



Pedestrian Safety and Vulnerable Road Users Toolkit

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AGENCY OF TRANSPORTATION
DEPARTMENT OF HEALTH



Table of Contents

[Introduction](#)

[Data](#)

[Themes](#)

[School Zones](#)

[Accessible Design](#)

[Towns](#)

[Media](#)

[Law Enforcement](#)

[Infrastructure](#)

[Special Situations](#)

[FAQ](#)

[Additional Resources](#)



Introduction

This toolkit is designed to help communities take action to improve the safety of Vermonters using our roadways. Municipal organizations, law enforcement, schools, reporters and community members all have a role to play in making their communities a safe place to walk for residents and visitors alike.

Purpose of this toolkit is to provide clear action steps for implementing manageable, affordable, and impactful changes in Vermont communities to increase the access and safety of all road users. Communities can feel stuck determining what changes they can make to get the best return on investment or what residents can agree on. Investments in walking result in many additional benefits, and do not have to be expensive.

In 2017 in Vermont there were [9](#) people killed and [133](#) people who visited the emergency department or were hospitalized as a result of being struck by a motor vehicle while walking. Nationally, there were [6,075](#) people killed while walking and over [142,000](#) injuries where someone accessed emergency department or hospital care in 2017.

Why walking? Walking is a great way to get around, connect with your community, stay physically active, improve your overall health and wellbeing, and reduce carbon emissions. In some areas, it can be faster to walk or bike because of traffic congestion and limited parking availability. While some people choose to walk because of the many benefits, others are not able to drive or own a vehicle and walking may be the only transportation option a person has. The cost of owning and operating a vehicle is [estimated between \\$7,000 to \\$12,000 each year](#). Additionally, older adults, young people, some people with disabilities and certain medical conditions, and those without a driver's license may not be able to drive and need safe transportation options to get to community destinations.

When people have safe spaces to walk, bike, jog and play in their communities they are [more likely to meet recommended levels of physical activity](#) and [spend more money in their community](#). They have opportunities to walk to work, medical appointments, the grocery store, school, and community gathering spaces- which in turn can improve their overall wellbeing and connections to the community.



Many Vermont communities do not feel safe for walking, often due to a combination of factors such as high vehicle travel speeds, absent or damaged sidewalks and crosswalks, and risk of crime. In 2017, [nine percent of Vermont adults](#) felt their community was not at all safe or slightly safe to walk in, with Vermont adults living with disabilities [more than three times](#) as likely to feel that their community was unsafe for walking. Improving pedestrian safety in Vermont requires a community effort: state and local governments can enact policies that protect community members while travelling, maintain existing sidewalks, and strategize about infrastructure changes to maximize community benefit; law enforcement officials can enforce laws designed to keep people safe as they move through their communities; media can cover stories around our transportation system and use language that does not inadvertently assign blame to victims; and individuals can follow the rules of the road and respect the safety of their neighbors.

By working across disciplines, we can create a culture that prioritizes safe and accessible transportation for all people- regardless of mode, age, and ability.

Data

Data is vital to help you learn where to concentrate your efforts, identify themes, competitively apply for grants and measure progress. There are a variety of data sources both nationally and locally to help guide a project.

Vermont Data

The Vermont Department of Health collects and analyses data from Vermont hospitals, known as [Hospital Discharge Data](#). In 2019, the Health Department created data briefs around pedestrian and bicycle-related injuries related to motor vehicle crashes using hospital data.

- [Pedestrian Injuries](#) (2017 data)
- [Bicycle-Related Injuries](#) (2017 data)

The Vermont Department of Health collects and analyzes Emergency Medical Services (EMS) data from the [Statewide Incident Reporting Network \(SIREN\)](#), and creates statewide summaries (known as data briefs). In 2017, the Health Department created data briefs around pedestrian and bicycle-related injuries related to motor vehicle crashes using EMS data.

- [Pedestrian Injuries](#) (2014-2016 data)
- [Bicycle-related Injuries](#) (2014-2016 data)

The Vermont Crash Database maintains law enforcement reported crashes involving at least one motor vehicle where someone was injured or killed, or damage exceeds \$3000. The [Vermont Public Crash Data Query Tool](#) can be used to find motor vehicle crashes in Vermont that involve either pedestrians or bicyclists, if a motor vehicle was involved and a report was filed. This data can be sorted by location down to the town level, shows locations on a map, and has little delay (1 day to a couple of months, depending on reporter).

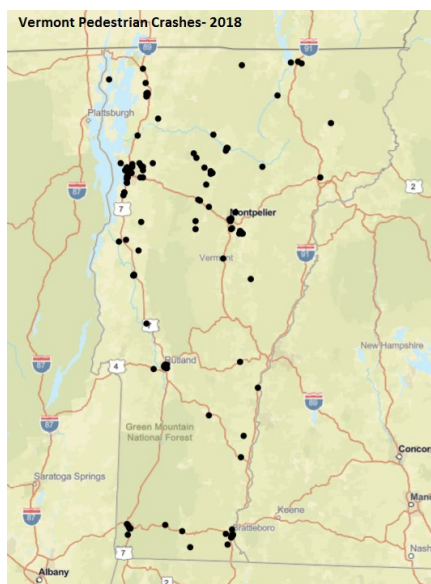
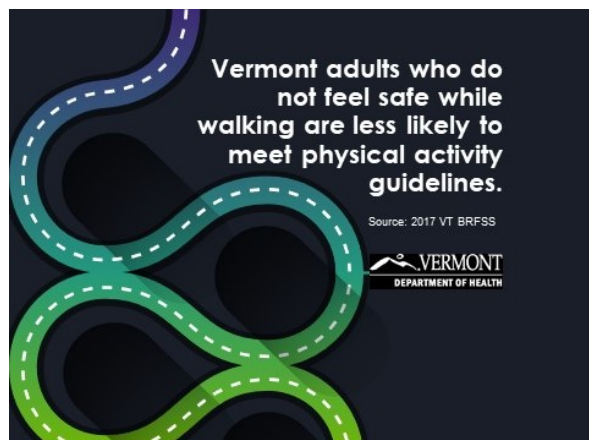


Image: Screenshot of [VTrans Crash Query Tool](#), 2018 Pedestrian Crashes

Statewide surveys such as the [Behavioral Risk Factor Surveillance Survey \(BRFSS\)](#), [Youth Risk Behavior Survey \(YRBS\)](#), [VTrans Driver Attitude Survey](#), and other surveys conducted by regional planning commissions, universities, and other organizations can help identify action areas, lend support to a project and measure public opinions around safety and travel.

- [Feelings of Community Safety for Walking Data Brief \(2017\)- BRFSS](#)



[Count data](#) can help to assess current usage of facility and can be used a baseline to measure change after a project is implemented. In some cases, count data may help to establish exposure for calculating risk of injury at a location.

- [Vermont Bike and Pedestrian Count Data \(UVM\)](#)

National Data

National data is useful for identifying emerging trends, especially when the numbers are too small for statistical significance in Vermont yet are important to act upon. The National Highway Traffic Safety Administration (NHTSA) releases annual [Traffic Safety Facts](#), Smart Growth America releases [Dangerous By Design](#), and The League of American Bicyclists releases the [Bicycling and Walking Benchmarking Report](#). There are also national surveys, such as the [National Household Travel Survey](#) and [AARP's Home and Community Preferences Survey](#).

- [Pedestrians – NHTSA Traffic Safety Facts \(2017\)](#)
- [Bicyclists and Other Cyclists – NHTSA Traffic Safety Facts \(2017\)](#)

How to collect your own data

For a community project you may be interested in collecting data around speed of vehicle travel, yielding behaviors at crosswalks, [number or counts of people](#) using various modes including walking and biking, or community attitudes around a proposed project.

This may be the most meaningful data, as you can measure exactly what you are looking for—whether it is a count of students travelling by mode to school, creating a survey on community perceptions, walk audit reports, or asking the community what areas on a map they would like to see improved. There are phone apps to make counting easy, and many people around the state have already begun collecting information that may help guide your efforts.

Communities can request pedestrian and bicycle counts from their regional planning commission.

- [Vermont Bike and Pedestrian Count Data](#)
- [Minnesota DOT Bicycle and Pedestrian Data Collection Manual](#)

Get help—recruit a team of people to help you collect data at different times of day and days of the week. Reach out to a local walk-bike group (if you have one), they may volunteer to help collect data.

Create a plan—determine the purpose of your data gathering; how you will collect, check, interpret, use and share the data; and who will be responsible for what and when.

Walk Audits

Conducting a walk audit is a great way to collect data on how people in the community feel about an area. Communities can conduct a walk audit before new construction to ensure that the future design serves all community members. While a walk audit can be made of up any number of people, ensure that you invite Public Works, local leaders, the media, parents with young children, youth, older adults, and people with limited mobility or other limitations (such as hearing or visual). After the walk audit, be sure to share your findings with decision makers and other community members.

- Example of Walk Audit report from AARP: [Burlington Centennial Neighborhood Walk Audit Survey Results](#)



Image: [America Walks](#)

Data limitations

One challenge in looking at pedestrian and bicycle crashes is the lack of data that indicates the amount of exposure. As an example, a location may have one crash reported, and few people walking because no one feels safe walking there. Another location may have one crash, but this location feels safer to walk and many people walk in this location. The count data can help fill in the context of the exposure and risk of crash at a given location. When communities start to look at their local data it is important to understand the entire context of the road, who is currently using it for what purposes, and what people would use it for if it were safe enough to do so.

Common Themes in Vermont

Impairment can refer to many ways in which a person is impaired. **Alcohol and other drugs**, including marijuana, opioids, prescription and over-the-counter medications, can impair a person's judgement, ability to make decisions, and coordination ([NHTSA](#)). Driving under the influence of alcohol and other drugs is illegal and impairment can set in before reaching a blood alcohol content (BAC) of .08%. Some research also indicates that [driving while hungover](#) can also have serious consequences on our roadways. [Many pedestrian-involved crashes](#) include either a driver or pedestrian who is impaired by alcohol or other drugs. Walking while under the influence of alcohol or drugs is not inherently illegal and may not put others at risk in the way that operating a vehicle under the influence does. But data suggests that impaired walking can be deadly, particularly when combined with dark lighting conditions. Communities can promote the use of designated drivers and other safe forms of transportation for people who choose to use alcohol and other drugs, in addition to [connecting individuals with treatment](#).

- [Impaired Driver Rehabilitation Program](#) -- A program people convicted of impaired driving can take to reinstate their privilege to drive.
- [Roadwise RX](#) – A tool developed by AAA to help adults determine how their medications may impact their ability to drive.

People are also impaired by **drowsy and fatigued driving**. This can be due to lack of quality sleep, such as with sleep disorders, shift work, or new parents. To learn more about drowsy driving, visit [CDC's Drowsy Driving: Asleep at the Wheel](#).

Distractions are another major risk on our roadways. All people are distracted at some point while travelling, whether due to technology, passengers, scenery, or one's own thoughts; but consequences of distractions are deadliest for those driving a motor vehicle. Distractions are classified into three categories: manual (hands), visual (eyes), and cognitive (mind). Smartphone use while driving receives a lot of attention for a good reason, as they take your hands off the wheel, your eyes off the road, and your mind off driving. Vermont [law prohibits the use](#) of handheld portable electric devices while driving. People walking should also take care to reduce distractions while walking on or near roadways, which can include using headphones to listen to music or phones while crossing the street if they impair one's awareness of their surroundings. To learn more about distracted driving, visit CDC's [Distracted Driving](#).

In Vermont, many pedestrian-involved crashes occur when it is dark out, particularly during the fall and winter months. Communities can consider adding [street lighting at pedestrian level](#) to improve the **visibility** of people walking.

People **driving at night** should closely adhere to speed limits in order to leave themselves enough time to safely react to neighbors walking or jogging.

People are often encouraged to wear white or lightly colored clothing, but this often does not increase your visibility to a safe distance for people driving to react. Wearing **reflective gear** or using a flashlight are more effective than wearing brightly colored clothing and can provide enough distance for the person driving to react or stop. If you frequently walk or jog along roadways, especially in areas without sidewalks, consider sticking reflective gear on your jacket, shoes or bag so that you don't need to remember an extra item. If out at night without reflective gear, consider using the flashlight on your phone. To learn more about safe travel in the dark, visit the National Safety Council's [Driving at Night](#).

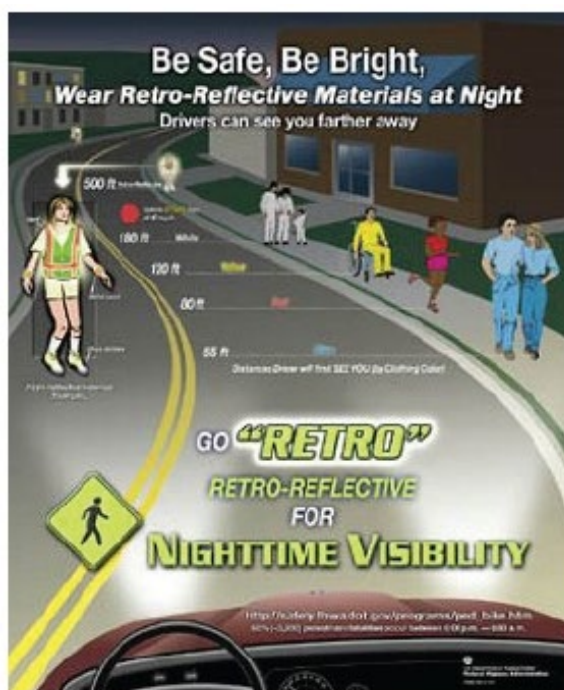


Image: [FHWA](#)

The **speed** of vehicle travel has a direct relationship with the likelihood of crash survival. A person driving a vehicle traveling at 25 mph (the speed in many Vermont school zones, downtowns and villages) is more likely to be able to react to a person walking or biking, they have a wider view of the roadway, and in the event of a crash, the vulnerable road user has a higher likelihood of surviving the crash ([around 3 in 4 chance of survival](#)). A person travelling on the same road at 40 mph requires a longer distance to stop, has a narrower view of the surrounding roadway, and in the event of a crash, the vulnerable road user has, at best, [a 1 in 4 chance of survival](#).

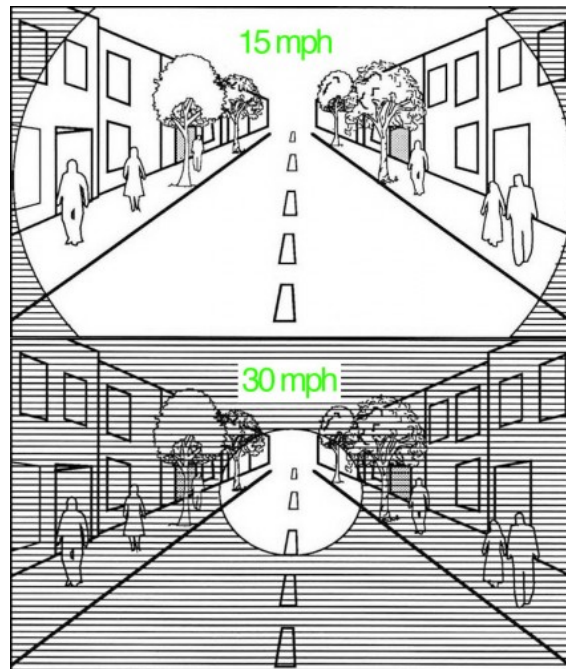


Image: Visual Perception at Different Speeds, [Streets MN](#)

Roadway design has a direct impact in how fast people feel comfortable driving on a given road. Road diets and other infrastructure changes are an investment in community safety. A self-enforcing road is a road where people do not feel comfortable travelling faster than the speed limit. While law enforcement can play a temporary role in monitoring speeds on a given road, enforcement cannot happen 24 hours a day. Law enforcement can help identify problem areas and educate community members about the dangers of speeding.

In Vermont, crashes involving pedestrians occur at intersections and non-intersection **locations** equally.

Safe crossing locations are important for all road users. Intersections without crosswalks and pedestrian signals (like a walk sign) are confusing; and poor infrastructure, such as faded paint, roads that are too wide, or signals that are too short, are dangerous. The Federal Highway Administration (FHWA) [Safe Transportation for Every Pedestrian \(STEP\) Program](#) recommends crossing treatments to improve the safety of people walking. [See “Infrastructure Treatment.”](#)

Leading pedestrian intervals at signalized pedestrian crossings allow people walking a ‘head start’ and can improve the visibility of people walking. [Nationally, a common conflict between people walking and driving happens when people driving vehicles are turning left](#), as the driver is watching for oncoming traffic and may not be looking for people walking. An additional treatment to improve pedestrian safety at intersections are [restrictions on right on red](#), which can result in vehicle-pedestrian conflict if the person driving is watching for oncoming traffic and not looking for people walking.

- [FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations](#)

Crashes that happen **along the road**, classified as “not at a junction” in the police crash database, are just as common in Vermont as those that happen at intersections. Vermont’s rural roads often do not have sidewalks, shoulders, or street lighting, which puts people walking, biking and driving in the same space. Communities can narrow the travel lane to 10 feet when speeds are 40 mph or lower, and paint edge lines to increase shoulder space for people walking. In some locations there may be opportunities to add shared use paths, sidewalks, or widen shoulders to provide a safer space for people walking. People driving vehicles can follow the speed limit, share the roadways with people walking and cycling, and allow adequate space for vulnerable road users when passing (recommended distance of 4 feet). People cycling can ride predictably, in the same direction as traffic, use hand signals to signal their intent, ride no more than 2 abreast, and use lights in low lighting conditions. People walking should walk facing traffic (if there are no sidewalks), use reflective gear in low lighting conditions, and are required by law to yield to vehicles when crossing outside of a crosswalk. Best practice is that people walking should make eye contact with people driving when they intend to cross the road so that you know they see you.

School Zones

Schools are important to a child’s successful growth and development. Historically schools were in the middle of town and students were able to safely walk or bike to and from school. Today schools often are no longer located within 2 miles of many students’ homes, or the roads surrounding these schools do not feel safe enough for parents and caregivers to allow their children to walk to and from school. Children require [at least one hour of exercise each day](#) and the commute to and from school is a great opportunity for reaching this physical activity recommendation. Solutions to improve the safety of these zones can improve student health and well-being while providing students and caregivers with travel options.

Speed Kills—Slow down for school zones

Many communities have speed limits of 25 mph in school zones, and for good reason. When a person driving a vehicle at or below 25 mph strikes a person walking, the person walking is [more likely to survive than die](#). When a person driving a vehicle at or above 40 mph strikes a person walking, the person walking is [more likely to die than survive](#).

There are many strategies to slow down vehicle speed. [See “Infrastructure Treatments.”](#)



School Bus Safety

For students in many communities, the school bus is a great way to get safely to and from school. School buses are among the [safest vehicles on the road](#) and are highly regulated. Teaching children how to [safely get on and off the school bus](#) is important. If you have a problem with illegal passing of school buses in your community, reach out to your local police department for assistance.



School Drop Off and Pick Up Zones

Traffic around schools can be dangerous for students walking and biking, and much of the conflict is due to fellow students getting dropped off or picked up in single occupancy vehicles at the same time as students walking. Schools can implement a safety delay for student dismissal at the end of the day, where students who are walking, biking and riding the bus are let out at the normal time, and students travelling in private vehicles are held in the classroom for an additional five minutes to give students walking and biking a chance to safely travel through the areas with most conflict.

- [Parents: Avoid Becoming A Traffic Hazard](#)
- [Improving Arrival and Dismissal for Walking and Biking](#)

Remote Drop Off Zones

[Remote drop off zones](#) can be used at schools where students live too far to walk or bike, or when surrounding roads are unsafe. Students gather at a location a mile or less from school and walk the remaining distance as a group, accompanied by designated adult chaperones. Schools

can develop agreements with local businesses or organizations, like a church, community center or park, where students can be dropped off by either the school bus or their caregivers. Schools can reach out to local law enforcement to see if they are available to escort the group.



In 2019, Newbury Elementary School held a Walk to School Day where they met at a remote drop off location and were escorted the remaining distance to school by chaperones and a member of the Orange County Sheriff's Department.

Walking School Buses

Walking school buses are a great way to get groups of students walking together to school. A trusted adult, such as a parent, school staff member or law enforcement officer, walks a group of students into school and makes stops at designated pick up locations along the way. Visit the [Vermont Safe Routes to School website](#) for tips on starting a walking school bus.

Walk and Bike to School Days

[International Walk to School Day](#) happens each year in early October and [National Bike to School Day](#) happens each year in early May. Schools can set up a few events a year, or choose to hold regular events, such as the first Wednesday of every month. Schools participating in the [Way To Go! challenge](#) are eligible for points if they hold a walk or bike to school day event. Some communities are able to work with the town and local law enforcement to temporarily close down a portion of the road to allow children to safely walk or bike to school during the events.



Image: Walk to School Day Bennington Elementary 2019

Additional Resources

[Safe Routes to School \(SRTS\)](#)

Visit this website to determine if someone in your school is already working on making your community safe for students to travel to and from school. Below are some of the many resources available.

[Miniguides for your SRTS program](#)

[School Travel Plan Miniguide](#)

[Vermont Safe Routes to School Crossing Guard Training: Best Practices for Safe Crossing](#)

[VT Safe Routes to School Infrastructure Glossary](#)

[Way to Go! to School](#)

Learn more about incentives available to schools participating in the Way to Go! to School challenge. Schools can win prizes such as bike helmets, reflective gear, bike racks, and even a flower-shaped solar panel.

[Bike Smart Program](#)

Local Motion's Bike Smart program provides schools and communities with a trailer for a week or two so that children can learn how to safely ride a bike.

[Safe Routes National Partnership Resource Catalog](#)

[Safe Kids](#)

[Take Action Toolkit: How to fix an unsafe school zone in your community](#)

[School Zone Research Report](#)

[School Zone Infographic](#)

[Tips on getting to school safely](#)



Accessible Design

Accessible design is necessary for some people and useful for all people. Streets with curb cuts and ramps that are accessible to people using a wheelchair are also useful for people pushing strollers. Communities that are designed for older adults also tend to be safer for younger children.

Some requirements under the Americans with Disabilities Act (ADA) include [curb ramps](#), [truncated domes \(detectable warnings\)](#), and minimum widths for sidewalks. All new or reconstructed sidewalks or shared paths open to public travel by pedestrians must meet standards for accessibility.



Additional Resources for Accessible Design:

[VTrans ADA Program Resources & Useful Links](#)

[Handbook for Designing Roadways for the Aging Population](#)

[AARP's Livable Lingo: A Livability Glossary](#)

[AARP's 7 Ways to Make Communities More Livable for People With Vision or Hearing Impairments](#)

[Universal Design](#)

This video series demonstrates some considerations for designing sidewalks for all members of your community.

[Accessible Sidewalks: Pedestrians who use Wheelchairs](#)

[Accessible Sidewalks: Pedestrians with Ambulatory Impairments](#)

[Accessible Sidewalks: Pedestrians with Low Vision](#)

[Accessible Sidewalks: Pedestrians who are Blind](#)

Towns

Zoning can support walkability.

Walkable communities are more economically profitable and an investment in your community's future. [Walkable communities](#) attract new residents and [help retain](#) aging residents who want to remain at home. To learn more, visit the VTrans report, [Economic Impact of Bicycling and Walking in Vermont](#).

Here are some examples of how zoning and planning can improve walking in your community:

- Require developers to install sidewalks with new development in your zoning and development regulations. Regional planning commissions can help and provide examples of other Vermont towns who have this language in existing regulations.
- Store entrances should face the street and not be set back by large parking lots that are dangerous to walk through.
- Commit to the operation and maintenance of infrastructure, including sidewalks and bike lanes.

For more examples of how towns can support walkability, visit the [Vermont Healthy Community Design Resource](#) (p. 17-19).



Image: [AARP, Brett VA](#)



Grant Opportunities

Apply for grant opportunities with support from regional planning commissions to leverage funds in walkability projects. Conducting a [walk audit](#) prior to your grant can help identify needed changes and build community support.

- [AARP Community Action Grants](#)
- [Better Connections Program](#)
- [Go! Vermont Local Community Assistance Program Grants](#)
- [Municipal Planning Grant Program](#)
- [RiseVT Amplify Grant](#)
- [VTrans Bicycle and Pedestrian Program](#)
- [VTrans Transportation Alternatives Program](#)

Rural Roads

Many of our roads in Vermont are rural and towns face common challenges such as physical and fiscal constraints, safety, maintenance, and high speeds. Solutions that work in urban areas may not be feasible to many Vermont communities. It is important to work with the community to determine what solution would work best to keep all road users safe, including those without a personal vehicle.

The FHWA released the [Small Town and Rural Multimodal Networks guide](#) to help communities find appropriate solutions for transportation challenges in rural communities.



Image: [AARP, Melissa Stanton](#)

Media

The way we talk about a topic can have a profound impact on public perception of an issue. All Vermonters use our roads and pay taxes to support infrastructure maintenance and improvements. All people using our roadways are that—people. We each want to get where we are going, safely and in a stress-free manner.

Invite the media to your event

Your local media won't know to attend an event unless you invite them. They want to cover stories their readers and listeners care about, and many citizens care about the safety and connectivity of their roads. Walk audits and other events are good starting points for building a relationship with local media.

Crash not Accident

Many people use the term accident when referring to a car crash. The term accident implies inevitability and that there is no need for accountability, answers or solutions. Car crashes are preventable and are not accidents. When media are covering a story of a crash, it is important to use the appropriate language.

Reporting on crashes involving a pedestrian

When covering a motor vehicle crash, consider how blame is assigned, either explicitly or implicitly. By focusing on what color clothing someone was wearing or if they had on a helmet, the blame is shifted to the person using the more vulnerable transportation mode. People driving vehicles have a high level of responsibility for their lives and the lives of those around them, as vehicles can quickly become deadly weapons.

When a police investigation is still on-going, do not assign blame or speculate on the cause of the crash.

When reporting crashes, it can be useful to report on [previous crashes at this location](#), the design of the road, and other related environmental factors, such as lighting, crosswalks, shoulder width, presence of sidewalks and speed limit.

Avoid using passive voice, such as stating that a vehicle struck a person, instead you can say that a person driving a vehicle struck another person.

Note the role of survivor bias if a person was killed and can't tell their side of the story.

To learn more about language use and car crashes, consider reading [When covering car crashes, be careful not to blame the victim.](#)

Law Enforcement

Law enforcement plays a key role in keeping people using our roads safe. They enforce laws designed to keep all road users safe, such as speed limits, impaired driving, and failure to yield. They also have their eyes on the streets and work with community members to improve the safety of identified conflict areas. Law enforcement professionals upload data into the [Crash database](#), which is then used to identify locations with a high number of crashes. Some law enforcement professionals help children safely cross the streets on the way to and from school, helping parents and caregivers to feel comfortable allowing their children to walk to and from school. Partnering with law enforcement is an important step in making your community safe for all people, travelling by any mode.



Laws

[Vermont Motor Vehicle Laws](#) – A list of motor vehicle laws on Vermont Legislature website.

[Vermont Walk & Bike Laws- Local Motion](#) – A summary of laws that impact vulnerable road users.

Selected laws:

- [Pedestrians' right of way in crosswalks](#), people driving must yield to people walking within crosswalks when there is not a traffic control device; people walking should take due care when crossing to allow people driving vehicles enough time to stop; and people driving may not pass another person driving a vehicle that has stopped for people walking
- [Crossing outside of marked crosswalks](#), people walking must yield to people driving where there is not a crosswalk
- [Pedestrians on roadways](#), when sidewalks are not provided people should walk facing traffic

- [Duty toward persons who are blind](#), people driving must yield the right of way to individuals who are blind, visual indicators may include a white walking stick or a guide dog
- [Passing motor vehicles and vulnerable users](#), people driving must reduce speed and should give vulnerable road users a suggested four feet of space when passing
- [Following too closely, crowding, and harassment law](#), people driving should be respectful when sharing the road with vulnerable road users
 - o *“The operator of a vehicle shall not, in a careless or imprudent manner, approach, pass, or maintain speed unnecessarily close to a vulnerable user as defined in subdivision 4(81) of this title, and an occupant of a vehicle shall not throw any object or substance at a vulnerable user.”*

High visibility enforcement

Failure to yield is a common safety violation that results in crashes between people driving and people walking or biking. Law enforcement professionals can assist with [crosswalk enforcement operations](#) designed to improve yielding behavior at dangerous crossing locations. During these operations, law enforcement may choose to hand out warnings with tips on safely sharing the road.



Image: [NHTSA](#)

Infrastructure Treatments

Roadway conditions can make it safer and easier for people to get around by various modes. Infrastructure treatments include work on the pavement, like travel lanes, shoulders, and paint; as well as above the pavement, including signage, lighting and sidewalks. These range in price and some can be implemented almost immediately, while others can take years to implement.

There are a variety of resources for municipalities, transportation engineers, departments of public works, and other planning entities around making our streets safer for people travelling by all modes.

- [Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations](#)
- [Process for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations](#)
- [Small Town and Rural Multimodal Networks](#) and the [Rural Design Guide](#)
- [Intersection Safety for Vulnerable Road Users](#)
- [PEDSAFE Countermeasures](#)

Selected Treatment Types:

[Sidewalks](#) provide a safe space for pedestrians to travel that is separate from vehicle traffic.

[Leading pedestrian intervals](#) (LPIs) at signalized intersections allow pedestrians to walk, usually 3 to 4 seconds, before vehicles get a green signal to turn left or right. The LPI increases visibility, reduces conflicts, and improves yielding (source: [FHWA](#)). See [Pedestrian Signal Timing](#) for more signal guidance.

[Right-Turn-on-Red Restrictions](#) can reduce conflict between vehicles turning right on red when pedestrians have a walk signal.

[Crosswalk visibility enhancements](#), such as crosswalk lighting and enhanced signage and markings, help drivers detect pedestrians— particularly at night (source: [FHWA](#)).

[Curb Extensions or Bulb-outs](#) are a treatment that reduces the distance of pedestrian crossing and can enhance visibility of pedestrians in areas with on street parking.



Image: [Living Streets](#)

Raised crosswalks can serve as a traffic calming measure and reduce vehicle speeds.



Image: [FHWA](#)

Pedestrian crossing/refuge islands allow pedestrians a safer place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for pedestrians with limited mobility (source: [FHWA](#)).



Image: [PBIC Image Library \(Dan Burden\)](#)

Rectangular rapid flashing beacons (RRFBs) are active (user-actuated) or passive (automated detection) amber LEDs that use an irregular flash pattern at mid-block or uncontrolled crossing locations. They significantly increase driver yielding behavior (source: [FHWA](#)).



Image: [FHWA](#)

Pedestrian hybrid beacons (PHBs) provide positive stop control for higher-speed, multilane roadways with high vehicular volumes. The PHB is an intermediate option between a flashing beacon and a full pedestrian signal (source: [FHWA](#)).



Example of PHBs mounted on a mast arm.

Image: [FHWA](#)

Road Diets can reduce vehicle speeds and the number of lanes pedestrians cross, and they can create space to add new pedestrian facilities such as pedestrian crossing/refuge islands (source: [FHWA](#)).

Before Road Diet:



After Road Diet:



Images: [PEDSAFE](#)

Roundabouts are an alternative to more traditional intersections and enhance the safety of all users by slowing traffic speeds.

Getting started and support

Local Motion can help communities test out a [temporary infrastructure treatment, commonly known as a “pop up demonstration” or a pilot project.](#)

[VTrans’ Bike and Pedestrian Program](#) offers grants for scoping and feasibility studies, as well as small and large infrastructure projects.

[Project bundling](#) is a cost-effective way for communities to implement desired changes, when feasible.

[VTrans Traffic Operations FAQ](#) is a guide with answers to how to implement certain infrastructure changes in Vermont.

Special Situations

Crashes in work zones, on limited access highways and in parking lots; as well as those involving people whose jobs put them on or near roadways are quite common. Limited access highways, such as I-89 and I-91, generally prohibit people walking and biking. When people exit their vehicles due to a breakdown, crash, or to do their job, they are put near vehicles travelling at speeds that are deadly. Parking lots bear a high burden of crashes involving pedestrians, as people walking and driving are sharing the same space, often without clear travel lanes and with limited sight lines.

Work Zone Safety

Work zones are an area where people on foot are in close proximity to people travelling in vehicles. Work zones have lower speed limits to improve the safety of people working, and higher fines associated with speeding in these zones to deter people driving from speeding. A car travelling at a lower speed can increase the likelihood of survival in a crash and increase the ability of a person driving to react and stop.

Work zones can impact people's ability to safely travel to their destination and ensuring people on foot are also provided with guidance on where they can safely travel is an important. There are many examples and resource materials for [accommodating pedestrians in work zones](#).

Move Over Law

The move over law is designed to protect emergency responders while they are responding to a roadside emergency. [Vermont's move over law](#) requires drivers to either change lanes away from the emergency responder's vehicle or slow down. The law applies to all emergency vehicles, including [tow trucks](#) and volunteer EMS or fire, when either lights or sirens are on.

Vehicle Breakdown

A vehicle breakdown can be a scary experience for any driver. By properly maintaining your vehicle to reduce the chances of vehicle breakdown, preparing a roadside emergency kit to keep in your vehicle so that you are prepared in event of a breakdown, and knowing what to do if your vehicle breaks down you can reduce the chances of getting into a crash after breaking down.

If your vehicle breaks down:

- Pull over to the right side of the road and put on emergency flashers
- Then call for a tow truck, and if there was a crash you should also call the police.
- Determining whether or not to exit your vehicle will depend on many factors, including the location, proximity to services, weather, and personal safety concerns. Do not stand next to or in front of your vehicle in case they are hit by another vehicle. Be aware of the danger of carbon monoxide poisoning if your tailpipe becomes buried in snow.

Prepare a [Roadside Emergency Kit](#) to store in your car so that you are prepared in the event of a breakdown. Some items in the kit will help you stay visible to other drivers, including flashlight, flares and a white flag, other items, like a cell phone and charger, first aid kit and water are useful in almost any emergency situation.

Parking Lot Safety

In Vermont, [one in five crashes](#) involving a pedestrian happen in parking lots, including parking garages. Individuals driving and walking in parking lots can take extra caution, slow down when driving, look both ways, and [avoid using phones and other electronics, including GPS](#).

Businesses and property owners can design parking lots to be safer for pedestrians, such as by including marked walkways, managing vehicle speeds, and providing adequate lighting. Buildings with parking lots in the rear are often easier to walk to. Property owners can improve the safety of their parking lots with low-cost solutions, such as reducing overly wide access points by installing planters. Additional safety considerations related to crime should also be addressed.

Frequently Asked Questions

My community does not feel safe for walking, where do I start?

A great way to start is to talk to neighbors, local officials, your local health department, or a local walk-bike committee. You are probably not the only person who thinks the community could be safer! After you have a group of people interested, start asking your local Public Works department, [regional planning commission](#), or look at the [VTransparency website](#) to see if there is a project planned for the location. From there you may want to conduct a [walk audit](#), [traffic count](#), or even a [pop-up demonstration](#).

I want to do a walk audit, who can help me?

There are many people who can help with a walk audit in your community. Some options include the [Vermont Department of Health](#), [AARP](#), [RiseVT](#) and [Local Motion](#). Remember to invite local officials, including Public Works, and local media to share lessons learned and build support for upcoming projects.

- [AARP Walk Audit Tool](#)

I want to reduce the speed that vehicles travel in my community, what options do I have?

Communities looking to slow down the speed of vehicle traffic have a few options. One is to request that law enforcement assist you—which may be through a speed feedback cart.

- [VTrans' Guidelines for the Use of Radar Speed Feedback Signs on the State Highway System](#)
- [Traffic Calming Measures](#)

Can I bike on the sidewalk?

Generally, it is advised to ride in the road or on a shared use path. Some towns have laws that restrict cycling on the sidewalk in the downtown area, often with an exception for children. People riding bikes who do travel on the sidewalk should operate at lower speeds, give respect to pedestrians and notify other people using the sidewalk when you are approaching. Cyclists should also be aware of increased conflicts with motor vehicles at access points, such as driveways and intersections.

How can I find my local Walk and Bike group?

Local Motion maintains a [list of committees and advocacy groups on their website](#).

How wide is a travel lane for vehicles?

The minimum lane width is 9 ft. An ideal lane width for slowing traffic when speeds are below 45mph is 10-10.5 ft. Traditional lane width is 12 ft.

Is 'jaywalking' illegal?

Vermont law allows for people to cross the street outside of a crosswalk if they yield to vehicle traffic. There are some instances where people are not allowed to cross outside of a crosswalk, which is when there are adjacent intersections with controls. At all marked and unmarked crosswalks, a person driving a vehicle must yield to pedestrians. See VT law [§ 1052. Crossing except at crosswalks](#).

What is an unmarked crosswalk?

An unmarked crosswalk happens when a sidewalk ends at one side of the intersection and continues on the other side of the road. A person driving must yield to people walking at unmarked and marked crosswalks.

What is access management?

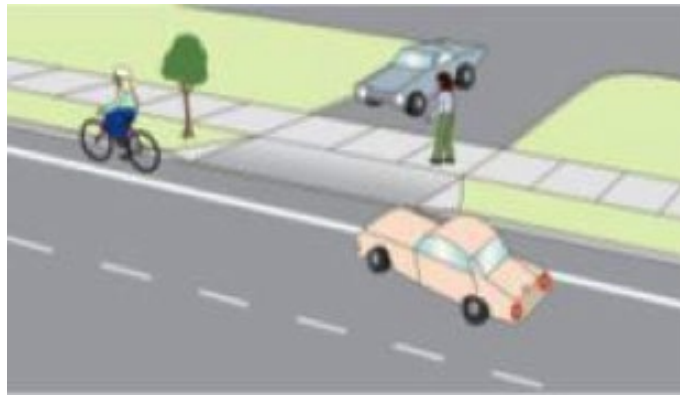
Access management is related to the control of vehicle turning into driveways, side streets and parking lots, which can reduce the number of potential conflicts with pedestrians, cyclists and other vulnerable road users. Communities can implement temporary or permanent solutions to reduce conflict points. Consider the example of a gas station, where vehicles have a wide area to enter and exit and people walking are vulnerable to increased crash risk. This location can test out putting barriers (such as planters) to improve safety by reducing the distance people walking are exposed to turning vehicle traffic, reducing the number of vehicle-to-vehicle conflicts, and even increasing the number of parking spaces available.

- [VNRC Access Management](#)
- [PEDSAFE Driveway Improvements](#)

Before:



After:



Images: [PEDSAFE](#)

How can I measure my success?

[Guidebook for Developing Pedestrian and Bicycle Performance Measures](#)

My question isn't answered here!

[VTrans Traffic Operation FAQs](#)

[Burlington's Biking and Walking FAQs](#)

[Local Motion](#)

[Way to Go! Vermont Contact List](#)

Additional Resources

Vermont

[Watch For Me VT](#)

[Complete Streets: a guide for Vermont communities](#)

[Safe Streets Vermont](#)

[Give Some Love, Get Some Love: Safety is a Two-Way Street](#)

[Healthy Community Design](#)

[Parking Lot Safety](#)

[VTrans Bicycle and Pedestrian Program](#)

National

[Safe Routes to School](#)

[Pedestrian and Bicycle Information Center](#)

[Pedestrian Safety- CDC](#)

[CDC's Walking Initiative](#)

[Step it Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities](#)

[Halloween Safety Poster](#)

[Summer Safety Poster](#)

[Pedestrian Safety Lesson Plan K-3](#)

[Pedestrian Safety Lesson Plan Grades 4-5](#)

Videos

[VTrans \(Vermont Agency of Transportation\) Bike & Auto Safety](#)

[Animated Crash Scenario](#)

[Vermont Safe Routes to School Crossing Guard Training: Best Practices for Safe Crossing](#)

[Local Motion and Ski Rack Bike Commuting videos](#)