



## TRANSPORTATION ADVISORY COMMITTEE

**Tuesday, September 24, 2019, 6:30 p.m.**

***Central VT Chamber of Commerce, Paine Turnpike North, Berlin, VT***

(Coming off the interstate at exit 7, turn left at the first light.

Just before the next crossroads, the Chamber is on your left. It is the light yellow building.)

6:15 pm - Social & Pizza

\*Action Item

### Page **AGENDA**

**6:30 Introductions**

**Adjustments to the Agenda**

**Public Comments**

**6:35 Presentation on VT Autonomous Vehicle Law and Community Testing**

**2 7:05 Approve July TAC Minutes (enclosed)\***

**3 7:10 Plainfield/Orange Brook Rd Functional Classification Change Request (enclosed)\***

**7:30 Presentation on Community Rail Grant Submission**

**18 8:00 TAC Updates**

**8:15 TAC Member Concerns**

Roundtable for any issues, questions, and town updates from TAC members.

**8:29 Set Agenda for the Future TAC Meeting**

**8:30 Adjourn**

### **Future TAC Meeting Agendas**

Below is a preview of upcoming TAC meeting agendas for consideration by the TAC.

#### **October**

- **Public Trans Policy Plan Presentation**
- **Review of new project prioritization process**

**CENTRAL VERMONT REGIONAL PLANNING COMMISSION**  
**Transportation Advisory Committee (TAC)**

**DRAFT Minutes**

**July 23, 2019**

Central Vermont Regional Planning Commission Office

**Attendees:**

	Barre City: Scott Bascom		Northfield: Patrick DeMasi
X	Barre Town: Shaun Corbett	X	Orange: Lee Cattaneo
	Berlin: Robert Wernecke, Vice- Chair	X	Plainfield: Bob Atchinson
	Cabot: John Cookson	X	Roxbury: Gerry D'Amico
X	Calais: Karin McNeill, Alt	X	Waitsfield: Don La Haye
X	Duxbury: Alan Quackenbush		Warren: Jim Sanford
x	East Montpelier: Frank Pratt		Washington: Vacant
	Fayston: Kevin Russell	X	Waterbury: Steve Lotspeich, Chair
	Marshfield: Robin Schunk		Williamstown: Rich Turner
X	Middlesex: Ronald Krauth		Woodbury: Vacant
x	Montpelier: Dona Bate		Worcester: Bill Arrand
X	Moretown: Joyce Manchester	X	Staff: Ashley Andrews

Guests: Alan Shoesmith and Cory Line (City of Montpelier)

Steve Lotspeich called the meeting to order at 6pm. Introductions were completed. There wasn't a quorum.

**Adjustments to the Agenda:**

No adjustments to the agenda were suggested

**Public Comments:**

There were no public comments

**Approve June, 25<sup>th</sup> TAC Minutes:**

Joyce Manchester suggested some corrections to the minutes.

**Guided Tour:**

The TAC was given a guided tour by Cory Line (City of Montpelier) of the Montpelier Transit Center, the Pedestrian Bridge over North Branch of the Winooski and the new bike path along Barre St, Pioneer St, Route 2, and Gallison Hill Rd.

**Set Agenda for Future TAC Meeting**

There is no August TAC Meeting so no agenda was set.

**Adjourn:** The meeting was adjourned at 7:45 pm.



## MEMO

Date: September 24, 2019

To: Transportation Advisory Committee

From: Daniel Currier, Program Manager

Re: Review of Functional Classification System

---

**✉ ACTION REQUESTED:** Review and provide feedback to VTrans on Plainfield and Orange request for changes to the Functional Classification system.

The purpose of the functional classification system is to identify the particular role a roadway plays in moving vehicles through a network of highways. It groups roads into three main functional classes as defined by the United States Federal Highway Administration: arterial, collector, and local.

In the winter of 2018 VTrans performed a review of the current functional classification system and provide each RPC with a listing of proposed changes. Each RPC is being asked to review the list, discuss any changes, and provide feedback to VTrans. Any proposed changes will need to conform with the FHWA guidance document “The Highway Functional Classification: Concepts, Criteria and Procedures, 2013 Edition”.

[https://www.fhwa.dot.gov/planning/processes/statewide/related/highway\\_functional\\_classifications/fcauab.pdf](https://www.fhwa.dot.gov/planning/processes/statewide/related/highway_functional_classifications/fcauab.pdf)

Plainfield and Orange are asking for 4 segments of roadway be changes from Minor Collectors to major collector including:

Reservoir Rd from US 302 to Orange/Plainfield Town Line

Brook Rd from Orange/Plainfield Town Line to Mill St

Mill St from Brook Rd to Main St

Main St from Mill St to US 2

Maps showing existing and proposed changes are included after this memo.

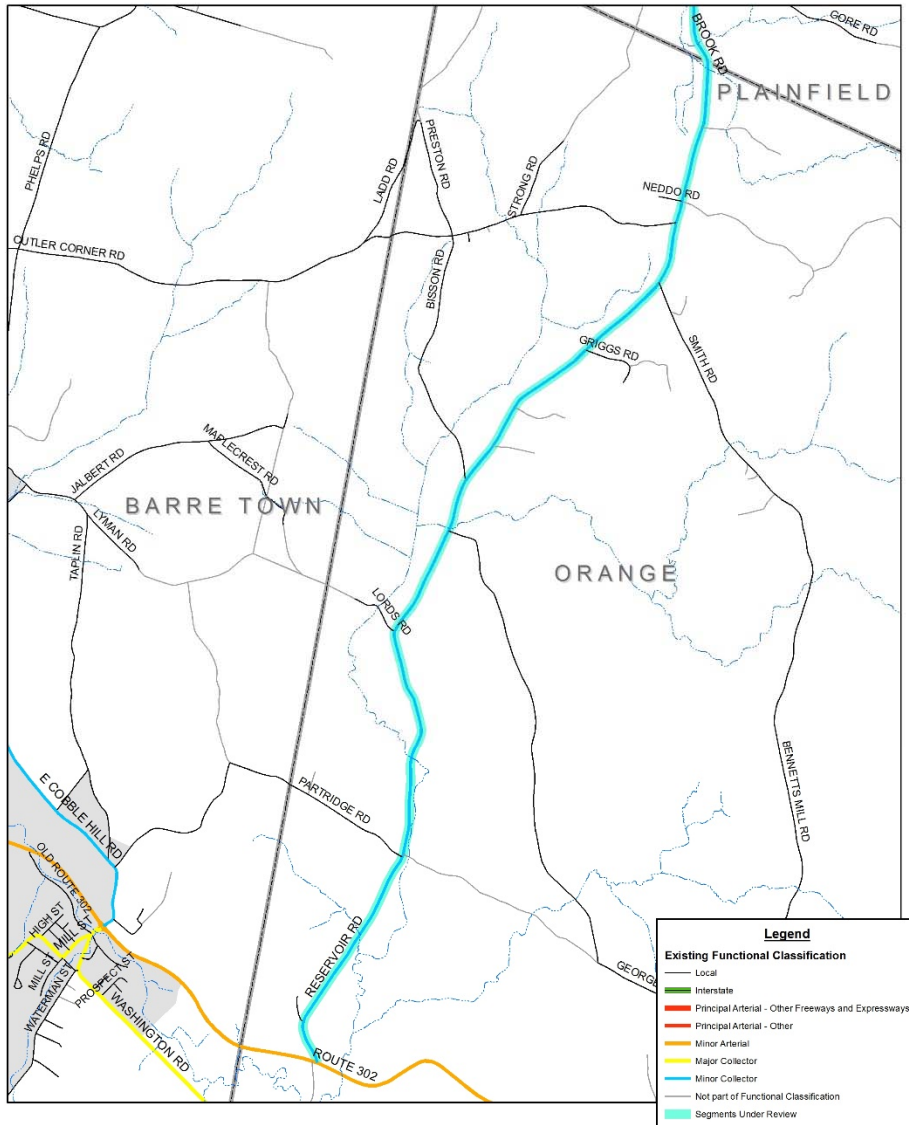
## Background

In 2014 the RPCs assisted VTrans with reviewing and adjusting Urban Area Boundaries. During that exercise, and as a result of changes in the urban area boundaries it became evident that there were some inconsistencies in the Functional Classification for some Vermont roadways. Changes in the functional class coding during this period also contributed to the inconsistencies. Following up on the 2014 effort, VTrans would like to enlist the RPCs assistance in reviewing and seeking regional input on proposed changes in the Functional Classification system.

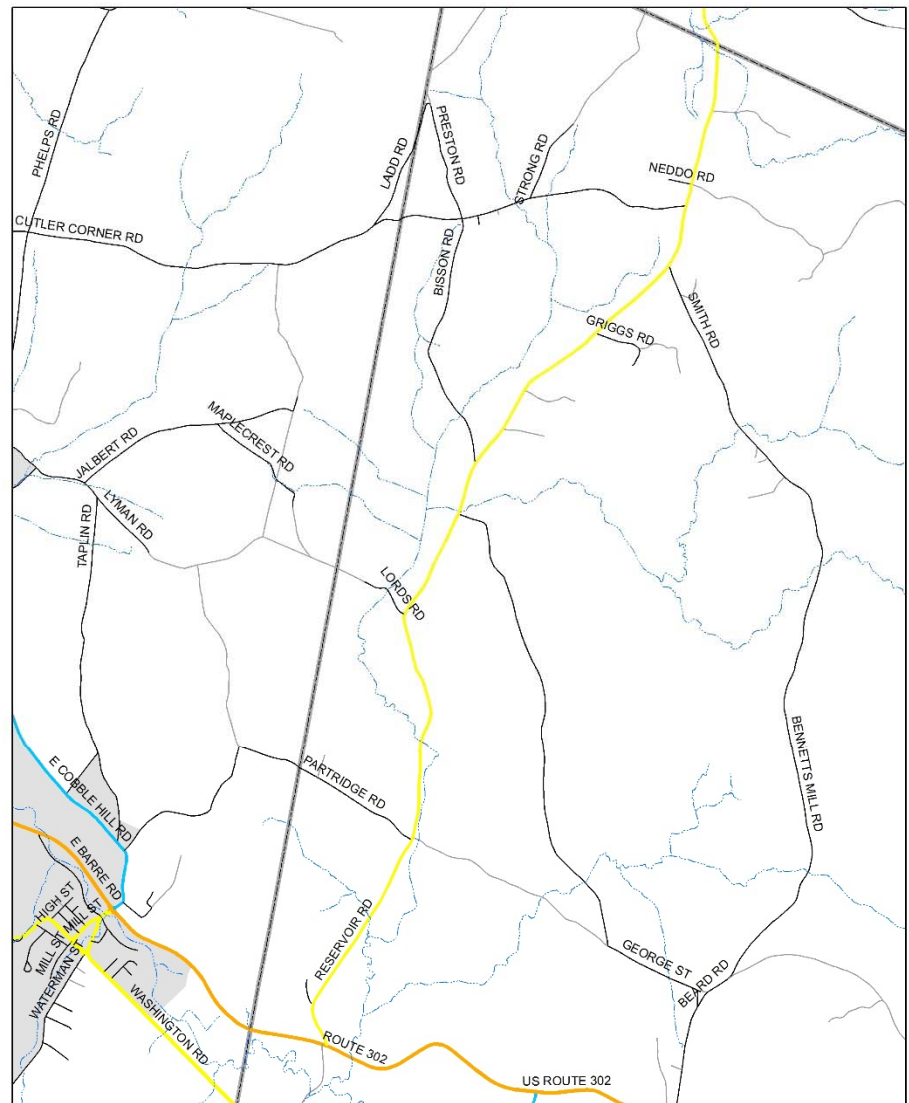
## Roadways

Classification Change	Road Name	Town	Lane Width (ft)	Shoulder Width (ft)	AADT	Notes
Upgrade	Reservoir Rd	Orange	11	2	384/567	Upgrade from Minor Collector to Major Collector
Upgrade	Brook Rd	Plainfield	11	2	289/768	Upgrade from Minor Collector to Major Collector
Upgrade	Mill St	Plainfield	11	2	1800	Upgrade from Minor Collector to Major Collector
Upgrade	Main St	Plainfield	11	2	923	Upgrade from Minor Collector to Major Collector

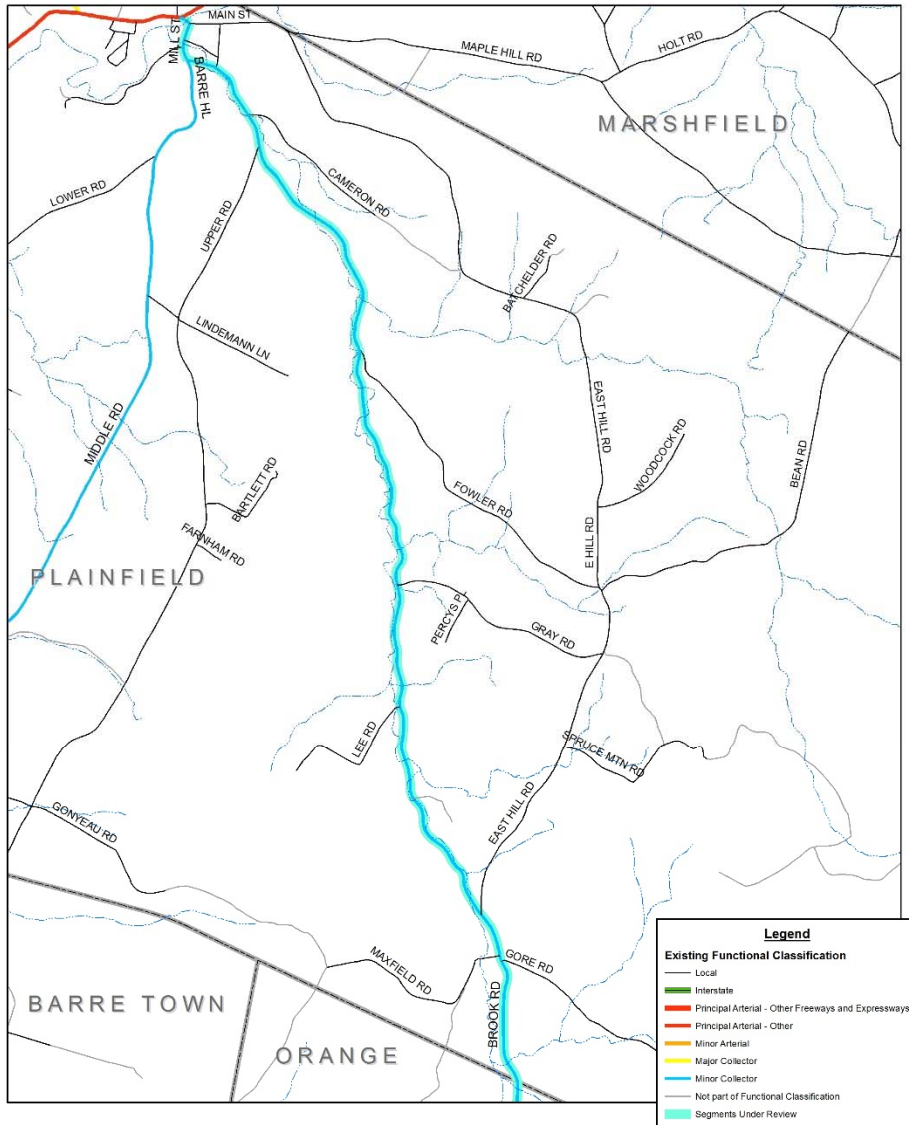
**Existing Road Functional Classification**



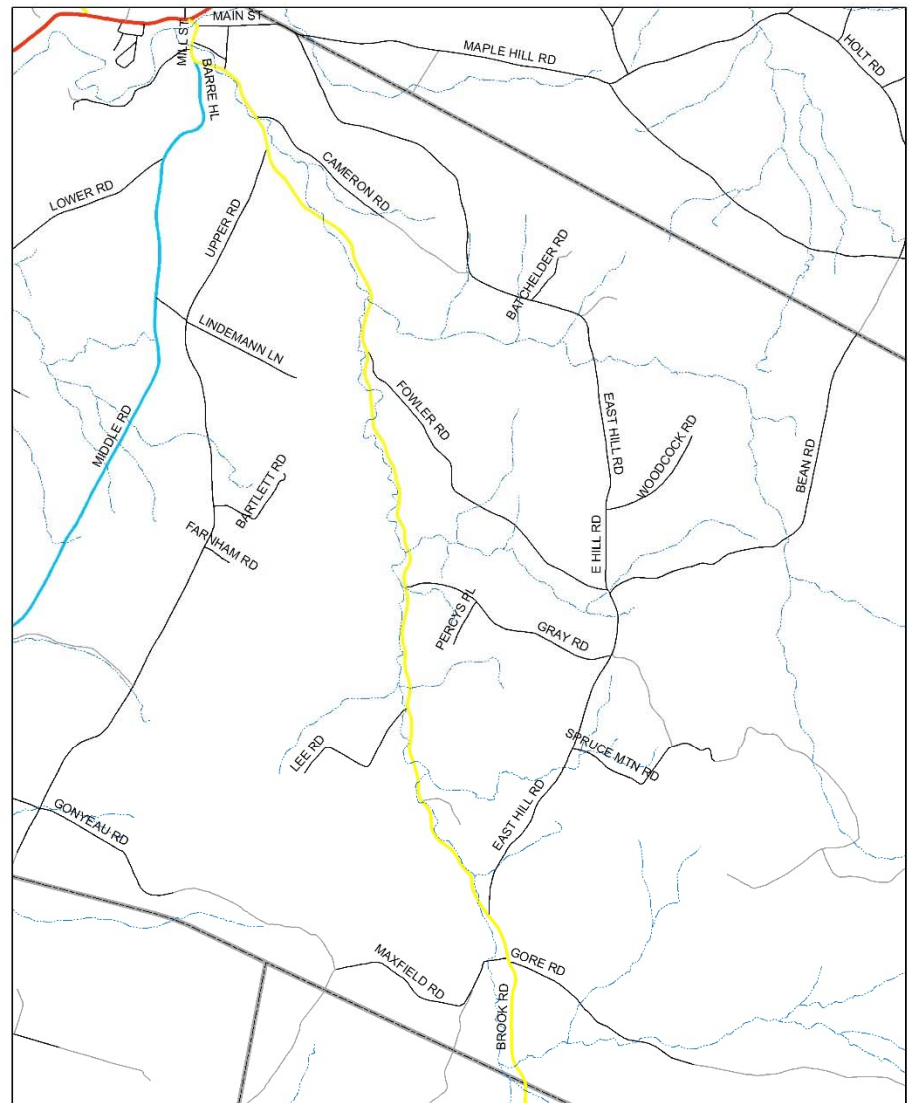
**Proposed Road Functional Classification Change**



**Existing Road Functional Classification**



**Proposed Road Functional Classification Change**





## SECTION 3. CRITERIA

### 3.1 Definitions and Characteristics

The previous section provided a general overview of the functional classification categories of Arterial, Collector and Local. For Federal functional classification purposes, this section breaks these categories down further to stratify the range of mobility and access functions that roadways serve. Additionally, the physical layout and the official designation of some roadways dictate the classification of certain roadways.

#### 3.1.1 Interstates

Interstates are the highest classification of Arterials and were designed and constructed with mobility and long-distance travel in mind. (**Figure 3-1**) Since their inception in the 1950's, the Interstate System has provided a superior network of limited access, divided highways offering high levels of mobility while linking the major urban areas of the United States.

Determining the functional classification designation of many roadways can be somewhat subjective, but with the Interstate category of Arterials, there is no ambiguity. Roadways in this functional classification category are officially designated as Interstates by the Secretary of Transportation, and all routes that comprise the Dwight D. Eisenhower National System of Interstate and Defense Highways belong to the Interstate functional classification category and are considered Principal Arterials.

**Figure 3-1: Example of Interstate**



Source: CDM Smith

#### 3.1.2 Other Freeways & Expressways

Roadways in this functional classification category look very similar to Interstates. While there can be regional differences in the use of the terms 'freeway' and 'expressway', for the purpose of functional classification the roads in this classification have directional travel lanes are usually separated by some type of physical barrier, and their access and egress points are limited to on- and off-ramp locations or a very limited number of at-grade intersections. Like Interstates, these roadways are designed and constructed to maximize their mobility function, and abutting land uses are not directly served by them.

*Access control is a key factor in the realm of functional classification. All Interstates are "limited access" or "controlled access" roadways. The use of the word "access" in this context refers to the ability to access the roadway and not the abutting land use—these roadways provide no "access" to abutting land uses. Access to these roadways is controlled or limited to maximize mobility by eliminating conflicts with driveways and at-grade intersections that would otherwise hinder travel speed. Access to these roadways is limited to a set of controlled locations at entrance and exit ramps. Travelers use a much lower functionally classified roadway to reach their destination.*



### 3.1.3 Other Principal Arterials

These roadways serve major centers of metropolitan areas, provide a high degree of mobility and can also provide mobility through rural areas. Unlike their access-controlled counterparts, abutting land uses can be served directly. Forms of access for Other Principal Arterial roadways include driveways to specific parcels and at-grade intersections with other roadways. (Figure 3-2) For the most part, roadways that fall into the top three functional classification categories (Interstate, Other Freeways & Expressways and Other Principal Arterials) provide similar service in both urban and rural areas. The primary difference is that there are usually multiple Arterial routes serving a particular urban area, radiating out from the urban center to serve the surrounding region. In contrast, an expanse of a rural area of equal size would be served by a single Arterial.

*Figure 3-2: Example of Other Principal Arterial*



Source: CDM Smith

Table 3-1 presents a few key differences between the character of service that urban and rural Arterials provide.

*Table 3-1: Characteristics of Urban and Rural Arterials*

Urban	Rural
<ul style="list-style-type: none"> <li>• Serve major activity centers, highest traffic volume corridors and longest trip demands</li> <li>• Carry high proportion of total urban travel on minimum of mileage</li> <li>• Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area</li> <li>• Serve demand for intra-area travel between the central business district and outlying residential areas</li> </ul>	<ul style="list-style-type: none"> <li>• Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel</li> <li>• Connect all or nearly all Urbanized Areas and a large majority of Urban Clusters with 25,000 and over population</li> <li>• Provide an integrated network of continuous routes without stub connections (dead ends)</li> </ul>

### 3.1.4 Minor Arterials

Minor Arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher Arterial counterparts and offer connectivity to the higher Arterial system. In an urban context, they interconnect and augment the higher Arterial system, provide intra-community continuity and may carry local bus routes. (Figure 3-3)

*Figure 3-3: Example of Urban Minor Arterial*



Source: Unsourced photo





In rural settings, Minor Arterials should be identified and spaced at intervals consistent with population density, so that all developed areas are within a reasonable distance of a higher level Arterial. Additionally, Minor Arterials in rural areas are typically designed to provide relatively high overall travel speeds, with minimum interference to through movement. The spacing of Minor Arterial streets may typically vary from 1/8- to 1/2-mile in the central business district (CBD) and 2 to 3 miles in the suburban fringes. Normally, the spacing should not exceed 1 mile in fully developed areas (see **Table 3-2**).

**Table 3-2: Characteristics of Urban and Rural Minor Arterials**

Urban	Rural
<ul style="list-style-type: none"> <li>• Interconnect and augment the higher-level Arterials</li> <li>• Serve trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials</li> <li>• Distribute traffic to smaller geographic areas than those served by higher-level Arterials</li> <li>• Provide more land access than Principal Arterials without penetrating identifiable neighborhoods</li> <li>• Provide urban connections for Rural Collectors</li> </ul>	<ul style="list-style-type: none"> <li>• Link cities and larger towns (and other major destinations such as resorts capable of attracting travel over long distances) and form an integrated network providing interstate and inter-county service</li> <li>• Be spaced at intervals, consistent with population density, so that all developed areas within the State are within a reasonable distance of an Arterial roadway</li> <li>• Provide service to corridors with trip lengths and travel density greater than those served by Rural Collectors and Local Roads and with relatively high travel speeds and minimum interference to through movement</li> </ul>

### 3.1.5 Major and Minor Collectors

Collectors serve a critical role in the roadway network by gathering traffic from Local Roads and funneling them to the Arterial network. Within the context of functional classification, Collectors are broken down into two categories: Major Collectors and Minor Collectors. Until recently, this division was considered only in the rural environment. Currently, all Collectors, regardless of whether they are within a rural area or an urban area, may be sub-stratified into *major* and *minor* categories. The determination of whether a given Collector is a Major or a Minor Collector is frequently one of the biggest challenges in functionally classifying a roadway network.

In the rural environment, Collectors generally serve primarily intra-county travel (rather than statewide) and constitute those routes on which (independent of traffic volume) predominant travel distances are shorter than on Arterial routes. Consequently, more moderate speeds may be posted.

The distinctions between Major Collectors and Minor Collectors are often subtle. Generally, Major Collector routes are longer in length; have lower connecting driveway densities; have higher speed limits; are spaced at greater intervals; have higher annual average traffic volumes; and may have more travel lanes than their



Minor Collector counterparts. Careful consideration should be given to these factors when assigning a Major or Minor Collector designation. In rural areas, AADT and spacing may be the most significant designation factors. Since Major Collectors offer more mobility and Minor Collectors offer more access, it is beneficial to reexamine these two fundamental concepts of functional classification. Overall, the total mileage of Major Collectors is typically lower than the total mileage of Minor Collectors, while the total Collector mileage is typically one-third of the Local roadway network (see **Table 3-3**).

*Table 3-3: Characteristics of Major and Minor Collectors (Urban and Rural)*

MAJOR COLLECTORS	
Urban	Rural
<ul style="list-style-type: none"> <li>• Serve both land access and traffic circulation in <u>higher</u> density residential, and commercial/industrial areas</li> <li>• Penetrate residential neighborhoods, often for <u>significant</u> distances</li> <li>• Distribute and channel trips between Local Roads and Arterials, usually over a distance of <u>greater than</u> three-quarters of a mile</li> <li>• Operating characteristics include higher speeds and more signalized intersections</li> </ul>	<ul style="list-style-type: none"> <li>• Provide service to any county seat not on an Arterial route, to the larger towns not directly served by the higher systems and to other traffic generators of equivalent intra-county importance such as consolidated schools, shipping points, county parks and important mining and agricultural areas</li> <li>• Link these places with nearby larger towns and cities or with Arterial routes</li> <li>• Serve the most important intra-county travel corridors</li> </ul>
MINOR COLLECTORS	
Urban	Rural
<ul style="list-style-type: none"> <li>• Serve both land access and traffic circulation in lower density residential and commercial/industrial areas</li> <li>• Penetrate residential neighborhoods, often only for a <u>short</u> distance</li> <li>• Distribute and channel trips between Local Roads and Arterials, usually over a distance of <u>less than</u> three-quarters of a mile</li> <li>• Operating characteristics include lower speeds and fewer signalized intersections</li> </ul>	<ul style="list-style-type: none"> <li>• Be spaced at intervals, consistent with population density, to collect traffic from Local Roads and bring all developed areas within reasonable distance of a Collector</li> <li>• Provide service to smaller communities not served by a higher class facility</li> <li>• Link locally important traffic generators with their rural hinterlands</li> </ul>

### 3.1.6 Local Roads

Locally classified roads account for the largest percentage of all roadways in terms of mileage. They are not intended for use in long distance travel, except at the origin or destination end of the trip, due to their provision of direct access to abutting land. Bus routes generally do not run on Local Roads. They are often designed to discourage through traffic. As public roads, they should be accessible for public use throughout the year.



Local Roads are often classified by default. In other words, once all Arterial and Collector roadways have been identified, all remaining roadways are classified as Local Roads (see **Table 3-4**).

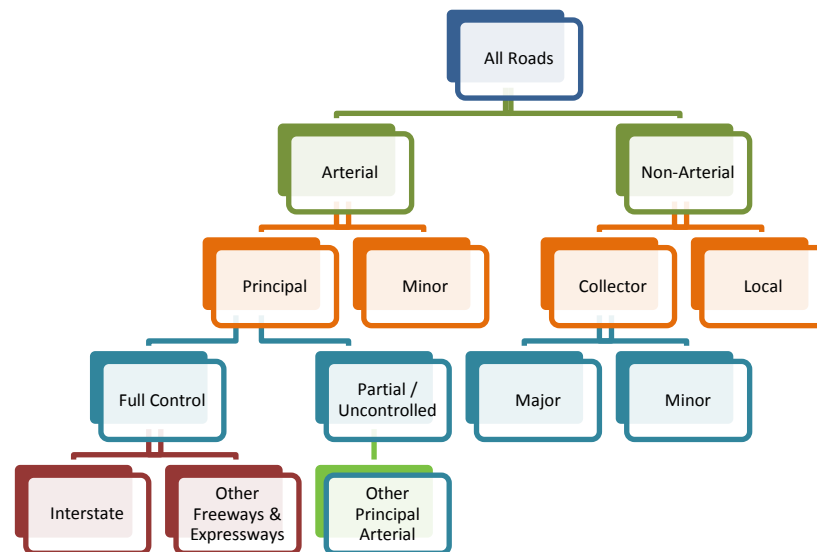
**Table 3-4: Characteristics of Urban and Rural Local Roads**

Urban	Rural
<ul style="list-style-type: none"> <li>• Provide direct access to adjacent land</li> <li>• Provide access to higher systems</li> <li>• Carry no through traffic movement</li> <li>• Constitute the mileage not classified as part of the Arterial and Collector systems</li> </ul>	<ul style="list-style-type: none"> <li>• Serve primarily to provide access to adjacent land</li> <li>• Provide service to travel over short distances as compared to higher classification categories</li> <li>• Constitute the mileage not classified as part of the Arterial and Collector systems</li> </ul>

## 3.2 Putting it all Together

The functional classification system groups roadways into a logical series of decisions based upon the character of travel service they provide. **Figure 3-4** presents this process, starting from assigning the function of an Arterial by its level of access (limited or full) or Non-Arterial (full access).

**Figure 3-4: Federal Functional Classification Decision Tree**



Source: FHWA and CDM Smith

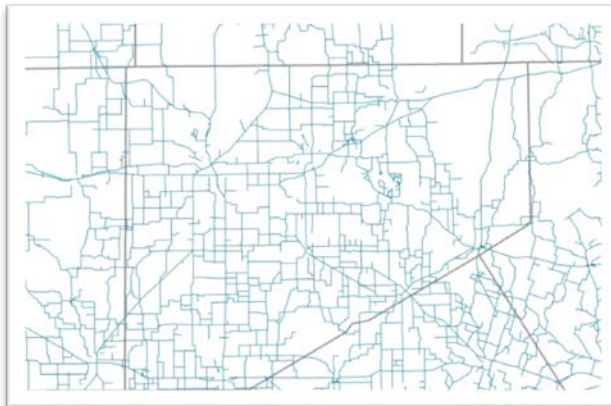
While this document emphasizes the importance of function and service over the urban/rural distinction when classifying roads, the classification process is still influenced by the intensity and distribution of land development patterns. Classification of roadways in urban areas is typically guided by the local comprehensive planning and design process, or the fundamental principles of roadway functional classification. In comparison, rural development patterns are often more diverse, if not less orderly, thereby making the functional classification determination of some rural roadways more challenging (see **Figure 3-5** and **Figure 3-6**).

**Figure 3-5: Map of an Urban Area's Roadway Network  
(Functional Classification more evident)**



Source: CDM Smith

**Figure 3-6: Map of a Rural Area's Roadway Network  
(Functional Classification less evident)**



Source: CDM Smith

When comparing urban and rural areas, perhaps the most relevant characteristic is the density of the roadway network. Even with a cursory view of a map of an urban area's roadway network, the functional classification of many roadways can be discerned due to the differences in roadway size. In contrast, the functional classification of the roadway network in many rural areas is less readily apparent, primarily due to the relatively inconsistent roadway spacing.

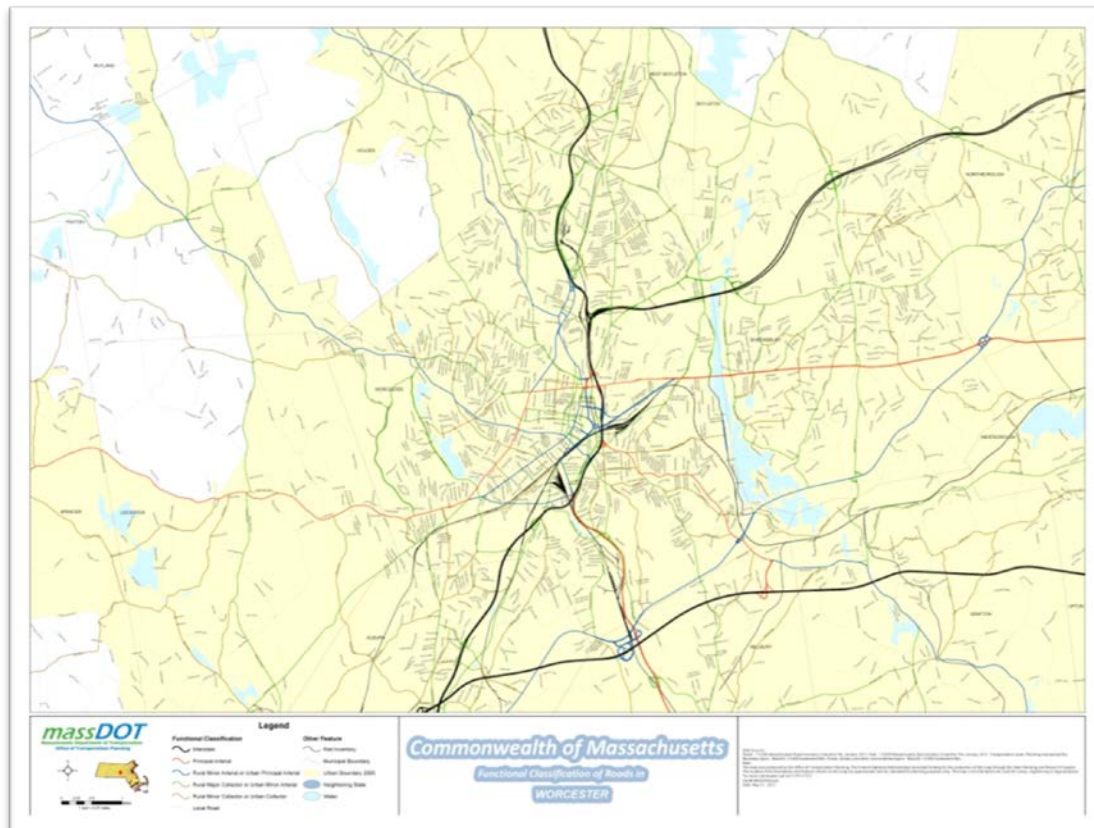
Nevertheless, functional classifications should be assigned based on actual functional criteria, rather than the location of the roadway within an urban or rural context.

### 3.3 A Real World Example

At this point, the concepts, criteria and definitions of all Federal functional classification categories have been presented. However, to strengthen the functional classification practitioner's understanding of these topics, the real world example of the city of Worcester, MA is presented below (**Figure 3-7**).

**Figure 3-7: Worcester, MA Roadway System**

Shaded area depicts the Urbanized Area



1. The city of Worcester is served by two interstate routes, Interstate 190 and Interstate 290 (shown in black). These Interstates provide high mobility service to residential communities to the north, northeast and south sides of the city.
2. A handful of Other Freeways & Expressways and Other Principal Arterials (shown in red and blue) radiate out from the central core of the city and provide direct service into, out of and through the city, offering connections to the surrounding areas not served by the Interstates.
3. An even larger number of Minor Arterials (shown in green) provide connectivity between the Interstate, Other Freeways & Expressways and Other Principal Arterials and are rather evenly spaced. Note that only a few of these Minor Arterial routes actually extend outside of the city border, as most of them terminate at Arterials within the city limits.
4. The Collector roadway system (shown in brown) consists of relatively shorter routes that mainly connect to Minor Arterials.
5. All other roadways (shown in gray) are Local Roads and comprise the vast majority of the mileage of the city's roadway network.



### 3.4 Final Considerations

In many instances, assigning a functional classification to a roadway is straightforward, especially for Interstates and Locals. However, there is flexibility when deciding between adjacent classifications. For example, deciding whether a given roadway acts as a Minor Arterial or Major Collector can be subject to debate. Deciding between a Major Collector and Minor Collector assignment can be even more challenging.

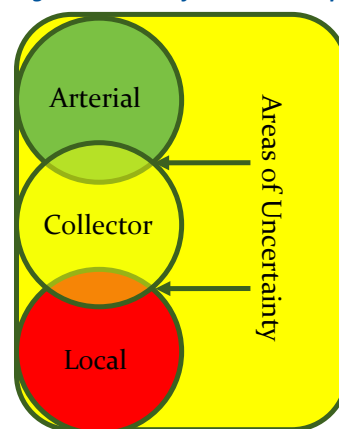
To assist transportation planners responsible for determining the functional classification of roadways, this guidebook offers a helpful tool that can make the classification process of classifying “borderline” roadways a bit easier. **Table 3-5** illustrates the range of lane width, shoulder width, AADTs, divided/undivided status, access control and access points per mile by functional classification categories.

Table 3-5 also presents guidelines for mileage and VMT ranges for Federal functional classifications of roads. These guidelines are based on an analysis of 2008 HPMS data and are adjusted to represent reasonable ranges. The table presents mileage and VMT extents for rural states, urban states and all states. For this purpose rural states are defined as having 75 percent or less of their population in urban areas. Research determined this was a natural breakpoint that approximated the geographic difference between the States.

As expected, Interstates account for the lowest portion of total system miles, but the greatest portion of travel. Conversely, Local Roads comprise the greatest portion of system mileage with Collectors carrying the lowest percentage of travel volume. Therefore, as a primary consideration in functional classification, planners and engineers can use mileage as a guideline. Where roadway systems significantly deviate from these ranges, State DOTs should consider adjusting their roadway assignments during the functional classification review process and at least every 10 years as part of the response to Census defined Urban Boundary changes. FHWA intends to review these guideline ranges for mileage and VMT periodically.

Lastly, as a result of variances within the functional classification system, the guidelines have overlapping ranges of values. This allows greater flexibility in determining functional classification (see **Figure 3-8**).

**Figure 3-8: Classification Overlap**



Source: FHWA

*Table 3-5: VMT and Mileage Guidelines by Functional Classifications - Arterials*

	Arterials			
	Interstate	Other Freeways & Expressway	Other Principal Arterial	Minor Arterial
<b>Typical Characteristics</b>				
Lane Width	12 feet	11 - 12 feet	11 - 12 feet	10 feet - 12 feet
Inside Shoulder Width	4 feet - 12 feet	0 feet - 6 feet	0 feet	0 feet
Outside Shoulder Width	10 feet - 12 feet	8 feet - 12 feet	8 feet - 12 feet	4 feet - 8 feet
AADT <sup>1</sup> (Rural)	12,000 - 34,000	4,000 - 18,500 <sup>2</sup>	2,000 - 8,500 <sup>2</sup>	1,500 - 6,000
AADT <sup>1</sup> (Urban)	35,000 - 129,000	13,000 - 55,000 <sup>2</sup>	7,000 - 27,000 <sup>2</sup>	3,000 - 14,000
Divided/Undivided	Divided	Undivided/Divided	Undivided/Divided	Undivided
Access	Fully Controlled	Partially/Fully Controlled	Partially/Uncontrolled	Uncontrolled
<b>Mileage/VMT Extent (Percentage Ranges)<sup>1</sup></b>				
<b>Rural System</b>				
Mileage Extent for Rural States <sup>2</sup>	1% - 3%	0% - 2%	2% - 6%	2% - 6%
Mileage Extent for Urban States	1% - 2%	0% - 2%	2% - 5%	3% - 7%
Mileage Extent for All States	1% - 2%	0% - 2%	2% - 6%	3% - 7%
VMT Extent for Rural States <sup>2</sup>	18% - 38%	0% - 7%	15% - 31%	9% - 20%
VMT Extent for Urban States	18% - 34%	0% - 8%	12% - 29%	12% - 19%
VMT Extent for All States	20% - 38%	0% - 8%	14% - 30%	11% - 20%
<b>Urban System</b>				
Mileage Extent for Rural States <sup>2</sup>	1% - 3%	0% - 2%	4% - 9%	7% - 14%
Mileage Extent for Urban States	1% - 2%	0% - 2%	4% - 5%	7% - 12%
Mileage Extent for All States	1% - 3%	0% - 2%	4% - 5%	7% - 14%
VMT Extent for Rural States <sup>2</sup>	17% - 31%	0% - 12%	16% - 33%	14% - 27%
VMT Extent for Urban States	17% - 30%	3% - 18%	17% - 29%	15% - 22%
VMT Extent for All States	17% - 31%	0% - 17%	16% - 31%	14% - 25%
Qualitative Description (Urban)	<ul style="list-style-type: none"> <li>• Serve major activity centers, highest traffic volume corridors, and longest trip demands</li> <li>• Carry high proportion of total urban travel on minimum of mileage</li> <li>• Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area</li> <li>• Serve demand for intra-area travel between the central business district and outlying residential areas</li> </ul>			<ul style="list-style-type: none"> <li>• Interconnect with and augment the principal arterials</li> <li>• Serve trips of moderate length at a somewhat lower level of travel mobility than principal arterials</li> <li>• Distribute traffic to smaller geographic areas than those served by principal arterials</li> <li>• Provide more land access than principal arterials without penetrating identifiable neighborhoods</li> <li>• Provide urban connections for rural collectors</li> </ul>
Qualitative Description (Rural)	<ul style="list-style-type: none"> <li>• Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel</li> <li>• Serve all or nearly all urbanized areas and a large majority of urban clusters areas with 25,000 and over population</li> <li>• Provide an integrated network of continuous routes without stub connections (dead ends)</li> </ul>			<ul style="list-style-type: none"> <li>• Link cities and larger towns (and other major destinations such as resorts capable of attracting travel over long distances) and form an integrated network providing interstate and inter-county service</li> <li>• Spaced at intervals, consistent with population density, so that all developed areas within the State are within a reasonable distance of an arterial roadway</li> <li>• Provide service to corridors with trip lengths and travel density greater than those served by rural collectors and local roads and with relatively high travel speeds and minimum interference to through movement</li> </ul>

1- Ranges in this table are derived from 2011 HPMS data.

2- For this table, Rural States are defined as those with a maximum of 75 percent of their population in urban centers.

*Table 3-6: VMT and Mileage Guidelines by Functional Classifications – Collectors and Locals*

	Collectors		Local
	Major Collector <sup>2</sup>	Minor Collector <sup>2</sup>	
<b>Typical Characteristics</b>			
Lane Width	10 feet - 12 feet	10 - 11 feet	8 feet - 10 feet
Inside Shoulder Width	0 feet	0 feet	0 feet
Outside Shoulder Width	1 feet - 6 feet	1 feet - 4 feet	0 feet - 2 feet
AADT <sup>1</sup> (Rural)	300 - 2,600	150 - 1,110	15 - 400
AADT <sup>1</sup> (Urban)	1,100 - 6,300 <sup>2</sup>		80 - 700
Divided/Undivided	Undivided	Undivided	Undivided
Access	Uncontrolled	Uncontrolled	Uncontrolled
<b>Mileage/VMT Extent (Percentage Ranges)<sup>1</sup></b>			
<b>Rural System</b>			
Mileage Extent for Rural States <sup>3</sup>	8% - 19%	3% - 15%	62% - 74%
Mileage Extent for Urban States	10% - 17%	5% - 13%	66% - 74%
Mileage Extent for All States	9% - 19%	4% - 15%	64% - 75%
VMT Extent for Rural States <sup>3</sup>	10% - 23%	1% - 8%	8% - 23%
VMT Extent for Urban States	12% - 24%	3% - 10%	7% - 20%
VMT Extent for All States	12% - 23%	2% - 9%	8% - 23%
<b>Urban System</b>			
Mileage Extent for Rural States <sup>3</sup>	3% - 16%	3% - 16% <sup>2</sup>	62% - 74%
Mileage Extent for Urban States	7% - 13%	7% - 13% <sup>2</sup>	67% - 76%
Mileage Extent for All States	7% - 15%	7% - 15% <sup>2</sup>	63% - 75%
VMT Extent for Rural States <sup>3</sup>	2% - 13%	2% - 12% <sup>2</sup>	9% - 25%
VMT Extent for Urban States	7% - 13%	7% - 13% <sup>2</sup>	6% - 24%
VMT Extent for All States	5% - 13%	5% - 13% <sup>2</sup>	6% - 25%
<b>Qualitative Description (Urban)</b>	<ul style="list-style-type: none"> <li>• Serve both land access and traffic circulation in higher density residential, and commercial/industrial areas</li> <li>• Penetrate residential neighborhoods, often for significant distances</li> <li>• Distribute and channel trips between local streets and arterials, usually over a distance of greater than three-quarters of a mile</li> </ul>	<ul style="list-style-type: none"> <li>• Serve both land access and traffic circulation in lower density residential, and commercial/industrial areas</li> <li>• Penetrate residential neighborhoods, often only for a short distance</li> <li>• Distribute and channel trips between local streets and arterials, usually over a distance of less than three-quarters of a mile</li> </ul>	<ul style="list-style-type: none"> <li>• Provide direct access to adjacent land</li> <li>• Provide access to higher systems</li> <li>• Carry no through traffic movement</li> </ul>
<b>Qualitative Description (Rural)</b>	<ul style="list-style-type: none"> <li>• Provide service to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intra-county importance such as consolidated schools, shipping points, county parks, important mining and agricultural areas</li> <li>• Link these places with nearby larger towns and cities or with arterial routes</li> <li>• Serve the most important intra-county travel corridors</li> </ul>	<ul style="list-style-type: none"> <li>• Be spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within reasonable distance of a minor collector</li> <li>• Provide service to smaller communities not served by a higher class facility</li> <li>• Link locally important traffic generators with their rural hinterlands</li> </ul>	<ul style="list-style-type: none"> <li>• Serve primarily to provide access to adjacent land</li> <li>• Provide service to travel over short distances as compared to higher classification categories</li> <li>• Constitute the mileage not classified as part of the arterial and collectors systems</li> </ul>

1- Ranges in this table are derived from 2011 HPMS data.

2- Information for Urban Major and Minor Collectors is approximate, based on a small number of States reporting.

3- For this table, Rural States are defined as those with a maximum of 75 percent of their population in urban centers.

*State DOTs are required to collect, analyze and publish traffic data on the roadways within their borders. Specifically, through the Highway Performance Monitoring System, each roadway segment on the Federal-aid highway (e.g., urban roadways classified as Minor Collectors and above and rural roadways classified as Major Collectors and above) is required to have an AADT value that is based on an actual traffic count within the last 3 years. Therefore, AADT is a readily available and objective metric that can be brought into the functional classification determination process.*

**Mileage and Daily Vehicle - Miles of Travel (DVMT) Ranges:** While these guidelines should be considered general rules of thumb, FHWA encourages State DOTs to generate similar statistics for their roadway network and evaluate whether they fall within the normal ranges presented here. States should also apply the urban and rural guidelines as appropriate to their urban and rural areas.

**Annual Average Daily Traffic:** Roadway traffic volumes are typically expressed as annual average daily traffic (AADT) and represent one of the most objective characteristics of a roadway's usage, providing a standard, easy to understand and simple metric for comparing the relative importance of roadways. In general, the higher the traffic volume is, the higher the functional classification will be (relative to the norms in the surrounding area). Therefore, examining the AADT with other roadways in both the immediate vicinity (and in the region as a whole) is helpful when deciding a "borderline" roadway classification. If, for example, when trying to determine whether a given roadway with an AADT of 3,500 should be classified as a Minor Arterial or Major Collector, most of the Minor Arterials (in the immediate area and the region at large) fall within the 4,000 to 10,000 range, and the Major Collectors fall within the 2,000 to 4,000 range, the roadway should be classified as a Major Collector.

**The Big Picture:** If there still remains some ambiguity surrounding what classification should be applied to a given roadway, it is often helpful to examine the roadways in close proximity to it and to consider the spacing. For example, if trying to determine whether a roadway should be classified as a Minor Arterial or Major Collector, it is useful to take a "step back" and determine whether any functional classification is under- or over-represented. If the area has a significant number of Minor Arterials, then the roadway could very well be best classified as a Major Collector. Alternatively, if there is not another Minor Arterial within a few mile radius of the roadway (assuming an urban context), then the roadway may best be designated as a Minor Arterial.

Even after careful review of a given roadway's attributes, a small set of roadway segments that are difficult to classify can remain. For this reason, the set of mileage guidelines in Tables 3-5 and 3-6 can help provide high-level guidance regarding both the extent (mileage) and usage (daily vehicle miles of travel [DVMT]) of the roadway system that should fall into the different functional classification categories. While these guidelines have been developed for application at the State level, they can also be applied within regions.



## TRANSPORTATION UPDATES

September 24, 2019

---

These updates are aimed at keeping the TAC informed about potential modifications to State programs and practices that may affect transportation, CVRPC transportation initiatives, VT's Clean Water Act, and other news that may be of interest.

### VTrans has Moved Mostly to Barre

Most of VTrans's staff have moved out of Nation Life in Montpelier and are now located at Barre City Place in Barre. Please verify your meeting locations prior to any meetings you have scheduled with VTrans.

### Regional Energy Roundtable

You are invited to join us for **Local Action for Transportation Transformation: A Central Vermont Regional Energy Event**. We'll share stories about community level campaigns from across the region that are working to change the way we get around, from expanding mass transit options to sharing rides and electrifying cars.

Breakout sessions with transportation experts will help to identify opportunities, overcome challenges, and advance transportation efficiency solutions at the local level. Plus, connect with local energy committee leaders and learn more about the work they are doing to transform Vermont's energy future from the ground up!

**When: Wednesday, October 2nd, 2019 - 6:00 pm to 8:30 pm**

**Where: Montpelier City Hall, 39 Main Street, Montpelier**

### Flashing Beacon Stop and Slow Traffic Control Sign

Photo taken on 9/12/19 while waiting for VTrans to complete work on a guardrail along VT Route 12 Middlesex.

