislature.vermont.gov/statutes/section/19/003/00305>) requires production of town highway maps that are based on the road centerlines data.

*“(g) The Agency shall provide each town with a map of all of the highways in that town, together with the mileage of each class 1, 2, 3, and 4 highway, as well as each trail, and such other information as the Agency deems appropriate.”*

### Data Standards

VTrans Road Centerline Spatial Data User Guide:

[https://vtransmaps.vermont.gov/Maps/Publications/VTrans\\_Road\\_Centerline\\_User\\_Guide\\_20210531.pdf](https://vtransmaps.vermont.gov/Maps/Publications/VTrans_Road_Centerline_User_Guide_20210531.pdf)

Model Inventory of Roadway Elements MIRE 2.0:

<https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/fhwasa17048.pdf>

### Change Management

No formal change management process exists at this time for the data model. Change is managed by the Section level in collaboration with ADS IT attached to VTrans.

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<sup>6</sup>[Data governance - Wikipedia](#)

## User Demographics

Geospatial data analysts and geographers, academia, transportation sector (AOT, MPO, and RPCs), 911 system to pull changes, and the public.

## System Documentation

### User Manuals

VTrans Road Centerline Spatial Data User Guide:

[https://vtransmaps.vermont.gov/Maps/Publications/VTrans\\_Road\\_Centerline\\_User\\_Guide\\_20210531.pdf](https://vtransmaps.vermont.gov/Maps/Publications/VTrans_Road_Centerline_User_Guide_20210531.pdf)

## VERMONT INTERSECTIONS (NODES AND NODELEGS)

### Description

AOT has built an intersection data model that is based on nodes and node legs that are built from the road centerline feature class, with nodes representing the end point of an arc and connection with other arcs, and node legs that are the approaches that connect to the node. Intersections are defined within the node and node leg attributes that define an intersection as simple or complex, the principal node and principal node legs. Attributes based on the MIRE data elements have been applied to the nodes and node legs, as well as a series of other attributes are pulled from the road centerline, AADT, traffic control and other sources. A derivative layer, Intersection Influence Zones was created by measuring 250 feet along each intersection leg with a 50-foot lateral buffer. Intersection legs were identified in the road centerlines file using the StartNodeID and EndNodeID fields. For continuity, road centerlines were connected across all 2-leg nodes and across multi-leg nodes where the TWN\_LR field matched. For closely spaced intersections, overlaps were removed by dividing the overlapping area equally between adjacent intersections. Intersection influence zones are useful for assigning crashes to intersections.

### System Owner

**Agency:** Agency of Transportation (AOT)

**POC Name:** Kerry Alley

**Title:** GIS Professional

**Email:** [Kerry.Alley@vermont.gov](mailto:Kerry.Alley@vermont.gov)

### System Architecture

#### Database Software

Microsoft SQL Server database that uses the Esri Enterprise Geo-database technology

#### Web Application Server

Provided internally and externally as a feature web service via ArcGIS server.

Node Feature Service:

<https://maps.vtrans.vermont.gov/arcgis/rest/services/Master/vtrans/FeatureServer/18>

Node Leg feature service -

<https://maps.vtrans.vermont.gov/arcgis/rest/services/Master/vtrans/FeatureServer/17>

Intersection Influence Zones -

<https://vtrans.maps.arcgis.com/home/item.html?id=2e1621557b5b4c4da92c7f3b988e1e8a>

## Technology Stack

Esri ArcGIS and ArcGIS, Esri Enterprise Geo-database, ArcGIS Server

## Interfaces

- Regional Planning Commissions can edit the attributes of Nodes and NodeLegs (excluding geometries) via ESRI ArcGIS Online WebMap.
- Internal access to the node and node leg data within the VTrans GIS environment.

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>7</sup>

## Data Access Policies

Access to editing of intersection data is restricted to individuals based on granted roles and permissions.

The intersection node and node leg layers are publicly available through the feature services (listed above).

## Legislative Requirements

None. Operational requirement to meet safety analysis needs and to meet the FHWA MIRE data standard.

## Data Standards

Model Inventory of Roadway Elements MIRE 2.0 -

<https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/fhwasa17048.pdf>

## Change Management

No formal change management process exists at this time. Change is managed by the Section level in collaboration with ADS IT attached to VTrans.

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<sup>7</sup>[Data governance - Wikipedia](#)

## User Demographics

Geospatial data analysts and geographers, consultants, transportation sector (AOT, MPO, and RPCs), and the public.

## System Documentation

### Data Dictionary

VTrans Intersection Data Dictionary - The data dictionary is available at [https://vtransmaps.vermont.gov/Maps/Publications/Data Dictionaries/DataDictionary In tersections Master.pdf](https://vtransmaps.vermont.gov/Maps/Publications/Data%20Dictionaries/DataDictionary%20Intersections%20Master.pdf) .



## VERMONT ROAD WIDTH

### Description

Road width data represents information on highway typical, number of lanes, widths of lanes, types of shoulders, shoulder widths, median type, through lanes and more. This data was built to support the production of the straight-line diagrams (route logs) at the AOT, the Highway Performance Monitoring System (HPMS) and safety analysis, by providing widths and lane information.

### System Owner

**Agency:** Agency of Transportation (AOT)

**POC Name:** Johnathan Croft

**Title:** Mapping Section Chief

**Email:** [Johnathan.Croft@vermont.gov](mailto:Johnathan.Croft@vermont.gov)

### System Architecture

#### Database Software

Microsoft SQL Server database that uses the Esri Enterprise Geo-database technology

#### Web Application Server

Provided internally and externally as a feature web service via ArcGIS server.

Road Width Feature Service:

<https://maps.vtrans.vermont.gov/arcgis/rest/services/Master/vtrans/FeatureService/22>

#### Technology Stack

Esri ArcGIS and ArcGIS, Esri Enterprise Geo-database, ArcGIS Server

### Interfaces

- The Road Width features are accessible to the AOT, Regional Planning Commissions, and the public via an ESRI ArcGIS Online feature service.
- Internal users at the AOT can access road width data through the GIS environment.

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>8</sup>

### Data Access Policies

Access to editing of RoadWidth data is restricted to individuals based on granted roles and permissions.

The RoadWidth layers are publicly available through the feature services (listed above).

### Legislative Requirements

None. Operational requirement to meet safety analysis needs and to meet the FHWA MIRE data standard.

### Data Standards

Model Inventory of Roadway Elements MIRE 2.0 -

<https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/fhwasa17048.pdf>

Highway Performance Monitoring System (HPMS) Field Manual –

<https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/>

### Change Management

No formal change management process exists at this time. Change is managed by the Section level in collaboration with ADS IT attached to VTrans.

### User Demographics

Geospatial data analysts and geographers, consultants, transportation sector (AOT, MPO, and RPCs), and the public.

## System Documentation

### Data Dictionary

VTrans Roadwidth Data Dictionary –

[https://vtransmaps.vermont.gov/Maps/Publications/Data\\_Dictionaries/DataDictionary\\_RoadWidth.pdf](https://vtransmaps.vermont.gov/Maps/Publications/Data_Dictionaries/DataDictionary_RoadWidth.pdf)

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<sup>8</sup>[Data governance - Wikipedia](#)

## VERMONT CURVES

### Description

The Agency of Transportation has two curve datasets, one derived from the road centerline data and analysis of the centerline geometry to create a layer of curves for all public highways, and a curve layer that is based on the engineered curves defined on project plans and available only for federal aid system highways that have had projects. Tangent segments are not included in either dataset.

### System Owner

**Agency:** Agency of Transportation (AOT)

**POC Name:** Johnathan Croft

**Title:** Mapping Section Chief

**Email:** Johnathan.Croft@vermont.gov

### System Architecture

#### Database Software

Microsoft SQL Server database that uses the Esri Enterprise Geo-database technology

#### Web Application Server

The curve data layers are not currently accessible via the web and are internally accessible only at this point.

#### Technology Stack

Esri ArcGIS and ArcGIS, Esri Enterprise Geo-database, ArcGIS Server

### Interfaces

- Internal users at the AOT can access road width data through the GIS environment.

### Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>9</sup>

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<sup>9</sup>[Data governance - Wikipedia](#)

### Data Access Policies

Access to editing of either Curve data layer is restricted to individuals based on granted roles and permissions.

The curves datasets are available upon request to VTrans as a public record.

### Legislative Requirements

None. Operational requirement to meet safety analysis needs and to meet the FHWA MIRE data standard.

### Data Standards

Model Inventory of Roadway Elements MIRE 1.0 –

[https://safety.fhwa.dot.gov/tools/data\\_tools/mirereport/mirereport.pdf](https://safety.fhwa.dot.gov/tools/data_tools/mirereport/mirereport.pdf)

Model Inventory of Roadway Elements MIRE 2.0 –

<https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/fhwasa17048.pdf>

Highway Performance Monitoring System (HPMS) Field Manual –

<https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/>

### Change Management

No formal change management process exists at this time. Change is managed by the Section level in collaboration with ADS IT attached to VTrans.

### User Demographics

Geospatial data analysts and geographers, consultants, transportation sector (AOT, MPO, and RPCs), and the public.

## System Documentation

### Data Dictionary

#### MIRE 1.0

MIRE #	MIRE Element
107	Curve Identifiers and Linkage Elements
108	Curve Feature Type
109	Horizontal Curve Degree AND Radius
110	Horizontal Curve Length
111	<i>Superelevation (Not deliverable from GIS centerline data)</i>
112	Horizontal Transition/Spiral Curve Presence

- 113 Horizontal Curve Intersection/Deflection Angle
- 114 Horizontal Curve Direction

Internal document – *“Horizontal Curve Data Inventory on Local Roads”* by Works Consulting

## VERMONT AADT

### Description

The Agency of Transportation maintains a feature service with Annual Average Daily Traffic (AADT) values assigned to all road segments within Functional Classes 1-5 and 6 urban. Both end-to-end and town-based LRS milepoints are included. Roads are segmented at town boundaries, HPMS section breaks, rural/urban boundary limits, and at intersections where the volume of traffic changes by greater than 10% across the intersection.

### System Owner

**Agency:** Agency of Transportation (AOT)

**POC Name:** Becca Mitchell

**Title:** Data Analyst

**Email:** becca.mitchell@vermont.gov

### System Architecture

#### Database Software

Microsoft SQL Server database that uses the Esri Enterprise Geo-database technology

#### Web Application Server

Points of count locations used to derive AADT are available in MS2:

<https://vtrans.public.ms2soft.com/tcds>

Provided internally and externally as a feature web service via ArcGIS server.

AADT Feature Service:

<https://maps.vtrans.vermont.gov/arcgis/rest/services/Layers/AADT/FeatureServer>

#### Technology Stack

Esri ArcGIS and ArcGIS, Esri Enterprise Geo-database, ArcGIS Server

## Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>10</sup>

### Data Access Policies

Access to editing of AADT data is restricted to individuals based on granted roles and permissions.

The AADT layer is publicly available through the feature services (listed above).

### Legislative Requirements

None. Operational requirement to meet safety analysis needs and to meet the FHWA MIRE data standard.

### Data Standards

Model Inventory of Roadway Elements MIRE 2.0 -

<https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/fhwasa17048.pdf>

### Change Management

No formal change management process exists at this time. Change is managed by the Section level in collaboration with ADS IT attached to VTrans.

### User Demographics

Geospatial data analysts and geographers, consultants, transportation sector (AOT, MPO, and RPCs), and the public.

## System Documentation

### Data Dictionary

VTrans AADT Data Dictionary has not been developed yet.

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<sup>10</sup>[Data governance - Wikipedia](#)

## INJURY SURVEILLANCE

States with a comprehensive Injury Surveillance System (ISS) have data readily available from five core components: pre-hospital emergency medical services (EMS), trauma registry, emergency department, hospital discharge, and vital records. These data sets enable a wide variety of stakeholders (including the Traffic Records Coordinating Committee (TRCC)) to effectively develop problem identification and program evaluation efforts. A mature ISS can specifically address issues related to data quality so that subsequent analyses of injury severity, costs, and outcomes can be made accurately and reliably. data sources provide more detailed information on injuries sustained in motor vehicle crashes than can be found in other components of a state's traffic records system, thus they are uniquely able to detail the severity, cost, and clinical outcomes of injuries sustained in crashes.

Vermont's ISS includes four well-developed data systems housed in the Vermont Department of Health. The Statewide Incident Reporting Network (SIREN) collects NEMESIS-compliant ambulance run reports. As of January 01, 2023, SIREN reports are submitted 100 percent electronically. The system is well-documented, has automated edit checks that apply validation rules to submitted records, and has ongoing performance measures and goals for several of the core metrics. These metrics permit SIREN managers to provide detailed data quality feedback to the services and reports to the State's TRCC. Quality control reviews are required at the agency level, but a State-level review would ensure consistency among the State's EMS agencies.

The Vermont Green Mountain Care Board (GMCB) manages the collection of data from the State's hospitals and the resultant data set is managed by the VDH. The Vermont Uniform Hospital Discharge Data System is primarily used for utilization analysis. Public use data files are available upon request and researchers may apply for a limited-use data set through an agreement with the GMCB. While hospital data is available to researchers, its use for highway safety programs has been minimal. Given its small size and the differences in traffic safety laws in bordering states, analysis of hospital data can help to provide a more complete picture of the burden of injury resulting from motor vehicle crashes in the State.

Vital records data is also available through the VDH. The data is collected in accordance with guidelines provided by the National Center for Health Statistics. Data is available for use by researchers and other interested parties through a public records request. By Vermont law, death certificates are considered public information and are available for analytical purposes.

Vermont has many elements of a core injury surveillance data system, with the exception of a trauma registry. Limitations in funding and staffing have prevented the use of available injury surveillance data beyond mandatory reporting requirements. Identifying partners that would



be able to provide analytical support for highway safety efforts through other funding opportunities would be beneficial.

## EMS – SIREN

### System Description

The Vermont Department of Health administers the Statewide Incident Reporting Network (SIREN), a pre-hospital data collection system powered by ImageTrend's Elite software. SIREN efficiently gathers NEMSIS-compliant ambulance run reports through electronic means and employs robust edit checks and validation rules to submitted records. The system tracks ongoing performance metrics and its reports are provided to the TRCC for performance measures. These metrics enable SIREN managers to provide comprehensive data quality feedback to service providers. Agency-level quality control reviews are mandatory.

### System Owner

**Agency:** Vermont Department of Health

**POC Name:** Beth Brouard

**Title:** EMS Data Manager

**Email:** [Bethany.Brouard@vermont.gov](mailto:Bethany.Brouard@vermont.gov)

### System Architecture

#### Database Software

Microsoft SQL Server

#### Web Application Server

.NET

#### Technology Stack

.NET, Angular/React

### Interfaces

- NEMSIS
- Third-party EMS data imports (i.e., ESO, ImageTrend Elite, TraumaSoft, Zoll, First Due)
- EMS Licensing System – ImageTrend Records Management System
- Third-party EMS data imports
- Continuum (dashboard of EMS Incidents by ImageTrend)
- Hospital Hub (EMS Records System for hospital viewing by ImageTrend)

## Data Governance

### Data Access Policies

<https://www.healthvermont.gov/about/contact/public-records>

Requests go to the data team for review and approval. If needed, requests may be routed to Legal for review.

### Legislative Requirements

18 V.S.A. § 904(b) and 24 V.S.A. § 2682(a)(3), Chapter 7 – Emergency Medical Services (EMS) and Emergency Preparedness

### Data Standards

National Emergency Medical Services Information System (NEMSIS)

The SIREN system is currently NEMSIS 3.5 compliant.

### Change Management

Twice a year, in both January and August, a comprehensive evaluation of the system's performance and functionality takes place. This evaluation is driven by input and feedback from providers and other key stakeholders. The objective is to identify areas where the system may have deficiencies or where enhancements could lead to improvements in speed, accuracy, and overall impact. Following a thorough review, extensive discussions occur with the data system management team to ensure alignment with strategic objectives when proposing changes. Approved changes are then promptly communicated to providers.

### User Demographics – Types and Numbers of Users

- EMS Agency Providers and Administrators: 4,031 users
- Hospital users (Hospital Hub), AOT users, Billing, other Vermont Department of Health (e.g., Environmental Health)

## System Documentation

<b>Title</b>	<i>ImageTrend University</i>
<b>Agency</b>	Vermont Department of Health
<b>Point of Contact</b>	ImageTrend

<b>Document Location/ Hyperlink</b>	Not available publicly – This feature is only available to registered users.
<b>Summary/Description</b>	Help and Documentation library, allows for searching with most applicable subjects displayed in order of relevance.

**Data Dictionary - National and Vermont specific Schemas**

<b>Title</b>	<i><b>NEMESIS V3 State Data Set</b></i>
<b>Agency</b>	Vermont Department of Health
<b>Point of Contact</b>	NEMESIS.org
<b>Document Location/ Hyperlink</b>	<a href="https://nemesis.org/media/nemesis_states/repository.html?repository=vermont&amp;file=Resources/VT_StateDataSet.xml&amp;at=refs%2Fheads%2Frelease-3.5.0">https://nemesis.org/media/nemesis_states/repository.html?repository=vermont&amp;file=Resources/VT_StateDataSet.xml&amp;at=refs%2Fheads%2Frelease-3.5.0</a>
<b>Summary/Description</b>	State Data Set and Facility Information

## TRAUMA REGISTRY

### **System Description**

Vermont does not have a trauma registry at this time.

## VITAL RECORDS – VERMONT VITAL RECORDS

### System Description

Pursuant to Act 46 of 2017 and effective July 1, 2019, all birth and death records dating January 1, 1909 and later are only available through the Department of Health's Statewide Registry System. Original source records for these events in the offices of the town clerks and the state registry are available for informational research purposes; however, the Statewide Registry System is the official system of record and certified and noncertified copies of birth and death records can only be issued through this system.

The Department of Health, all town clerks and the Vermont State Archives and Records Administration are authorized by law to issue certified and noncertified copies from the Department of Health's Statewide Registry System.

### System Owner

**Agency:** Vermont State Archives & Records Administration

**POC:** VSARA Reference Archivists

**Email:** sos.archives@vermont.gov

### Interfaces

- Department of Health – Death Notifications to DMV Driver

### Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>11</sup>

### Data Access Policies

<https://www.healthvermont.gov/about/contact/public-records>

Requests go to the data team for review and approval. If needed, requests may be routed to Legal for review.

### Legislative Requirements

Title 18, Health, Chapter 101 : Vital Records Generally - [Title 18 V.S.A. § 5002](#)

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<sup>11</sup>[Data governance - Wikipedia](#)

## EMERGENCY DEPARTMENT AND HOSPITAL DISCHARGE DATA

### System Description

The Vermont Uniform Hospital Discharge Data System consists of inpatient discharge data, outpatient procedures and services data, and emergency department data. Each data file includes:

- Case-specific diagnostic discharge data
- Some socio-demographic characteristics of the patient
- Medical reason for the admission
- Treatment and services provided to the patient.
- Duration and status of the patient's stay in the hospital
- Full, undiscounted total and service-specific charges billed by the hospital.

Vermont's rich hospital discharge data are available to state agencies, providers, payers, and health care researchers seeking data for health research in the public interest. These de-identified patient-level data files support analyses of topics as hospital utilization patterns and market shares, the patient care continuum, comparative charges and outcomes in acute care hospitals, and preventable hospitalizations.

Vermont has been collecting and reporting hospital discharge data since the early 1980s. All 14 of Vermont's general acute care hospitals currently contribute records for Vermont residents and non-residents to the Vermont Uniform Hospital Discharge Data System (VUHDDS). Under the statutory authority to collect these data (18 V.S.A. § 9410, 9456 and 9457)-----, the Vermont Green Mountain Care Board administers the program, and the Vermont Department of Health manages the data set under an agreement with the Board.

The Vermont Association of Hospitals and Health Systems-Network Services Organization contracts with the state of Vermont to collect the Vermont hospitals data that are then incorporated into the Vermont Uniform Hospital Discharge Data System following a series of quality assurance checks performed by the Health Department. The Vermont psychiatric hospitals, including the Brattleboro Retreat and the Vermont State Hospital, do not submit data to this data system.

In addition to the data collected from Vermont hospitals, the Green Mountain Care Board obtains records for Vermont residents using hospital services in the bordering states of New Hampshire, New York, and Massachusetts under data use agreements with the New Hampshire Department of Health and Human Services, the New York Department of Health, and the Massachusetts Division of Health Care Finance and Policy. While records for Vermont residents

using hospitals in New Hampshire, New York, and Massachusetts include inpatient discharges, not all states collect comparable data sets for outpatient and emergency department discharges. The Green Mountain Care Board is prohibited from releasing records obtained from these bordering states per provisions of the data use agreements with each state.

The Vermont hospital subset of the Vermont Uniform Hospital Discharge Data System includes records for inpatient, outpatient, emergency department, observation bed, and series patient discharges for both Vermont residents and non-residents. The collection of emergency department records from Vermont hospitals began with reporting year 2003. From 1989 to 2000, outpatient data collection was limited to records that each hospital identified as surgical procedures performed in operating rooms. Starting in reporting year 2001, the outpatient definition was revised to include ICD-9-CM procedure codes 00.0-86.99 that occurred in all hospital-based outpatient settings. Starting in reporting year 2006, while all Vermont hospitals continued to report the core outpatient set specified by code range, most hospitals also started to submit all records considered outpatient procedures beyond the specified code range. This includes a wider range of diagnostic procedures and treatments. The Green Mountain Care Board is working with the Health Department, the Vermont Association of Hospitals and Health Systems-Network Services Organization, and Vermont hospitals to determine how to define, edit, and use the expanded outpatient data set.

Further information can be found at <https://www.healthvermont.gov/stats/systems/hospital-discharge-data>.

### System Owner

**Agency:** Vermont Department of Health, Division of Health Statistics and Informatics

**POC Name:** Jeffrey Ross

**Email:** Jeffrey.Ross@vermont.gov

### Data Governance

Data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization's data across the enterprise.<sup>12</sup>

### Data Access Policies

Release of public use data is subject to the following conditions, which the requestor agrees to comply with upon accepting copies of the data:

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<sup>12</sup>[Data governance - Wikipedia](#)



[Hospital Data Release Policy](#) (Last updated November 2002) – The data may not be used in any manner that attempts to or does identify, directly or indirectly, any individual patient or health care practitioner (18 V.S.A. § 9457). The requestor agrees to incorporate the following, or a substantially similar, disclaimer in all reports or publications that include public use data:

Hospital discharge data for use in this study were supplied by the Vermont Association of Hospitals and Health Systems-Network Services Organization (VAHHS-NSO) and the Vermont Green Mountain Care Board (GMCB). All analyses, interpretations or conclusions based on these data are solely that of [the requestor]. VAHHS-NSO and GMCB disclaim responsibility for any such analyses, interpretations, or conclusions. In addition, as the data have been edited and processed by VAHHS-NSO, GMCB assumes no responsibility for errors in the data due to coding or processing by hospitals, VAHHS-NSO or any other organization, including [the requestor].

Users complete the Webform request at <https://gmcboard.vermont.gov/form/vuhdds-puf> for public data requests.

### Legislative Requirements

Vermont has been collecting and reporting hospital discharge data since the early 1980s. All 14 of Vermont's general acute care hospitals currently contribute records for Vermont residents and non-residents to the Vermont Uniform Hospital Discharge Data System.

Under the statutory authority to collect these data (18 V.S.A. § 9410, 9456 and 9457)-----, the Vermont Green Mountain Care Board (GMCB) administers the program, and the Vermont Department of Health manages the data set under an agreement with the Green Mountain Care Board.

Under interstate agreements with agencies outside of Vermont, the Green Mountain Care Board also receives hospital discharge data for Vermont residents using hospitals in bordering states, including New Hampshire, New York, and Massachusetts. The final data set comprises the Vermont Uniform Hospital Discharge Data System that is used by the Health Department in analyses for the Vermont Hospitals Report on utilization.